

Application for the rectification of unlawful commencement or continuation of a listed activity in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

FINAL S24G ASSESSMENT REPORT

DENC S24G Ref: 01/01/2018

**STOFEILAND 24G RECTIFICATION OF
CULTIVATION OF 27.4HA OF VINEYARDS ON
KAKAMAS SOUTH SETTLEMENT NO 2132,
KENHARDT**



**COMPILED BY: ELANIE KÜHN
PIETER BADENHORST PROFESSIONAL SERVICES
DATE: JUNE 2018**



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Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

**Sasko Building 90 Long Street, Private Bag X6012, Kimberley, 8300.
Tel (053) 8077430, Fax (053) 831 3530**

Application form for the rectification of unlawful commencement or continuation of a listed activity in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended

Kindly note that:

1. This application form must be completed for all applications in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, by an independent Environmental Assessment Practitioner.
2. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the application form have been published or produced by the relevant competent authority.
3. The content of the application for rectification form comprises of:
Section A: Application Information
Section B: Activity Information
Section C: Description of Receiving Environment
Section D: Preliminary Impact Assessment
Section E: Alternatives
Section F: Appendices
Section G: Declarations
4. An independent EAP must be appointed to complete the application form on behalf of the applicant; the declaration of independence must be completed by the independent EAP and submitted with the impact assessment report.
5. The required information must be typed within the spaces provided. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. The space provided extend as each space is filled with typing. A legible font type and size must be used when completing the form. The font size should not be smaller than 10pt (e.g. Arial 10). A digital copy of the application form is available on the Department's website (details below).
6. The use of "*not applicable*" in the application form must be done with circumspection.
7. No faxed or e-mailed applications will be accepted.
8. Unless protected by law, all information contained in and attached to this application form may become public information on receipt by the competent authority. Upon request, any interested and affected party must be provided with the information contained in and attached to this application form.
9. This application form must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the competent authority. Unnecessary delays will be incurred should the application and attached information not be submitted to the correct address and / or competent authority.
10. This application form constitutes the initiation of the Section 24G application process.

DEPARTMENTAL DETAILS

The Director: Biodiversity Management, Compliance and Enforcement
 Department of Environment and Nature Conservation
 Bag X 6012
 Kimberley
 8301
 South Africa

SECTION A: APPLICATION INFORMATION

1. APPLICANT PROFILE INDEX

Cross out the appropriate box “☒”.

| | | | |
|-----|---|------------|----|
| 1.1 | The applicant is an individual | YES | NO |
| 1.2 | The applicant is a company | YES | NO |
| 1.3 | The applicant is a state-owned enterprise or municipality | YES | NO |

| | | | | | | | | | | | | | |
|--|---|----------|----------|----------|----------|--------------|-----------------------|----------|----------|----------|----------|----------|----------|
| Project applicant: | A&C Van Niekerk Boerdery (Pty) Ltd | | | | | | | | | | | | |
| RSA Identity number: | 6 | 4 | 0 | 3 | 2 | 3 | 5 | 0 | 9 | 4 | 0 | 8 | 3 |
| Contact person: | CHRISTIAAN, RUDOLF, BRUWER VAN NIEKERK | | | | | | | | | | | | |
| Position in company | COO | | | | | | | | | | | | |
| Registered Name of Company/ Closed Corporation | A&C Van Niekerk Boerdery (Pty) Ltd | | | | | | | | | | | | |
| Trading name (if any): | A&C Van Niekerk Boerdery (Pty) Ltd | | | | | | | | | | | | |
| Registration number | 2003/010564/07 | | | | | | | | | | | | |
| Postal address: | P.O. Box 274 | | | | | | | | | | | | |
| | Kakamas | | | | | Postal code: | 8870 | | | | | | |
| Telephone: | (054) 441 0220 | | | | | Cell: | | | | | | | |
| E-mail: | acvn@lantic.net | | | | | Fax: | (054) 441 0220 | | | | | | |

| | | | | |
|--|---|--------------|-----------------------|--|
| Environmental Assessment Practitioner (EAP): | Pieter Badenhorst Professional Services | | | |
| Contact person: | Elanie Kuhn | | | |
| Postal address: | PO Box 1058 | | | |
| | Wellington | Postal code: | 8870 | |
| Telephone: | (021) 873 7228 | Cell: | 076 584 0822 | |
| E-mail: | pbps@iafrica.com | Fax: | (086) 672 1916 | |
| EAP Qualifications | Civil Engineering degree with 42 years' experience in environmental field | | | |
| EAP Registrations/Associations | Pieter Badenhorst - 42 years' experience (16 @ CSIR) in environmental management; report writing; project management; facilitation | | | |
| | Elanie Kuhn – 11 years experience, environmental management, report writing, project management | | | |

| | | | | |
|--------------------|---|--------------|-----------------------|--|
| Landowner(s): | A&C Van Niekerk Boerdery (Pty) Ltd | | | |
| Contact person(s): | Christo Van Niekerk | | | |
| Postal address: | P.O. BOX 274 | | | |
| | Kakamas | Postal code: | 8874 | |
| Telephone: | (054) 441 0220 | Cell: | | |
| E-mail: | acvn@lantic.net | Fax: | (054) 441 0220 | |

Please Note: In instances where there is more than one landowner, please attach a list of landowners with their contact details to the back of this page.

| | | | | |
|--|-------------------------------|--------------|-----------------------|--|
| Municipality in whose area of jurisdiction the activity falls: | Kai!Garib Municipality | | | |
| Contact person: | Municipal Manager | | | |
| Postal address: | Private Bag X6 | | | |
| | Kakamas | Postal code: | 8870 | |
| Telephone: | (054) 461 6700 | Cell: | | |
| E-mail: | | Fax: | (054) 461 6401 | |

Please Note: In instances where there is more than one Municipality involved, please attach a list of Municipalities with their contact details to the back of this page.

| | | | | | | |
|---|---|------------|----------------|----------------|------------|---------------|
| Project title: | Stofeiland 24G Rectification Of 28ha of vineyards across small streams on Kakamas South Settlement no 2132, Kenhardt | | | | | |
| Property location: | Farm Stofeiland | | | | | |
| Farm/Erf name & number (incl. portion): | Kakamas South Settlement no 2132 | | | | | |
| SG21 Digit code: | C03600070000213200000 | | | | | |
| Co-ordinates: | Latitude (S): | | | Longitude (E): | | |
| | 28° | 43' | 21.88 " | 20° | 29' | 05.16" |

Please Note:
Where a large number of properties are involved (e.g. linear activities), attach a list of property descriptions to the back of this page.

| | | | |
|--|--|---|----------------------|
| 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 must be in degrees, minutes and seconds. The minutes must be given to at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection. | | | |
| Street address: | | Hoofstraat; Kai !Garib Municipality | |
| Magisterial District or Town: | | Kenhardt District - Kakamas | |
| <p>Please Note: In instances where there is more than one town or district involved, please attach a list of towns or districts as well as complete physical address information for the entire area to the back of this page.</p> | | | |
| Closest City/Town: | | Marchand | Distance 2 Km |
| Zoning of Property: | | Agricultural Zone 1 | |
| <p>Please Note: In instances where there is more than one zoning, please attach a list of zonings that also indicate which portions each use pertains to, to this application.</p> | | | |
| Was a rezoning application required? | | YES | NO |
| Was a consent use application required? | | YES | NO |
| <p>Please Note: Where planning approvals have been granted please attach the relevant approvals. In instances where there is more than one zoning, please attach a list of zonings that also indicate which portions each use pertains to, to this application.</p> | | | |
| Owners consent: | | <p>Letters of consent from all landowners or a detailed explanation by the applicant explaining why such letters of consent are not furnished must be attached to the back of this document as Appendix C.</p> <p>NOT REQUIRED AS PROJECT IS ON APPLICANT'S PROPERTY</p> | |

2. APPLICATION HISTORY

(Cross out the appropriate box “☒” and provide a description where required).

| | | |
|--|-----|-----------|
| Has any national, provincial or local authority considered any development applications on the property previously? | Yes | NO |
| If so, please give a brief description of the type and/or nature of the application/s: instances where there were more than one application, please attach a list of these applications) | | |
| N/A | | |
| Which authority considered the application: | | |
| N/A | | |
| Has any one of the previous application/s on the property been approved/rejected? If so provide a list of the successful and unsuccessful application/s and the reasons for decision/s. | Yes | NO |
| N/A | | |
| Provide detail on the period of validity of decision and expiry dates of the above application permits etc. | | |
| N/A | | |

I hereby apply in terms of Section 24 G of the National Environmental Management Act (Act no 107 of 1998 as amended) for the rectification of the unlawful commencement or continuation of a listed activity:

Applicant (Full names)_____ **Christo Van Niekerk** _____

Signature:_____

Place: _____

Date: _____

EAP (Full names): **Pieter Badenhorst**

Signature:_____

Place: _____

Date: _____

SECTION B: ACTIVITY INFORMATION

1. ACTIVITIES APPLIED FOR:

Separate rectification applications are required for one development site where more than one listed activity has commenced and where these unlawfully commenced activities constitute offences in terms of different EIA regulations Applicants and EAPS are strongly advised to discuss the merits of a combined application (if deemed appropriate) with the relevant Department prior to the completion of this application form and submission thereof. The relevant Department will use its discretion in deciding to allow one rectification application for more than 1 Section 24F(2)(a) contravention on one development site. All potential listed activities associated with the development must be indicated below. (See Annexures B, C, D and E). Only those activities for which the applicant applies will be considered. The onus is on the applicant to ensure that all the applicable listed activities are included in the application.

2. ACTIVITY DESCRIPTION

An application may be made for more than one listed or specified activity that, together, make up one development proposal. All the listed activities that make up this application must be listed.

| Number and date of the relevant notice: | Activity No (s) (in terms of the relevant or notice) : | Describe each listed activity |
|--|---|--|
| NEMA 2002 Regulations | | |
| Government Notice R670 2002 Activity 10 | The cultivation or any other use of virgin ground. | The construction of cultivation areas of 2.86 ha. |
| NEMA 2006 Regulations | | |
| Government Notice R385 of 2006 Listing Notice 1 Activity 4 | The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland. | The infilling and removal of soil within the streams for the development of approximately 8.3ha of vineyards. |
| NEMA 2010 Regulations | | |
| GNR 544 of 2010 Listing Notice 1 (Basic Assessment) Activity 11 | The construction of: (xi) infrastructure or structures covering 50 square metres or more Where such construction occurs within a watercourses or within 32 metres of a watercourse, measured from the edge of the watercourses, excluding where such construction will occur behind the development setback line. | The construction during 2010 to 2012 for the infrastructure development associated with the cultivation of the vineyards such as irrigation pipelines across a water courses. |
| GNR 544 of 2010 Listing Notice 1 (Basic Assessment) Activity 18 | 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 of more than 5 cubic metres from: (i) watercourse | Approximately 13.8 hectares of land were cleared prior to 30 September 2013 (refer to Appendix B), within watercourses. |

| | | |
|---|---|---|
| <p>GNR 544 of 2010 Listing Notice 3 (Basic Assessment)</p> <p>Activity 4</p> | <p>The construction of a road wider than 4 metres with a reserve less than 13,5 metres:</p> <p>(a) In Northern Cape province:</p> <p>ii. Outside urban areas, in:</p> <p>(ee) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>(gg) Areas within 10 kilometres from national parks</p> | <p>There are farm roads wider than 4 metres with road reserves less than 13,5 meters within the cultivated area to provide access for the agricultural activities. The project site is located within a CBA (Refer to Figure 16) and within 10km of the Augrabies SANBI National Park.</p> |
| <p>GNR 544 of 2010 Listing Notice 3 (Basic Assessment)</p> <p>Activity 12</p> | <p>The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>(b) within critical biodiversity areas identified in bioregional plans</p> | <p>Approximately 13.8 hectares of land was cultivated in between July 2010 to September 2013 resulting in the clearance of an area of more than 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, within a CBA (Refer to Figure 16).</p> |
| <p>GNR 544 of 2010 Listing Notice 3 (Basic Assessment)</p> <p>Activity 13</p> | <p>The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation...</p> <p>(a) Critical biodiversity areas and ecological support areas as identified in systematic biodiversity plans adopted by the competent authority</p> <p>(c) In Northern Cape</p> <p>(ii) Outside urban areas, the following:</p> <p>(ff) Areas within 10 kilometres from national parks...</p> | <p>Approximately 13.8 hectares of land was cultivated from July 2010 to September 2013 resulting in the clearance of an area of more than 1 ha or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation, located within a CBA (Refer to Figure 16), and within 10 km of the Augrabies National Park.</p> |
| NEMA 2014 Regulations | | |
| <p>GNR 983 of 2014 Listing Notice 1 (Basic Assessment)</p> <p>Activity 12</p> | <p>The development of:</p> <p>(xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>Where such development occurs –</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;</p> | <p>The construction of infrastructure associated with the cultivation of the vineyards such as irrigation pipelines located within water courses. Construction took place between 2014 to 2016. Refer to Figure 16.</p> |
| <p>GNR 983 of 2014 Listing Notice 1 (Basic Assessment)</p> | <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of</p> | <p>Approximately 2.5 hectares of land was developed from 2014 to</p> |

| | | |
|---|--|--|
| Assessment) Activity 19 | soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from- (i) watercourse | 2016 (Refer to Appendix B) within watercourses. |
| GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 4 | The development of a road wider than 4 metres with a reserve less than 13,5 metres: (a) In the Northern Cape: (ii) Outside urban areas, in: (ee) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) within 10 kilometres from national parks | There are roads wider than 4 metres with road reserves less than 13,5 meters within the cultivated areas to provide access for the agricultural activities. The area under cultivation is located within a CBA (Refer to Figure 16) and within 10km of the Augrabies National Park. |
| GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 12 | The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (d) in Northern Cape ii. Within critical biodiversity areas identified in bioregional plans. | Total area cleared of indigenous vegetation for cultivation during 2014 to 2016 was 2.5 hectares. Refer to Appendix B and Figure 16 (CBA map). |
| GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 14 | The development of – (xii) infrastructure or structures with a physical footprint of 10 square metres or more; Where such development occurs- (a) within a watercourse; (a) In the Northern Cape: (ii) Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (hh) areas within 10 kilometres from national parks. | A total of 2.5 hectares was cultivated from 2014 to 2016. The construction of infrastructure associated with the cultivation of the vineyards such as irrigation pipelines within water courses. The project site is located within a CBA within 10km of the Augrabies SANBI National Park. |

Please note that any authorisation that may result out of this application will only cover activities applied for. Omissions may render any authorisation that is based on incomplete information to be nil and void.

(Cross out the appropriate box “☒” and provide a description where required).

| | | |
|--|------------|----------------|
| (a) Is/was the project a new development or an upgrade of an existing development? | New | Upgrade |
|--|------------|----------------|

| |
|---|
| (b) Clearly describe the activity and associated infrastructure commenced with, |
|---|

indicating what has been completed, what still has to be completed and applicable commencement dates.

Locality:

The proposed development is situated approximately 2 kilometers outside of the small town of Marchand in the Northern Cape, in the Kai! Garib Municipal area within the Kenhardt District.

Refer to the Locality Plan attached at Appendix A (and inserted below as Figure 1).



Figure 1: Locality plan

Proposed development:

Refer to the Historical Google Earth images attached at Appendix D1.

The proposed development consisted out of the following activities that triggered NEMA 2002, 2009, 2010 and 2014 Regulations:

NEMA 2002:

- 1. Clearance of approximately 2.86 hectares of virgin soil between 2002 and prior to 2004. (Refer to Figure 2, yellow block).**

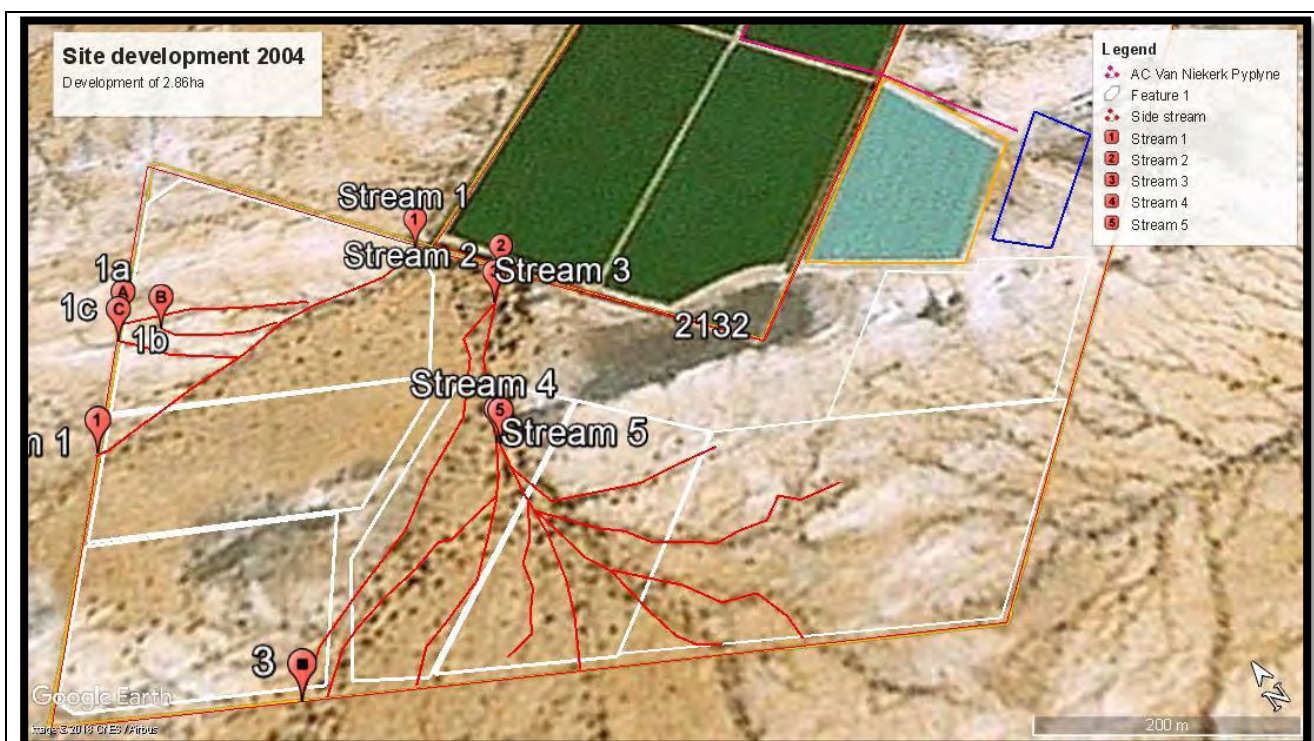


Figure 2: Vegetation clearing between 2002 and 2004.

NEMA 2006

- 1. Clearance of approximately 8.3 hectares of vegetation between 2006 and 2009 for the clearing within/across a watercourse. (Refer to Figure 3, yellow blocks).**

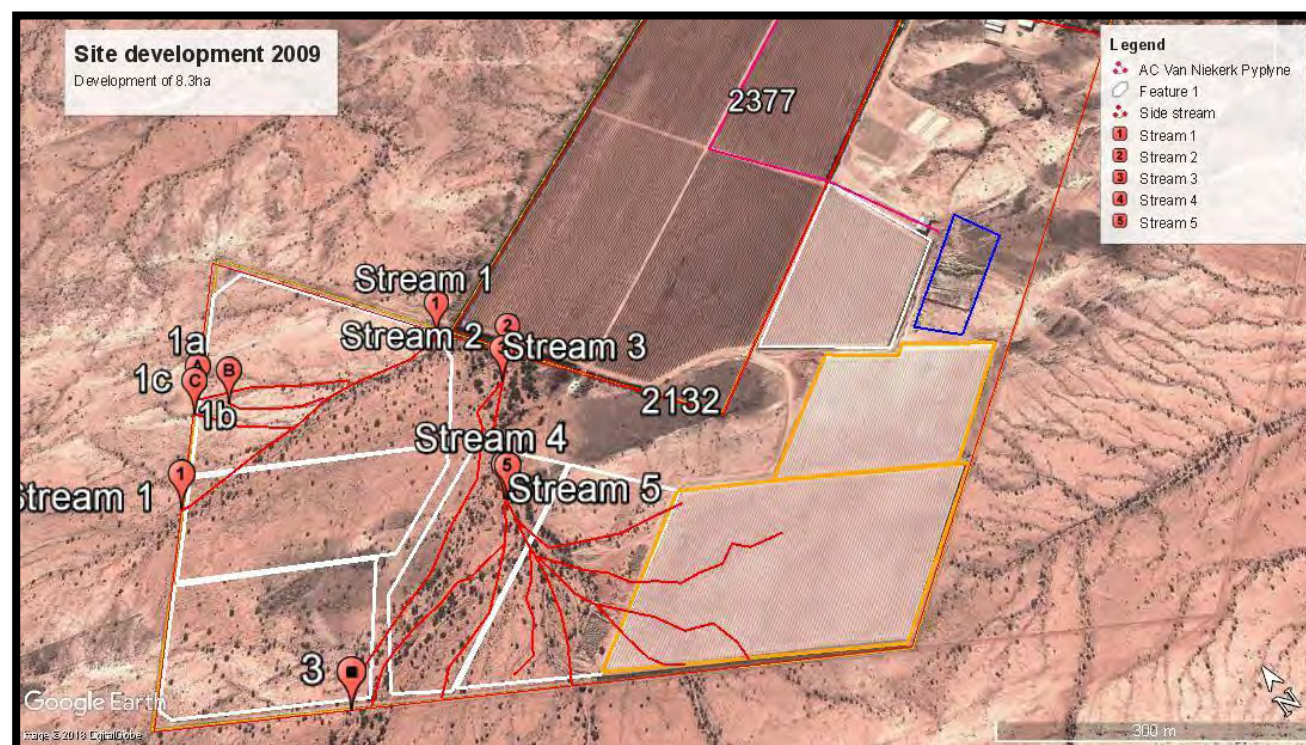


Figure 3: Vegetation clearing between 2009 and 2010.

NEMA 2010:

1. Clearance of approximately 13.8 hectares of indigenous vegetation between July 2010 and prior to September 2013, also the clearing within/across a watercourse. (Refer to Figure 4, yellow blocks).
2. Construction of pipelines and roads as part of the clearance of the 13.8 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

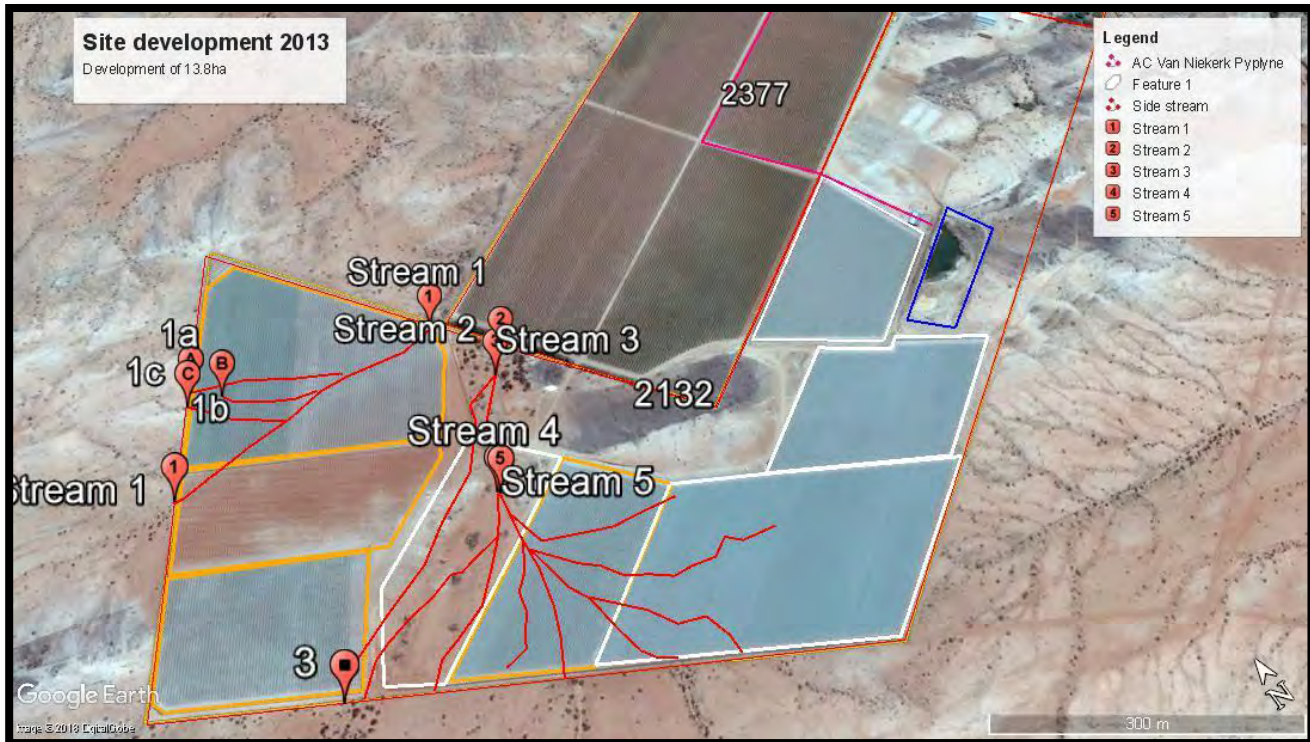


Figure 4: Vegetation clearing between 2010 and 2013.

NEMA 2014:

1. Clearance of approximately 2.5 hectares of indigenous vegetation after 2014, also the clearing within a watercourse. (Refer to Figure 5, yellow blocks).
2. Construction of pipelines and roads as part of the clearance of the 2.5 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

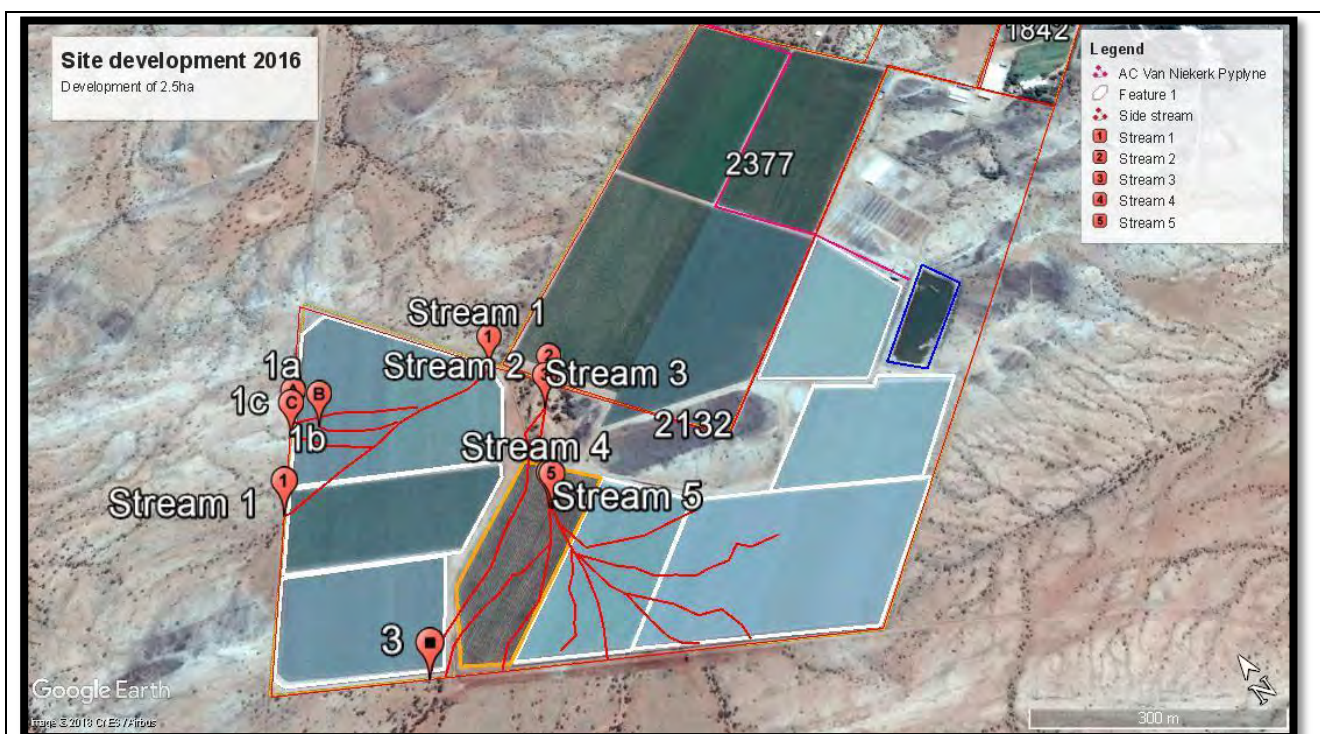


Figure 5: Vegetation clearing between 2013 and 2014.

As shown in Figure 3, these areas were under cultivation of vineyards for table grapes by November 2016 with a total of 24.9 hectares (see Figure 4) constructed. Access tracks were constructed within the cultivated area to facilitate the farming activities.

By end of 2016, a total of 27.4 hectares had been cleared (Figure 2).

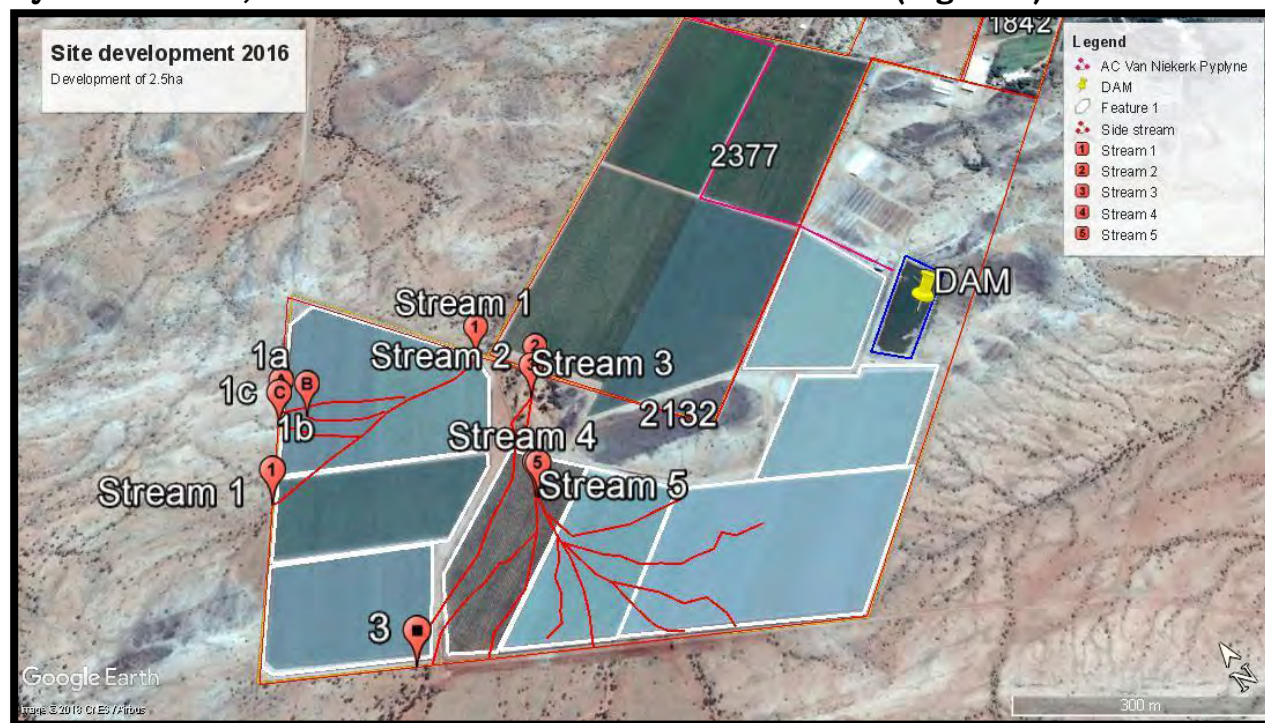


Figure 6: Total developed area

Refer to the Site Photographs attached at Appendix D2.

(c) Provide details of all components of the activity and attach diagrams (e.g. architectural drawings or perspectives, engineering drawings, process flow charts etc.).

| | | |
|-----------|-----|----|
| Buildings | YES | NO |
|-----------|-----|----|

Provide brief description:

Refer to Appendix B: Site Plan and Figure 7 below.

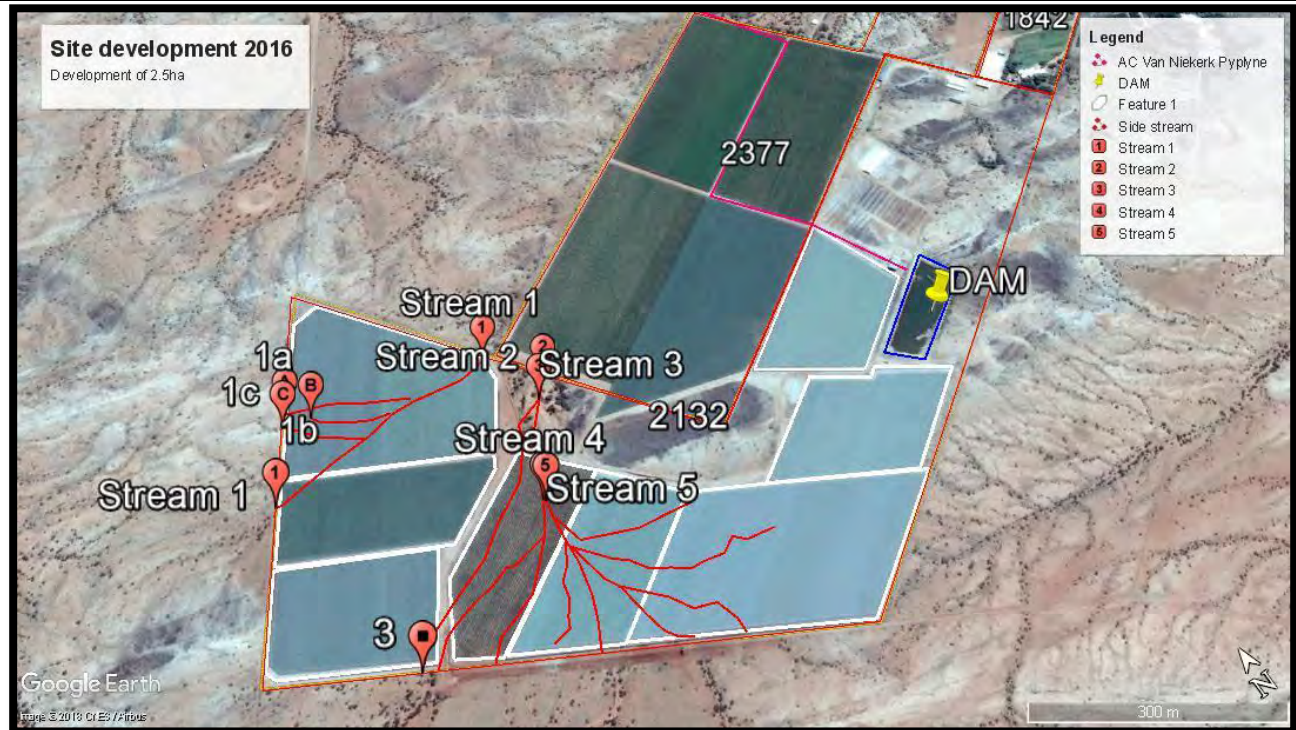


Figure 7: Total areas cleared and developed by end of 2016.

There is one building with the project area. This is a storage area. Also located on the property is a drying area for grapes to produce raisins.

Refer to Appendix D2: Site Photographs.

Pipeline and pump station:

A pipeline of approximately 2km. Note the route follows within existing gravel road reserves, the route also does not cross any streams that was affected. The pump station is constructed just above the weir diverting flow into the channel, within the outflow channel, just outside of the banks of the Orange River. The pump station is a small building constructed well above the 1:100 year floodline and approximately 50m² in size. Note this did not activate a NEMA listed activity as this was constructed prior to 1998 and purchased by the applicant.



Figure 8: Pipeline route



Figure 9: Pump station

Dam:

The dam consists out of the following diameters:

- 167m in length
- 60m in width
- 3m in height and
- Has a capacity of approximately 30 000m³

Note this dam is just a balancing dam, water pumped from the Orange River is temporarily stored to pump to vineyards. The balancing dam results in a reduction in electricity costs and easy distribution to vineyards.



Figure 10: Balancing dam

| | | |
|--|------------|-----------|
| Infrastructure (e.g. roads, power and water supply/ storage) | YES | NO |
|--|------------|-----------|

Provide brief description:

Refer to Appendix B: Site Plan (see above).

Roads:

Access is gained off the R64 district road via Kakamas South Settlement no 1842, which is also the applicant's property. The internal farm tracks are not surfaced, and are compacted earth with no formal storm water management control structures in place. The low rainfall characteristic of the area negates the need to provide for formal storm water control.

Water:

Water is required for the drip irrigation of the established vineyards, and is supplied via pipelines from the booster pump station and pump lines as shown on Appendix B. Kakamas South Settlement no 2132 has water use rights of 0 hectares that were registered with the Marchand/Augrabies and Kakamas Water Users Association. Water use for Farm Orange Fall 16/81 will be provided to Kakamas South Settlement no 2132. Farm Orange Fall no 16/81 will provide Kakamas South Settlement no 2132 with 23 hectares of water use rights. The cultivated development on the property is 25ha in total. As part of this an application will also be lodged to DWS for additional temporary storage of 30 000m³ of water in a dam. Transfer and allocations as outlined below:

Refer to Appendix E1 for existing water use rights and Appendix E2 of the WULA.

As part of the Water Use License Application will apply for Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on the property took place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

The ephemeral drainages systems spring will ultimately have flowed into the Orange River, this is no longer the case as all these streams are cut off from the Orange River via agricultural developments and the canal.

The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains. They are mostly ephemeral streams, see Figure 11 (red lines).

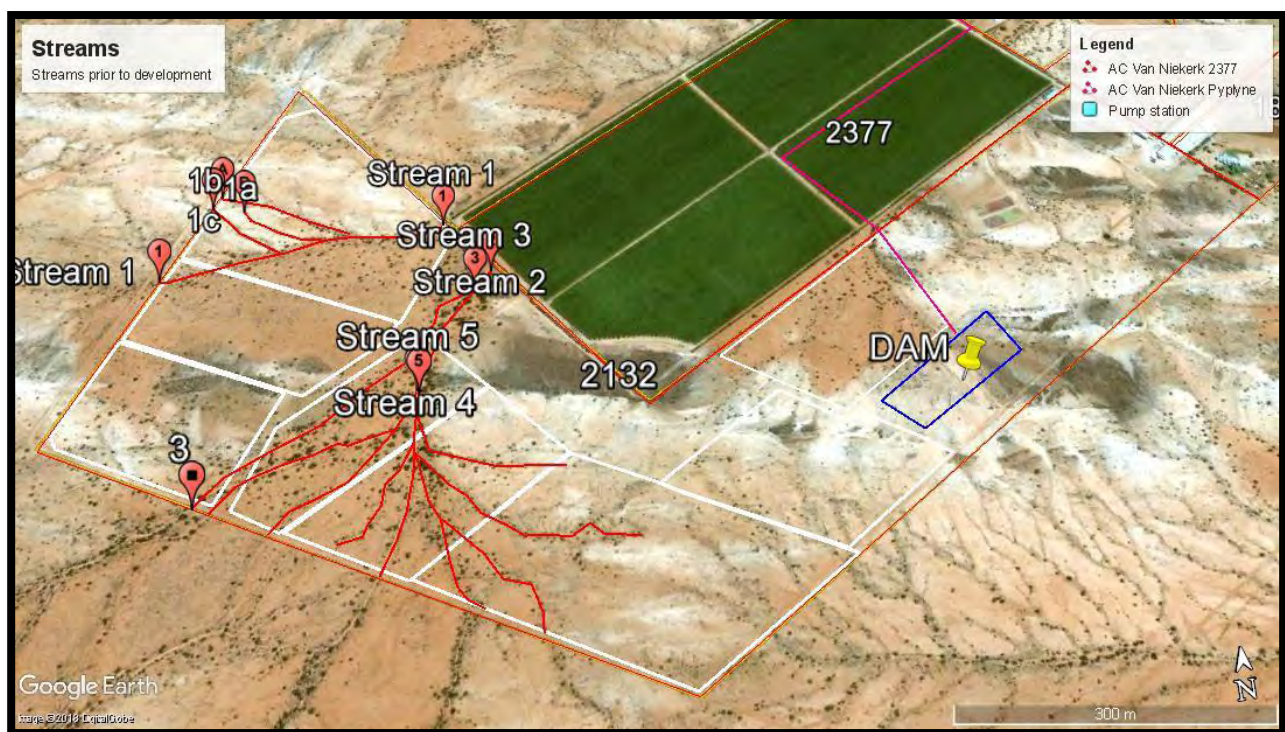


Figure 11: Ephemeral streams/drainage areas

The WULA application is summarised for the following water usages:

| | |
|--|---|
| (a) taking water from a water resource; | [transfer of water between properties] |
| (b) storage and temporary storage of water | Temporary storage of water with a total volume of 30 000m ³ |
| (c) impeding or diverting flow of water in a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |

| | | |
|---|---|--|
| (i) altering the bed, banks, course or characteristics of a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. | |
|---|---|--|

Electricity:
Electricity is provided for the irrigation process and is linked to the booster pump. Refer to Appendix B.

| | | |
|---|-----|----|
| Processing activities (e.g. manufacturing, storage, distribution) | YES | NO |
| Provide brief description: | | |
| Storage facilities for raw materials and products (e.g. volume and substances to be stored) | | |
| Provide brief description | YES | NO |
| Storage and treatment facilities for solid waste and effluent generated by the project | | |
| Provide brief description | YES | NO |
| Other activities (e.g. water abstraction activities, crop planting activities) | | |
| Provide brief description | Yes | No |

Crop Planting:
Table grapes are being cultivated as indicated in the project area (refer to Appendix B).

Water abstraction activities:
Water is required for the drip irrigation of the established vineyards, and is supplied via pipelines from the booster pump station and pump lines as shown on Appendix B and Figure 8 and 9. Kakamas South Settlement no 2132 has water use rights of 0 hectares that were registered with the Kakamas Water Users Association, an application is made for transfer of 23ha of water from Orange fall no 16/81 to Kakamas South Settlement no 2132.

3. ACTIVITY NEED AND DESIRABILITY

| |
|--|
| Describe the need and desirability of the activity: |
| <p>According to the report prepared by DAFF (2012): South African table grape exports totalled 2 708 767 metric tons. Europe is the most important market. Most table grapes were exported to the Netherlands (40%), followed by Great Britain (21%), Belgium (7,4%), Germany (5,5%), Hong Kong (3,1%) and other African countries (0,3%). During the summer season, India, Chile, South Africa and Israel are the major competing countries.</p> <p>Major production areas in South Africa The Hex River Valley is the country's main table grape production area; more than half of all grape exports come from this district, which has the longest harvesting period in the country. The Northern Cape is a very dry province, so most of the grapes in this province are cultivated in the Orange River region and they are harvested very early.</p> <p>The project area is located within the Lower Orange River wine region (Refer to</p> |

Figure 12 below.)

Kakamas South Settlement no 2132 contributes to the production of table grapes that are harvested early for the export market, in time for the Christmas festive season overseas. This particular characteristic of growing table grapes in this region gives the growers a highly competitive advantage in the global market.

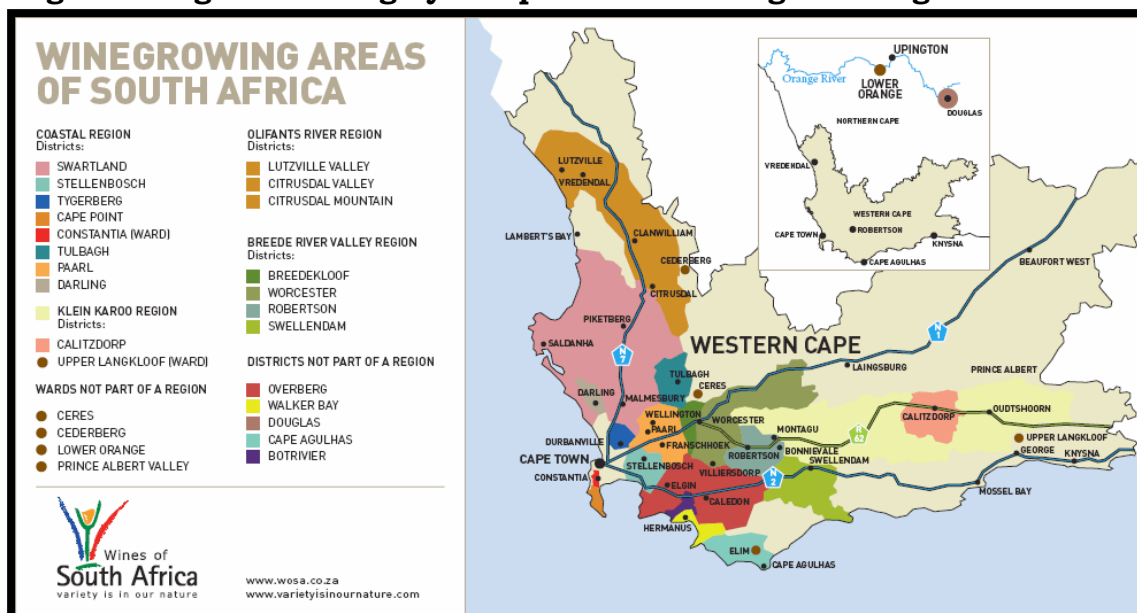


Figure 12: Winegrowing areas of South Africa (sourced from www.wosa.co.za)

Indicate the benefits that the activity has/had for society in general and also indicate what benefits the activity has/had for the local communities where it is located:

The cultivation of table grapes created short-term employment during the construction phase, and long-term employment during the operational phase. The grower (Stoefeiland) has to employ a large number of workers to harvest the grapes by hand and to sort them during harvest time, and there is a team to ensure the maintenance of the vineyards in general.

Local employment has a positive economic spin-off for the local economy and results in community upliftment through being able to provide for basic needs such as housing and education of the children of the employed staff.

The export of grapes contributes to the National Gross Domestic Profit (GDP).

4. PHYSICAL SIZE OF THE ACTIVITY

| | |
|--|--|
| Indicate the physical spatial size of the activity as well as associated infrastructure (footprints): | Agricultural Areas 23ha or 23 000 m² Pipeline 2km in length 50m² in size for the pump station |
| Indicate the area that has been transformed / cleared to allow for the activity as well as associated infrastructure | Agricultural Areas 23ha or 23 000 m² Pipeline 2km in length 50m² in size for the pump |

| | |
|---|--|
| | station |
| Total area (sum of the footprint area and transformed area) | Agricultural Areas 23ha or 23 000 m² Pipeline 2km in length 50m² in size for the pump station |

5. SITE ACCESS

Was there an existing access road?

The access road is an existing road that gains access off the R64 via Erf 1842 as shown below in the Google Earth photograph below (refer to Figure 13), and is just under 4 metres wide.

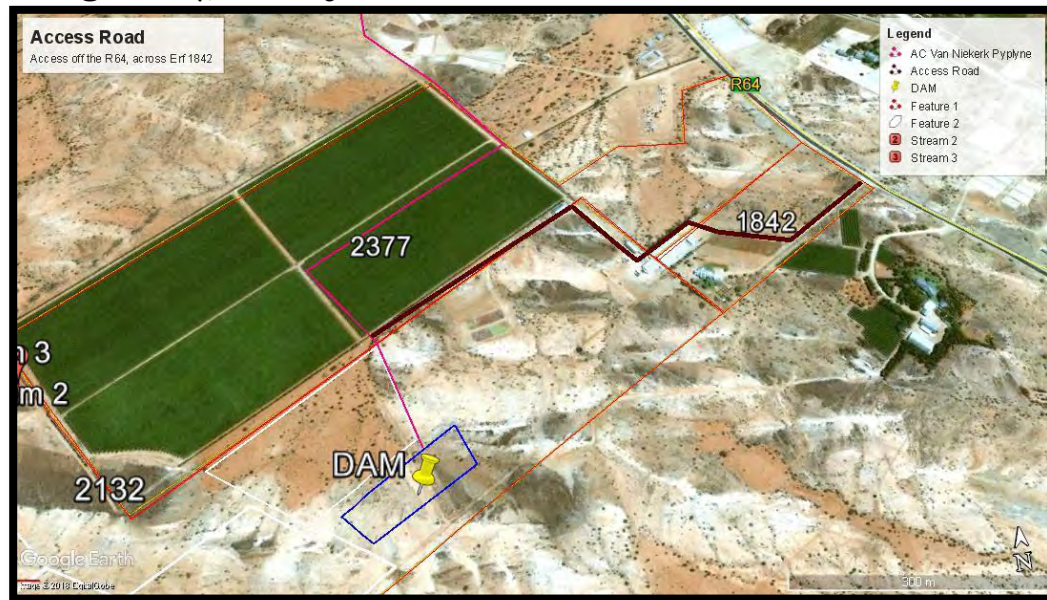


Figure 13: Access Roads

EIA Regulations dated 21 April 2006, include roads wider than 4 metres and longer than 30 metres; therefore GNR 386 dated 21 April 2006 is not applicable.

YES **NO**

If NO, what was the distance over which the new access road was built?

m

Describe the type of access road constructed: [indicate the position of the access road on the site plan]

The existing access road is a farm dirt track that existed prior to 2000.

6. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken of the site and from the site), both before (if available) and after the activity commenced, with a description of each photograph **must** be attached to this application.

The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide past and recent aerial photographs.

Historical Aerial photographs dated back to 2003 are provided as Figures, attached at Appendix D.

Site Photographs taken is attached as Appendix D2.

It should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Photographs must be attached under Appendix D to this form.

7. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

Please list all legislation, policies and/or guidelines that were or are relevant to this activity.

| LEGISLATION | ADMINISTERING AUTHORITY | TYPE Permit/ license/ authorization/comment | DATE (if already obtained): |
|--|---|---|-----------------------------------|
| National Environmental Management Act | Department of Environment and Nature Conservation (DENC) | Authorisation | In progress |
| National Heritage Resources Act | SAHRA | Comment. | In progress |
| National Water Act | Department of water and Sanitation | Water Use Licence or General Authorisation | In progress |
| Conservation of Agricultural Resources Act | Department of Agriculture | Plough Certificate for Water Use licence; Comment on EIA | In progress |
| POLICY/ GUIDELINES | | ADMINISTERING AUTHORITY | |
| Guidelines published in terms of NEMA Regulations | | Department of Environmental Affairs | |
| Guidelines published in terms of the National Water Act | | Department of Water and Sanitation | |

PLEASE NOTE THIS IS A S24G PROCESS. THIS FORM THEREFORE SERVES AS THE REPORT THAT WILL BE DISTRIBUTED AND SUBMITTED FOR APPROVAL.

8. Application for Basic Assessment (BA)

Is the rectification process done through an application for conducting a basic assessment (as defined in the regulations)?

| | |
|------------|-----------|
| YES | NO |
| YES | NO |

If, YES, is a basic assessment report attached?

If, NO, please indicate when the basic assessment report will be submitted:

This report will be extended to an Assessment Report

9. Application for Scoping and Environmental Impact Assessment (EIA)

Is the rectification process done through an application for Scoping and EIA (as defined in the regulations)?

| | |
|------------|-----------|
| YES | NO |
| YES | NO |

If, YES, is a Scoping Report and Plan of Study for EIA attached?

If, NO, please indicate when the Scoping Report and Plan of Study for EIA will be submitted:

N/A

The scoping report and/or the plan of study for EIA will be submitted

| | |
|------------|-----------|
| YES | NO |
|------------|-----------|

after consultation with the competent authority:

A consultation with the competent authority is hereby requested:

| | |
|------------|-----------|
| YES | NO |
|------------|-----------|

SECTION C: DESCRIPTION OF RECEIVING ENVIRONMENT

SITE/AREA DESCRIPTION

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

Section C Copy No. (e.g. 1, 2, or 3):

N/A

1. GRADIENT OF THE SITE

Indicate the general gradient of the site(s) (cross out the appropriate box).

| | | | |
|------|--------------------------|------------|------------------|
| Flat | Flatter than 1:10 | 1:10 – 1:5 | Steeper than 1:5 |
|------|--------------------------|------------|------------------|

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (cross out (“☒”) the appropriate box (es)).

| | | | | | | | | | |
|-----------|---------|-----------------------------|---------------|-------------|--------------|----------------------------|------|-----------|-------|
| Ridgeline | Plateau | Side slope of hill/mountain | Closed valley | Open valley | Plain | Undulating plain/low hills | Dune | Sea-front | Other |
|-----------|---------|-----------------------------|---------------|-------------|--------------|----------------------------|------|-----------|-------|

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on or near any of the following [cross out (“☒”) the appropriate boxes]?

| | | | |
|---|-----|-----------|--------|
| Shallow water table (less than 1.5m deep) | YES | NO | UNSURE |
| Seasonally wet soils (often close to water bodies) | YES | NO | UNSURE |
| Unstable rocky slopes or steep slopes with loose soil | YES | NO | UNSURE |
| Dispersive soils (soils that dissolve in water) | YES | NO | UNSURE |
| Soils with high clay content | YES | NO | UNSURE |
| Any other unstable soil or geological feature | YES | NO | UNSURE |
| An area sensitive to erosion | YES | NO | UNSURE |

If any of the answers to the above are “YES” or “UNSURE”, specialist input may be requested by the Department. 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.

4. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites (cross out (“☒”) the appropriate boxes)?

| | | | |
|---|------------|----|--------|
| Perennial River | YES | NO | UNSURE |
| Non-Perennial River (mainly drainage areas and a small stream) | YES | NO | UNSURE |
| Permanent Wetland | YES | NO | UNSURE |

| | | | |
|------------------------------|-----|----|--------|
| Seasonal Wetland | YES | NO | UNSURE |
| Artificial Wetland | YES | NO | UNSURE |
| Estuarine / Lagoonal wetland | YES | NO | UNSURE |

The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

The drainage channel system is located in a sub-catchment of a stream locally known as the Slangriver. The Slangriver is not really a river, but more fits the description of a mostly dry drainage line. The river is classified as Class C: Moderately modified. The ephemeral drainages systems spring will ultimately have flowed into the Orange River, this is no longer the case as all these streams are cut off from the Orange River via agricultural developments and the canal.

Note however that a section of the site, the original blocks fall within the NEFPA sub quaternary catchment areas. Note these blocks (6, 7 and 8) did not have a negative impact on this catchment area. See Figure 14 for the NEFPA areas.



Figure 14: River Catchment Areas

5. VEGETATION AND GROUNDCOVER

5.1 VEGETATION / GROUNDCOVER (PRE-COMMENCEMENT)

Cross out (“X”) the block or describe (where required) the vegetation types / groundcover present on the site before commencement of the activity.

| | | | | | |
|--|--|---|---|--|--|
| Indigenous Vegetation — good condition | | Indigenous Vegetation with scattered aliens | X | Indigenous Vegetation with heavy alien infestation | |
|--|--|---|---|--|--|

| | | |
|---|---|---|
| Describe the vegetation type above: N/A | Describe the vegetation type above: Bushmanland Arid Grassland, see Figure 15 | Describe the vegetation type above: N/A |
| Provide ecosystem status for above: N/A | Provide ecosystem status for above: Least threatened [Vegetation Map of South Africa, Lesotho and Swaziland 2002 beta] and falls within a CBA category 2 (Refer to Figure 16 below) | Provide Ecosystem status for above: N/A |
| Indigenous Vegetation in an ecological corridor or along a soil boundary / interface | Veld dominated by alien species | Distinctive soil conditions (e.g. Sand over shale, quartz patches, limestone, alluvial deposits, termitaria etc.) – describe: The average depth of the soil is 1.8 metres. There are no hard or impermeable soil layers. The granite that occurs in the sub-surface is already in a serious degree of weathering. |
| Bare soil | Building or other structure | Sport field |
| Other (describe below) | Cultivated land | Paved surface |
| | | |

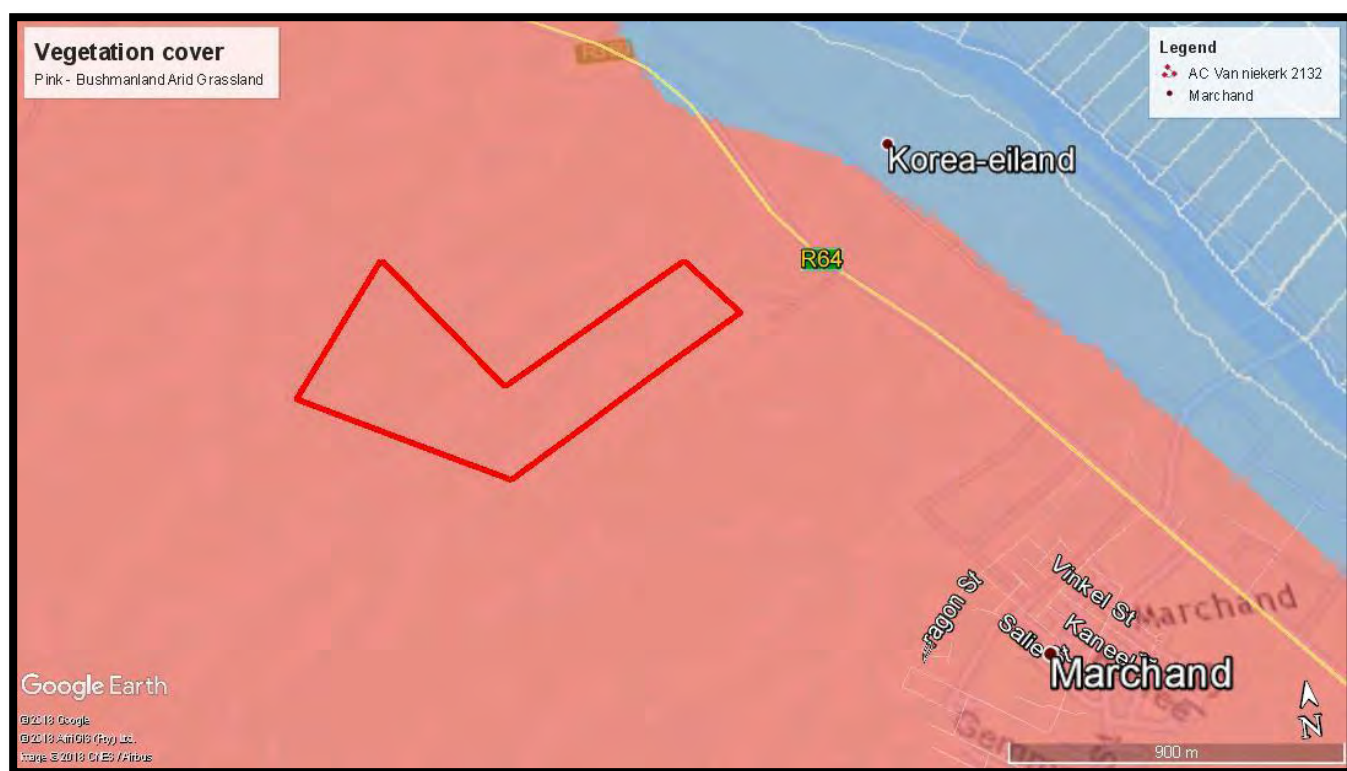


Figure 15: Vegetation Map



Figure 16: CBA Map

5.2. VEGETATION / GROUNDCOVER (POST-COMMENCEMENT)

Cross out ("X") the block or describe (where required) the vegetation types / groundcover present on the site after commencement of the activity.

| | | | | | |
|--|--|--|--|---|--|
| Indigenous Vegetation — good condition | | Indigenous Vegetation — with scattered aliens | | Indigenous Vegetation with heavy alien infestation | |
| Describe the vegetation type above: | | Describe the vegetation type above: | | Describe the vegetation type above: | |
| Provide ecosystem status for above: | | Provide ecosystem status for above: | | Provide Ecosystem status for above: | |
| Indigenous Vegetation in an ecological corridor or along a soil boundary / interface | | Veld dominated by alien species | | Distinctive soil conditions (e.g. Sand over shale, quartz patches, limestone, alluvial deposits, termitaria etc.) — describe | |
| Bare soil | | Building or other structure | | Sport field | |
| Other (describe below) Access roads within cultivated area | | Cultivated land | | Paved surface | |
| <p>Please note: The Department may request specialist input/studies depending on the nature of the vegetation type / groundcover and impact(s) of the activity/ies. To assist with the identification of the <u>vegetation type</u> and <u>ecosystem status</u> consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used.</p> | | | | | |

5.3 VEGETATION / GROUNDCOVER MANAGEMENT

Describe any mitigation/management measures that were adopted and the adequacy of these:

| |
|---|
| <p>The vegetation was removed and the brush-cut has been removed. No further mitigation necessary.</p> <p>The area is cultivated with vineyards. Areas around buildings have been cleared, not enough water to landscape around buildings and vineyards.</p> <p>Mitigation measures associated with Storm Water Management is included in the WULA in Appendix E2.</p> |
|---|

6. LAND USE CHARACTER OF SURROUNDING AREA (PRE-COMMENCEMENT)

Cross out ("X") the block that reflects the past land uses and/or prominent features that occur/red within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and impact(s) of the activity/ies.

Refer to Figure 17 inserted below of the land uses within 500m of the project site reflecting past land uses within a 500m radius of the site. As shown below in Figure 15 the site is surrounded by existing agricultural areas with homesteads and other agri-industrial uses.

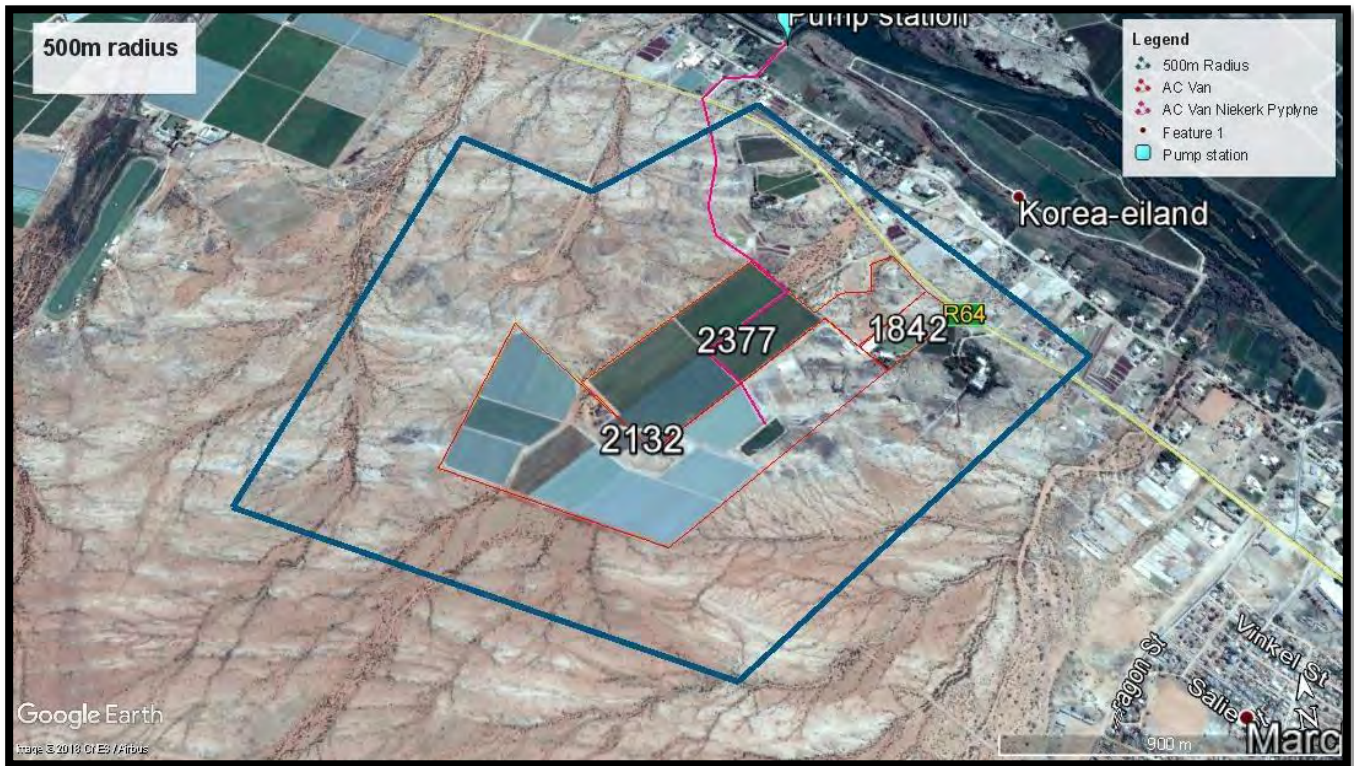


Figure 17: Land uses within 500m of the project site prior to the commencement of the cultivation (Google Earth image is dated 02/11/2016)

| Untransformed area | Low density residential | Medium density residential | High density residential | Informal residential |
|----------------------------------|--------------------------------|--|---------------------------------|--------------------------------|
| Retail | Commercial & warehousing | Light industrial | Medium industrial | Heavy industrial |
| Power station | Office/consulting room | Military or police base/station/compound | Casino/entertainment complex | Tourism & Hospitality facility |
| Open cast mine | Underground mine | Spoil heap or slimes dam | Quarry, sand or borrow pit | Dam or reservoir |
| Hospital/medical center | School | Tertiary education facility | Church | Old age home |
| Sewage treatment plant | Train station or shunting yard | Railway line | Major road (4 lanes or more) | Airport |
| Harbour | Sport facilities | Golf course | Polo fields | Filling station |
| Landfill or waste treatment site | Plantation | Agriculture | River, stream or wetland | Nature conservation area |
| Mountain, koppie or ridge | Museum | Historical building | Graveyard | Archaeological site |
| Other land uses (describe): | | | | |

7. REGIONAL PLANNING CONTEXT

Is/was the activity permitted in terms of the property's existing land use rights? Please explain

| | | | |
|--|------------|----|-----------------------|
| Yes, Kakamas South Settlement 2132 is zoned as Agriculture. | | | |
| Is/was the activity in line with the following? | | | |
| Provincial Spatial Development Framework (PSDF) | YES | NO | Please explain |
| Kakamas South Settlement 2132 is zoned for Agricultural use, and the agricultural activities are in line with the PSDF. | | | |
| Urban edge / Edge of Built environment for the area | YES | NO | Please explain |
| The agricultural activities have taken place outside the urban edge/urban area on land for agricultural use. | | | |
| Integrated Development Plan of the Local Municipality | YES | NO | Please explain |

| | | | |
|--|------------|-----------|-----------------------|
| Kakamas South Settlement 2132 is zoned for Agricultural use, and the agricultural activities are in line with the IDP. | | | |
| Spatial Development Framework of the Local Municipality | YES | NO | Please explain |
| Kakamas South Settlement 2132 is zoned for Agricultural use, and the agricultural activities are in line with the SDF. | | | |
| Approved Structure Plan of the Municipality | YES | NO | Please explain |
| Kakamas South Settlement 2132 is zoned for Agricultural use, and the agricultural activities are in line with the Structure Plan. | | | |
| Any other Plans | YES | NO | Please explain |
| N/A | | | |

8. SOCIO-ECONOMIC CONTEXT

8.1 SOCIO-ECONOMIC CONTEXT (PRE-COMMENCEMENT)

Describe the pre-commencement social and economic characteristics of the community in order to provide baseline information.

The economy is heavily depended on the Agricultural Sector, both intensive and extensive. However the major roads (N14, R27 and R359) assist in the growth of the municipal area experience. It is important to note that new opportunities have opened up for Kai !Garib municipal area since the need to facilitate the generation of sustainable energy was introduced in South Africa by Eskom and the South African government. (Kai !Garib Municipality Integrated Development Plan (IDP) Draft 2016/2017).

The local Augrabies community relies on tourism associated with the Augrabies National Park located in close proximity to the project site. Any tourism related socio-economic benefits would have been supplemented with the agricultural activities associated with the farming activities along the Orange River between Augrabies and Kakamas.

According to the IDP for 2016/2017 (dated March 2016) the project area is located within Ward 1: Augrabies, Marchand, Riemvasmaak and had a total population of 11 408 as recorded in the 2011 Census.

8.2 SOCIO-ECONOMIC CONTEXT (POST-COMMENCEMENT)

Describe the post commencement social and economic characteristics of the community in order to determine any change.

With the development of additional cultivated land by A & C Van Niekerk Boerdery, additional agricultural employment opportunities were provided, with associated local socio-economic spin-offs.

The positive impact of the job creation and increased employment following the increase in cultivated areas initiated in 2015 is not be reflected in the employment statistics reported in the March 2016 IDP from the 2011Census.

According to the IDP (March 2016); The agricultural sector is still the main economic sector that made the biggest contribution (51.8 %) to the economy of Kai !Garib in 2010. The Agriculture sector is also a major employer in the Municipality, providing 66.5% of all formal employment. It is also the sector with the largest potential for economic growth. The commercial farmer's farm especially with grapes for export, raisins and wine, while citrus are also becoming more prevalent in the area.

The project has therefore contributed to the largest economic sector in the Kai !Garib Municipality.

8.3 CULTURAL/HISTORICAL FEATURES

| | | |
|---|-----------|----|
| Were there any signs or evidence (unearthed during construction) of culturally or historically significant elements including archaeological or palaeontological sites, on or in close proximity to the site? | X-YES | NO |
| | UNCERTAIN | |

| | | | |
|---|---|----|--|
| If YES, explain: | Surrounding sites nearby was assessed by heritage specialists and small Later Stone Age tools were encountered and area highly disturbed and of having a grade 3C, low rating of significance. No further studies are required. However, the site has entirely been transformed with agricultural activities and therefore possibility of any further finds is scarce. However the findings will be submitted on the SAHRIS online application for comments. | | |
| If uncertain, the Department may request that specialist input be provided to establish whether there was such possibilities occurred on or close to the site. | | | |
| Briefly explain the findings of the specialist if one was already appointed: | Nothing of significance was recovered by in surrounding areas still undeveloped by specialists. The site has already been transformed. | | |
| Were any buildings or structures older than 60 years be affected in any way? | YES | NO | |
| Was 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 submit or, make sure that the applicant or a specialist submit the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application. | | | |

SECTION D: PRELIMINARY IMPACT ASSESSMENT

Please note, the impacts identified below refer to general impacts commonly associated with development activities. The list below is not exhaustive and may need to be supplemented. Where required, please append the information on any additional impacts to this application.

1. WASTE, EFFLUENT AND EMISSION MANAGEMENT

(a) Solid waste management

| | | |
|---|-------------------|----------------|
| Did/does the activity produce any general waste (e.g. domestic-, commercial-, certain industrial waste, including building rubble also known as solid waste) during the construction phase <u>and/or</u> the operational phase? | YES | NO |
| If yes, briefly describe what type of waste was produced (i.e. green waste, building rubble, etc.) in which phase. | | |
| Construction phase: | | |
| A small amount of construction related waste associated with vineyards would have been generated, such as cement bags, paint tins, etc. | | |
| Operational phase: | | |
| Operational waste is limited to broken materials associated with the farming activities, and with solid waste associated with food eaten by the farm workers. | | |
| What quantity was/is produced during the construction period? | Approx. 2 | m ³ |
| What was/is the estimated quantity that will be produced per month during the operational phase? | Negligible | m ³ |

| | | |
|--|----------------|----------------|
| Did/does the activity produce any <u>hazardous</u> waste (e.g. chemical, medical waste, infectious, nuclear etc.) during the construction and/or the operational phase? | YES | NO |
| If yes, briefly describe what type of waste was produced (i.e. infectious waste, medical waste, etc.) in which phase. | | |
| N/A | | |
| What quantity was/is produced during the construction period? | N/A | m ³ |
| What was/is the estimated quantity that will be produced per month during the operational phase? | N/A | m ³ |

| | | |
|--|-----|----|
| Where and how was/is waste treated / disposed of (describe each waste stream)? | | |
| Very little solid waste is produced by farm workers and general farming activities. General solid waste collection and disposal by the municipality will be confirmed during the public consultation process. | | |
| Has the municipality or relevant authority confirmed that sufficient capacity exist for treating / disposing of the solid waste to be generated by this activity(ies)? If yes, provide written confirmation from Municipality or relevant authority. | YES | NO |
| TO BE CONFIRMED DURING PUBLIC PARTICIPATION PROCESS | | |
| Does/did the activity produce solid waste that was/will be treated and/or disposed of at another facility other than into a municipal waste stream? | YES | NO |

| | | | |
|---|--|--------------|----|
| If yes, did/has this facility confirmed that sufficient capacity exist for treating / disposing of the solid waste to be generated by this activity(ies)? Provide written confirmation from the facility and provide the following particulars of the facility: | | YES | NO |
| Did/does the facility have an operating license? (If yes, please attach a copy of the license.) | | YES | NO |
| Facility name: | | | |
| Contact person: | | | |
| Postal address: | | | |
| | | Postal code: | |
| Telephone: | | Cell: | |
| E-mail: | | Fax: | |
| | | | |

(b) Effluent

| | | |
|--|----------------|----------------|
| Did/does the activity produce sewage and or any other effluent? | YES | NO |
| None associated with the development of vineyards, existing ablution facilities on Erf 1842 at the existing packaging shed. | | |
| What was/is the estimated quantity produced per month? | N/A | m ³ |
| Was/is the effluent treated and/or disposed of in a municipal system? | YES | NO |
| If Yes, did/has the Municipality or relevant authority confirmed that sufficient unallocated capacity exist for treating / disposing of the sewage or any other effluent generated by this activity(ies)? Provide written confirmation from the Municipality or relevant authority. | | |
| N/A | | |
| Was/is any effluent produced be treated and/or disposed of on site? | Yes | NO |
| If yes, briefly describe the nature of the effluent and how it was/will be disposed of: | | |
| N/A | | |
| Did/does the activity produce effluent that was/will be treated and/or disposed of at another facility? | YES | NO |
| If yes, did/has this facility confirmed that sufficient capacity exist(ed) for treating / disposing of the liquid effluent generated by this activity(ies)? Provide written confirmation from the facility and provide the following particulars of the facility: | YES | NO |
| N/A | | |
| Does the facility have an operating license? (If yes, please attach a copy of the license.) | YES | NO |
| Facility name: | | |
| Contact person: | | |
| Postal address: | | |
| | Postal | |

| | |
|------------|-------|
| | code: |
| Telephone: | Cell: |
| E-mail: | Fax: |

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

N/A

(c) Emissions into the atmosphere

| | | |
|---|----------------|---------------|
| Did/does the activity produce emissions that will be disposed of into the atmosphere? | YES | NO |
| If yes, did/does it require approval in terms of relevant legislation? If yes, attach a copy to this application | YES | NO |
| Describe the emissions in terms of type and concentration and how it was/will be treated/mitigated: | | |
| N/A | | |

(d) Describe any mitigation/management measures that were adopted and the adequacy of these:

There is very little in any, operational solid waste produced and there are no emissions associated with the vineyards that require mitigation measures. The harvested grapes are moved to another property where packaging is undertaken under controlled conditions for export.

2. WATER USE

(a) Please indicate the source(s) of water for the activity by crossing out ("X") the appropriate box(es)

| | | | | | |
|-----------|----------------------------------|-------------|----------------------------|-------|-------------------------------------|
| Municipal | Water Board Kakamas WUA – | Groundwater | River, Stream, Dam or Lake | Other | The activity did/does not use water |
|-----------|----------------------------------|-------------|----------------------------|-------|-------------------------------------|

If water was/is extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that was/is extracted per month:

Water is required for the drip irrigation of the established vineyards, and is supplied via pipelines from the booster pump station and pump lines as shown on Appendix B. Kakamas South Settlement no 2132 has water use rights of 0 hectares that were registered with the Kakamas Water Users Association. A total of 23ha of water use rights will be transferred for Farm Orange Fall 16/81 and will be provided to Kakamas South Settlement no 2132. The cultivated development on the property is 25ha. As part of this an application will also be lodged to DWS for additional temporary storage of 30 000m³ of water in a dam Transfer and allocations as outlined below:

27.4ha
a m³

Refer to Appendix E1 for existing water use rights and Appendix E2 of the WULA.

As part of the Water Use License Application will apply for Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on the property took place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

The ephemeral drainages systems spring will ultimately have flowed into the Orange River, this is no longer the case as all these streams are cut off from the Orange River via agricultural developments and the canal. The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains. They are mostly ephemeral streams, see Figure 18 (red lines).

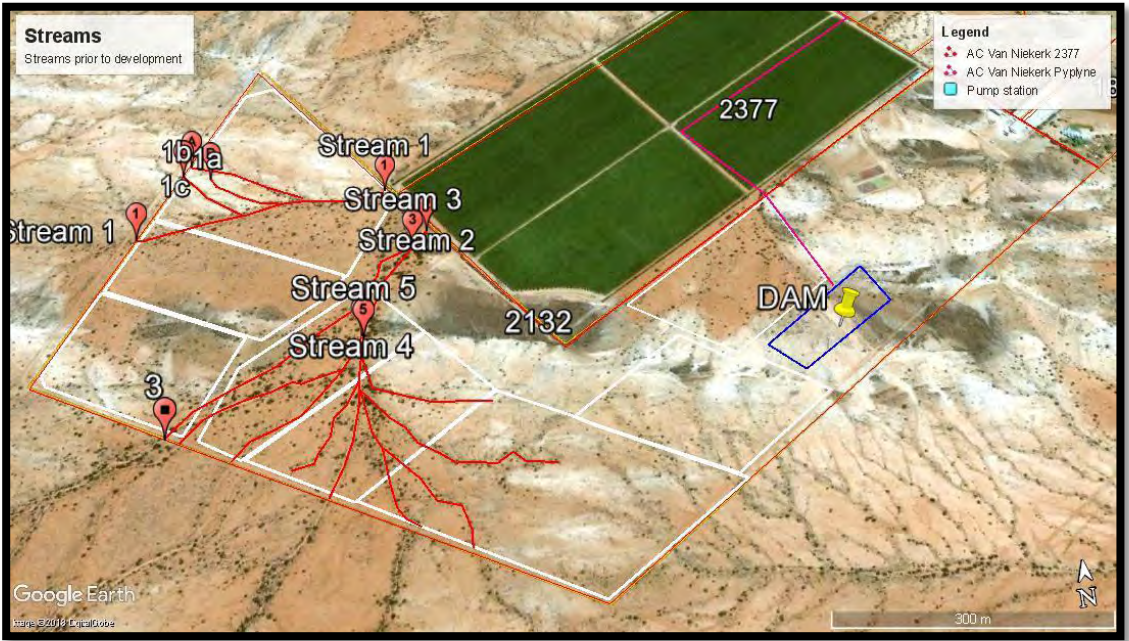


Figure 18: Ephemeral streams/drainage areas

| | |
|--|---|
| (a) taking water from a water resource; | [transfer of water between properties] |
| (b) storage and temporary storage of water | Temporary storage of water with a total volume of 30 000m³ |
| (c) impeding or diverting flow of water in a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |

(i) altering the bed, banks, course or characteristics of a watercourse

For the construction of agricultural areas across ephemeral streams/natural drainage areas.

The WULA application is summarised for the following water usages:

Pipeline and pump station:

The section 21 c and i application is also for the construction of pipelines and a pump station.

A pipeline of approximately 2km. Note the route follows within existing gravel road reserves, the route also does not cross any streams that was affected. The pump station is constructed just above the weir diverting flow into the channel, within the outflow channel, just outside of the banks of the Orange River. The pump station is a small building constructed well above the 1:100 year floodline and approximately 50m² in size.



Figure 19: Pumps

Please provide proof of assurance of water supply eg. letter of confirmation from Municipality/water user associations, yield of borehole etc.

Refer to Appendix E1 providing proof of the water use for Kakamas South Settlement no 2132 from the Kakamas Water Users Association. Water is allocated from the irrigation canal.

Did/does the activity require a water use permit / license from DWAF? If yes, attach a copy to this application

X
YES

N
O

If yes, please submit the necessary application to Department of Water Affairs and Forestry and attach proof thereof to this application.

A Water Use License Application will be submitted to DWS for the following:

| | |
|--|--|
| (a) taking water from a water resource; | [transfer of water between properties] |
| (b) storage and temporary storage of water | Temporary storage of water with a total volume of 30 000m³ |
| (c) impeding or diverting flow of water in a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |
| (i) altering the bed, banks, course or characteristics of a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |

(b) Describe any mitigation/management measures that were adopted and the adequacy of these:

The following mitigation measures with regards to the impacts due to the water use increase:

- Care was taken during the construction of the pipelines to construct them within an existing gravel road reserve so as to not affect any natural vegetation.
- The pipelines did not affect any streams.
- The pipelines are checked on a monthly basis to ensure no dripping/leakage.
- Flow meters are installed at the pump station site to ensure good water use practice.
- The pump station was constructed above the 1:100 year floodline on the bank edge of the weir inlet, just outside the banks of the Orange River to result in the lowest possible impacts.
- The pumps are selected to provide optimum delivery at minimum demand where water use is managed by applying drip irrigation. This is good agricultural practice.

3. POWER SUPPLY

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

There is an existing Eskom power supply on Kakamas South Settlement no 2132.

| | | |
|--|-----|----|
| Has the Municipality or relevant service provider confirmed that sufficient electricity capacity (i.e. generation, supply and transmission) exist for activity(ies)? If yes, provide written confirmation from Municipality or relevant service provider. | YES | NO |
|--|-----|----|

| | | |
|--|--|--|
| NOTE: Written confirmation will be sought during the public consultation phase. | | |
|--|--|--|

| |
|---|
| If power supply was/is not available, where was/is it sourced from? |
| Electricity is supplied by powerline to the cultivated areas from the existing grid. |

(b) Describe any mitigation/management measures that were adopted and the adequacy of these:

| |
|--|
| The pumps utilized are selected based on their optimum delivery at minimum demand, and there are no other types of pumps available for this type of irrigation. |
|--|

4. ENERGY EFFICIENCY

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

| |
|--|
| The pumps utilized are selected based on their optimum delivery at minimum demand, and there are no other types of pumps available for this type of irrigation. |
|--|

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

| |
|--|
| Drip irrigation utilizes less energy (and water) than spray irrigation. |
|--|

5. NOISE IMPACTS

| | | |
|---|------------|-----------|
| (a) Did/does the activity result in any noise impacts? | YES | NO |
| If yes, please describe and indicate the measures implemented to mitigate and manage these impacts? | | |
| N/A | | |

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential noise impact(s) of the activity/ies.

6. VISUAL IMPACTS

| | | |
|--|------------|-----------|
| (a) Did/does the activity result in any visual impacts? | YES | NO |
| If yes, please describe and indicate the measures implemented to mitigate and manage these impacts? | | |
| The property is a property away from the R64 and the surroundings are in line with agricultural activities and cultivation of vineyards. The project area does not create an unusual visual impact. | | |
| (b) Did/does the activity result in potential lighting impacts at night? | YES | NO |
| If yes, please describe and indicate the measures implemented to mitigate and manage these impacts? | | |
| N/A | | |
| (c) Were/are there any alternatives available to address this impact? | YES | NO |
| If yes, please describe these alternatives? | | |
| N/A | | |

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential visual impact(s) of the activity/ies.

7. SOCIO-ECONOMIC IMPLICATIONS OF THE ACTIVITY

| | |
|---|--------------------------|
| (a) What was/is the expected capital value of the activity on completion? | R13 500 000 |
| (b) What was/is the expected yearly income or contribution to the economy that will be generated by or as a result of the activity? | R8 000000 |
| (c) Did/does the activity contribute to service infrastructure? | YES NO |
| (d) How many permanent new employment opportunities were created? | 70 |
| (e) What was/is the expected current value of the employment opportunities to date? | R3 000000 |
| (f) What percentage of this accrued to previously disadvantaged individuals? | 100% |

| |
|---|
| How was (is) this (to be) ensured and monitored (please explain): |
| As far as possible select contractors using local labour. |

8. PRELIMINARY IMPACT ASSESSMENT

Briefly describe the impacts (as appropriate), significance rating of impacts, mitigation and significance rating of impacts of the activity. This must include an assessment of the significance of all impacts. Please note: This is a preliminary impact statement. The Department may request specialist input/studies depending on the type and nature of the impact(s) of the activity/ies.

| Possible Impacts | Significance rating of impacts after mitigation (Low, Medium, Medium-High, High, Very High): |
|--|--|
| Loss of indigenous vegetation | Low negative |
| Loss of non-perennial drainage lines | Medium negative |
| Impact from pipelines and pump station construction | Low negative |
| Water required for irrigation | Medium negative |
| Visual | Low negative |
| Noise | Low negative |
| Cultural | None |
| Employment creation | Medium-High positive |
| Production of table grapes for export market | Medium-High positive |

REFER TO THE PRELIMINARY IMPACT RATING TABLES BELOW:

PRELIMINARY IMPACTS THAT RESULTED FROM THE CONSTRUCTION PHASE:

| |
|---|
| Impacts on geographical and physical aspects: |
|---|

| | |
|---|---|
| Nature of impact: | Removal of 27.4ha of disturbed indigenous vegetation (Bushmanland Arid Grassland rated as least threatened) on Kakamas South Settlement no 2132 located within a CBA2 area. |
| Extent and duration of impact: | Local extent and Long term duration |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Low |
| Cumulative impact prior to mitigation: | The conclusions made here have been made after the clearing of the vegetation which presents significant limitations. With those limitations in mind the general conclusions reached are that given the location of the site within a terrestrial Critical Biodiversity Area 2 and considering available information and evidence (disturbance regime, least threatened vegetation type etc.) the impact of the clearing for the vineyards is low negative. The rating would have been medium negative if the area was completely undisturbed prior to clearing. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |
| Degree to which the impact can be mitigated: | None |
| Proposed mitigation: | No mitigation is available for the activity already which has already taken place. |
| Cumulative impact post mitigation: | Low |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

| Impacts on geographical and physical aspects: | |
|---|---|
| Nature of impact: | Loss of non-perennial drainage lines: Impeding the flow of water in a watercourse and altering the beds, banks, course and characteristics of the watercourses at the Orange River and along pipelines |
| Extent and duration of impact: | Local extent and Long term duration |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Impact cannot be reversed. |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium |
| Cumulative impact prior to mitigation: | Medium |

| | |
|---|---|
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative |
| Degree to which the impact can be mitigated: | None |
| Proposed mitigation: | <ul style="list-style-type: none"> • Care was taken during the construction of the pipelines to construct them within an existing gravel road reserve so as to not affect any natural vegetation. • The pipelines did not affect any streams. • The pipelines are checked on a monthly basis to ensure no dripping/leakage. • Flow meters are installed at the pump station site to ensure good water use practice. • The pump station was constructed above the 1:100 year floodline on the bank edge of the weir inlet, just outside the banks of the Orange River to result in the lowest possible impacts. • The pumps are selected to provide optimum delivery at minimum demand where water use is managed by applying drip irrigation. This is good agricultural practice. |
| Cumulative impact post mitigation: | Low negative |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

| Impacts on geographical and physical aspects: | |
|---|---|
| Nature of impact: | Loss of non-perennial drainage lines: Impeding the flow of water in a watercourse and altering the beds, banks, course and characteristics of the watercourses within the project area through cultivation of vineyards. |
| Extent and duration of impact: | Local extent and Long term duration |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Impact cannot be reversed. |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium |
| Cumulative impact prior to mitigation: | Medium |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative |

| | |
|--|---|
| Degree to which the impact can be mitigated: | None |
| Proposed mitigation: | No mitigation is available for the activity already which has already taken place. An Application will be lodged with DWS for Section 21 a, c and i. |
| Cumulative impact post mitigation: | Medium |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative |

| Impacts on socio-economic aspects: | |
|---|---|
| Nature of impact: | Job creation |
| Extent and duration of impact: | Local extent and short term duration is dependent of the lifespan of the agricultural activities (some will be long term and other will be seasonally linked). |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | The impact is positive |
| Degree to which the impact may cause irreplaceable loss of resources: | None |
| Cumulative impact prior to mitigation: | Job creation to local communities. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative prior to job creation |
| Degree to which the impact can be mitigated: | The activity is mitigation |
| Proposed mitigation: | The activity is mitigation |
| Cumulative impact post mitigation: | Job creation to local communities. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium positive with job creation |

| Impacts on cultural-historical aspects: | |
|---|-------------|
| Nature of impact: | None |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | |

| | |
|--|--|
| Very-High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | |

| Noise impacts: | |
|---|--|
| Nature of impact: | General noise associated with clearing of land. |
| Extent and duration of impact: | Local extent, long term duration. |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | None |
| Cumulative impact prior to mitigation: | Noise pollution of low impact, as area is agricultural with no adjacent neighbours in close proximity. The area falls within an agricultural active area and the impact will not be very big. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative |
| Degree to which the impact can be mitigated: | Low |
| Proposed mitigation: | Restrict working hours from 06:00 to 20:00. The area falls within an agricultural active area and the impact will not low due to lack of receptors (people). |
| Cumulative impact post mitigation: | Noise of short term duration during construction phase with negligible cumulative impact. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

| Visual impacts / Sense of Place: | |
|---|---|
| Nature of impact: | The removal of vegetation for the establishing of the vineyards. |
| Extent and duration of impact: | Local extent, Long term duration. |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium |
| Cumulative impact prior to mitigation: | None, the cleared areas although visible to |

| | |
|---|---|
| | passing traffic from the main road would be temporary during construction phase. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |
| Degree to which the impact can be mitigated: | Low, the activity already took place. |
| Proposed mitigation: | None, the activity already took place |
| Cumulative impact post mitigation: | None, the cleared areas although visible to passing traffic from the main road would be temporary during construction phase. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

PRELIMINARY IMPACTS THAT RESULT FROM THE OPERATIONAL PHASE:

| Impacts on the geographical and physical aspects: | |
|---|--|
| Nature of impact: | Vegetation has been cleared for the vineyards, and drainage lines cultivated, therefore this impact is not rated further. |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | |

| Impacts on the socio-economic aspects: | |
|---|--|
| Nature of impact: | Job creation |
| Extent and duration of impact: | Local extent and duration is dependent of the lifespan of the agricultural activities (some will be long term and other will be seasonally linked). |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | The activity is positive |

| | |
|---|--|
| Degree to which the impact may cause irreplaceable loss of resources: | None |
| Cumulative impact prior to mitigation: | Additional job opportunities created for new agricultural activity. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | None |
| Degree to which the impact can be mitigated: | None |
| Proposed mitigation: | None, the activity is positive. |
| Cumulative impact post mitigation: | None |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | None |

| | |
|---|--|
| Impacts on socio-economic aspects: | |
| Nature of impact: | Financial income to A&C Van Niekerk Boerdery and region. |
| Extent and duration of impact: | Region |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | None, the impact is positive. |
| Degree to which the impact may cause irreplaceable loss of resources: | None, the impact is positive. |
| Cumulative impact prior to mitigation: | Financial income to the company and the country by selling of produce nationally and internationally. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | None |
| Degree to which the impact can be mitigated: | None, the impact is positive. |
| Proposed mitigation: | None |
| Cumulative impact post mitigation: | Financial income to the company and the country by selling of produce nationally and internationally. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | None |

| | |
|--|-------------|
| Impacts on the cultural-historical aspects: | |
| Nature of impact: | None |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be | |

| | |
|---|--|
| reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | |

| Noise impacts: | |
|---|--|
| Nature of impact: | General noise associated with agricultural activities. |
| Extent and duration of impact: | Local extent, long term duration. |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | None |
| Cumulative impact prior to mitigation: | Localised noise pollution. The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Medium negative |
| Degree to which the impact can be mitigated: | Low |
| Proposed mitigation: | The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting. No mitigation necessary. |
| Cumulative impact post mitigation: | The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

| Visual impacts / Sense of Place: | |
|---|---|
| Nature of impact: | The new vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. |
| Extent and duration of impact: | Local extent, Long term duration. |
| Probability of occurrence: | High |
| Degree to which the impact can be reversed: | Low |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium |
| Cumulative impact prior to mitigation: | The new vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. |
| Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |
| Degree to which the impact can be mitigated: | Low, the activity already took place. |
| Proposed mitigation: | None, the activity already took place. |
| Cumulative impact post mitigation: | The new vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. |
| Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High) | Low negative |

IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE:

The agricultural activities will not be decommissioned in the near future and impacts associated with this phase have not been assessed.

Rehabilitation of the site would include the removal of all newly planted orchards to make way for the rehabilitation of the 55ha with indigenous vegetation present at surrounding areas. This would result in a major financial loss for the applicant as well as the loss of employment opportunities for employees currently working for the applicant. Water that would have been used for the vineyards would now have to be used to water the rehabilitated vegetation until the area is self-sustainable. The water rights are for irrigation only.

Not applicable

| Potential impacts on the geographical and physical aspects: | |
|---|--|
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |

| | |
|--|--|
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

| | |
|--|--|
| Potential impact on biological aspects: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

| | |
|--|--|
| Potential impacts on the socio-economic aspects: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

| | |
|---|--|
| Potential impacts on the cultural-historical aspects: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |

| | |
|--|--|
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

| | |
|--|--|
| Potential noise impacts: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

| | |
|--|--|
| Potential visual impacts: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

Any other impacts:

| | |
|---|--|
| Potential impact: | |
| Nature of impact: | |
| Extent and duration of impact: | |
| Probability of occurrence: | |
| Degree to which the impact can be reversed: | |

| | |
|--|--|
| Degree to which the impact may cause irreplaceable loss of resources: | |
| Cumulative impact prior to mitigation: | |
| Significance rating of impact prior to mitigation (Low, Medium, Medium High, High, or Very High) | |
| Degree to which the impact can be mitigated: | |
| Proposed mitigation: | |
| Cumulative impact post mitigation: | |
| Significance rating of impact after mitigation (Low, Medium, Medium High, High, or Very High) | |

ASSESSMENT CRITERIA:

The criteria for the description and assessment of environmental impacts were drawn from the National Environmental Management Act, 1998 (Act No.107 of 1998).

The level of detail was somewhat fine-tuned by assigning specific values to each impact. In order to establish a coherent framework within which all impacts could be objectively assessed it is necessary to establish a rating system, which is consistent throughout all criteria. For such purposes each aspect was assigned a value, ranging from 1-5, depending on its definition.

H-2.1 Potential Impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected and how it is being affected.

H-2.2 Extent

The physical and spatial scale of the impact is classified as:

Local

The impacted area extends only as far as the activity, e.g. a footprint.

Site

The impact could affect the whole, or a measurable portion of the site.

Regional

The impact could affect the area including the neighbouring erven, the transport routes and the adjoining towns.

H-2.3 Duration

The lifetime of the impact, which is measured in relation to the lifetime of the proposed base?

Short term

The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the phases.

Medium term

The impact will last up to the end of the phases, where after it will be entirely negated.

Long term

The impact will continue or last for the entire operational lifetime of the Development, but will be mitigated by direct human action or by natural processes thereafter.

Permanent

This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

H-2.4 Intensity

The intensity of the impact is considered here by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. These are rated as:

Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

Medium

The affected environment is altered, but functions and processes continue, albeit in a modified way.

High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

H-2.5 Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

Improbable

The possibility of the impact occurring is none, due either to the circumstances, design or experience.

Possible

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

Likely

There is a possibility that the impact will occur to the extent that provisions must therefore be made.

Highly Likely

It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity.

Definite

The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on.

H-2.7 Determination of Significance – With Mitigation

Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. In this case the prediction refers to the foreseeable significance of the impact after the successful implementation of the suggested mitigation measures. Significance with mitigation is rated on the following scale:

No significance

The impact will be mitigated to the point where it is regarded to be insubstantial.

Low

The impact will be mitigated to the point where it is of limited importance.

Low to medium

The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.

Medium

Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance.

However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.

Medium to high

The impact is of great importance. Through implementing the correct mitigation measures the negative impacts will be reduced to acceptable levels.

High

The impact is of great importance. Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and, taken within the overall context of the project, is considered to be a fatal flaw in the project proposal. This could render the entire development option or entire project proposal unacceptable.

SECTION E: ALTERNATIVES

As part of this report, consideration must be given to alternatives that are/may have been possible had an environmental impact assessment been undertaken prior to the commencement of the activity. Please provide a detailed description of the alternatives (whether location, technology or environmental) that were/are possible in terms of this application.

Alternative 1: Removal of vegetation for cultivation of vineyards on Kakamas South Settlement no 2132.

The applicant removed 27.4 ha of indigenous vegetation to establish vineyards for table grape cultivation for export, as shown in the Appendix B below as Figure 20:

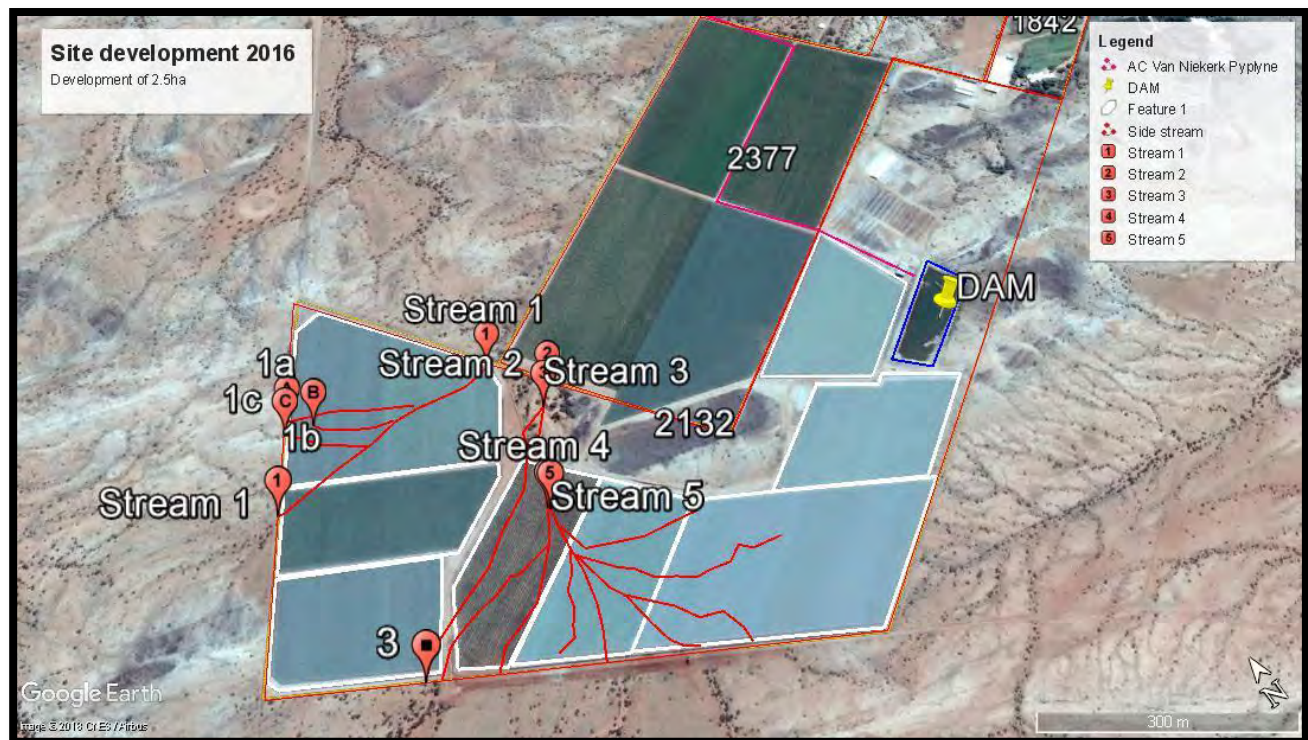


Figure 20: Site Layout Plan

As the activity has already taken place and rehabilitation will be too costly, this option is the only feasible and preferred alternative.

Alternative 2: Removal of vegetation for the cultivation of table grapes after obtaining environmental authorisation

Alternative 2 would have been the preferred alternative, by receiving environmental authorisation before any vegetation were removed.

This would have included comment and input from authorities and I&APs to design the best feasible alternative for the property.

No-Go Option

The No-Go Option would have meant that vegetation would not have been removed from the property. Not cultivation of the land would mean that there were no additional table grapes grown for export, with no associated employment creation, and an opportunity cost for the landowners with their land zoned for agricultural use. This would have resulted in no additional job opportunities for local communities and no income to the business and country's economy.

Rehabilitation of the site would include the removal of all newly planted orchards to make way for the rehabilitation of the 27.4ha with indigenous vegetation present at surrounding areas. This would result in a major financial loss for the applicant as well as the loss of employment opportunities for employees currently working for the applicant. Water that would have been used for the vineyards would now have to be used to water the rehabilitated vegetation until the area is self-sustainable. Production on the property would cease all together as the entire site is covered by the 27.4ha.

SECTION F: APPENDICES

The following appendices must be attached where appropriate:

| Appendix | Cross out ("X") the box if Appendix is attached |
|--|--|
| Appendix A: Location map | X |
| Appendix B: Site plan(s) | X |
| Appendix C: Owner(s) consent(s) | N/A |
| Appendix D: Photographs <ul style="list-style-type: none">• Appendix D1: Historic aerial photographs (Figures 1 to 5)• Appendix D2: Site photographs | X |
| Appendix E: Permit(s) / license(s) from any other organ of state including service letters from the municipality <ul style="list-style-type: none">• Appendix E1: Irrigation rights from Kakamas Water Users Association• Appendix E2: WULA• Appendix E3: Plough Certificate & Soil Science Report) | X |
| Appendix F: Additional Impact Assessment Information <ul style="list-style-type: none">• Appendix F1: CBA 2 located on farm Kakamas South Settlement no 2132. | X |

| | |
|--|------------|
| Appendix G: Report on alternatives | N/A |
| Appendix H: Any Other (describe) <ul style="list-style-type: none"> • Appendix H1: Attendance register of meeting held with DENC and DWS. • Appendix H2: EMP | X |

SECTION G: DECLARATIONS

G1: Declarations of the EAP

1. **The Independent Environmental Assessment Practitioner**

I, _____ declare under oath that I –

- a. act as the independent environmental assessment practitioner in this application ;
- b. do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Section 24G of the National Environmental Management Act, read together with the relevant Environmental Impact Assessment Regulations;
- c. do not have and will not have a vested interest in the proposed activity proceeding;
- d. have no, and will not engage in, conflicting interests in the undertaking of the activity;
- e. undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Section 24G of the National Environmental Management Act, read together with the Environmental Impact Assessment Regulations, 2006;
- f. will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- g. will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- h. will keep a register of all interested and affected parties that participated in a public participation process; and
- i. will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.

Signature of EAP

Name of company

Date

Designation

Official stamp (below)

G2: Declarations of the Applicant

2. **The Applicant**

- I, **Christo Van Niekerk** declare under oath that I -
- am the applicant in this application;
 - appointed the environmental assessment practitioner as indicated under **G1** above to act as the independent environmental assessment practitioner for this application;
 - will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;
 - am responsible for complying with the directive or conditions of any environmental authorisation issued by the competent authority;
 - understand that I will be required to pay an administration fine in terms of section 24G(2) of the Act and that a decision in this regard will only be forthcoming after payment of such a fine;
 - hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of the Act; and

Signature of Applicant

A&C Van Niekerk Boerdery PTY Ltd
Name of company

Date

Designation

Commissioner of Oaths

Signature

Date

Designation

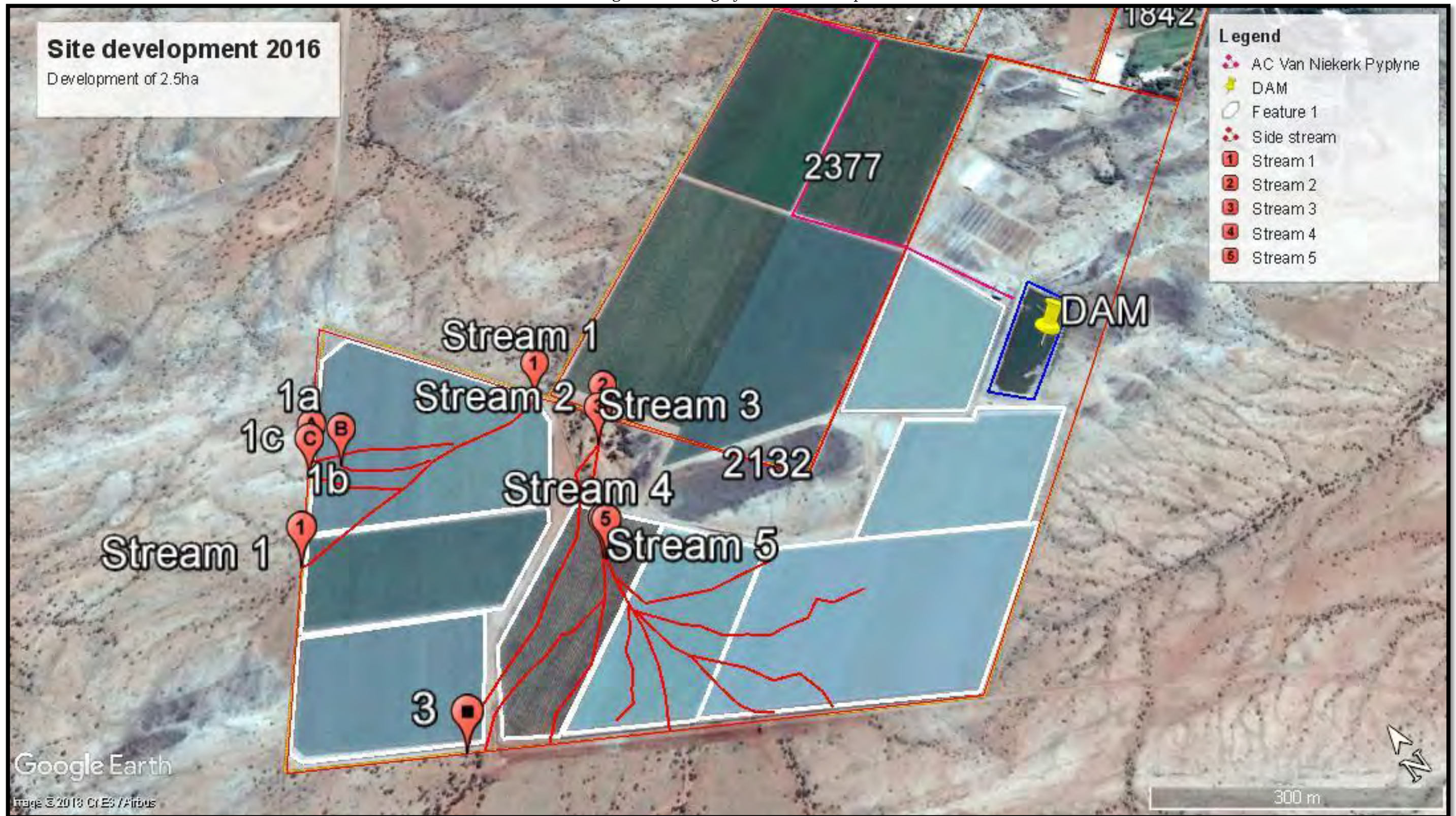
Official stamp(below)

APPENDIX A: LOCALITY MAP



APPENDIX B: SITE PLANS

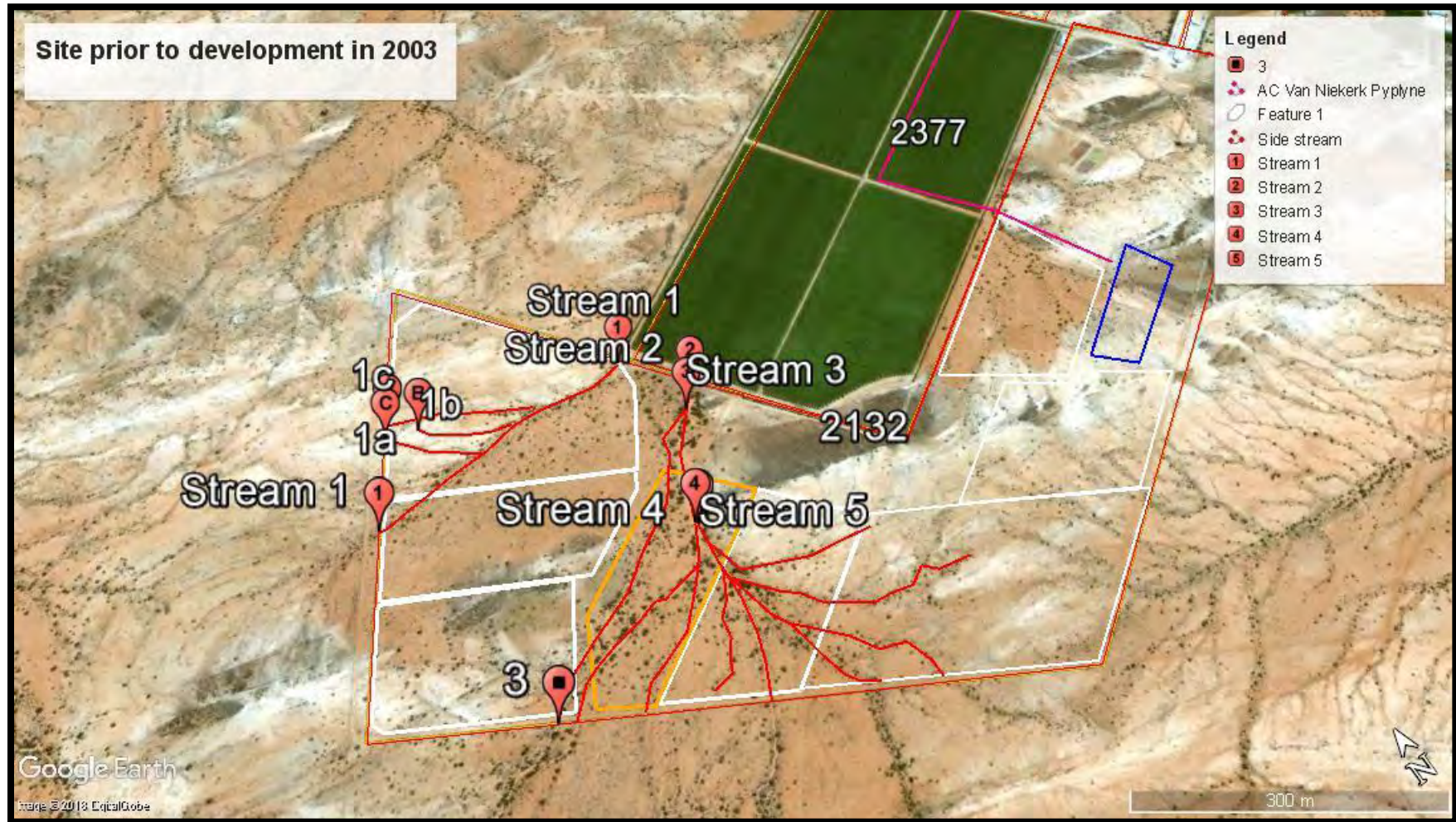
Google Earth Imagery of areas developed



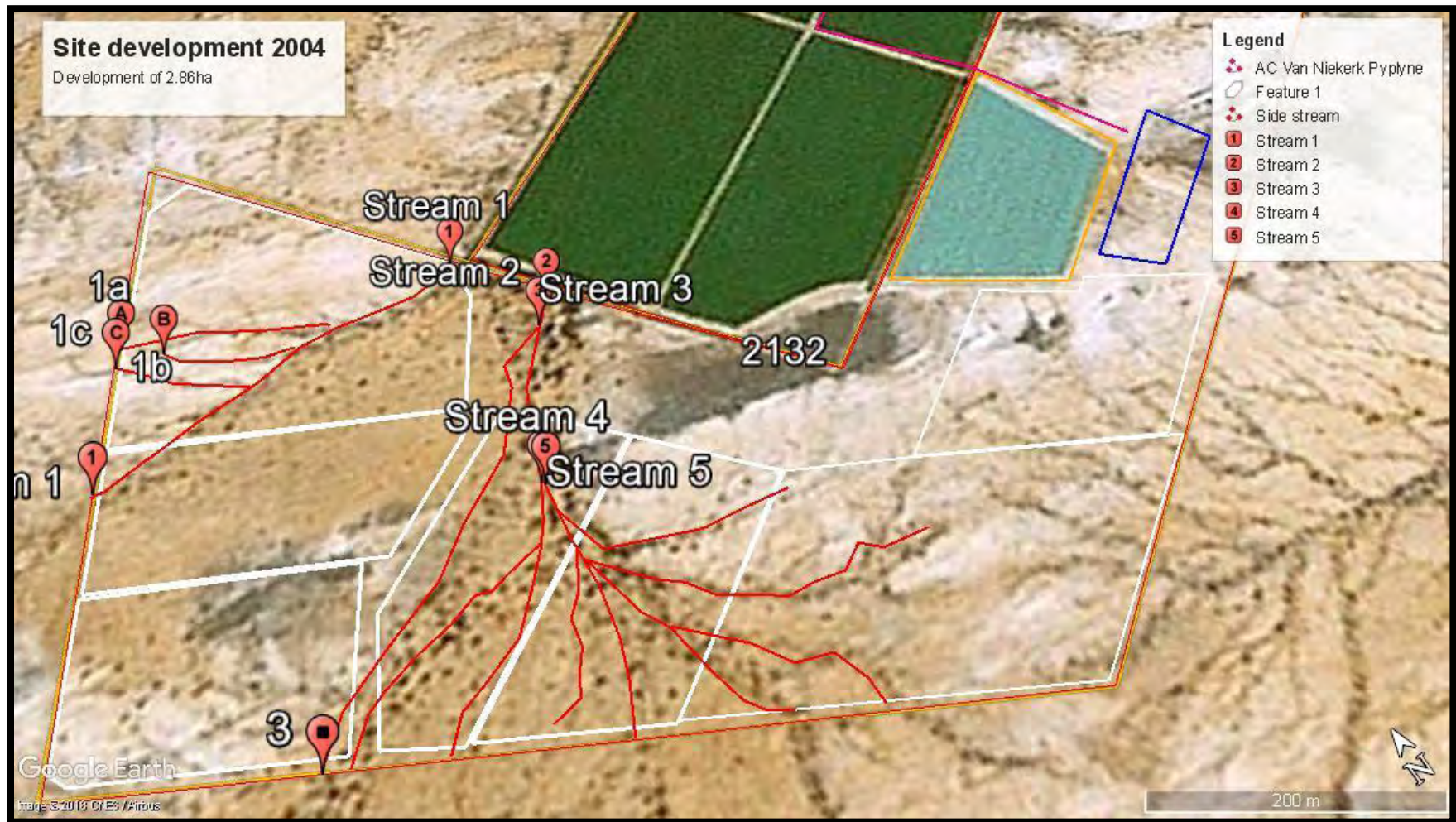


Layout showing pump station and existing pipelines

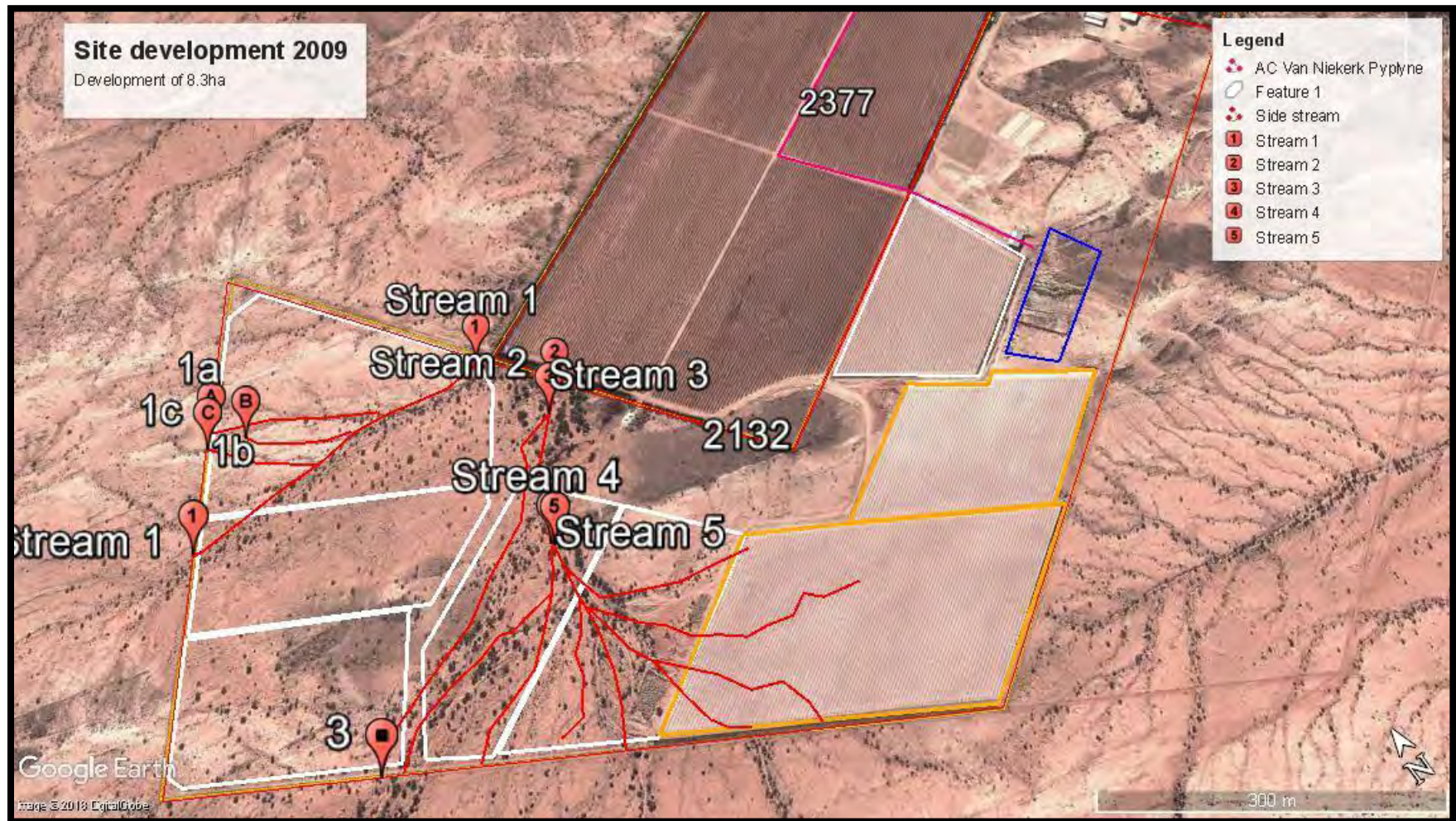
APPENDIX D1: HISTORICAL PHOTOGRAPHIC IMAGERY



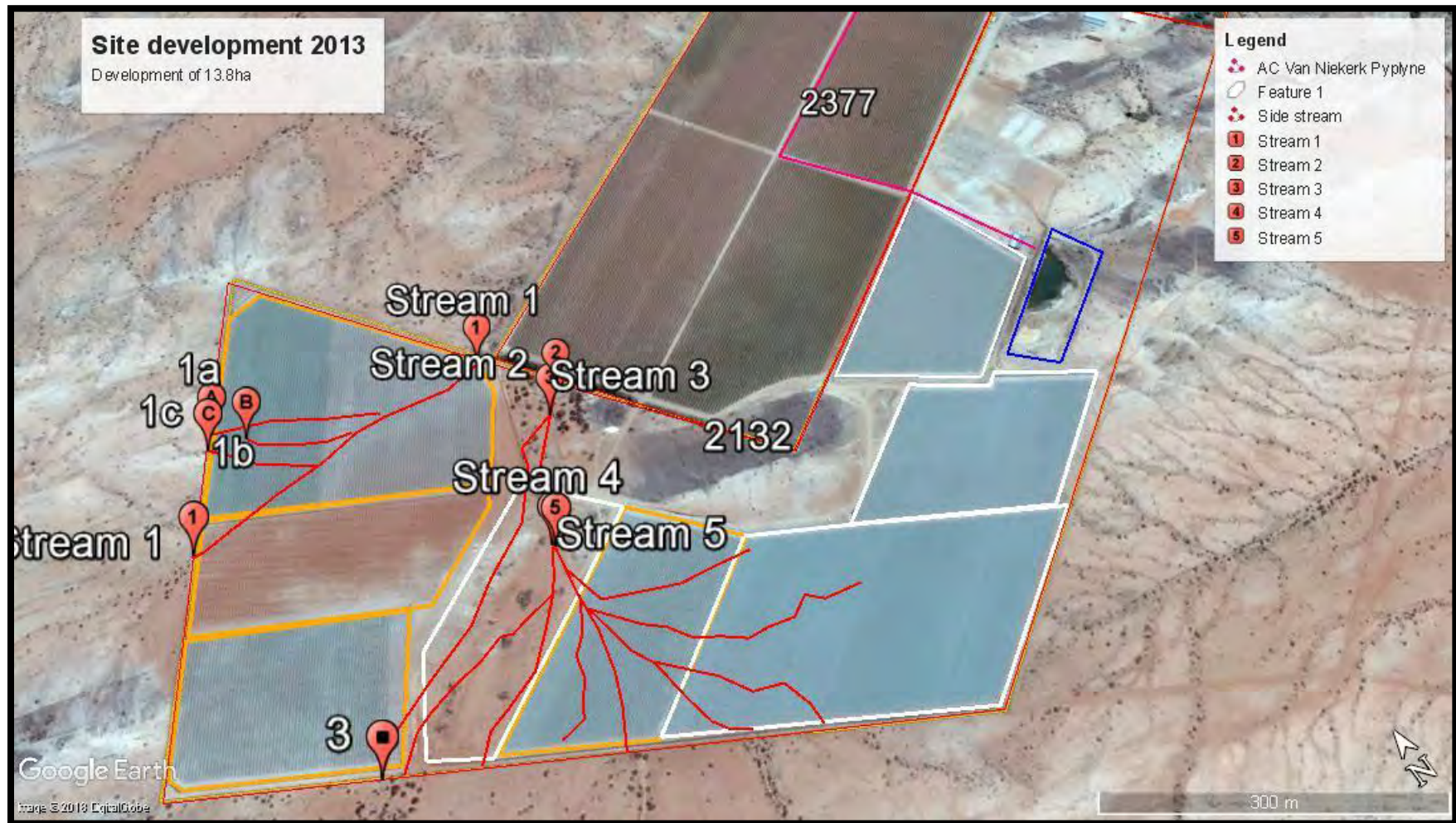
Site pre-development



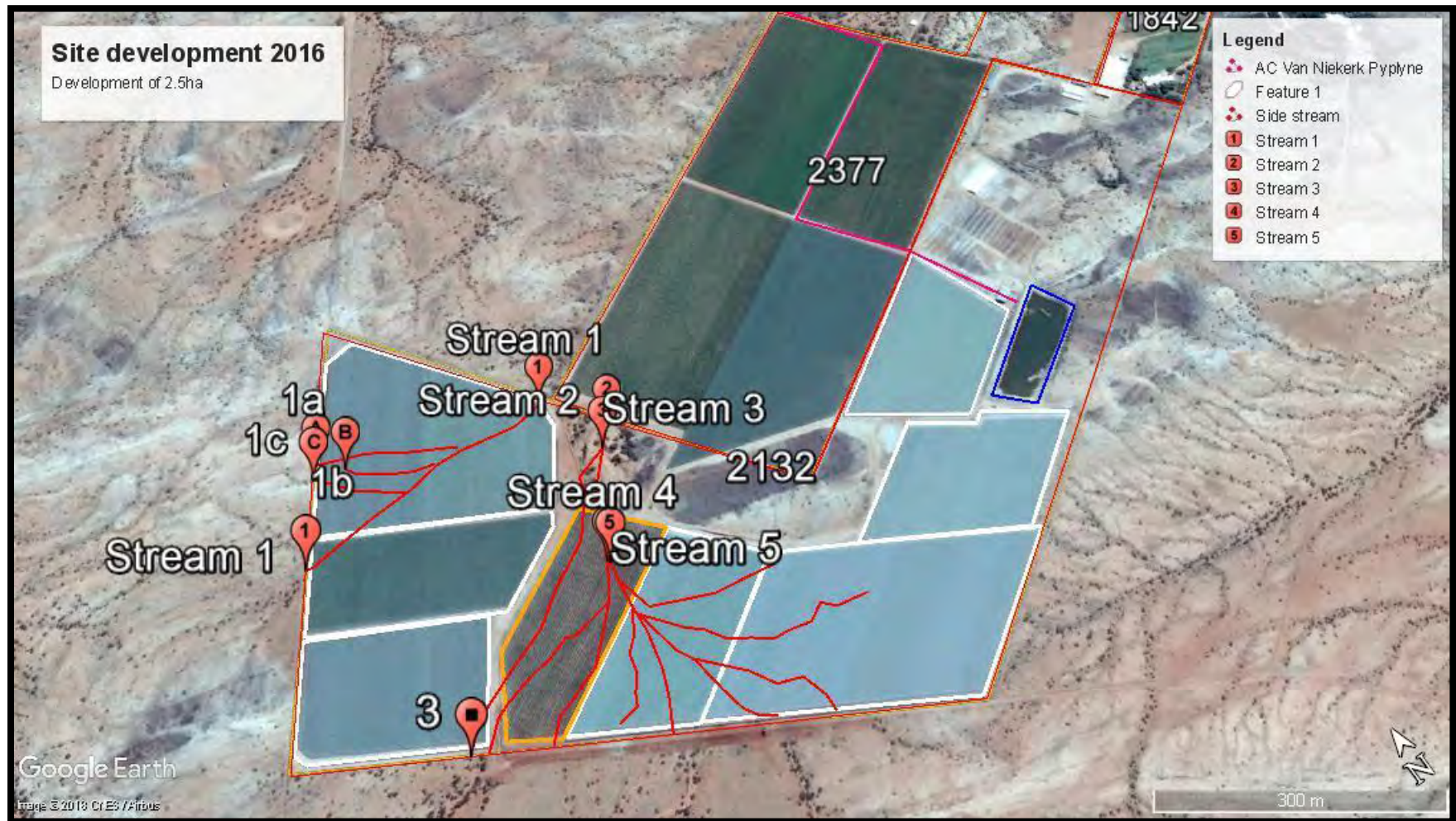
Development of 2.86ha in Block 7



Block 6 and 7 developed in 2009 with a total of 8.3ha.



From 2010 to 2013 the development of blocks 1, 2, 3 and 5 with a total of 13.8ha. Also the development of the small dam.



2016 the development of Block 4 with a total of 2.5ha.

APPENDIX D2: SITE PHOTOGRAPHS



Pump – Intake off the Orange River



Pump station – At the weir



Canal

APPENDIX E1: IRRIGATION RIGHTS FROM KAKAMAS WATER USERS ASSOCIATION



Watergebruikersvereniging
Water User's Association

Oosthuizenstraat Oosthuizen Street
Private Bag x4 Private Bag x4
Kakamas 8870 Kakamas 8870

Tel (054) 431 0725/6
Faks/Fax (054) 431 0348
E-Pos/e Mail ceokwgv@sat.co.za



C. Plaatjies

02 February 2016



473/D2/1/2132

Dept. Water and Sanitation
Private Bag X 5912
Upington
8800

Attention: Letlhogonolo Emanuel Thebe

Dear Sir

Permanent Transfer of Water Usage from Plot G81KE 16 Augrabies to Plot 2132 in Machand: Kenhardt Settlement.

Kakamas Water Users Association herewith affirm to having no objections against the permanent transfer of 23 ha river water use rights.

Yours Faithfully

Chief Executive Officer

DEPARTEMENT VAN LANDBOU

Verwysing: 18/3/2/4

Kantoor van die: DIREKTEUR: GROOTFONTEIN LOI
Privaatsak X 529
MIDDELBURG, KP
Poskode: 5900
Datum: 19-11-2004

A.C van Niekerk Boerdery
Pobus 274
KAKAMAS
8870

TOESTEMMING: Om nuwe grond te bewerk (Reg.2)

PLAASEENHEID: PERSEEL 2132 KAKAMAS-SUID
LANDDROSDISTRIK: SIYANDA

1. Na aanleiding van u aansoek van 6/5/2004 (datum) ingevolge die bepaling van regulasie 2 van die Wet op Bewaring van Landbouhulpbronne 1983 (Wet 43 van 1983), word toestemming hiermee verleen om grond op die volgende gedeeltes van gemelde plaaseenheid te bewerk, onderhewig aan die voorwaardes hieronder genoem;

| Kamp/Land no | Grootte | Gronddiepte | Grondvorm | Grondsoort | Droëland/Bespr |
|--------------------|---------|-------------|-----------|------------|----------------|
| P2132 Kakamas-Suid | 2 ha | 1200-1500mm | Augrabies | Jankwa | Besproeiing |
| P2132 Kakamas-Suid | 3ha | 1200-1500mm | Kimberley | Nanaga | Besproeiing |
| P2132 Kakamas-Suid | 3ha | 1200-1500mm | Kimberley | Nanaga | Besproeiing |

*Sien asseblief aangehegte lugfoto en grondkundige verslag wat integrale deel van hierdie toestemmingsbrief uitmaak.

2. Voorwaardes:

- 2.1 Beskerming van die land(e) deur middel van grondbewaringswerke is nie nodig nie.
2.2 Tipe gewas wat aangeplant mag word:

(x) Wingerd

3. Ander voorwaardes:

- 3.1 Slegs gedeelte in groen op lugfoto gemerk mag bewerk en besproei word.
3.2 Gedeelte gemerk in Blou op die lugfoto moet oopgehou word vir veilige afvoer van stormwater
3.3 Gedeelte gemerk in Geel reeds onder besproeiing
3.4 Gedeelte gemerk in Rooi op lugfoto koppie - ongeskik vir besproeiing
3.5 Besproeiing op hierdie eiendom moet so geskied dat geen verbraking en/of versuipting plaasvind op hierdie of enige ander eiendom nie. Sou dit wel gebeur sal u verantwoordelik gehou word vir die opheffing daarvan soos maatreëls om 'n herhaling daarvan te voorkom.

Die uwe

Nms: UITVOERENDE BEAMPTTE: WET 43/1983

APPENDIX E2: PROOF OF SUBMISSION OF THE WATER USE LICENSE APPLICATION
Last correspondence with DWS.



PIETER BADENHORST PROFESSIONAL SERVICES CC

**PO Box 1058
Wellington, 7654**

DATE: 05 April 2018

REF: DWS Ref: 27/2/1

Dept. Water Affairs and Sanitation: Upington Office
Private Bag X5912
Upington
8800
Attn: Jdlene van Wyk-Towell
SUBMITTED VIA EMAIL AND HARD COPY VIA REGISTERED POST

WATER USE LICENSE APPLICATION - REQUEST FOR EXTENSION - FARM 2131, MARCHAND
Applicant - A&C van Niekerk

This letter serves as a request for extension of the existing Water Use License Application's (WULA) timeframe with six months from the date of this letter. The reasons for requesting this extension are provided below:

1. The initial process commenced with an application for the transfer of water – Section 21a – from the Farm Orange Fall nr 16 (ptn 81 (a ptn of ptn 13) to the Farm 2132, Marchand. The application was submitted on the 10 March 2016.
2. This application was withdrawn after various correspondences via email with the Department of Water and Sanitation (DWS). The application was withdrawn mainly for the adding of the section 21 c and i activities. DWS also requested that application be made for a temporary transfer of the water use and further to submit a Notice of Intent for the amended application. These documents were submitted on the 08 February 2017.
3. The new application that included the additional information with regards to the Section 21 c and i and other small additions were submitted on the 24 February 2017.
4. On the 13 December 2017 DWS indicated that the application was with DWS Pretoria's 21 c and i Unit and that they requested a site visit for this application.
5. The site visit was held on the 03 February 2018 at the application property. During the site visit no apparent issues, except for a stormwater management plan, were raised and the DWS Pretoria section 21 c and i Unit indicated that they will send comments as soon as possible. During the meeting after the site visits it was agreed that comments could be expected within about two weeks from the date of the site visit.
6. The correspondence from DWS Pretoria 21 c and i Unit was eventually received on the 20 March 2018. The letter included that the following information be supplied (our comment in brackets):
 - Master layout plan showing the 1:100 floodline plan for the Orange River (the application is not near the Orange River and the request is therefore not applicable).
 - Storm water management plan
 - Method statements for infrastructure
 - An Environmental Impact assessment for the stream crossings
7. The abovementioned information can only be supplied, at the fastest, within six months as the EIA process will be a Section 24G Application that will take a minimum of six months to receive a decision.
8. It must be pointed out that should the 21c and i Unit have assessed the submitted application before the site visit and thus raised these issues then, especially the requirement for an EIA, the work could already have commenced after the site visit.

Trust you find this in order.

Should you have any queries please do not hesitate to contact me.

Yours sincerely

Elanie Kühn
Pieter Badenhorst Professional Services
Environmental Assessment Practitioner
P. O. Box 1058, Wellington, 7654
Cell: 076 584 0822
Email: elaniem@iafrica.com
Fax: 086 672 1916

APPENDIX E3: PLOUGH CERTIFICATE & SOIL SCIENCE REPORT)

DEPARTEMENT VAN LANDEBOU

Verwysing: 18/3/2/4

Kantoor van die: DIREKTEUR: GROOTFONTEIN LOI
Privaatsak X 529
MIDDELBURG, KP
Poskode: 5900
Datum: 19-11-2004

A.C van Niekerk Boerdery
Pobus 274
KAKAMAS
8870

TOESTEMMING: Om nuwe grond te bewerk (Reg 2)

PLAASEENHEID: PERSEEL 2132 KAKAMAS-SUID
LANDDROSDISTRIK: SIYANDA

1. Na aanleiding van u aansoek van 6/5/2004 (datum) ingevolge die bepaling van regulasie 2 van die Wet op Bewaring van Landbouhulpbronne 1983 (Wet 43 van 1983), word toestemming hiermee verleen om grond op die volgende gedeeltes van gemelde plaaseenheid te bewerk, onderhewig aan die voorwaardes hieronder genoem:

| Kamp/Land no | Grootte | Gronddiepte | Grondvorm | Grondserie | Droëland/Bespr |
|--------------------|---------|-------------|-----------|------------|----------------|
| P2132 Kakamas-Suid | 2 ha | 1200-1500mm | Augrabies | Jankwa | Besproeiing |
| P2132 Kakamas-Suid | 3ha | 1200-1500mm | Kimberley | Nanaga | Besproeiing |
| P2132 Kakamas-Suid | 3ha | 1200-1500mm | Kimberley | Nanaga | Besproeiing |

*Sien asseblief aangehegte lugfoto en grondkundige verslag wat integrale deel van hierdie toestemmingsbrief uitmaak.

2. Voorwaardes:

- 2.1 Beskerming van die land(e) deur middel van grondbewaringswerke is nie nodig nie.
2.2 Tipe gewas wat aangeplant mag word:

(a) Wingerd

3. Ander voorwaardes:

- 3.1 Slegs gedeelte in groen op lugfoto gemerk mag bowerk en besproei word.
3.2 Gedeelte gemerk in Blou op die lugfoto moet oopgehou word vir veilige afvoer van stormwater
3.3 Gedeelte gemerk in Geel reeds onder besproeiing
3.4 Gedeelte gemerk in Rooi op lugfoto koppie - ongeskik vir besproeiing
3.5 Besproeiing op hierdie eiendom moet so geskied dat geen verbraking en/of versuiping plaasvind op hierdie of enige ander eiendom nie. Sou dit wel gebeur sal u verantwoordelik gehou word vir die opheffing daarvan asook maatreëls om 'n herhaling daarvan te voorkom.

Die uwe

Nms: UITVOERENDE BEAMPT: WET 43/1983

WET OP DIE BEWARING VAN LANDBOUHULPERONNE, 1983 (WET 43 VAN 1983)
CONSERVATION OF AGRICULTURAL RESOURCES ACT, 1983 (ACT 43 OF 1983)

AANSOEK OM NUWE GROND TE BEWERK / APPLICATION TO CULTIVATE VIRGIN SOIL
(Regulasie / Regulation 2)

BELANGRIK

Vul volledig in waarna die aansoek by die Voorligtingskantoor vir die gebied waarin die betrokke plaaseenheid geleë is, ingedien word.

IMPORTANT

Complete in full whereafter the application must be submitted to the Extension Officer for the area in which farm unit is situated.

Grondgebruiker van die plaas-eenheid (voorletters en van)
 Land user of the farm unit (initials and surname)

AIC van Niekak Boender

Hoedanigheid (bv. Eienaar, huurder)
 Capacity (e.g. owner, lessor)

Eienaar

Posadres

Postal address *Bus 274 Kakamas*

Poskode

Postal code *8870*

Plaaseenheid

Farm unit *Reit Gool en Reot 2152 Kakamas SW*

Landdrosdistrik

Magisterial District *Kakamas*

Tel. no *44 14220*

Kode/Code *057*

Besonderhede van die gedeeltes van die plaas-eenheid waarna die aansoek hieronder verwys word op die lokaliteitskets op agterkant aangedui.
 Particulars of the portions of the farm unit to which the application here under refers are as indicated on the locality sketch overleaf.

Ek, die ondergetekende doen hiermee aansoek om toestemming om bogenoemde handeling te verrig;
 I, the undersigned hereby apply for permission to perform above-mentioned action:

- Die oppervlakte vir bewerking waarvoor nou aansoek gedoen word is
 The area of cultivation currently applied for, is
 (a) vir droë landha (b) vir besproeiingha
 for dry landsha for irrigationha
- Type gewas wat gevestig gaan word
 Type of crop to be established *unijed*
- Opmerkings
 Remarks

Handtekening/Sigature
 Van Grondgebruiker/Land user

Datum/Date

Handtekening/Sigature
 Van Grondeienaar/Owner

Datum/Date: *20/9/04*

Lokalityskets of fotostaat van lugfoto/ ortofoto waarop plaasgrense, opstal, toegangspasie, waterlope, noordpyl en posisie van beplande handeling aangedui word.
 Locality sketch or Photostat of an aerial photo/ortophoto indicating farm boundaries, farmstead, access roads, waterways north point and locality of proposed work.

SIEN AANGEHEGTE KAART

Verslag deur ondersoekbeampte: Dui asb. aan of beskerming van land deur middel van grondbewaringswerke nodig is asook ander tersake inligting.
 Report of investigating officer: Please indicate whether protection of land by means soil conservation works is necessary as well as other relevant information.

Gedekte Bergreuker

moet aangehou word vir oopvakk drainasie.

| Kamp/Land no Camp/Land no | Grootte Size (ha) | Grondtepte Soil depth (mm) | Grondvorm Soil form | Grondserie Soil series | Gemid. Helling van land. Ave slope of land % | Droëland bespr. Dry land/ Irrigation |
|------------------------------|-------------------------|----------------------------------|------------------------|---------------------------|---|--|
| <i>Blok no 7</i> | | <i>1,2 m</i> | <i>Apurabins</i> | <i>Tankwa</i> | <i>± 2 %</i> | <i>Bevoering</i> |
| | | <i>1,5 m</i> | <i>Kimbele</i> | <i>Nanaga</i> | <i>± 2 %</i> | <i>Bevoering</i> |
| | | <i>1,5 m</i> | <i>Kimbele</i> | <i>Nanaga</i> | <i>± 2 %</i> | <i>Bevoering.</i> |
| | | | | | | |



Tel. (021) 851 6401
Faks (021) 851 4379
Sel. 082 804 7499
E-Pos akkoize@bemlab.co.z
VAT Reg. No. 416018557



AECI Gebou W21
De Beersweg
Somerset Wes

Posbus 12457
Die Boord, Stellenbosch 7613

Herbert W Hattingh
Postbus 1387
Uitenhage
6000

Naam: Dr. W.A.G. Kotzé
New Anne van Dorpster

Georgie Herbert Hattingh

Die resultate van u grondontleding is soos volg.

| Lab. No. | Diepte (cm) | pH | Weersel. (Ohm) | H (cmol/kg) | Kip (Vol %) | P Bray II (mg/kg) | K (mg/kg) | Litrilbare katione (mmol(+)/kg) | | | Cu Zn Mn | | | C |
|-----------------|-------------|----|----------------|-------------|-------------|-------------------|-----------|---------------------------------|------|-------|--------------|------|-----|------|
| | | | | | | | | Na | K | Ca | mg/kg | B | % | |
| Stadland Blok 1 | 13304 | 0 | 7.7 | 1220 | 0.00 | 0 | 62 | 0.19 | 0.19 | 12.88 | 1.26 | 0.7 | 8.9 | 0.09 |
| Blok 1 Gruis | 13305 | 0 | 7.8 | 1160 | 0.00 | 18 | 10 | 0.20 | 0.09 | 14.46 | 1.80 | 0.6 | 8.6 | 0.08 |
| Blok 2 | 13306 | 0 | 7.9 | 890 | 0.00 | 10 | 5 | 0.34 | 0.28 | 16.32 | 1.48 | 0.27 | 0.9 | 0.12 |
| Blok 2 Gruis | 13307 | 0 | 7.4 | 530 | 0.00 | 20 | 14 | 0.40 | 0.20 | 13.21 | 2.67 | 1.10 | 3.6 | 0.24 |
| Blok 7 | 13308 | 0 | 7.7 | 740 | 0.00 | 3 | 1 | 0.41 | 0.09 | 11.93 | 1.14 | 0.84 | 0.3 | 0.25 |
| Blok 11 | 13309 | 0 | 6.6 | 760 | 0.00 | 0 | 132 | 0.36 | 0.45 | 12.12 | 8.88 | 2.05 | 2.3 | 0.09 |
| Blok 13 | 13310 | 0 | 7.9 | 850 | 0.00 | 0 | 8 | 0.34 | 0.65 | 13.95 | 4.25 | 2.84 | 1.3 | 0.13 |
| Blok 14 | 13311 | 0 | 6.5 | 880 | 0.00 | 0 | 88 | 0.31 | 0.30 | 11.19 | 3.74 | 3.44 | 1.9 | 0.31 |
| Blok 17 | 13312 | 0 | 6.5 | 760 | 0.00 | 0 | 53 | 0.48 | 0.27 | 12.59 | 4.74 | 3.38 | 1.6 | 0.17 |
| Blok 18 | 13313 | 0 | 6.3 | 860 | 0.00 | 0 | 88 | 0.35 | 0.24 | 10.50 | 4.01 | 3.57 | 1.8 | 0.08 |

Indien pH > 7.0 is word die Olsen metode vir die bepaling van P gebruik.

Busie Versadiging

| Lab. No. | Na % | K % | Ca % | Mg % | T-Waarde (cmol/kg) |
|-----------------|-------|------|------|-------|--------------------|
| Stadland Blok 1 | 13304 | 1.29 | 1.10 | 88.81 | 14.52 |
| Blok 1 Gruis | 13305 | 1.21 | 0.55 | 87.26 | 18.55 |
| Blok 2 | 13306 | 1.87 | 1.53 | 88.53 | 18.44 |
| Blok 2 Gruis | 13307 | 2.42 | 1.23 | 80.67 | 16.38 |
| Blok 7 | 13308 | 3.03 | 0.80 | 87.05 | 13.58 |
| Blok 11 | 13309 | 2.14 | 2.70 | 73.01 | 16.60 |
| Blok 13 | 13310 | 1.80 | 3.41 | 72.66 | 18.21 |
| Blok 14 | 13311 | 2.03 | 1.95 | 71.86 | 18.48 |
| Blok 17 | 13312 | 2.68 | 1.48 | 69.62 | 28.23 |
| Blok 18 | 13313 | 2.24 | 1.54 | 70.33 | 15.50 |

Dr. W.A.G. Kotzé
vir BemLab

28-05-2004
Deum

Direkteur: Dr. W.A.G. Kotzé

Stellenbosch 0449 1649

17 September 2004 01:21 nm

AL22.1 + $\frac{\text{Grond} + \text{Water} \text{ l/ha}}{\text{Dpt handboek se 111}}$

STOFEILAND

BESPROEIBAARHEID VAN DIE GRONDE

Saamgestel Deur

HW Hattingh
(M.Sc.Agric)

Posbus 1397, Upington 8800 Suid-Afrika
Tel + 27 (0) 54 331 1709
Sel +27 (0) 82 372 3470

Inleiding

Die ondersoek op die gronde is gedoen gedurende die jaar 2001 en daar is gevind dat die gronde wel besproeibaar is met die voorbehoud dat slegs mikro- of drupbesproeiing op die buite gronde gebruik kan word terwyl die vloedgronde gevloed kan word. Grondontledings is net op sekere blokke gedoen omdat die grond so eenvormig is (Bylae 1). Die gronde op die plaas bestaan hoofsaaklik uit drie grondvorme nl. die Augrabiese grondvorm van die grondfamilie Hefnaar, Dundee van die grondfamilie Sabie en die Glenrosa grondvorm van die grondfamilie Keurkloof. Die horison opeenvolging van die Augrabies, Dundee en Glenrosa is as volg: Ortiese A op Neokarbonaat op ongespesifiseerde materiaal, Ortiese A op Gestratifiseerde Alluvium en Ortiese A op Litokutaniese B. Hier onder volg 'n beskrywing van die drie grondvorme se onderskeie horisonte.

Ortiese A-horison

- i) *is 'n oppervlakhorison wat nie as 'n organiese, humiese, vertiese of melaniese bogrond kwalifiseer nie, hoewel dit deur organiese materiaal verdonker mag wees.*

Omdat hulle feitlik oor die hele Suid-Afrika onder 'n wye reeks van grondvormingstoestande aangetref word, sal die organiese koostofinhoud, kleur, tekstuur, struktuur, basisstatus, mineraalsamestelling, ensameer, van ortiese horisonte baie varieer.

Die buite gronde van die plaas Stofeiland bestaan uit 'n redelike fyn tot growwe sand fraksie en die waterhouvermoë van die gronde is egter redelik tot laag. Die binne gronde bestaan uit 'n fyn sandkleileem en beskik oor 'n redelike goeie waterhouvermoë. Omdat daar gewoonlik 'n natuurlike genetiese verwantskap tussen bogronde en ondergronde bestaan, is daar 'n opvallende kovariansie tussen baie van die eienskappe. Hoewel die klassifikasie nie spesifiek die variasie in eienskappe van ortiese bogronde in ag neem nie, bring die kovariansie nogtans mee dat die aard van die bogronde getipeer kan word. Verdere inligting oor die eienskappe van die A-Horison kan dikwels van die kriteria vir die onderverdeling van grondvorme afgelei word. Byvoorbeeld, die organiese koolstofinhoud van die ortiese A-horison van 'n distrofe lid van die Augrabiese vorm sal hoër wees as dié van 'n eutrofe lid (Grondklassifikasie, 1991).

Neokarbonaat B-horison

- i) *kom direk onder 'n diagnostiese bogrond- of E-horison voor;*
- ii) *bevat, binne 1 500 mm vanaf die oppervlak, voldoende kalsium- of kalsium-magnesiumkarbonaat in die grondmatriks om sigbaar te bruin as dit met koue 10 %-soutuur behandel word;*
- iii) *het nie die morfologie wat vereis word om te kwalifiseer as 'n diagnostiese sagte of hardebank karbonaathorison nie;*
- iv) *kom in ongekonsolideerde materiaal (gewoonlik vervoer) voor waarin grondontwikkeling tot so 'n mate plaasgevind het dat die horison nie kwalifiseer as diagnostiese gestratifiseerde alluvium, regiese sand of mensgemaakte grondafsetting nie, en wat die teenwoordigheid van karbonate veroorsaak het, maar dit is egter onvoldoende om enige ander diagnostiese horison te vorm;*

Voorbeelde is:

- horisonte wat, behalwe vir die teenwoordigheid van karbonate, sou kwalifiseer as diagnostiese rooi apedale, geelbruin apedale of neokutaniese B-horisonte;
- verdwyning van fyn gelaagdheid en die teenwoordigheid van karbonate in 'n afsetting wat oorspronklik gelaag (in vergelyking met onderliggende gestratifiseerde C) was;
- aggre gasie van gronddeeltjies in die teenwoordigheid van karbonate, tot so 'n mate dat dit nie meer los is nie, maar onvoldoende is om te kwalifiseer as 'n diagnostiese pedokutaniese of prismakutaniese B.

Die algemene bespreking van moedermateriale, ontwikkeling van struktuur en verdwyning van afsettingsgelaagdheid by die neokutaniese B-horison, is ook van toepassing op die neokarbonaat B-horison. Die neokarbonaat B-horison verskil egter van die neokutaniese B-horison in die belangrike opsig dat dit 'n horison van akkumulasie van kalsium- en/of magnesiumkarbonate is. Dit is 'n aanduiding van spesifieke klimaats- en topografiese omgewings met 'n logingspotensiaal wat onvoldoende is om basiskatione (hoofsaaklik kalsium en/of magnesium) uit die B-horison te verwyder. Dit kan in gronde op alle terreinposisies in ariede en semi-ariëde streke, en in laer hellingsposisies in meer humiede klimate ontwikkel, veral as die moedermateriaal ryk aan divalente basiskatione is. Die mate van aansameling van karbonate is egter onvoldoende om die horison te kwalifiseer as 'n sagte of hardebanks karbonaathorison (Grondklassifikasie, 1991).

Gestratifiseerde alluvium

- i) is ongekonsolideerd en het gelaagdheid wat die gevolg is van alluviale of kolluviale afsetting;
- ii) kom direk onder 'n diagnostiese ortiese of melaniese A-horison, of aan die oppervlak voor;
- iii) kwalifiseer nie as diagnostiese regiese sand nie.

In teenstelling met grondhorisonte wat deur pedogenetiese prosesse ontwikkel het, kan die onderskeidende kenmerke van gestratifiseerde alluvium toegeskryf word aan afsettingsprosesse en verteenwoordig gevolglik nie 'n opeenvolging van sogenaamde genetiese horisonte nie. Pedogenetiese veranderinge is minimaal en dit is eintlik 'n C-horison of moedermateriaal. Gestratifiseerde kolluvium, alhoewel seldsaam, word ook onder hierdie konsep geakkommodeer. Homogeniserende pedogenetiese prosesse sal met tyd alle tekens van afsetting vernietig: stratifikasie sal verdwyn en vervang word deur egte genetiese grondhorisonte waarvan die geaardheid sal afhang van die besondere materiaal, die besondere posisie en die besondere eksterne omgewing. Alluvium word egter gewoonlik intensief vir gewasproduksie gebruik. Vir hierdie praktiese rede is die herkenning van gestratifiseerde alluvium as 'n diagnostiese ondergrondmateriaal, as noodsaaklik beskou. Die klassifikasie reflekteer die belang van jong alluvium deur dit as 'n diagnostiese horison in die sisteem in te sluit. Ander diagnostiese ondergrondhorisonte maak voorsiening vir die pedogenetiese veranderinge wat alluvium mettertyd beïnvloed (Grondklassifikasie, 1991).

Litokutaniese B-horison:

- i) kom óf direk óf via 'n kliplyn onder 'n diagnostiese bogrondhorison of 'n E-horison voor;
- ii) gaan geleidelik oor in verwerende rots;
- iii) het, in ten minste 'n gedeelte daarvan, 'n algemene rangskikking ten opsigte van kleur, struktuur of konsistensie, wat duidelike verwantskappe toon met die onderliggende moedergesteente;
- iv) het kutaniese kenmerke wat gewoonlik as tonge of prominente veelkleurigheid herkenbaar is, en die gevolg is van residuele grondvorming en illuviasie wat lokalisering van een of meer klei, yster- en mangaanoksiede en organiese materiaal veroorsaak in 'n nie-gehomogeniseerde matriks van geologiese materiaal (saproliet) in 'n variërende, maar gewoonlik jong stadium van verwerking;
- v) is nie 'n lateraal aaneenlopende horison wat as 'n diagnostiese pedokutaniese B- of 'n prismakutaniese B-horison sal kwalifiseer nie;
- vi) kwalifiseer nie as 'n diagnostiese podzol B-, 'n neokarbonaat B-, 'n sagte of hardebank karbonaathorison of diagnostiese dorbank nie;
- vii) indien die horison tekens van natheid toon, het meer as 25 % van die volume van die horison saprolitiese kenmerke.

Hierdie konsep is een van minimale ontwikkeling van 'n illuviale B-horison in verwerende rots en die litokutaniese B kom voor onder 'n diagnostiese bogrondhorison. *In situ* verwerking van rots onder 'n bogrond lewer 'n heterogene en tipiese veelkleurige sone wat bestaan uit grondmateriaal (relatief goed gehomogeniseer sonder tekens van verwerende rots) wat vermeng is met saproliet of verwerende rots in verskillende stadia van opbreking. Laasgenoemde word herken aan die algemene voorkoms wat bepaal word deur die struktuur, kleur of konsistensie wat nog duidelike verwantskappe met die moedergesteente toon. Verder gradeer hierdie sone na relatief ongeaffekteerde en uiteindelik vars rots, dikwels op redelik vlak dieptes. Die kutaniese patroon is baie kenmerkend, veral as tonge teenwoordig is. Harde, ondeurdringbare rots en horisontaalliggende skalies gee gewoonlik nie aanleiding tot die vorming van litokutaniese B-horisonte nie (Grondklassifikasie, 1991).

Grondontledingsverslag

1. Klei en Slik:

Uit die ontledings is dit duidelik dat die klei- en slikinhoud van die gronde ongeveer 10 persent is vir die Augrabies en Glenrosa terwyl die vloedgronde wissel tussen 16 en 26 persent. Tydens die grondondersoek is gevind dat die gronde uit 'n redelike fyn tot medium sandfraksie bestaan en dus geklassifiseer kan word as 'n fyn tot medium sand tot sandleem. Die klei-, slik- en sandfraksie in die Augrabies en Glenrosa dui op 'n swak tot redelike waterhouvermoë en dit sal veroorsaak dat die besproeiingskedulering van hierdie gronde baie deeglik gedoen moet word om oorbesproeiing sowel as onderbesproeiing teë te werk. Die gebruik van skeduleringshulpmiddels word aanbeveel, kontak 'n kundige op die gebied. Die dreineerbaarheid van die gronde is baie hoog maar as gevolg van die feit dat daar wel harde rots onder die Litokutaniese B kan voorkom kan

dreineringsprobleem wees. Die plaas het egter op die stadium geen probleme met dreineringsprobleme.

2. Elektriese geleiding (EG) en Natriumadsorpsievermoë (NAV):

Die definisie van 'n soutgrond is dat die geleiding van 'n versadigingseksrak van die grond hoër is as 400 mS m^{-1} terwyl die NAV kleiner is as 5. Die pH (H_2O) is gewoonlik laer as 8.5. Indien die NAV van 'n grond hoër is as 5 met 'n EG hoër as 400 mS m^{-1} dan word die grond geklassifiseer as 'n sout-alkaliese grond.

Die EG is tussen 17 en 23 mS/m en NAV is 0.3. Dus die EG en die NAV van die gronde is onderskeidelik laer as die norme vir besproeibare gronde.

3. Kalsium (Ca):Magnesium (Mg) verhouding:

Die ideale kalsium en magnesium verhouding vir wingerd tot mekaar is 2.5:1. Uit die ontledingsverslae blyk dit dat alle monsters redelik naby die ideale verhouding is. Die verhouding van die ontledings is 2:1. Die ideale verhouding van Ca:Mg:K:Na is 65:25:8:2 en die ontwikkelings verhouding is 56-60:34-37:3-4. Die lae kalium in die verhouding word in die volgende paragrawe bespreek. Uit die verhoudings is dit duidelik dat die Kalsiuminhoud van die gronde te laag is en dat daar in die bemestingsprogramme aandag aan Kalsium gegee sal moet word.

4. Magnesium (Mg):

Die uitruilbare magnesiumpersentasie van die grond behoort tussen 20-25 % te wees. Die ontleding dui egter aan dat magnesium slegs ongeveer 34-37 % van die kationadsorpsievermoë van die grond beslaan.

5. Kalium (K):

Vir wingerd moet die uitruilbare kaliumpersentasie tussen 4 en 8 persent wees. Die kalium in die ontledings wissel tussen 3 en 4 en daar sal tydens grondvoorbereiding aandag aan die kaliumbehoefte gegee moet word. Dit is egter 'n eenmalige regstelling by die ontwikkeling van die grond en daarna is dit slegs die toediening van onderhoudsbemesting. Vir die regstelling van die grond word tussen 500 en 700 kg Kaliumsulfaat benodig. Die hoeveelheid kalium is te veel vir 'n eenmalige toediening dus sal dit beter wees om die kalium tydens die groeiperiode van die plant volledig aan te vul. 'n Gedeelte van die kalium wat benodig word vir die regstelling van die grond kan tydens grondvoorbereiding toegedien word en die res oor 'n drie jaar periode na plant, as deel van die normale bemestingsprogram.

6. Fosfaat (P):

Die fosfaat in die grond is genoeg indien die ontledingsyfer bo 15 mg/kg (Olsen) is. In dié geval is van die ontledings hoog en van die ander ontledings is laag. Die lae fosfaat kan aangespreek word by grondvoorbereiding. In hoër

kalsiumryke gronde is die regstelling egter nie baie effektief nie want die fosfate word baie vinnig ontoeganklik vasgelê. Dit sal beter wees om die fosfaat gereeld gedurende die lewensduur van die gewas toe te dien. Indien die opsie gekies word moet u besef dat in hoë pH gronde die effektiwiteit van fosfaat slegs 20 % is en dat dit in berekening gebring moet word by die bemestingsprogramme. Indien die fosfaat by grondvoorbereiding toegedien word sal ongeveer 1 000 kg Dubbelsupers benodig word.

7. Sink (Zn):

Sink is een van die belangrikste mikro-elemente in hoë kalsiumryke gronde. Dieselfde argument wat vir fosfaat geld, geld ook hier. Uit die ontledings is dit duidelik dat ten minste 75 kg Sinksulfaat per ha toegedien moet word om die tekort reg te stel.

Waterontleding

Waterontleding dui aan dat die Oranje-rivier se water geklassifiseer word as C_2S_1 wat nog steeds geklassifiseer word as goeie besproeiingswater.

Grondbewerking

Die gronde sal eers gerip moet word in dieselfde rigting as die helling om seker te maak waar al die klipsones is en om die dreinerings te verbeter. Dan moet dit met 'n "backacter" bewerk word tot op 'n diepte van 1.5 m om gelaagdheid te verwyder waar van toepassing. Die "backacter" bewerking sal slegs op die rye gedoen word. Om die vooraf bemesting meer effektief te maak, indien dit tydens grondvoorbereiding gedoen wil word, sal dit beter wees om die bemesting op die bewerkingsone van die "backacter" te plaas. Dit sal die bemesting ook meer ekonomies maak omdat 'n kleiner area reggestel moet word. Afhangende van die bakgrootte wat gebruik gaan word kan die area van regstelling met ongeveer een derde verminder.

Omgewingsimpak

Die ontwikkeling van 'n Tafeldruif plaas in die omgewing sal geen negatiewe effek op die omgewing hê nie. Die naaste ander Tafeldruif plaas is ongeveer 1 km van die plaas af. Hierdie omgewing is uiters geskik vir die verbouing van vroeër tafeldruiwe. Die area waar die druiwe verbou word is semi-arië en dus sal siektes in die wingerde nie so 'n groot rol speel nie.

Stormwaterafloop

Die meeste stormwater word oor geplaas in 'n groot sloot wat die water rivier toe vat.

Dreinerings

Die gronde is baie goed gedreineerd en daar behoort geen probleme met dreinerings te wees nie mits die skedulering na wense gedoen word. Omdat die gronde so hoog geleë is en die gronde so diep is met geen beperkende lae nie sal dreinerings nie sommer watertafels veroorsaak nie behalwe in die laagliggende gebiede.

BRONNELYS:

Die Grondklassifikasiewerkgroep. 1991. *Grondklassifikasie 'n taksonomiese sisteem vir Suid-Afrika*. Departement van Landbou-Ontwikkeling, Pretoria

Let Wel: Aanbevelings, projeksies en evaluasies is op feite en persoonlike ondervinding gebaseer en word soos versoek, tot die beste van ons vermoëns met kliënte gedeel. Hierdie inligting mag soms teenstrydig wees met die denkwyse van 'n kliënt. Tydens die implementasie van aanbevelings moet natuurlike- en bedryfsrisiko's te alle tye in ag geneem word. Die uitvoering van alle aanbevelings, voorstelle en toedienings bly te alle tye onderworpe aan die diskresie, besluit en goedkeuring van die persoon wat die gegewe toediening of aanbeveling op die gegewe oomblik onder spesifieke omstandighede uitvoer.

APPENDIX F1: CBA 2 LOCATED ON KAKAMAS SOUTH SETTLEMENT NO 2132



The green area indicates the Critical Biodiversity Area 2 (sanbi/bgis.co.za)

APPENDIX F2: PUBLIC PARTICIPATION

Appendix F2.1: I&AP database

AUTHORITIES AND I&AP's

| | Erf no | Surname | Initials | Representing | Tel | Fax | email | Post Box | Town | Code | Reg |
|--|---------------------|--------------------------|------------|--|----------------------------|--------------|--|--------------------------------|--------------|------|-----|
| AUTHORITIES | | | | | | | | | | | |
| 1 | | Lategan | J.G. | Kai Garib Municipality: Municipal Manager | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 2 | | Snyers | A.C. | Kai Garib Municipality: Ward Councillor Ward 2 | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 3 | | Klim | WD | Kai Garib Municipality: Ward Councillor | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 4 | | Towell | J | Department of Water Affairs | 082 887 8866/ 054 338 5819 | | Towell.J@dws.gov.za | Private Bag X5912 | Upington | 8800 | L |
| 5 | | Tsimakwane | T | DENC: NC – 24G | 0538077300 | 0538077328 | ttsimakwane@ncpg.gov.za | Sasko Building, 90 Long street | Kimberley | 8300 | L |
| 6 | | Geldenhuis | C | Nature Conservation Unit | 027 718 9906 | 027 718 9907 | The unit indicated comments will be requested by the case officer. | | | | L |
| 7 | | CEO | | Boegoeberg Water Users Association | 054 841 0002 | 054 841 0000 | info@boegoebergwater.co.za | P. O. Box 15 | Groblershoop | 8850 | L |
| 8 | | CEO | | Kakamas Water Users Association | 054 431 0725/6 | 054 431 0348 | kakamaswgv@isat.co.za | Private Bag X4 | Kakamas | 8870 | |
| 9 | | Mabuza | Thembisile | DAFF | | | | P. O. Box 2303 | Kimberley | 8300 | L |
| INTERESTED AND AFFECTED PARTIES | | | | | | | | | | | |
| 1 | KSS 2375 | Spangenberg | D | Krismar Investments | 082 412 7186 | | amy@orexexport.co.za | P. O. Box 456 | Kakamas | 8870 | |
| 2 | KSS 2131 | Die Bult Plaas Gastehuis | | The Raisin Company | 054 441 0200 | | nicolene@theraisinco.co.za | P. O. Box 77 | Marchand | 8873 | |
| 3 | KSS 2386 | | | TR Plant Hire | 054 4410111 | | tr.plant@mweb.co.za | P. O. Box 60 | Marchand | 8873 | |
| 4 | KSS 2377 & KSS 1842 | Van Niekerk | A&C | Stofeiland (Applicant) | 054 441 0220 | | acvn@tlantic.co.za | P. O. Box 274 | Kakamas | 8870 | |

| | Erf no | Surname | Initials | Representing | Tel | Fax | email | Post Box | Town | Code | Reg |
|---|------------------------|----------------|-----------------|---------------------------|---------------------------|------------|--------------------|-----------------|-------------|-------------|------------|
| 5 | KSS 1516 & KSS 2135 | Engelbrecht | R & J | Engelbrecht Familie Trust | 0827764868/08292078 60 | | riaanovl@gmail.com | Posbus 41 | Marchand | 8873 | |

Proof of advertisements for the AR.

11 MEI 2018

GEMSBOK

PAGE 19

Doen nou aansoek vir skooltoelating vir 2019

GEMSBOK-UPINGTON: "Alle openbare skole sal oop wees vir toelating van leerders vir die 2019 akademiese jaar vanaf 7 tot 31 Mei 2018 op die dag wat deur die skool bepaal word," so lui 'n persverklaring wat verlede week deur die Noord-Kaapse departement van onderwys uitgereik is.

Aansoeke vir toelating tot 'n openbare skool sal oorgewe word in die volgende volgorde:

- As hulle 'n broer of suster het wat reeds daardie skool bywoon
- As hulle ouer 'n werknemer by daardie skool is;
- As hulle woonplek binne dieselfde voorstad as die skool is;
- As hulle woonplek in die naburige voorstad van die skool is;
- Indien daar nog plekke beskikbaar is, nadat al die bogenoemde aansoeke plekke aangebied is, sal ander aansoeke oorgewe word in die volgorde waarin hulle aansoek deur die skool ontvang word.

Let asseblief op die volgende: Toelating tot Graad R

- Die verpligte ouderdom vir toelating tot Graad R is ouderdom vyf jaar, wat ses jaar in die jaar van toelating word.
- Die minimum ouderdom van toelating tot Graad R is ouderdom vyf jaar wat vyf jaar teen 30 Junie in die jaar van toelating word.
- Die Departement sal eers Graad R-leerders toelaat wat ouderdom - vier, word jaar vyf teen 30 Junie in die jaar van toelating is - nadat al die vyf jaar - word ses jaar oud, toegelaat is.

Toelating tot Graad 1

- Die verpligte ouderdom vir toelating tot Graad 1 is ouderdom ses jaar wat sewe jaar in die jaar van toelating word.
- Die minimum ouderdom vir toelating tot Graad 1 is ouderdom vyf jaar wat ses jaar word teen 30 Junie in die jaar van toelating.
- Skole moet slegs Graad 1-leerders wat ouderdom ses jaar tot sewe jaar in die jaar van toelating is, erken.

• Skole mag afwyk deur leerders wat vyf (5) jaar is, toe te laat om ses (6) jaar teen 30 Junie te word indien hulle tans in Graad R by die skool is.

• Ouers moet aandring op en voorsien word van 'n nommer wat die volgorde van hul aansoek aandui.

• Geen skoolbeheerliggaam of skoolhoof mag 'n toets magtig of administratief, insluitend 'n onderhoud wat verband hou met toelating van enige leerder nie.

• Skole mag nie die akademiese prestasie-, sport- of kulturele prestasies, onbetaalde skoolgeld, dissiplinêre rekord of prosedure van onderhoudvoering van leerders gebruik om toelating tot 'n skool te bepaal nie.

• Die skoolhoof sal ouers of voogde skriftelik

in kennis stel teen 20-24 Augustus 2018 dat die leerder tot die skool toegelaat is, of nie.

- Waar die leerder aanvraag is, moet ouers / voogde die skoolhoof skriftelik binne 7 dae na ontvangs van die kennisgewing in kennis stel dat hulle die skoolplek by die skool sal aanvaar / verwerp.

Dokumente benodig vir toelatings:

1. Gewaarmerkte afskrif van leerder se amptelike geboortesertifikaat / identiteit dokument
2. Onlangse skoolverrekening
3. Kliniek / Immuniseringskaart van leerders
4. Gewaarmerkte afskrif van ouers se ID
5. Ouerlike regverhouding met leerder
6. Bewys van kind se koshuis
7. Bewys van broer of sustersverhouding
8. Studiepermit / verblyfpermit (vir nie-Suid-Afrikaanse burgers)

OLERS / VOOGDE MOET PERSOONLIK SY OF HAAR KIND SE REGISTRASIE BEHARTIG.

Let wel: Dit is belangrik om daarop te let dat 'n geskik of appel nie 'n waarborg vir

plasing by skole waar aansoeke ingedien is nie. • Prinsipale moet ouers en leerders inlig oor hul reg om te appeller teen die besluit van die skool. • Die ouer moet binne 7 dae direk by die kantoor van die LUR 'n appel indien vanaf ontvangs van kennisgewing van die skool. • ** Ouers kan 'n leerder Toelatingsvorme en ander relevante dokumentasie by die skool kry waar hulle hul kind wil inskryf.

PRODUKSIESTUURDER

Bakerynt Boerdery BK is geleë in Kakamas omgewing, is 'n produsent van gehalte tafeldruwe en rosyne en beskik oor die volgende vakante pos.

Die ideale kandidaat sal oor die volgende moet beskik:

- Goede mensverhoudings en mensbestuursvaardighede
- Die jaar tafeldruif ondervinding
- Persoon moet deeglik, energiek, hardwerkend en pligsgetrou wees

U kan u aansoek stuur na: frans@bakerynt.co.za

Die sluitingsdatum vir aansoeke is 19 Mei 2018

Persone wat teen 31 Mei 2018 nog geen reëlske ontvang het nie, moet onmiddellik aanvaar dat die aansoek onsuksesvol was.

UPINGTON BUSINESS SOLUTIONS (EDMS) BPK

beskik oor die geleentheid vir 'n kandidaat met innemende gesindheid, goeie kommunikasie vaardighede (verbaal en skriftelik), uitstekende selfverantwoordelike, dinamiese gesindheid en ferm werk-etiek om aansoek te doen vir die volgende betrekking:

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- Vermoet om onafhanklik en onder druk te funksioneer
- Vriendelike, dog beslissende telefoon-etiek

Rig volledige CV per Faks: 086 646 9922 of Epos: alma@blauwsgroep.co.za

Sluitingsdatum: 11 Mei 2018

Indien u nie binne een (1) week na sluitingsdatum gekontak word nie, kan u aanvaar dat u aansoek onsuksesvol was.

PUBLIC PARTICIPATION PROCESS

Section 24G Application

The unlawful clearance of indigenous vegetation and the development of infrastructure Kakamas South Settlement no 2132, Marichand, Northern Cape.

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, as amended 2002, 2006, 2010 and 2014 for the Section 24G Application.

During the period from 2006 to 2014 agricultural development took place on Kakamas South Settlement no 2132, Marichand. The total agricultural development entailed the clearance of more than 2 ha of indigenous vegetation and development within 52m of a watercourse. The development was undertaken without Authorisation and therefore a Section 24G Application is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for notification:

NEMA 2002 Regulations: GH R 670 Activity 10;

NEMA 2006 Regulations: GH R 365 LHM Activity 4;

NEMA 2010 Regulations: GH R 544 LHM Activity 11; 10, LHM 4, 12; NEMA 2014 Regulations: GH R 983 LHM Activity 12, 19, GH R 985 LHM Activity 4, 12, 14;

More information on the Section 24G Application and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment from www.edms.co.za or the EAP in due course. Should you wish to register as an Interested and Affected Party (I&AP), please submit your name, contact information and interest in the matter as well as any comment to the EAP. The commenting period is from Monday 14 May 2018 until Thursday 14 June 2018.

Details of EAP/OPB

Elaine Kuhn

Pieter Badenhorst Professional Services

P.O. Box 1058, Wellington 7554;

Cell: 076 584 0822;

Fax: 086721916;

E-mail: aljans@pieters.com;

Website: www.pieters.co.za

In order to ensure that you are identified as an interested and/or affected party please submit your name, contact information, interest in the matter and interest in the matter as well as any comment to the EAP before 17:00 on 14 June 2018.

Public participation process to provide comments on the draft Scoping Report is from Friday 11 May 2018 until Monday 11 June 2018.

As per the activated listed activities below the proposed development initiated a Scoping/EIA process. The following was applicable under NEMA 2014 Regulations:

Listing Notice 1: No 365, Activity 9, 12, 19

Listing Notice 2: No 365, Activity 12, 14

Listing Notice 3: No 365, Activity 12, 14

Listing Notice 4: No 365, Activity 12, 14

Listing Notice 5: No 365, Activity 12, 14

Listing Notice 6: No 365, Activity 12, 14

Listing Notice 7: No 365, Activity 12, 14

Listing Notice 8: No 365, Activity 12, 14

Listing Notice 9: No 365, Activity 12, 14

Listing Notice 10: No 365, Activity 12, 14

Listing Notice 11: No 365, Activity 12, 14

Listing Notice 12: No 365, Activity 12, 14

Listing Notice 13: No 365, Activity 12, 14

Listing Notice 14: No 365, Activity 12, 14

Listing Notice 15: No 365, Activity 12, 14

Listing Notice 16: No 365, Activity 12, 14

Listing Notice 17: No 365, Activity 12, 14

Listing Notice 18: No 365, Activity 12, 14

Listing Notice 19: No 365, Activity 12, 14

Listing Notice 20: No 365, Activity 12, 14

Listing Notice 21: No 365, Activity 12, 14

Listing Notice 22: No 365, Activity 12, 14

Listing Notice 23: No 365, Activity 12, 14

Listing Notice 24: No 365, Activity 12, 14

Listing Notice 25: No 365, Activity 12, 14

Listing Notice 26: No 365, Activity 12, 14

Listing Notice 27: No 365, Activity 12, 14

Listing Notice 28: No 365, Activity 12, 14

Listing Notice 29: No 365, Activity 12, 14

Listing Notice 30: No 365, Activity 12, 14

Listing Notice 31: No 365, Activity 12, 14

Listing Notice 32: No 365, Activity 12, 14

Listing Notice 33: No 365, Activity 12, 14

Listing Notice 34: No 365, Activity 12, 14

Listing Notice 35: No 365, Activity 12, 14

Listing Notice 36: No 365, Activity 12, 14

Listing Notice 37: No 365, Activity 12, 14

Listing Notice 38: No 365, Activity 12, 14

Listing Notice 39: No 365, Activity 12, 14

Listing Notice 40: No 365, Activity 12, 14

Listing Notice 41: No 365, Activity 12, 14

Listing Notice 42: No 365, Activity 12, 14

Listing Notice 43: No 365, Activity 12, 14

Listing Notice 44: No 365, Activity 12, 14

Listing Notice 45: No 365, Activity 12, 14

Listing Notice 46: No 365, Activity 12, 14

Listing Notice 47: No 365, Activity 12, 14

Listing Notice 48: No 365, Activity 12, 14

Listing Notice 49: No 365, Activity 12, 14

Listing Notice 50: No 365, Activity 12, 14

Listing Notice 51: No 365, Activity 12, 14

Listing Notice 52: No 365, Activity 12, 14

Listing Notice 53: No 365, Activity 12, 14

Listing Notice 54: No 365, Activity 12, 14

Listing Notice 55: No 365, Activity 12, 14

KARSTEN

KARSTEN GROEP (KARSTEN BOERDERY)

Die Karsten Groep is 'n prominente en vooruitstrevende uitvoer vrugte produsent in die Benede Oranje gebied. Die geskikte kandidaat sal op Roepersfontein geskiedenis wees. Opleiding in Algemene Verpleegkunde en registrasie by die SA Raad vir Verpleegkunde, 'n kode 8 bestuurslisensie asook 'n reserpting lisensie is vereistes vir die pos. Rekennaarvaardigheid met twee tot drie jaar ondervinding sal 'n aanbeveling wees.

KLINIEKVERPLEEGKUNDIGE

Die pos behels die lewer van primêre gesondheidsorg dienste aan plese in die Benede Oranje gebied. Die geskikte kandidaat sal op Roepersfontein geskiedenis wees. Opleiding in Algemene Verpleegkunde en registrasie by die SA Raad vir Verpleegkunde, 'n kode 8 bestuurslisensie asook 'n reserpting lisensie is vereistes vir die pos. Rekennaarvaardigheid met twee tot drie jaar ondervinding sal 'n aanbeveling wees.

Stuelprestasie areas sluit die volgende in:

- hantering van basiese gesondheidsorg van werknemers
- vervoer van dokter en vervoer van pasiënte na dokter/hospitaal
- betrekke by HIV/TS bevoormaking- en hulpprogramme
- behoor van gesondheidswerkers op ordenske plese en toets op gesondheid
- toestand in hospitale
- kliniek administrasie en rekordhouding met behulp van rekenaar

Vir navraag oor die pos kan Pieter Wild geskakel word by tel no 054-491 9347 of sel no 082 470 2218.

'n Modedringende vergoedingspakket in ooreenstemming met toepaslike kwalifikasies en ondervinding word aangebied. Byvoordele sluit idmaatskap van 'n voorsorgfonds en mediese skema in.

Aansoeke kan gerig word aan die Menslike Hulpbron Beampte. Faks u CV na faks no. 086 -292 7810 of e-pos belindap@karsten.co.za

SLUITINGSdatum VIR AANSOEKE IS 25 MEI 2018

Kandidate wat geen terugvoer binne drie weke na bogenoemde sluitingsdatum ontvang nie, kan hul aansoek as onsuksesvol beskou.

KHAI-MA MUNICIPALITY

Khai-Ma Municipality is an equal opportunity Affirmative Action Employer, with its Headquarters in Polokwane. It subscribes to the Principles of Employment Equity and actively promotes representation in terms of race, gender and disability. Applications are invited for:

ELECTRICIAN

SALARY SCALE

Postlevel 110 - salary notch 11 (R 197 517,96 per year) (in accordance to a Category One (1) Local Municipality)

BENEFITS

Benefits in accordance to a Category One (1) Local Municipality, including a vehicle allowance of R 6000,00 per month

To view the full advertisement, visit the website of the municipality at www.khaima.gov.za

Closing date: 22 May 2018

Certified copies of qualifications, I.D document, not older than three months, together with a complete Curriculum Vitae must accompany your application.

Application forms can be retrieved at www.khaima.gov.za. Applications received after the closing date will not be considered. Written communication will only be with shortlisted candidates and if no communication has been received from the municipality within three (3) months after the closing date, please consider your application as unsuccessful.

No faxed or e-mailed applications will be accepted.

For administrative enquiries contact the Human Resources Officer, Ms. Eunice Magerman, Tel No. 054- 933 1004; Fax No. 054- 933 0252; Physical Address: 21 Nuwe Street, Polokwane, 8890

Applications must be directed to: The Municipal Manager, Khai-Ma Municipality, P.O. Box 108, Polokwane, 8890; Tel (054) 933-1000 or hand delivered at the Registry Office, Khai-Ma Municipality, 21 Nuwe Street, Polokwane, 8890

Applications must be directed to: The Municipal Manager, Khai-Ma Municipality, P.O. Box 108, Polokwane, 8890; Tel (054) 933-1000 or hand delivered at the Registry Office, Khai-Ma Municipality, 21 Nuwe Street, Polokwane, 8890

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Appendix F2.3: Notice Boards

Text for the site notice

| | |
|--|--|
| <p style="text-align: center;">PUBLIC PARTICIPATION PROCESS Section 24G Application The unlawful clearance of indigenous vegetation and the development of infrastructure Kakamas South Settlement no 2132, Marchand, Northern Cape</p> <p>Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), and the Environmental Impact Assessment Regulations, as Amended 2002, 2006, 2010 and 2014 for the Section 24G Application</p> <p>During the period from 2006 to 2014 agricultural development took place on Kakamas South Settlement no 2132, Marchand. The total agricultural development entailed the clearance of more than 27.4ha of indigenous vegetation and development within 32m of a watercourse. The development was undertaken without Authorisation and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for rectification: NEMA 2002 Regulations; GN R 670 Activity 10; NEMA 2006 Regulations; GN R 385 LN1 Activity 4; NEMA 2010 Regulations; GN R 544, LN1 Activity 11, 18, LN3 4, 12, 13; NEMA 2014 Regulations, GN R 983, LN1 Activity 12, 19, GN R 985, LN 3, Activity 4, 12, 14. More information on the S24G Application and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment from www.pbpscon.co.za or the EAP in due course. Should you wish to register as an Interested and Affected Party (I&AP), please submit your name, contact information and interest in the matter as well as any comment to the EAP. The commenting period is from Monday 14 May 2018 until Thursday 14 June 2018</p> | |
| <p>Details of EAP/OBP Elanie Kühn Pieter Badenhorst Professional Services P O Box 1058, Wellington 7654; Cell: 076 584 0822, Fax: 0866721916; E-mail: elaniern@iafrica.com; Website: www.pbpscon.co.za</p> | <p>In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 June 2018.</p> |

9x3 public participation kakamas
south

Proof of Notice Boards for AR



At the property entrance



Appendix F2.4: Proof of notices

Proof of notices for AR.

Appendix F2.5: Notices

Notices sent to Authorities for AR.



PIETER BADENHORST PROFESSIONAL SERVICES CC

**PO Box 1058
Wellington, 7654**

DATE:

10 May 2018

REF:

DENC Ref: S24G 01/01/2018

Stofeiland 24G Rectification of the unlawful cultivation of vineyards across small streams on Kakamas South Settlement no 2132, Marchand.

This letter serves as notification that the draft Assessment Report (dAR) is available for comment. Note this report is available as part of the formal S24G process under National Environmental Management Act (NEMA). The public participation process will run from Monday 14 May 2018 until Thursday 14 June 2018.

Herewith, please find a copy of the draft Assessment Report, for your consideration and comment.

As per the listed activities below the proposed development initiated a Section 24G process for a Basic Assessment Report.

The following NEMA EIA listed activities and the National Water Act Activities that will be applied for:

| | |
|---|---|
| NEMA 2002 Regulations GN R 670: Activity 10; | NEMA 2006 Regulations; GN R 385 LN1 Activity 4; |
| NEMA 2010 Regulations, GN R 544, LN1: Activity 11, 18, GN R 546 LN3 Activity 4, 12, 13; | NEMA 2014 Regulations, GN R 983, LN1 Activity 12, 19, GN R 985, LN 3, Activity 4, 12, 14: |
| An Application was submitted to the Department of Water and Sanitation. In terms of the Water Use License Application, the following sections are being applied for: Sections 21 (a); (b), (c) and (i) of the National Water Act. | |

Should you have any queries please do not hesitate to contact me.

Yours sincerely

Elanie Kühn
Pieter Badenhorst Professional Services
Environmental Assessment Practitioner
P. O. Box 1058, Wellington, 7654
Cell: 076 584 0822

Email: elaniem@iafrica.com

Fax: 086 672 1916

Attached: Authorities list

dAR: 1 x hard copy

| | Surname | Initials | Representing | Tel | Fax | email | Postbox | Town | Code | Reg |
|---|------------|------------|--|-------------------------------|--------------|--|--------------------------------|--------------|------|-----|
| 1 | Lategan | J.G. | Kai Garib Municipality: Municipal Manager | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 2 | Snyers | A.C. | Kai Garib Municipality: Ward Councillor Ward 2 | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 3 | Klim | WD | Kai Garib Municipality: Ward Councillor | 054 431 6328 | 054 461 6401 | mm@kaigarib.gov.za | Private Bag X6 | Kakamas | 8870 | L |
| 4 | Towell | J | Department of Water Affairs | 082 887 8866/ 054 338 5819 | | TowellJ@dws.gov.za | Private Bag X5912 | Upington | 8800 | L |
| 5 | Tsimakwane | T | DENC: NC – 24G | 0538077300 | 0538077328 | tsimakwane@ncpg.gov.za | Sasko Building, 90 Long street | Kimberley | 8300 | L |
| 6 | Goldenhuis | C | Nature Conservation Unit | 027 718 9906 | 027 718 9907 | The unit indicated comments will be requested by the case officer. | | | | L |
| 7 | CEO | | Boegoeberg Water Users Association | 054 841 0002 | 054 841 0000 | info@boegoebergwater.co.za | P. O. Box 15 | Groblershoop | 8850 | L |
| 8 | CEO | | Kakamas Water Users Association | 054 431 0725/6 | 054 431 0348 | kakamaswgvi@isat.co.za | Private Bag X4 | Kakamas | 8870 | |
| 9 | Mabuza | Thembisile | DAFF | | | | P. O. Box 2303 | Kimberley | 8300 | L |

Notices sent to I&APs for AR.



DATE:
10 May 2018

REF:
DENC Ref: S24G 01/01/2018

Dear Interested and Affected Party (Owners and Tenants)

Stofeiland 24G Rectification of the unlawful cultivation of vineyards across small streams on Kakamas South Settlement no 2132, Marchand.

This letter serves as notification that the draft Assessment Report (dAR) is available for comment. Note this report is available as part of the formal S24G process under National Environmental Management Act (NEMA). The public participation process will run from Monday 14 May 2018 until Thursday 14 June 2018.

Herewith, please find a short Summary Report for your consideration and comment. A copy of the dAR is also available on the website www.pbpscon.co.za (Projects/Downloads/S24G Assessment Reports). Herewith, please find a copy of the draft Assessment Report for your consideration and comment.

As per the listed activities below the proposed development initiated a Section 24G process for a full EIA.

The following NEMA EIA listed activities and the National Water Act Activities that will be applied for:

| | |
|---|---|
| NEMA 2002 Regulations GN R 670: Activity 10; | NEMA 2006 Regulations; GN R 385 LN1 Activity 4; |
| NEMA 2010 Regulations, GN R 544, LN1: Activity 11, 18, GN R 546 LN3 Activity 4, 12, 13; | NEMA 2014 Regulations, GN R 983, LN1 Activity 12, 19, GN R 985, LN 3, Activity 4, 12, 14; |
| An Application was submitted to the Department of Water and Sanitation. In terms of the Water Use License Application, the following sections are being applied for: Sections 21 (a); (b), (c) and (i) of the National Water Act. | |

Should you have any queries please do not hesitate to contact me.

Yours sincerely

Elanie Kühn
Pieter Badenhorst Professional Services
Environmental Assessment Practitioner
P. O. Box 1058, Wellington, 7654
Cell: 076 584 0822
Email: elaniem@iafrica.com
Fax: 086 672 1916

Attached: Summary

SUMMARY

Locality:

The proposed development is situated approximately 2 kilometers outside of the small town of Marchand driving towards Augrabies in the Northern Cape, in the Kai! Garib Municipal area.

Refer to the Locality Plan inserted below as Figure 1. Accesses to the farms are via existing gravel roads that gain access off the R64. The property is currently zoned Agriculture. The owner of the properties is A&C Van Niekerk Boerdery PTY Ltd and has appointed PBPS as the independent consultant to undertake the EIA process.



Figure 1: Locality plan

Proposed development:

The proposed development consisted out of the following activities that triggered NEMA 2010 and 2014:

The proposed development consisted out of the following activities that triggered NEMA 2002, 2009, 2010 and 2014 Regulations:

NEMA 2002:

- Clearance of approximately 2.86 hectares of virgin soil between 2002 and prior to 2004. (Refer to Figure 2, yellow block).

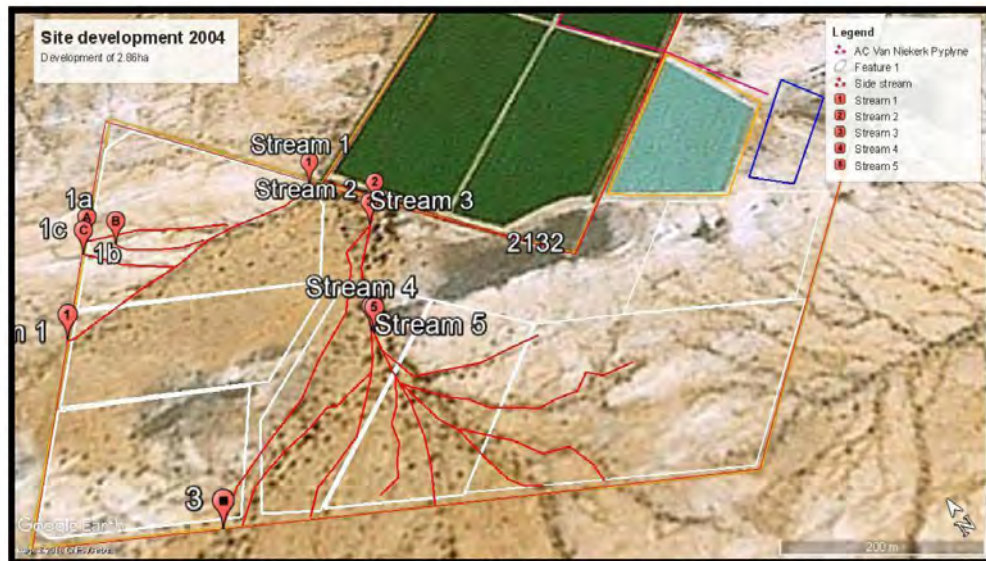


Figure 2: Vegetation clearing between 2002 and 2004.

NEMA 2006

- Clearance of approximately 8.3 hectares of vegetation between 2006 and 2009 for the clearing within/across a watercourse. (Refer to Figure 3, yellow blocks).

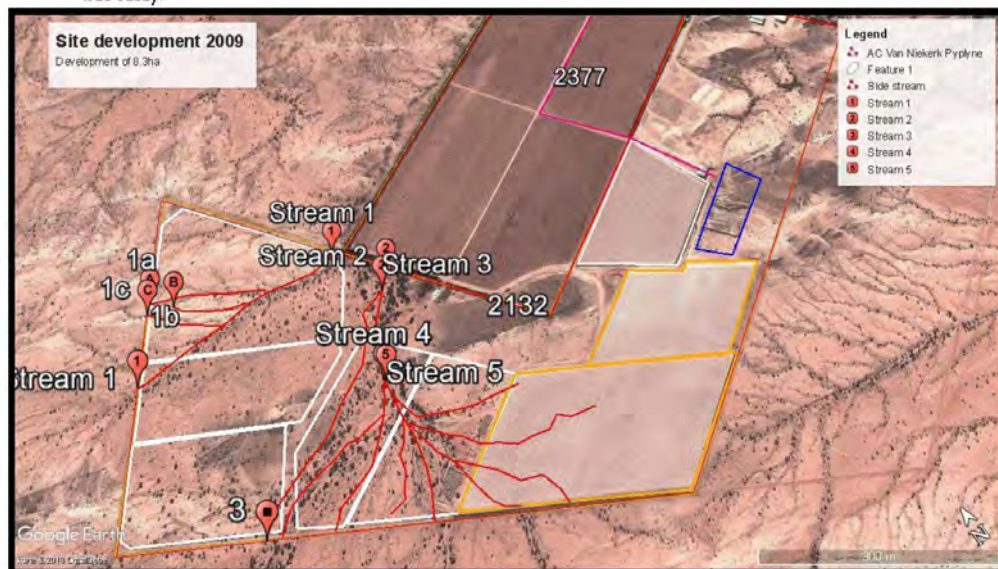


Figure 3: Vegetation clearing between 2009 and 2010.

NEMA 2010:

- Clearance of approximately 13.8 hectares of indigenous vegetation between July 2010 and prior to September 2013, also the clearing within/across a watercourse. (Refer to Figure 4, yellow blocks).
- Construction of pipelines and roads as part of the clearance of the 13.8 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

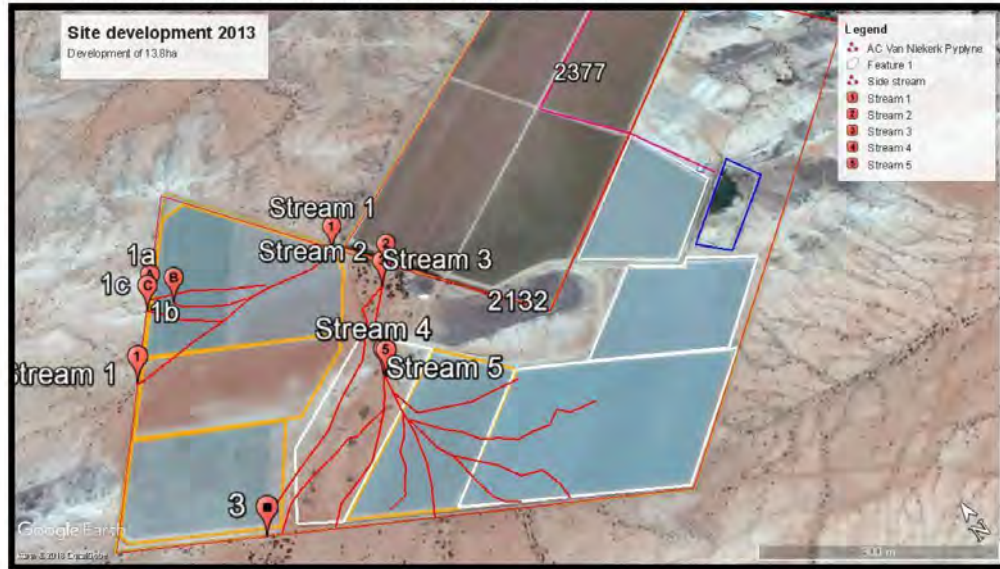


Figure 4: Vegetation clearing between 2010 and 2013.

NEMA 2014:

- Clearance of approximately 2.5 hectares of indigenous vegetation after 2014, also the clearing within a watercourse. (Refer to Figure 5, yellow blocks).
- Construction of pipelines and roads as part of the clearance of the 2.5 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

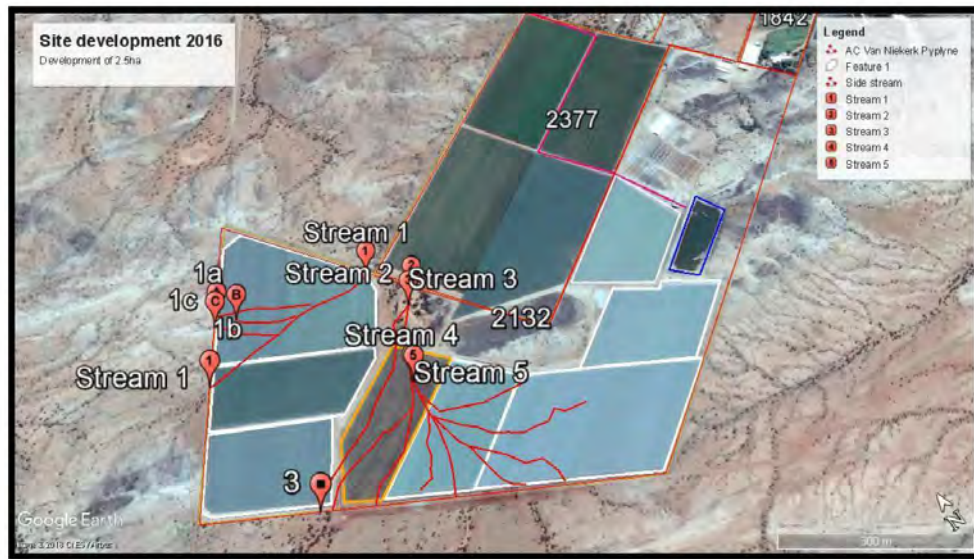


Figure 5: Vegetation clearing between 2013 and 2014. As shown in Figure 3, these areas were under cultivation of vineyards for table grapes by November 2016 with a total of 24.9 hectares (see Figure 4) constructed. Access tracks were constructed within the cultivated area to facilitate the farming activities.

By end of 2016, a total of 27.4 hectares had been cleared (Figure 2).

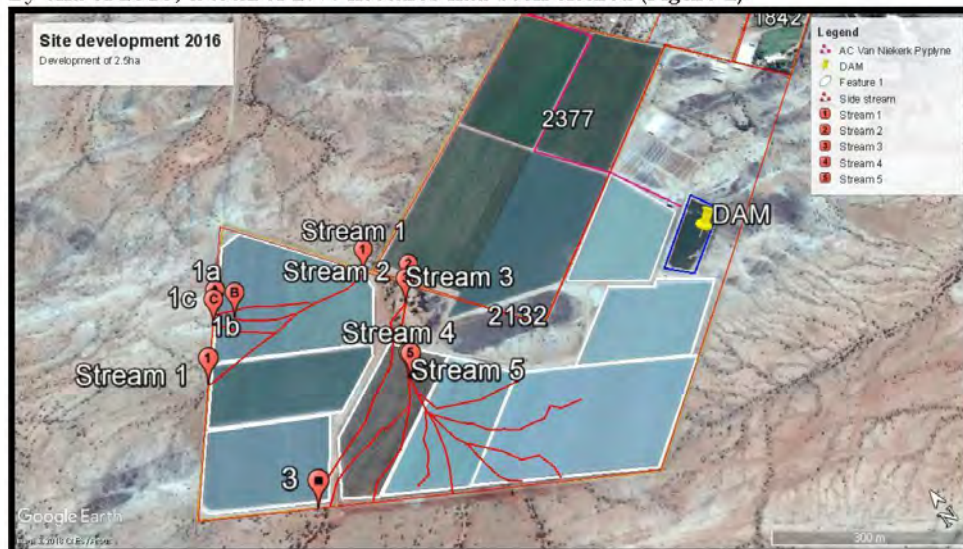


Figure 6: Total developed area

Pipelines and Pump station:

A pipeline of approximately 2km. Note the route follows within existing gravel road reserves, the route also does not cross any streams that was affected. The pump station is constructed just above the weir diverting flow into the channel, within the outflow channel, just outside of the banks of the Orange River. The pump station is a small building constructed well above the 1:100 year floodline and approximately 50m² in size. Note this did not activate a NEMA listed activity as this was constructed prior to 1998 and purchased by the applicant.

Roads:

Access is gained off the R64 district road via Kakamas South Settlement no 1842, which is also the applicant's property. The internal farm tracks are not surfaced, and are compacted earth with no formal storm water management control structures in place. The low rainfall characteristic of the area negates the need to provide for formal storm water control.

Water:

Water is required for the drip irrigation of the established vineyards, and is supplied via pipelines from the booster pump station and pump lines as shown on Appendix B. Kakamas South Settlement no 2132 has water use rights of 0 hectares that were registered with the Marchand/Augrabies and Kakamas Water Users Association. Water use for Farm Orange Fall 16/81 will be provided to Kakamas South Settlement no 2132. Farm Orange Fall no 16/81 will provide Kakamas South Settlement no 2132 with 23 hectares of water use rights. The cultivated development on the property is 25ha in total. As part of this an application will also be lodged to DWS for additional temporary storage of 30 000m³ of water in a dam. Transfer and allocations as outlined below:

As part of the Water Use License Application will apply for Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on the property took place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

The ephemeral drainages systems spring will ultimately have flowed into the Orange River, this is no longer the case as all these streams are cut off from the Orange River via agricultural developments and the canal.

The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains. They are mostly ephemeral streams, see Figure 7 (red

lines).

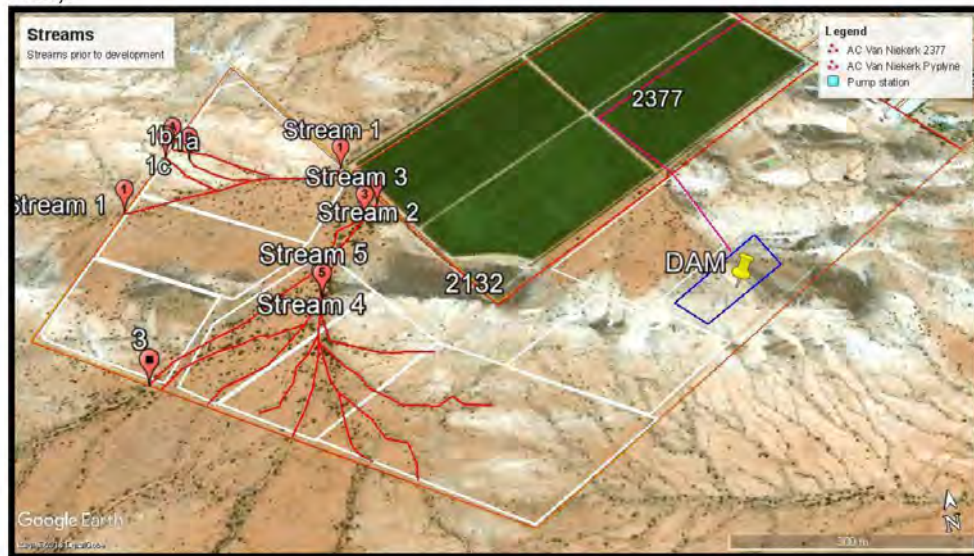


Figure 7: Ephemeral streams/drainage areas

The WULA application is summarised for the following water usages:

| | |
|---|---|
| (a) taking water from a water resource; | [transfer of water between properties] |
| (b) storage and temporary storage of water | Temporary storage of water with a total volume of 30 000m ³ |
| (c) impeding or diverting flow of water in a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |
| (i) altering the bed, banks, course or characteristics of a watercourse | For the construction of agricultural areas across ephemeral streams/natural drainage areas. |

Electricity:

Electricity is provided for the irrigation process and is linked to the booster pump.

Process and Public Participation:

This summary and notices serves as notification of the availability of the Draft 24G Assessment Report (dAR) and Draft Environmental Management Programme (dEMPr), including the Water Use License Application (WULA). An application (WULA) is hereby made by A&C Van Niekerk Boerdery PTY Ltd for the transfer of water between various properties within the Boegoeberg and Kakamas Water Users Associations.

As per the activated listed activities below the proposed development initiated Basic Assessment and NEMA/EIA processes, however, this will all be dealt with under NEMA Section 24G Requirements.

Applicable NEMA Regulations:

| | |
|--|---|
| NEMA 2002 Regulations GN R 670: Activity 10; | NEMA 2006 Regulations; GN R 385 LN1 Activity 4; |
| NEMA 2010 Regulations, GN R 544, LN1: Activity 11, 18, GN R 546 LN3 Activity 4, 12, 13; | NEMA 2014 Regulations, GN R 983, LN1 Activity 12, 19, GN R 985, LN 3, Activity 4, 12, 14; |
| In terms of the Water Use License Application, Sections 21 (a); (b), (c) and (i) of the National Water Act are applicable. | |

The public participation period for the public and authorities to provide comments on the draft AR and the WULA is from Monday 14 May 2018 until Thursday 14 June 2018.

The reports can be accessed from the website, as follows:

Website: www.pbps.co.za

1. Draft AR(Projects/Downloads/S24G Assessment Reports).
2. WULA (Projects/Downloads/Water Use License Applications)

Appendix F2.6: Comments received

Department of Water and Sanitation



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, PRETORIA, 0001. Sedibeng Building 185, Francis Baard Street, PRETORIA, 0001,
Tel: +27 12 336 7500 www.dws.gov.za

(012) 336 6608
e-mail: kusel@dwa.gov.za

P/Bag X313
PRETORIA
0001

Ms L Kuse
(012) 336 8336
Not indicated

**Northern Cape Region
Private Bag X 5912
UPINGTON
8800**

ATTENTION: Ms. Jolene Towell

APPLICATION FOR A WATER USE AUTHORISATION IN TERMS OF THE NATIONAL WATER ACT, ACT 36 OF 1998: A & C VAN NIEKERK BOERDERY (PTY) LTD – PERMANENT TRANSFER OF WATER RIGHTS FROM THE AUGRABIES IRRIGATION BOARD TO THE MARCHAND IRRIGATION BOARD ON FARM 2132

This letter has reference to the site inspection that was conducted on 31 January 2018 and documentation submitted to this office for the above activities.

1. Background

The applicant, A & C Van Niekerk Boerdery (Pty) Ltd, intends to permanently transfer water rights 23 ha (345 000 m³/a) from the Augrabies Irrigation Board to the Marchand Irrigation Board on Farm 2132. The water will be pumped from the Orange River into a small storage dam with a capacity of less than 50 000m³ and it will be used for irrigation onto the vineyards as needed.

1.1 Watercourses affected

- Several drainage lines and streams that form tributaries of Orange River.

1.2 Documents submitted

- Water use licence application documentation.

2. Summary or Analysis

- 2.1 Several drainage lines and stream were altered (destroyed) during cultivation of vineyards for table grapes on Farm 2132 during the years of 2010 to 2016.
- 2.2 There is no stormwater management plan on the WULA documentation submitted.
- 2.3 The positions of the abstraction point and small storage dam have not been shown.
- 2.4 No impact assessment has been done for the pump station that will be used to abstract water from the Orange River to the storage dam.

- 2.5 No impact assessment done for cultivation area.
- 2.6 The risk matrix has been done and the risk rating came out as low for all aspects of the proposed activities. However, the risk matrix did not include all impacts associated with the proposed activities, e.g. removal of vegetation from the watercourses, destruction of the watercourses, use of fertilisers or herbicides, etc.

3. Recommendations

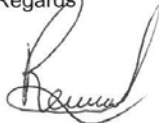
- 3.1 Instream Water Use (IWU) does not recommend issuance of the water use licence. This application will be considered again after submission of the following:
- 3.1.1. Master layout plan must be updated to indicate the all activities and associated infrastructure in relation to all watercourses, 1:100 year floodlines for at least the Orange River and buffer zones. Furthermore, the position of the abstraction point and storage dam must be clearly shown.
 - 3.1.2. Stormwater management plan with layout drawing must be submitted.
 - 3.1.3. Method statement and designs of the abstraction structure and associated infrastructure.
 - 3.1.4. All structures and infrastructure that will be situated within 1:100 year floodline must be protected against 1:100 flood events and also not obstruct/impede flow that can cause erosion/damage.
 - 3.1.5. Environmental impact assessment for all activities affecting watercourses must be submitted with the risk matrix. Please note that it must pay attention to amongst others characteristics of the watercourse and proposed mitigation measures.

4. Conclusion

- 4.1. The information highlighted above must be submitted in order to enable IWU to advise the Regional Office.

Please do not hesitate to contact the above official should there be any queries.

Regards



DR PAUL MEULENBELD
SCIENTIFIC MANAGER GRADE A: INSTREAM WATER USE
DATE: 2018/3/20

A & C Van Niekerk

Our Ref:



an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 12469

Date: Tuesday May 29, 2018
Page No: 1

Interim Comment

In terms of Section 38(3), 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Pieter Badenhorst Professional Services

The S24G Application for the illegal clearance of land/indigenous vegetation from 2002 to 2016 for a total of 27.4 hectares of vineyards and the construction of pipelines and development across small streams on Kakamas South Settlement no 2132, Marchand.

Pieter Badenhorst Professional Services has been appointed by A&C Van Niekerk Boerdery (Pty) Ltd to conduct a Section 24G rectification application for the cultivation of 27.4 ha of vineyards on Kakamas South Settlement No 2132, Kenhardt, Northern Cape Province. A S24G Assessment Report has been submitted in terms of the National Environmental Management Act, Act No 107 of 1998 (NEMA) and the NEMA Environmental Impact Assessment (EIA) Regulations.

The S24G Report notes that the surrounding area was assessed by heritage specialists and Stone Age tools were identified, however no heritage assessment report has been submitted as per section 38(3) and 38(8) of the National Heritage Resources Act, Act 25 of 1999 (NHRA).

Interim Comment

The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit requests that a report conducted in terms of section 38(3) of the NHRA be submitted for comment as per section 38(8) of the NHRA as part of the S24G process. The heritage assessment must assess all heritage resources as defined in section 3 of the NHRA that would have been present before the cultivation of the vineyard.

Further comments will be issued upon receipt of the above.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

A & C Van Niekerk

Our Ref:



an agency of the
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4509 | E: info@sahra.org.za
South African Heritage Resources Agency | 111 Harrington Street | Cape Town
P.O. Box 4637 | Cape Town | 8001
www.sahra.org.za

Enquiries: Natasha Higgitt
Tel: 021 462 4502
Email: nhiggitt@sahra.org.za
CaseID: 12469

Date: Tuesday May 29, 2018
Page No: 2

Natasha Higgitt
Heritage Officer
South African Heritage Resources Agency

Phillip Hine
Acting Manager: Archaeology, Palaeontology and Meteorites Unit
South African Heritage Resources Agency

ADMIN:

Direct URL to case: <http://www.sahra.org.za/node/503901>
(DENC, Ref: S24G 01/01/2018)

Appendix F2.7: Comments and responses sheet

| COMMENTS ON DRAFT ASSESSMENT REPORT | | | | |
|-------------------------------------|---|--|------------------------|--|
| Date | Comments from | Comments received | Response from | Response received |
| 29-05-2018 | SAHRA – Natasha Higgit | The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit requests that a report conducted in terms of section 38(3) of the NHRA be submitted for comment as per section 38(8) of the NHRA as part of the S24G process. The heritage assessment must assess all heritage resources as defined in section 3 of the NHRA that would have been present before the cultivation of the vineyard. | Jonathan Kaplan - ACRM | <p>Please note the following:</p> <ul style="list-style-type: none"> The affected landholdings are already irrevocably transformed as a result of 14 years of vineyard production (refer to Figure 2). It is considered highly unlikely that any significant archaeological heritage will be present on the affected landholdings. Any heritage remains encountered such as Stone Age tools would be ex-situ. Impacts prior to development, would most likely have been dispersed and isolated scatters of Middle Stone Age and Later Stone Age lithics, consistent with the results of the previous surveys in the surrounding area1. Most of the remains represent discarded flakes and flake debris <p>It is my professional opinion that a field based Heritage Impact Assessment Management Plan is not required, since it is considered very unlikely that any important heritage remains will be encountered.</p> <p>On behalf of the applicant, I hereby request exemption from undertaking a HIA, as requested by SAHRA.</p> |
| 20-03-2018 | Department of Water and Sanitation – Section 21 c and I Unit – Lumka Kusa | <p>3.1 Instream Water Use (IWU) does not recommend issuance of the water use licence. This application will be considered again after submission of the following:</p> <p>3.1.1. Master layout plan must be updated to indicate the all activities and associated infrastructure in relation to all watercourses, 1:100 year flood lines for at least the Orange River and buffer zones. Furthermore, the position of the abstraction point and storage dam must be clearly shown.</p> <p>3.1.2. Stormwater management plan with layout drawing must be submitted.</p> <p>3.1.3. Method statement and designs of the abstraction structure and associated infrastructure.</p> <p>3.1.4. All structures and infrastructure that will be situated within 1:100 year flood line must be protected against 1: 1 00 flood events and also not obstruct/impede flow that can cause erosion/damage.</p> <p>3.1.5. Environmental impact assessment for all activities affecting watercourses must be submitted with the risk matrix. Please note that it must pay attention to amongst others characteristics of the watercourse and proposed mitigation measures.</p> | 19-06-2018 | <p>3.1.1. [Find attached a layout indicating the 1:100 year floodline. Note this is a prediction/estimation from historic information provided by the applicant. Also included is the DWS flood peak points. Note the infrastructure is all existing constructed in the 1980's and purchased by the applicant.]</p> <p>3.1.2.[Find attached the updated Storm Water Management Plan]</p> <p>3.1.3.[Find attached the updated Storm Water Management Plan a design for the abstraction structure, please note that these pumps, the jetty and the pipelines are existing and constructed prior to 1980's, therefore do not form part of this WULA application.]</p> <p>3.1.4. [Find attached the updated Storm Water Management Plan and see point 3.1.1.]</p> <p>3.1.5. [Find attached the S24G Assessment Report for your consideration and the updated Risk Matrix.]</p> |
| | | | | |

Appendix F2.8: Response to comments

Jonathan Kaplan - ACRM



Agency for Cultural Resource Management
Specialists in Archaeological Studies and Heritage Resource Management

08 July, 2018

Ms Natasha Higgitt
SAHRA
PO Box 4637
Cape Town
8001

Dear Ms Higgitt,

**SECTION 24G RECTIFICATION PROCESS FOR THE ILLEGAL CLEARANCE OF
LAND/INDIGENOUS VEGETATION FROM 2002 TO 2016 FOR A TOTAL OF 27.4HA OF
VINEYARDS AND THE CONSTRUCTION OF PIPELINES AND DEVELOPMENT ACROSS
SMALL STREAMS ON KAKAMAS SOUTH SETTLEMENT NO 2132 MARCHLAND,
NORTHERN CAPE**

CASE ID: 12469

Your letter dated 29 May, 2018 (Interim Comment) refers:

The affected landholdings are located \pm 2kms outside the small town of Marchand on the way to Augrabies in the Northern Cape (Figure 1).

Please note the following:

- The affected landholdings are already irrevocably transformed as a result of 14 years of vineyard production (refer to Figure 2).
- It is considered highly unlikely that any significant archaeological heritage will be present on the affected landholdings. Any heritage remains encountered such as Stone Age tools would be *ex-situ*.
- Impacts prior to development, would most likely have been dispersed and isolated scatters of Middle Stone Age and Later Stone Age lithics, consistent with the results of the previous surveys in the surrounding area¹. Most of the remains represent discarded flakes and flake debris

¹ Kaplan, J. 2017 Archaeological Impact Assessment, proposed citrus development, Renosterkop Extension (Kakamas South Settlement No. 2185 & 2193) Augrabies, Northern Cape

Kaplan, J. 2017 (incomplete). Archaeological Impact Assessment, Proposed development of agricultural land on Portion 13 of Orange Falls Farm No. 16, Augrabies Falls Way, Augrabies, Northern Cape

Kaplan, J. 2016 Archaeological Impact Assessment, proposed vineyard development on Farm 1726 Renosterkop, Farm 1290 & Farm 1537 Augrabies Northern Cape. Report prepared for Pieter Badenhorst Professional Services, ACRM, Cape Town

Beaumont, P.B. 2008. Phase 1 Archaeological Impact Assessment report on Kakamas South Farm 2092 near Augrabies, Siyanda District Municipality, Northern Cape Province

Van Schalkwyk, J. A. 2013. Cultural Heritage Impact Assessment for the proposed township development on a section of the Farm Kakamas Suid 28 Augrabies, Kal !Garib Municipality, Northern Cape Province. Report prepared for MEG Environmental Consultants.



Agency for Cultural Resource Management
Specialists in Archaeological Studies and Heritage Resource Management

It is my professional opinion that a field based Heritage Impact Assessment Management Plan is not required, since it is considered very unlikely that any important heritage remains will be encountered.

On behalf of the applicant, I hereby request exemption from undertaking a HIA, as requested by SAHRA.

Yours sincerely

Jonathan Kaplan











Figure 1. Google satellite map indicating the affected landholding in relation to Augrabies



Figure 2. Close up Google satellite map of the affected landholdings, showing the irrevocably transformed landscape (vineyards under shade cloth). Blue lines are small streams

APPENDIX H1: ATTENDANCE REGISTER OF THE LAST MEETING HELD WITH DWS ON 31-01-2018

Attendance Register

| PROJECT NAME: PBPS WULA | | | | |
|-------------------------|----------------|------------------------------|-------------------------------|---|
| DATE: 31/01/2018 | | TIME: 11H30 | | |
| Name & Surname | Organisation | Telephone number | E-mail address | Signature |
| Odri van Niekerk | CapeSpan | 082 775 0410 | Adri-vanniekerk@capspan.co.za |  |
| Elsie Kuhn | PBPS | 016 584 0822 | elaniem@iafrica.com |  |
| Mogale Ntoi | DWS - UPN | 054 338 5836 | NTolM@dws.gov.za |  |
| Paul Meulenbeld | DWS - IWW | 081 662 7719 | meulenbeldp@dws.gov.za |  |
| Lumka Kuise | DWS - IWW | 083 661 7999 | kuseka@dws.gov.za |  |
| Chantel Schwarz | DWS - UPN (WQ) | 050 255 3300 054 338 5800 | Schwarzc@dws.gov.za |  |
| Jolene van Wyk-Towell | DWS - UPN | 082 881 8866 | towellj@dws.gov.za |  |
| Peter Groenewald | PBPS | 082 776 6122 | p.ppsa@iafrica.com |  |
| | | | | |
| | | | | |

APPENDIX H2: ENVIRONMENTAL MANAGEMENT PROGRAMME

Application for Authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, December 2014, as amended March 2017

CONSTRUCTION & OPERATIONAL MANAGEMENT PLAN FOR

STOFEILAND 24G RECTIFICATION OF CULTIVATION OF 27.4HA OF VINEYARDS ON
KAKAMAS SOUTH SETTLEMENT NO 2132, KENHARDT

DENC Ref: S246 01/01/2018



Prepared by:

Elanie Kühn

Environmental Assessment Practitioner

Pieter Badenhorst Professional Services CC

PO Box 1058

Wellington 7654

(elaniem@iafrica.com)



Date: June 2018

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List of abbreviations

| | |
|----|---------------------|
| CA | Competent Authority |
|----|---------------------|

| | |
|--------------------|---|
| DENC:NC | Department of Environment and Nature Conservation: Northern Cape |
| DEAT | Department of Environmental Affairs and Tourism |
| dSR | Draft Scoping Report |
| fSR | Final Scoping Report |
| DWS | Department of Water and Sanitation |
| EA | Environmental Authorisation |
| EAP | Environmental Assessment Practitioner |
| ECO | Environmental Control Officer as per the environmental authorisation |
| EIA | Environmental Impact Assessment and the process to be followed in terms of the National Environmental Management Act, Act 107 of 1998 |
| EIR | Environmental Impact Report |
| ELU | Existing Lawful Use |
| EMF | Environmental Management Framework |
| EMP | Environmental Management Programme |
| EO | Environmental officer as appointed by the client or contractor |
| GG | Government Gazette |
| GN | Government Notice |
| I&AP | Interested and Affected Party |
| IAIAsa | International Association for Impact Assessment for South Africa |
| NEMA | National Environmental Management Act, Act 107 of 1998 |
| NID | Notice of Intent to Develop |
| PoSfEIA | Plan of Study for EIA |
| RE/Engineer | Resident Engineer overseeing the construction activity |
| ROD | Record of Decision |
| SDF | Spatial Development Framework |
| SR | Scoping Report |
| TOR | Terms of Reference |

Definitions

For the purposes of this Specification the following definitions shall apply:

Construction site, working area or Site - means any area within the boundaries of the property(ies) where construction is taking place.

No-Go area - means any area where no access is allowed.

Refuse - refers to all solid waste, including construction debris (cement bags, wrapping materials), waste and surplus food, food packaging, organic waste etc.

Expertise of the EAP

Pieter Badenhorst

The name and details of the EAP are provided in the front of the report. He has more than 45 years' experience in project management and report writing. He worked at the CSIR in environmental, coastal and estuarine management for 16 years. During that time he was part of the team that developed coastal management guidelines, the first process for EIAs and undertook numerous environmental studies for DEAT in collaboration with a team of ecologists. The last 15 years he has worked mainly in environmental control and environmental impact assessments and has completed EIAs for many projects. He has also undertaken an EIA peer review on a major development for DEAT.

He has a B.Sc. Civil Engineering Degree as well as B.Honours Degree (Irrigation), M. Engineering (Civil) and an MBA from Stellenbosch University.

The consultant is a member of the Engineering Council of South Africa and the South African Institute of Civil Engineers, as well as a member of the International Association for Impact Assessment (South Africa).

The consultant has organized many meetings/workshops/open days to identify issues for similar projects at the CSIR; Blue Flag for DEAT as well as other DEAT projects. The Blue Flag and other projects required interaction with large groups of stakeholders.

Elanie Kühn

The consultant has 11 years' experience in project management and report writing. She has worked for two other environmental assessment companies prior to this. She completed her BSc degree and after this gained an Honours Degree in Environmental Management from the North West University in Potchefstroom. She has been working with Pieter Badenhorst for the last six years working on environmental impact assessments.

1 Introduction

1.1 Locality:

The proposed development is situated approximately 2 kilometers outside of the small town of Marchand driving towards Augrabies in the Northern Cape, in the Kai! Garib Municipal area.

Refer to the Locality Plan inserted below as Figure 1. Accesses to the farms are via existing gravel roads that gain access off the R64. The property is currently zoned Agriculture. The owner of the properties is A&C Van Niekerk Boerdery PTY Ltd and has appointed PBPS as the independent consultant to undertake the EIA process.



Figure 1: Locality plan

Proposed development:

The proposed development consisted out of the following activities that triggered NEMA 2010 and 2014:

The proposed development consisted out of the following activities that triggered NEMA 2002, 2009, 2010 and 2014 Regulations:

NEMA 2002:

1. Clearance of approximately 2.86 hectares of virgin soil between 2002 and prior to 2004. (Refer to Figure 2, yellow block).

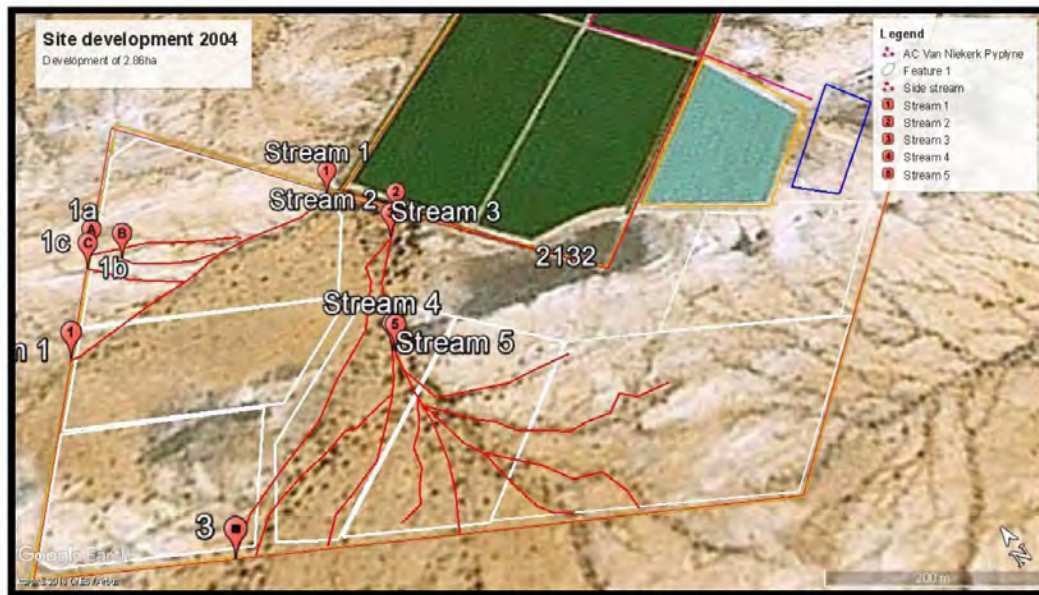


Figure 2: Vegetation clearing between 2002 and 2004.

NEMA 2006

1. Clearance of approximately 8.3 hectares of vegetation between 2006 and 2009 for the clearing within/across a watercourse. (Refer to Figure 3, yellow blocks).

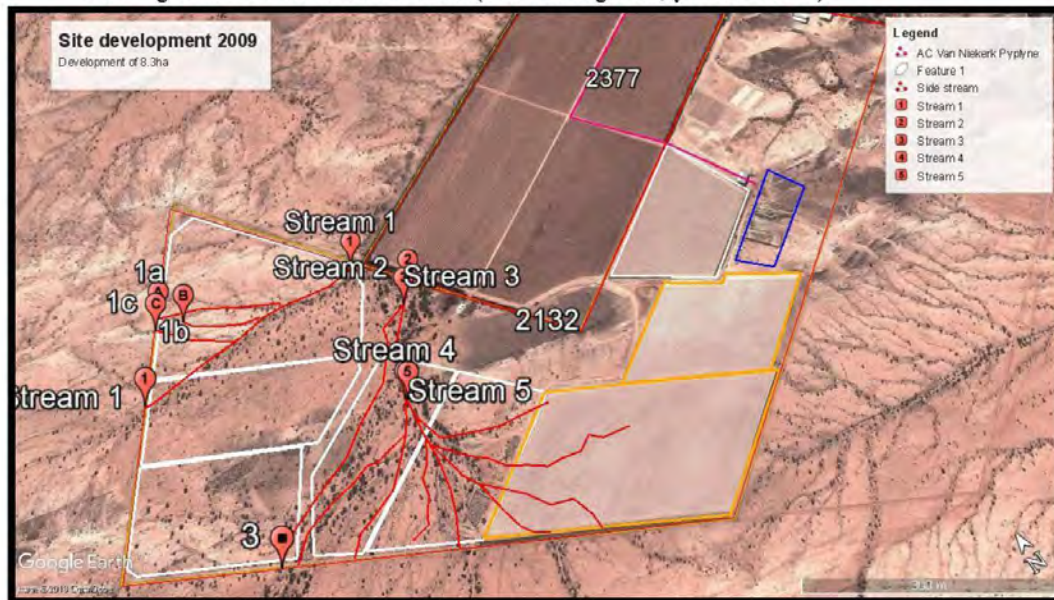


Figure 3: Vegetation clearing between 2009 and 2010.

NEMA 2010:

1. Clearance of approximately 13.8 hectares of indigenous vegetation between July 2010 and prior to September 2013, also the clearing within/across a watercourse. (Refer to Figure 4, yellow blocks).
2. Construction of pipelines and roads as part of the clearance of the 13.8 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

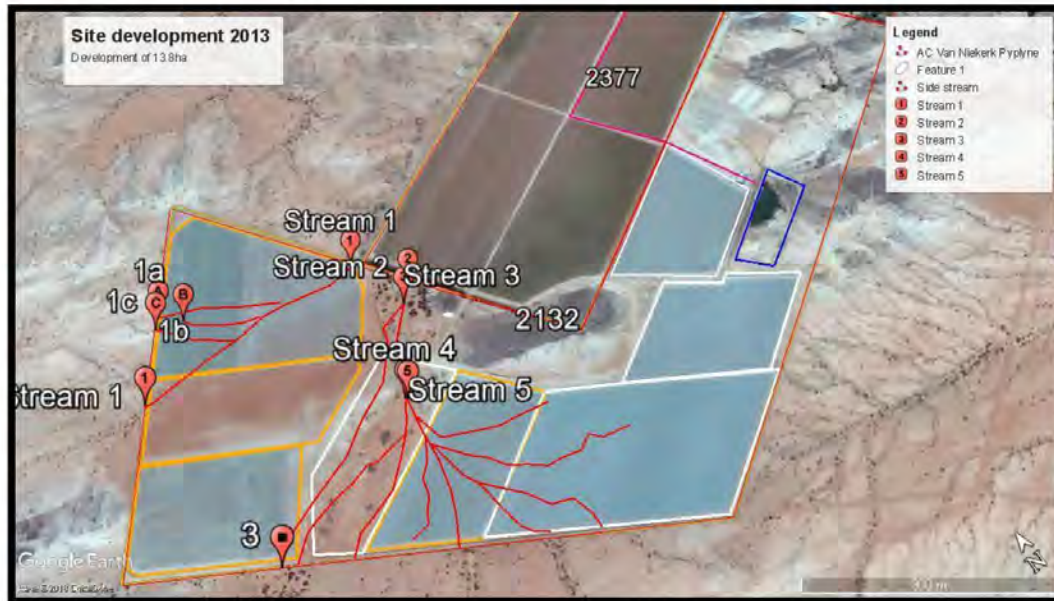


Figure 4: Vegetation clearing between 2010 and 2013.

NEMA 2014:

1. Clearance of approximately 2.5 hectares of indigenous vegetation after 2014, also the clearing within a watercourse. (Refer to Figure 5, yellow blocks).
2. Construction of pipelines and roads as part of the clearance of the 2.5 hectares of indigenous vegetation, see pink line for pipeline route. Note this is not activated as this was constructed in 1998.

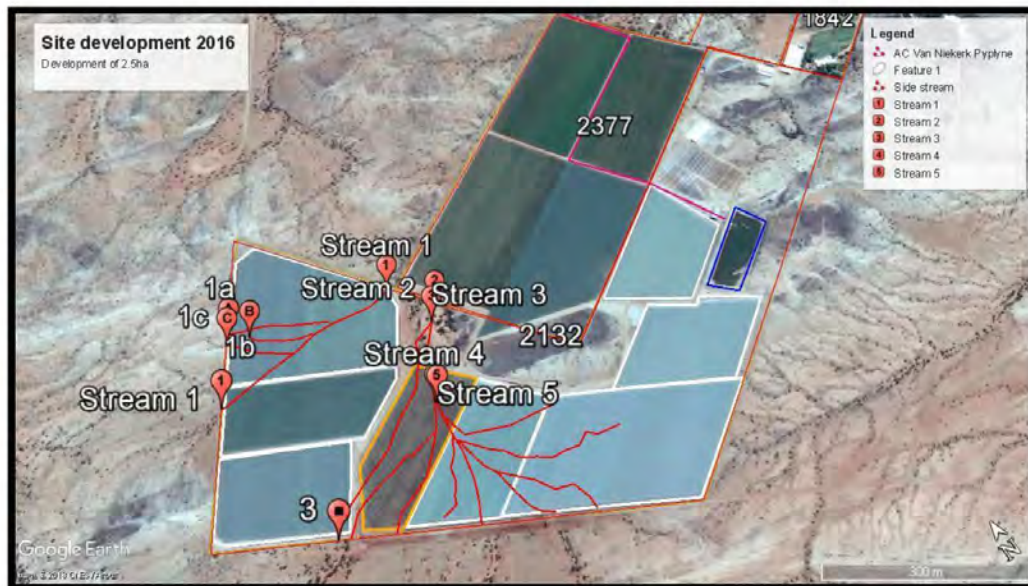


Figure 5: Vegetation clearing between 2013 and 2014.

As shown in Figure 3, these areas were under cultivation of vineyards for table grapes by November 2016 with a total of 24.9 hectares (see Figure 4) constructed. Access tracks were constructed within the cultivated area to facilitate the farming activities.

By end of 2016, a total of 27.4 hectares had been cleared (Figure 2).

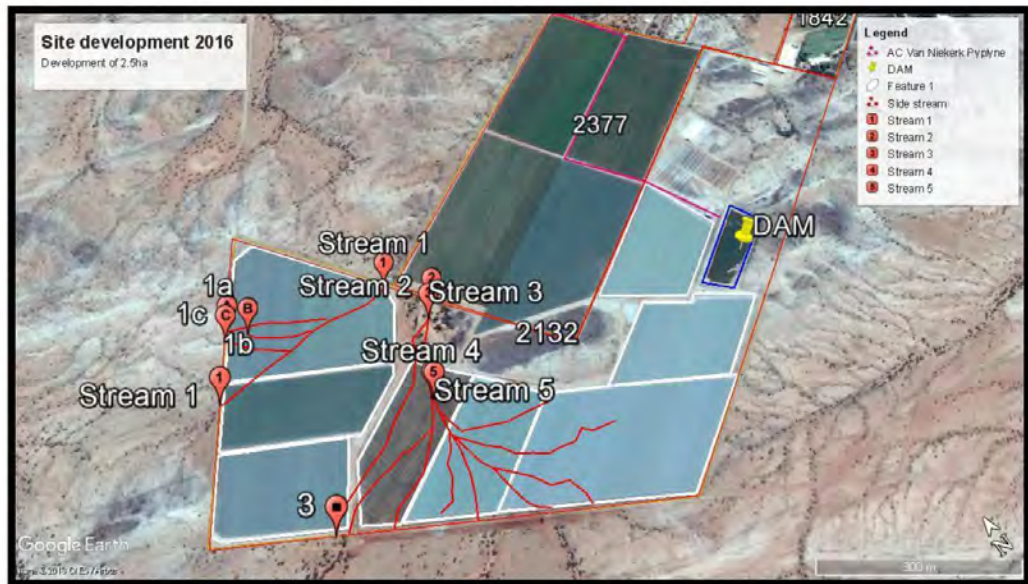


Figure 6: Total developed area

The SG 21 Digit Codes of the property indicated in Figure 1 above is provided in the list below:

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | 0 | 3 | 6 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 2 | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

This document is a requirement for environmental authorization (EA) which is shown in Appendix A. All mitigation measures included in the EA will be inserted into Appendix C. On approval by DENC the developer must ensure that its conditions are implemented by making the document available to the contractor and also ensure that an ECO or the Resident Engineer are appointed and systems are in place to evaluate compliance. The contractor(s) is expected to familiarise himself with the contents of this document and to implement its conditions.

Overall the EMP will aim to:

- Control the construction activities in such a way that negative impacts on the physical environment, sensitive areas and surrounding residential areas are prevented or minimised.
- Ensure that mitigation and rehabilitation measures are implemented where required.

Please note that this document does not replace any other regulations, laws and bylaws that the contractor must adhere to. It specifically does not replace the regulations of the Occupational Health and Safety act of 1993 (Act No. 85 of 1993).

Funding for the implementation of the Construction EMP is the financial responsibility of the developer.

The project environmental issues are shown in section 2 with the construction EMP in section 3 and the operational EMP in section 4.

2 Environmental issues

2.1 Vegetation

The site is covered by Bushmanland Arid Grassland, it has a least threatened status [according to Mucina & Rutherford (2006)].

According to Namakwa District Biodiversity Sector Plan (2008), the development encroaches on an ecological support area (ESA) which was established as a terrestrial migration corridor associated with the Orange River corridor. However, it must be noted that most of this corridor in this vicinity is compromised as a result of existing agricultural development. Most of the neighbouring areas to the west, north and east of the site have already been transformed into agricultural land. To the south of the property (falling outside of the ESA) natural is still encountered.

Mitigation:

Mitigation during for the planning and construction can no longer be applied as the activity already took place, however, the operation phases of this proposed development are as follows:

Very little scope is available for mitigation measures to compensate for the loss of natural or near natural habitat in the study area itself since.

Recommended mitigation for the loss, particularly of seasonal watercourses, would be in the form of storm water management in the channelled areas and to prevent any further degradation of the streams below the site.

2.2 Fauna

Although not observed during the site visit, it is expected that small game such as klipspringer, steenbok, porcupines, baboons and dassies will be found in the area. Some bird species were also found.

Habitat destruction and the possible genetic contamination of species are however all factors that can negatively impact on vertebrate species, but can be minimized through applying the following mitigation measures:

Mitigation

- Regular maintenance of the water network will minimize the damage done by porcupines.
- No hunting of small game with dogs will be allowed.
- In order to ensure that all fauna will be able to relocate to the adjacent veld, openings should be made in the fences surrounding the proposed development area before any construction work may commence
- To ensure environmentally friendly farming practices, the site manager will have to adhere to the requirements and prescriptions which will be included in the environmental management plan to be included as part of the EIA process. This plan will also deal with issues such as the prohibition of the hunting of small game etc.

2.3 Heritage, Archaeology and Palaeontology

The site has already been developed and the possibility of any future finds is low, however the following mitigation measures should be considered for the operational phase of the site.

If any archaeological material or human burials are uncovered during the course of the operational phase then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist.

2.4 Access

There is existing access for all areas proposed for cultivation, and for the construction of the water extraction infrastructure.

2.5 Electricity

The development falls within the capacity of Eskom. Note that additional electrical capacity was necessary for the development of the pump station; however this has already been approved and currently in use.

2.6 Land uses

The planned development is situated within a purely agricultural area with no other land uses in close proximity. The proposed development will therefore have no impact on any surrounding land uses in the area.

2.7 Plough certificate

A plough certificate has already been obtained and included as part of the WULA included in the EIA phase of the development.

2.8 Water Use License

An application for a license in terms of the National Water Act, 1998 is being made by the developer, A&C Van Niekerk Boerdery PTY Ltd for the transfer water rights, in addition to the application to impede the flow of water and to alter the beds, banks and course of the watercourses on site summarised as the followed:

Section 21(a) taking water from a water resource: Transfer of water rights

Section 21 (b) storage of water

Section 21(c) impeding or diverting the flow of water in a watercourse: Impeding flow

Section 21(i): altering the bed, banks, course or characteristics of a watercourse: Altering the banks of a water course. Refer to the S24G Assessment Report for the WULA.

2.9 Ephemeral stream and drainage areas

The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains. Refer to further details contained in the Storm water management plan referred to above in Appendix D.

The establishment of the vineyards on the property took place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

The ephemeral drainages systems spring will ultimately have flowed into the Orange River, this is no longer the case as all these streams are cut off from the Orange River via agricultural developments and the canal.

The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains. They are mostly ephemeral streams, see Figure 7 (red lines).

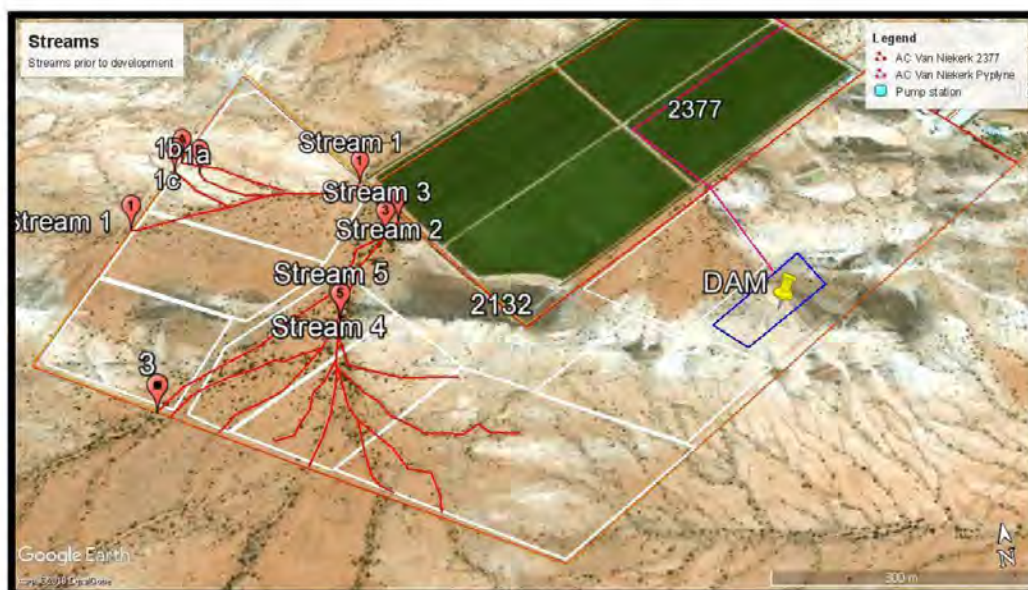


Figure 7: Ephemeral streams/drainage areas

3 Management Programme – Construction

Please note that the Construction section for the EMP is not applicable as the development already took place and no mitigation measures that would require construction on the site was outlined in the studies.

4 Management Programme – Operational

This section will only make reference to Operational Management measures.

4.1 Water Use License

If any recommendations or measures are outlined in the WULA they should be included in this section.

4.2 Water Management Section

The proposed development of the agricultural areas will in effect result in the following measures to reduce energy and water usage:

- The irrigation system used should be environmentally friendly and best available for water usage as per DWS recommendations.
- Test pits and data collections from these pits are taken on a regular basis to determine the moisture content for soil etc.
- Soil coverage within the vineyards with chaff.
- Regular monitoring and checks from specialists in the field to introduce best possible irrigation practices.
- Preventative measures to reduce possible spillage or silt accumulation in lower streams from storm water accumulated during heavy rains. Placing of bales within streams in lower areas before entering streams.

4.3 Maintenance of infrastructure

The Applicant will ensure that all pump infrastructure is maintained at the water extraction point along the Orange River, to prevent leakages of hazardous substances contaminating the soil and water. Any parts that are replaced shall be removed from the site on the same day that the repair and maintenance takes place.

4.4 Contingency planning

In the event of a spill or leak of product into the ground and/or water courses (e.g. that of hazardous substances used for the construction phase), such incidents must be reported (within 14 days) to all the relevant authorities including the Directorate: Pollution Management in accordance with Section 30(10) of the National Environmental Management Act No. 107 of 1998 (NEMA) and Section 20 (3) of the National Water Act No.36 of 1998 (NWA), that pertains to the control of emergency incidents and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.

Containment, clean-up, and remediation must commence immediately.

4.5 Storm water management

As per the Storm Water Management Plan included in Appendix D.

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|--|
| Appendix A: Environmental authorisation |
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Included once received.

Appendix B: Tracking Table

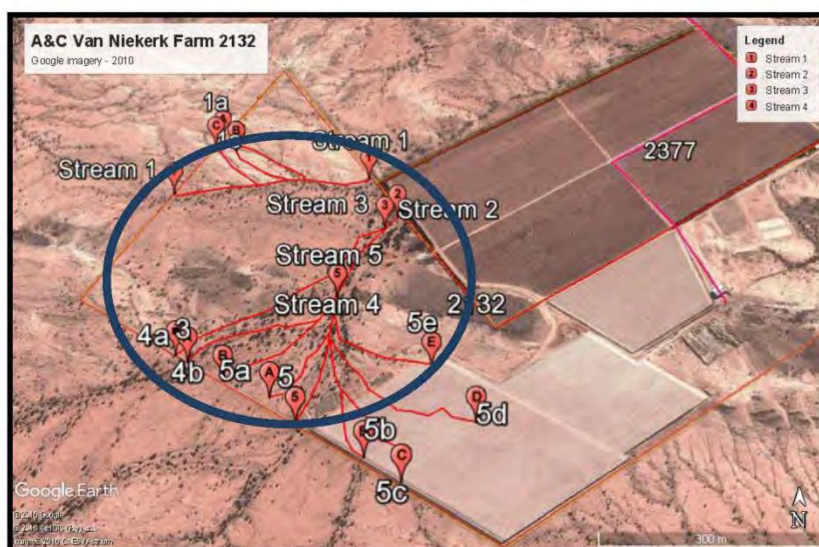
| Requirement | Received | | Date | Comment |
|------------------------------|----------|----|------|---------|
| | Yes | No | | |
| Methodology statement | | | | |
| Site establishment plan | | | | |
| Letter re contents of EMP | | | | |
| Letter re awareness training | | | | |
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| Appendix D: Storm Water Management Plan |
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STORM WATER MANAGEMENT PLAN

for

PROPOSED PERMANENT TRANSFER OF WATER RIGHTS BETWEEN TWO
IRRIGATION BOARDS TO IRRIGATE VINEYARDS
ON
FARM 2132, AUGRABIES, NORTHERN CAPE



Oval area depicts the approximate main proposed development area.

Prepared by:

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Date: June 2018



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List of abbreviations

| | |
|-------------|--|
| DENC | Department of Environment and Nature Conservation: Northern Cape |
| DWS | Department of Water and Sanitation |
| EAP | Environmental Assessment Practitioner |

Definitions

For the purposes of this Specification the following definition shall apply:

Storm water – Storm water is defined as surface water that concentrates as a result of precipitation, in locations where water is generally not otherwise found.

Expertise of the EAPPieter Badenhorst

He has more than 42 years' experience in project management and report writing. He worked at the CSIR in environmental, coastal and estuarine management for 16 years. During that time he was part of the team that developed coastal management guidelines, the first process for EIAs and undertook numerous environmental studies for DEAT in collaboration with a team of ecologists. The last 20 years he has worked mainly in environmental control and environmental impact assessments and has completed EIAs for many projects. He has also undertaken an EIA peer review on a major harbour development for DEA.

He has a B.Sc. Civil Engineering Degree as well as B.Hon Degree (Irrigation), M. Engineering (Civil) and an MBA from Stellenbosch University.

The consultant is a member of the Engineering Council of South Africa and the South African Institute of Civil Engineers, as well as a member of the International Association for Impact Assessment (South Africa).

The consultant has organized many meetings/workshops/open days to identify issues for similar projects at the CSIR; Blue Flag for DEAT as well as other DEAT projects. The Blue Flag and other projects required interaction with large groups of stakeholders.

Elanie Kühn

The consultant has more than 11 years' experience in project management and report writing. She has worked for two other environmental assessment companies prior to this. She completed her BSc degree and after this gained an Honours Degree in Environmental Management from the North West University in Potchefstroom. She has been working with Pieter Badenhorst for the last seven years working on environmental impact assessments.

1. INTRODUCTION

This Storm water Management Plan (SWMP) forms part of the Water Use License Application (WULA) and is intended to provide the Department of Water Affairs (DWS) with all necessary information to assess the suitability of mitigation measures included in the WULA. The report describes the pre development status of the site, the storm water management objectives and mitigation measures that the land-owner will undertake to ensure sustainable management of the area to be developed.

The proposed development area is shown in Figure 1. The area contains natural vegetation which is dissected by small ephemeral streams. Furthermore, the newly developed area lies within the middle catchment which means water from higher lying areas would have flowed through the developed areas (see Figure 1 for storm water flow directions).

In the WULA application is made to rectify the illegal planting over some of the minor existing natural water courses. The report will identify mitigation measures to prevent erosion of the new planted areas and to mitigate against enrichment of downstream flows.

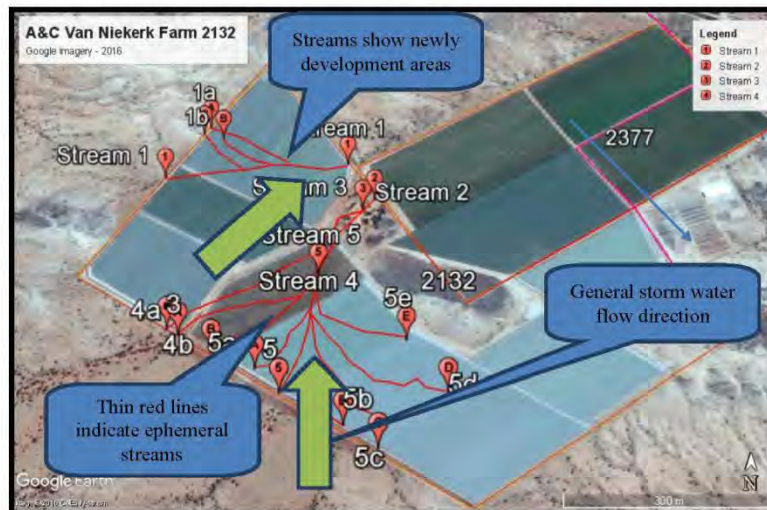


Figure 1: Development area.

2. DESIGN POLICIES, GUIDELINES AND OBJECTIVE

2.1. Design Guidelines and Policies

This storm water management plan adopts and conforms to the policies of the Department of Water and Sanitation

The design guidelines incorporated are:

- Storm water management planning and design guidelines for new developments, July 2002, CCT.

2.2.Objective

The main objective of storm water management planning for the development is to ensure that a site's run-off characteristics are not negatively influenced by the agricultural development and thus does not have a negative impact on downstream flows. Characteristics that could be impacted include storm water flow changes and enrichment of the water and flow towards the agricultural areas do not accumulate to high volumes and an increased hydrological response that will result in destruction of property and natural flow downstream.

Note, however, agricultural development is not similar to a residential etc. development with hardened surfaces ultimately resulting in a higher hydrological response. The proposed agricultural development will have the opposite effect in that farming practices will result in minimising storm water flows. Therefore, catchment characteristics of the larger system will be changed from semi-permeable to highly-permeable after development. As a result storm water flows will be reduced thereby minimising the impact of nutrient enrichment downstream.

In addition, storm water run-off is not considered to be a high risk due to the low rainfall generally experienced in the area. However, during downpours storm water could be generated and the overall objective of storm water would be to minimise storm water flows, the potential for erosion and downstream nutrient enrichment.

3. LOCALITY, AND ENVIRONMENT

3.1.Locality

The study area is part of the Farm 2132, Marchand, it lays immediately north-west of the town of Marchand in the Kai! Garib Municipality, Northern Cape Province. The property is located south of the R64 (MR 359) and south of the Orange River (see Figure 2).



Figure 2: Locality

3.2. Topography, Geology and Soils

The terrain studied is on the lowlands south and south-east of the Orange River. The elevation is approximately 640 m above mean seal level. The landscape is generally flat but is dissected by numerous dendritic drainage lines over most of the site. Soils generally consist of red sandy topsoil with dense weathered granite-gneiss subsoils across the whole site. The land-type is classified as Ag2 for the whole property, described as, "Migmatite, gneiss and granite predominantly; small outcrops of ultrametamorphic rocks in places (Namaqualand Metamorphic Complex). Occasional small seif dunes; dorbank at many places; very dense subdendritic drainage and dissection pattern; occasional lime nodules and calcrete."

3.3. Climate and rainfall

The farm 2132 falls within the Nama-Karoo Biome and has an arid climate. Rainfall peaks in March (autumn) with 10 mm or more occurring in January, February, March, April and October. Augrabies, the nearest town with measured rainfall and temperatures has a mean annual rainfall of 251 mm (Figure 3), mean summer daytime temperature (October to March) of 35 °C and mean winter night temperature (April to September) of 5 °C.

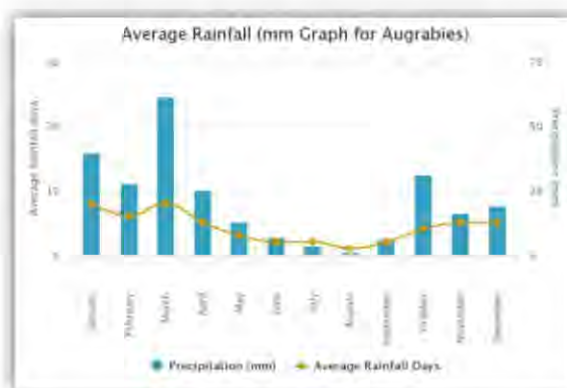


Figure 3: Average rainfall.

4. PRE- AND POST-DEVELOPMENT RUNOFF AND WATER QUALITY

4.1. Runoff

The pre-development status of the site with ephemeral streams and flow direction is shown in Figure 4. All streams would previously have flowed towards the Orange River, however was already cut off by existing agricultural development downstream.

The post-development status of the site is shown in Figure 1. The green arrows indicate flow direction of the small water courses.

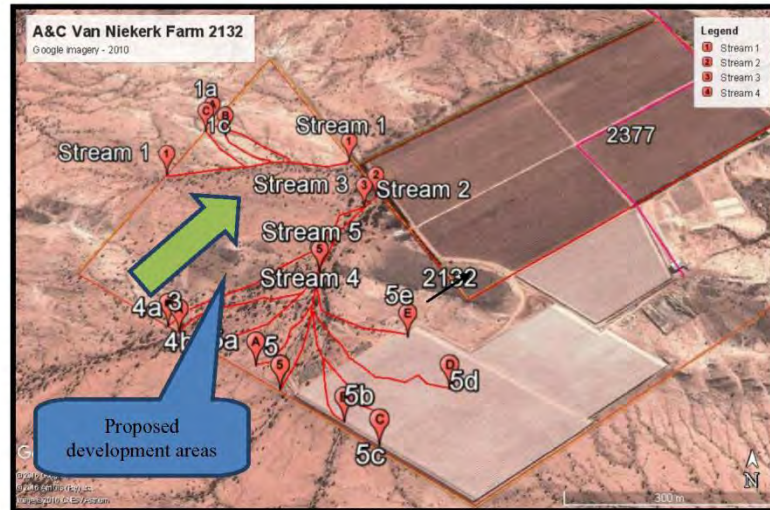


Figure 4: Catchment areas on site.

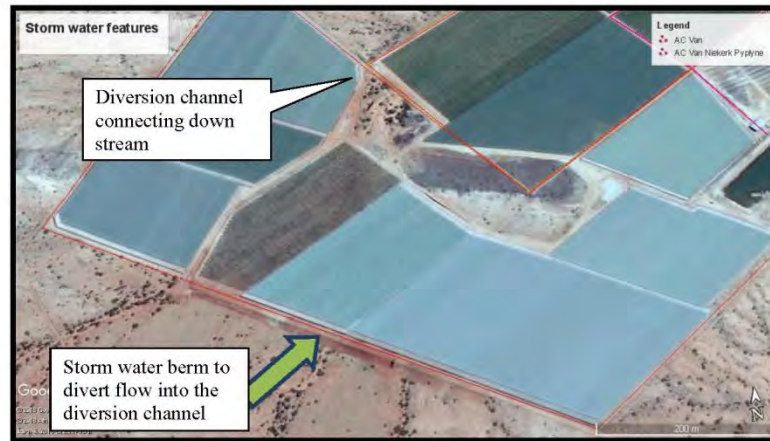


Figure 5: Storm water berm

Figures 5 clearly demonstrate that the design of the blocks planted already aimed to minimise disruption of the natural storm water flows. A storm water berm, see Figure 6, was constructed above stream to divert flow around the planted blocks towards the diversion channel. Flow entering the diversion channel will then flow downstream and naturally enter an existing stream.



Figure 6: Showing the storm water berm

It should be noted that this pump station was constructed in the 1980's. See Storm water management layout plan in Appendix A and it also shows the position of the pump that abstracts water from the Orange River, see Figure 7. Note these pumps are constructed on a section of the Orange River at the diversion channel that allows flow into the canal. Therefore the pump will have no impact on the banks of the Orange River. As shown below in Figure 11 is the abstraction pump will be above the 1:100 year floodline, note this structure was constructed in the 1980's and the applicant bought it from a previous owner. Refer to section 5 below within the design mitigation measures taken into consideration to prevent impediment of flow of the Orange River.

The pipelines running from the Orange River diversion structure along an existing small dirt road across the R64 towards the property as shown in Figure 5. Note this pipeline was constructed in the 1980's and purchased by the applicant. These pipelines run underground the method statement of how these pipes are constructed is included in Appendix C. As shown in the photo below in Figure 11, the pipe does not cross any streams. No design available as stated above this was constructed in the 1980's already. All the other pipeline crossing including the main pipeline from the Orange River to the small balancing dam was constructed underground.



Figure 7: Pump at the canal off take

4.2. Water Quality

Planting of vineyards or most other crops require proper irrigation and supply of nutrients to ensure optimum growth and production. If not managed properly the water quality of the post-development run-off could be affected by nutrients, chemicals spraying or over irrigation. In order to achieve sustainable crop production and management of the environment control elements should be implemented. The control measures to be implemented are the following:

- Care to taken to reduce nutrient application to land.
- Preventative measures to reduce possible spillage or silt accumulation in lower streams from storm water accumulated during heavy rains. Placing of bales within streams in lower areas before entering streams.

5. MITIGATION

The main issues to be addressed with mitigation measures include

1. Design
2. Irrigation
3. Nutrients (fertilisers)
4. Spraying (pesticides)
5. Storm water channels and berm

6. Pipelines
7. Erosion control
8. River pump station

5.1. Design

The design of vineyard blocks took into account the natural flows and minimise impacts on the ephemeral streams. A storm water berm, see Figure 6, was constructed above stream to divert flow around the planted blocks towards the diversion channel. Flow entering the diversion channel will then flow downstream and naturally enter an existing stream.

In this case the layout of the blocks has been done according to this mitigation measure.

5.2. Irrigation

In order to prevent over irrigation, which might lead to water flows creating erosion and or transporting nutrients to the retained ephemeral streams, good farming practises such as irrigation on demand should be utilised.

In addition, the use of mulching should be used to reduce evaporation losses. The mulch also serves to retain moisture and prevent erosion near the plants at the source of irrigation; microjet or drip.

A typical example with mulching along the planted rows and planting between rows is shown below in Figure 8.



Figure 8: Mulching and planting between rows

5.3. Nutrients

Nutrients are usually applied in the irrigation water. Every effort must be made to only apply as required by the plant and soil.

Should fertiliser powder or pellets be used and applied by hand or machine it must only be placed along the vine plants and no mess or waste between rows should be allowed.

Powder or pellet fertiliser may not be spilled between vine rows or on access roads between the vine blocks. Should this happen it must be picked up and removed immediately.

5.4. Spraying

Spraying of pesticide is normally applied by machine as a vapour. The main potential source of pollution would be from spillages. Therefore, filling of the spray machine must be done in

a safe area where pollution of the soil would not be possible. The best place would be on a concrete area where the pesticide is mixed with water.

5.5.Storm water channel and berm

As shown in the Storm water management Layout Plan, and shown in Figure 6. The berm directs flow from above the site, into the channel, that runs through the site and releases the flow back down stream into the natural stream. No dissipating structures in place, as the stream does not result in heavy flow during peak periods and the channel itself results in a reduced flow rate, so outflow does not affect the natural stream.

5.6.Pipelines

The pipelines that will be constructed to the irrigation areas will run along an existing gravel road. It should be noted that the pipeline was not constructed by the applicant. During the purchase of the property, the applicant also bought the pump station and pipeline. Care will be taken to prevent any future impediment of flow related to this pipe. Find included in Appendix C a method statement for construction of pipelines (PVC Pipes) below ground, if any future repairs should take place. The following mitigation measures should be implemented:

- Care will be taken to only repair the pipelines during the dry seasons
- As far as possible the section of the pipeline across/within the stream should be done manually, no machinery, resulting in the lowest possible impact.
- Infilling with original soils (as per method statement)
- Flow meters must be equipped on the pipelines.-protective measurement on water losses. This must be monitored on a regular basis and records kept on site.

5.7.Erosion control

Erosion would normally occur with the following:

1. Over irrigation which create water flows from the planted rows to the area between the rows and then to roads between the blocks.
 - a. For mitigation see (3) below.
2. Pipe breakages where water will wash from the plants to the area between the rows to the roads between blocks and from where water can flow towards the retained ephemeral streams – thereby causing erosion gulleys.
 - a. For mitigation see (3) below.
3. Rain events where the water will flow down slope to reach the ephemeral streams and along the way cause erosion where development took place; that is – between the planted rows and along the roads between blocks.
 - a. Mitigation include the following:
 - i. Mulching and planting/mulching between rows – see Figure 8 for typical example.
 - ii. Scarifying of soil between planted blocks and roads to create a soft/rough area to retain moisture and prevent erosion – see Figure 9.



Figure 9: Scarifying of soil

- iii. Create a buffer with natural vegetation between the planted blocks and roads as shown in Figure 10.



Figure 10: Buffer areas with natural vegetation between blocks and roads

5.8.River/canal off take pump station

The pump station was constructed in the 1980's. See Storm water management layout plan in Appendix A and it also shows the position of the pump that abstracts water from the Orange River. Note these pumps are constructed on a section of the Orange River at the diversion channel that allows flow into the canal. Therefore the pump will have no impact on the banks of the Orange River. As shown in Figure 11 is the abstraction pump will be above the 1:100 year floodline, note this structure was constructed in the 1980's and the applicant bought it from a previous owner.

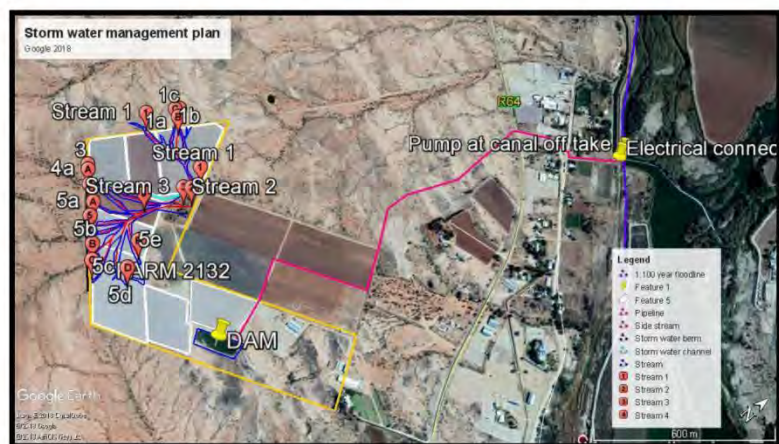


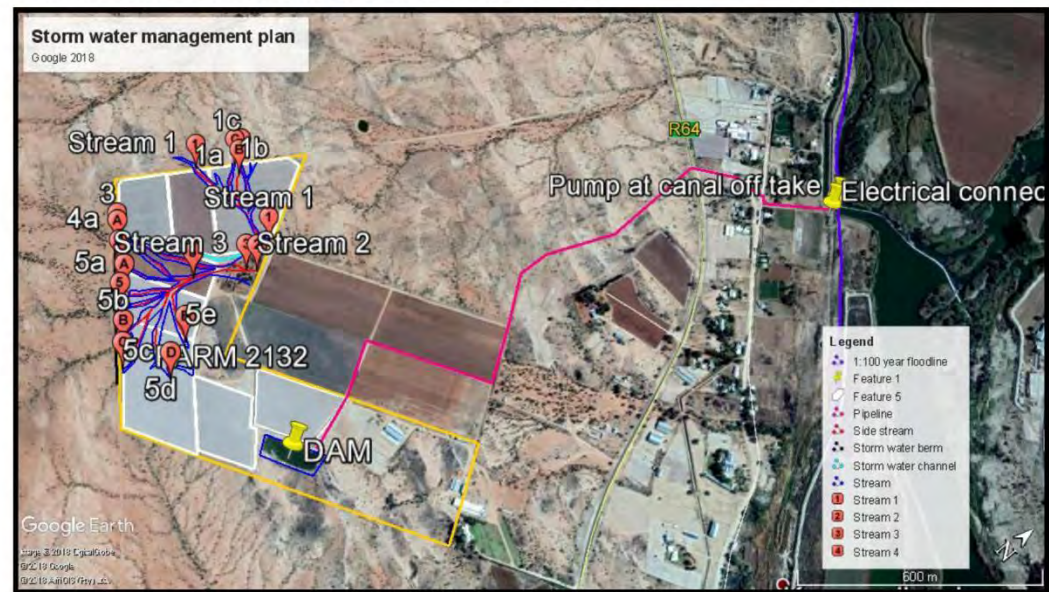
Figure 11: Storm management plan

Overall therefore, the natural approach is preferred whereby mulching, planting and natural buffer areas are used to serve as mitigation to prevent flows that could create erosion as far as possible with berms as natural buffers for flow of storm water into the storm water channel and finally flows back into the stream. This has the further advantage that it also act against spreading of nutrients and pesticides.

6. REFERENCE

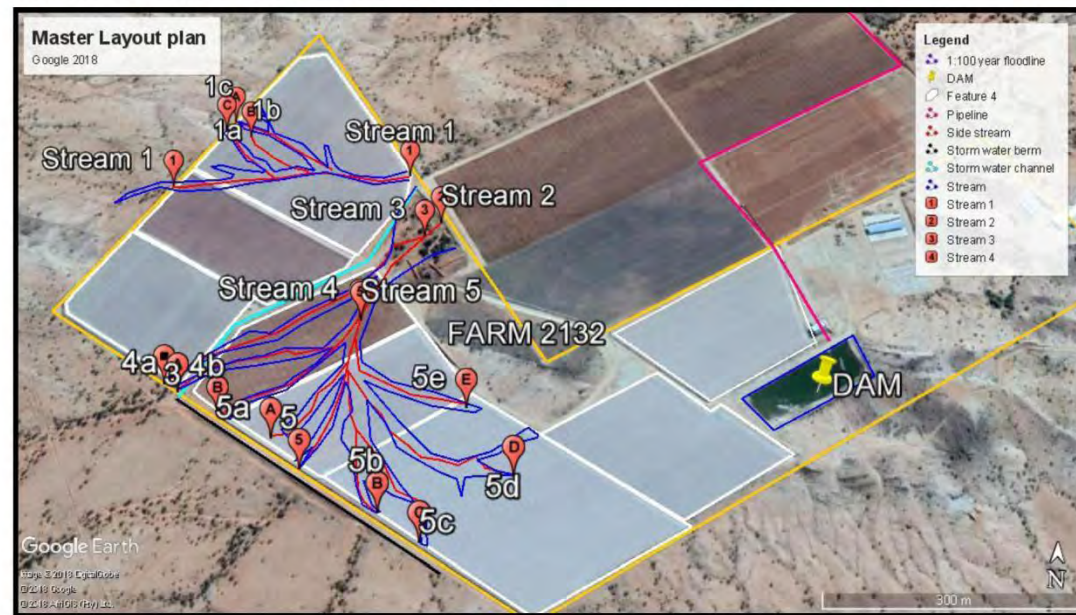
- Alternative Technology for Storm Water Management, The South African Guidelines for Sustainable Drainage Systems, Neil Armitage, Michael Vice, Lloyd Fisher-Jeffes, Kevin Winter Andrew Spiegel & Jessica Dunstan, Report to the Water Research Commission
- Land Type Survey Staff 1972—2006. Land Types of South Africa: Digital Map (1 250 000 scale) and soil inventory databases. ARC – Institute for Soil, Climate & Water, Pretoria.

7. APPENDIX A: STORM WATER MANAGEMENT LAYOUT PLAN



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8. APPENDIX B: PROPOSED DEVELOPMENT LAYOUT



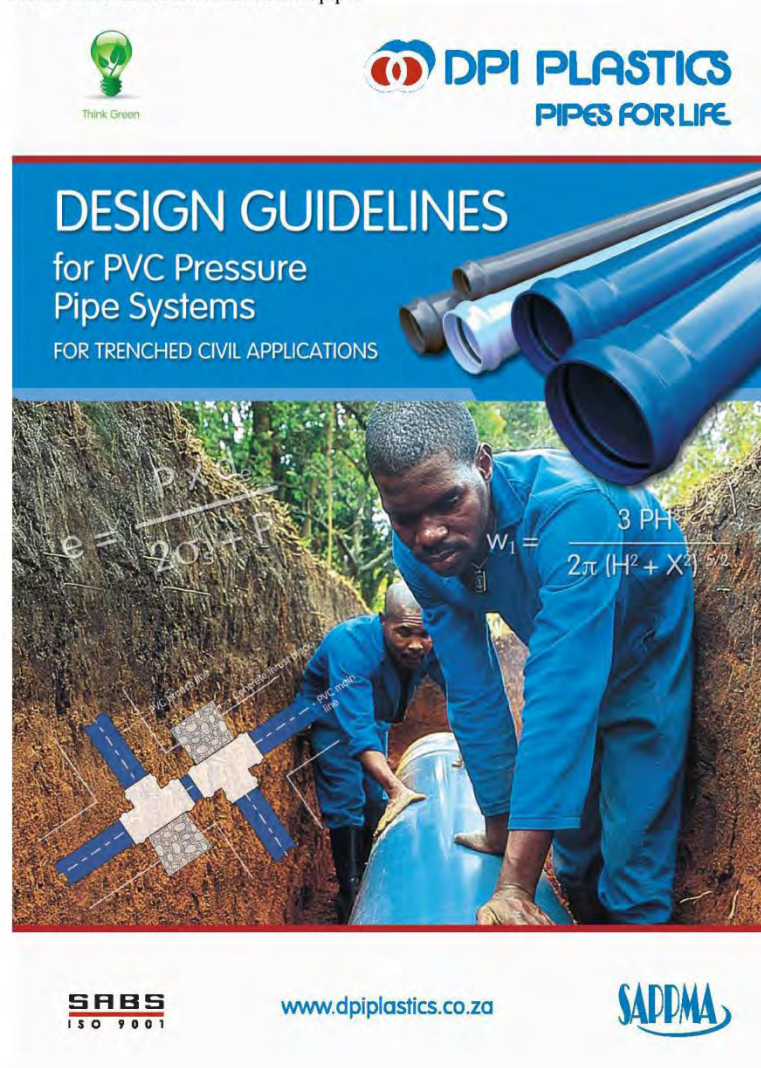
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9. APPENDIX C: PIPELINE LAYOUT AND METHOD STATEMENT



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Method Statement for construction of pipes



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6. Installation



6.1 Excavation of trenches

A recommended alignment and grade of trench is established by the engineer in charge of the project. The width of the trench should be kept to a minimum allowing just sufficient working area for jointing and initial compaction around the pipe. For most purposes a trench 300mm wider than the diameter of the pipe allows enough room for jointing. (Fig. 6.1)

It is important that the trench is not opened too far in advance of the pipe laying operation. Pipes must be backfilled immediately after laying, with the joints left open for testing.

It is recommended that the depth of cover from the top of the pipe to the ground surface be no less than 0.9 metre. (Figure 6.1).

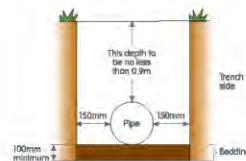


Figure 6.1

6.2 Trench preparation

The trench bed must be free from all stone or hard projections which are likely to cause damage to the pipe.

The bottom of the trench should be backfilled to a depth of 100mm, with suitable bedding material such as free drainage coarse sand, gravel, or soil of a friable nature. (Figure 6.1).

The bedding should be carefully and thoroughly compacted to produce a level uniform bed onto which the pipe is directly laid.

All levelling and side sheeting must be removed before bedding.

The size of the majority of particles in a bedding material should not exceed 20mm. The presence of some particles of up to 40mm in size is permissible, providing that the total quantity of these particles represents a very small

(20) SANS 2001 DR:1 for buried pipelines and embedded conduits.

fraction of the whole and that these particles have no sharp edges. The engineer should refer to SANS 2001 DR ⁽²⁰⁾ for specification of bedding.

6.3 Determination of soil suitability for use as bedding material

6.3.1 Take a 2kg sample of the material and pass it through a sieve with a nominal aperture size of 20mm. If more than 25g material is retained, pass the retained material through a 40mm aperture size sieve. If particles are retained and will not break up under light finger pressure, the material must be regarded as unsuitable.

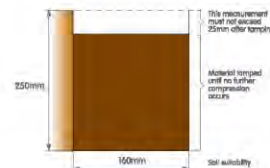


Figure 6.3

6.3.2 If the material passes the sieve test as indicated above then proceed with testing as follows: Take a further sample of approximately 50 kg in mass, heap on a clean level surface. Using a spade, divide this heap through the middle in 2 separate heaps. Sub-divide one of the heaps again and again until a sample which will fill a 2.0 litre container is obtained.

6.3.3 Cut a length of 250mm from a pipe 160mm in diameter and stand this upright on a level surface. Ensure that the moisture content of this sample is the same as that of the main body from which it was taken and then loosely fill the pipe with this material. Empty the material from the pipe into a suitable container. Using this same material charge the pipe in layers of 60mm in height, firmly tamping each layer with a metal hammer weighing between 1 and 1,25kg and having a striking face of approximately 40mm in diameter.

6.3.4 Use all material from the container which originally was loosely filled into the pipe, tamping continually until no further compression of the material occurs. Measure the distance from the top of the pipe to the surface of the tamped material. If this measurement does not exceed 25mm then the material is suitable for use. (Figure 6.3)



6.4 Pipe laying

The pipeline must be laid directly on the prepared bedding in the trench and any temporary supports, bricks or other foreign hard bodies must be removed. All spigots must be checked to ensure that they are free from burrs. Both the spigot and socket surfaces must be carefully cleaned with a dry cloth.

It is important to ensure that the rubber ring is clean and free of stones and grit.

Check the chamfer on the spigot end - a uniform chamfer to approximately 15° must occur around the external circumference of the pipe for approx. half the wall thickness.



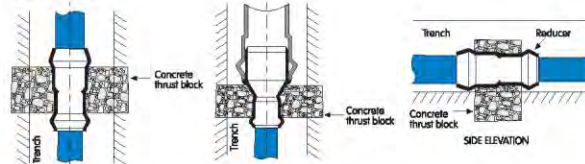
The depth of entry is marked on the spigot and must be positioned so as to be just visible outside the mouth of the socket.

6.5 Anchoring and thrust blocks

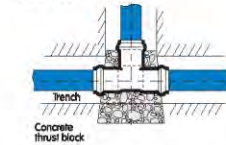
Pipelines must be anchored at all changes of direction, at all valves, all stop ends and reducers. Concrete anchor thrust blocks are most commonly used at all anchor points. Where anchor points are in direct contact with the pipe (eg. at bends) the bend should be protected by means of a layer of plastic sheeting.

An alternative anchoring method uses Durolok joints. (See Section 5.3) Install at least four lengths containing Durolok joints on either side of the fitting. Soil/pipe friction will anchor the pipeline.

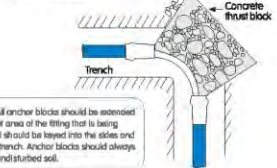
6.5.1 Reducer



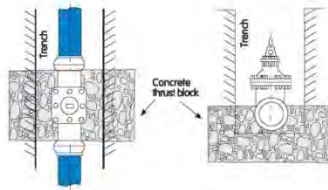
6.5.2 Tee



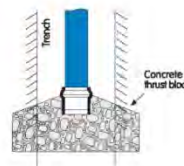
6.5.3 Bend



6.5.4 Sluice valve



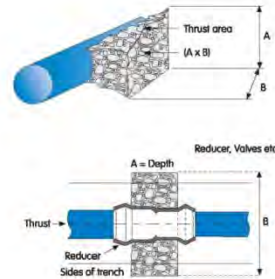
6.5.5 End cap



6.5.6 Thrust block size guide

The intention is to provide a guide to thrust block sizes as it is necessary to install thrust blocks at all changes of direction. This is to neutralise the thrust caused by the pressure of the water in the pipe. Thrust blocks must be placed between the fitting which is to be supported and the undisturbed wall of the trench, or preferably keyed into the sidewall of the trench.

The size of the thrust block depends on, pipe size, line pressure, type of fittings, degree of bend and type of soil.



| Pipe size (mm) | 90° Bends A x B (m) | 45° Bends A x B (m) | Tees A x B (m) | End caps, sluice valves, reducers A x B (m) |
|----------------|------------------------|------------------------|-------------------|--|
| 50 to 90mm | 0,2 x 0,2 | 0,2 x 0,2 | 0,25 x 0,25 | 0,25 x 0,6 |
| 110mm | 0,3 x 0,3 | 0,3 x 0,25 | 0,3 x 0,3 | 0,3 x 0,6 |
| 125 & 140mm | 0,3 x 0,45 | 0,3 x 0,3 | 0,3 x 0,4 | 0,3 x 0,65 |
| 160mm | 0,3 x 0,6 | 0,3 x 0,4 | 0,3 x 0,45 | 0,3 x 0,7 |
| 200mm | 0,45 x 0,7 | 0,3 x 0,7 | 0,45 x 0,6 | 0,45 x 0,8 |
| 250mm | 0,6 x 0,9 | 0,6 x 0,6 | 0,45 x 0,8 | 0,45 x 0,85 |
| 315mm | 0,6 x 1,3 | 0,6 x 0,9 | 0,6 x 0,9 | 0,6 x 1,0 |
| 355mm | 0,8 x 1,5 | 0,6 x 1,2 | 0,6 x 1,4 | 0,6 x 1,4 |
| 400mm | 1,0 x 1,6 | 1,0 x 1,2 | 0,8 x 1,5 | 0,8 x 1,5 |

ASSUMPTIONS: Line pressure - 90m, plus allowance for surge pressure, Soil - medium loam

NOTE: These dimensions may vary considerably with different soil types

6.6 Backfilling

It is essential that PVC pressure pipes are backfilled immediately after each pipe is installed, in order to contain the expansion and contraction to each individual pipe length where it is catered for by the socket. Trenching, bedding and backfilling to be carried out according to SANS 2001:2010 or as specified in the contract documentation.

6.6.1 Side-filling and initial backfill

Check that the depth of entry mark is just visible on all joints. Selected material (as for bedding) should be placed gently and evenly in uncompacted layers of 75mm in thickness between the sides of the trench and the pipe. (Figure 6.6.1)

Tamp each layer firmly with a hand tamper until the level of the crown of the pipe is reached, taking care to ensure that no voids are left under the pipe. All joints must be left exposed at this stage. (Figure 6.6.2). Movement of the pipe should be prevented by the simultaneous filling and even compaction of material on either side of the pipe.

Selected material should be placed in even and uncompacted layers of 150mm in thickness over the entire width of the trench to a height of 300mm above the crown of the pipe. All layers must be firmly tamped by hand. All joints are still exposed at this stage. (Figure 6.6.2)

6.6.2 Main backfill

The remainder of the trench, excluding the areas where joints must still remain exposed, should be filled in layers of 300mm thickness and excavated trench material can be used. Each layer must be firmly tamped, the first layer by hand and subsequent layers by mechanical means if so desired. (Figure 6.6.1) Refer to SANS 2001:2010.

6.7 Testing

6.7.1 Preparation of the pipeline for the field pressure test

6.7.1.1 General

The purpose of a field pressure test is to test the design of the pipeline and the quality of the workmanship applied during construction. Batch samples of the pipes are pressure tested at the factory during manufacture. Pressure testing is to be carried out according to SANS 2001:2010 or as specified in the contract documentation.

6.7.1.2 Test lengths

The test should be carried out on a short length (<500m). This is recommended as it will show up any leaking joints or pipes damaged through laying or handling. The test sections must be isolated to limit water loss in the event of a failure.

6.7.1.3 Sealing of test section

The test section should be plugged with end-caps or end-plugs fitted with inlets and outlets for filling and bleeding

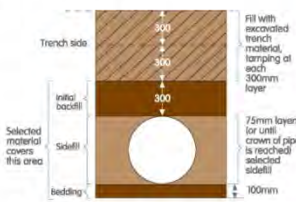


Figure 6.6.1

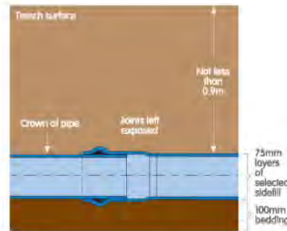


Figure 6.6.2

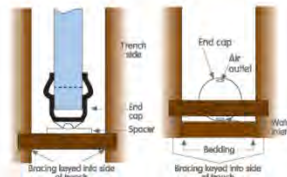


Figure 6.7

purposes. The plugged ends must be braced to prevent movement when pressure is applied to the pipeline. It is not recommended that the test be carried out against closed inline valves. (Refer figure 6.7)

6.7.1.4 Before filling

Before filling the line, check that all joints are exposed, thrust blocks are set (see Anchoring section 6.5) and, if the

pipeline goes over a rise, there is enough backfill to prevent the pipes from lifting due to thrust. Remove all air valves and open their isolating valves to release the air when filling. Close all scour valves. Make provision to dispose of the water after the test.

6.7.1.5 Filling of test section

Fill the test section from the lowest point. The filling rate must be in accordance with the recommendation in Table 6.7. Allow the line to bleed well through the isolating valves and ensure that all the air has been removed from the system before closing the bleed valves.

6.7.1.6 Before testing

Allow the pipeline to stand for 12 hours under static pressure after it has been filled. This is to allow any remaining air to reach the highest point. (Refer to Section 6.8) Inspect the line for leaks and settlement.

N.B. DON'T apply any pressure during this 12 hour period. Top up the line after 12 hours and bleed again to get rid of any remaining air. The presence of air can seriously affect the results of pressure test operations. (See section 6.8)

6.7.2 Applying pressure

Apply the required pressure slowly by means of a suitable test pump. (Recommended test is for a 1 hour period, to a hydraulic pressure not exceeding 1.25 times the stated pressure of the class of pipe under test, as per SANS 2001 DP2 requirements). Take pressure readings from the lowest point. Once the pipeline has been pressurised to the test pressure, the drop in pressure must be recorded every 15 minutes, whereafter the test pressure must be restored and the make-up water recorded. Refer to Table 6.7.3.

Table 6.7 Recommended filling rate

| Size | Litres/minute |
|------|---------------|
| 50 | 5 |
| 63 | 8 |
| 75 | 11 |
| 90 | 15 |
| 110 | 20 |
| 125 | 30 |
| 140 | 37 |
| 160 | 50 |
| 200 | 95 |
| 250 | 150 |
| 315 | 215 |
| 355 | 290 |
| 400 | 380 |

The rate of pressure drop between readings should decrease. If not, look for the leaks, yielding thrust blocks or open valves. If no cause is found, it may be due to entrapped air. Let water flow through the test section to move air to the bleeding points.

N.B. Don't test against a closed inline valve as the pressure may cause damage or it may leak.

6.7.3 Allowable leakage rates (ALR)

Seepage may occur at valve glands and areas of transition. Table 6.7.3 is an indication of allowable leakage rates.

| Pipe Outside Dia. Size (mm) | Test Pressure 750kPa (Class 6) | Test Pressure 1025kPa (Class 9) | Test Pressure 1500kPa (Class 12) | Test Pressure 2000kPa (Class 16) | Test Pressure 2500kPa (Class 20) | Test Pressure 3125kPa (Class 25) |
|-----------------------------|--------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| | ALR | ALR | ALR | ALR | ALR | ALR |
| 50 | 0.43 | 0.53 | 0.61 | 0.71 | 0.79 | 0.88 |
| 63 | 0.55 | 0.67 | 0.77 | 0.89 | 1.00 | 1.11 |
| 75 | 0.65 | 0.80 | 0.92 | 1.06 | 1.19 | 1.33 |
| 90 | 0.78 | 0.95 | 1.10 | 1.27 | 1.42 | 1.59 |
| 110 | 0.95 | 1.17 | 1.35 | 1.57 | 1.74 | 1.94 |
| 125 | 1.08 | 1.33 | 1.53 | 1.77 | 1.98 | 2.21 |
| 140 | 1.21 | 1.48 | 1.71 | 1.98 | 2.21 | 2.47 |
| 160 | 1.39 | 1.70 | 1.96 | 2.26 | 2.53 | 2.83 |
| 200 | 1.73 | 2.12 | 2.45 | 2.83 | 3.16 | 3.54 |
| 250 | 2.17 | 2.65 | 3.06 | 3.54 | 3.95 | 4.42 |
| 315 | 2.73 | 3.34 | 3.86 | 4.46 | 4.98 | 5.57 |
| 355 | 3.07 | 3.77 | 4.35 | 5.02 | 5.61 | 6.28 |
| 400 | 3.46 | 4.24 | 4.90 | 5.66 | 6.32 | 7.07 |

Table 6.7.3 Allowable Leakage Rates - ALR in Litres/Kilometre/hour (Based on test pressure = 1.25 x rated pressure of the pipe)

SANS 2001 DP2 section 7.3.3 (b) specifies the following equation to calculate allowable leakage rates in litres:

The system is isolated from the test pump for a period of one hour. The test is then deemed satisfactory if the quantity of water required to restore the pipeline to the test pressure does not exceed the amount of litres calculated by the formula:

$$0.01 \times \text{diameter of pipe in millimetres} \\ \times \text{length of test section in kilometres} \\ \times \text{square root of the test pressure in megapascals}$$

eg. A 160mm Class 12 pipeline 1000m in length test pressure 1500 kPa. Allowable amount of water required to restore system to test pressure after 1 hour

$$= 0.01 \times 160 \times 1 \times \sqrt{1.5} \\ = 1.96 \text{ litres}$$

For pipelines shorter than 30m in length, the maximum pressure loss after 1 hour test period shall be 50 kPa.

6.7.4 Completion of test

After a satisfactory test period of a least one hour, release the pressure and, if required, open bleed and drain points to drain the water.

6.8 The effect of entrapped air on a pressurised pipeline⁽¹⁾

The effect entrapped air has on a pipeline is difficult to calculate or even evaluate. Independent international and local studies have shown that pressure surges in excess of 15 times the actual applied internal pressure can occur if entrapped air is released in an uncontrolled manner from a pressurised pipeline.

6.8.1 General

Entrapped air in a pipeline will have a different influence under the following conditions:

- Under static conditions, i.e. when no flow takes place and the pipe is only subjected to static pressure;
- under operational conditions, i.e. when flow takes place in the pipeline; and
- when waterhammer occurs for whatever reason.

During the design, filling, testing, commissioning and operation of any pipeline it is essential that the necessary precautions be taken to try and minimise the volume of air present in the system. Since it is not practically possible to totally prevent air from entering, it is necessary that provision be made to remove the remaining air from the system, thereby reducing the potential negative effect thereof.

6.8.2 The effect of entrapped air under static conditions

Joints are absolutely watertight but not necessarily airtight, especially when subjected to low and high pressures.

Should an air pocket be present in a pipeline when under static pressure, the pressure in that air pocket is equal to that in the water, say X MPa. Contrary to water, air is compressible and, under a pressure of X MPa its volume will be X times smaller than its initial uncompressed volume. If at a certain instant one or more couplings release air under the applied pressure, the compressed air escapes almost instantaneously and the surrounding water rushes rapidly into the created void, unable to escape through the coupling it results in waterhammer in the "static" pipe.

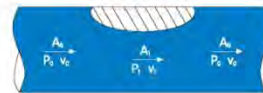
Experiments have shown that these openings through which air is able to escape are microscopically small and that a single drop of water completely seals such "openings".

6.8.3 The effect of entrapped air under operational conditions

When an air pocket of considerable size occupies a certain part of a pipeline in which water is flowing, surge pressures may be created by the air pocket itself without it actually escaping from the system.

The mechanics of this phenomena can best be explained by means of the illustration in Figure 6.8.

Figure 6.8 Pressure variations caused by entrapped air in a pressure pipeline



The discharge through the pipeline is equal through cross-sections A2 and A3. The flow velocity v3 is thus greater than v2. When the equation of Bernoulli is applied it follows that pressure P3 must be smaller than pressure P2.

The amount of dissolved air in water is a function of both the temperature and pressure, and when the temperature is constant and the pressure decreases, as in the vicinity of cross-section A3, more air will be liberated from the water and the size of the airpocket will increase. This will

⁽¹⁾ Swetite Hydraulics Design Technical Document – 7A.2/92

result in further increase in velocity v and decrease in pressure P . The airpocket may eventually get so big that it will occupy the whole cross-section of the pipeline for a short period of time, resulting in a momentary interruption in flow and collision of the two water columns causing a surge wave of significant magnitude.

6.8.4 Influence of entrapped air on the magnitude of surge caused by waterhammer

Depending on the quantity of air present and the location thereof, the magnitude of the surge pressure caused by waterhammer can either be aggravated or reduced. It is thus important to try and minimise the quantity of air present in the system, and to make provision for the orderly release of remaining air.

6.8.5 Removal of entrapped air from a pipeline

There are two ways in which air can be removed from a pipeline:

- Hydraulically; and
- Mechanically.

Both methods however only operate effectively when flow takes place in the pipeline, and a combination of the two methods is normally employed in practice, i.e. sufficiently high flow velocities as well as correct sizes and effective air release valves are correctly positioned and installed.

6.8.5.1 Hydraulic removal of air

In order to remove air hydraulically, a certain minimum flow velocity, corresponding to the slope and diameter of the pipeline, is necessary to move the air to the air valves and/or outlet of the pipeline.

The minimum flow velocity necessary to move entrapped air along the pipeline can be calculated with either the formula of Kaliske and Bliss or Wisner. Both have been derived mathematically, but in addition to this, Wisner's equation was modified through physical observations on experiments conducted on the drag forces on air bubbles. For this reason the Wisner equation gives a higher minimum flow velocity, and is considered to be more accurate and therefore more commonly used.

These equations should be applied between air valves on the flattest sections to determine whether entrapped air will in fact be transported to the air valves thus enabling it to escape.

Wisner

$$v \geq (0.25 \sqrt{\sin \theta} + 0.825) \sqrt{gd}$$

Kaliske and Bliss

$$v \geq \sqrt{111.73gd \tan \theta}$$

where: v = minimum flow velocity required to transport air along pipe (m/s)

θ = gradient of section of pipeline under consideration (degrees)

g = gravity acceleration (m/s²)

d = internal diameter of pipe (m)

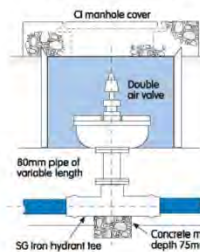
6.8.5.2 Mechanical removal of air

Entrapped air must be set free from pipelines by means of strategically positioned air valves. When designing, filling, testing, commissioning and operating a pipeline the following must be kept in mind:

- Air valves must be positioned not only on local high points, but also at regular intervals along even or flat sections;
- air valves must not be positioned above the hydraulic gradient as air will then be sucked in;
- air valves do not operate under static conditions;
- air valves do not function properly when filling a pipeline;
- It is recommended that all air valves be installed on collector pipes of diameter of no less than that of the pipeline, extending at least half the pipe diameter above the pipe crown;
- In order to prevent blowshut, the flow velocity of air through an air valve must not be more than 30m/s (consult valve manufacturer for accurate requirements); and
- air valves must be checked and serviced regularly.

More specific information on air valves should be obtained from the manufacturers and relevant literature.

Typical air valve installation



6.9 Backfilling at joints

After completion of acceptance testing, the parts of the trench left unutilised for this testing must be backfilled in exactly the same way as that used for the rest of the trench. (Figure 6.9)



Figure 6.9

6.10 Repair

50 mm or PVC repair couplings (See 3.4) are designed to slide over a damaged pipe in order to effect a repair. The 50 mm couplings are rated to Class Z5 and are easily installed on the smooth constant outside diameter of the PVC pressure pipe. The following figures indicate the method of use.

6.10.1 Damaged pipe



6.10.2 Remove damaged section



6.10.3 Install repair coupling

After chamfering ends with file, measure half of repair coupling length and mark each pipe end as shown. Using lubricant liberally, install repair couplings, one on each exposed pipe end.



6.10.4 Insert new pipe section

Cut and chamfer new section of pipe and make the same marks equal to approximately half the coupling length as shown. Insert into the gap.



6.10.5 Secure couplings in place

Tap couplings into place using rubber mallet or hammer and drift.



6.10.6 Backfill after the system has been put under pressure

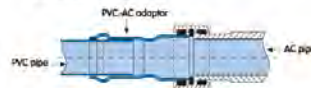
6.11 Typical installations

6.11.1 Joining to dissimilar pipes

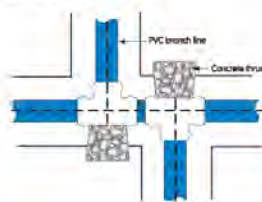
1) Steel pipes



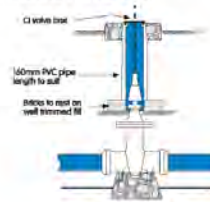
2) Asbestos Cement pipes



6.11.2 Cross Branching

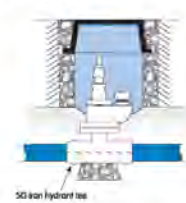


6.11.3 Sluice or gate valves

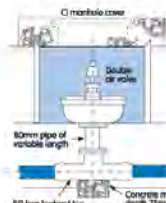


6.11.4 Fire hydrants and double air valves

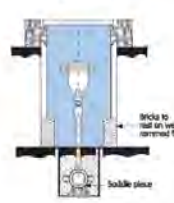
1) Fire hydrant



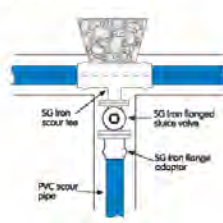
2) CI double air valve



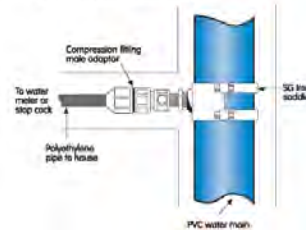
3) Single air valve



6.11.5 Scour valves



6.11.6 House connections



APPENDIX H3: WATER USE LICENSE APPLICATION

Letter indicating status of WULA submitted.



PIETER BADENHORST PROFESSIONAL SERVICES CC

PO Box 1058
Wellington, 7654

DATE: 05 April 2018

REF: DWS Ref: 27/2/1

Dept. Water Affairs and Sanitation: Upington Office
Private Bag X5912
Upington
8800

Att: Jolene van Wyk-Towell

SUBMITTED VIA EMAIL AND HARD COPY VIA REGISTERED POST

WATER USE LICENSE APPLICATION - REQUEST FOR EXTENSION - FARM 2131, MARCHAND

Applicant - A&C van Niekerk

This letter serves as a request for extension of the existing Water Use License Application's (WULA) timeframe with six months from the date of this letter. The reasons for requesting this extension are provided below:

1. The initial process commenced with an application for the transfer of water – Section 21a – from the Farm Orange Fall nr 16 (ptn 81 (a ptn of ptn 13) to the Farm 2132, Marchand. The application was submitted on the 10 March 2016.
2. This application was withdrawn after various correspondences via email with the Department of Water and Sanitation (DWS). The application was withdrawn mainly for the adding of the section 21 c and i activities. DWS also requested that application be made for a temporary transfer of the water use and further to submit a Notice of Intent for the amended application. These documents were submitted on the 08 February 2017.
3. The new application that included the additional information with regards to the Section 21 c and i and other small additions were submitted on the 24 February 2017.
4. On the 13 December 2017 DWS indicated that the application was with DWS Pretoria's 21 c and i Unit and that they requested a site visit for this application.
5. The site visit was held on the 03 February 2018 at the application property. During the site visit no apparent issues, except for a stormwater management plan, were raised and the DWS Pretoria section 21 c and i Unit indicated that they will send comments as soon as possible. During the meeting after the site visits it was agreed that comments could be expected within about two weeks from the date of the site visit.
6. The correspondence from DWS Pretoria 21 c and i Unit was eventually received on the 20 March 2018. The letter included that the following information be supplied (our comment in brackets):
 - Master layout plan showing the 1:100 floodline plan for the Orange River (the application is not near the Orange River and the request is therefore not applicable).
 - Storm water management plan
 - Method statements for infrastructure
 - An Environmental Impact assessment for the stream crossings.
7. The abovementioned information can only be supplied, at the fastest, within six months as the EIA process will be a Section 24G Application that will take a minimum of six months to receive a decision.
8. It must be pointed out that should the 21c and i Unit have assessed the submitted application before the site visit and thus raised these issues then, especially the requirement for an EIA, the work could already have commenced after the site visit.

Trust you find this in order.

Should you have any queries please do not hesitate to contact me.

Yours sincerely

Elanie Kühn
Pieter Badenhorst Professional Services
Environmental Assessment Practitioner
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