



## water affairs

Department:  
Water Affairs  
**REPUBLIC OF SOUTH AFRICA**

Private Bag X313, Pretoria, 0001, Sedibeng Building, 185 Schoeman Street, Pretoria, Tel: (012) 336-7500 Fax: (012) 323-4472 / (012) 326-2715

### LICENCE IN TERMS OF CHAPTER 4 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)

I, **Deborah Gabaakelwe Mochotlhi**, in my capacity as Project Manager: Letsema in the Department of Water Affairs and acting under authority of the powers delegated to me by the Minister of Water and Environmental Affairs, hereby authorize the following water uses in respect of this licence.

SIGNED: .....

DATE: 12/02/2011 .....

LICENCE NO: 03/A23A/356  
REF NO: 16/2/7/A230/N46

1. **Water User**  
**South African Rail Commuter Corporation**  
Private Bag X101  
Braamfontein  
2017
2. **Water Uses:**
  - 2.1 Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse, subject to the conditions set out in Appendices I and II.
  - 2.2 Section 21(i) of the Act: Altering the bed, banks course or characteristics of a watercourse, subject to the conditions set out in Appendices I and II.
3. **Property on which the water uses will be exercised**
  - 3.1 Portion 17 of the farm Hatherly 331 JR
4. **Registered owner of the Property**
  - 4.1 South African Rail Commuter Corporation
5. **Licence and Review Period**
  - 5.1 This licence is valid for a period of twenty (20) years from the date of issuance and it will be reviewed every five (5) years.

**B 0953**

**6. Definitions**

"Any word or term defined under the Act shall have the same meaning as defined in the Act, unless otherwise specifically stated."

"The Regional Head" means the Regional Chief Director: North West Region, Department of Water Affairs, Private Bag X 5; Mmabatho, 2735

"Report" refers to the following documentations and communications (emails, letters, verbal, etc) related thereto.

- a) Water Use licence Application submitted by South African Rail Commuter Corporation dated May 2009;
- b) Ecological assessment compiled by BKS engineering and Management dated September 2010;
- c) Environmental Impact Assessment compiled by BKS engineering and Management dated April 2009;
- d) Environmental Management Plan compiled by BKS engineering and Management dated April 2009;
- e) Environmental Authorisation dated 15 June 2009;

"Extent of the watercourse" means within the 1:100 year floodline or delineated riparian habitat whichever is the greatest or within 500 m radius of the boundary of a wetland.

**7. Description of the activity**

South African Rail Commuter Corporations (SARCC) submitted a water use licence application to the Department of Water Affairs (DWA) in May 2009 for Section 21(c) and (i) water use associated with the doubling of the railway line between Eerste Fabrieke and Greenview stations. The proposed water use will take place on portion 17 of the farm Hatherly 331 JR in Mamelodi. The water use will impact the Pienaars River, located in the A23A quaternary catchment in the Crocodile West Marico Water Management Area.

## APPENDIX I GENERAL CONDITIONS FOR THE LICENCE

1. This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).
2. The responsibility for complying with the provisions of the licence is vested in the licensee and not any other person or body.
3. The licensee must immediately inform the Regional Head of any change of name, address, premises and/or legal status.
4. If the property in respect of which this licence is issued is subdivided or consolidated, the licensee must provide full details of all changes in respect of the properties to the Regional Head of the Department within 60 days of the said change taking place.
5. If a water user association is established in the area to manage the resource, membership of the licensee to this association is compulsory.
6. The licensee shall be responsible for any water use charges or levies imposed by a responsible authority.
7. While effect must be given to the Reserve as determined in terms of the Act, where a desktop determination of the Reserve has been used in issuance of a licence, when a comprehensive determination of the Reserve has finally been made; it shall be given effect to.
8. When compulsory licensing is implemented for the water resource in respect of which this licence was issued, the water use authorized in this licence could be subject to appropriate reduction.
9. The licence shall not be construed as exempting the licensee from compliance with the provisions any other applicable Act, Ordinance, Regulation or By-law.
10. The licence and amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.
11. The licensee shall conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Regional Head within one month of the finalisation of the audit.
12. The licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this license and a report on the audit shall be submitted to the Regional Head within one month of finalisation of the report.
13. Flow metering, recording and integrating devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates shall be available for inspection by the Regional Head or his representative upon request.
14. Any incident that causes or may cause water pollution shall be reported to the Regional Head or his/her designated representative within 24 hours.

## APPENDIX II

**Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse**  
**Section 21(i) of the Act: Altering the bed, banks, course or characteristics of a watercourse.**

### 1. GENERAL

- 1.1 This licence authorises Section 21 (c) and (i) water use activities as indicated in the water use licence application reports submitted to the Department for the doubling of a railway line between Eerste Fabrieke and Green View Stations.

**Table 1: Water use activities**

Activity	Description	Watercourse	Coordinates
Doubling of railway line between Eerste and Green View Stations.	widening of the existing bridge and culvert from 5.4 to 10.8m,	Pienaars river	25°43'30.4" S 28°22'48.4" E

- 1.2 The licensee must carry out and complete all the activities listed under condition 1.1 to the following Reports:
- 1.2.1. WULA submitted by South African Rail Commuter Corporation application document dated Dated May 2009;
- 1.2.2. Ecological assessment compiled by BKS engineering and Management dated September 2010;
- 1.2.3. Environmental Impact Assessment compiled by BKS engineering and Management dated April 2009;
- 1.2.4. Environmental Management Plan compiled by BKS engineering and Management dated April 2009;
- 1.2.5. Environmental Authorisation dated 15 June 2009;
- 1.2.6. Conditions of this licence; and
- 1.2.7. Any other written direction issued by the Regional Head in relation to this licence.
- 1.3. No activity may take place within the 1:100 year flood line or the riparian habitat whichever is the greatest, or within 100m from a borehole or well or within 500 m radius of the boundary of a wetland, unless authorised by this license.
- 1.4. The conditions of the authorisation must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of these activities and the licensee must take such measures that are necessary to bind such persons to the conditions of this licence.
- 1.5. A copy of the water use license must be on site at all times.

- 1.6. A suitably qualified person/s, appointed by the licensee, and approved in writing by the Regional Head must be responsible for ensuring that the activities are undertaken in compliance with the specifications as set out in reports submitted to the Department or the Responsible Authority and the conditions of this licence.

## 2. FURTHER STUDIES AND INFORMATION REQUIREMENTS

- 2.1 For the water use activities set out in Table 1:
- 2.1.1. Work method statements, site plan/s and final detailed design drawings for the construction of all infrastructure impeding and/or diverting flow of watercourses as well as alterations to watercourses on the property/ies must be submitted to the Regional Head: North West for written approval and implementation as directed before construction. The foregoing must indicate the regulated activities, marking the limits of disturbance in relation to the impacted watercourses; morphology of the watercourses; site specific impacts; and environmental management, particularly erosion and sediment, controls and measures;
- 2.1.2. No fundamental alterations of the work method statements, site plan/s and drawings are allowed, unless a modification is requested and granted by the Regional Head: North West in writing; and
- 2.1.3. No site activities must occur beyond the proposed site location of the erosion and sedimentation controls and marked limits of disturbance.
- 2.2 An EMP for the decommissioning of any of the water use activities listed in Table 1 must be submitted three (3) years before commencing with closure to the Regional Head: North West for written approval.
- 2.3. For all the activities listed under condition 1.1, Table 1, "as-built" plans and engineering drawings prepared by a registered professional engineer, must be submitted to the Regional Head: North West within six (6) months of completion. These plans and drawings must indicate the watercourse including wetland boundaries and layout and structure location/s of all infrastructure impeding and/or diverting flow of watercourses as well as alternations to watercourses on the property/ies.
- 2.4 The licensee must amend the Environmental Management Plan (EMP) by considering the possible impacts associated with the characteristics of a watercourse and their mitigatory measures and submit the Amended EMP to the Regional Chief Director: North West for approval before the commencement of the activity.
- 2.5 The licensee must prepare Rehabilitation plan and submit it to the Regional Head: North West for approval in consultation with Deputy Director: Environment and Recreation before the commencement of any activities.

## 3. PROTECTIVE MEASURES

### 3.1. Storm Water Management

- 3.1.1. Storm water management practices must be constructed, operated and maintained in a sustainable manner throughout the project and for the water use activities set out in condition 1.1 and must include but are not limited to the following:
- 3.1.1.1. Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the watercourse/s;

- 3.1.1.2. Storm water must be diverted from construction works and roads and must be managed in such a manner as to disperse runoff and to prevent the concentration of storm water flow;
- 3.1.1.3. The velocity of storm water discharges must be attenuated and the banks of the watercourses protected; and
- 3.1.1.4. Storm water leaving the licensee's premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.
- 3.1.1.5. Increased runoff due to vegetation clearance and or/soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.

### **3.2 Structures**

- 3.2.1 The necessary erosion prevention measures must be employed to ensure the sustainability of all structures.
- 3.2.2 Structures must not be damaged by floods exceeding the magnitude of floods occurring on average once in every 100 years.
- 3.2.3 Structures must be non-erosive, structurally stable and must not induce any flooding or safety hazard. Temporary crossings must be inspected regularly for accumulation of debris, blockage, erosion of abutments and overflow areas, remove debris and repair and reinforce damage areas immediately.
- 3.2.4 The construction camp, plant and material stockpiles must be located outside the extent of the watercourse/s and must be recovered and removed within a period of 1(one) month after completion of activity.

### **3.3 Water Use Activities in relation to the Characteristics of the Watercourses**

#### **3.3.1 Water Quality**

- 3.3.1.1. The licensee must ensure that the quality of the water to downstream water users does not decrease because of the water use activities listed under condition 1.1.
- 3.3.1.2. In-stream water quality must be analysed on a two-weekly basis during construction otherwise monthly at monitoring points both upstream and downstream of the activities.
- 3.3.1.3. Monitoring must be undertaken as set out in condition 4.
- 3.3.1.4. Activities that lead to elevated levels of turbidity of any watercourse must be minimised. Activities must be scheduled to take place during the dry seasons when flows are lowest where reasonably possible. If this is not possible and if management measures have not been provided for activities in a wet season in the reports submitted to the Department or the Responsible Authority, the licensee must submit such to the Regional Head for written approval before these activities commence. Natural in-stream hydrology is to be used to determine which months constitute the low flow months.
- 3.3.1.5. Pollution of and disposal/spillage of any material into the watercourse must be prevented, reduced, or otherwise remediated through proper operation, maintenance and effective protective measures.
- 3.3.1.6. Vehicles and other machinery must be serviced well above the 1:100 year flood-line or outer edge of the riparian habitat whichever is the greatest. Oils and other potential



pollutants must be disposed off at an appropriate licensed site, with the necessary agreement from the owner of such a site.

- 3.3.1.7. Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance.
- 3.3.1.8. No material with pollution generating potential will be used in any of the operation and maintenance activities.
- 3.3.1.9. All reagent storage tanks and reaction units must be supplied with a bunded area built to the capacity of the facility and provided with sumps and pumps return the spilled material back into the system. The system must be maintained in a state of good repair and standby pumps must be provided.

### **3.3.2 Flow**

- 3.3.2.1. The licensee must ensure that the overall magnitude and frequency of flow in the watercourse/s does not decrease, other than for natural evaporative losses and authorised attenuation volumes.
- 3.3.2.2. Flows must be conveyed in open vegetated channels as opposed to point sources e.g. pipes and where flows are discharged onto land, flows should be diffused to mimic the existing conditions. The systems need to be profiled in such a way so as to reduce side wall erosion and flow velocities in unprotected systems should be less than 1.2m/sec.
- 3.3.2.3. The proposed construction may not restrict river flows by reducing the overall river width or obstructing river flow.

### **3.3.3. Riparian Habitat (Vegetation and Morphology)**

- 3.3.3.1. Activities must start up-stream and proceed into a down-stream direction, so that the recovery processes can start immediately, without further disturbance from upstream works.
- 3.3.3.2. The proposed construction should not increase bank instability and the erosive potential of a stream. Steps should be taken to ensure that the channel is able to withstand the most probable maximum flood events without undue bank instability or erosion.
- 3.3.3.3. Operation and storage of equipment within the riparian habitat must be limited as far as possible.
- 3.3.3.4. Activities must not occur in sensitive riffle habitats or where there are rocks outcrops.
- 3.3.3.5. Indigenous riparian vegetation, including dead trees, outside the limits of disturbance indicated in the site plans referred to in condition 2, may not be removed from the area.
- 3.3.3.6. Removal of riparian forest must be authorised in terms of the National Forest Act (Act No. 84 of 1998).
- 3.3.3.7. The vegetation of the surrounding catchment on the property must also be managed to prevent erosion and siltation of the watercourse.
- 3.3.3.8. Alien and invader vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be eradicated or controlled, using standard methods approved by the Department.

- 3.3.3.9. Existing vegetation composition in riparian zones by maintaining the natural variability in flow fluctuations must be maintained.
- 3.3.3.10. Recruitment and maintaining of a range of size classes of dominant riparian species in perennial channels must be stimulated.
- 3.3.3.11. Encroachment of additional exotic species and terrestrial species in riparian zones must be discouraged.
- 3.3.3.12. Accumulation of woody debris on terraces by periodic flooding must be discouraged.
- 3.3.3.13. Existing flood terraces and deposition of sediments on these terraces to ensure optimum growth, spread and recruitment of these species must be maintained.
- 3.3.3.14. All reasonable steps must be taken to minimise noise and mechanical vibrations in the vicinity of the watercourses.
- 3.3.3.15. The necessary erosion prevention mechanisms must be employed to ensure the sustainability of all structures and activities and to prevent in stream sedimentation.
- 3.3.3.16. Soils that have become compacted through the water use activities must be loosened to an appropriate depth to allow seed germination.
- 3.3.3.17. Slope/bank stabilisation measures must be implemented.
- 3.3.3.18. Stockpiling of removed soil and material must be stored outside of the 1:100 floodline or riparian habitat, whichever is the greater, to prevent being washed into the watercourse and must be covered to prevent wind and rain erosion.
- 3.3.3.19. The indiscriminate use of machinery within the in-stream and riparian habitat may lead to compaction of soils and vegetation and must therefore be strictly controlled.
- 3.3.3.20. The overall macro-channel structures and mosaic of cobbles and gravels must be maintained by ensuring a balance (equilibrium) between sediment deposition and sediment conveyance maintained. A natural flooding and sedimentation regime must thus be ensured as far as reasonably possible.
- 3.3.3.21. Operation and storage of equipment within the riparian zone must be limited as far as possible.
- 3.3.3.22. All activities within the riparian zone should be restricted as far as possible.

#### **3.3.4. Biota**

- 3.3.4.1. The licensee must take all reasonable steps to allow movement of aquatic species, including migratory species.
- 3.3.4.2. All reasonable steps must be taken not to disturb the breeding, nesting and/or feeding habitats and natural movement patterns of aquatic biota.
- 3.3.4.3. The current level of diversity of biotopes and communities of animals, plants and microorganisms must be maintained.

#### **3.4. Other Water Users**



- 3.4.1. The licensee must attempt to prevent adverse affects on other water users. All complaints must be investigated by a suitably qualified person and if investigations prove that the licensee has impaired the rights of other water users, the licensee must initiate suitable compensative measures.

### **3.5. Rehabilitation and Management**

- 3.5.1. The licensee must embark on a systematic long-term rehabilitation programme to restore the watercourse/s to environmentally acceptable and sustainable conditions after completion of the activities, which must include, but not be limited to the rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem as stated per section 2.5 in this licence.
- 3.5.2. A photographic record must be kept as follows and submitted with reports as set out in Condition 4:
- 3.5.2.1 Dated photographs of all the sites to be impacted before construction commences;
- 3.5.2.2 Dated photographs of all the sites during construction on a monthly basis; and
- 3.5.2.3 Dated photographs of all the sites after completion of construction, seasonally.
- 3.5.3. All disturbed areas must be re-vegetated with indigenous vegetation suitable to the area in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.
- 3.5.4. An active campaign for controlling invasive species must be implemented within disturbed zones to ensure that it does not become a conduit for the propagation and spread of invasive exotic plants.
- 3.5.5. Plants that are indigenous to the immediate surroundings must be used for rehabilitation.

## **4. MONITORING AND REPORTING**

- 4.1. The Regional Head must be notified in writing one week prior to commencement of the licensed activity/ies and again upon completion of the activity/ies.
- 4.2. A dedicated, comprehensive and appropriate environmental (including bio-monitoring) assessment and monitoring programme to determine the impact, change, deterioration and improvement of the aquatic system associated with the activities listed under condition 1.1 as well as compliance with the water use license conditions must be developed and submitted to the Regional Head for written approval before commencement and must subsequently be implemented as directed.
- 4.3. Six (6) monthly monitoring reports must be submitted to the Regional Head
- 4.4. A qualified environmental management specialist will be retained by the licensee who will give effect to the various license conditions and to ensure compliance thereof pertaining to all activities impeding and/or diverting flow of watercourses as well as alterations to watercourses on the property/ies as set out in condition 1.1.
- 4.5. The licensee must conduct on a yearly basis an internal audit on compliance with the conditions this license. A report on the audit must be submitted to the Regional Head

within one (1) month of the finalisation of the audit. A qualified independent auditor must undertake this audit.

- 4.6. The audit reports must include but are not limited to:
- 4.6.1. Reporting in respect of the monitoring programme referred to in condition 4.2;
  - 4.6.2. A record of implementation of all mitigation measures including a record of corrective actions and
  - 4.6.3. Compensation measures for damage where mitigation measures have failed to adequately protect the in-stream and riparian habitat or any other characteristic of the watercourses.
- 4.7. The licensee may apply after a period of two (2) years after completion of the crossing in writing to the Regional Head for alternative reporting arrangements for which written approval must be provided in consultation with the Deputy Director: Environment and Recreation.

**END OF LICENCE**