



**environment  
& tourism**

Department:  
Environmental Affairs and Tourism  
REPUBLIC OF SOUTH AFRICA

DATE RECEIVED

22. 05. 2009

BY CHIEF EXECUTIVE'S  
OFFICE

Private Bag X 447, PRETORIA, 0001- Fedsure Building, 315 Pretorius Street, PRETORIA  
Tel (012) 310 3911, Fax (012) 322 2682

Ref: 12/9/11/P108

Enquiries: Ms K. Ntoampe

Tel. 012 310 3920 Fax: 12 310 3753 Email Address: [knatoampe@deat.gov.za](mailto:knatoampe@deat.gov.za)

P.O Box 1127  
Johannesburg  
2000

Fax:011 688 1400

Dear permit holder

Please find hereto attached a permit /permit amendment issued in terms of S.20 of the ECA (ACT 73 OF 1989) (as amended)

Please be advised that future permit amendment applications should be addressed to:

The Director: Authorisations and Waste Disposal Management  
Department of Environmental Affairs and Tourism  
Private Bag X447  
Pretoria  
0001

This is also to advise you that applications for authorization of permit amendment, exemptions, waste delisting, emergency and or once off authorizations will be processed only if the Department of Environmental Affairs and Tourism (DEAT) is in receipt of the latest external audit report, annexure IV of the permit or any other documents specified in the permit/ authorisation that needs to be submitted to DEAT/DWAF annually or at frequencies stipulated in the permit.

Furthermore, please note that due to the permitting process being handled by two departments, the **minimum** time for processing any application regardless of details required is four and half months. You are therefore advised to apply well in advance.

Yours Sincerely

  
Ms Nosipho Ngcaba  
Director-General

Letter signed by Ms Kelello Ntoampe

Designation: Director: Authorisations and Waste Disposal Management

Date: 13 MAY 2009.



## environment & tourism

Department:  
Environmental Affairs and Tourism  
REPUBLIC OF SOUTH AFRICA

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**PERMIT NUMBER:** 12/9/11/P108

**CLASS:** G: S: B+

**WASTE DISPOSAL SITE:** RAND WATER ZUIKERBOSCH WASTE DIPOSAL SITE

**LOCATION:** FARM KLIPPLAATDRIFT 601 IQ, PORTION 97,  
VANDARBIJLPARK, GAUTENG PROVINCE

**PERMIT HOLDER:** RAND WATER BOARD

**ADDRESS:** P.O BOX 1127, JOHANNESBURG, 2000

**PERMIT IN TERMS OF SECTION 20 OF THE ENVIRONMENT CONSERVATION ACT, 1989 (ACT 73 OF 1989) (AS AMENDED)**

I, Joanne Yawitch, in my capacity as Deputy Director General: Environmental Quality and Protection of the National Department of Environmental Affairs and Tourism (hereinafter referred to as "the Department"), in terms of section 20(1) of the Environment Conservation Act (ECA), 1989 (Act 73 of 1989) (as amended), hereby authorise the abovementioned Permit Holder to operate the Rand Water (Zuikerbosch) Waste Disposal Site for closure subject to the conditions specified herein.

Muhasho wa zwa Vhupo na Vhuendelamashango • LiTiko le Tesimondzawo netekuVakasha • Isebe lemiCimbi yokusiNgqongileyo noKhenketho  
Ndzawulo ya Tinhaka & Mbango • Department: Omgewingsake en Toerisme • Lefapha la Tikoloho le Bohanhlaudi • Lefapha la Bojanala  
Kgoro ya Tikologo le Boeli • UmNyango wezeBhuduluko nokuVakatjha • Umnyango Wezemvelo Nokuvakaha



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In this Permit, "Director" means the Director: Authorisations and Waste Disposal Management of the National Department of Environmental Affairs and Tourism who may be contacted at the address below:

Director: Authorisations and Waste Disposal Management  
Department of Environmental Affairs and Tourism  
Private Bag X447  
PRETORIA  
0001

In this Permit, "Regional Director" means the Regional Director: Gauteng of the Department of Water Affairs and Forestry "DWAF" who may be contacted at the address below:

Regional Director: GAUTENG  
Department of Water Affairs and Forestry  
Private Bag X 995  
PRETORIA  
0001

**1. SITE DETAILS**

**1.1 LOCATION**

1.1.1 This Permit authorises the closure and rehabilitation of Rand Water (Zuikerbosch) waste disposal site on Portion 97 of the farm Klipplaatdrift 601 IQ, Gauteng Province (hereinafter referred to as "the Site") according to Zuikerbosch Waste Dump site Characterisation Report compiled by WSP Environmental (Pty) Ltd, dated 12 April 2007 (hereinafter referred to as "the Report"), and the Environmental Impact Assessment Record of Decision (RoD) for project referenced GAUT 002/06-07/0555 issued by the Gauteng Department of Agriculture, Conservation and Environment, dated 16 October 2007, submitted by the Permit Holder.

1.1.2 The Site is geographically located as follows:

Number of Corner	Latitude	Longitude
1	26° 40' 43"	27° 59' 09"
2	26° 40' 43"	27° 59' 36"
3	26° 40' 21"	27° 59' 36"
4	26° 40' 21"	27° 59' 09"



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**1.2 DOCUMENTS CONSIDERED**

- 1.2.1 Zuikerbosch Waste Dump Site Characterisation Report compiled by WSP Environmental (Pty) Ltd, dated 12 April 2007,  
"Hereafter referred to as the reports"
- 1.2.2 Permit application signed by Assistant Executive Manager, dated 02 May 2007
- 1.2.3 EIA Authorisation, issued by the Gauteng Department of Agriculture, Conservation and Environment, dated 16 October 2007,
- 1.2.4 Record of Decision (RoD) issued by the Department of Water Affairs and Forestry dated 22 May 2008;

**1.3 SITE MANAGEMENT**

- 1.3.1 The closure and rehabilitation activities must be managed and operated:
  - (a) in accordance with a closure and remediation plan that inter alia identifies and minimises risks of pollution, including those arising from construction, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the permit holder as a result of complaints;
  - (b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.
- 1.3.2 Any persons having duties that are or may be affected by the matters set out in this permit must have convenient access to a copy of which must be kept at or near the place where those duties are carried out.

**PERMIT CONDITIONS**

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**1.4 EMERGENCY PREPAREDNESS PLAN**

- 2.2.1 The Permit Holder must maintain and implement an emergency preparedness plan and review it annually when conducting audit and after each emergency and or major accident. The plan must among others include:
  - (a) Waste Disposal Site Fire
  - (b) Slope Failure
  - (c) Natural disasters such as floods
  - (d) Uncontrolled biogas production and emissions



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**3. CONSTRUCTION OF REMEDIATION MEASURES**

- 3.1 Since the site does not have an engineered basal liner, the Site or any portion thereof must be capped with a 450mm compacted clayey soil (in 3 X 150mm layers) and 200mm thick topsoil layer that must be compacted in such a way that:
  - 3.1.1 the formation of pools due to rain is prevented;
  - 3.1.2 free surface runoff of rain water is ensured;
  - 3.1.3 contamination of storm water is prevented;
  - 3.1.4 no objects or material which may hamper the rehabilitation of the Site are present;
  - 3.1.5 no erosion must occur after rehabilitation; and
  - 3.1.6 re-vegetating of the area with indigenous species is achieved
- 3.2 Closure construction and rehabilitation within the site must be carried out in accordance with recognised civil engineering practice with special consideration to stability under the leadership of a registered engineer who must send a letter or a certificate to the Director every year until completion to certify that construction and closure activities are compliant with engineering standards and plans approved by the Director.
- 3.3 Drainage systems and berms must be constructed and maintained by the permit holder as depicted on plan number DRG. No.S2684 dated 15 August 2005 (A0 Plan Attached) to ensure that:
  - 3.3.1 excess water does not enter the waste body.
  - 3.3.2 Water from the body and the site in general does not drain into the natural environment especially by collecting contaminated water in a lined evaporation pond constructed at the toe of the site.
- 3.4 A storm water diversion channel is to be constructed on the eastern boundary of the site.
- 3.5 The maximum height of the site above ground level must not exceed 3m.
- 3.6 The Permit Holder must make provision for sanitation facilities on site during construction in line with the Occupational Health and Safety Act, 1993 (Act 85 of 1993).



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**4. ACCESS CONTROL**

- 4.1 Weatherproof, durable and legible notices in at least three official languages applicable in the area must be displayed at each entrance to the Site. These notices must prohibit unauthorised entry, disposal of waste on the site and state the alternative place for disposal. Signs must have the name, address and telephone number of the Permit Holder and the person responsible for the Site.
- 4.2 The site must be fenced to a minimum height of 1,8 metres, with gates of the same height at all entrances, to reasonably prevent unauthorised entry.

**5. OPERATION**

- 5.1 The permit holder must apply sufficient dust control measures during capping and re-vegetation to prevent wind-blown dust from causing nuisance conditions or health risks.
- 5.2 The permit holder must ensure adequate fire breaks and implement fire control measures.
- 5.3 The stock pile of slag must be removed and disposed of at authorised waste disposal sites for hazardous waste.
- 5.4 Waste outliers must be transferred onto the main waste facility.
- 5.5 Permit Holder must ensure the health and safety of workers and employees on site, in terms of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).
- 5.6 The site must cease acceptance of waste apart from capping material.

**6. MONITORING**

**6.1 MONITORING METHODS AND PARAMETERS**

- 6.1.1 The Permit Holder must carry out all tests required in of this permit in accordance with methods prescribed by and obtainable from the South African Bureau of Standards (SABS), referred to in the Standards Act, 1982 (Act 30 of 1982).

**6.2 WATER MONITORING**

- 6.2.1 A monitoring borehole network for the Site must be maintained by the permit holder accordingly to the satisfaction of the Director and the Regional Director so that unobstructed sampling, as required in terms of this Permit, can be undertaken. The monitoring borehole network for the site must be according to the co-ordinates indicated on the permit application report, submitted by the Permit Holder which is defined as follows:



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<b>Borehole numbers</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Borehole locality</b>
BH1 d	26° 40' 33"	27° 59' 32"	Upstream
BH1s	26° 40' 33"	27° 59' 32"	Upstream
BH2d	26° 40' 29"	27° 59' 18"	Downstream
BH2s	26° 40' 29"	27° 59' 18"	Downstream
BH3d	26° 40' 40"	27° 59' 22"	Downstream
BH3s	26° 40' 40"	27° 59' 22"	Downstream

6.2.2 Monitoring boreholes must be equipped with lockable caps. The DWAF reserves the right to take water samples at any time and to analyse these samples, or to have them taken and analysed.

6.2.3 The permit holder must monitor surface water quality for the parameters listed in Annexure I below at locations it leaves the site prior to discharge into the natural environment.

6.2.4 Groundwater monitoring by the Permit Holder, in accordance with conditions 6.4.1, must continue and be maintained for a period of 30 years after closure, or for such a period and/or frequency as approved by the Director in consultation with the Regional Director.

**6.3 BACKGROUND MONITORING**

6.3.1 Samples from the borehole as required 6.2.1 above, where the groundwater in the borehole is at an expected higher hydraulic pressure level as the hydraulic pressure level of the groundwater under the Site, shall be considered as background monitoring. Background groundwater monitoring shall be conducted during each monitoring occasion for the water quality variables listed in Annexure I and Annexure II.

**6.4 DETECTION MONITORING**

6.4.1 Monitoring must be conducted bi-annually for the water quality variables listed in paragraph (a) of Annexure II and annually for the variables listed in paragraph (b) of Annexure II at locations specified in condition 6.3.1 or such frequency as may be determined by the Regional Director.

**6.5 INVESTIGATIVE MONITORING**

6.5.1 If, in the opinion of Regional Director, a water quality variable listed under the detection monitoring programme, as referred to in condition 6.4.1, shows an increasing trend, the Permit Holder shall initiate a monthly monitoring programme for the water quality variables listed in Annexure I.

**6.6 GAS MONITORING**

6.6.1 The permit holder must drill gas monitoring test pits within and surrounding the waste body and the concentration, by volume in air at Standard Temperature and Pressure, of flammable gas and carbon dioxide shall not exceed 1% and 0.5% respectively in the test pits.



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6.6.2 Should measurements at these boreholes or devices transgress the limits set in condition 6.6.1, the Permit Holder shall immediately notify the Director and initiate a more frequent gas monitoring programme as requested by the Director, in consultation with and as prescribed by the Director: Air Quality Management and the Affected Air Quality Officer.

6.6.3 Gas monitoring must be conducted six-monthly from the date of this permit for a period of two years and thereafter send the results to the Director for determination of monitoring frequency if further required.

**6.7 FURTHER INVESTIGATIONS**

**6.7.1 WATER POLLUTION**

6.7.1.1 If, in the opinion of the Regional Director, groundwater and surface water pollution have occurred or may possibly occur, the Permit Holder must conduct and/or appoint specialists to conduct the necessary investigations and implement additional monitoring and rehabilitation measures to the satisfaction of the Regional Director.

**6.7.2 ENVIRONMENTAL POLLUTION**

6.7.2.1 If, in the opinion of the Director, environmental pollution, nuisances or health risks may be or is occurring, the Permit Holder must initiate an investigation into the cause of the of the problem or suspected problem. Such investigation must include the monitoring of the relevant environmental pollution, nuisance and health risk variables, at those monitoring points and such frequency to be determined in consultation with the Director.

**7 AUDITING**

**7.1 INTERNAL AUDITS**

7.1.1 Internal audits must be conducted annually by the Permit Holder and on each audit occasion an official report must be compiled by the relevant auditor to report the findings of the audits.

7.1.2 External audit must be conducted by the permit holder two years from the date of this permit and the report must be forwarded to the Director.

**7.2 DEPARTMENTAL AND DWAF AUDITS AND INSPECTIONS**

7.2.1 The Department and DWAF reserves the right to audit and/or inspect the Site at any time and at such a frequency as the Director and Regional Director may decide, or to have the Site audited or inspected.

7.2.2 The Permit Holder must make any records or documentation available to the Director and Regional Director upon request, as well as any other information the Director and Regional Director may require.





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- 7.2.3 The findings of these audits or inspections shall be made available to the Permit Holder within 60 days of the end of the audit or inspection. Information from the audits must be treated in accordance with the Promotion of Access to Information Act, 2000 (Act 2 of 2000).

**8 RECORDING**

- 8.1 The Permit Holder shall record all borehole data and chemical analyses in the format depicted in Annexure III.
- 8.2 Safe disposal certificates for the slag dispatched from the site must be kept.
- 8.3 Records demonstrating compliance with condition 2.1.1 and any other record required by this permit must be maintained.

**9 REPORTING**

**9.1 REPORTING OF INCIDENTS**

- 9.1.1 The Permit Holder must, within 24 hours, notify the Director and Regional Director of the occurrence or detection of any incident on the Site, or incidental to the operation of the Site, which has the potential to cause, or has caused environmental pollution, water pollution, health risks or nuisance conditions.
- 9.1.2 The Permit Holder must, within 14 days, or a shorter period of time, if specified by the Director and Regional Director, from the occurrence or detection of any incident referred to in condition 9.1.1, submit an action plan, which must include a detailed time schedule, to the satisfaction of the Director and Regional Director of measures taken to –
- 9.1.2.1 correct the impact resulting from the incident;
- 9.1.2.2 prevent the incident from causing any further impact; and
- 9.1.2.3 prevent a recurrence of a similar incident.
- 9.1.3 In the event that measures have not been implemented within 21 days of the incident to address impacts caused by the incident referred to in condition 9.1.1, or measures which have been implemented are inadequate, the Director and Regional Director may implement the necessary measures at the cost and risk of the Permit Holder.
- 9.1.4 The Permit Holder must keep an incident report and complaints register, which must be made available to both the external, Departmental and DWAF auditors for the purpose of their audits.



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9.1.5 Records generated in terms of condition 8 above and any other records generated as a result of this permit must be interpreted and included in the audit report in terms of condition 7.1.2 above must be submitted to the Director.

9.1.6 Gas monitoring and water monitoring results as per condition 6.6 above must be recorded and trend analysis conducted and reported to the Director and the Regional director if there is an indication of an upward trend.

**10 LEASING AND ALIENATION OF THE SITE**

10.1 Should the Permit Holder want to alienate or lease the Site, he shall notify the Director in writing of such an intention at least 120 days prior to the said transaction.

10.2 Should the Permit Holder want to transfer the Permit of the Site, he shall notify and obtain approval from the Director for such a transfer in writing at least 120 days prior to the said transfer.

10.3 Any subsequent Permit Holder shall be bound by the conditions of this Permit.

**11 REHABILITATION AND CLOSURE OF THE SITE**

11.1 The Site or any portion thereof, the surface of the Site must receive only waste used for capping as mentioned in the minimum requirements or any other material approved by the Director and be maintained in such a way that no objects or materials including facilities and old machinery which may hamper the rehabilitation of the Site are present. Rehabilitation and closure of the site should entail –

11.1.1 disposal of the currently generated waste at authorised waste disposal sites for the waste being disposed of.

11.1.2 development of a strategy for the prevention of illegal dumping upon or post closure of the site.

11.1.3 management of vegetation in terms of species of vegetation planted adjacent to the fill areas and along property boundaries and implementation of a programme for the prevention and or removal of invasive alien vegetation from the site

11.1.4 protection of the cover from ponding water, drainage challenges, erosion and also providing adequate security to prohibit damage of the cover from settlements

11.1.5 operation and maintenance of the landfill gas control system whereby



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- 11.1.5.1 Gas monitoring by the Permit Holder as prescribed in condition 6.6 shall continue after closure for a period of two years, or such longer period as may be determined by the Director. Should the atmospheric levels be between 0.1% and 1%, a higher frequency of monitoring must be instituted. Should levels above 1% be detected, the Permit Holder must submit a contingency plan regarding occupational safety to the Director, which must be implemented on the Site, after written approval by the Director in consultation with the Director: Air Quality Management and the Affected Air Quality Officer.
- 11.1.6 assessment of the long and short term stability
- 11.1.7 Compilation and implementation of procedures for reporting:
  - 11.1.7.1 significant environmental effects during the aftercare period
  - 11.1.7.2 inspection and maintenance frequencies pertaining to monitoring equipment and abstraction points and results thereof
- 11.1.8 The Permit Holder must rehabilitate the Site in accordance with the latest edition of the documents titled: "Minimum Requirements" and "closure & rehabilitation plan approved by the Director".
- 11.1.9 Indigenous vegetation must be established around the site to effectively screen the site from nearby roads and residential areas.
- 11.1.10 The Permit Holder must ensure that the integrity of the landfill cover is not breached due to ongoing decomposition of waste.
- 11.1.11 The Permit Holder must submit the end-use plan within six month (6) months of the issuing of the permit.

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**12 GENERAL**

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- 12.1 The Permit Holder shall be responsible for the Site or its impacts on the environment post closure of the Site.
- 12.2 This Permit shall not be construed as exempting the Permit Holder from compliance with the provisions of any other National and Provincial Legislation and any other relevant Ordinance, Regulation, By-laws and relevant National Norms and Standards.
- 12.3 This permit shall not be transferable, unless such transfer is subject to condition 10.2.



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- 12.4 Transgression of any condition in this permit will impact negatively on future decisions by the Department on future developments that the permit holder may need authorisation for.

*J. Yawitch*

Ms Joanne Yawitch  
DEPUTY DIRECTOR-GENERAL

DATE: 08/05/09



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ANNEXURE I

WATER QUALITY VARIABLES REQUIRED FOR BACKGROUND MONITORING  
AND INVESTIGATIVE MONITORING: CONDITIONS 5.3 and 5.5

Alkalinity (P.Alk)	Free & saline ammonia as N (NH <sub>4</sub> -N)
Calcium (Ca)	Boron (B)
Chromium (hexavalent) (Cr <sup>6+</sup> )	Magnesium (Mg)
Chromium (Total) (Cr)	Cadmium (Cd)
Chemical oxygen demand (COD)	Chloride (Cl)
Cyanide (CN)	Fluoride (F)
Mercury (Hg)	pH
Lead (Pb)	Sodium (Na)
Nitrate (as N) (NO <sub>3</sub> -N)	Electrical conductivity (EC)
Phenolic compounds (Phen)	Sulphate (SO <sub>4</sub> )
Potassium (K)	
Total dissolved solids (TDS)	



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ANNEXURE II

WATER QUALITY VARIABLES REQUIRED FOR BACKGROUND MONITORING AND DETECTION  
MONITORING: CONDITIONS 5.3 AND 5.4

- (a) Bi-annually for:
- Alkalinity (P.Alk)
  - Chemical oxygen demand (COD)
  - pH
  - Total dissolved solids (TDS)
  - Chlorides (Cl)
  - Nitrate ( $\text{NO}_3\text{-N}$ )
  - Potassium (K)
- (b) Annually for:
- Electrical conductivity (EC)
  - Calcium (Ca)
  - Magnesium (Mg)
  - Sodium (Na)
  - Sulphate ( $\text{SO}_4$ )
  - Fluoride (F)



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**ANNEXURE III**

**INFORMATION WHICH SHALL BE SUBMITTED ON AN ANNUAL BASIS: CONDITION 8.1**

\* = Indicate with an X. Please print legibly.

NAME OF SITE: <input type="text"/>	DATE OF REPORT: <input type="text"/>
LOCATION: <input type="text"/>	
LIST OF ENVIRONMENTALLY SENSITIVE AREAS IN THE VICINITY:	
1. <input type="text"/>	
2. <input type="text"/>	
3. <input type="text"/>	

**1. Registered owner(s) of property on which permitted facility &/ activity is situated:**

Name	Telephone	<input type="text"/>
Postal Address	Fax	<input type="text"/>
	Email	<input type="text"/>

**2. Operator in control of disposal Site:**

Name	Telephone	<input type="text"/>
Identity number	Tel. After hours	<input type="text"/>
Educational Qualifications	<input type="text"/>	
Other Relevant competencies:	<input type="text"/>	

**3. Gas and water monitoring:**

Attach results, trends and graphs and interpretation and action plans where required

**4. Indicate the present dimensions of the site (metre)**

Height/depth	<input type="text"/>
Length	<input type="text"/>
Breadth	<input type="text"/>

I, the undersigned, declare that the information stated above and the Risk Assessment below is to my knowledge a true reflection of the status at the \_\_\_\_\_ disposal site.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Capacity: \_\_\_\_\_

Place: \_\_\_\_\_

Date: \_\_\_\_\_



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**ANNEXURE IIV**

**FORM TO BE USED FOR CHEMICAL INFORMATION:**  
**CONDITIONS 8.2**

Name of site				
Borehole/observation- point name/number				
Sampling date (y-m-d):		Method:	Bail	
Sampling Time			Pump	
Time after start of pump:	h min	Depth of sample		m
Date of analysis (y-m-d)		Laboratory		

**General chemistry**

Constituent	Unit	Value	Required Standard	Constituent	Unit	Value	Required Standard
pH	(-log[H <sup>+</sup> ])			As (III)	(mg/l)		
EC	(mS/m)			B	(mg/l)		
TDS	(mg/l)			Cd	(mg/l)		
Ca	(mg/l)			Free CN	(mg/l)		
Mg	(mg/l)			Cr (Total)	(mg/l)		
Na	(mg/l)			Cr (VI)	(mg/l)		
K	(mg/l)			Cu	(mg/l)		
Alkalinity	(mg CaCO <sub>3</sub> /l)			Mn	(mg/l)		
Cl	(mg/l)			Pb	(mg/l)		
SO <sub>4</sub>	(mg/l)			Hg	(mg/l)		
NO <sub>3</sub> -N	(mg/l)			S-	(mg/l)		
F	(mg/l)						
COD	(mg/l)						
NH <sub>4</sub> -N	(mg/l)						
Phenol	(mg/l)						
PO <sub>4</sub>	(mg/l)						
TOX	µg/l						
TOC	(mg/l)						
Ba	(mg/l)						