APPENDIX I

GENERAL AUTHORISATION

No. 399 **26 March 2004**

REVISION OF GENERAL AUTHORISATIONS IN TERMS OF SECTION 39 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)

I, ARNOLD MICHAEL MULLER, Director-General of the Department of Water Affairs and Forestry and duly authorised in terms of section 63 of the National Water Act, 1998 (Act No 36 of 1998) have revised and amended General Authorisations No 1191 published in the Government Gazette No. 20526 dated 8 October 1999,as contained in the Schedule hereto.

Sgn. A M Muller
DIRECTOR-GENERAL: WATER AFFAIRS AND FORESTRY
DATE: 18 March 2004

SCHEDULE

1. THE TAKING OF WATER FROM A WATER RESOURCE AND STORAGE OF WATER

[Sections 21(a) and (b)]

Purpose of this authorisation

1.1. The authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the National Water Act for the taking or storage of water from a water resource, provided that the taking or storage is within the limits and conditions set out in this authorisation.

Exclusion

1.2. This authorisation does not apply-

(a) to any lawful taking and storage within a government water control area, a government water work, a catchment control area or an irrigation district as defined in the Water Act, 1956 (Act No. 54 of 1956) prior to its repeal;

(b) to a person who does not have lawful access to any waterwork or water resource;

(c) to wetlands, the dewatering of mines or storage of water underground;

(d) to an exclusion zone of 750 metres inland from the high water mark; and

(e) to an area where the limits of taking and storage of water were reduced in terms of section 9B (1C) of the Water Act, 1956 (Act No 36 of 1956).

Compliance with National Water Act and other laws

1.3.(1) This authorisation does not-

(a) apply to any water use under Schedule 1 of the National Water Act;

(b) replace any existing authorisation that is recognised under the National Water Act; or

(c) exempt a person who uses water from compliance with any other provision of the National Water Act unless stated otherwise in this notice, or any other applicable law, regulation, ordinance or by-law.

(2) In the case of the taking of water for industrial purposes the provisions of section 7 of the Water Services Act, 1997 (Act No. 108 of 1997), must be met.

(3) A person who uses water in terms of this authorisation is exempt from compliance with section 22(2)(e) of the National Water Act.

Area of applicability

1.4 This authorisation is applicable throughout the Republic of South Africa, except as excluded in paragraph 1.2 above and the areas set out in-

(a) Table 1.1 for the taking of surface water;

(b) Table 1.2 for the taking of groundwater; and

(c) Table 1.3 (a) and (b) for storage of water.

Duration of authorisation

1.5. This authorisation will be valid for a period of five years from the date of publication of this notice, unless-

(a) it is amended at any review period, which period shall be at intervals of three years from the date of publication of this notice;

(b) the period is extended by a notice in the *Gazette*;

(c) it is replaced with a General Authorisation in relation to a specific water resource or within a specific area; or

(d) the water user is required to apply for a licence in terms of the National Water Act.

Definitions

1.6. In this authorisation unless the context indicates otherwise, any word or expression to which a meaning has been assigned in terms of the National Water Act shall have that meaning, and-

"**monitoring programme**" means a programme for taking regular measurements of the quantity and/or quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge;

"small industrial users" means water users who qualify as work creating enterprises that do not use more than twenty cubic metres per day and identified in the Standard Industrial Classification of All Economic Activities (5th edition), published by the Central Statistics Service, 1993, as amended and supplemented, under the following categories:-

(a) 1: food processing
(b) 2: prospecting, mining and quarrying;
(c) 3: manufacturing;
(d) 5: construction;

"**storage**" means storing water not containing waste, in a watercourse or off-channel storage;

"**taking**" means the abstraction of water from a water resource.

Taking and storage of water

1.7. A person who-

(a) owns or lawfully occupies property registered at the Deeds Office at the date of this notice; or

(b) lawfully occupies or uses land that is not registered or surveyed; or

(c) lawfully has access to land on which the use of water takes place,

may:

(i) on that property or land take groundwater as set out in Table 1.2, outside of the areas set out in paragraph 1.2 above;

(ii) take surface water for that property or land as set out in Table 1.1, outside of the areas set out in paragraph 1.2 above at a rate of up to 15 litres per second not exceeding 150 000 cubic metres per annum; and

(iii) subject to Tables 1.3(a) and (1.3(b)) store up to 50 000 cubic metres of water,

if the taking or storing of water-

(aA) does not impact on a water resource or any other person's water use, property or land;

(aB) is not excessive in relation to the capacity of the water resource and the needs of other users; and

(aC) is not detrimental to the health and safety of the public in the vicinity of the activity.

Registration of water use

1.8.(1) A person who uses water in terms of this authorisation must submit to the responsible authority a registration form or any other further information requested in writing by the responsible authority for the registration of the water use before commencement of-

(a) taking more than 50 cubic metres from surface water or 10 cubic metres from groundwater on any given day; or

(b) a combined storage of more than 10 000 cubic metres of water per property.

(2) On written receipt of a registration certificate from the Department, the person will-

(a) be regarded as a registered water user; and
(b) be liable for water charges as per the Department's pricing strategy.

(3) All forms for registration of water use are obtainable from the Regional offices of the Department, as well as from the Departmental web-site at http:\\www.dwaf.gov.za

Precautionary practices

1.9 (1) The water user must ensure that any dam complies with the requirements of Chapter 12 of the National Water Act.

(2) The water user must follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of the taking and storage of water.

(3) Where water is stored in a watercourse, the water user must take reasonable measures to ensure that the movement of aquatic species is not prevented, including those species that normally migrate through the watercourse.

(4) Outlet pipes at the lowest practical level must be provided on all storage structures for Reserve releases.

Record-keeping and disclosure of information

1.10. (1) The water user must ensure the establishment of monitoring programmes to measure the quantity of water taken and/or stored, as follows-

(a) the quantity of groundwater or surface water abstracted must be metered or gauged and the total recorded as at the last day of each month;

(b) in the case of irrigation and where no meter or gauge is used, the quantity of water abstracted may be calculated according to methods set by the responsible authority; and

(c) the quantity of water stored must be recorded as at the last day of each month.

(2) Upon the written request of the responsible authority the water user must-

(a) ensure the establishment of any additional monitoring programmes; and

(b) appoint a competent person to assess the water use measurements made in terms of this authorisation and submit the findings to the responsible authority for evaluation.

(3) Subject to paragraph 1.10. (2) above, the water user must, for at least five years, keep a written record of all taking and storage of surface or groundwater. This information must be made available upon written request to the responsible authority.

Inspections

1.11. Any property or land in respect of which a water use has been authorised in terms of this notice must be made available for inspection by an authorised person in terms of section 125 of the National Water Act.

Offences

1.12. A person who contravenes any provision of this authorisation is guilty of an offence and is subject to the penalty set out in section 151(2) of the National Water Act.

NOTE: Information regarding the drainage regions referred to in Tables 1.1, 1.2, 1.3 (a) and (b) can be obtained from the Department, upon written request.

TABLE 1.1 Areas excluded from General Authorisation for the taking of surface water

Primary drainage region	Secondary/Tertiary/Quaternary drainage region and excluded resources	Description of main river in drainage region for information purposes

Primary drainage region	Secondary/Tertiary/Quaternary drainage region and excluded resources	Description of main river in drainage region for information purposes
A	All catchments	Limpopo River
B	All catchments	Olifants River
D	Orange River downstream of Gariep Dam	
	D13	Kraai River
E	E10A to K	Olifants River above the confluence with the Doring River
	E21	Groot River
G	G10 G21 G22A, B ,F & J G30 G40A to E G40H G40 J to L G50B, C, E & F	Berg River Diep River Eerste River Verlorevlei River Bot River Onrus River (De Bos Dam Catchment) Klein River Nuwejaars River
H	H 10A to L, excluding H10J H20A H30 H40B to H 40L H50A & B H60 A to F H70 C, D & E H80A to E H90	All Tributaries, that is, Titus-, Koekedouw-, Dwars-Holsloot, Wabooms and Slang Rivers to confluence with Breede River upstream of Greater Brandvleidam (excluding Molenaars River) Hex River to confluence with Breede River Kingna River All tributaries to Breede River contributing to and downstream of Greater Brandvlei Dam to confluence with the Kingna River Tributaries to confluence and main stream Breede River to s/e boundaries of Zanddrift & Langeberg WUA's Tributaries of Sonderend River to confluence with the Breede River Tradouws River to confluence with Buffeljags River Duivenhhoks River Goukou River
J	J12 J25 J31 to 35 J40C	Touws River Gamka River Olifants River Langtou and Weyers Rivers
K	K10 K20 K30A K40C K50 & K60 K70A K70B K80A to F K90A to G	Little Brak River Great Brak River Maalgate River Karatara River Knysna, Keurbooms Rivers Buffels River Bloukrans River Lottering, Storms, Sanddrif, Groot, Tsitsikamma, Klippedrift Rivers Kromme, Seekoei, Kabeljous Rivers
L	L81 L82 L90	Baviaanskloof River Kouga River Lower Gamtoos River Tributaries
M	M10 M20 M30	Swartkops River Van Stadens River, Maitland River Coega River, Van Stadens River
N	N11, N12	Sundays River upstream of Vanrynevelds Pass Dam
P	P10 P30 P40	Bushmans River Kowie River Kariega River
Q	Q41A, Q41B, Q41C, Q41D, Q44A, Q44B Q42A & B Q43A & B Q92 Q94	Tarka River Elands River Vlekpoort River Koonap River Kat River

Primary drainage region	Secondary/Tertiary/Quaternary drainage region and excluded resources	Description of main river in drainage region for information purposes
R	R20 R30A, B, C & D R30E & F	Buffelo River Kwenxura, Kwelera, Gonubie Rivers Nahoon River
S	S20A S32A to C S32D & E S40A, B & C S50A, B & C S60A & B S60C & D	Indwe River upstream of the Doring River Dam, Swart Kei River upstream of the Klipplaat confluence Klipplaat River upstream of Waterdown Dam Thorn, Thomas Rivers Tsomo, Kwa-Qokwama and Mbokotwa Rivers Kubusi River upstream of Wriggleswade Dam Toise River Xilinxa River upstream of the Xilinxa Dam
T	T11A & B T35A, B, C, D, F & G	Slang, Xuka Rivers Tsitsa, Pot, Mooi, Inxu, Wildebees, Gatberg Rivers
U	U20 & U40	Mgeni, Mvoti Rivers
V	V11 V20 V31 V32 V60 V70	Upper Thukela River Mooi RiverBuffels/Slang River Buffels River Sundays River Bushmans River
W	W12 W20 W21A W30 (excluding W 31 [see Table 3.1(a)]	Mhlatuze River Mfolozi River White Mfolozi River upstream of Klipfontein Dam Hluhluwe and Mkuzi Rivers
X	All catchments (excluding X 11, X 12, X 21 A, B, C, F & G [See table 1.3(a)]	Nkomati River

Table 1.2 Groundwater Taking Zones: Quaternary Drainage Regions

The Table refers to the size of the property on which the General Authorisation is applicable

Zone A NO WATER MAY BE TAKEN FROM THESE DRAINAGE REGIONS EXCEPT AS SET OUT UNDER SCHEDULE 1 AND SMALL INDUSTRIAL USERS.		**Zone B 45 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone C 75 M^3 PER HECTARE PER ANNUM MAY BE TAKEN -FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone D 150 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone E 400 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**	
A21C,D	F60A-E	A10B,C	E22A,B,E-G	A10A	K10A,B	A21A,B	K10D-F	E10A-D	L82A-H,J
A21E-G,K,L	G21A,B,E,F	A21J	E23A,B,E	A21H	L21D	B20A,B	K20A	G10A,B,G	P20B
A23A,E	G22A-E	A22B-D	E24B,C,E,F	A22AE,G	L70A,B,E	B31B,F-H	K30A-D	G22F	T52L
A24A,B,C,J	G30E	A23D	E32C,E	A23B,C,F-H,J-L	L90B	B32G	K40B,C,D	G40A-E,G,H,J,L,M	T60D
A32E	H10C	A31B,F,G-J	E33G	A24D-H	N11A,B	C11A,B,D,F-H,K	K90E-G	G50A,F,J,K	U20M
A41D,E	H70F	A32A-C,D	E40B	A31A,D,E	N12A,B	C12E-G,K	L50A	H10B-F-H,J,K	U30A,C
A42J	J11F,G	A41C	F30C	A41A,B	N21B,D	C23B-E	L70C,F	H20B-G	U40C,E,F,J
A50A-C	J21A-E	A42A-C,D,E,G,H	F50B,C,E	A42F	N40A,B,D,E	C24A	L90A,C	H40B,K	U60C
A50G,H,J	J22D-F,J,K	A50D-F	H40F	A61B,C-E	P10A,B,D-G	C33C	M20B	H60A,C,D	U70C,D
A61J	J23A-D,F,G	A61A,F,G	J11A-E	A61H	P30A-C	C92C	N40F	H80B,C,F	V50C
A63A-E	J24B-F	A62A,E,G,J	J12C,E,J,K	A62B-D,F,H	P40A-D	E10E-H,J,K	P20A	H90C	W11A
A71A-L	J32A-D	A91J,K	J22A-C,G,H	B11A-H,J,K	Q11A-D	E21D,F-H,J,K	T40E-F	J34A,C	W12F,H,J
A72A,B	J33E	B11L	J23H	B12A-E	Q12A,B	E24A,L,M	T52M	J34C	W21K
A80A-F	L11E,G	B20D	J24A	B20E-H,J	Q14D	E40D	T60A,G,H	J40B	W23B-D
A80G-J	L12A-D	B31E	J31D	B31A	Q21A	G10C-E,H	U10L,M	K10C	W31J-L
A91A-H	L22B,C	B41B,D,H,J	J32E	B32A-F,H,J	Q41A-D	G21C-D	U20F,G,K,L	K40A,E	W45A,B
A92A-D	L23A-D	B42C,E,G,H	J33C	B41A,E,K	Q42A,B	G22G,H,K	U30D,E	K50A,B	W57K
B20C	L30B,D	B51C	L11A-D,F	B51A,B,F,H	Q91C	G40F	U40D,G,H	K60A-G	W32A,B,H
B31C,D,J	L40B	B52A,B,E	L21A-C,E,F	B52C,D,F-H,J	Q92A,B,D,E,G	G50B-E	U50A	K70A,B	W70A
B41C,F,G	N14B-D	B60G	L22A,D	B60A-D,H,J	Q93A-D	H10L	U60D-F	K80A-F	
B42A,B	N21A	B71C,F,G	L30A,C	B71A,H,J	Q94A-F	H20A,H	U70B,F	K90A-D	
B42D,F	N22A,E	B72A,F-H,J	L40A	B72B-D,K	R10C-E,G,H,J-M	H30A-E	U80B,E,G,J	L70G	
B51E,G	N23B	B73A,H,J	L50B	B73B-G	R20B,D-G	H40A,C-E,G,H,J,L	V40D,E	L81A-D	
B60E,F	N24B-D	B82A-F,J	L60A,B	B81H,J	R30A-F	H50A	V50A,B		
B71B,D,E	N30A-C	B83A-E	L70D	B82G-H	R40A-C	H60B,E,F,H,J	W11B		
B72E	N40C	B90A-H	N12C	C11C,E,J,L,M	R50A-B	H70C-E,K	W12A,B,D		
B81A,B,D	Q12C	C22H,J	N13A-C	C12A-D,H,J,L	S20A,B-D	H80A,E	W13A,B		
C51K	Q13B,C	C24H	N14A	C13A-H	S31A,D,F,G	H90A,B	W21G,H,J		
C52L	Q14A-C,E	C31F	N21C	C21A-G	S32A-C,F-H,J-M	J12A,B	W32C,F,G		
C91D	Q21B	C51H,J,L,M	N22B-D	C22A-G,K	S40A-F	J13C	W42D,E,F		
C91E	Q22B	C52H,K	N23A	C23A,F-H,J-L	S50A-E-H,J	J23J	W51C		
D31B	Q30B-E	C70D	N24A	C24B,C,G,J	S60C-E	J25A-E	W52B,C		

Zone A **NO WATER MAY BE TAKEN FROM THESE DRAINAGE REGIONS EXCEPT AS SET OUT UNDER SCHEDULE 1 AND SMALL INDUSTRIAL USERS.**		**Zone B** **45 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone C** **75 M^3 PER HECTARE PER ANNUM MAY BE TAKEN -FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone D** **150 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone E** **400 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**	
D33A,C-E,K	Q44A-C	C91A-C	P10C	C25A-F	S70A-F	J31A-C,	W53A,B		
D41C-H,J,-M	Q50A,B	D14C,D	Q13A	C31B-E	T11C,F-H	J33A,F	W54C-E		
D42A-E	Q60C	D16F,G	Q22A	C32A-D	T12A-G	J34B,D-F	W55B,C,D		
D51C	Q80A-C,F	D21A,D,E,H	Q30A	C33A,B,C	T13A-C	J35B-F	W56A,B		
D53D-H,J	U20H	D22C	Q43A,B	C41A-H,J	T31A-H	J40A,C	W57J		
D54A-G	V11C,D	D31A,C,D,E	Q50C	C42A-H,J-L	T33A,B,D,F-H		X12C-F		
D55L	V70A	D33B,F-H,J	Q60A,B	C43A-D	T40G		X23A,C,D		
D56H,J	W41G	D34G	Q70A-C	C51A-G	T52J		W43E,F		
D57A-E	W42G,J,L	D41B,G,L	Q80D,E,G	C52A-G,J	T60C,J				
D58A,C	W44D	D51A,B	Q91A,B	C60A-H,J	T90A				
D62A-E	W51E	D52A-F	Q92C,F	C70A-C,E-H,J,K	U20J				
D73A,C-F	W52D	D53A-C	R10A,B,F	C81A-E,G-H,J-M	U30B				
D81A-G	X11D,F	D55A-H,J,K,M	R20A,C	C82A-H	U40B				
D82A-H,J-L	X21A-D,F,G	D56A-G	S31B,C,E	C83A-H,J-M	U70E				
E22D	X31F	D58B	S32D,E	C92A,B,C	U80A,C,D,FH,K,L				
E23C,D,F-H,J,K	X32B,E	D61A-H,J-M	S60A,B	D12A-F	V11F,K,M				
E24D,G,H	A22H,J	D62F-H,J	T11A,B,D,E	D13A-H,J-M	V12E,G				
E31A-H	A31C	D71C,D	T13D,E	D14A,B,E-H,J,K	V13B,C,E				
E32A,B,D	C24D-F	D72A-C	T20A-G	D15G,H	V14A-E				
E33A-E,H	C31A	D73B	T31J	D18K,L	V20G,H,J				
E40A	G10K-M	B81C,E-G	T32A-H	D21F,G	V31C-H,J,K				
F10A-C	G30A-H	C81F	T33C,E,J,K	D22A,B,D,G,H,L	V32A-H				
F20A-E	M10A-D		T34A-E,F-H,J,K	D23A,C-H,J	V33A-D				
F30A,B,D-G	M20A		T35A-D-H,J-M	D24A-H,J-L	V40A-C				
F40A-H	M30A,B		T36A,B	D32A-H,J,K	V50D				
F50A,D,F,G			T40A-D	D34A-F	V60C,E-H,J,K				
			T51A-H,J	D35A-H,J,K	V70F,G				
			T52A-H,K	D41A	W11C				
			T60B,E,F,K	D71A,B	W12E				
			T70A-G	E21A-C,E,L	W21A-F,L				
			T80A-D	E22C	W22A,F				
			T90B-G	E24J,K	W31A,G,K				
			U10A-H,J,K	E33F	W32D,E				
			U20A-E	E40C	W41D				
			U40A	G10F,J	W42A-C,E,F				
			U60A,B	G40K	W44B,C,E				
			U70A	G50G,H	W51A,B,D,F				
			V11A,B,E,G,H,J,	H10A	W52A				

Zone A **NO WATER MAY BE TAKEN FROM THESE DRAINAGE REGIONS EXCEPT AS SET OUT UNDER SCHEDULE 1 AND SMALL INDUSTRIAL USERS.**		**Zone B** **45 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone C** **75 M^3 PER HECTARE PER ANNUM MAY BE TAKEN -FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone D** **150 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**		**Zone E** **400 M^3 PER HECTARE PER ANNUM MAY BE TAKEN FROM THESE DRAINAGE REGIONS AND SMALL INDUSTRIAL USERS.**	
			L						
			V12A-D,F	H50B	W53C-E				
			V13A,D	H60G,K,L	W54A-B				
			V20A-F	H70A,B,G,H,J	W55A				
			V31A,B	H80D	X11A-C,H,J,K				
			V60A,B,D	H90D,E	X12A,B,H,K				
			V70B-E	J11H,J,K	X13H,J-L				
			W12C,G	J12D,F-H,L,M	X14H				
			W22B-E,G,H,J-L	J13A,B	X21H,K				
			W23A	J23E	X22C,D				
			W31B-F,H	J33B,D	X23B,E,F				
			W41A-C,E,F	J35A	X24A-H				
			W42H,K,M	J40D,E	X31A,K-M				
			W44A		X32C,F-H,J				
			X11E,G		X40C				
			X12G,J		S10A-J				
			X13A						
			X14A,B,D-G						
			X21E,J						
			X22A,B,E-H,J,K						
			X23G,H						
			X31B-E,G,H,J						
			X32A,D						
			X33A-D						
			X40A,B,D						

TABLE 1.3 (a) Areas excluded from General Authorisation for any storage of water

Primary drainage region	Secondary/Tertiary/Quaternary drainage region	Description of main river in drainage region for information purposes
X	X11, X12 X21A, B, C X21F,G	Komati River Catchment upstream of Swaziland Crocodile River Catchment upstream of Kwena Dam Elands River Catchment upstream of Waterval Onder
B	B1 B2 B3 B4	Olifants and Klein-Olifants River Wilge River Elands River Steelpoort River
U	U 20 A to M	Mgeni River
W	W 31 W 51 t0 57	Mfolozi River Usutu River

TABLE 1.3 (b) Areas excluded from General Authorisation for storage of water in excess of 10 000 cubic metres and falling outside government control areas proclaimed under the Water Act No 54 of 1956.

Primary drainage region	Secondary/Tertiary/Quaternary drainage region	Description of main river in drainage region for information purposes
A	All catchments	Limpopo River
B	All catchments excluding B1 to B 4 (see Table 1.3(a))	Olifants River and all tributaries
C	C11, C12, C13, C20, C40, C50, C60, C70, C81, C82, C83 & C90	Vaal River and all tributaries
V	V11 V13B	Assegaai River Tugela River

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2. ENGAGING IN A CONTROLLED ACTIVITY, IDENTIFIED AS SUCH IN SECTION 37(1): IRRIGATION OF ANY LAND WITH WASTE OR WATER CONTAINING WASTE GENERATED THROUGH ANY INDUSTRIAL ACTIVITY OR BY A WATERWORK

[Section 21(e)]

Purpose of this authorisation

2.1. The authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the National Water Act provided that the irrigation is within the limits and conditions set out in this authorisation.

Exclusion

2.2. This authorisation does not apply to a person who is not the lawful occupier of the land on which the wastewater irrigation takes place.

Compliance with National Water Act and other laws

2.3. (1) This authorisation does not-

(a) replace any existing authorisation that is recognised under the National Water Act; or

(b) exempt a person who uses water from compliance with any other provision of the National Water Act unless stated otherwise in this notice, or any other applicable law, regulation, ordinance or by-law.

(2) A person who uses water in terms of this authorisation is exempt from compliance with section 22(2)(e) of the National Water Act.

Area of applicability

2.4. This authorisation is applicable throughout the Republic of South Africa.

Duration of authorisation

2.5. This authorisation will be applicable for a period of five years from the date of publication of this notice, unless-

(a) it is amended at any review period, which period shall be at intervals of three years from the date of publication of this notice;

(b) the period is extended by a notice in the *Gazette*;

(c) it is replaced with a General Authorisation in relation to a specific water resource or within a specific area; or

(d) the water user is required to apply for a licence in terms of the National Water Act.

Definitions

2.6. In this authorisation, unless the context indicates otherwise, any word or expression to which a meaning has been assigned in terms of the National Water Act shall have that meaning, and-

"**biodegradable industrial wastewater**" means wastewater that contains predominantly organic waste arising from industrial activities and premises including-
(a) milk processing;
(b) manufacture of fruit and vegetable products;
(c) sugar mills;
(d) manufacture and bottling of soft drinks;
(e) water bottling;
(f) production of alcohol and alcoholic beverages in breweries, wineries or malt houses;
(g) manufacture of animal feed from plant or animal products;
(h) manufacture of gelatine and glue from hides, skin and bones;
(i) abattoirs;
(j) fish processing; and
(k) feedlots;

"**commercial activity**" means those activities identified in the Standard Industrial Classification of All Economic Activities (5th Edition), published by the Central

Statistics Service, 1993, as amended and supplemented, under the following categories-

a) 6: wholesale and retail trade,
b) 7: transport, storage and communication,
c) 8: business services,
d) 9: community, social and personal services,
e) 0: personal and other services;

"**domestic wastewater**" means wastewater arising from domestic and commercial activities and premises, and may contain sewage;

"**irrigation**" means the application of wastewater for the purpose of crop production, and includes the cultivation of pasture;

"**monitoring programme**" means a programme for taking regular measurements of the quantity and/or quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge;

"**organic waste**" means waste of non-anthropogenic origin that is readily biodegradable in the environment and does not contain any toxic substances that may accumulate in the environment;

"**primary treatment**" means treatment of wastewater by a physical process, which may involve maceration, sedimentation, screening and grit removal;

"**secondary treatment**" means treatment of wastewater by a biological process, through solar and other energy, bacteria, algae and a variety of aquatic biota, to remove organic matter;

"**wastewater**" means water containing waste, or water that has been in contact with waste material.

Irrigation with wastewater

2.7. A person who-

(a) owns or lawfully occupies property registered in the Deeds Office as at the date of this notice;

(b) lawfully occupies or uses land that is not registered or surveyed; or

(c) lawfully has access to land on which the use of water takes place,

may on that property or land

(i) irrigate up to 2000 cubic metres of domestic and biodegradable industrial waste water on any given day provided the-

(a) faecal coliforms do not exceed 1000 per 100 ml;

(b) Chemical Oxygen Demand (COD) does not exceed 75 mg/l;

(c) pH is not less than 5,5 or more than 9,5 pH units;

(d) Ammonia (ionised and un-ionised) as Nitrogen does not exceed 3 mg/l;

(e) Nitrate/Nitrite as Nitrogen does not exceed 15 mg/l;

(f) Chlorine as Free Chlorine does not exceed 0,25 mg/l;

(g) Suspended Solids does not exceed 25 mg/l;

(h) Electrical Conductivity does not exceed 70 milliSiemens above intake to a maximum of 150 milliSiemens per metre (mS/m);

(i) Ortho-Phosphate as phosphorous does not exceed 10 mg/l;

(j) Fluoride does not exceed 1 mg/l; and

(k) Soap, oil or grease does not exceed 2,5 mg/l.

(ii) irrigate up to 500 cubic metres of domestic or biodegradable industrial wastewater on any given day, provided the-

(a) electrical conductivity does not exceed 200 milliSiemens per metre (mS/m);

(b) pH is not less than 6 or more than 9 pH units;

(c) Chemical Oxygen Demand (COD) does not exceed 400 mg/l after removal of algae;

(d) faecal coliforms do not exceed 100 000 per 100 ml; and

(e) Sodium Adsorption Ratio (SAR) does not exceed 5 for biodegradable industrial wastewater;

(ii) irrigate up to 50 cubic metres of biodegradable industrial wastewater on any given day, provided the-

(a) electrical conductivity does not exceed 200 milliSiemens per metre (mS/m);

(b) pH is not less than 6 or more than 9 pH units;

(c) Chemical Oxygen Demand (COD) does not exceed 5 000 mg/l after removal of algae;

(d) faecal coliforms do not exceed 100 000 per 100 ml; and

(e) Sodium Adsorption Ratio (SAR) does not exceed 5 for biodegradable industrial wastewater,

if the irrigation of wastewater-

(aA) does not impact on a water resource or any other person's water use, property or land; and

(aB) is not detrimental to the health and safety of the public in the vicinity of the activity.

Registration of irrigation with wastewater

2.8.(1) A person who irrigates with wastewater in terms of this authorisation must submit to the Responsible authority a registration form or any other information requested in writing by the Responsible authority for the registration of the water use before commencement of irrigation.

(2) On written receipt of a registration certificate by the Department, the person will be regarded as a registered water user.

(3) All forms for registration of water use are obtainable from the Regional offices of the Department as well as from the Departmental web-site at http:\\www.dwaf. gov.za

Location of irrigation with wastewater

2.9. Wastewater irrigation in terms of this authorisation is only permitted if the irrigation takes place-

(a) above the 100 year flood line, or alternatively, more than 100 metres from the edge of a water resource or a borehole which is utilised for drinking water or stock watering, which ever is further; and

(b) on land that is not, or does not, overlie a Major Aquifer (identification of a Major Aquifer will be provided by the Department, upon written request).

Record-keeping and disclosure of information

2.10. (1) The water user must ensure the establishment of monitoring programmes to monitor the quantity and quality of the wastewater to be irrigated prior to commencement of irrigation and thereafter, as follows-

(a) the quantity must be metered and the total recorded weekly; and

(b) the quality must be monitored monthly as at the last day of each month by grab sampling, at the point at which the wastewater enters the irrigation system for all parameters listed in subparagraphs 2.7.(i) and (ii).

(2) The methods for the measurement of specific substances and parameters in any wastewater must be carried out-

(a) by a laboratory that has been accredited under the South African National Accreditation System (SANAS) in terms of SABS Code 0259 for that method; or

(b) as approved in writing by the responsible authority.

(3) Upon the written request of the responsible Authority the water user must-

(a) ensure the establishment of any additional monitoring programmes; and

(b) appoint a competent person to assess the water use measurements made in terms of this authorisation and submit the findings to the responsible authority for evaluation.

(4) Subject to paragraph 2.10. (3) above, the water user must keep a written record of the following wastewater irrigation and related activities, for at least three years-

(a) demarcate the location of the irrigation area on a suitable scale map and the extent of the area under irrigation on a 1: suitable scale map;
(b) details of the crop(s) and the area under irrigation;
(c) the irrigation management techniques being practised;
(d) quantity of wastewater irrigated;
(e) quality of wastewater irrigated;
(f) details of the monitoring programme;
(g) details of failure and malfunctions in the irrigation system and details of measures taken, and

such information must be made available upon written request to the responsible authority.

(5) Any information on the occurrence of any incident that has or is likely to have a detrimental impact on the water resource quality must be reported to the responsible authority.

Precautionary practices

2.11. (1) The water user must follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of the wastewater irrigation system, including the prevention of-

(a) waterlogging of the soil and pooling of wastewater on the surface of the soil;
(b) nuisance conditions such as flies or mosquitoes, odour or secondary pollution;
(c) waste, wastewater or contaminated stormwater entering into a water resource; ,
(d) the contamination of run-off water or stormwater;
(e) the unreasonable chemical or physical deterioration of, or any other damage to, the soil of the irrigation site; the unauthorised use of the wastewater by members of the public; and
(f) preventing of people being exposed to the mist originating from the industrial waste.

(2) All reasonable measures must be taken for storage of the wastewater used for irrigation when irrigation cannot be undertaken.

(3) Suspended solids must be removed from any wastewater, and the resulting sludge disposed of according to the requirements of any relevant law or regulation, including-

(a) “Permissable utilisation and disposal of sewage sludge” Edition 1, 1997. Water

Research Commission Report No TT 85/97 as amended from time to time ; and

(b) "Guide: Permissable utilisation and disposal of treated sewage effluent", 1978. Department of National Health and Population Development Report No. 11/2/5/3, as amended from time to time (obtainable from the Department upon written request).

(4) All reasonable measures must be taken to provide for mechanical, electrical, operational, or process failures and malfunctions of the wastewater irrigation system.

(5) All reasonable measures must be taken to collect stormwater runoff containing waste or wastewater emanating from the area under irrigation and to retain it for disposal;

Inspections

2.12. Any property or land in respect of which a water use has been authorised in terms of this notice must be made available for inspection by an authorised person in terms of section 125 of the National Water Act.

Offences

2.13. A person who contravenes any provision of this authorisation is guilty of an offence and is subject to the penalty set out in section 151(2) of the National Water Act.

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3 DISCHARGE OF WASTE OR WATER CONTAINING WASTE INTO A WATER RESOURCE THROUGH A PIPE, CANAL, SEWER OR OTHER CONDUIT; AND DISPOSING IN ANY MANNER OF WATER WHICH CONTAINS WASTE FROM, OR WHICH HAS BEEN HEATED IN, ANY INDUSTRIAL OR POWER GENERATION PROCESS

[Sections 21(f) and (h)]

Purpose of this authorisation

3.1. The authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the National Water Act provided that the discharge is within the limits and conditions set out in this authorisation.

Exclusion

3.2. This authorisation does not apply to a person who discharges wastewater-

(a) through sea outfalls;
(b) to an aquifer;
(c) any other groundwater resource; or
(d) or any water resource with a closed drainage system.

Compliance with National Water Act and other laws

3.3.(1) This authorisation does not-

(a) apply to any water use under Schedule 1 of the National Water Act;

(b) replace any existing authorisation that is recognised under the National Water Act;

(c) exempt a person from compliance with section 7(2) of the Water Service Act, 1997 (Act No. 108 of 1997);

(d) exempt a person who uses water from compliance with any other provision of the National Water Act unless stated otherwise in this notice, or any other applicable law, regulation, ordinance or by-law; or

(e) apply to a category A mine .

(2) A person who uses water in terms of this authorisation is exempt from compliance with section 22(2)(e) of the National Water Act.

Area of applicability

3.4 This authorisation is applicable throughout the Republic of South Africa, except as excluded in paragraph 3.2 above.

Duration of authorisation

3.5. This authorisation will be applicable for a period of five years from the date of this notice, unless-

(a) it is amended at any review period, which period shall be at intervals of three years from the date of publication of this notice;

(b) the time period is extended by a further notice in the *Gazette*;

(c) it is replaced with an authorization in relation to a specific water resource or within a specific area; or

(d) the water user is required to apply for a licence in terms of the National Water Act.

Definitions

3.6. In this authorisation unless the context indicates otherwise, any word or expression to which a meaning has been assigned in terms of the National Water Act shall have that meaning, and-

"**category A mine**" means-

(a) any gold or coal mine;
(b) any mine with an extractive metallurgical process, including heap leaching; or
(c) any mine where sulphate producing or acid generating material occurs in the mineral deposit;

"**commercial activity**" means those activities identified in the Standard Industrial Classification of All Economic Activities (5th Edition), published by the Central Statistics Service, 1993, as amended and supplemented, under the following categories-
a) 6: wholesale and retail trade,
b) 7: transport, storage and communication,
c) 8: business services,
d) 9: community, social and personal services,
e) 0: personal and other services;

"**complex industrial wastewater**" means wastewater arising from industrial activities and premises, that contains-
a) a complex mixture of substances that are difficult or impractical to chemically characterise and quantify, or
b) one or more substances, for which a wastewater limit value has not been specified, and which may be harmful or potentially harmful to human health, or to the water resource (identification of complex industrial wastewater will be provided by the Department upon written request);

"**domestic wastewater**" means wastewater arising from domestic and commercial activities and premises, and may contain sewage;

"**domestic wastewater discharge**" means a wastewater discharge consisting of 90% or more domestic wastewater, by volume, that is collected, treated and subsequently disposed of;

"**industrial activity**" means those activities identified in the Standard Industrial Classification of All Economic Activities (5th Edition), published by the Central Statistics Service, 1993, as amended and supplemented, under the following categories-

a) 2: mining and quarrying,
b) 3: manufacturing,
c) 4: electricity, gas and water supply,
d) 5: construction;

"**industrial wastewater discharge**" means a wastewater discharge consisting of more than 10% industrial wastewater, by volume, that is collected, treated and subsequently disposed of;

"**intake**" is water taken from a water resource, and excludes water taken from any source that is not a water resource;

"**monitoring programme**" means a programme for taking regular measurements of the quantity and/or quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge;

"**listed water resources**" are those water resources listed in Table 3.3 and include any tributary of a listed water resource, and any water resource draining the catchment area of a listed water resource;

"**wastewater**" means water containing waste, or water that has been in contact with waste material;

"**wastewater limit value**" means the mass expressed in terms of the concentration and/or level of a substance which may not be exceeded at any time. Wastewater Limit Values shall apply at the last point where the discharge of wastewater enters into a water resource, dilution being disregarded when determining compliance with the wastewater limit values. Where discharge of wastewater does not directly enter a water resource, the wastewater limit values shall apply at the last point where the wastewater leaves the premises of collection and treatment.

Discharging of domestic and industrial wastewater into water resources

3.7. (1) A person who-

(a) owns or lawfully occupies property registered in the Deeds Office as at the date of this notice;

(b) lawfully occupies or uses land that is not registered or surveyed, or

(c) lawfully has access to land on which the use of water takes place.

may on that property or land outside of the areas excluded in paragraph 3.4 above,

(i) discharge up to 2 000 cubic metres of wastewater on any given day into a water resource that is **not** a listed water resource set out in Table 3.3, provided the discharge-

(a) complies with the general wastewater limit values set out in Table 3.1;

(b) does not alter the natural ambient water temperature of the receiving water resource by more than 3 degrees Celsius; and

(c) is not a complex industrial Wastewater.

(ii) discharge up to 2 000 cubic metres of wastewater on any given day into a listed water resource set out in Table 3.3, provided the discharge -

(a) complies with the special wastewater limit values set out in Table 3.1;

(b) does not alter the natural ambient water temperature of the receiving water resource by more than 2 degrees Celsius; and

(c) is not a complex industrial wastewater,

if the discharging of wastewater-

(aA) does not impact on a water resource or any other person's water use, property or land; and

(aB) is not detrimental to the health and safety of the public in the vicinity of the activity.

(2) A person may not discharge stormwater runoff from any premises containing waste, or water containing waste emanating from industrial activities and premises, into a water resource.

TABLE 3.1: Wastewater limit values applicable to discharge of wastewater into a water resource

SUBSTANCE/PARAMETER	GENERAL LIMIT	SPECIAL LIMIT
Faecal Coliforms (per 100 ml)	1 000	0
Chemical Oxygen Demand (mg/l)	75 (i)	30(i)
pH	5,5-9,5	5,5-7,5
Ammonia (ionised and un-ionised) as Nitrogen (mg/l)	6	2
Nitrate/Nitrite as Nitrogen (mg/l)	15	1,5
Chlorine as Free Chlorine (mg/l)	0,25	0
Suspended Solids (mg/l)	25	10
Electrical Conductivity (mS/m)	70 mS/m above intake to a maximum of 150 mS/m	50 mS/m above background receiving water, to a maximum of 100 mS/m
Ortho-Phosphate as phosphorous (mg/l)	10	1 (median) and 2,5 (maximum)
Fluoride (mg/l)	1	1
Soap, oil or grease (mg/l)	2,5	0

SUBSTANCE/PARAMETER	GENERAL LIMIT	SPECIAL LIMIT
Dissolved Arsenic (mg/l)	0,02	0,01
Dissolved Cadmium (mg/l)	0,005	0,001
Dissolved Chromium (VI) (mg/l)	0,05	0,02
Dissolved Copper (mg/l)	0,01	0,002
Dissolved Cyanide (mg/l)	0,02	0,01
Dissolved Iron (mg/l)	0,3	0,3
Dissolved Lead (mg/l)	0,01	0,006
Dissolved Manganese (mg/l)	0,1	0,1
Mercury and its compounds (mg/l)	0,005	0,001
Dissolved Selenium (mg/l)	0,02	0,02
Dissolved Zinc (mg/l)	0,1	0,04
Boron (mg/l)	1	0,5

(i) After removal of algae

Registration of discharges into water resources

3.8. (1) A person who discharges wastewater into a water resource in terms of this authorisation must submit a registration form for registration of the water use before commencement of the discharge.

(2) On written receipt of a registration certificate by the Department, the person will be regarded as a registered water user.

(3) All forms for registration of water use are obtainable from the Regional offices of the Department, as well as from the Departmental web-site at http:\\www.dwaf. gov.za

Record-keeping and disclosure of information

3.9. (1) The water user must ensure the establishment of monitoring programmes to monitor the quantity and quality of the discharge prior to the commencement of the discharge, as follows-

(a) the quantity of the discharge must be metered and the total recorded weekly; and

(b) the quality of domestic wastewater discharges must be monitored monthly by grab sampling and analysed for specific substances and parameters as required by the responsible authority. as set out in Table 3.2.

TABLE 3.2: Monitoring requirements for domestic wastewater discharges

DISCHARGE VOLUME ON ANY GIVEN DAY	MONITORING REQUIREMENTS
10 to 100 cubic metres	pH Electrical Conductivity (mS/m) Faecal Coliforms (per 100 ml)
100 to 1000 cubic metres	pH Electrical Conductivity (mS/m) Faecal Coliforms (per 100 ml) Chemical Oxygen Demand (mg/l) Ammonia as Nitrogen (mg/l) Suspended Solids (mg/l)
1 000 to 2 000 cubic metres	pH Electrical Conductivity (mS/m) Faecal Coliforms (per 100 ml) Chemical Oxygen Demand (mg/l) Ammonia as Nitrogen (mg/l) Nitrate/Nitrite as Nitrogen (mg/l)

DISCHARGE VOLUME ON ANY GIVEN DAY	MONITORING REQUIREMENTS
	Free Chlorine (mg/l) Suspended Solids (mg/l) Ortho-Phosphate as Phosphorous (mg/l)

(c) the quality of industrial wastewater discharges must be monitored weekly by grab sampling-

(i) for all substances which have been added to the water through any industrial activity;

(ii) for all substances which have been concentrated in the water through any industrial activity;

(iii) for all substances which may be harmful or potentially harmful to human health or to the water resource quality; and

(iv) as set out in paragraph 3.9(1)(b) above, if the wastewater contains any domestic wastewater.

(d) The methods for the measurement of specific substances and parameters in any wastewater must be carried out-

(i) by a laboratory that has been accredited under the South African National Accreditation System (SANAS) in terms of SABS Code 0259 for that method; or

(ii) as approved in writing by the responsible authority .

(2) Upon the written request of the responsible authority the registered user must-

(a) ensure the establishment of any additional monitoring programmes; and

(b) appoint a competent person to assess the water use measurements made in terms of this authorisation and submit the findings to the responsible authority for evaluation.

(3) Subject to paragraph 3.9. (2) above, the water user must submit the following information on a monthly basis to the responsible authority -

(a) the quantity of wastewater discharged;
(b) the quality of wastewater discharged;
(c) details of the monitoring programme/s;
(d) details of failures and malfunctions in the discharge system and details of measures taken, and

such information must be made available upon written request to the responsible authority.

(4) Any information on the occurrence of any incident that has or is likely to have a detrimental impact on the water resource quality must be reported to the responsible authority.

Precautionary practices

3.10. (1) The water user must follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of the discharge.

(2) All reasonable measures must be taken to provide for mechanical, electrical, operational, or process failures and malfunctions of the discharge system.

Inspections

3.11. Any property or land in respect of which a water use has been authorised in terms of this notice must be made available for inspection by an authorised person in terms of section 125 of the National Water Act.

Offences

3.12. A person who contravenes any provision of this authorisation is guilty of an offence and is subject to the penalty set out in section 151(2) of the National Water Act.

TABLE 3.3: Listed Water Resources

	WATER RESOURCE
1	Hout Bay River to tidal water
2	Palmiet River from Kogelberg Dam to its estuary
3	Lourens River to tidal water
4	Steenbras River to tidal water
5	Berg and Dwars Rivers to their confluence
6	Little Berg River to Vogelvlei weir
7	Sonderend, Du Toits and Elandskloof Rivers upstream and inclusive of Thee Waterskloof Dam
8	Witte River to confluence with Breede River
9	Dwars River to Ceres divisional boundary
10	Olifants River to the Ceres divisional boundary
11	Hlsloot and Smalblaar (or Molenaars) Rivers to their confluence with Breede River
12	Hex River to its confluence with Breede River
13	Van Stadens River to tidal water
14	Buffalo River from its source to where it enters the King Williams Town limits
15	Klipplaat River from its source to Waterdown Dam
16	Swart Kei River to its confluence with the Klipplaat River
17	Great Brak River
18	Bongola River to Bongola Dam
19	Kubusi River to the Stutterheim limitsy
20	Langkloof River from its source to Barkly East limits
21	Kraai River to its confluence with the Langkloof River
22	Little Tsomo River
23	Xuka River to the Elliot limits
24	Tsitsa and Inxu Rivers to their confluence
25	Mvenyane and Mzimvubu Rivers from sources to their confluence
26	Mzintlava River to its confluence with the Mvalweni River
27	Ingwangwana River to its confluence with Umzimkulu River
28	Umzimkulu and Polela Rivers to their confluence
29	Elands River to the Pietermaritzburg-Bulwer main road
30	Umtamvuma and Weza Rivers to their confluence
31	Umkomaas and Isinga Rivers to their confluence
32	Lurane River to its confluence with the Umkomaas River
33	Sitnundjwana Spruit to its confluence with the Umkomaas River
34	Inudwini River to the Polela district boundary
35	Inkonza River to the bridge on the Donnybrook-Creighton road
36	Umlaas to the bridge on District Road 334 on the farm Maybole

	WATER RESOURCE		
37	Umgeni and Lions River to their confluence		
38	Mooi River to the road bridge at Rosetta		
39	Little Mooi and Hlatikula Rivers to their confluence		
40	Bushmans River to Wagendrift Dam		
41	Little Tugela River and Sterkspruit to their confluence		
42	M'Lambonjwa and Mhlawazeni Rivers to their confluence		
43	Mnweni and Sandhlwana Rivers to their confluence		
44	Tugela River to its confluence with the Kombe Spruit		
45	Inyamvubu (or Mnyamvubu) River to Craigie Burn Dam		
46	Umvoti River to the bridge on the Seven Oaks-Rietvlei road		
47	Yarrow River to its confluence with the Karkloof River		
48	Incandu and Ncibidwane Rivers to their confluence		
49	Ingogo River to its confluence with the Harte River		
50	Pivaan River to its confluence with Soetmelkspruit		
51	Slang River and the Wakkerstroom to their confluence		
52	Elands and Swartkoppie Spruit to their confluence		
53	All tributaries of the Komati River between Nooitgedacht Dam and its confluence with and including Zevenfontein Spruit		
54	Seekoeispruit to its confluence with Buffelspruit		
55	Crocodile River and Buffelskloofspruit to their confluence		
56	All tributaries of the Steelpoort River down to its confluence with and including the Dwars River		
57	Potspruit to its confluence with the Waterval River		
58	Dorps River (or Spekboom River) to its confluence with the Marambanspruit		
59	Ohrigstad River to the Ohrigstad Dam		
60	Klein-Spekboom River to its confluence with the Spekboom River		
61	Blyde River to the Pilgrim's Rest municipal boundary		
62	Sabie River to the Sabie municipal boundary .		
63	Nels River to the Pilgrim's Rest district boundary		
64	Houtbosloop River to the Lydenburg district boundary		
65	Blinkwaterspruit to Longmere Dam		
66	Assegaai River upstream and inclusive of the Heyshope Dam		
67	Komati River upstream and inclusive of the Nooitgedacht Dam and the Vygeboom Dam		
68	Ngwempisi River upstream and inclusive of Jericho Dam and Morgenstond Dam		
69	Slang River upstream and inclusive of Zaaihoek Dam		
70	All streams flowing into the Olifants River upstream and inclusive of Loskop Dam, Witbank Dam and Middelburg Dam		
71	All streams flowing into Ebenezer Dam on the Great Letaba River		
72	Dokolewa River to its confluence with the Politzi River		
73	Ramadiepa River to the Merensky Dam on the farm Westfalia 223, Letaba		
	LISTED WATER RESOURCES WHERE SPECIAL LIMIT FOR ORTHO-PHOSPHATE AS PHOSPHOROUS IS APPLICABLE (Crocodile (west) Marico Water Management Area)		
74	Pienaars River and tributaries as far as Klipvoor Dam		
75	Crocodile River and tributaries as far as Roodekopjies Dam		
76	Elands and Hex River and trrbutaries as far as Vaalkop Dam		
77	Molopo River and Tributaries as far as Madimola Dam		
	RAMSAR LISTED WETLANDS:	**PROVINCE**	**LOCATION**
78	Barberspan	North-West	26°33′ S 25°37′ E
79	Blesbokspruit	Gauteng	26°17′ S 28°30′ E
80	De Hoop Vlei	Western Cape	34°27′ S 20°20′ E
81	De Mond (Heuningnes Estuary)	Western Cape	34°43′ S 20°07′ E
82	Kosi Bay	Kwazulu-Natal	27°01′ S 32°48′ E
83	Lake Sibaya	Kwazulu-Natal	27°20′ S 32°38′ E
84	Langebaan	Western Cape	33°06′ S 18°01′ E
85	Orange River Mouth	Northern Cape	28°40′ S 16°30′ E
86	St Lucia System	Kwazulu-Natal	28°00′ S 32°28′ E
87	Seekoeivlei Nature Reserve	Free State	27°34′ S 29°35′ E
88	Verlorenvlei	Western Cape	32°24′ S 18°26′ E
89	Verloren Valei	Mpumalanga	25°14′ S 30°4′ E
90	Nylsvlei	Northern	24°39′ S 28°42′ E
91	Wilderness Lakes	Western Cape	33°59′ S 22°39′ E

4 DISPOSING OF WASTE IN A MANNER WHICH MAY DETRIMENTALLY IMPACT ON A WATER RESOURCE

[Section 21(g)]

Purpose of this authorisation

4.1. The authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the National Water Act for the disposal of waste, provided that the disposal is within the limits and conditions set out in this authorisation.

Exclusion

4.2. This authorisation does not apply to a person who is not the lawful occupier of the land or who does has lawful access to the land on which the disposal takes place.

Compliance with National Water Act and other laws

4.3 (1) This authorisation does not-

(a) replace any existing authorisation that is recognised under the National Water Act;

(b) exempt a person from compliance with section 7(2) of the Water Services Act, 1997 (Act No. 108 of 1997);

(c) exempt a person from compliance with the provisions of the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977) for construction, operation and maintenance of any structure used for the collection, treatment or disposal of waste; or

(d) exempt a person who uses water from compliance with any other provision of the National Water Act unless stated otherwise in this notice, or any other applicable law, regulation, ordinance or by-law.

(2) A person who uses water in terms of this authorisation is exempt from compliance with section 22(2)(e) of the National Water Act.

Area of applicability

4.4 This authorisation is applicable throughout the Republic of South Africa, except for those subterranean government water control areas set out in Table 4.1.

Duration of authorisation

4.5. This authorisation will be applicable for a period of five years from the date of publication of this notice, unless-

(a) it is amended at any review period, which period shall be at intervals of three years from the date of publication of this notice;

(b) the period is extended by a further notice in the *Gazette*;
(c) it is replaced with a General Authorisation in relation to a specific water resource or within a specific area; or
(d) the water user is required to apply for a licence in terms of the National Water Act.

Definitions

4.6. In this authorisation, unless the context otherwise indicates, any expression to which a meaning has been assigned in terms of the National Water Act shall have that meaning, and-

"biodegradable industrial wastewater" means wastewater that contains predominantly organic waste arising from industrial activities and premises, including-
(a) milk processing;
(b) manufacture of fruit and vegetable products;
(c) sugar mills;
(d) manufacture and bottling of soft drinks;
(e) water bottling;
(f) production of alcohol and alcoholic beverages in breweries, wineries or malt houses;
(g) manufacture of animal feed from plant or animal products;
(h) manufacture of gelatine and glue from hides, skin and bones;
(i) abattoirs;
(j) fish processing; and
(k) feedlots;

"**category A mine**" means-
(a) any gold or coal mine;
(b) any mine with an extractive metallurgical process, including heap leaching; or
(c) any mine where the mineral deposit contains sulphide or where acid-forming minerals occur in the mineral deposit;

"**complex industrial wastewater**" means wastewater arising from industrial activities and premises, that contains-
a) a complex mixture of substances that are difficult or impractical to chemically characterise and quantify; or
b) one or more substances, for which a wastewater limit value has not been specified, and which may be harmful or potentially harmful to human health, or to the water resource-
(identification of complex industrial wastewater will be provided by the Department upon written request);

"**domestic wastewater**" means wastewater arising from domestic and commercial activities and premises, and may contain sewage;

"**evaporation pond**" means a dam designed to collect and dispose of wastewater through evaporation, from which any concentrated waste or sludge

must be removed and disposed of according to the requirements of any relevant laws and regulations;

"**grey water**" refers to wastewater generated through domestic activities and premises, including washing, bathing and food preparation, but does not contain sewage;

"**monitoring programme**" means a programme for taking regular measurements of the quantity and/or quality of a water resource, waste or wastewater discharge at specified intervals and at specific locations to determine the chemical, physical and biological nature of the water resource, waste or wastewater discharge;

"**organic waste**" means waste of non-anthropogenic origin that is readily biodegradable in the environment and does not contain any substances that may accumulate in the environment;

"**on-site disposal**" refers to the disposal of wastewater on individual properties not permanently linked to a central waste collection, treatment and disposal system, such as septic tank systems, conservancy tank systems, soakaway systems, french drains and pit latrines;

"**primary treatment**" means the treatment of wastewater by a physical process, which may involve maceration, sedimentation, screening and grit removal;

"**secondary treatment**" means the treatment of wastewater by a biological process, through solar energy, bacteria, algae and a variety of aquatic biota, to remove organic matter;

"**wastewater**" means water containing waste, or water that has been in contact with waste material;

"**wastewater pond system**" means a dam or system of dams designed to collect wastewater and to conduct primary and secondary treatment, from which treated wastewater is disposed of.

Storage of domestic and/or biodegradable industrial wastewater for the purpose of re-use

4.7. A person who-

(a) owns or lawfully occupies property registered in the Deeds Office as at the date of this notice;

(b) lawfully occupies or uses land that is not registered or surveyed, or

(c) lawfully has access to land on which the use of water takes place,

may on that property or land outside of the areas set out in Table 4.1-

(i) store up to 5 000 cubic metres of domestic and/or biodegradable industrial wastewater for the purpose of re-use,

if the storing of the wastewater-

(aa) does not impact on a water resource or on any other person's water use, property or land; and

(bb) is not detrimental to the health and safety of the public in the vicinity of the activity.

Storage of domestic and/or biodegradable industrial wastewater for the purpose of disposal

4.8. A person who-

(a) owns or lawfully occupies property registered in the Deeds Office as at the date of this notice;

(b) lawfully occupies or uses land that is not registered or surveyed, or

(c) lawfully has access to land on which the use of water takes place,

may on that property or land outside of the areas set out in Table 4.1-

(i) store domestic and/or biodegradable industrial wastewater for the purpose of disposal of-

(aa) up to 10 000 cubic metres per property or land; or

(bb) up to 50 000 cubic metres in a wastewater pond system per property or land,

if the storing of the wastewater-

(aA) does not impact on a water resource or on any other person's water use, property or land; and

(aB) is not detrimental to the health and safety of the public in the vicinity of the activity;

Disposal of domestic and/or biodegradable industrial wastewater

4.9. A person who-

(a) owns or lawfully occupies property registered in the Deeds Office as at the date of this notice;

(b) lawfully occupies or uses land that is not registered or surveyed, or

(c) lawfully has access to land on which the use of water takes place,

may on that property or land, outside of the areas set out in Table 4.1, dispose of -

(i) up to 1 000 cubic metres of domestic and/or biodegradable industrial wastewater, on any given day-

(aa) into a wastewater pond system; or

(bb) into an evaporation pond system;

(ii) domestic wastewater or biodegradable wastewater into a wastewater irrigation system as set out under General Authorisation 2 above;

(iii) wastewater to an on-site disposal facility -

(aa) for grey water generated by a single household;

(bb) up to one cubic metre of biodegradable industrial wastewater on any given day; or

(cc) domestic wastewater to a communal conservancy tank serving no more than 50 households;

(iv) domestic wastewater generated by a single household not permanently linked to a central waste collection, treatment and disposal system to an on-site disposal facility; and

(v) stormwater runoff from any premises not containing waste or wastewater from industrial activities and premises,

if the disposing of wastewater-

(aA) does not impact on a water resource or on any other person's water use, property or land; and

(bB) is not detrimental to the health and safety of the public in the vicinity of the activity.

Disposal of mine waste or residue

4.10. A person may dispose of mine residue into mine residue deposits provided that-

(a) the mine residue is not from a Category A mine;

(b) the disposal is in accordance with Government Notice No. 704, dated 4 June 1999; and

(c) the disposal is in accordance with SABS Code 0286, as amended from time to time.

Registration of wastewater storage

4.11.(1) A person who stores wastewater in terms of this authorisation must submit a registration form for registration of the water use before commencement of storage if more than 1 000 cubic metres are stored for disposal or if more than 500 cubic metres are stored for re-use.

(2) On written receipt of a registration certificate form the Department, the person will be regarded as a registered water user.

(3) All forms for registration of water use are obtainable from the Regional offices of the Department as well as from the Departmental web-site at http:\\www.dwaf.gov.za

Registration of wastewater disposal

4.12(1) A person who disposes of wastewater in terms of this authorisation must submit a registration form for registration of the water use before the commencement of the disposal if more than 50 cubic metres of domestic wastewater or biodegradable industrial wastewater is disposed of on any given day.

(2) The responsible local authority must submit a registration form obtained from the Department, to register the water use for disposal of domestic wastewater in-

(a) areas where more than 5 000 households are served by on-site disposal sites;

(b) areas where the density of on-site disposal sites exceeds 10 per hectare; or

(c) areas served by communal septic tanks.

(3) On written receipt of a registration certificate from the Department, the person will be regarded as a water user.

(4) All forms for registration of water use are obtainable from the Regional offices of the Department as well as from the Departmental web-site at http:\\www.dwaf.gov.za

Location of wastewater storage dams and wastewater disposal sites

4.13. Wastewater storage dams and wastewater disposal sites must be located-

(a) outside of a watercourse;

(b) above the 100 year flood line, or alternatively, more than 100 metres from the edge of a water resource or a borehole which is utilised for drinking water or stock watering, which ever is further; and

(c) on land that is not, or does not, overlie, a Major Aquifer (identification of a Major Aquifer will be provided by the Department upon written request).

Record-keeping and disclosure of information

4.14.(1) The water user must ensure the establishment of monitoring programmes to

monitor the quantity and quality of the wastewater prior to storage or disposal, as follows-

(a) for the storage of wastewater, the quantity must be recorded monthly; or

(b) for the disposal of wastewater, the quantity must be gauged or metered and recorded monthly.

(2) Upon the written request of the responsible authority, the water user must-

(a) ensure the establishment of any additional monitoring programmes; and

(b) appoint a competent person to assess the water use measurements made in terms of this authorisation, and to submit the findings to the responsible authority for evaluation.

(3) Subject to paragraph 4.14 (2) above, the water user keep a written record of the following wastewater storage or wastewater disposal and related activities-

(a) the location of the storage dam or wastewater disposal site;
(b) the quantity of wastewater stored or disposed of or re-used;
(c) the quality of wastewater stored or disposed of, where applicable;
(d) details of the monitoring programme;
(e) details of failures and malfunctions of any wastewater disposal system or wastewater storage dam that the registered user is responsible for, and

such information must be made available upon written request to the responsible authority.

(4) Any information on the occurrence of any incident that has or is likely to have a detrimental impact on the water resource quality must be reported to the responsible authority.

Precautionary practices

4.15.(1) The water user must follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of any wastewater disposal system or wastewater storage dam.

(2) All reasonable measures must be taken to prevent wastewater overflowing from any wastewater disposal system or wastewater storage dam.

(3) All reasonable measures must be taken to provide for mechanical, electrical or operational failures and malfunctions of any wastewater disposal system or wastewater storage dam.

(4) Sewage sludge must be removed from any wastewater and the resulting sludge disposed of according to the requirements of any relevant law and regulation, including-

(a) “Permissable utilisation and disposal of sewage sludge” Edition 1, 1997. Water Research Commission Report No TT 85/97and Addendum thereto Edition 1, July 2002, and as amended from time to time; and

(b) “Guide: Permissable utilisation and disposal of treated sewage effluent”, 1978, Department of National Health and Population Development Report No. 11/2/5/3, as amended from time to time (obtainable from the Department upon written request).

Inspections

4.16. Any property or land in respect of which a water use has been authorised in terms of this notice must be made available for inspection by an authorised person in terms of section 125 of the National Water Act.

Offences

4.17. A person who contravenes any provision of this authorisation is guilty of an offence and is subject to the penalty set out in section 151(2) of the National Water Act.

NOTE: Information regarding the drainage regions referred to in Table 4.1 can be obtained from the Department, upon written request.

TABLE 4.1 Subterranean government water control areas excluded from General Authorisation for disposal of waste

Primary drainage region	Tertiary/ Quaternary drainage region	Description of subterranean government water control area	Government Notice No.	Government Gazette Date
H	H30	Baden	136	1967-06-16
A	A30	Bo-Molopo	1324	1963-08-30
C	C30	Bo-Molopo	1993	1965-12-17
D	D41	Bo-Molopo	R634	1966-04-29
A	A24	Crocodile River Valley	208	1981-10-23
A	A21	Crocodile River Valley	18	1983-02-18
A	A21, A22	Kroondal-Marikana	180	1963-06-17
G	G10,G30	Lower Berg River Valley/Saldanha	185	1976-09-10
A,B	A60,B50,B31	Nyl River Valley	56	1971-03-26
G	G30	Strandfontein	2463	1988-12-09
M	M10,M20,M30	Uitenhage	260	1957-08-23
G	G30	Wadrif	992	1990-05-11
G	G20	Yzerfontein	27	1990-02-09
G	G30	Graafwater	1423	1990-06-29
A	A70	Dendron-Vivo	813	1994-04-29
A	A60	Dorpsrivier	312	1990-02-16
C	C24	Ventersdorp	777	1995-06-02

APPENDIX II

GEOTECHNICAL REPORT

APPENDIX III

BOREHOLE CONSTRUCTION & GEOLOGICAL LOGS

Borehole Construction and Geological Log

Date compiled: 2009/04/28

BASIC SITE INFORMATION: ***Site Identifier:*** 2330CD00001 ***Number:*** H08-1872 ***Site type:*** Borehole

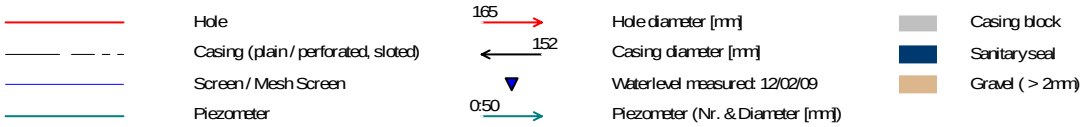
Distr./Farm No.: ***Site Name/Des.:*** MOGOBOYA'S LOCATION/MAAKE FILLING STATION

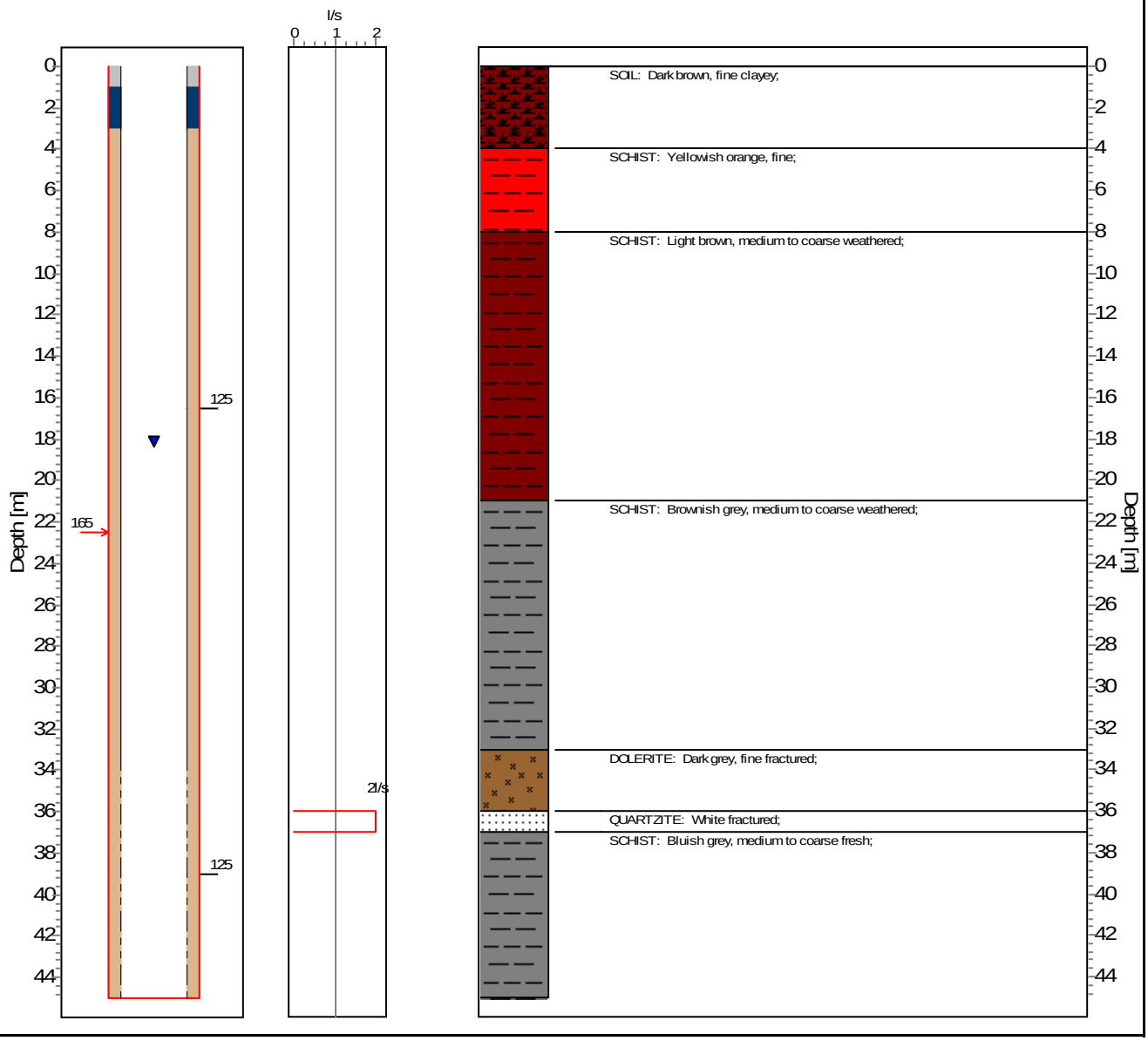
Region Type: District Council ***Region Descr.:***

Longitude [°]:	23.976190	***Reg./BB.:***		***Depth [m]:***	45.00
Latitude [°]:	30.288170	***G-Nr.:***		***Col. ht. [m]:***	0.40
Altitude [m]:	590.00	***Topo-set.:***	Hillside (slope)	***Diam. [mm]:***	127
Coord. acc.:	Accurate to within 10 units	***Site status:***	In use	***Drain. reg.:***	B81D
Coord. meth.:	Global Positioning System	***Site purp.:***	Observation	***Rep. inst.:***	
		Use applic.:	Industrial and mining -		
		Equipment:	No equipment		

Coordinate System: Geographic Decimal Degrees (Longitude/Latitude), Cape Datum (Mod. Clarke 1880)

Construction and Geohydrological Legend





COMMENT:

User name and adress

Borehole Construction and Geological Log

Date compiled: 2009/02/20

BASIC SITE INFORMATION:

Site Identifier: 2330CDR0006 ***Number:*** H08-1873 ***Site type:*** Borehole

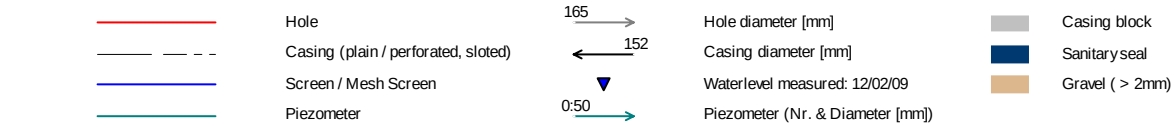
Distr./Farm No.: NP ***Site Name/Des.:*** MOGOBOYA'S LOCATION/MAAKE FILLING STATION

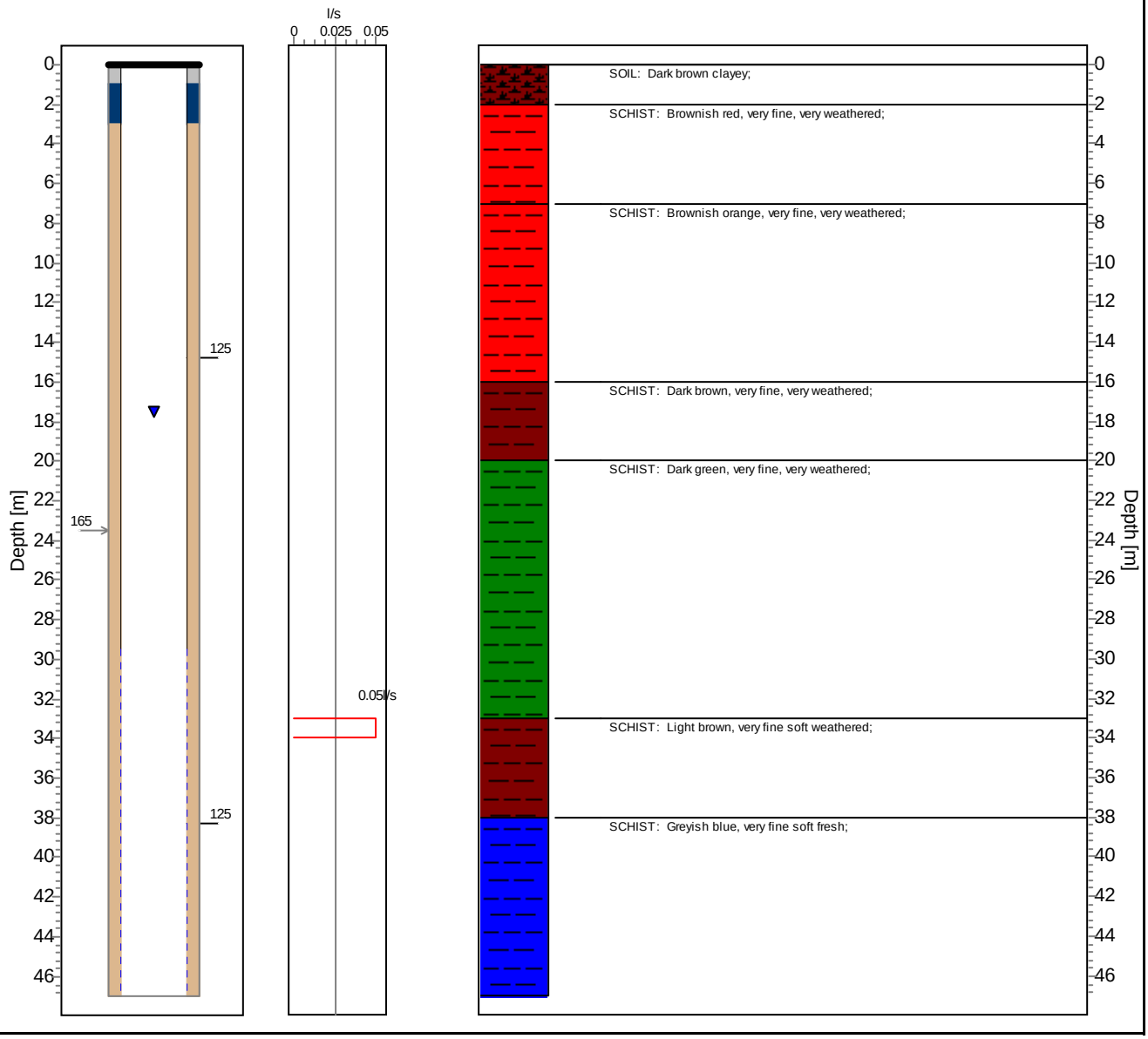
Region Type: District Council ***Region Descr.:*** MOPANI/GREATER TZANEEN

Latitude [°]:	23.976020	***Reg./BB.:***		***Topo-set.:***	Flat surface, plain	***Depth [m]:***	47.00
Longitude [°]:	30.287530	***G-Nr.:***		***Site status:***	Unused	***Col. ht. [m]:***	0.40
Altitude [m]:	590.00			***Site purp.:***	Observation	***Diam. [mm]:***	165
Coord. acc.:	Accurate to within 100 units			***Use applic.:***	Industrial - commercial	***Drain. reg.:***	B81D
Coord. meth.:	Interpolated from map			***Equipment:***	No equipment	***Rep. inst.:***	

Coordinate System: Geographic Decimal Degrees (Longitude/Latitude), Cape Datum (Mod. Clarke 1880)

Construction and Geohydrological Legend





COMMENT:

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APPENDIX IV

HYDRO-CHEMISTRY RESULTS

UIS Analytical Services (Pty) Ltd • Reg. No. 2000/027788/07 • VAT No. 4920202969
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info@uis-as.co.za • http://www.uis-as.co.za

ANALYSIS CERTIFICATE

Date	2009/03/11
Request No	975
Contract No	
Order/Ref No	

Insitu Groundwater Services
PO Box 26278
Nelspruit
1200
South Africa
Chrisna Ross
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Fax : +27 13 741 4043
E-Mail : insitugw@xsinet.co.za

SAMPLE ID :	69289	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1872/UPSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : pH
METHOD NO.: UIS-EA-T003 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
pH	7.17	
pH Temperature	24.4	Deg C

METHOD : Electrical Conductivity
METHOD NO.: UIS-EA-T001 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
Total Conductivity	58	mS/m
TC Temperature	24.4	Deg C

METHOD : Calculated Total Dissolved Solids from EC
METHOD NO.: UIS-CP-T001 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
TDS by EC * 6.5	377	mg/l
TDS by EC * 7	406	mg/l

METHOD : P and Total (M) Alkalinity
METHOD NO.: UIS-EA-T002 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
P Alkalinity	<0.6	mg/l CaCO3
Total (M) Alkalinity	202	mg/l CaCO3

analysis (ə'nælɪsɪs) *n.* separation of something into its elements or components (*pl.* **-yses** (ɪsi:z)) — **chemical** *n./a.*, the analysis of material samples to gain an understanding of their chemical composition and structure

SANAS ACCREDITED LABORATORY T0184

SAMPLE ID :	69289	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1872/UPSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : Cations in Water by ICP-OES
METHOD NO.: UIS-TEA-T001 **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
Ag	<0.05	mg/l
Al	<0.05	mg/l
As	<0.1	mg/l
B	0.19	mg/l
Ba	0.13	mg/l
Be	<0.05	mg/l
Bi	<0.05	mg/l
Ca	54.7	mg/l
Cd	<0.05	mg/l
Co	0.06	mg/l
Cr	<0.05	mg/l
Cu	<0.05	mg/l
Fe	0.22	mg/l
K	0.9	mg/l
Li	<0.05	mg/l
Mg	27.2	mg/l
Mn	0.31	mg/l
Mo	<0.05	mg/l
Na	26.9	mg/l
Ni	<0.05	mg/l
P	<0.05	mg/l
Pb	<0.05	mg/l
S	2.38	mg/l
Sb	<0.05	mg/l
Se	<0.05	mg/l
Si	21.9	mg/l
Sn	<0.05	mg/l
Sr	0.1	mg/l
Ti	<0.05	mg/l
Tl	<0.05	mg/l
V	<0.05	mg/l
Zn	0.09	mg/l

METHOD : Calculated Hardness
METHOD NO.: UIS-CP-T004 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
Ca Hardness	137	mg/l CaCO3
Mg Hardness	112	mg/l CaCO3
Total Hardness	249	mg/l CaCO3

METHOD : Anions by Ion Chromatography
METHOD NO.: UIS-EA-T008 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
F	0.2	mg/l
Cl	34.1	mg/l
NO3	47	mg/l
NO3 as N	10.6	mg/l
PO4	<0.8	mg/l
SO4	5.67	mg/l

SAMPLE ID :	69289	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1872/UPSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : Ion Balance Error

METHOD NO.: UIS-CP-T002 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
Sum of Cations	6.21	me/l
Sum of Anions	6.78	me/l
Ion Balance Error	-4.36	%

METHOD : Ammonium by Ion Chromatography (IC)

METHOD NO.: UIS-EA-T009 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
NH4	<2.5	ppm

AUTHORISED SIGNATURE

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ANALYSIS CERTIFICATE

Date	2009/03/11
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Insitu Groundwater Services
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1200
South Africa
Chrisna Ross
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Fax : +27 13 741 4043
E-Mail : insitugw@xsinet.co.za

SAMPLE ID :	69290	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1873/DOWNSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : pH
METHOD NO.: UIS-EA-T003 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
pH	7.21	
pH Temperature	24.3	Deg C

METHOD : Electrical Conductivity
METHOD NO.: UIS-EA-T001 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
Total Conductivity	49	mS/m
TC Temperature	24.3	Deg C

METHOD : Calculated Total Dissolved Solids from EC
METHOD NO.: UIS-CP-T001 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
TDS by EC * 6.5	319	mg/l
TDS by EC * 7	343	mg/l

METHOD : P and Total (M) Alkalinity
METHOD NO.: UIS-EA-T002 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
P Alkalinity	<0.6	mg/l CaCO3
Total (M) Alkalinity	196	mg/l CaCO3

analysis (ə'nælɪsɪs) *n.* separation of something into its elements or components (*pl.* **-yses** (ɪsi:z)) — **chemical** *n./a.*, the analysis of material samples to gain an understanding of their chemical composition and structure

SANAS ACCREDITED LABORATORY T0184

SAMPLE ID :	69290	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1873/DOWNSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : Cations in Water by ICP-OES

METHOD NO.: UIS-TEA-T001 **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
Ag	<0.05	mg/l
Al	<0.05	mg/l
As	<0.1	mg/l
B	0.25	mg/l
Ba	0.1	mg/l
Be	<0.05	mg/l
Bi	<0.05	mg/l
Ca	45.8	mg/l
Cd	<0.05	mg/l
Co	<0.05	mg/l
Cr	<0.05	mg/l
Cu	<0.05	mg/l
Fe	<0.05	mg/l
K	0.73	mg/l
Li	<0.05	mg/l
Mg	23.2	mg/l
Mn	0.16	mg/l
Mo	<0.05	mg/l
Na	27.2	mg/l
Ni	<0.05	mg/l
P	0.16	mg/l
Pb	<0.05	mg/l
S	1.9	mg/l
Sb	<0.05	mg/l
Se	<0.05	mg/l
Si	22.4	mg/l
Sn	<0.05	mg/l
Sr	0.08	mg/l
Ti	<0.05	mg/l
Tl	<0.05	mg/l
V	<0.05	mg/l
Zn	0.18	mg/l

METHOD : Calculated Hardness

METHOD NO.: UIS-CP-T004 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
Ca Hardness	114	mg/l CaCO3
Mg Hardness	95.5	mg/l CaCO3
Total Hardness	210	mg/l CaCO3

METHOD : Anions by Ion Chromatography

METHOD NO.: UIS-EA-T008 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
F	0.21	mg/l
Cl	21.9	mg/l
NO3	24.3	mg/l
NO3 as N	5.48	mg/l
PO4	<0.8	mg/l
SO4	3.92	mg/l

SAMPLE ID :	69290	**SAMPLE MATRIX :**	Water
SAMPLE NO.:	H08-1873/DOWNSTREAM	**DATE RECEIVED :**	2009-02-26

METHOD : Ion Balance Error

METHOD NO.: UIS-CP-T002 **DATE COMPLETED :** 2009-03-09

PARAMETER	VALUE	UNIT
Sum of Cations	5.44	me/l
Sum of Anions	5.97	me/l
Ion Balance Error	-4.65	%

METHOD : Ammonium by Ion Chromatography (IC)

METHOD NO.: UIS-EA-T009 (Accredited) **DATE COMPLETED :** 2009-03-06

PARAMETER	VALUE	UNIT
NH4	<2.5	ppm

AUTHORISED SIGNATURE

Labserve
ANALYTICAL SERVICES & CROP PROTECTION

Nebo Park, Suikerriet Street, Nelspruit
P.O. Box 1920, Nelspruit, 1200
E-mail: labserve@lantic.net
Telephone: 013-752-4745
Fax: 013-752-4617

AgriLASA
AGRI LABORATORY ASSOCIATION OF SOUTHERN AFRICA

A member and participant of Agrilasa's Interlaboratory Control Schemes.

Test Report - Water Analysis

In-situ Groundwater Consulting
Box 26278
Nelspruit
1200

Telephone: 013-741-5158
Fax:
E-mail:

Samples Received : 20/02/2009
Sampled by: Yourselves
Report # : 9-02093
Order #:
Acc # : I26

Sample(s) received: 1 x water sample

Sample condition: Good

Sub-contractor: None

ORIGINAL

Results:

LAB No.		9-02093
Your Reference		H08-1872 13/2/09 @ 12:52
Irrigation Class [a]		C2-S1
Sodium Abs. Ratio		0.7
pH	pH units	7.18
Conductivity @ 25 °C	mS/m	57
Total Alkalinity as $CaCO_3$	mg/l	200
Calcium as Ca	mg/l	46
Magnesium as Mg	mg/l	25
Sodium as Na	mg/l	25
Chloride as Cl	mg/l	44
Potassium as K	mg/l	1
Sulphate as SO_4	mg/l	1
Nitrate as N	mg/l	4.62
Fluoride as F	mg/l	0.42
Turbidity	NTU	0.04
Total Coliform (SANS 5221) [b]	cfu/100 ml	<1
E. coli (SANS 5221) [c]	cfu/100 ml	<1
Total Dissolved Solids	mg/l	405
pH_s at 20 °C		7.59
Ryznar Index @ 20 °C		8.00
Langelier Index @ 20 °C [d]		-0.41
Ca Hardness as $CaCO_3$	mg/l	115
Mg Hardness as $CaCO_3$	mg/l	103
Total Hardness as $CaCO_3$	mg/l	218

[a] C2-S1 : Medium salinity water suitable for irrigation on most soils and crops provided drainage is good.

K. Auerswald Sci. Nat
L.K. Auerswald B.Sc. Agric (Hons)

Date: 03/03/2009

(END OF REPORT)

Labserve
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A member and participant of Agrilasa's Interlaboratory Control Schemes.

Test Report - Water Analysis

Consulting

In-situ Groundwater Services
Box 26278
Nelspruit
1200

Telephone: 013-741-5158
Fax:
E-mail:

Samples Received : 27/02/2009
Sampled by: Yourselves
Report # : 9-02394
Order #:
Acc # : I15

Sample(s) received: 2 x water samples

Sample condition: Good

Sub-contractor: None

Results: H08-1873

LAB No.		9-02394	9-02395
Your Reference		H05-Marite 20/02/09 @ 16:30 H05-2612	H08-24/02/09 @ 12:00 H08-1873
Sodium Abs. Ratio		0.96	0.79
pH	pH units	6.57	6.79
Conductivity @ 25 °C	mS/m	11	48
Total Alkalinity as $CaCO_3$	mg/l	55	205
Calcium as Ca	mg/l	9	40
Magnesium as Mg	mg/l	3	22
Sodium as Na	mg/l	13	25
Chloride as Cl	mg/l	7	24
Potassium as K	mg/l	1	1
Sulphate as SO_4	mg/l	1.57	3.61
Nitrate as N	mg/l	0.08	1.62
Fluoride as F	mg/l	0.13	0.19
Turbidity	NTU	0.05	1.52
Total Coliform (SANS 5221) [b]	cfu/100 ml	<1	**2419**
E. coli (SANS 5221) [c]	cfu/100 ml	<1	<1
Total Dissolved Solids	mg/l	78	341
pH_s at 20 °C		8.79	7.63
Ryznar Index @ 20 °C		11.00	8.47
Langelier Index @ 20 °C [d]		**-2.22**	**-0.84**
Ca Hardness as $CaCO_3$	mg/l	23	100
Mg Hardness as $CaCO_3$	mg/l	12	90
Total Hardness as $CaCO_3$	mg/l	35	190

ORIGINAL

[b] Alert level exceeded Class 0 Class 4

[d] The water may corrode unprotected metal & concrete surfaces in the system.

K. Auerswald Sci. Nat
L.K. Auerswald B.Sc. Agric (Hons)

Date: 10/03/2009

(END OF REPORT)

APPENDIX V

PUMP TEST & WATER SOURCE EVALUATION REPORTS

PUMPING TEST REPORT

Date compiled: 2009/02/23

BASIC SITE INFORMATION:

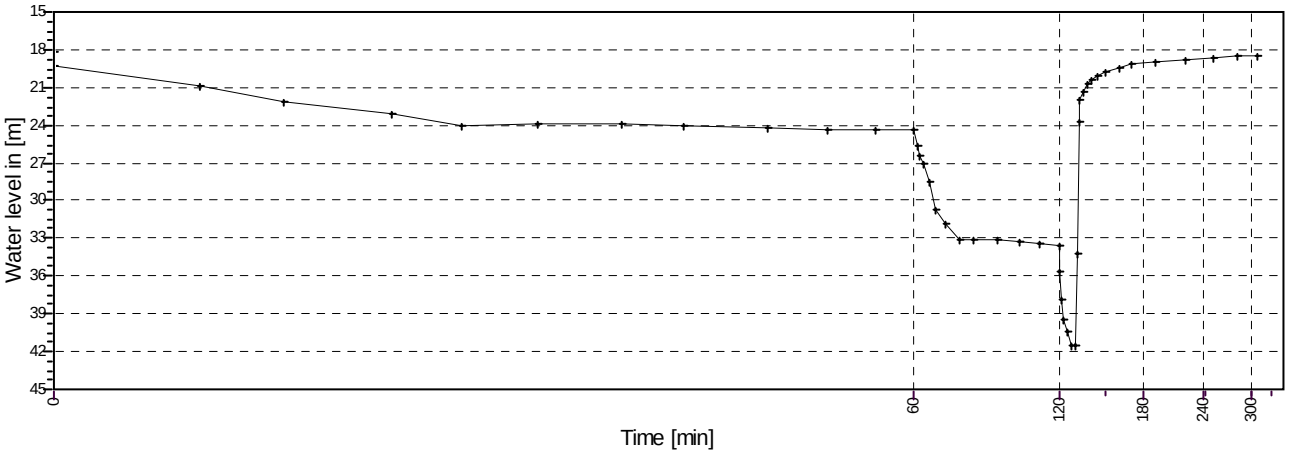
Site Identifier: 2330CDR0005 ***Number:*** H08-1872 ***Site type:*** Borehole

Distr./Farm No.: NP ***Site Name/Des.:*** MOGOBOYA'S LOCATION/MAAKE FILLING STATION

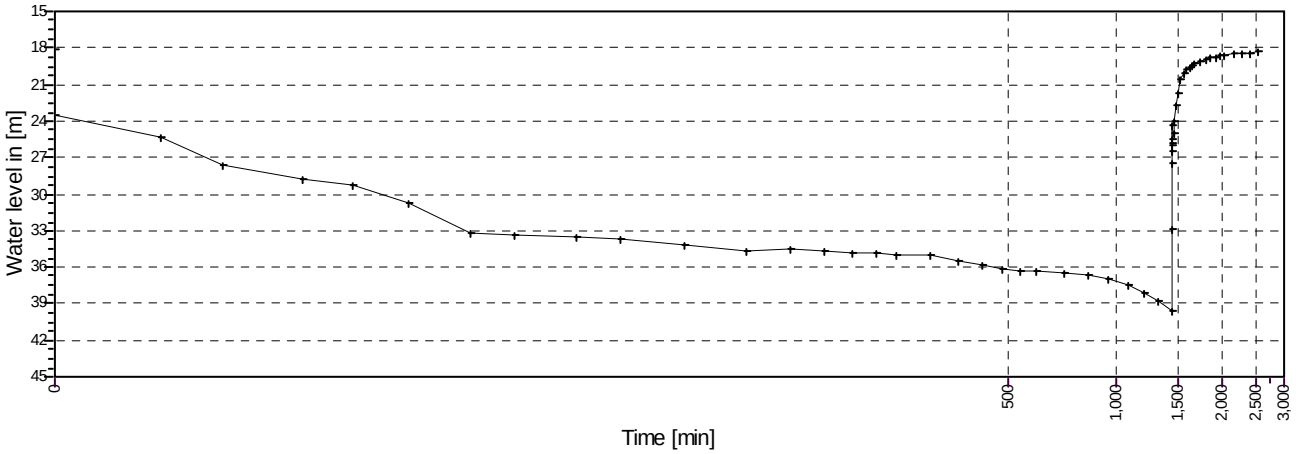
Latitude [°]	23.976190	***Alt. No. 1:***		***Diam. [mm]:***	170	***Water lev. [m]:***	18.10
Longitude [°]	30.288170	***Alt. No. 2:***		***Depth [m]:***	45.90	***Piezometer:***	0
Altitude [m]:	590.00	***Rep. inst.:***	INSITU	***Col. ht. [mm]:***	0.50	***Date WL meas.:***	20090212

Coordinate System: Geographic Decimal Degrees (Longitude/Latitude), Cape Datum (Mod. Clarke 1880)

Multirate Test



Constant Rate Test



PUMPING TEST:

Rep. Inst.	*Meth. tested*	*Depth to intake [m]*	*Starting Date*	*Time*	*Ending Date*	*Time*	*Transmis. [m²/d]*	*Storativ.*	*Rec. abs. [l/s]*
INSI	Step test	41.43	20090212	0700	20090212	1210			
INSI	Constant rate test	41.43	20090212	1300	20090213	1300			
INSI	Recovery test	41.43	20090213	1301	20090214	0700	8.7181	6.916E-10	

TESTING DETAILS:

Description	*Time start.*	*Durat. [min]*	*Depth to intk. [m]*	*Disch. rate[l/s]*	*Drawd. [m]*	*Recov. [m]*	*%*	*Rec. Dur. [min]*	*Trans. [m²/d]*	*Perm. [m/d]*	*Storat.*	*Q/st*
STEP TEST 1	0700	60	41.43	1.25	6.28							0.20
STEP TEST 2	0800	60	41.43	2.17	15.40							0.14
STEP TEST 3	0900	10	41.43	2.74	23.33	0.42	98	180				0.12
CONSTANT DISCHARGE	1300	1440	41.43	2.21	21.52	0.20	99	1080	8.718		7E-10	0.10

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WATER SOURCE EVALUATION REPORT

BASIC SITE INFORMATION:

Site Identifier: 2330CDR0005 **Number:** H08-1872 **Site type:** Borehole

Distr./Farm No.: NP **Site Name/Descr.:** MOGOBOYA'S LOCATION/MAAKE FILLING STATION

Latitude [°]:	23.976190	**Alt. No. 1:**		**Diam. [mm]:**	170	**Water lev. [m]:**	18.10
Longitude [°]:	30.288170	**Alt. No. 2:**		**Depth [m]:**	45.90	**WL status:**	Static
Altitude [m]:	590.00	**Rep. inst.:**	INSITU	**Col. ht. [m]:**	0.50	**Date WL meas.:**	20090212

Coordinate System: Geographic Decimal Degrees (Longitude/Latitude), Cape Datum (Mod. Clarke 1880)

EXISTING EQUIPMENT:

Pump:

Type of Inst.: No equipment **Pulley Diam. [mm]:**

Manufacturer: **Depth to Intk. [m]:**

Engine:

Manufacturer: **Power Rating [kW]**

Type of Power: None **Pulley Diam. [mm]:**

USE APPLICATION:

Site Status: Unused

Purpose: Observation

Consumer: Urban

Application: Industrial - commercial

WATER CHEMISTRY:

Sample No.: **Date sampled:** **Depth sampl. [m]:** **Comment:**

Main Parameters:			Calculated Parameters:	Bacteriol. Parameters:
pH:	**Na:**	**Cl:**	**Langel.:**	**E.Coli:**
EC: [mS/m]	**K:**	**NO3 as N:**	**Aggr-Ind:**	**Faec. co:**
TDS:	**Si:**	**SO4:**	**Ion-bal:**	**Total Co:**
T. Alk.:	**Al:**	**F:**	**CaCO3:**	**SPC:**
Ca:	**Fe:**			
Mg:	**Mn:**			

Concentrations in [mg/l]; Bact. param. in counts/100ml; Chemistry Standard: SABS for human consumption
† Value exceeds recommended maximum limit ‡ Value exceeds maximum allowable limit
! Value exceeds recommended minimum limit ¡ Value exceeds minimim allowable limit

AQUIFER INFORMATION:

Depth to Top [m]	Depth to Bot. [m]	Yield[l/s]	Method meas.	Aquifer type	Comment
36.00	37.00	2.00	Volumetric	Fractured	

CASING DETAILS:

Depth to Top [m]	to Bot. [m]	Diam. [mm]	Material	Thickn. [mm]	Type of openings	Openings [mm]: Length	Width	Hor. Dist.	Vert. Dist.
0.00	33.00	125	PVC	6	Plain casing				
33.00	45.00	125	Steel	6	Screen				

TESTING DETAILS:

Description	Date	Durat. [min]	Depth to intk. [m]	Disch. rate[l/s]	Drawd. [m]	Recovery [m]	%	[min]	T [m²/d]	Storage	Comment
STEP TEST 1	20090212	60	41.43	1.25	6.28						
STEP TEST 2	20090212	60	41.43	2.17	15.40						
STEP TEST 3	20090212	10	41.43	2.74	23.33	0.42	98	180			
CONSTANT DISCHARGE	20090212	1440	41.43	2.21	21.52	0.20	99	1080	8.718	7E-10	

RECOMMENDATIONS:

Prior.	Rec. equipm.	Depth to intk. [m]	Type of power	Duty cyc. [hrs]	Disch. rate [l/s]	Water quality	Dyn. water level [m]	Crit. water level [m]
1	Submersible pump	40.00	Electric motor	18	1.80	AWAIT	34.00	37.00

Note: Borehole would be abl to deliver a sustainable yield of 6480L/hr or 116 640L/day at recommended pumping rate.

Borehole H08-1873, 68.2m from tested borehole H08-1872, exhibited a 0.340m drawdown in water level over the 1440 minutes of testing of borehole H08-1872.

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