



DEPARTEMENT VAN WATERWESE EN BOSBOU
DEPARTMENT OF WATER AFFAIRS AND FORESTRY



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PERMIT NUMBER: B33/2/1400/3/P243
CLASS: G:M:B⁺
WASTE DISPOSAL SITE: GRAHAMSTOWN MUNICIPAL DISPOSAL SITE
LOCATION: GRAHAMSTOWN COMMONAGE WEST: DIVISION OF ALBANY
PERMIT HOLDER: GRAHAMSTOWN MUNICIPALITY
ADDRESS: P.O. BOX 176, GRAHAMSTOWN, 6140

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

By virtue of the powers delegated to me by the Minister of Water Affairs and Forestry (hereinafter referred to as "the Minister"), I, Jacobus Louis Johannes van der Westhuizen, in my capacity as Acting Manager: Scientific Services in the Department of Water Affairs and Forestry (hereinafter referred to as "the Department"), hereby, in terms of section 20(1) of the Environment Conservation Act, 1989 (Act 73 of 1989), authorise the abovementioned Permit Holder to further develop and operate the abovementioned waste disposal site, subject to the conditions specified herein.

PERMIT CONDITIONS

In this Permit, "Regional Director" means the Regional Director: Eastern Cape of the Department who may be contacted at the address below:

Regional Director: Eastern Cape
Department of Water Affairs and Forestry
Private Bag X68
CRADOCK
5880

1. LOCATION

- 1.1 This Permit authorises the further development and operation of a waste disposal site on Grahamstown Commonage West, Division of Albany (hereinafter referred to as "the Site") according to the report dated May 1994 (hereinafter referred to as "the Report"), submitted by the Permit Holder.

The boundaries of the Site shall be as indicated as beacon descriptions A,B,C,D,E,F on the plan with scale 1:2500 and the permit application submitted by the Permit Holder.

2. PERMISSIBLE WASTE

- 2.1 The Site may be used for the disposal of all waste types, excluding those listed in Annexure I and excluding those where specific control has been established in terms of the Nuclear Energy Act, 1993 (Act 131 of 1993). Waste types controlled in terms of the Minerals Act, 1991 (Act 50 of 1991) and the Electricity Act, 1987 (Act 41 of 1987) are also excluded from disposal on the Site unless written permission has been obtained from the Regional Director.
- 2.2 The Permit Holder shall take all reasonable steps to ensure that -
- 2.2.1 no organic or inorganic element or compound which may have a definite acute or chronic negative effect on human health and/or the environment, due to it's toxic, physical, chemical or persistent characteristics and which corresponds with the UNEP definition of hazardous waste be disposed of on the Site;
- 2.2.2 no medical waste be disposed of on the Site unless it has been incinerated at 800°C or higher for at least 1 second; and
- 2.2.3 no scheduled pharmaceutical products registered in terms of the Medicines and Related Substances Control Act, 1965 (Act 101 of 1965) or associated containers be disposed of on the Site.

3. CONSTRUCTION

- 3.1 The Site or any portion thereof may only be used for the disposal of permissible waste if the Site or any such portion has been constructed or developed according to condition 3 of this Permit.
- 3.2 Further development within the Site shall be in accordance with approved plan number S1/6 dated May 1994 to be submitted by the applicant.
- 3.3 Any further development within the Site which may require construction can only be undertaken by the Permit Holder after specified engineering plans have been provided to and approved by the Regional Director.
- 3.4 Further development within the Site shall be carried out under the supervision of a suitably qualified person proposed by the Permit Holder and approved by the Regional Director.
- 3.5 Should a portion of the Site be further developed, the Permit Holder shall notify the Regional Director of such a development within the Site before disposal may commence on that portion within the Site. The completed construction

works of the development within the Site shall be inspected by an official of the Department and the person referred to in condition 3.4. If the Regional Director is satisfied with the construction of that further development within the Site and has given written permission, the Permit Holder may use that portion of the Site for the further disposal of waste.

- 3.6 Works shall be constructed and maintained on a continuous basis by the Permit Holder to divert and drain from the Site in a legal manner, all runoff water arising on land adjacent to the Site, which could be expected as a result of the estimated maximum precipitation during a period of 24 hours with an average frequency of once in fifty years (hereinafter referred to as the "estimated maximum precipitation"). Such works shall, under the said rainfall event, maintain a freeboard of half a metre.
- 3.7 Works shall be constructed and maintained on a continuous basis by the Permit Holder to divert and drain from the working face of the Site, all runoff water arising on the Site, which could be expected as a result of the estimated maximum precipitation and to prevent such runoff water from coming into contact with leachate from the Site. Such works shall, under the said rainfall event, maintain a freeboard of half a metre.
- 3.8 Runoff water referred to in condition 3.7 shall comply with the quality requirements of the General Standard, prescribed in terms of section 21(1)(a) of the Water Act, 1956 as published in Government Notice 991 of 18 May 1984, or with such quality requirements as may from time to time be determined by the Minister and shall be drained from the Site in a legal manner.
- 3.9 Runoff water referred to in condition 3.7 which does not comply with the quality requirements applicable in terms of condition 3.8 and all leachate from the Site shall, by means of works which shall be constructed and maintained on a continuous basis by the Permit Holder -
- 3.9.1 be discharged into any convenient sewer if accepted by the authority in control of that sewer; and/or,
- 3.9.2 be treated to comply with the aforementioned standard and discharged in a legal manner; and/or,
- 3.9.3 with the written approval of the Regional Director be evaporated in dams and/or be evaporated by spraying over those portions of the Site which comply with the requirements set in terms of condition 3.1.
- 3.10 Works constructed in compliance with condition 3.9 shall be of such a capacity as to accommodate all runoff and leachate which could be expected as a result of the estimated maximum precipitation. Such works shall, under the said rainfall event, maintain a freeboard of half a metre.

- 3.11 The Site shall be constructed in accordance with recognised civil engineering practice to ensure that it remains stable.
- 3.12 The slope of the sides of the Site shall be constructed in such a manner that little or no erosion occurs.
- 3.13 The Permit Holder shall make provision for adequate sanitation facilities on the Site.

4. ACCESS CONTROL

- 4.1 Weatherproof, durable and legible notices in three official languages applicable in the area, shall be displayed at each entrance to the Site. These notices shall prohibit unauthorised entry and state the hours of operation, the name, address and telephone number of the Permit Holder and the person responsible for the operation of the Site.
- 4.2 The Site shall be fenced to a minimum height of 1,8 metres, with gates of the same height at all entrances, to reasonably prevent unauthorised entry and curtail the spreading of wind-blown paper and plastic materials.
- 4.3 The Permit Holder shall take all reasonable steps to maintain service roads in a condition which ensures unimpeded access to the Site for vehicles transporting waste and to keep the roads free of waste.
- 4.4 The Permit Holder shall ensure that all entrance gates are manned during the hours of operation and locked outside the hours of operation.
- 4.5 The Permit Holder shall ensure effective access control.
- 4.6 The Permit Holder shall take all reasonable steps to prevent the disposal of waste on the Site for which the Site has not been approved.

5. OPERATION

- 5.1 Waste disposed of on the Site shall be compacted and covered on a daily basis with a minimum of 150 millimetres of soil or other material approved by the Regional Director.
- 5.2 The Permit Holder shall take all reasonable steps to ensure that the Site is operated in a manner which shall prevent the creation of nuisance conditions or health hazards.
- 5.3 The Permit Holder shall make use of moveable fences to control wind-blown waste.
- 5.4 The Permit Holder shall apply sufficient dust control measures to prevent wind-blown dust from causing nuisance conditions or health hazards.
- 5.5 Waste disposed of on the Site may be reclaimed. The

reclamation activity shall not interfere with the daily operational activities of the Site.

- 5.6 The Permit Holder shall keep a record of the volume and nature of the waste materials which are reclaimed and report this on an annual basis to the Regional Director.

6. MONITORING

6.1 Gas monitoring

- 6.1.1 The Permit Holder shall implement adequate measures to the satisfaction of the Regional Director, to ventilate or to prevent lateral migration of methane gas generated in the waste disposal area within the Site so that the build-up of dangerous concentrations is prevented.

- 6.1.2 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 gas monitoring boreholes or other monitoring devices surrounding the waste body within the Site.

- 6.1.3 The measurements for condition 6.1.2 shall be taken on a three-monthly basis from gas monitoring boreholes or any other monitoring devices approved by the Regional Director which shall be at least one metre deeper than the deepest point of the waste body.

- 6.1.4 Should measurements at these boreholes or devices transgress the limits set in condition 6.1.2, the Permit Holder shall immediately notify the Regional Director and initiate a more frequent gas monitoring programme as prescribed by the Regional Director.

- 6.1.5 The concentration of flammable gas in the atmosphere inside buildings on the Site shall not exceed 1% by volume in air, at Standard Temperature and Pressure. If the atmospheric levels are found to be between 0.1% and 1%, regular monitoring shall be instituted. If levels above 1% are detected, the buildings shall be evacuated or trained personnel shall be consulted.

6.2 Post-closure gas monitoring

- 6.2.1 Gas monitoring by the Permit Holder as described in condition 6.1 shall continue after closure for a period of two years, or such longer period as may be determined by the Regional Director.

- 6.2.2 The Permit Holder shall also initiate a six-monthly gas monitoring programme where measurements are taken from gas monitoring boreholes or any other monitoring devices approved by the Regional Director, situated within the waste body, until the limits set in condition 6.1.2 are met over a two year period.

6.3 Water monitoring

- 6.3.1 The Permit Holder shall within the next financial year starting 1 April 1997, construct a borehole (where the ground water in the borehole is at an expected lower hydraulic pressure level than the hydraulic pressure level of the ground water under the Site) to be used as a monitoring point. The location of this borehole shall be determined in consultation with the Regional Director.
- 6.3.2 The monitoring borehole shall be equipped with a lockable cap. The Department reserves the right to take water samples at any time and to analyse these samples or have them analysed.
- 6.3.3 The monitoring borehole shall be maintained by the Permit Holder to the satisfaction of the Regional Director so that unobstructed sampling, as required in terms of this Permit can be undertaken.
- 6.3.4 Surface water monitoring shall be performed in all stormwater drains on and adjacent to the Site at locations selected in conjunction with the Regional Director and at a frequency as determined by the Regional Director.
- 6.3.5 Treated leachate discharged into a water course shall be monitored and the standards and parameters shall be as determined from time to time by the Manager: Scientific Services.

6.4 Detection monitoring

- 6.4.1 Monitoring shall be conducted within 3 days of 15 January and 15 July of each year for the water quality variables listed in paragraph (a) of Annexure III and annually within 3 days of 15 July for the variables listed in paragraph (b) of Annexure III.

6.5 Investigative monitoring

- 6.5.1 If, in the opinion of the Regional Director, a water quality variable listed under the detection monitoring programme, as referred to in condition 6.4, shows an increasing trend, the Permit Holder shall initiate a monthly monitoring programme for the water quality variables listed in Annexure II.

6.6 Post-closure monitoring

- 6.6.1 Ground water monitoring by the Permit Holder, in accordance with condition 6.4 or 6.5, shall commence immediately upon closure of the Site and be maintained for a period of 30 years, or such lesser period as may be determined by the Regional Director.

6.7 Further investigations

If, in the opinion of the Regional Director, ground water, surface water and/or air pollution occur or are suspected to

occur, the Permit Holder shall conduct the necessary investigations as may be required by the Regional Director.

7. METHODS OF ANALYSIS

7.1 The Permit Holder shall carry out all tests 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), to analyze the samples taken under the monitoring programmes specified in condition 6.

7.2 The Permit Holder shall only use another method of analysis if written proof that the method is equivalent to the SABS method, is submitted to the Regional Director.

8. RECORDING

8.1 The Permit Holder shall keep a record of and update all the information referred to in Annexure IV on an annual basis.

8.2 The Permit Holder shall record all borehole data and chemical analysis in the format depicted in Annexure V.

9. REPORTING

9.1 The information required in terms of conditions 6.1 to 6.6 shall be submitted to the Regional Director within a period of 30 days following the analysis of the said samples. The information required in terms of condition 8.1 shall be submitted to the Regional Director within a period of one year from the date of issuing of this Permit and annually thereafter.

10. REHABILITATION AND CLOSURE OF THE SITE

10.1 The Permit Holder shall, at least 60 days prior to the intended closure of the Site, notify the Regional Director by registered mail of such closure and submit final rehabilitation plans for his approval.

10.2 Immediately following the cessation of operations with the intention to close the Site, the surface of the Site shall be covered in such a way that -

10.2.1 the formation of pools due to rain is prevented;

10.2.2 free surface runoff of rain-water is ensured; and

10.2.3 no objects or materials which may hamper the rehabilitation of the Site are present.

10.3 The Permit Holder shall rehabilitate the Site in accordance with a rehabilitation plan which shall be submitted by the

Permit Holder and which shall be to the satisfaction of the Regional Director.

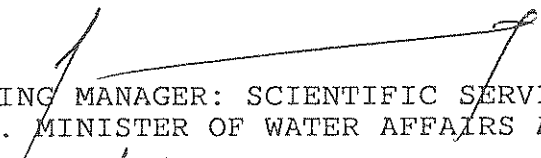
11. LEASING AND ALIENATION OF THE SITE

11.1 Should the Permit Holder want to alienate or lease the Site, he shall notify the Regional Director in writing of such an intention at least 60 days prior to the said transaction.

12. GENERAL

12.1 This Permit shall not be transferable.

12.2 This Permit shall not be construed as exempting the Permit Holder from compliance with the provisions of the Health Act, 1977 (Act 63 of 1977), the Water Act, 1956 (Act 54 of 1956) or any other applicable act, ordinance, regulation or by-law.


ACTING MANAGER: SCIENTIFIC SERVICES
P.P. MINISTER OF WATER AFFAIRS AND FORESTRY

DATE: 10/9/96

ANNEXURE IWASTE WHICH SHALL NOT BE ACCEPTED ON THE SITE

1. Waste considered to be dangerous by virtue of their fire hazard. That is all waste with a closed cup flashpoint < 61°C.
2. Any waste with a substance which is a Group A and/or Group B carcinogen. Group A carcinogens have been clinically and epidemiologically proven in humans. Group B carcinogens have been proven without doubt in laboratory animals.
3. Any waste with a substance at a concentration greater than 1% which is a Group C and/or Group D carcinogen. Group C carcinogens have shown limited evidence in animals. Group D carcinogens - only inadequate and doubtful data is available.
4. Any waste with a substance which is a Mutagen.
5. Any infectious waste, unless it has been incinerated at 800° C or higher for at least 1 second. Infectious waste is waste which is generated during the diagnosis, treatment or immunisation of humans or animals; in the research pertaining to this; in the manufacturing or testing of biological agents -including blood, blood products and contaminated blood products, cultures, pathological wastes, sharps, human and animal anatomical wastes and isolation waste that contain or may contain infectious substances.
6. Any waste with a substance with a LD₅₀ for acute oral toxicity smaller and equals to 5000 mg/kg. The LD₅₀ for acute oral toxicity shall be as defined in SABS 0228:1995.
6. Any waste with a substance with a LD₅₀ for acute dermal toxicity smaller and equals to 2000 mg/kg. The LD₅₀ for acute dermal toxicity shall be as defined in SABS 0228:1995.
7. Any waste with a substance with a LC₅₀ for acute toxicity on inhalation smaller and equal to 10mg/l. The LC₅₀ for acute toxicity on inhalation shall be as defined in SABS 0228:1995.
8. All waste with a pH less than 6 or greater than 12.
9. All materials which fall in Class 1 (explosives), Class 2 (compressed gases) and Class 7 (radioactive materials), as specified in SABS 0228:1995.
10. Any waste containing a substance listed in SABS 0228:1995, or is difficult to analyse and classify, unless written approval has been granted by the Regional Director.
11. Any complexes of heavy metal cations, paints and paint sludges, laboratory chemicals.

ANNEXURE IIWATER QUALITY VARIABLES REQUIRED FOR INVESTIGATIVE MONITORING :
CONDITION 6.5

Alkalinity (P. Alk)	Free & saline ammonia as N ($\text{NH}_4\text{-N}$)
Calcium (Ca)	Boron (B)
Chromium (hexavalent) (Cr^{6+})	Magnesium (Mg)
Chromium (Total) (Cr)	Cadmium (Cd)
Chemical oxygen demand (COD)	Chloride (Cl)
Cyanide (CN)	Mercury (Hg)
Lead (Pb)	pH
Nitrate (as N) ($\text{NO}_3\text{-N}$)	Sodium (Na)
Phenolic compounds (Phen)	Electrical conductivity (EC)
Potassium (K)	Sulphate (SO_4)
Total dissolved solids (TDS)	

ANNEXURE IIIWATER QUALITY VARIABLES REQUIRED FOR DETECTION
MONITORING: CONDITION 6.4

- (a) Alkalinity (P.Alk)
Chemical oxygen demand (COD)
pH
Total dissolved solids (TDS)
Chlorides (Cl)
Nitrate (NO₃-N)
Potassium (K)
- (b) Annually for electrical conductivity (EC), calcium (Ca), magnesium (Mg), sodium (Na), sulphate (SO₄) and fluoride (F).

4.(a) Indicate the method of disposal of waste (*). Landbuilding Landfilling

(b) Indicate the present dimensions of the site in metres.

Height/depth
 Length
 Breadth

5. Indicate the applicable waste types and quantities salvaged during the year (*)

No salvaging undertaken

Type	Quantity (m ³)	Type	Quantity (m ³)
<input type="checkbox"/> Paper/wood fibre	<input type="checkbox"/> Rubber	.....
<input type="checkbox"/> Plastics	<input type="checkbox"/> Textiles	.....
<input type="checkbox"/> Glass	<input type="checkbox"/> Iron	.....
<input type="checkbox"/> Copper	<input type="checkbox"/> Aluminium	.....
<input type="checkbox"/> Zinc	<input type="checkbox"/> Lead	.....
<input type="checkbox"/> Phosphogypsum	<input type="checkbox"/> Fly-ash	.....
<input type="checkbox"/> Waste for composting	<input type="checkbox"/> Food residues	.....
<input type="checkbox"/> Flammable gases	Other	.....
Other	Other	.....
Other	Other	.....

6. Indicate the types, sources and approximate quantities of available covering material (*).

Type	Sources	Quantity m ³
<input type="checkbox"/> Soil
<input type="checkbox"/> Sand
<input type="checkbox"/> Ash
<input type="checkbox"/> Gravel
<input type="checkbox"/> Clay
<input type="checkbox"/> Building rubble
Other (specify)
.....
.....
.....

* Indicate with an X

Signature
 Capacity.....
 Place..... Date.....

