Multilateral Agreement on the Control of Pollution of Water Resources in the Southern African Region

PREAMBLE The member States,

CONSCIOUS of the interdependence of all States and their peoples in the Southern African region;

RECOGNISING the importance of the limited water resources in the Southern African region for the sustained prosperity and development of their countries;

REALISING the impairment of such water resources caused by pollution resulting from industrial and domestic usage;

CONVINCED of the necessity for close co-operation between States in the Southern African region in order to ensure effective control of water pollution in the said region; and

ACCEPTING the recommendations of the Working Group established by the Multilateral Technical Committee of Agriculture and Environment Affairs,

HEREBY AGREES as follows:

ARTICLE 1

USE OF TERMS

In this Agreement, except where inconsistent with the context -

"effluent" means residual water or any other liquid produced by or resulting from the use of water for industrial purposes, including any substance dissolved or suspended therein, but excluding any liquid produced for commercial purposes;

"Member States" means all States signature to this Agreement as well as all States which have acceded hereto in terms of Article 6(1);

"solid waste" means any solid refuse or waste originating from any residential , commercial or industrial area and includes any semi-solid, liquid or gaseous substance contained therein;

"this Agreement" means this present instrument as well as the attached Annexures and Schedules and any amendments accepted by Member States in accordance with the provisions of Article 8;

"use for industrial purposes" in relation to water, means use of water (including effluent supplied by a person other than the user) for or in connection with -

(a) the manufacture, alteration, processing, treatment, repair decoration, painting, spray-painting, electroplating, corrosion prevention, coiling dyeing washing, polishing, cleaning, finishing or breaking up of any article or part thereof, whether that article or part is solid, liquid, vapour or gas or a combination thereof;

(b) the generation of power;

(c) railway purposes;

(d) mining or the winning or washing of sand, gravel or stone;

(e) an intensive animal feeding system or the breeding of fish or any mollusc;

(f) the slaughtering of livestock;

(g) any sewerage system or work or any water care work;

(h) the conveyance of any substance; or

(i) printing or photographic work

and includes use for domestic purposes or for the watering of stock or of streets and gardens in so far as such use may be incidental to use for industrial purposes;

"waste disposal site" means and area of land on which solid waste is disposed of or treated for the purpose of disposing thereof; and

"water care work" means any water work for -

(a) the purification or treatment of water in order to render it fit for human consumption or for use in the foodstuffs industry; or

(b) the purification, treatment or disposal of effluent.

ARTICLE 2

PROMOTION OF CONTROL OF WATER POLLUTION

Member States shall individually and collectively promote the effective control of sources of pollution of the water environment by –

(a) the enforcement of minimum common standards, listed in Annexure 1 to this Agreement, applicable to the quality of effluents discharged into water courses after purification;

(b) the control of the disposal of solid waste disposal sites, in accordance with the provisions of Annexure II to this Agreement, the registration of sites suitable for that purpose, and the prohibiting of the disposal of materials listed in that Annexure elsewhere; and

(c) the control of seepage from mine dumps and mines by the construction of works that will effectively prevent the pollution of the water environment.

ARTICLE 3

EXEMPTIONS

(1) Member States may grant exemptions to users of water with regard to quality requirements listed in Annexure I to this Agreement, and may withdraw any such exemption.

(2) Any exemption contemplated in Subarticle (1) shall be granted only after consideration of all relevant factors, including –

(a) possible effects on the water environment;

(b) possible effects on other users of water derived from the stream or river in question;

(c) the availability of practical methods to treat effluents so exempted to any applicable standard referred to in the said Annexure I; and

(d) possible effects on users of water in adjoining countries served by the same stream or river and its tributaries.

ARTICLE 4

FURNISHING OF INFORMATION

A Member State shall, on request, provide details of any exemption granted as contemplated in Article 3 or the registration of any solid waste disposal site as contemplated in Article 2(b), to any other Member State.

ARTICLE 5

ANNUAL MEETINGS

Member States shall meet annually at consultative meetings to -

(a) consider any proposed amendment to the said Annexure I or II, or to any provision of this Agreement;

(b) review progress regarding the establishment of practical means of purification of effluents produced by different industries which may obviate the necessity for the granting of any exemption contemplated in Article 3, or which may lead to any exemption which may have been granted to be withdrawn;

(c) receive and consider reports from appropriate scientific and research bodies advising Member States on any scientific or technical aspect relevant to this Agreement; and

(d) arrange for assistance in the application of standards and the control of water pollution.

ARTICLE 6

ACCESSION

(1) This Agreement shall be open for accession by any independent State in the Southern African region which signifies its acceptance hereof and the obligations hereunder.

(2) Such accession shall be subject to the approval of Member States.

(3) The instrument of accession shall be deposited with the Depositary which shall forthwith notify Member States of the fact and date of such deposit.

ARTICLE 7

ENTRY INTO FORCE

This Agreement shall enter into force for signatory Member States on the date of signature hereof and for Member States acceding hereto on the date the instrument of accession is deposited with the Depositary.

ARTICLE 8

AMENDMENTS

(1) Any Member State may propose an amendment to this Agreement. The text of any such proposed amendment and the reason therefore, together with a request for consultations between Member States, shall be communicated to the Depositary who shall notify the other Member States thereof. Member States shall meet within a period of sixty days, after such notification, to consider the proposal.

(2) Any amendment agreed to by Member States shall come into force when it has been signed by Member States and deposited with the Depositary.

ARTICLE 9

WITHDRAWAL

(1) After the expiration of a period of three years from the date of entry into force of this Agreement, a Member State may withdraw from it by giving notice of its withdrawal to the Depositary which shall forthwith inform other Member States thereof.

(2) Such withdrawal shall become effective twelve months after the date of receipt of such notice by the Depositary.

ARTICLE 10

DEPOSITARY

This Agreement, drawn up in a single original in the English language, shall be deposited with the Secretariat for Multilateral Co-operation in Southern Africa (SECOSAF), which shall be the Depositary and which shall transmit certified copies thereof to each Member State.

IN WITNESS WHEREOF the parties hereto acting through their representatives thereunto duly authorised have caused this Agreement, in the English language, to be signed and sealed in their respective names at PRETORIA on the TWENTY FIRST day of NOVEMBER in this the Year Nineteen Hundred and 'Eighty-Five.

COMMON STANDARDS FOR THE PURIFICATION OF EFFLUENT PRODUCED BY OR RESULTING FROM THE USE OF WATER FOR INDUSTRIAL PURPOSES IN MEMBER STATES

COMMON STANDARDS FOR THE PURIFICATION OF EFFLUENT PRODUCED BY OR RESULTING FROM THE USE OF WATER FOR INDUSTRIAL PURPOSES

1. SPECIAL STANDARD

Effluent produced by or resulting from the use of water for industrial purposes and disposed of into any river specified in Schedule 1 to this Annexure, or a tributary of such river, at any point between the source of such river or tributary and the point defined in the said Schedule, shall conform to the following standards:

1.1 Colour, odour or taste

The effluent shall not contain any substance in a concentration capable of producing any colour, odour or taste.

1.2 pH

Shall be between 5,5 and 7,5.

1.3 Dissolved oxygen

Shall be at least 75 per cent saturation.

1.4 Typical (faecal) soli

The effluent shall contain no typical (faecal) col(per 100 millilitres.

1.5 Temperature

Shall be a maximum of 25°C.

1.6 Chemical oxygen demand

Not to exceed 30 milligrams per litre after applying the chloride correction.

1.7 Oxygen absorbed

The oxygen absorbed from acid N/80 potassium permanganate in 4 hours at 27°C shall not exceed 5 milligrams per litre.

1.8 Conductivity

1.8.1 Not to be increased by more than 15 per cent above that of the intake water.

1.8.2 The conductivity of any water or effluent seeping or draining from any area where mining is or was undertaken, shall not exceed 250 milli-Siemens per metre (determined at 25°C).

1.9 Suspended solids

Not to exceed 10 milligrams per litre.

1.10 Sodium content

Not to be increased by more than 50 milligrams per litre above that of the intake water.

1.11 Soap, oil or grease None.

1.12 Other constituents.

1.12.1 Constituents

Maximum concentration in milligrams per litre

Residual chlorine (as Cl) [TAB] Nil

Free and saline ammonia [TAB] 1,0 (as N)

Nitrates (as N) [TAB] 6,0

Arsenic (as As) [TAB] 0,1

Boron (as B) [TAB] 0,5

Total chromium (as Cr) [TAB] 0,05

Copper (as Cu) [TAB] 0,02

Phenolic compounds [TAB] 0,01 (as phenol)

Lead (as Pd) [TAB] 0,1

Soluble Ortho Phosphate [TAB] 1,0 (as P)

Iron (as Fe) [TAB] 0,3

Manganese (as Mn) [TAB] 0,1

Cyanides (as Cn) [TAB] 0,5

Sulphides (as S) [TAB] 0,05

Fluoride (as F) [TAB] 1,0

Zinc (as Zn) [TAB] 0,3

Cadmium (as Cd) [TAB] 0,05

Mercury (as Hg) [TAB] 0,02

Selenium (as Se) [TAB] 0,05

1.12.2 The effluent shall contain no other constituents in concentrations which are poisonous or injurious to trout or other fish or other forms of aquatic life.

SPECIAL STANDARDS FOR PHOSPHATE

Effluent produced by or resulting from the use of water for industrial purposes and disposed of into any river specified in Schedule 2 to this Annexure, or any tributary of such river at any point between the source of such river or tributary and the point defined in the said Schedule, shall not contain soluble ortho phosphate (as P) in a higher concentration than 1,0 milligram per litre.

GENERAL STANDARDS

Effluent produced by or resulting from the use of water for industrial purposes and disposed of into any river at a point to which the Special Standards contained in paragraphs 2 and 3 do not apply, shall conform to the following standards:

3.1 Colour, odour or taste

The effluent shall not contain any substance in a concentration capable of producing any colour, odour or taste.

3.2 pH

Shall be between 5,5 and 9,5.

3.3 Dissolved oxygen

Shall be at least 75 per cent saturation.

3.4 Typical (faecal) coli

The waste water or effluent shall not contain any typical (faecal) coli per 100 millilitres.

3.5 Temperatures

Shall be a maximum of 35°C.

3.6 Chemical oxygen demand

Not to exceed 75 milligrams per litre after applying the chloride correction.

3.7 Oxygen absorbed

The oxygen absorbed from acid N180 potassium permanganate in 4 hours at 27°C shall not exceed 10 milligrams per litre.

3.8 Conductivity

3.8.1 Not to be increased by more than 75 milli-Siemens per metre (determined at 25 °C) above that of the intake water.

3.8.2 The conductivity of any water, waste water or effluent seeping or draining from any area where mining is or was undertaken shall not exceed 250 milli-Siemens per metre (determined at 25°C).

3.9 Suspended solids

3.10 Sodium content

Not to be increased by more than 90 milligrams per litre above that of the intake water.

3.11 Soap, oil or grease

Not to exceed 2.5 milligrams per litre.

3.12 Other constituents

3.12.1 Constituents

Maximum concentration in milligrams per litre

Residual chlorine (as Cl) [TAB] 0,1

Free and saline ammonia [TAB] 10,0 (as N)

Arsenic [TAB] (as As) [TAB] 0,5

Boron [TAB] (as)3) [TAB] 1,0

Hexavalent chromium (as Cr) [TAB] 0,05

Total chromium (as Cr) [TAB] 0,5

Copper (as Cu) [TAB] 1,0

Phenolic compounds [TAB] 0,1 (as phenol)

Lead [TAB] (as Pd) [TAB] 0,1

Cyanides (as Cn) [TAB] 0,5

Sulphides (as S) [TAB] 1,0

Fluoride (as F) [TAB] 1,0

Zinc (as Zn) [TAB] 5,0

Manganese (as Mn) [TAB] 0,4

Cadmium (as Cd) [TAB] 0,05

Mercury (as Hg) [TAB] 0,02

Selenium (as Se) [TAB] 0,05

3.12.2 The sum of the concentrations of the following metals shall not exceed 1 mg/1: cadmium (as Cd), chromium (as Cr), copper (as Cu), mercury (as Hg) and lead (as Pb).

3.12.3 The effluent shall contain no other constituents in concentrations which are poisonous or injurious to humans, animals, fish other than trout, or other forms of aquatic life, or which are deleterious to agricultural use.

4. METHODS OF TESTING

All tests shall be carried out in accordance with standard test methods prescribed by and obtainable from the South African Bureau of Standards, referred to in the Standards Act, 1982 (act 30 of 1982) of the Republic of South Africa, as listed in Schedule 3 to this Annexure.

SCHEDULE X (PARAGRAPH 1 OP ANNEXDRE 1)

River [TAB] Division or district

1. Buffalo River to where it enters the King William's Town municipal area [TAB] King William’s Town

2. Swart Kei and Klipplaat Rivers to their confluence [TAB] Tarka, Queenstown and Cathcart

3. Tsomo River to the St Marks district boundary [TAB] St. Marks

4. Xuka River to the Elliot district boundary [TAB] Elliot

5. Tsitsa and Inxu Rivers to their confluence [TAB] Maclear, Mount Fletcher, Tsolo and Qumbu

6. Tina and Qanku Rivers to their confluence [TAB] Mount Fletcher, Qumbu & Mount Frere

7. Mvenyane and Umzimvubu Rivers to their confluence [TAB] Matatiele, Mount Currie and Mount Ayliff

8. Mzimhlava River to the Mount Currie divisional boundary [TAB] Mount Currie

9. Steelpoort River down to the confluence with and including the Dwars River [TAB] Lydenburg, Belfast, Middleburg and Groblersdal

10. Pienaars River down to its confluence with the Crocodile River [TAB] Pretoria, Cullinan and Brits

SCHEDULE 2 (PARAGRAPH 2 OF ANNEXURE 1)

CATCHMEN AREAS IN WHICH WASTE WATER OR EFFLUENT MUST BE PURIFIED TO CONTAIN NO SOLUBLE ORTHO PHOSPHATE (AS P) IN A HIGHER CONCENTRATION THAN 1,0 MILLIGRAM PER LITRE

1. Pienaars and Crocodile Rivers upstream of their confluence;

2. Buffalo River upstream and inclusive of the Bridle Drift Dam.

SCHEDULE 3

(PARAGRAPH 4 OF ANNEXURE 1) EFFLUENT ANALYSIS: SAGS STANDARD TEST METHODS

Reference No. of SASS

Ammonia - free and saline [TAB] 217

Arsenic [TAB] 200

Bacteriological - faecal coliform etc. [TAB] 221

Boron [TAB] 1 053

Cadmium [TAB] 201

Calcium hardness [TAB] 216

Chemical oxygen demand [TAB] 1 048

Chloride [TAB] 202

Chlorine - residual [TAB] 1 052

Chromium - total [TAB] 1 054

Chromium VI [TAB] 206

Colour [TAB] 198

Conductivity [TAB] 1 057

Copper [TAB] 203

Cyanide [TAB] 204

Fluoride [TAB] 205

Hardness - total [TAB] 215

Iron [TAB] 207

Lead [TAB] 208

Magnesium [TAB] 1 071

Manganese [TAB] 209

Mercury [TAB] 1 059

Nitrate plus nitrite [TAB] 210

Reference No. of SABS

Nitrate [TAB] 219

Oil and grease [TAB] 1051

Oxygen absorbed [TAB] 220

Oxygen demand (chemical) [TAB] 1048

Oxygen dissolved [TAB] 1047

pH [TAB] 11

Phenolic compounds [TAB] 211

Phosphate - ortho [TAB] 1055

Selenium [TAB] 1058

Sodium [TAB] 1050

Solids - suspended [TAB] 1049

Sulphate [TAB] 212

Sulphide [TAB] 1056

Turbidity [TAB] 197

Zinc [TAB] 214

ANNEXURE II

COMMON REQUIREMENTS FOR THE ESTABLISHMENT OF SOLID WASTE DISPOSAL SITES AND THE DISPOSAL OF SOLID WASTE IN MEMBER STATES

1.0 SITE CLASSIFICATION

Solid waste disposal sites shall be classified in accordance with the geological and geohydrological properties of each site:

1.1 Class 1 - Containment sites: Sites with very low permeability soil (maximum permeability 10-6cm sec -1), thus allowing very little or no chance of leachate reaching groundwater.

1.2 Class 2 -- Domestic/sanitary waste sites: Sites on which waste is separated from the groundwater table by sufficient semi permeable soil (maximum permeability 10-3cm sec -1).

1.3 Class 3 -- Unacceptable sites: Sites where there is no attenuation zone at all due to the solid waste being in direct contact with the groundwater table.

2.0 WASTE ACCEPTANCE CRITERIA

2.1 As a general rule, the following chemical criteria shall apply for acceptance or either Class 1 or Class 2 disposal sites:

2.1.1 The pH of the waste or the pH of a 1:1 w/w extract with water shall lie between 7 and 12.

2.1.2 Free cyanide shall not be present in a concentration greater than 0.4ppm.

2.1.3 The waste shall not contain more than 10 ppm of free sulphide.

2.1.4 The flashpoint of the waste as measured by the closed cup method, shall not be below 60°C.

2.1.5 The waste shall not react with air or water within the pH range 7 to 12, to produce flammable, explosive or toxic gases.

2.1.6 The waste shall not contain highly reactive redox compounds.

2.2 Waste accepted on a Class 1 site

The following types of waste shall be acceptable for disposal on a Class 1 site, subject to constraints enumerated in paragraph 3.3 and to prior treatment as described in paragraph 4.0.

2.2.1 Any water soluble sal sludge and solution.

2.2.2 Any pharmaceutical waste.

2.2.3 Any PCB or substances containing PCB.

2.2.4 Any organochlorine compound.

2.2.5 Any pesticide.

2.2.6 Any organolead sludge.

2.2.7 Any water soluble ink and dye.

2.2.8 Any toxic or hazardous chemical or substance not specified above.

2.3 The following types of waste shall not be accepted on a Class 1 site:

2.3.1 Any waste having a flashpoint below 60°C by the closed cup method.

2.3.2 Any reactive organic material.

2.3.3 Any inorganic acid below pH4.

2.3.4 Any inorganic alkali above pH12.

2.3.5 Any reactive metal.

2.3.6 Any reactive redox reagent.

2.3.7 Any compound which can release toxic or explosive gases in interaction with other waste e.g. any cyanide or sulphide.

3.0 PRIOR TREATMENT OF WASTE TO BE DISPOSED OF ON A CLASS 1 SITE

3.1 Any PCB, non-biodegradable organochloride pesticide and arsenic compound shall be enclosed in a sealed steel container which is then encapsulated in concrete having a strength of not less than 35 MPa after 28 days.

3.2 Any pesticide shall be disposed of as specified in the South African Bureau of Standards Code of Practice for Pesticide Disposal to landfill sites.

3.3 Any organolead sludge shall be oxidized by weathering in a specially demarcated clay bunded area on the site. The weathering process shall be regarded as complete once the lead in air analysed above the sludge, falls to below 0,01 ppm.

3.4 Any pharmaceutical waste or any other hazardous or toxic chemical or other substance shall be detoxified to the satisfaction of the health authority concerned before disposal.

4.0 WASTE ACCEPTED ON A CLASS 2 SITE

4.1 Any domestic or innocuous trade waste shall be accepted without further analysis.

4.2 Any insoluble organic salt.

4.3 The following slightly soluble inorganic salts shall be accepted:

4.3.1 Any heavy metal sulphide.

4.3.2 Any heavy metal hydroxide.

4.3.3 Calcium sulphate.

4.3.4 Barium sulphate.

4.3.5 Calcium phosphate.

4.3.6 Any heavy metal phosphate.

4.3.7 Calcium fluoride.

4.3.8 Any heavy metal oxide.

4.3.9 The following material shall also be accepted:

4.3.9.1 Any slag.

4.3.9.2 Any cellulosic waste.

4.3.9.3 Any rubber waste.

4.3.9.4 Any industrial effluent treatment sludge.

4.3.9.5 Any interceptor sludge.

4.3.10.0 Any food waste.

4.3.10.1 Any bituminous waste.

4.3.10.2 Any oil sludge.

4.3.10.3 Any PVA material and oil paint sludge.

4.3.10.4 Any adhesive.

4.3.10.5 Any vegetable oil waste.

4.3.10.6 Any hydrocarbon solvent.

4.3.10.7 Any organic resin.

4.3.10.8 Any phenolic sludge.

4.3.10.9 Any fat, wax or grease.

4.3.10.10 Any asbestos waste.

5.0 TYPE OF WASTE SPECIFICALLY EXCLUDED FROM A CLASS 2 SITE:

5.1 Any pharmaceutical waste.

5.2 Any PCB.

5.3 Any organochlorine compound.

5.4 Any pesticide

5.5 Any organolead sludge.

5.6 Any water soluble ink or dye.

5.7 Any chemical that is difficult to analyse.

5.8 Any waste which does not comply with the chemical criteria listed in paragraph 3 above.

5.9 Any undigested sewage sludge (including sludge from septic tanks, oxidation ponds, surplus activated sludge, dewatered or thickened humus tank sludge and any nightsoil or sludge from primary settling tanks).