

**ENVIRONMENTAL QUALITY (CONTROL OF POLLUTION FROM SOLID WASTE
TRANSFER STATION AND LANDFILL) REGULATIONS 2009**

PU(A) 433/2009

10 December 2009

IN exercise of the powers conferred by sections 21, 24 and 51 of the **Environmental Quality Act 1974**[Act 127] the Minister, after consultation with the Environmental Quality Council, makes the following regulations:-

1. Citation

These regulations may be cited as the **Environmental Quality (Control of Pollution from Solid Waste Transfer Station and Landfill) Regulations 2009**.

In these Regulations:-

"leachate" means liquid that has percolated through solid waste and has been extracted or dissolved, or suspended materials from the solid waste, or liquid discharged or released from a solid waste transfer station or landfill;

"professional engineer" has the same meaning assigned to it in the Registration of **Engineers Act 1967**[Act 138];

"landfill" means a waste disposal site for the deposit of solid waste onto or into land;

"licence" means a licence referred to in regulation 14 pursuant to subsection 25(1) of the Act;

"authorized officer" means such officer appointed under section 3 of the Act or any other officer to whom the Director General has delegated his power under section 49 of the Act;

"solid waste" has the same meaning assigned to it in the **Solid Waste and Public Cleansing Management Act**[Act 672] and "solid waste transfer station" means a facility where solid waste is received for the purpose of subsequent transfer to another facility for further processing, treatment, transfer or disposal;

"leachate treatment system" means any facility designed and constructed for the purpose of reducing the potential of the leachate to cause pollution;

"leachate collection and removal system (LCRS)" includes the liner system, the drainage layer, leachate trench and pipe, leachate line clean-out ports, leachate collection pump and lift station and leachate storage tank system;

3. Application

These Regulations shall apply to solid waste transfer stations and landfills which discharge or release leachate.

4. Notification for new source of leachate discharge or release

(1) Notwithstanding any other provisions in these Regulations, no person shall, without the prior written notification to the Director General, carry out any work on any solid waste transfer station or landfill, or construct on any land any facility or building that may result in a new source of leachate discharge or release.

(2) In this regulation, "new source of leachate discharge or release" means any solid waste transfer station or landfill, that has not yet been in operation or for which written permission has not been given by the Director General.

(3) The written notification to the Director General referred to in subregulation (1) shall be accompanied by the information as specified in the First Schedule.

5. Operation of solid waste transfer station and landfill

An owner or occupier of a solid waste transfer station or landfill shall operate the solid waste transfer station or landfill in such a manner that the following are strictly controlled:-

- (a) noise, dust or odours;
- (b) air pollution;
- (c) pollution of the soil, surface water or ground water; and
- (d) entry and disposal of scheduled wastes.

6. Landfill gas collection and disposal system

An owner or occupier of a landfill shall operate a landfill gas collection and disposal system to minimize the impact resulting from the generation of landfill gas.

7. Control of ground water pollution

An owner or occupier of a landfill shall:-

- (a) ensure that the design and operation of the landfill incorporates measures to prevent and control the pollution to ground water; and
- (b) establish and operate a ground water monitoring program to monitor the leakage or movement of leachate from the landfill.

8. Monitoring of leachate discharge

An owner or occupier of a landfill that discharges leachate onto or into any soil, or into any inland waters or Malaysian waters shall, at his own expense:-

- (a) monitor the concentration of ammoniacal nitrogen in the leachate discharged from the landfill on a continuous basis using the online instrumentation system which is linked to the Department of Environment;
- (b) monitor the concentration of other parameters as listed in the first column of the Second Schedule in the leachate discharged from the landfill; and
- (c) install flow-meters, monitoring equipment, sampling equipment and recording equipment for the purpose of monitoring leachate discharge.

9. Provision of leachate treatment system

No person shall operate a solid waste transfer station or landfill without a leachate treatment system.

10. Proper operation of leachate treatment system

(1) An owner or occupier of a solid waste transfer station or landfill shall operate and maintain a leachate treatment system in accordance with sound engineering practice for the treatment of leachate and ensure that all components of the leachate treatment system are in good working condition.

(2) In this regulation, "[sound engineering practice](#)" means the manner by which a leachate treatment system is operated where the operational characteristics are maintained within the normal range of values commonly used for the treatment of leachate.

11. Performance monitoring of leachate treatment system

(1) An owner or occupier of a solid waste transfer station or landfill shall:-

- (a) conduct performance monitoring of the components of the leachate treatment system; and
- (b) equip himself or itself with facilities, relevant equipment or instruments for the purpose of conducting performance monitoring of the leachate treatment system referred to in paragraph (a).

(2) In this regulation, "[performance monitoring](#)" means the routine monitoring of certain characteristics to provide an indication that a treatment process is functional and capable of treating leachate.

12. Competent person

(1) The operation of a leachate treatment system shall be supervised by a competent person.

(2) A competent person shall be any person who has been certified by the Director General that he is duly qualified to operate a leachate treatment system for a solid waste transfer station or a landfill.

(3) An owner or occupier of the solid waste transfer station or landfill shall ensure that a competent person is on duty at any time the leachate treatment system is in operation.

13. Acceptable conditions for discharge of leachate

No person shall discharge leachate which contains substances in concentrations greater than those specified as acceptable conditions as shown in the third column of the Second Schedule, onto or into any soil, or into any inland waters or Malaysian waters.

14. Licence to contravene the acceptable conditions for discharge of leachate

(1) Any person may apply for a licence under subsection 25(1) of the Act to contravene the acceptable conditions of discharge of leachate as specified in regulation 6.

(2) An application for a licence under subregulation (1) shall be made in accordance with the procedures as specified in the **Environmental Quality (Licensing) Regulations 1977[P.U. (A) 198/1977]** and shall be accompanied by:-

(a) a report on leachate characterization study; and

(b) a licence and leachate-related fee as specified in regulation 27.

15. Method of analysis and sampling of leachate

(1) An authorized officer may carry out an *in-situ* or *ex-situ* analysis of leachate using any instrument approved by the Director General.

(2) An analysis of leachate discharged or released onto or into any soil, or into any inland waters or Malaysian waters shall be carried out in accordance with any of the methods contained in the publications as specified in the Third Schedule.

(3) The analysis of leachate referred to in this regulation shall be based on grab samples.

(4) In this regulation:-

(a) "**ex-situ analysis**" means the analysis of leachate conducted on a sample that has been removed from its location and conducted at a different site and not at the site from where the sample was taken;

(b) "**in-situ analysis**" means the analysis of leachate conducted on a sample without removing it from its location or conducted on a sample at the original site from where the sample was taken; and

(c) "grab sample" means a discrete individual sample taken within a short period of time of less than fifteen minutes.

16. Point of discharge of leachate

(1) The point of discharge of leachate shall comply with the specifications as specified in the Fourth Schedule and shall be clearly indicated by the owner or occupier of a solid waste transfer station or landfill on the layout plans and engineering drawings certified by a professional engineer.

(2) An owner or occupier of a solid waste transfer station or landfill shall submit to the Director General the layout plans and engineering drawings referred to in subregulation (1).

(3) Where an owner or occupier of a solid waste transfer station or landfill proposes to make any alteration or change to the location or position of the point of discharge of leachate or design of the outlet at the point of discharge of leachate, he or it shall notify the Director General within thirty days prior to the making of such alteration or change.

17. Prohibition against leachate discharge or release through by-pass

(1) No person shall discharge or release or cause or permit to be discharged or released leachate onto or into any soil, or into any inland waters or Malaysian waters through a by-pass.

(2) In this regulation, "by-pass" means any intentional diversion of leachate discharge from any portion of a leachate treatment system.

18. Dilution of leachate

(1) No person shall dilute, or cause or permit to be diluted, any leachate, whether raw or treated at any time or point after it is produced at any solid waste transfer station or landfill.

(2) Leachate becomes diluted when it undergoes a process to make it less concentrated by adding water or other liquids from external sources other than liquids or materials used for treating leachate.

19. Spill, accidental discharge or leakage of leachate

(1) In the event of the occurrence of any spill, accidental discharge or leakage of any leachate which either directly or indirectly gains or may gain access onto or into any soil, or into any inland waters or Malaysian waters, the owner or occupier of the solid waste transfer station or landfill shall immediately and not more than six hours from the time of the occurrence inform the Director General of the occurrence.

(2) An owner or occupier of the solid waste transfer station or landfill shall, to every reasonable extent, contain, cleanse or abate the spill, accidental discharge or leakage or recover the leachate discharged in a manner that satisfies the Director General.

(3) The Director General may in any particular case, if he considers it necessary to do so, specify the manner in which the spill, accidental discharge or leakage is to be contained, cleansed or abated and the owner or occupier of the solid waste transfer station or landfill shall comply with such specification.

(4) The Director General shall determine any damage caused by any spill, accidental discharge or leakage and may recover all costs and expenses from the owner or occupier of the solid waste transfer station or landfill.

(5) Where the Director General undertakes to cleanse or abate any spill, accidental discharge or leakage, he shall determine the full costs and expenses incurred and recover such costs and expenses from the owner or occupier of the solid waste transfer station or landfill in accordance with the provisions of section 47 of the Act.

20. Making changes that alter quality of leachate

The holder of a licence shall not make, or cause or permit to be made, any changes to a solid waste transfer station or landfill or in the manner of maintaining or operating the solid waste transfer station or landfill, which cause, or is intended or is likely to cause, a material increase in the quantity or quality of leachate or both discharged from the solid waste transfer station or landfill, unless the prior written approval of the Director General has been obtained for the change.

21. Reporting changes in information furnished for purposes of application for licence

An applicant for a licence or for the renewal or transfer of such licence shall, within seven days of the occurrence of any material change in any information furnished in his application or furnished in writing pursuant to a request by the Director General under subsection 11(2) of the Act, give the Director General a report in writing of the change.

22. Display of licence

The holder of a licence shall display his licence, together with every document forming part of the licence, in a conspicuous place in the principal building of the solid waste transfer station or landfill.

23. Continuance of existing conditions and restrictions in case of change in occupancy

Where a person becomes the occupier of a licensed solid waste transfer station or landfill in succession to another person who holds an unexpired licence in respect of such solid waste transfer station or landfill, then:-

(a) for a period of fourteen days after the change in occupancy; or

(b) where the new occupier applies within the period specified in paragraph (a) for the transfer of the licence to him, for the period from the change in occupancy until the final determination of

his application, the conditions and restrictions of the licence shall be binding on the new occupier and shall be observed by him, notwithstanding that he is not yet the holder of the licence or that the licence may, during the period as specified in paragraph (a) or (b), as the case may be, have expired.

24. Maintenance of record

(1) An owner or occupier of a solid waste transfer station or landfill shall maintain records on the following:

- (a) operation, maintenance and performance monitoring of the leachate treatment system;
- (b) implementation of surface and ground water monitoring program;
- (c) implementation of landfill gas monitoring program;
- (d) implementation of the monitoring program for the leachate collection and removal system (LCRS);
- (e) implementation of waste control program to ensure scheduled wastes are not accepted for disposal; and
- (f) leachate discharge monitoring data.

(2) The records under subregulation (1) shall be submitted to the Director General and made available for inspection by any authorized officer.

25. Personnel training

(1) An owner or occupier of a solid waste transfer station or landfill:-

- (a) shall ensure that his or its employees attend training on environmental requirements and on the best practices to control pollution from the solid waste transfer station or landfill before they begin work;
- (b) shall ensure that the training for his or its employees include retraining on updates for new, revised and existing requirements and procedures; and
- (c) shall maintain records of training which shall include the training date, name and position of employee, training provider and a brief description of the training content.

(2) The record under paragraph (1)(c) shall be submitted to the Director General upon request and shall be made available for inspection by an authorized officer.

26. Owner or occupier to render assistance during inspection

An owner or occupier of any solid waste transfer station or landfill shall provide the Director General or any authorized officer every reasonable assistance and facility available at the solid waste transfer station or landfill, including labour, equipment, appliances, and instruments that the Director General or authorized officer may require for the purpose of inspection.

27. Licence fee

(1) The fee for a licence, including the renewal of a licence shall be five hundred ringgit and an additional leachate-related fee computed in accordance with the method as specified in the Fifth Schedule.

(2) The fee for a licence, including the renewal of a licence of five hundred ringgit shall accompany the application and shall not be refundable.

(3) The leachate-related fee shall not become due until called for.

(4) The fee for a transfer of licence shall be one hundred ringgit.

28. Waiver of fee

(1) If the Director General is satisfied that research on leachate treatment and disposal that is being or is to be conducted on any licensed solid waste transfer station or landfill is likely to benefit the cause of environmental protection, he may, with the approval of the Minister, wholly, or partly, waive any leachate-related licence fee payable by virtue of regulation 27.

(2) In deciding the extent of the waiver, the Director General shall be guided by the consideration of the pollution loading of leachate being discharged or to be discharged.

29. Penalty

Any person who contravenes regulations 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 24, 25 and 26 shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding one hundred thousand ringgit or to a term of imprisonment for a period not exceeding five years or to both and to a further fine not exceeding one thousand ringgit a day for every day that the offence is continued after the notice by the Director General requiring him to cease the act as specified in the notice has been served upon him.

30. Revocation, transitional and savings provision

(1) The **Environmental Quality (Sewage and Industrial Effluents) Regulations 1979**[P.U. (A) 12/1979] is revoked (hereinafter referred to as "the revoked Regulations").

(2) Any application made under the revoked Regulations for a licence to contravene the acceptable conditions, renewal or transfer of such licence, or written permission, which are pending immediately before the date of the coming into operation of these Regulations shall,

after the date of the coming into operation of these Regulations, be dealt with under the revoked Regulations and for such purposes it shall be treated as if these Regulations have not been made.

(3) All licences issued and written permission granted under the revoked Regulations shall, after the date of the coming into operation of these Regulations, continue to remain in full force and effect until the licence expires, is amended, suspended or cancelled or written permission expires or is revoked under the revoked Regulations and for such purposes it shall be treated as if these Regulations has not been made.

(4) Any proceeding, whether civil or criminal, commenced under the revoked Regulations and are pending on the date of the coming into operation of these Regulations shall, on the date of the coming into operation of these Regulations, be continued and concluded under the revoked Regulations and for such purposes it shall be treated as if these Regulations have not been made.

FIRST SCHEDULE

(Regulation 4)

WRITTEN NOTIFICATION OF NEW SOURCES OF LEACHATE DISCHARGE

I, the undersigned hereby notify that a solid waste transfer station or landfill* with the following details** will be constructed at..... that may result in a new source of leachate discharge or release. I also declare that all information given in this notification is to the best of my knowledge and belief true and correct.

Signature of responsible person:

.....

Name:

Designation:

Date:

Name and address of the solid waste transfer station or landfill:

.....

.....

Mailing address of the solid waste transfer station or landfill (if different from above)

.....

Telephone number:..... Fax number:.....

File reference number of Department of Environment (if applicable):.....

(Affix official seal or stamp of company which owns the solid waste transfer station or landfill)

* Delete whichever is not applicable

**** INFORMATION TO BE ATTACHED TO THE WRITTEN NOTIFICATION**

LANDFILL

1. Location and site plans of appropriate scale clearly indicating the location and boundary of the proposed landfill, buffer zone, waste fill area and contours, surface run-off control structures, on-site roads and structures, final cover design, the point of leachate discharge from the landfill and land use within 1000 meters radius of the proposed landfill
2. Design calculations, design parameters and engineering drawings of the leachate collection and removal system (LCRS) prepared by a professional engineer
3. Quality assurance and quality control plans for the construction of the leachate collection and removal system (LCRS) prepared by a professional engineer
4. Design parameters, design calculations and engineering drawings of the leachate treatment system prepared by a professional engineer
5. Proposed performance monitoring procedure for all the components of the leachate treatment system prepared by a professional engineer
6. Design parameters, design calculations and engineering drawings of the landfill gas collection and disposal system prepared by a professional engineer
7. Location and layout plan and engineering drawings of the final discharge point certified by a professional engineer
8. Longitude and latitude of the final discharge point for the treated leachate to the watercourse
9. System for monitoring the leachate collection and removal system (LCRS), leachate, surface and ground water and landfill gas prepared by a professional engineer
10. Plans for site closure and post-closure care
11. Contingency plan for leachate control
12. Design calculations and design drawings of stormwater collection

13. Site operation and maintenance procedures addressing the following items: waste acceptance criteria; waste control program to ensure scheduled wastes are not accepted for disposal; site supervision and security; waste disposal and covering activities; operational practices to reduce odour and dust emissions; site monitoring and pollution complaint response plan

14. Information on the expected date of commencement of work at the proposed landfill and the date the landfill is expected to commence operation.

SOLID WASTE TRANSFER STATION

1. Location and site plans of appropriate scale clearly indicating the location and boundary of the proposed solid waste transfer station and land use within 500 metres radius of the proposed solid waste transfer station

2. Information on how leachate, noise, odour and air pollution generated from the solid waste transfer station will be managed

3. Information on the expected date of commencement of work at the proposed solid waste transfer station and the date the solid waste transfer station is expected to commence operation.

SECOND SCHEDULE

(Regulation 13)

ACCEPTABLE CONDITIONS FOR DISCHARGE OF LEACHATE

	(1)	(2)	(3)
	Parameter	Unit	Standard
(i)	Temperature	°C	40
(ii)	pH Value	-	6.0-9.0
(iii)	BOD at 20°C	mg/L	20
(iv)	COD	mg/L	400
(v)	Suspended Solids	mg/L	50
(vi)	Ammoniacal Nitrogen	mg/L	5
(vii)	Mercury	mg/L	0.005
(viii)	Cadmium	mg/L	0.01
(ix)	Chromium, Hexavalent	mg/L	0.05
(x)	Chromium, Trivalent	mg/L	0.20
(xi)	Arsenic	mg/L	0.05
(xii)	Cyanide	mg/L	0.05
(xiii)	Lead	mg/L	0.10

(xiv)	Copper	mg/L	0.20
(xv)	Manganese	mg/L	0.20
(xvi)	Nickel	mg/L	0.20
(xvii)	Tin	mg/L	0.20
(xviii)	Zinc	mg/L	2.0
(xix)	Boron	mg/L	1.0
(xx)	Iron	mg/L	5.0
(xxi)	Silver	mg/L	0.10
(xxii)	Selenium	mg/L	0.02
(xxiii)	Barium	mg/L	1.0
(xxiv)	Fluoride	mg/L	2.0
(xxv)	Formaldehyde	mg/L	1.0
(xxvi)	Phenol	mg/L	0.001
(xxvii)	Sulphide	mg/L	0.50
(xxviii)	Oil and Grease	mg/L	5.0
(xix)	Colour	ADMI*	100

**ADMI - American Dye Manufacturers Institute*

THIRD SCHEDULE

(Regulation 15)

METHODS OF ANALYSIS OF LEACHATE

1. The 21st edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation of the United States of America
2. "Code of Federal Regulations, Title 40, Chapter 1, Subchapter D, part 136" published by the Office of the Federal Register, National Archives and Records Administration, United States of America

FOURTH SCHEDULE

(Regulation 16)

SPECIFICATION OF POINT OF DISCHARGE OF LEACHATE

1. The discharge point is located within the boundary of the landfill, immediately after the final unit operation or unit process of the leachate treatment system.
2. The location of the discharge point is easily accessible and does not pose any safety hazards to personnel performing site inspection or leachate sampling.
3. The leachate is discharged through a pipe, conduit or channel to facilitate leachate sampling.
4. The discharge point is physically identified by installing a metal identification sign which reads "Final Discharge Point".
5. The discharge point and its surrounding are properly maintained to be free from any obstruction that may pose difficulty or hazards during site inspection or leachate sampling.

FIFTH SCHEDULE

(Regulation 27)

METHOD OF COMPUTING LEACHATE-RELATED LICENCE FEE

	Parameter	Fee per kg of contaminant discharged
(i)	BOD at 20°C	RM 0.50
(ii)	Ammoniacal Nitrogen	RM 500.00
(iii)	Mercury	RM 2500.00
(iv)	Cadmium	RM 2500.00
(v)	Chromium, Hexavalent	RM 2500.00
(vi)	Chromium, Trivalent	RM 2500.00
(vii)	Arsenic	RM 2500.00
(viii)	Cyanide	RM 2500.00
(ix)	Lead	RM 2500.00
(x)	Copper	RM 2500.00
(xi)	Manganese	RM 2500.00
(xii)	Nickel	RM 2500.00
(xiii)	Tin	RM 2500.00
(xiv)	Silver	RM 2500.00
(xv)	Selenium	RM 2500.00
(xvi)	Barium	RM 2500.00
(xvii)	Fluoride	RM 2500.00
(xviii)	Formaldehyde	RM 2500.00
(xix)	Zinc	RM 500.00
(xx)	Boron	RM 500.00
(xxi)	Iron	RM 500.00
(xxii)	Phenol	RM 500.00
(xxiii)	Sulfide	RM 500.00
(xxiv)	Oil and Grease	RM 500.00

