

The Philippine Environmental Governance 2 Project

Memo to DENR: Phased compliance by LGUs with RA requirements on waste disposal facilities

September 2005



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MEMORANDUM

Subject: Phased compliance by LGUs with RA 9003 requirements on waste disposal facilities

By : Policy and UEM teams, EcoGov 2

Date : September 12, 2005

PROBLEM

Are LGUs required to put up sanitary landfill facilities (SLF) under the law? Can LGUs that can't afford an SLF, develop and operate waste disposal facilities other than SLFs?

SHORT ANSWER

The law mandates the closure of open dumps and also, eventually, all controlled dumps. It sets criteria for siting, establishment and operation of an SLF. But the law does not specifically mandate that LGUs put up SLFs immediately. It can be argued that a waste disposal facility that surpasses the standards for controlled dumps, while short of the criteria for SLFs, will comply with the law.

A proposed draft resolution for a phased compliance with the legal requirements for waste disposal facilities is presented after the discussion below.

LEGAL BASIS

Section 37 of RA 9003 provides that “No open dumps shall be established and operated, nor any practice or disposal of solid waste by any person, including LGUs, which constitutes the use of open dumps for solid waste, be allowed after the effectivity of this Act: Provided, That within three (3) years after the effectivity of this Act, every LGU shall convert its open dumps into controlled dumps, in accordance with the guidelines set in Section 41 of this Act: Provided, further, That no controlled dumps shall be allowed five (5) years following effectivity of this Act”.

The Act, thereafter, provides the guidelines for controlled dumps (sec 39) and the criteria for siting (sec 40), establishment (sec 41), and operation (sec 42) of sanitary landfills. The IRR of RA 9003 also provides additional and detailed criteria for siting, establishment, and operation of sanitary landfills.

However, there is no provision in RA 9003 that states that the establishment of sanitary landfills is mandatory. Section 17(h) of the Act recommends that LGUs find an alternative “sanitary landfill site” to be “developed and operated as a final disposal site for solid and, eventually, residual wastes...” and thereafter prescribes guidelines for

designing and operating landfills. What is mandatory is compliance with the criteria for siting, establishment, and operation of sanitary landfills, if the LGU decides to put up an SLF. Thus, in the absence of a provision making the establishment of sanitary landfills mandatory, what the law does, in effect, is to present sanitary landfills as a primary option or alternative waste disposal facility after the closure of controlled dumps.

This interpretation is especially critical because SLFs, as prescribed in the Act, are prohibitively expensive to develop and operate. Given the volume of wastes being generated, the development and operation of SLFs is beyond the financial capacity of most LGUs. The technical skills required, though not insurmountable, are also currently not available in most LGUs.

The law should be strictly interpreted in favor of local government autonomy. Since there is no categorical statement in the law requiring SLFs, it should be interpreted to mean that the SLF provisions are mandatory only if the LGU decides to put up an SLF. But an SLF as a type of waste disposal facility is only the preferred or suggested form.

Again, given that there is no unconditional requirement for SLFs, it is worth asking the question: Who is in a better position to know what is the most effective manner of residual waste disposal—the DENR? The Commission? Or the LGU? We submit that the LGU, properly informed, is in the best position to make such a decision.

This interpretation is not intended to allow LGUs to conveniently escape the stringent requirements for waste disposal facilities. In fact, it is consistent with the overall policy of the law which is—to minimize waste¹, maximize diversion², and use disposal facilities as a last resort for residual wastes³

In an ideal situation, recyclables, compostables and hazardous wastes will not be allowed to be dumped in waste disposal facilities. Therefore, the criteria for disposal facilities need not be as stringent compared to a situation where mixed wastes are sent to the SLF. Even recognizing that the ideal is unlikely to be achieved, it is still possible to set a range of situations where different criteria for disposal facilities can apply. We propose below a phased compliance with the law, specifying realistic categories and reasonable conditions for meeting the legal requirements.

In summary, it is submitted that an LGU may establish a disposal facility other than a fully developed sanitary landfill subject to the following conditions:

1. The open dump or controlled dump of the LGU must be closed;
2. The waste disposal facility of the LGU must have none of the characteristics of an open or controlled dump;

¹ Sec. 17 (e) source reduction

² Sec. 17 (f) recycling, (g) composting; Sec 20 mandatory waste diversion targets; Art. IV (recycling) and Art V (composting)

³ Sec. 48 (8) penalty for mixing segregated wastes

3. The environmental protection measures, safeguards and standards for the establishment and operation of the waste disposal facility must be more than that prescribed by the Act for controlled dumps.

TECHNICAL BASIS

As of January 2005, the National Solid Waste Management Commission has listed 214 sites deemed suitable for development into a sanitary landfill (Table 1). These are distributed among the 15 regions of the country. Fifteen (15) of these sites have been identified to accommodate the waste from Metro Manila. An analysis of these data has shown that most of these sites have reached only the pre-feasibility or initial assessment stage. The conduct of the feasibility studies, acquisition of environmental permit and social acceptance and the eventual construction could take over 2 to 3 years assuming the concerned LGUs have the financial capability to fund the undertakings.

Currently, there are 4 operational engineered disposal facilities in the country, namely the Bais SLF at Negros Oriental, the CDC SLF in Capas, Tarlac, the Puerto Princesa SLF in Palawan and the Rodriguez disposal site⁴. The CDC SLF was built and is currently being operated by a German company. The Bais SLF in Negros Oriental is a small facility built with assistance from the German government. Likewise, German government assistance has facilitated the on-going construction of the small SLF in Dalaguete, Cebu.

Out of over 1,600 LGUs, only 3 have made their own significant strides towards the development and operation of their respective engineered disposal facilities. These are Rodriguez in Rizal province, Puerto Princesa in Palawan and San Fernando in La Union. The recently opened Puerto Princesa SLF was constructed through an ADB loan. The San Fernando SLF in La Union will soon be constructed through a loan from Logofind. The Rodriguez facility was developed and operated by a local contractor in coordination with the local government unit.

With less than 6 months left before the deadline, it is now considered unlikely that most of the remaining LGUs or cluster of LGUs will be able to develop their respective sanitary landfills or disposal facilities as Phased compliance by LGUs with RA 9003 requirements on waste disposal facilities defined under RA 9003. These LGUs will, in all probability, continue using open dumps with some attempting to convert them to a controlled dump. This condition will continue to affect the quality of the environment within the immediate vicinity of the dumps and contribute to the degradation of the quality of both surface and groundwater resources.

Prior to the passage of RA 9003, 4 sanitary landfills have been developed and operated in the Philippines. These are the Carmona (Cavite), San

Region	Number of Proposed SLF Sites
1	4
2	2
3	29
4A	17
4B	8
5	2
6	41
7	21
8	3
9	3
10	32
11	17
12	14
13	5
CAR	16
Total	214

⁴An ECC was recently issued allowing the adjacent 14 hectare lot to be developed as a sanitary landfill

Mateo (Rizal), Subic Base (SBMA) and Inayauan (Cebu) SLFs. Thereafter, the Bais (Negros Oriental), CDC (Tarlac), Rodriguez (Rizal) and Puerto Princesa (Palawan) disposal facilities were constructed.

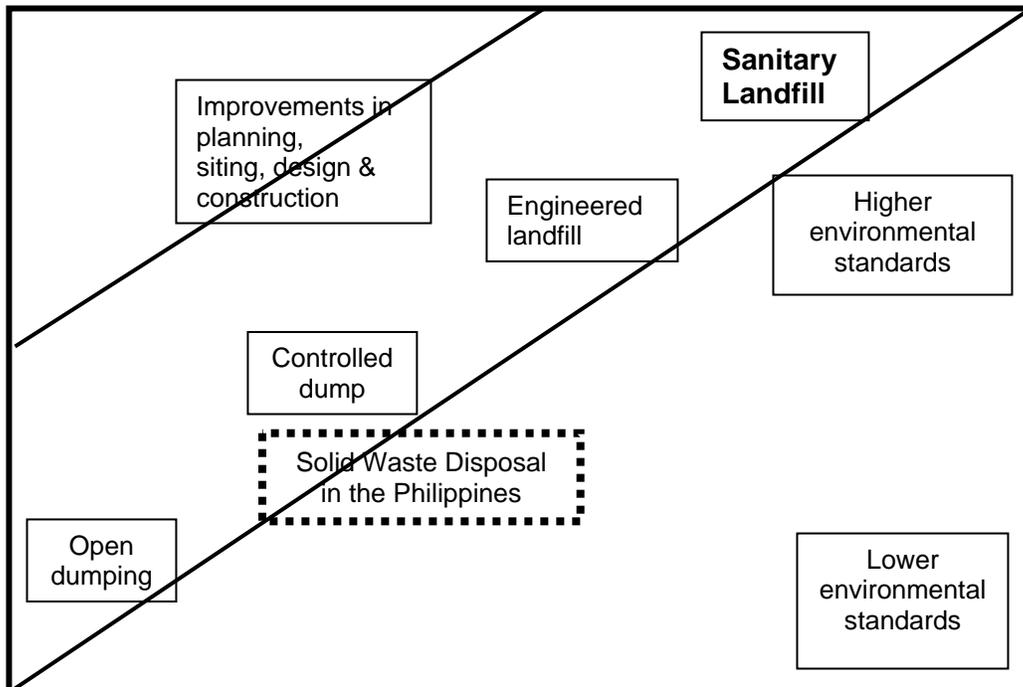
The Carmona and San Mateo SLFs were developed and initially operated by the Department of Public Works and Highways for Metro Manila through financing by the World Bank. These facilities began operations in 1990 and 1992, respectively. The Carmona SLF ceased operations in 1998. The San Mateo SLF stopped operations in 2000. The stoppage of operations of these disposal facilities was brought about by then mounting opposition not only by the communities surrounding them but by the residents occupying the areas along the roads leading to these facilities. These stakeholders complained about the unpleasant odor, contamination of surface and groundwater, presence of pests and vectors and the traffic and accidents brought about by the garbage trucks.

The Cebu sanitary landfill, which was built in the mid 90's was reportedly beset by financial, technical and administrative problems and soon deteriorated into an open dump. The SBMA managed sanitary landfill within the former American base operated marginally as an engineered disposal facility. The Bais sanitary landfill was completed in 2004 and has been operational since then and is noted to be having maintenance problems. The Rodriguez disposal facility which receives the waste of 10 LGUs of Metro Manila is reportedly operated as a controlled dump and contains the basic engineering features of a sanitary landfill. The CDC SLF has reportedly continued to operate as a sanitary landfill.

The foregoing experiences have indicated that in general, the LGUs and even the major agencies do not have enough experience, technical know-how, financial capability and political will to sustain the operations of an engineered disposal facility such as a sanitary landfill. The setbacks experienced in operating the Carmona, San Mateo and Cebu sanitary landfills clearly stress this point. Moreover, the limited number of SLFs which were built and operated prior to RA 9003 and those built after its passage represent efforts by national agencies or donor western countries and not the real capability of the LGUs.

Considering its history and current state, waste disposal management in the Philippines falls within the lower level of the graph of the evolutionary improvement in solid waste management as prepared by Philip Rushbrook and Michael Pugh⁵ for the World Bank in 1999 (Figure 1).

⁵ Solid Waste Landfills in Middle and Lower Income Countries, A Technical Guide to Planning, Design and Operations, World Bank, 1999



As in most developing countries, it will take some time before the LGUs can move forward to the engineered and sanitary landfills for solid waste disposal. In the case of the Philippines, slow pace of development from open dumps to controlled dumps to engineered and sanitary landfills can be attributed to a combination of technical, financial, institutional, environmental and political issues which the LGUs are trying to but generally cannot resolve within the deadline set by RA 9003.

For the Philippines to effectively address its solid waste disposal problem within the limited capability of the local government units, the most practical approach is to progressively move in phases from the basic waste containment to the more sophisticated method of disposal.

Considerations for phased compliance

The use of income class for determining the level of sanitary landfill to be used by the LGUs was initially suggested in Department Administrative Order (DAO) 98-49 which provided the guidelines for the development and operations of a sanitary landfill 1 and sanitary landfill 2.

The ongoing JICA study recommends a similar approach which likewise categorizes the various types of landfill stages based on income class.

The two proposals obviously considered the potential ability of the LGU to finance the development and operation of a disposal facility. However, both would have to take into account the following:

- Low income LGUs do not consistently have low potential waste generation rates
- High income LGUs do not consistently have high potential waste generation rates

Income class alone, therefore, cannot be used as the sole screening criterion for determining the type of disposal facility for an LGU.

Waste Generation with Diversion

This proposal recommends the use of potential solid waste generation with a minimum 25% diversion as the basis for setting the entry level of LGUs into the various phases of disposal facilities.

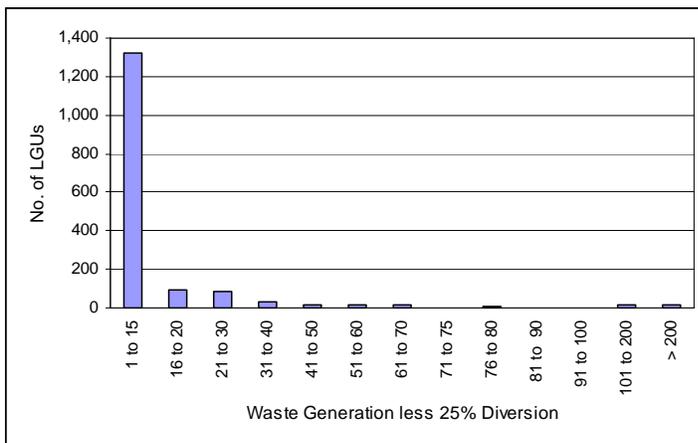


Figure 1 - Range of Disposable Waste of LGUs after Diversion

The potential daily waste that can be generated by the 1,610 LGUs in 2006 was estimated using projected NSO population data and applying the following per capita generation rates⁶: 0.3 kg/ day for rural areas, 0.5 kg/day for urban areas, 0.7 kg/day for the National Capital Region⁷ and 0.4 kg/day for capitals. As a requirement and in compliance with the provisions of RA 9003, each LGU must have attained a minimum 25%

waste diversion by 2006 to qualify in this proposed classification. Figure 1 shows the plot of the potential waste for disposal by the LGUs after the required percentage of diversion. Four (4) potential LGU groupings are evident in the graph. These are the < 15 tons per day (tpd), the 16 to 75 tpd, the 76 to 200 tpd and the > 200 tpd. A comparison with the income class classification shows that the LGUs with less than 75 tpd fall under the low income bracket⁸. The LGUs with disposable waste above 75 tpd generally include the higher income municipalities and cities⁹. Table 2 shows the number and percentage of LGUs under this potential grouping.

A total of 1,319 LGUs or nearly 82% fall within the range of less than or equal to 15 tpd. About 251 LGUs or 15.59% fall within the range of 16 to 75 tpd.

Waste Generation after 25% Diversion(tpd)	%	No. of LGUs
1 to 15	81.93	1319
16 to 75	15.59	251
76 to 200	1.55	25
> 200	0.93	15

⁶ Must be adjusted per LGU if per capita generation is available

⁷ The Philippines Environment Monitor 2001, World Bank

⁸ This refers to the 4th, 5th and 6th class municipalities

⁹ This refers to the 3rd, 2nd, 1st class municipalities and cities

Twenty-five LGUs or 1.55% are within the range of 76 to 200 tpd while 15 LGUs or 0.93% generate more than 200 tpd.

The LGUs with disposable waste range exceeding 75 tpd generally include the cities and some urbanized municipalities. Table 3 shows the list of LGUs within the 76 to 200 tpd group while Table 4 presents the LGUs exceeding the 200 tpd disposable waste range.

On a regional basis, most of the LGUs falling within the 76 to 200 tpd range belong to either NCR or Region 4. The rest correspond to the cities and urbanized municipalities in Regions 1, 3, 6, 7, 10, 11, 12 and Caraga.

The LGUs exceeding 200 tpd consist of Metro Manila cities (NCR) and those in Regions 4, 7, 9 and 11.

Proposed phased compliance and guidelines

Four levels of waste disposal facilities are proposed which consider potential waste generation of LGUs reckoned from the projected 2006 population and the 25% diversion as required by RA 9003. Each LGU or cluster of LGUs may develop and operate their respective facilities and progressively move from a lower to a higher level facility as the amount of disposable waste increases over time.

Category 1

Category 1 disposal facility shall be applied to LGUs generating waste less than or equal to 15 tpd after 25% diversion. It shall also apply to a cluster of LGUs with a collective disposable waste of less than or equal to 15 tpd.

Category 2

Category 2 disposal facility shall be applied to LGUs generating waste greater than 15 tpd but less than or equal to 75 tpd after 25% diversion. It shall also apply to a cluster of LGUs with a collective disposable waste greater than 15 tpd but less than or equal to 75 tpd.

LGU	tpd	Region
San Fernando	79	1
Puerto Princesa City	79	4
City of Tagum	79	11
Olongapo City	80	3
Lucena City	83	4
Calamba	85	4
Bacoor	87	4
Lapu-Lapu City (Opon)	106	7
Baguio City	108	1
Butuan City	110	Caraga
Batangas City	112	4
Iligan City	113	12
Angeles City	114	3
City of Tarlac	115	3
Navotas	122	NCR
San Jose del Monte	122	3
Dasmariñas	133	4
Mandaue City	138	7
City of Mandaluyong	141	NCR
Iloilo City	153	6
Pasay City	157	NCR
Malabon	173	NCR
Bacolod City	174	6
City of Muntinlupa	187	NCR

Category 3

Category 3 disposal facility shall be applied to LGUs generating waste greater than 75 tpd but less than or equal to 200 tpd after 25% diversion. It shall also apply to a cluster of LGUs with a collective disposable waste greater than 75 tpd but less than or equal to 200 tpd.

Category 4

Category 4 disposal facility shall be applied to LGUs generating waste greater than 200 tpd after 25% diversion. It shall also apply to a cluster of LGUs with a collective disposable waste greater than 200 tpd.

Summary of Features of Proposed Levels of Disposal Facilities

The summary of the basic features of the proposed levels of disposal facilities is presented in the following table:

LGU	tpd	Region
Gen. Santos City	204	11
City of Makati	211	NCR
City of Marikina	229	NCR
City of Antipolo	256	4
Zamboanga City	275	9
City of Parañaque	279	NCR
City of Pasig	288	NCR
City of Valenzuela	289	NCR
City of Las Piñas	292	NCR
Cebu City	297	7
Taguig	313	NCR
Davao City	503	11
Kalookan City	732	NCR
Manila	786	NCR
Quezon City	1,269	NCR

Features	Category 1 ≤ 15 tpd	Category 2 > 15 tpd, ≤ 75 tpd	Category 3 > 75 tpd, ≤ 200 tpd	Category 4 > 200 tpd
Daily and Intermediate Soil Cover	√	√	√	√
Embankment/Cell Separation	√	√	√	√
Drainage Facility	√	√	√	√
Gas Venting	√	√	√	√
Leachate Collection	Provision for collection at the later stage of operation to be included in the design	√	√	√
Leachate Treatment	Natural Attenuation	Pond system	Combination of physical, biological & chemical	Combination of physical, biological & chemical
Leachate Re-circulation	At a later stage of operation	At a later stage of operation	At a later stage of operation	At a later stage of operation
Clay liner	Clay liner be at least 60 cm thick and has a permeability of 10 ⁻⁵ cm/sec	Clay liner must be at least 75 cm thick and has a permeability of 10 ⁻⁶ cm/sec		

Features	Category 1 ≤ 15 tpd	Category 2 > 15 tpd, ≤ 75 tpd	Category 3 > 75 tpd, ≤ 200 tpd	Category 4 > 200 tpd
Clay liner and/or synthetic liner			Clay liner at least 75 cm thick, clay liner with a permeability of 10 ⁻⁷ cm/sec or better, if not available, an equivalent replacement would be a composite liner consisting of at least 1.5mm thick HDPE membrane over at least 60 cm thickness of compacted fine materials with permeability no more than 10 ⁻⁶ cm/sec	Synthetic liner at least 1.5mm thick HDPE membrane over at least 60 cm thickness of compacted clay materials with permeability no more than 10 ⁻⁷ cm/sec
Permit	Environmental compliance certificate via initial environmental examination	ECC via IEE	ECC via IEE	Facilities exceeding a daily disposal of 1000 tpd must prepare an environmental impact assessment

The overall design shall include the collection and treatment of leachate, but this may be implemented at the appropriate time when leachate starts to accumulate.

Facility operating requirements

All waste disposal facilities, regardless of category, shall meet the following operating requirements, except as otherwise provided:

1. Planned capacity with phased cell development
2. Site preparation and containment engineering
3. Compaction of waste to minimum specified target densities
4. Specified operational procedures to protect amenities
5. Fence, gate and other site infrastructure with surfaced primary access road
6. Full record of waste volumes, types and source
7. Special provisions and procedures for dealing with special waste (for Categories 1 and 2)
8. Fully trained staff and experienced site management
9. Provision for aftercare following site restoration and closure
10. No waste picking

CONCLUSION

Given the current financial and technical capacities of LGUs, the proposed phased compliance provides strategies that will enable LGUs to meet, more effectively and in a timely manner, the requirements of RA 9003 with respect to waste disposal. First, LGUs must address the minimum requirements of waste diversion which RA 9003 sets at 25% within five (5) years after the effectivity of the Act. This can be readily achieved if the LGUs can immediately focus on waste generated by point sources (e.g., markets, commercial establishments, etc.) Second, after meeting the minimum waste diversion requirements, at least 97% of LGUs can actually opt for less complex and less costly waste disposal facilities that practically have most of the features and benefits of an SLF.

The above proposal is legally sound -- the law does not expressly provide that the establishment of SLFs is mandatory. What it says is that the undesirable features of open or controlled dumps must be eliminated. It is also technically and economically sound. The requirements for the proposed alternative facilities meet the waste diversion and disposal standards prescribed in RA 9003 but are substantially less costly and less complex to manage.

ACRONYMS

ADB	-	Asian Development Bank
CDC	-	
DAO	-	Department Administrative Order
DENR	-	Department of Environment and Natural Resources
ECC	-	Environmental Compliance Certificate
EcoGov	-	The Philippine Environmental Governance Project
IEE	-	Initial Environmental Examination
IRR	-	Implementing Rules and Regulations
LGU	-	Local Government Unit\
NCR	-	National Capital Region
NSWMC	-	National Solid Waste Management Commission
RA	-	Republic Act
SBMA	-	Subic Bay Metropolitan Authority
SLF	-	Sanitary Landfill
UEM	-	Urban Environmental Management
USAID	-	United States Agency for International Development



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FROM THE AMERICAN PEOPLE



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September 14, 2005

HON. MICHAEL T. DEFENSOR
Secretary
Department of Environment and Natural Resources
Visayas Avenue, Quezon City

ATTENTION: ATTY. ANALIZA R. TEH
Assistant Secretary for Foreign Assisted and Special
Projects Office (FASPO), DENR

MR. CASIMIRO YNARES III
Assistant Secretary for Environment and
Executive Director, National Solid Waste Management
Commission (NSWMC) Secretariat

ATTY. LOLIBETH R. MEDRANO
Director, Environmental Management Bureau

Dear Secretary Defensor:

On behalf of the Philippine Environmental Governance 2 Project (EcoGov 2), we are respectfully transmitting the attached proposed Resolution on Phased Compliance by Local Government Units (LGUs) with the provisions of Republic Act No. 9003 on waste disposal facilities. The proposed Resolution is accompanied by a Memorandum detailing the legal and technical bases for phased compliance, both of which are the products of joint and coordinative work of DENR, NSWMC and EcoGov2 personnel.

In connection with this, we would like to propose that the draft Resolution be submitted to the National Solid Waste Commission (NSWMC) for deliberation and consideration. Should there be a need for EcoGov2 presence in the deliberations, we are ready to send our specialists to serve as resource persons.

In addition, we would like to suggest that the NSWMC conduct official consultations with the leagues of cities and municipalities and other stakeholders on the proposed Resolution. The consultations will serve as a venue for the leagues and other stakeholders to officially present their respective positions on the proposed phased compliance Resolution.

We hope that the foregoing will merit your favorable consideration.

Very truly yours,


Rebecca R. Paz
Deputy Chief of Party for
Results Management

cc. Hon. Armando A. de Castro
Undersecretary for Management and Technical Services, DENR

Hon. Demetrio L. Ignacio (CESO I)
Undersecretary for Policy, Planning, Research and Legislative Affairs, DENR

Mr. Albert A. Magalang
Deputy Executive Director, NSWMC Secretariat

Office of the President of
the Philippines

NATIONAL SOLID WASTE MANAGEMENT COMMISSION

RESOLUTION NO. _____
_____ 2005

**PHASED COMPLIANCE WITH THE REQUIREMENTS
FOR WASTE DISPOSAL FACILITIES**

WHEREAS, almost all Local Government Units (LGUs) are facing serious problems with improper management of solid wastes;

WHEREAS, Republic Act No. 9003 mandates the closure of all controlled dumps after five (5) years from the effectivity of the Act;

WHEREAS the Act proposes, but does not absolutely require, the establishment of sanitary landfills as an alternative final disposal facility;

WHEREAS, the cost of establishing, operating and maintaining a sanitary landfill is grossly prohibitive and beyond the capacity of most LGUs to sustain;

WHEREAS, out of the total one thousand six hundred ten (1610) LGUs, less than ten (10) have established or are in the process of establishing sanitary landfills;

WHEREAS, one thousand three hundred nineteen (1319) of all LGUs, comprising eighty-two percent (82%) do not generate more than 15 tons of solid waste per day;

WHEREAS, the small amount of wastes generated by most LGUs, or even of a cluster of small LGUs, does not make the operation of a sanitary landfill financially viable nor necessary;

WHEREAS, the paramount policy of the Act is to reduce waste generation and divert solid wastes from waste disposal facilities through composting, reuse and recycling, thereby further potentially reducing the residual wastes to be disposed of;

WHEREAS, it is imperative that all LGUs establish an appropriate waste disposal facility that sufficiently meets the requirements for protection of public health, the surrounding environment and water resources, but takes into consideration the volume of wastes generated and the capacity of the LGUs to operate the facility;

NOW THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED, to require all municipalities and cities to establish an appropriate waste disposal facility for residual wastes, according to the conditions and specifications provided herein:

Section 1. Phased compliance with establishment of final disposal facilities.

Municipalities and cities shall develop, operate and maintain waste disposal facilities for residual wastes which are appropriate for their level of waste generation and capacity to operate such facilities.

For this purpose, LGUs shall be categorized according to their projected per capita waste generation, as provided in Section 3 herein. Section 4 provides the technical requirements for the appropriate waste disposal facilities that each category of LGU is required to operate.

Section 2. General requirements for LGUs to qualify for phased compliance.

Phased compliance is anchored on the assumption that only residual wastes remain to be disposed of at the facility. The technical requirements for Categories 1 and 2 disposal facilities are less stringent than that of a sanitary landfill, because it is assumed that recoverable materials, biodegradable and special wastes have already been diverted and disposed of properly. Therefore, only LGUs that have met the requirements for diversion under the law can qualify for phased compliance.

As a further incentive to comply with the Act, only LGUs that have complied with the mandatory closure of open dumps and phase-out of controlled dumps within the statutory deadline, may take part in phased compliance.

Section 3. Categories of LGUs.

There shall be four (4) categories of LGUs for purposes of phased compliance. The categorization is based on per capita waste generation, following population projections for 2006 using census data for year 2000 and the general estimate of 0.3 kg/day waste generation for rural areas and 0.5 kg/ day for urban areas.

Category 1	LGUs generating wastes less than or equal to 15 tons per day after diversion;
Category 2	LGUs generating greater than 15 but less than or equal to 75 tons per day after diversion;
Category 3	LGUs generating greater than 75 but less than or equal to 200 tons per day after diversion;
Category 4	LGUs generating more than 200 tons per day.

Section 4. Technical requirements for waste disposal facilities for each LGU category.

The following are the minimum technical requirements for waste disposal facilities for each LGU category:

Features	Category 1 ≤15 tpd	Category 2 > 15 tpd, ≤75 tpd	Category 3 > 75 tpd, ≤200 tpd	Category 4 > 200 tpd
Daily and Intermediate Soil Cover	√	√	√	√
Embankment/Cell Separation	√	√	√	√
Drainage Facility	√	√	√	√
Gas Venting	√	√	√	√
Leachate Collection	Provision for collection at the later stage of operation to be included in the design	√	√	√
Leachate Treatment	Natural Attenuation	Pond system	Combination of physical, biological & chemical	Combination of physical, biological & chemical
Leachate Re-circulation	At a later stage of operation	At a later stage of operation	At a later stage of operation	At a later stage of operation
Clay liner	Clay liner be at least 60 cm thick and has a permeability of 10^{-5} cm/sec	Clay liner must be at least 75 cm thick and has a permeability of 10^{-6} cm/sec		
Clay liner and/or synthetic liner			Clay liner at least 75 cm thick, clay liner with a permeability of 10^{-7} cm/sec or better, if not available, an equivalent replacement would be a composite liner consisting of at least 1.5mm thick HDPE membrane over at least 60 cm thickness of compacted fine materials with permeability no more than 10^{-6} cm/sec	Synthetic liner at least 1.5mm thick HDPE membrane over at least 60 cm thickness of compacted clay materials with permeability no more than 10^{-7} cm/sec
Permit	Environmental compliance certificate via initial environmental examination	ECC via IEE	ECC via IEE	Facilities exceeding a daily disposal of 1000 tpd must prepare an environmental impact assessment

The overall design shall include the collection and treatment of leachate, but this may be implemented at the appropriate time when leachate start to accumulate.

Section 5. Facility operating requirements.

All waste disposal facilities, regardless of category, shall meet the following operating requirements, except as otherwise provided:

1. Planned capacity with phased cell development
2. Site preparation and containment engineering
3. Compaction of waste to minimum specified target densities
4. Specified operational procedures to protect amenities
5. Fence, gate and other site infrastructure with surfaced primary access road
6. Full record of waste volumes, types and source
7. Special provisions and procedures for dealing with special waste (for Categories 1 and 2)
8. Fully trained staff and experienced site management
9. Provision for aftercare following site restoration and closure
10. No waste picking

Section 6. Effectivity.

The guidelines set under this Resolution shall take effect immediately.