

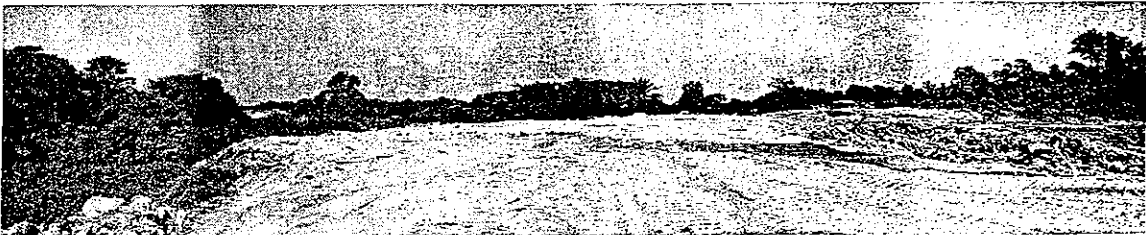
State	Perak
No.	PR-08

Basic Information			
Name of LA	MD Tapah		
Name of Landfill	Pekan Getah		
Location of the Landfill	Batu 4, Pekan Getah, Tapah		
Status of Landfill	operation	(Remaining Life Span : 1)	
Year Start Operation	1985	Year Cease Operation	-
Managed by	local authority		
Land ownership	Government		
Gazetted	no but with permission from land office		
Area	21.5	Waste Disposed daily	40
Reasons for closure	development at adjacent area		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 1		
Site Condition	flatland		
Waste Covered	yes	(Frequency : twice a week)	
Type of Vegetation	no vegetation		
Landslide	not noticeable		
Soil Subsidence	not noticeable		
Vector and animals	noticeable (stray dogs & birds)		
Odor, gas and smoke	noticeable		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	sandy		
No of complaints (/year)	yes		
dist. from Residential	<500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture, housing		
Ultimate Landuse	yes	(Level : high use - housing)	
Incl. in Local Development. Plan?	yes		
Probability of Development	most probably		
Distance from town centre (km)	5-10km		
Remarks			

Photos

	No	PR-08
Local Authority	MD Tapah	
Name	Pekan Getah	
Survey date	21-Mar-03	
Comments		

Photos



Gate



State	Perak
No.	PR-09

Basic Information			
Name of LA	MD Tapah		
Name of Landfill	Bidor		
Location of the Landfill	Batu 4, Jalan Bidor, Tapah		
Status of Landfill	operation	(Remaining Life Span :	10 (but propose to close soon))
Year Start Operation	1980	Year Cease Operation	-
Managed by	local authority		
Land ownership	Stateland		
Gazetted	no		
Area	2.13	Waste Disposed daily	50
Reasons for closure	move to a new improved site, propose to close soon, a new site is being proposed		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 1		
Site Condition	hilly		
Waste Covered	yes	(Frequency :	twice a week)
Type of Vegetation	no vegetation		
Landslide	noticeable (waste being pushed down the slope, 5-6m high, 70 deg slope)		
Soil Subsidence	not noticeable		
Vector and animals	noticeable		
Odor, gas and smoke	noticeable		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	-		
No of complaints (/year)	yes		
dist. from Residential	<500m (200m from hostels, police squatters)		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	housing		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	yes		
Probability of Development	less probably		
Distance from town centre (km)	5-10km		
Remarks			

Photos

No	PR-09
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Local Authority	MD Tapah
Name	Bidor
Survey date	21-Mar-03
Comments	

Photos

Surrounding area is housing.



Slope is steep.



Waste condition.

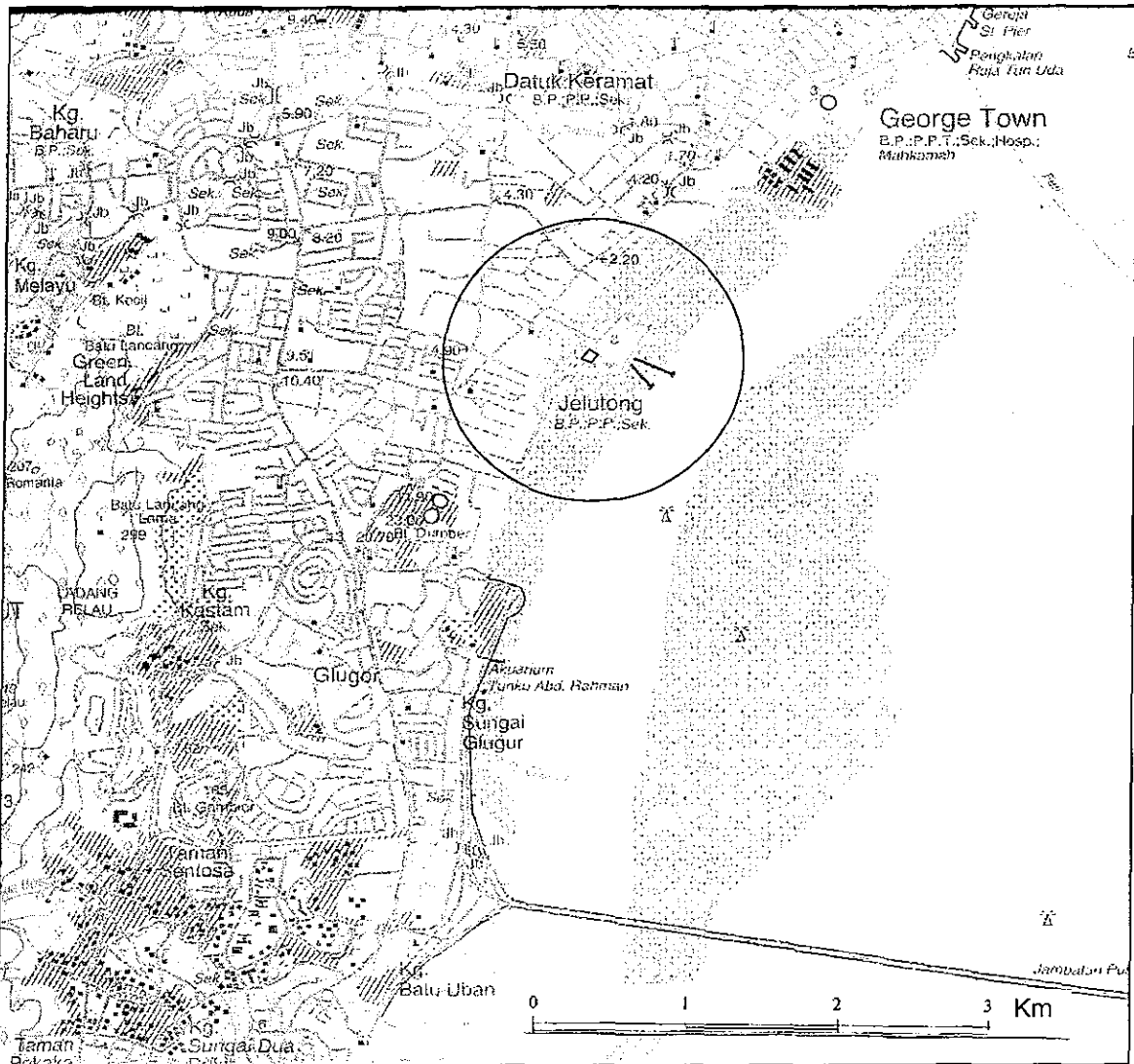


	State	Penang	
	No.	PP-01	
Basic Information			
Name of LA	MP Pulau Pinang		
Name of Landfill	Jeti Jelutong		
Location of the Landfill	Along new Jelutong Expressway		
Status of Landfill	operation for bulky (Remaining Life Span : -) waste only		
Year Start Operation	1980's	Year Cease Operation	2001, except for bulky waste
Managed by	local authority		
Land ownership	Government		
Gazetted	-		
Area	20	Waste Disposed daily	550
Reasons for closure	development at adjacent area (expressway & sewage treatment plant)		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 1		
Site Condition	reclaimed land		
Waste Covered	yes (Frequency : daily)		
Type of Vegetation	grasses and bushes		
Landslide	medium		
Soil Subsidence	medium		
Vector and animals	noticeable (stray dogs, many flies, pigeon)		
Odor, gas and smoke	noticeable (odour, smoke)		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	sand		
No of complaints (/year)	yes (smoke, dust, flies)		
dist. from Residential	<500m (nearest squatters and new flats abt. 200m)		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	housing		
Ultimate Landuse	yes (Level : low (propose upgrade of landfill))		
Incl. in Local Development. Plan?	yes (partially use for expressway and sewage treatment plant)		
Probability of Development	most probably		
Distance from town centre (km)	<5km		
Remarks			

Maps

No	PP-01
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Local Authority	MP Pulau Pinang	
Name	Jeti Jelutong	
Location	100°19'20"	05°23'32"
Survey date		
Maps		



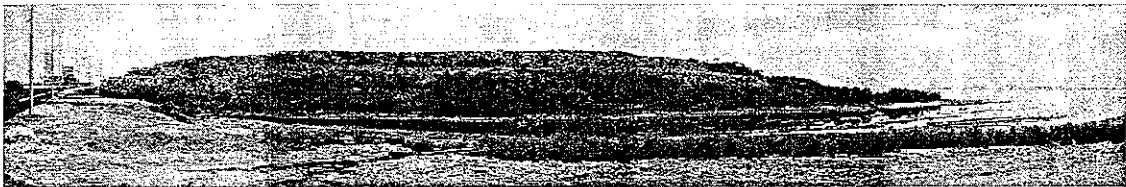
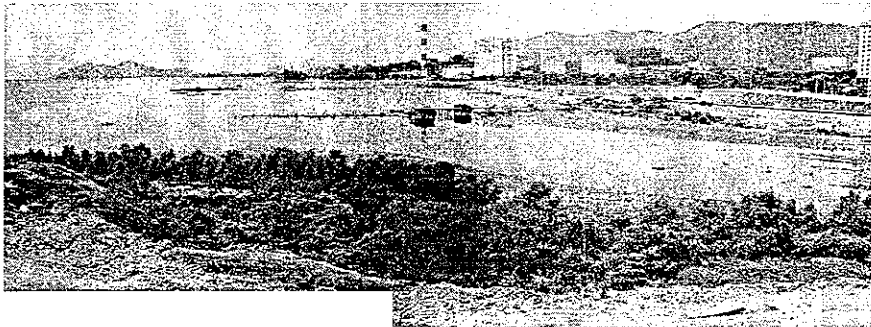
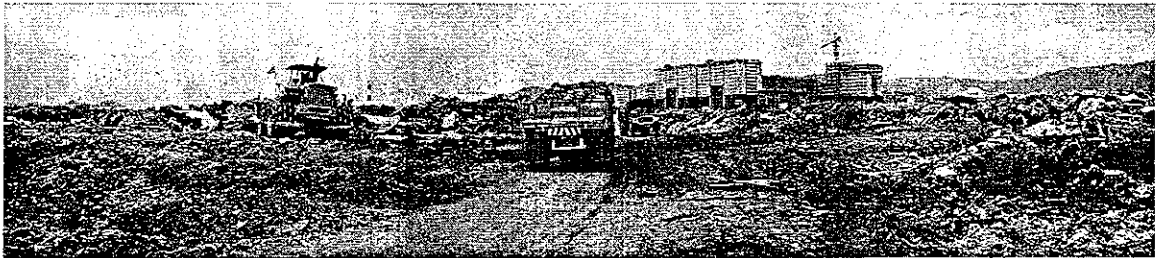
Comments

Photos

	No	PP-01
Local Authority	MP Pulau Pinang	
Name	Jeti Jelutong	
Survey date	13-Mar-03	
Comments		

Photos

Surrounding area is used for residence.



Leachate from the slope.

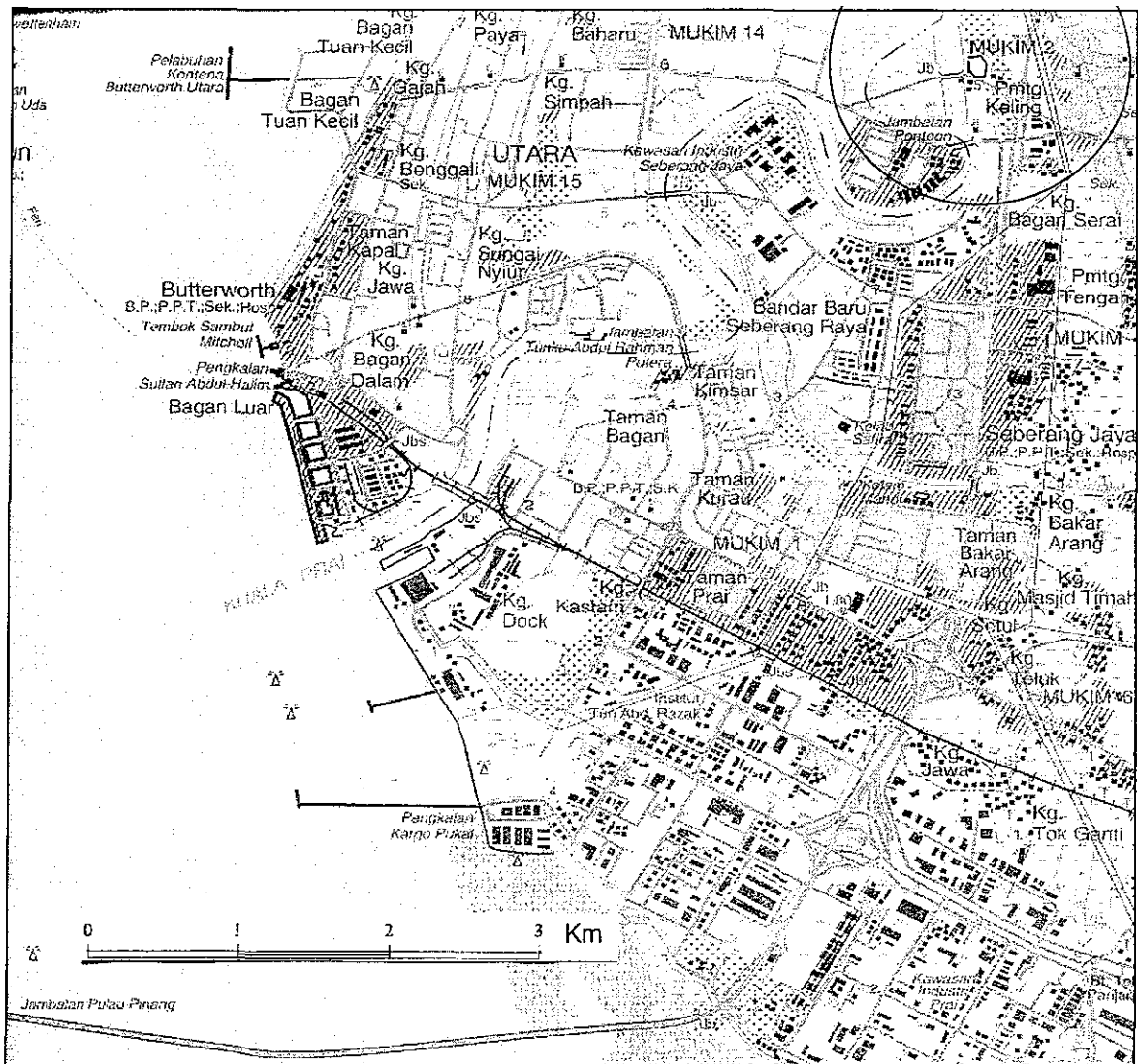


	State	Penang	
	No.	PP-02	
Basic Information			
Name of LA	MP Seberang Perai		
Name of Landfill	Ampang Jajar		
Location of the Landfill	Jalan Permatang Pauh		
Status of Landfill	operation	(Remaining Life Span :	0.5)
Year Start Operation	1980 (upgraded in 1989)	Year Cease Operation	2003
Managed by	local authority		
Land ownership	local authority		
Gazetted	yes		
Area	17	Waste Disposed daily	400-450
Reasons for closure	reached the life span		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 3		
Site Condition	swampy area		
Waste Covered	yes	(Frequency :	daily)
Type of Vegetation	grasses and bushes		
Landslide	no		
Soil Subsidence	no		
Vector and animals	noticeable (wild monkeys at surrounding forest)		
Odor, gas and smoke	noticeable		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	-		
No of complaints (/year)	no		
dist. from Residential	>500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	recreation, school, highway		
Ultimate Landuse	yes	(Level :	low (park))
Incl. in Local Development. Plan?	yes		
Probability of Development	most probably		
Distance from town centre (km)	<5km		
Remarks			

Maps

No	PP-02
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Local Authority	MP Seberang Perai	
Name	Ampang Jajar	
Location	100°24'21"	05°24'50"
Survey date		
Maps		



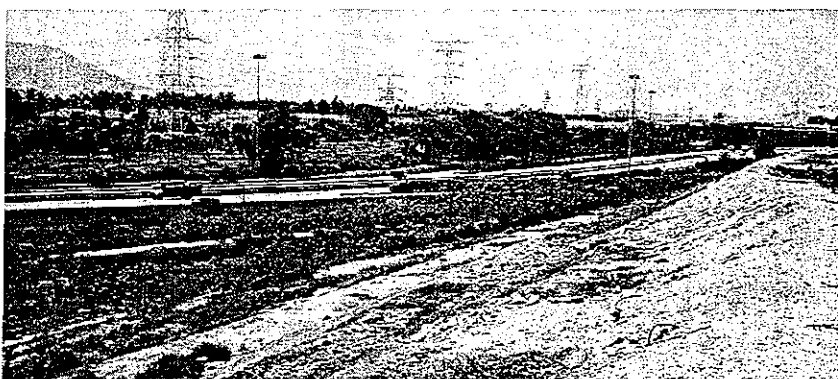
Comments

Photos

	No	PP-02
Local Authority	MP Seberang Perai	
Name	Ampang Jajar	
Survey date	14-Mar-03	
Comments		

Photos

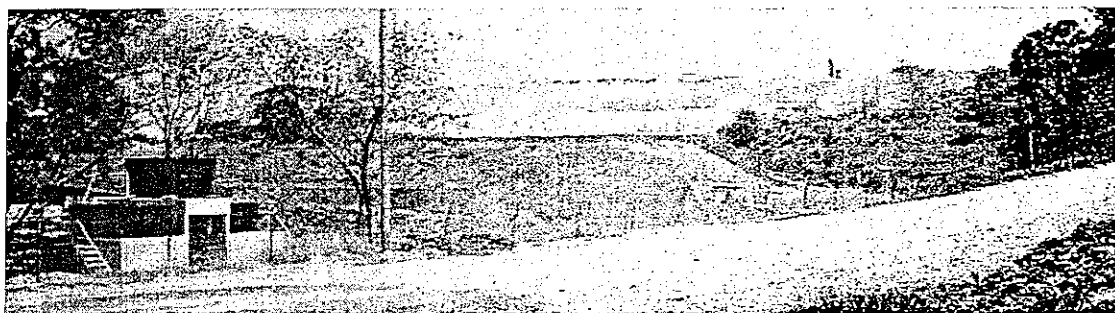
This site is adjoined on highway.



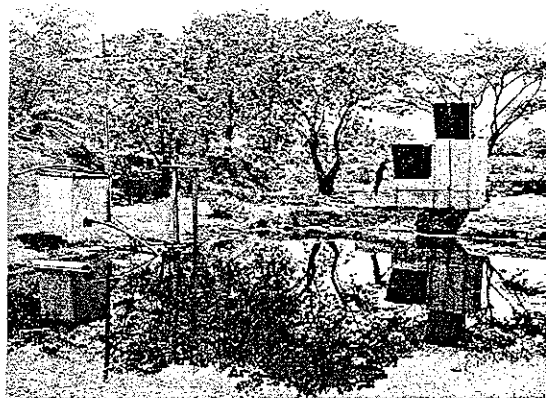
Gas vent and Bond.



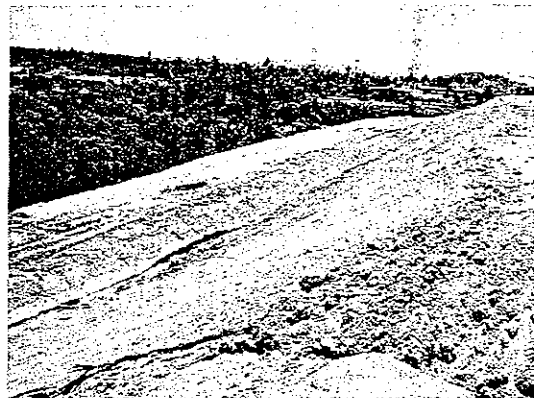
Landscape



Leachate Treatment.



Leachate is seen in a trench at scarcement of slope.



	State	Penang	
	No.	PP-03	
Basic Information			
Name of LA	MP Seberang Perai		
Name of Landfill	Pulau Burong		
Location of the Landfill	Mukim 11, Seberang Perai		
Status of Landfill	operation	(Remaining Life Span : 6)	
Year Start Operation	1980 (upgraded in 1994)	Year Cease Operation	-
Managed by	private company		
Land ownership	Government		
Gazetted	yes		
Area	64	Waste Disposed daily	1200
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 3		
Site Condition	swampy area, mangrove		
Waste Covered	yes	(Frequency : daily)	
Type of Vegetation	no vegetation		
Landslide	not noticeable		
Soil Subsidence	not noticeable		
Vector and animals	medium (wild monkeys)		
Odor, gas and smoke	medium		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	clay		
No of complaints (/year)	no		
dist. from Residential	>500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	mangroves		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	-		
Distance from town centre (km)	>5km (6km from Nibong Tebal)		
Remarks			

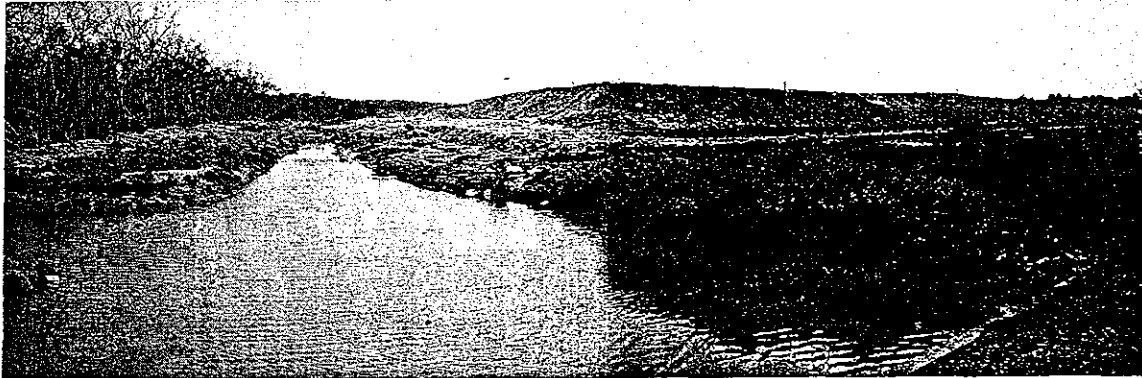
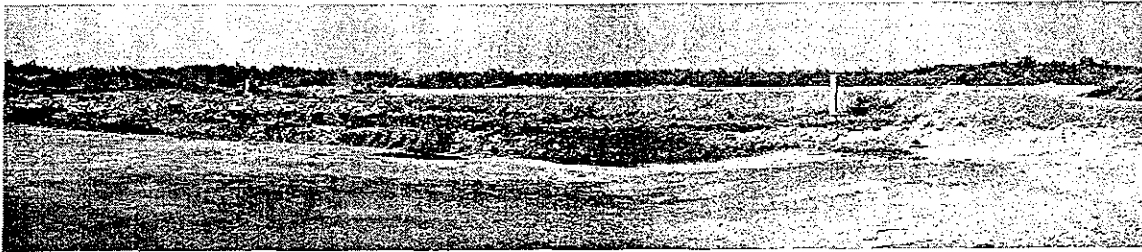
Photos

No	PP-03
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Local Authority	MP Seberang Perai
Name	Pulau Burong
Survey date	14-Mar-03
Comments	

Photos

Landscape



Leachate Pond. Aeration is done.

State	Kedah
No.	KD-01

Basic Information			
Name of LA	MP Kulim Kedah		
Name of Landfill	Padang Cina		
Location of the Landfill	Lot 1002 & 1003		
Status of Landfill	operation	(Remaining Life Span : 20)	
Year Start Operation	1996	Year Cease Operation	-
Managed by	local authority		
Land ownership	Government		
Gazetted	yes		
Area	56	Waste Disposed daily	160
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	open dumping		
Site Condition	hilly		
Waste Covered	yes	(Frequency : as necessary)	
Type of Vegetation	little vegetation in Block C		
Landslide	medium (1 bulldozer fell in Block B)		
Soil Subsidence	medium		
Vector and animals	noticeable (flies in Block A, cow in Block B)		
Odor, gas and smoke	noticeable (white smoke, smell)		
Leachate Quantity	noticeable (v)		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	granite		
No of complaints (/year)	yes (nearby industry complained about smoke)		
dist. from Residential	>500m (6km from Tmn Sepillai)		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture (oil palm estate)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	no		
Distance from town centre (km)	>10km		
Remarks			

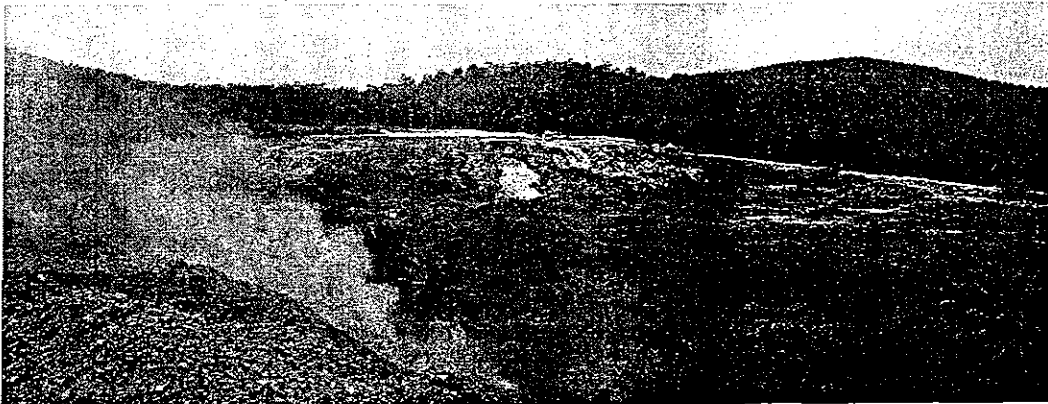
Photos

No	KD-01
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Local Authority	MP Kulim Kedah
Name	Padang Cina
Survey date	15-Mar-03
Comments	

Photos

View of the site. Smoke can be observed around the area.



View of the site with no covering soil provided.



View of the leachate stream. Smoke can be observed.



State	Kedah
No.	KD-02

Basic Information			
Name of LA	MD Baling		
Name of Landfill	Pulai		
Location of the Landfill	Lot 1149, Jalan Rambong, Pulai, 09100 Baling		
Status of Landfill	operation	(Remaining Life Span : 15)	
Year Start Operation	Jan 2001	Year Cease Operation	-
Managed by	local authority		
Land ownership	local authority		
Gazetted	no		
Area	6.8	Waste Disposed daily	100
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 3		
Site Condition	hilly, swampy area		
Waste Covered	yes	(Frequency : as necessary)	
Type of Vegetation	grasses and bushes		
Landslide	not noticeable (each step about 5m high, 45deg, soil from within site)		
Soil Subsidence	medium (bulldozer subsided 3 times)		
Vector and animals	not noticeable		
Odor, gas and smoke	medium		
Leachate Quantity	noticeable		
Location of Intake Point	downstream		
Distance from Intake Pt	7km km)		
Drinking Water Well	<500m		
Geological Condition	granite		
No of complaints (/year)	yes (leachate found in downstream river (Sg. Bukit Ijok))		
dist. from Residential	<500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture (rubber, orchard)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	less probably		
Distance from town centre (km)	5-10km (7km to Pulai town)		
Remarks			

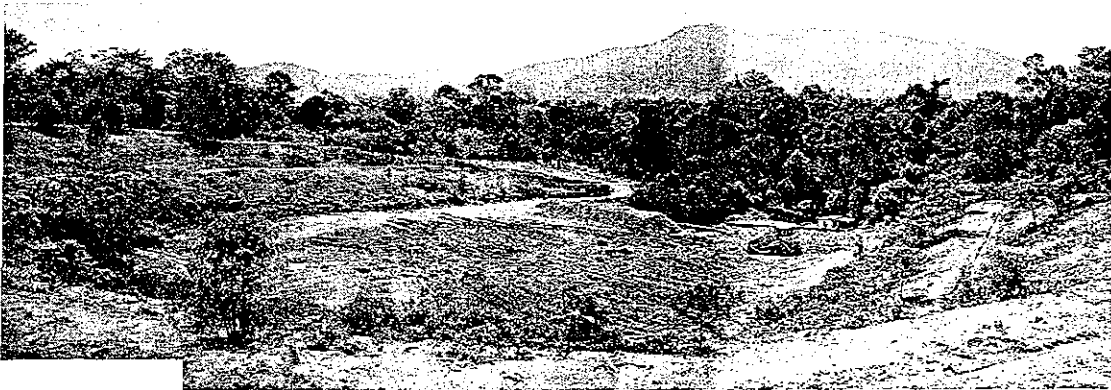
Photos

No	KD-02
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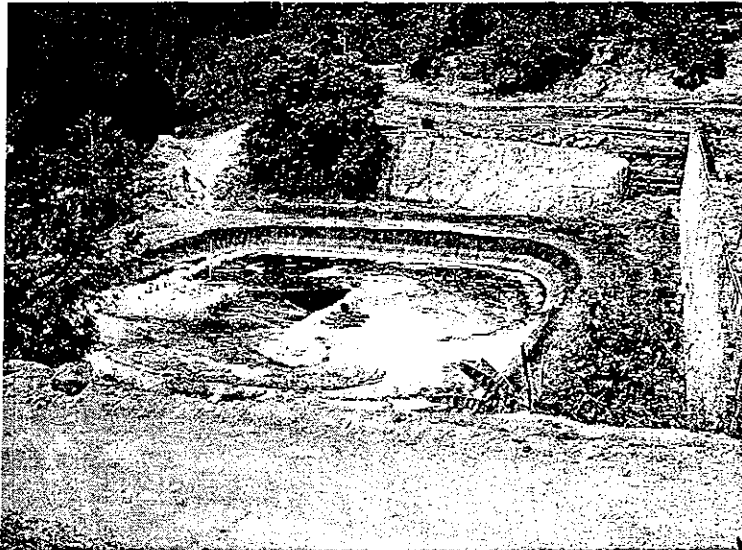
Local Authority	MD Baling
Name	Pulai
Survey date	16-Mar-03
Comments	

Photos

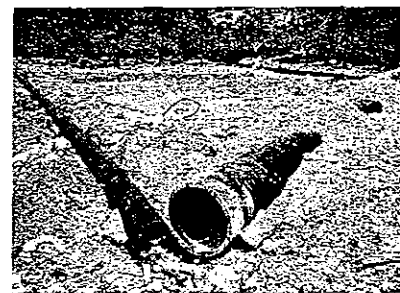
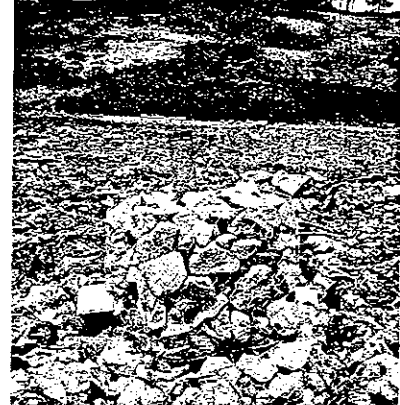
View of the site. Covering soil has been provided.



View of the leachate pond with aeration system installed



Gas venting pipes



State	Kedah
No.	KD-03

Basic Information			
Name of LA	MD Baling		
Name of Landfill	Kuala Pegang		
Location of the Landfill	Kg. Chenderai, Kuala Pegang, 09100 Kedah		
Status of Landfill	closed	(Remaining Life Span : -)	
Year Start Operation	1989	Year Cease Operation	2002
Managed by	local authority		
Land ownership	Stateland		
Gazetted	no		
Area	11 (use 3-4 ha)	Waste Disposed daily	100
Reasons for closure	move to a new improved site		
Remarks			
Environmental Impact Conditions			
Landfill Level	open dumping		
Site Condition	hilly, swampy area		
Waste Covered	no	(Frequency : -)	
Type of Vegetation	grasses and bushes		
Landslide	not noticeable		
Soil Subsidence	not noticeable		
Vector and animals	medium (monkeys)		
Odor, gas and smoke	medium (white smoke)		
Leachate Quantity	not noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	-		
No of complaints (/year)	yes (fish died)		
dist. from Residential	-		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	vacant		
Surrounding area	agriculture (rubber)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development Plan?	no		
Probability of Development	less probably		
Distance from town centre (km)	<5km (3km from K. Pegang)		
Remarks			

Photos

No	KD-03
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Local Authority	MD Baling
Name	Kuala Pegang
Survey date	16-Mar-03
Comments	

Photos

View of the site



Smoke can be observed around the site



View of the leachate stream



State	Kedah
No.	KD-04

Basic Information			
Name of LA	MP Sungai Petani		
Name of Landfill	Semeling		
Location of the Landfill	Jalan Semeling-Bedong		
Status of Landfill	operation	(Remaining Life Span : 10)	
Year Start Operation	1989	Year Cease Operation	-
Managed by	local authority		
Land ownership	Stateland		
Gazetted	yes		
Area	51	Waste Disposed daily	500
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 1		
Site Condition	ex-mine		
Waste Covered	yes	(Frequency : daily)	
Type of Vegetation	no vegetation		
Landslide	no (15m high, 40-50deg slope)		
Soil Subsidence	not noticeable		
Vector and animals	noticeable (cow, goats)		
Odor, gas and smoke	noticeable (odour, smoke)		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	sand		
No of complaints (/year)	yes (about flies when there was no covering)		
dist. from Residential	>500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture (palm oil estate)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	most probably (medical college is about 2-3km still under construction)		
Distance from town centre (km)	5-10km (6km from Semeling, 18km from Sg. Petani)		
Remarks			

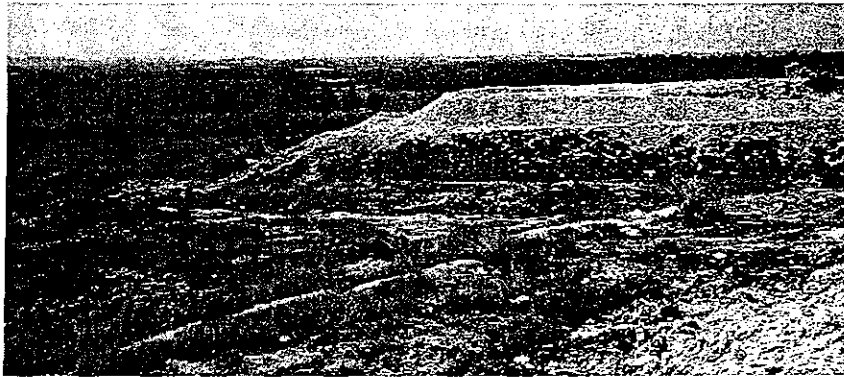
Photos

No	KD-04
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Local Authority	MP Sungai Petani
Name	Semeling
Survey date	17-Mar-03
Comments	

Photos

View of the site



View of the leachate ponds



Leachate pools



State	Kedah
No.	KD-05

Basic Information			
Name of LA	MP Sungai Petani		
Name of Landfill	Jeniang		
Location of the Landfill	Km 5, Jalan Bukit Selembau		
Status of Landfill	closed	(Remaining Life Span : -)	
Year Start Operation	1985	Year Cease Operation	2001
Managed by	local authority		
Land ownership	Stateland		
Gazetted	no		
Area	1.5	Waste Disposed daily	5-10
Reasons for closure	move to a new improved site, development at adjacent area		
Remarks			
Environmental Impact Conditions			
Landfill Level	open dumping		
Site Condition	swampy area		
Waste Covered	yes	(Frequency : as necessary)	
Type of Vegetation	grasses and bushes		
Landslide	not noticeable		
Soil Subsidence	not noticeable (abt. 3m high)		
Vector and animals	not noticeable		
Odor, gas and smoke	not noticeable		
Leachate Quantity	not noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	clay		
No of complaints (/year)	no		
dist. from Residential	>500m		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	vacant		
Surrounding area	agriculture (rubber estate)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	less probably		
Distance from town centre (km)	<5km (5km from Jeniang)		
Remarks			

Photos

No	KD-05
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Local Authority	MP Sungai Petani
Name	Jeniang
Survey date	17-Mar-03
Comments	

Photos

View of the closed site, covered with thick vegetation.



State	Kedah
No.	KD-06

Basic Information			
Name of LA	MP Kota Setar		
Name of Landfill	Bukit Tok Bertandok		
Location of the Landfill	Jalan Alor Setar-Kuala Nerang, Mukim Jabi, Daerah Pokok Sena		
Status of Landfill	operation	(Remaining Life Span : 1)	
Year Start Operation	1985	Year Cease Operation	-
Managed by	local authority (subcontract to local contractor)		
Land ownership	local authority		
Gazetted	yes		
Area	9.7	Waste Disposed daily	200
Reasons for closure	reached the life span		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 2		
Site Condition	ex-mine		
Waste Covered	yes	(Frequency : daily)	
Type of Vegetation	no vegetation		
Landslide	noticeable (steep slope (70-80 deg), 15m high)		
Soil Subsidence	medium (during raining season)		
Vector and animals	noticeable (flies, cows, birds)		
Odor, gas and smoke	medium		
Leachate Quantity	noticeable (contained at surrounding ponds and parameter ditch)		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	clay (white clay observed at steep angle)		
No of complaints (year)	no		
dist. from Residential	<500m (200m from a few houses)¥		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture (rubber plantation)		
Ultimate Landuse	yes	(Level : low)	
Incl. in Local Development. Plan?	yes		
Probability of Development	most probably		
Distance from town centre (km)	>10km (16km from Alor Setar)		
Remarks			

Photos

No	KD-06
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Local Authority	MP Kota Setar
Name	Bukit Tok Bertandok
Survey date	18-Mar-03
Comments	

Photos

View of the site. Covering soil not provided



Leachate accumulated in the surrounding ponds.



The leachate is black in colour.



View of the site and the access road.



	State	Kedah	
	No.	KD-07	
Basic Information			
Name of LA	MD Kubang Pasu		
Name of Landfill	Paya Kemunting		
Location of the Landfill	Km 15, Paya Kemunting, 06000 Jitra, Kedah		
Status of Landfill	operation	(Remaining Life Span : 1-2)	
Year Start Operation	1974	Year Cease Operation	-
Managed by	local authority		
Land ownership	local authority		
Gazetted	yes		
Area	5.03	Waste Disposed daily	200
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	Level 2		
Site Condition	hilly, swampy area		
Waste Covered	yes	(Frequency : as necessary)	
Type of Vegetation	no vegetation		
Landslide	no (5m high, slope abt. 50deg)		
Soil Subsidence	not noticeable		
Vector and animals	noticeable (flies, birds)		
Odor, gas and smoke	noticeable (odour, landfill gas observed)		
Leachate Quantity	noticeable		
Location of Intake Point	no		
Distance from Intake Pt	- km)		
Drinking Water Well	no		
Geological Condition	-		
No of complaints (/year)	no		
dist. from Residential	>500m (some development of hostel and administrative building is about 1km away)		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	agriculture (rubber plantation)		
Ultimate Landuse	no	(Level : -)	
Incl. in Local Development. Plan?	no		
Probability of Development	most probably (some development abt 1km away)		
Distance from town centre (km)	5-10km (10km from Jitra town)		
Remarks			

Photos

No	KD-07
----	-------

Local Authority	MD Kubang Pasu
Name	Paya Kemunting
Survey date	19-Mar-03
Comments	

Photos

View of the site



View of the leachate pond



Gas venting pipe



State	Perlis
No.	PL-01

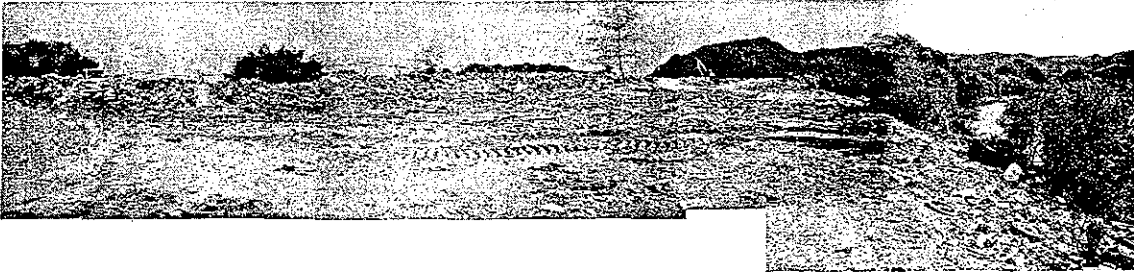
Basic Information			
Name of LA	MP Kangar		
Name of Landfill	Kuala Perlis		
Location of the Landfill	Jalan Wai, 02000 Kuala Perlis		
Status of Landfill	operation	(Remaining Life Span : 0)	
Year Start Operation	1983	Year Cease Operation	-
Managed by	local authority (sub-contract from 1989 to 2001, contract over, no budget)		
Land ownership	local authority		
Gazetted	yes		
Area	20.53 (use 8 ha)	Waste Disposed daily	120
Reasons for closure	-		
Remarks			
Environmental Impact Conditions			
Landfill Level	open dumping		
Site Condition	swampy area, near to river mouth		
Waste Covered	yes	(Frequency : as necessary)	
Type of Vegetation	no vegetation		
Landslide	not noticeable (abt. 3m high)		
Soil Subsidence	medium		
Vector and animals	noticeable		
Odor, gas and smoke	noticeable (strong foul odour due to stumpling of waste)		
Leachate Quantity	medium (dry season, sign of leachate at riverside)		
Location of Intake Point	upstream		
Distance from Intake Pt	30km (Ampang Timah Tasu) km)		
Drinking Water Well	no		
Geological Condition	-		
No of complaints (/year)	yes (smell, smoke & flies)		
dist. from Residential	<500m (nearest residents is just 30m away (just completed))		
Remarks			
Land Utilisation after closure			
Existing Land Utilization	-		
Surrounding area	housing, shrimp farming (nearby residents is Taman Bukit Kubu)		
Ultimate Landuse	yes	(Level : high)	
Incl. in Local Development. Plan?	yes		
Probability of Development	most probably (development of skilled institution about 1km away)		
Distance from town centre (km)	within Kuala Perlis town		
Remarks			

Photos

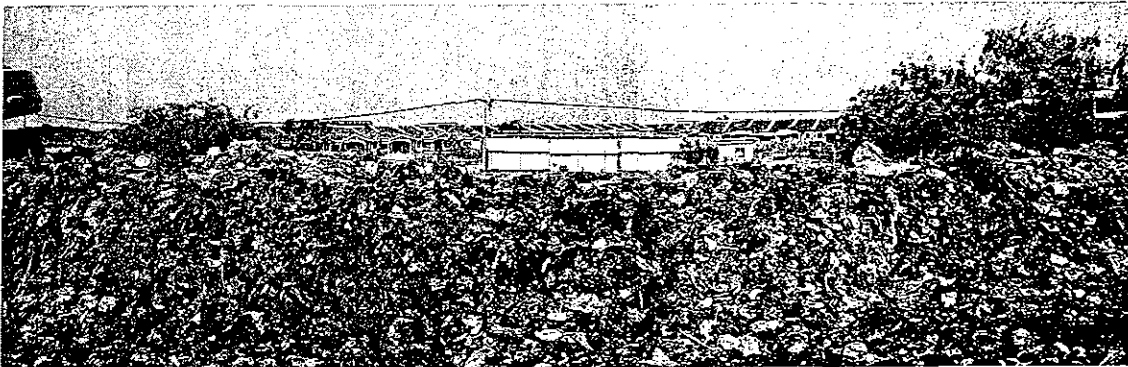
		No	PL-01
Local Authority	MP Kangar		
Name	Kuala Perlis		
Survey date	20-Mar-03		
Comments			

Photos

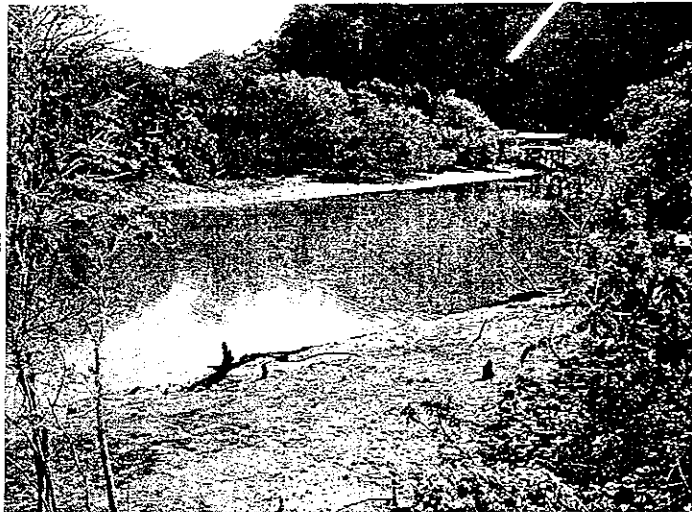
Landscape



Site is adjacent to residence.



Leachate Pond



Data Book 4

Result of Social Survey on Landfill Sites

CHAPTER 1 GENERAL VIEW AND RECOGNITION

For closures of landfill sites in developing countries, generally, it is considered that the closures have several negative impacts on social circumstances including public health. The principal receptors of the impacts may be people working at landfill sites and residents living around those sites. Therefore, with the aim of discussing and identifying the general view and recognition of social circumstances in Malaysia and possible social impacts would be caused by closures of landfill sites, social surveys consist of literature surveys and interview surveys with the people to be affected were done by the JICA study team in cooperation with MHLG in advance of elaborating a necessary action plan on the closures. As the result of the surveys, the following summarizes the discussions and identifications on the social circumstances and impacts.

1.1 RECEPTORS

Possible receptors to be impacted by closures of landfill sites are principally summarized in **Table 1.1.1**.

Table 1.1.1 Possible Receptors impacted by Closures of Landfill Sites

At Landfill Sites	- Authorized Workers (Operators of Heavy Equipment, Drivers of Collection Vehicles, Recyclers, Scrap Dealers and so on)
	- Scavengers
Vicinity of Landfill Sites	- Residential Households

The JICA Study Team

It can be generally considered that authorized workers may be appropriately evacuated and reemployed by any legal programs or schemes if authorities close landfills. Thus, in this study, the scavengers and households are assumed as the principal receptors.

1.2 SCAVENGERS

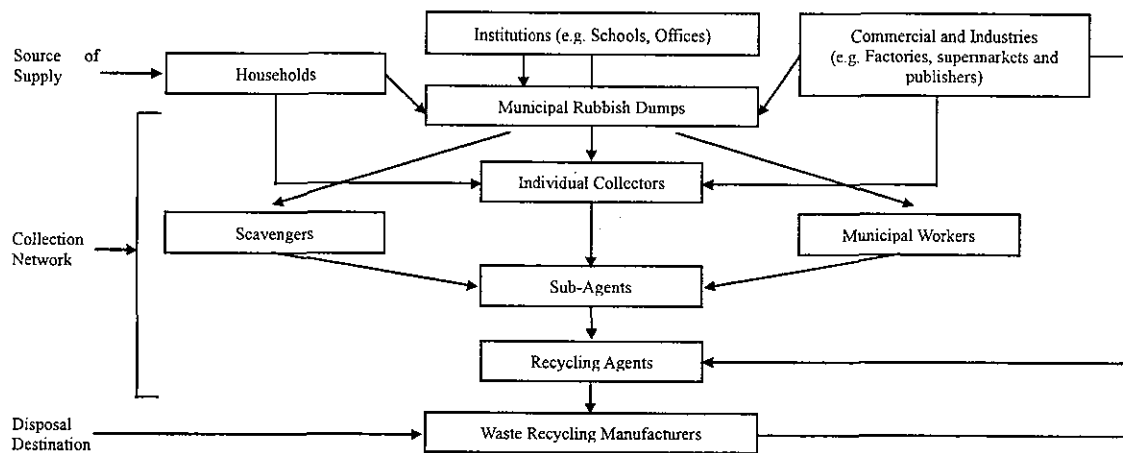
1.2.1 Definition

There is no official definition of scavengers in Malaysia at present. An academic paper entitled “Waste Recycling in Malaysia: Economics & Environmental Needs” (*Mohd Nasir Hassaan et al. Universiti Putra Malaysia*), however, defines scavenging and scavengers as follows:

- Scavenging refers to the informal practice of collecting saleable items from garbage at a waste disposal site and eventual reuse of the materials picked.
- Scavengers devote either part or most of their working time to foraging for saleable materials in the wastes.

1.2.2 Full-time Disposal Site Scavengers and Municipal Waste Collection Crew

In Malaysia, collection for recycling is carried out by both the full-time disposal site scavengers and the municipal waste collection crew (See **Figure 1.2.1**). The money earned from scavenging of recyclable waste material provides additional income to the collection crew. As the crews have easier access to recyclable materials generated from households than disposal site scavengers, the recyclable they collect have higher values. (*Mohd Nasir Hassaan et al.*)



Source: "Waste Recycling in Malaysia: Economics & Environmental Needs" Mohd Nasir Hassaan et al. Universiti Putra Malaysia

Figure 1.2.1 Existing Waste Collection Network System

1.2.3 Illegal Action

"Local Government Act 1976 (Act 171) regulates local government activities in Malaysia. In accordance with the act 171, every municipal council respectively enacts a "By Law" by which collection, transportation and disposal of municipal solid waste is regulated. Namely municipalities have a responsibility for municipal solid waste management (MSWM) in each administrative boundary. Those "By Laws" enacted by municipality councils regulate activities on MSWM, one of which includes prohibition of entering landfill sites without permission. Accordingly, scavenging at landfill sites is prohibited and is regarded as an illegal action in Malaysia.

1.2.4 Present Situation of Scavengers

A few of data and studies related to scavengers are available in Malaysia at present. Therefore, it is difficult to figure out a general representation of scavengers working at landfill sites in whole of Malaysia. However, some of related information and data identify a part of the present situation of scavengers in Malaysia as follows.

(1) The Number of Scavengers

Table 1.2.1 shows a list of the number of scavengers at disposal sites by local authority. The list was prepared by a survey to the authorities with a questionnaire to identify solid waste recycling activities. Based on the data in the list, the following is understood.

- Half of the authorities answered for the question "are scavengers active at disposal sites?".
- It can be considered that nearly half of the authorities do not have any data and information on scavengers and/or did not answer for the question.
- The number of scavengers at disposal sites in each authority who answered "yes" for the question is not more than 30 people excluding *Majlis Perbandaran Sungai Petani* in which more than 50 scavengers were reported by the authority.
- Therefore, it can be estimated that the number of scavengers at a landfill site is not so many (most of the case is probably less than 30 scavengers).

Table 1.2.1 the Number of Scavengers at Disposal Sites by Local Authority (1)

States	Name of Local Authority	Are scavengers active at disposal sites?		Number of scavengers at disposal sites			
		Yes	No	<10	10-30	31-50	>50
Johor	1 Majlis Bandaraya Johor Bahru						
	2 Majlis Perbandaran Patu Pahat						
	3 Majlis Perbandaran JB Tengah						
	4 Majlis Perbandaran Kluang						
	5 Majlis Perbandaran Muar						
	6 Majlis Daerah Kota Tinggi	√		√			
	7 Majlis Daerah Kulai						
	8 Majlis Daerah Labis	√		√			
	9 Majlis Daerah Mersing						
	10 Majlis Daerah Pontian						
	11 Majlis Daerah Segamat		√				
	12 Majlis Daerah Simpang Renggam		√				
	13 Majlis Daerah Tangkak		√				
	14 Majlis Daerah Yong Peng						
	15 Lemb. Bandaran Johor Tenggara						
	16 PBT Pasir Gudang						
Melaka	1 Majlis Bandaraya Melaka		√				
	2 Majlis Daerah Alor Gajah						
	3 Majlis Daerah Jasin						
N. S'bilan	1 Majlis Perbandaran Seremban	√		√			
	2 Majlis Perbandaran Nilai						
	3 Majlis Perbandaran Port Dickson	√		√			
	4 Majlis Daerah Jelebu						
	5 Majlis Daerah Jempol	√			√		
	6 Majlis Daerah Kuala Pilah	√		√			
	7 Majlis Daerah Rembau						
	8 Majlis Daerah Tampin	√		√			
Kedah	1 Majlis Perbandaran Kota Setar		√				
	2 Majlis Perbandaran Sungai Petani	√					√
	3 Majlis Perbandaran Langkawi	√		√			
	4 Majlis Perbandaran Kulim	√			√		
	5 Majlis Daerah Baling		√				
	6 Majlis Daerah Bandar Baru	√		√			
	7 Majlis Daerah Kubang Pasu						
	8 Majlis Daerah Padang Terap	√		√			
	9 Majlis Daerah Pendang	√		√			
	10 Majlis Daerah Sik	√		√			
	11 Majlis Daerah Yan	√		√			
	12 PBT Tmn Perindustrian Kulim						
Perak	1 Majlis Bandaraya Ipoh	√			√		
	2 Majlis Perbandaran Manjung		√				
	3 Majlis Perbandaran Taiping	√		√			
	4 Majlis Daerah Gerik						
	5 Majlis Daerah Hilir Perak	√			√		
	6 Majlis Daerah Kerian	√		√			
	7 Majlis Daerah Kinta Barat						
	8 Majlis Daerah Kinta Selatan	√		√			
	9 Majlis Daerah Kuala Kangsar	√		√			
	10 Majlis Daerah Lenggong	√		√			
	11 Majlis Daerah Pengkalan Hulu		√				
	12 Majlis Daerah Perak Tengah						
	13 Majlis Daerah Selama	√		√			
	14 Majlis Daerah Tanjung Malim						
	15 Majlis Daerah Tapah						
Perlis	1 Majlis Perbandaran Kangar						
P. Pinang	1 Majlis Perbandaran Pulau Pinang						
	2 Majlis Perbandaran Seberang Perai						
Selangor	1 Majlis Bandaraya Shah Alam	√			√		
	2 Majlis Perbandaran Ampang Jaya	no disposal site					
	3 Majlis Perbandaran Kajang	no disposal site					
	4 Majlis Perbandaran Kelang	no disposal site					
	5 Majlis Perbandaran Petaling Jaya	no disposal site					
	6 Majlis Perbandaran Selangor	√			√		
	7 Majlis Perbandaran Subang Jaya	no disposal site					
	8 Majlis Daerah Hulu Selangor						
	9 Majlis Daerah Kuala Langat	√		√			
	10 Majlis Daerah Kuala Selangor	√		√		√	
	11 Majlis Daerah Sabak Bernam	√		√		√	
	12 Majlis Daerah Sepang	√		√			

Note: √ stands for "positive"

Source: MHLG

Table 1.2.1 the Number of Scavengers at Disposal Sites by Local Authority (2)

States	Name of Local Authority	Are scavengers active at disposal sites		No of scavengers at disposal sites			
		Yes	No	<10	10-30	31-50	>50
Pahang	1 Majlis Perbandaran Kuantan		√				
	2 Majlis Perbandaran Temerloh		√				
	3 Majlis Daerah Bentong	√		√			
	4 Majlis Daerah Bera		√				
	5 Majlis Daerah Cameron Highlands	√		√			
	6 Majlis Daerah Jerantut	√		√			
	7 Majlis Daerah Lipis	√		√			
	8 Majlis Daerah Maran	√		√			
	9 Majlis Daerah Pekan	√		√			
	10 Majlis Daerah Raub	√		√			
	11 Majlis Daerah Rompin						
	12 LP Tioman						
T'ganu	1 Majlis Perbandaran K. Terengganu	√		√			
	2 Majlis Perbandaran Kemaman	√		√			
	3 Majlis Daerah Besut						
	4 Majlis Daerah Dungun	√		√			
	5 Majlis Daerah Hulu Terengganu	√		√			
	6 Majlis Daerah Marang		√				
	7 Majlis Daerah Setiu		√				
Kelantan	1 Majlis Perbandaran Kota Bharu	√			√		
	2 Majlis Daerah Bachok						
	3 Majlis Daerah Gua Musang						
	4 Majlis Daerah Jeli						
	5 Majlis Daerah Kota Bharu	√			√		
	6 Majlis Daerah Kuala Krai Selatan		√				
	7 Majlis Daerah Kuala Krai Utara						
	8 Majlis Daerah Machang						
	9 Majlis Daerah Pasir Mas						
	10 Majlis Daerah Pasir Puteh						
	11 Majlis Daerah Tanah Merah	√		√			
	12 Majlis Daerah Tumpat	√		√			
Total	100 (local authorities)	44	13	33	10	0	1

Note: √ stands for "positive"

Source: MHLG

(2) Present Activities

According to *Mohd Nasir Hassaan et al.*, scavengers in disposal sites often depend solely on scavenging as their main source of income. They are often considered by municipality officials as a nuisance and are rarely considered as an integral component of solid waste management. Among the scavengers, competition is quite high and the working hours are long, usually up to ten hours per day depending on the arrival of the collection vehicles. Typically, a scavenger is equipped with an L-shaped metal rod with a pointed end. This is used to pick-up recyclable materials into a collection sack. A similar kind of instrument is also used in *Bangkok (Butsapak, 1984)*, *Jakarta (Harahap, 1984)* and *Manila (Baldisimo, 1985)*.

The types of materials and the average amount of wastes scavenged daily are shown in **Table 1.2.2**. At the *MPPJ Kelana Jaya* disposal site, the largest amount of recyclable materials collected was newspaper, while in *Sungai Besi*, it was plastic materials. These differences are likely due to socio-economic variations between the two populations and the number of institutions and commercial establishments in these areas. (*Mohd Nasir Hassaan et al.*)

Table 1.2.2 Average Quantity of Recyclable Materials Collected by Scavengers at Disposal Sites (kg/day)

Types of Wastes	Petaling Jaya	Kuala Lumpur	Petaling District
Bottle	1,056	500	300
Paper (mixed)	1,024	950	-
Newspaper	1,234	1,000	500
Plastics	1,438	6,000	-
Iron	176	1,500	300
Aluminium	187	1,500	30
Rubber	37	300	-

Source: "Waste Recycling in Malaysia: Economics & Environmental Needs" Mohd Nasir Hassaan et al. Universiti Putra Malaysia

1.3 RESIDENTIAL HOUSEHOLDS (POPULATION)

1.3.1 Ethnic Groups and Citizenship

(1) Ethnic Group Classification

The details of the ethnic composition for Malaysia in the 2000 census are shown in Table 1.3.1.

Table 1.3.1 Detailed Ethnic Group Classification, Malaysia, 2000

Malaysian Citizens		Malaysian Citizens (Cont'd)	
Bumiputera:		Chinese:	Hokkien
<i>Malays</i>	<i>Malays</i>	<i>Khek (Hakka)</i>	
Other Bumiputera	<i>Negrato</i>	<i>Cantonese</i>	
	<i>Senoi</i>	<i>Teochew</i>	
	<i>Proto Malay</i>	<i>Hainanese</i>	
	<i>Dusun</i>	<i>Kwongsai</i>	
	<i>Kadazan</i>	<i>Foochow/Hokchiu</i>	
	<i>Kwijau</i>	<i>Henghua</i>	
	<i>Bajau</i>	<i>Hokchia</i>	
	<i>Iranun</i>	<i>Other Chinese</i>	
	<i>Murut (Sabah)</i>	Indians:	<i>Indian Tamil</i>
	<i>Orang Sungei</i>		<i>Malayli</i>
	<i>Sulu/ Suluk</i>		<i>Sikh/Punjabi</i>
	<i>Bisaya (Sabah/Sarawak)</i>		<i>Telegu</i>
	<i>Rungus</i>		<i>Sri Lankan Tamil</i>
	<i>Sino-native</i>		<i>Singalese</i>
	<i>Kadayan (Sabah/Sarawak)</i>		<i>Bangladeshi</i>
	<i>Tidong</i>		<i>Pakistani</i>
	<i>Tambanuo</i>		<i>Other Indian</i>
	<i>Idahan</i>	Others:	Indonesian
	<i>Dumpas</i>		
	<i>Mangkaak</i>	<i>Thai</i>	
	<i>Minokok</i>	<i>Filipino</i>	
	<i>Maragang</i>	<i>Myanmar</i>	
	<i>Paitan</i>	<i>Japanese</i>	
	<i>Rumanau</i>	<i>Korean</i>	
	<i>Lotud</i>	<i>Other Asian</i>	
	<i>Cocos Islander</i>	<i>Eurasian</i>	
	<i>Other Bumiputera (Sabah)</i>	<i>European</i>	
	<i>Iban/ Dayak Lauk</i>	<i>Others</i>	
	<i>Bidayuh/ Dayak Darat</i>		
	<i>Melanau</i>		
	<i>Kenyah</i>		
	<i>Kayan</i>		
	<i>Lun Bawang/Murut (Sarawak)</i>		
	<i>Penan</i>		
	<i>Kajang</i>		
	<i>Kelabit</i>		
	<i>Other Bumiputera (Sarawak)</i>	Non- Malaysian Citizens	

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

(2) Major Ethnic Groupings by Area

For the purpose of tabulations and analysis and taking into account the ethnic diversity between *Peninsular Malaysia*, *Sabah* (including *Wilayah Persekutuan Labuan*) and *Sarawak*, the major ethnic groupings were used as shown in **Table 1.3.2**.

Table 1.3.2 Major Ethnic Groupings by Area in Malaysia

<i>Peninsular Malaysia</i>	<i>Sabah & Wilayah Persekutuan Labuan</i>	<i>Sarawak</i>
Malaysian Citizens	Malaysian Citizens	Malaysian Citizens
<i>Bumiputera</i>	<i>Malays</i>	<i>Malays</i>
<i>Malays</i>	<i>Kadazan Dusun</i>	<i>Iban</i>
<i>Other Bumiputera</i>	<i>Bajau</i>	<i>Bidayuh</i>
<i>Chinese</i>	<i>Murut</i>	<i>Melanau</i>
<i>Indians</i>	<i>Other Bumiputera</i>	<i>Other Bumiputra</i>
<i>Others</i>	<i>Chinese</i>	<i>Chinese</i>
	<i>Others</i>	<i>Others</i>
Non- Malaysian Citizens	Non- Malaysian Citizens	Non- Malaysian Citizens

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

1.3.2 Demographic Statistics

As shown in **Table 1.3.1** and **1.3.2**, the Malaysia people come from a number of different ethnic groups.

According to demographic statistics by state of Malaysia in 2000 shown in **Table 1.3.3**, 94.1 % of the people of Malaysia was Malaysian citizens and the remainder of 5.9% was ethnic group composition of Malaysian citizens in 2000. 65.1 % of the population was *Bumiputera* (sons of the soil) that consists of *Malays* (53.4%) and *Other Bumiputera* (11.7%), followed by *Chinese* (26.0%) and *Indians* (7.7%).

Table 1.3.3 Demographic Statistics by State

State	Area	Total population	State distribution	Urban population	Malaysian citizens	Ethnic group composition of Malaysian citizens (%)	<i>Bumiputera</i>	Malays	Other <i>Bumiputera</i>	Chinese	Indians	Others
	(km ²)	(people)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
<i>Jahor</i>	18,987	2,740,625	11.8	65.2	94.5	5.5	57.1	55.7	1.4	35.4	6.9	0.6
<i>Kedah</i>	9,425	1,649,756	7.1	39.3	98.4	1.6	76.6	76.4	0.2	14.9	7.1	1.4
<i>Kelantan</i>	15,024	1,313,014	5.6	34.2	98.4	1.6	95	94.2	0.8	3.8	0.3	0.9
<i>Melaka</i>	1,652	635,791	2.7	67.2	96.4	3.6	63.8	62.7	1.1	29.1	6.5	0.6
<i>Negeri Sembilan</i>	6,644	859,924	3.7	53.4	96.3	3.7	57.9	56.6	1.3	25.6	16	0.6
<i>Pahang</i>	35,965	1,288,376	5.5	42.0	95.7	4.3	76.8	71.8	5.0	17.7	5.0	0.6
<i>Perak</i>	21,005	2,051,236	8.8	58.7	98.1	1.9	54.7	52.4	2.3	32	13.0	0.3
<i>Perlis</i>	795	204,450	0.9	34.3	98.5	1.5	85.5	85.2	0.3	10.3	1.3	2.9
<i>Pulau Pinang</i>	1,031	1,313,449	5.6	80.1	96.3	3.7	42.5	42.1	0.3	46.5	10.6	0.4
<i>Sabah</i>	73,619	2,603,485	11.2	48.0	76.4	23.6	80.5	15.3	65.3	13.2	0.5	5.8
<i>Sarawak</i>	124,450	2,071,506	8.9	48.1	97.0	3.0	72.9	23	49.8	26.7	0.2	0.2
<i>Selangor</i>	7,960	4,188,876	18.0	87.6	95.5	4.5	53.5	52.1	1.4	30.7	14.6	1.1
<i>Terengganu</i>	12,955	898,825	3.9	48.7	98.2	1.8	96.8	96.5	0.3	2.8	0.2	0.2
<i>W.P. K.L.</i>	243	1,379,310	5.9	100	93.3	6.7	43.6	42.7	0.9	43.5	11.4	1.5
<i>W.P. Labuan</i>	92	76,067	0.3	77.7	78.8	21.2	79.6	48.4	31.2	15.8	1.3	3.3
<i>Malaysia</i>	329,847	23,274,690	100	62	94.1	5.9	65.1	53.4	11.7	26	7.7	1.2

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

1.3.3 Educational Status

(1) Education System

The “Educational Act, 1961, Ministry of Education”, regulates compulsory education in Malaysia. The educational system (primary and secondary) of Malaysia is similar to the British as shown in **Table 1.3.4**. The educational language is *Bahasa* Malaysia. As second languages, English is taught, as also is Chinese in Chinese-run primary schools and Tamil in Tamil-run primary schools.

Table 1.3.4 Primary and Secondary Education

Category	School Age	Compulsory or Not
Pre-school	Start at 6 years Old	Not Compulsory
Primary School	From 7 years old to 12 years old	Compulsory
Secondary School	From 13 years old to 17 years old	Compulsory

Source: Ministry of Education Malaysia

(2) School Attendance

At the national (*Malaysia*) level, school attendance was observed that 92.7% of the male population aged 6years and over had ever been to school compared to 87.6% for females in census 2000 as shown in **Table 1.3.5**. This represented a narrowing in the gap between the sexes when compared to census 1991 where these percentages stood at 88.4% for males and 79.8% for females. In other words, the sex differential in the proportion of those ever been to school in favour of males declined from 9 % points in 1991 to 5% points in 2000. *

Table 1.3.5 School Attendance Rate (%)

		1991	2000
Male	(Aged 6years and over)	88.4	92.7
Female	(Aged 6years and over)	79.8	87.6

Source: “Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000”, Department of Statistics Malaysia

The pattern recorded at the national level in census 2000 was repeated at the state level whereby the percentage of male population aged 6 years and over ever been to school was higher than that of the females in every state; the sex differential in the percentage point being in the range of 2.8 (*Wilayah Persekutuan Kuala Lumpur*) and 8.8 (*Sarawak*). *

As expected, census 2000 also revealed that the more urban states such as *Wilayah Persekutuan Kuala Lumpur*, *Selangor* and *Pulau Pinang* recorded the highest percentages (both for males and females). On the other hand, among the states that recorded the lowest percentage (both for males and females) were *Sabah*, *Sarawak* and *Wilaya Persekutuan Labuan*. *

(3) Educational Attainment

Information on educational attainment collected in the 2000 census referred to the highest level of schooling attained whether it be school, primary, secondary or higher education. The percentage of Malaysian citizens aged 20 years and over with higher education increased from 8.9% in 1991 to 16.0% in 2000. This pattern was also observed for all the major ethnic groups; for Malays it increased from 10.3% to 17.3%

while for the Chinese the increase was from 9.0% to 16.5% and Indians from 7.6% to 13.0% over the 1991-2000 period as shown in Table 1.3.6*

Table 1.3.6 Educational Attainment Rate (%)

	1991	2000
Malaysian citizens aged 20 years and over	8.9	16.0
Malays	10.3	17.3
Chinese	9.0	16.5
Indian	7.6	13.0

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

(4) Literacy Rate

The literacy rate among Malaysian citizens aged 10-64 years improved from 88.6% in 1991 to 93.5% in 2000, thus representing an increase of about 5 % points over the 1991-2000 period. In census 2000, the literacy rate in the urban areas was higher at 96.1% compared to rural areas which recorded a rate of 89.1%; the urban-rural differential being 7.0% points. *

Table 1.3.7 Literacy Rate of Malaysia (%)

	1991	2000
Malaysian citizens aged 10-64 years old	88.6	93.5
Urban Area	-	96.1
Rural Area	-	89.1

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

A comparison of the literacy rates at the state level revealed that there was an increase in the literacy rate for all states between 1991 to 2000, the biggest being for the state of *Sabah* where literacy increased from 79.3% to 86.5% that is an increase of 7.5% points over the 1991-2000 period while the lowest increase was recorded for *Pahang*, *Negeri Sembilan* and *Wilayah Persekutuan Kuala Lumpur* at 3.4% points each. The states with the highest literacy rates in 1991 continued to record high rates in 2000. *Wilayah Persekutuan Kuala Lumpur*, which experienced the highest literacy rate at 94.1% in 1991, also recorded the highest rate in 2000 at 97.5%. *Selangor* maintained its second position recording a rate of 93.1% in 1991, which increased to 97.0% in 2000.*

Table 1.3.8 Literacy Rate by State (%)

	1991	2000
<i>Wilayah Persekutuan Kuala Lumpur</i>	94.1	97.5
<i>Selangor</i>	93.1	97.0
<i>Sabah</i>	79.3	86.5

Source: "Education and Social Characteristics of the Population, Population and Housing Census of Malaysia 2000", Department of Statistics Malaysia

1.4 HEALTH SITUATION

According to Ministry of Health Malaysia (*Annual Report 1999*), there are 27 notifiable diseases in Malaysia under Act 342, Prevention and Control of Infectious Disease Act 1998. Of 27 notifiable diseases, 9 are required to be notified within 24 hours while the rest by one week. In 1998, the authority to compound (Section 25 of Act 342) was

delegated to the Medical Officers of Health at the State and District levels. **Table 1.4.1** shows incidence of notifiable communicable disease in Malaysia from 1995-1999.

Table 1.4.1 Incidence of Notifiable Communicable Disease in Malaysia, 1995-1999

Disease / Year	1995	1996	1997	1998	1999
HIV (All Forms)*	4,431 (165)	4,944 (271)	4,492 (473)	5,499 (689)	4,692 (874)
Cholera	2,209 (27)	1,486 (2)	380 (5)	1,304 (19)	536 (9)
Dengue Fever**	6,156	13,723 (2)	18,642 (3)	26,240 (5)	9,602 (6)
Dengue Hemorrhagic Fever**	3,872 (28)	532 (30)	787 (49)	1,133 (53)	544 (31)
Diphtheria	1	0	2 (1)	5 (1)	6 (1)
Dysentery (All Types)	152	121	132	246	429
Food Poisoning	1,438 (3)	3,236	6,734	6,976 (3)	8,640 (3)
Leprosy#	311	273	277	236	224
Malaria**	59,208 (35)	51,921 (40)	26,649 (25)	13,491 (27)	11,106 (21)
Measles	654 (6)	460 (4)	565	483	2,603 (10)
Plague	0	0	0	0	0
Poliomyelitis, Acute	0	0	0	0	0
Rabies	0	5	7 (3)	1 (1)	0
Relapsing Fever	0	0	0	0	1
Chancroid"	5	6	4	18	9
Gonococcal Infections (All Forms) "	2,157	1,772	1,393	1,307	2,232
Syphilis (All Forms) "	1,941	1,562	1,317	2,460	2,150
Tetanus - Adult	12 (2)	9 (1)	13 (2)	6	16
- Neonatorum	27 (4)	23 (3)	15 (1)	13 (4)	10 (20)
Tuberculosis (All Forms)	11,778 (844)	12,691 (915)	13,539 (978)	14,115 (1,059)	14,908 (1,191)
Typhoid & Paratyphoid Fever	906 (8)	953 (9)	701 (3)	782 (3)	811 (2)
Typhus & Other Rickettsioses	177	108	83	56	68
Viral Encephalitis	7	18 (3)	12 (1)	64 (14)	301 (101)
Viral Hepatitis	1,078	1,581 (1)	714	5,410 (3)	6,014 (1)
Hepatitis A	419	849	341	240	319
Hepatitis B	551	627 (1)	307	5,010 (3)	5,295 (1)
Hepatitis C	48	33	43	136	257
Hepatitis Others	60	72	23	24	143
Whooping Cough	8	7	3	6	17
Yellow Fever	0	0	0	0	0
Ebola	NA	0	0	0	0
Myocarditis (Hand, Food & Mouth Disease)	NA	NA	5,999 (42)	922	434(1)
Any other life threatening microbial infection	NA	NA	0	0	0

Note : () Death Case
 -TB death: Death while on treatment
 - NA Not Available

Source: * 1. AIDS/STD Section
 ** 2. Vector-borne Disease Control Programme
 # 3. National Leprosy Control Programme
 + 4. National Tuberculosis Control Programme
 " 5. Formal Epid 206/207

Source: "Annual Report 1999", Ministry of Health Malaysia