

Annex VII

Average Annual Rainfall Nuwara Eliya

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max	min	Total
Sita-Eliya	1997	2.520	3.220	3.800	2.370	2.410	2.170	1.670	2.100	2.100	1.900	2.540	1.510	3.800	1.510	28.310
	1998	1.830	2.860	4.310	3.650	2.710	1.980	1.730	1.920	1.740	1.750	1.660	1.540	4.310	1.540	27.680
	1999	2.140	1.940	3.730	1.940	1.900	2.120	2.170	2.210	2.490	1.130	1.800	1.940	3.730	1.130	25.510
	2000	1.800	2.000	3.230	2.940	2.500	1.560	2.460	1.510	2.090	2.130	2.020	1.200	3.230	1.200	25.440
	2001	1.800	4.000	5.000	2.300	3.100	2.080	2.220	1.900	2.240	1.480	1.800	1.560	5.000	1.480	29.480
Ave		2.018	2.804	4.014	2.640	2.524	1.982	2.050	1.928	2.132	1.678	1.964	1.550			2.274

All the values are in meters (m). Source of data- Meteorological Department of Sri Lanka.

Annex VIII

**GEOLOGICAL SURVEY FOR THE STUDY ON IMPROVEMENT OF
SOLID WASTE MANAGEMENT AT NUWARA ELIYA**

Site Investigated: Moon Plains Landfill Site

Client: Kokusai Kogyo. , Co., Ltd.

GEOTECH LIMITED,

No. 13/1, Pepiliyana Mawatha,

Kohuwala,

Nugegoda

10th November, 2002

GEOLOGICAL SURVEY FOR THE STUDY ON IMPROVEMENT OF SOLID WASTE MANAGEMENT AT NUWARA ELIYA

1. INTRODUCTION

Kokusai Kogyo. , Co. Ltd. (hereafter referred to as the Client) has undertaken a study on Improvement of Solid Waste Management in Secondary Cities in Sri Lanka. One of the cities being investigated is Nuwara Eliya where there is an existing landfill site at a plantation forest located near Moon Plains Grama Sevaka Division in Moon Plains Village. The landfill site, which is out of the boundary of the Nuwara Eliya Municipal Council, is at a distance of approximately 6 km from the Nuwara Eliya city town.

A contour plan of the area together with the existing area covered with solid waste is shown in Fig.1. A stream flows along the gully shown in the map. The design proposal being investigated is to dam the stream at around the 86 m elevation, and to use the land behind this dam for disposal of solid waste.

Geotech Ltd. was contracted by the Client to carry out a soil investigation for ascertaining the geological data necessary for designing overall development plans of the disposal site.

The scope of work was identified as:

- (i) to advance 6 boreholes up to rock or hard stratum at locations BH-01 to BH-06, as identified by the Client. These locations are shown in Fig.1;
- (ii) to obtain disturbed samples from the overburden for visual classification;
- (iii) to establish the underground water table as measured from the water levels in the boreholes;
- (iv) to carry out field permeability tests in 4 of the boreholes such that water flow will be only from the hard stratum at the base of the borehole;
- (v) to prepare sub-surface profiles of the site using the borehole data.

2. SITE DESCRIPTION

The area investigated is just below the present dumping area, as shown in Fig.1. The access to the site at the higher elevations is from the upper road (presently used for dumping waste), and at the lower elevations from the lower road, which crosses the stream flowing in the gully. The lower road has been cut on the slope of the hill, and at some locations this cut is as much as over 20 ft. The water from the stream, which flows across the lower road, finally makes its way to the Bomurella reservoir.

3. FIELD INVESTIGATIONS

- 3.1 The Borehole Investigation consisted of advancing six boreholes at locations marked BH-01 to BH-06 in Fig.1. Due to difficulty of access to the borehole locations, the boreholes were advanced with the cathead and casing of size 2 7/8 inch diameter.

The casing shoe was used as the cutting tool, and disturbed soil samples were obtained by raising the entire casing, above ground level. This operation was carried out at 0.5 m intervals. The soils at different depths were classified using both the observation of material recovered, and the resistance to penetration of the casing shoe. When driving the casing shoe was difficult, the Standard Penetration Test (SPT) was carried out, and termination level was decided as the depth at which there was little or no penetration of the SPT tube. Ground water level, when encountered, was determined as the depth at which the water level stabilized inside the borehole.

(Borehole BH-05 was located close to the edge of the existing fill. In advancing this borehole through the initial depth, pieces of waste polythene, etc. were first removed by hand prior to commencement of the borehole advancement.)

The elevations at the top of boreholes were provided by the Client. These elevations together with the depth to hard stratum at each borehole location are given in the table below.

Borehole No.	BH-01	BH-02	BH-03	BH-04	BH-05	BH-06
Elev. at top of borehole (m)	91.0	95.0	103.0	98.0	99.0	86.0
Depth of borehole (m)	2.4	0.85	3.6	2.8	3.75	2.15

3.2 Constant head field permeability tests were carried out in boreholes BH-01, BH-02, BH-05 and BH-06. In this test, the hole of diameter 2 7/8 inches was cased to the bottom, and the casing tube continued up to a height of 1.0 m above ground level. The test was carried out with the casing kept full of water. Measurements were made of the amount of water introduced into the casing initially at 5 minute intervals, and subsequently at longer intervals until a constant rate of water absorption was achieved.

The field investigations were carried out from 30th October to 2nd November, 2002.

4. SUB-SURFACE CONDITIONS

The results of the field investigations are given in Appendix 1.

Using the results of the Borehole Investigation, profiles of the sub-surface conditions across the boreholes have been constructed and these are shown as

- Fig. 2a across boreholes BH-06, BH-01, BH-02 and BH-05; and
- Fig. 2b across boreholes BH-04, BH-02 and BH-03.

These results show that,

- (i) the ground water level (GWL) was at the surface in the gully area BH-05 to BH-02. Thereafter, the water forms into a stream. Boreholes BH-01 and BH-06 were located a short distance away from the stream, and hence the depths to GWL at these two locations were 1.4 m and 1.1 m respectively. Ground water was not encountered at the 2 embankment locations BH-04 and BH-03, (distant about 15 – 20 m from the stream), up to the end of drilling at hard rock;

- (ii) the overburden consists of a residual formation of sandy clays, clayey sands, etc. followed by the stronger layer of very highly weathered rock;
- (iii) the depth to hard stratum, presumed rock, varied between 0.85 m at BH-02 and 3.75 m at BH-05, at the borehole locations, as indicated previously in Sec.3.1.

5. ANALYSIS OF PERMEABILITY TEST RESULTS

The results of the Constant Head field permeability test are given in Appendix 2.

In the borehole permeability test, the coefficient of permeability (k) is given by

$$k = q / (F/H_c)$$

where q = constant rate of water intake

F = Intake Factor

H_c = Head causing flow

For the borehole cased to the bottom, F = 2 x diameter of hole

Specimen calculation for BH-01

Diameter of hole = 2.875 inches = 7.3025 cm

F = 14.605 cm

Depth to GWL = 1.4 m

H_c = (1.4 + 1.0) = 2.4 m = 240 cm

Results of Total Intake vs. Time are shown in Fig.3.

From this figure, $q = (750-570)/(51-31)$
 $= 180/20 = 9.0 \text{ cm}^3/\text{min.}$

$$k = 9.0 / (14.605 \times 240) = 2.57 \times 10^{-3} \text{ cm/min.}$$

$$= 4.28 \times 10^{-5} \text{ cm/s} = 4.28 \times 10^{-7} \text{ m/s}$$

Summary of Results

Borehole No.	BH-01	BH-02	BH-05	BH-06
Depth to GWL (m)	1.4	0.0	0.0	1.1
H _c (cm)	240	100	100	210
q (cm ³ /min.)	9.0	0.72	0.13	0.33
k (10 ⁻⁷ m/s)	4.28	0.82	0.15	0.18

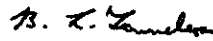
It is noted that whereas the permeability at locations BH-02, BH-05 and BH-06 are very small, and they have a magnitude of the order similar to clayey soils; a higher permeability, with a magnitude of the order similar to silty soils, is obtained at location BH-01. The permeability of a rock mass is governed mainly by the spacing and thicknesses of its joints/discontinuities. Therefore, a borehole of diameter 2 7/8 inches would not be able to adequately capture this picture.

6. RECOMMENDATIONS

As mentioned previously in Sec.5, the permeability of a rock mass is governed mainly by the spacing and thicknesses of its joints/discontinuities. Therefore, a borehole of diameter 2 7/8 inches would not be able to adequately capture this picture. It is also noted that the rock at this site is present at a relatively short depth. Therefore, it is recommended that:

either a series of trial pits be excavated up to rock and that the joints/discontinuities in the rock mass be mapped by a Geologist;

or the proposed landfill be artificially provided with an impervious base.



Prof. B. L. Tennekoon

University of Moratuwa



Mr. L.P. Jayasinghe

GEOTECH Limited

10th November, 2002

APPENDIX I: Borehole Logs

BOREHOLE LOG				Job No : G/1421	Sheet : 1 of 1		
Client: Kokusai Kogyo Co. Ltd.				B.H. No : 01	Level : MSL		
Consultant:				Duration : 30/10/2002 to 30/10/2002			
Project : Improvement of Solid Waste Management Nuwara-Eliya				Drilling Rig: Cathead Assembly			
				Logged by : P.S. Gamalath			
Depth m	Water m	Case mm	In Situ Test and Sample		Lithological Description	Depth m	Legend
			Depth m	SPT No			
01		NX			Yellowish Medium sandy clay	01	
02			GWL 1.40m			02	
			Absorption Test done at 2.40m		Very highly weathered rock	2.40	
03					BH terminated	03	
04						04	
05						05	
06						06	
07						07	
08						08	
09						09	
10		NX				10	

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13/1, Papiyana Mawatha, Nugegoda. Tel./Fax : 823 881

COMMENTS: Ground Water Level 1.40m
 BH terminated at 2.40m
 Very hard formation encountered at 2.40m

BOREHOLE LOG					Job No : G/1421	Sheet : 1 of 1		
Client: Kokusai Kogyo Co. Ltd.					B.H. No : 02	Level : MSL		
Consultant: -					Duration : 31/10/2002 to 31/10/2002			
Project : Improvement of Solid Waste Management Nuwara Eliya					Drilling Rig: Cathead Assembly			
					Logged by : P.S. Gamalath			
Depth m	Water m	Case mm	In Situ Test and Sample		SPT No	Lithological Description	Depth m	Legend
			Depth m					
		NX	GWL 0.0m			Black Clayey soil		
01			Absorption Test done at 0.85m			Very highly weathered rock	0.85	
						BH terminated		
02								
03								
04								
05								
06								
07								
08								
09								
10		NX						

GEOTECH LIMITED

13/1, Papiyana Mawatha, Nugegoda. Tel/Fax : 823 881

COMMENTS: Ground Water Level 0.0m
 BH terminated at 0.85m
 Very hard formation encountered at 0.85m

BOREHOLE LOG					Job No : G/1421	Sheet : 1 of 1	
Client: Kokusai Kogyo Co. Ltd.			B.H. No : 03		Level : MSL		
Consultant: -			Duration : 30/10/2002 to 30/10/2002				
Project : Improvement of Solid Waste Management Nuwara-Eliya			Drilling Rig: Cathead Assembly				
			Logged by : P.S. Gamalath				
Depth m	Water m	Core mm	In Situ Test and Sample		Lithological Description	Depth m	Legend
			Depth m	SPT No			
		NX	GWL 0.0m		Black Clayey soil		
01						01	
02					Very highly weathered rock	02	
03						03	
04			Absorption Test done at 3.75m		BH terminated	3.75 04	
05						05	
06						06	
07						07	
08						08	
09						09	
10		NX				10	

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 13/1, Papilayana Mawatha, Nugegoda. Tel./Fax : 823 881

COMMENTS: Ground Water Level 0.0m
 BH terminated at 3.75m
 Very hard formation encountered at 3.75m

BOREHOLE LOG				Job No : G/1421	Sheet : 1 of 1		
Client: Kokusai Kogyo Co. Ltd.			B.H. No : 04		Level : MSL		
Consultant: -			Duration : 01/11/2002 to 01/11/2002				
Project : Improvement of Solid Waste Management Nuwara Eliya				Drilling Rig: Cathead Assembly			
				Logged by : P.S. Gamalath			
Depth m	Water m	Casing mm	In Situ Test and Sample	SPT No	Lithological Description	Depth m	Legend
			Depth m				
		NX			Brownish Clayey soil		
01					Yellowish Clay with little medium sand	01	
02					Reddish Very highly weathered rock	02	
03					BH terminated	2.80 03	
04						04	
05						05	
06						06	
07						07	
08						08	
09						09	
10		NX				10	

GEOTECH LIMITED
 13/1, Pepsilyana Mawatha, Nugegoda. Tel./Fax : 823 881

COMMENTS: Ground Water Level - Nil
 BH terminated at 2.80m
 Very hard formation encountered at 2.80m

BOREHOLE LOG				Job No : G/1421	Sheet : 1 of 1		
Client: Kokusai Kogyo Co. Ltd.				B.H. No : 05	Level : MSL		
Consultant:				Duration : 01/11/2002 to 01/11/2002			
Project : Improvement of Solid Waste Management Nuwara-Eliya				Drilling Rig: Cathead Assembly			
				Logged by : P.S. Gamalath			
Depth m	Water m	Case mm	In Situ Test and Sample		Lithological Description	Depth m	Legend
			Depth m	SPT No			
01		NX			Dark Brown Clayey soil	01	
02					Very highly weathered rock	02	
03						03	
04					BH terminated	3.80	
05						05	
06						06	
07						07	
08						08	
09						09	
10		NX				10	

GEOTECH LIMITED
 13/1, Pepillyana Mawatha, Nugagoda. Tel/Fax : 823 881

COMMENTS: Ground Water Level - Nil
 BH terminated at 3.80m
 Very hard formation encountered at 3.80m

BOREHOLE LOG				Job No : G/1421	Sheet : 1 of 1		
Client: Kokusai Kogyo Co. Ltd.			B.H. No : 06		Level : MSL		
Consultant:			Duration : 02/11/2002 to 02/11/2002				
Project : Improvement of Solid Waste Management Nuwara-Eliya				Drilling Rig: Cathead Assembly			
				Logged by : P.S. Gamalath			
Depth m	Water m	Case mm	In Situ Test and Sample	SPT No	Lithological Description	Depth m	Legend
			Depth m				
01		NX			Dark Brown Clayey soil	01	
			GWL 1.90m				
02			Absorption Test done at 2.15m		Very highly weathered rock	02	
					BH terminated	2.15	
03						03	
04						04	
05						05	
06						06	
07						07	
08						08	
09						09	
10		NX				10	

GEOTECH LIMITED
 13/1, Pepsiyana Mawatha, Nugegoda. Tel./Fax : 923 881

COMMENTS: Ground Water Level 1.10m
 BH terminated at 2.15m
 Very hard formation encountered at 2.15m

APPENDIX 2: Permeability Test Results

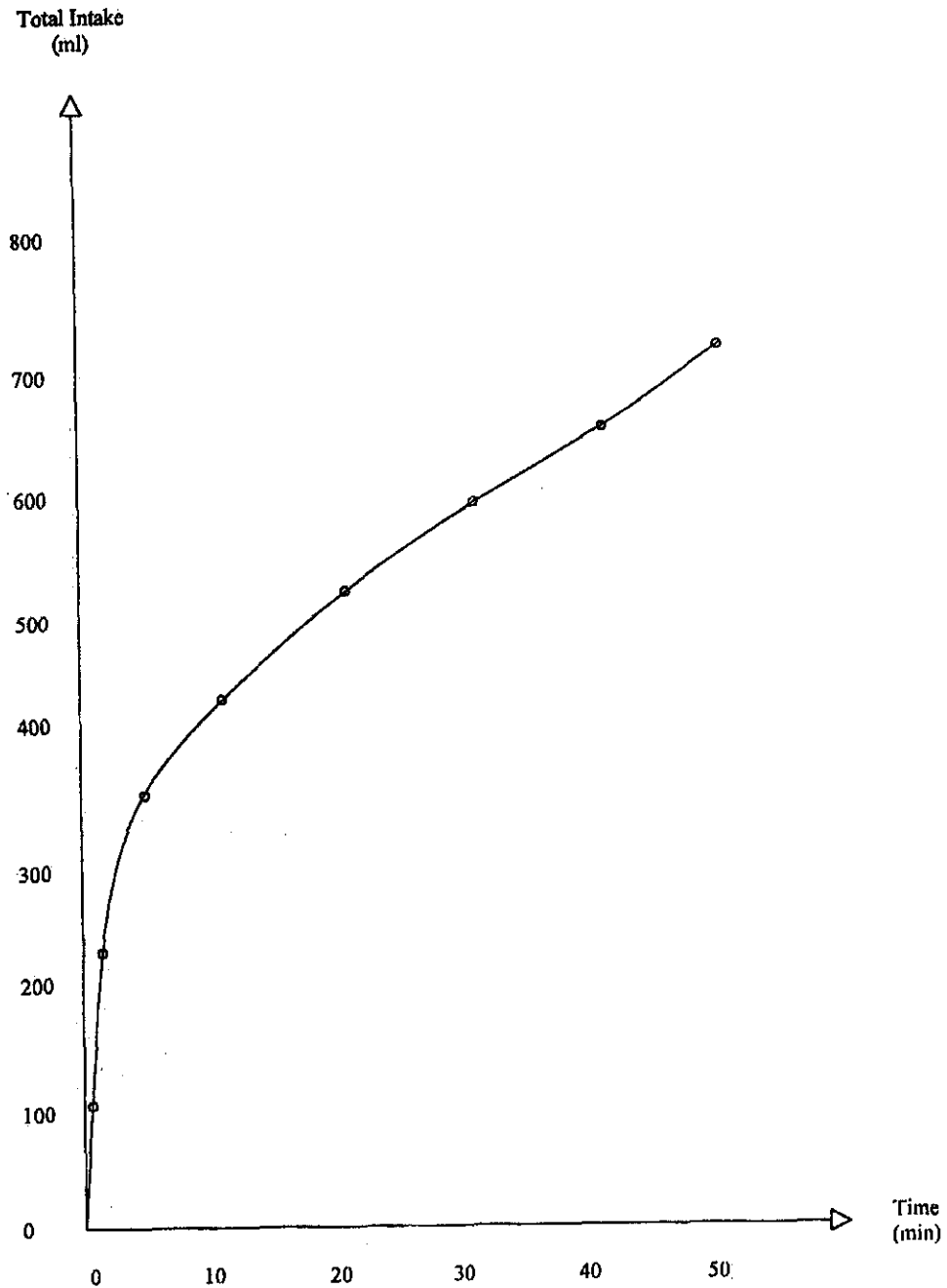
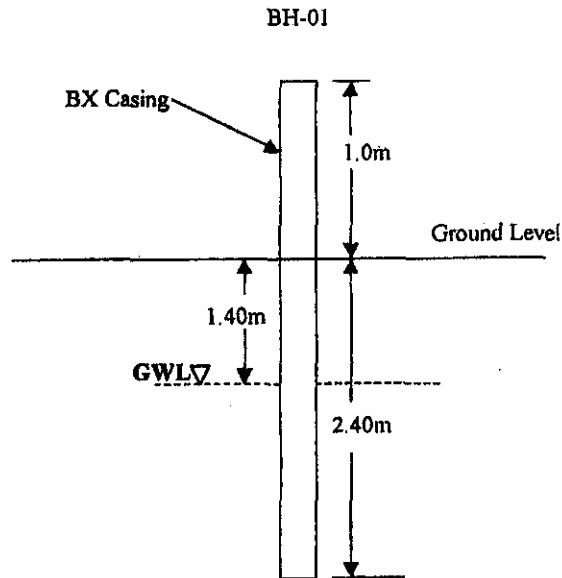


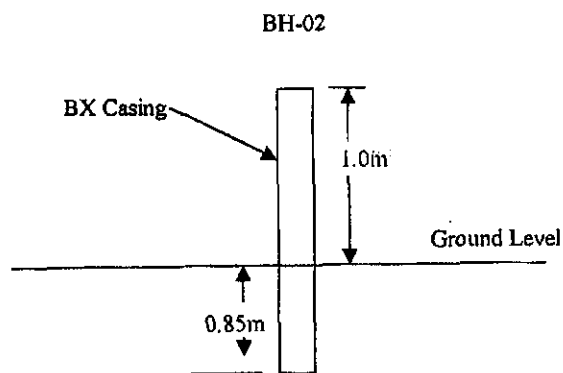
Fig. 3 - Results of Permeability Test at BH-01

Permeability Test Results.



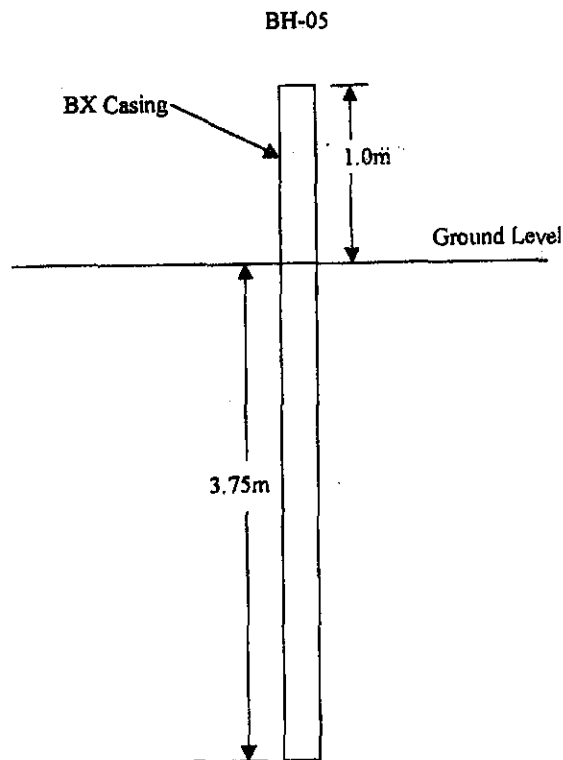
TIME	WATER TAKEN
2 min	225 ml
2 min	100 ml
2 min	30 ml
5 min	72 ml
5 min	57 ml
5 min	50 ml
5 min	36 ml
5 min	36 ml
5 min	36 ml
5 min	36 ml
5 min	36 ml
5 min	36 ml
5 min	36 ml

Permeability Test Results.



TIME	WATER TAKEN
5 min	16 ml
5 min	8 ml
5 min	6 ml
10 min	8 ml
15 min	12 ml
20 min	18 ml
25 min	18 ml
25 min	18 ml
25 min	18 ml
25 min	18 ml

Permeability Test Results.



TIME	WATER TAKEN
5 min	10 ml
10 min	5 ml
15 min	5 ml
15 min	4 ml
15 min	2 ml
15 min	2 ml
15 min	2 ml
15 min	2 ml

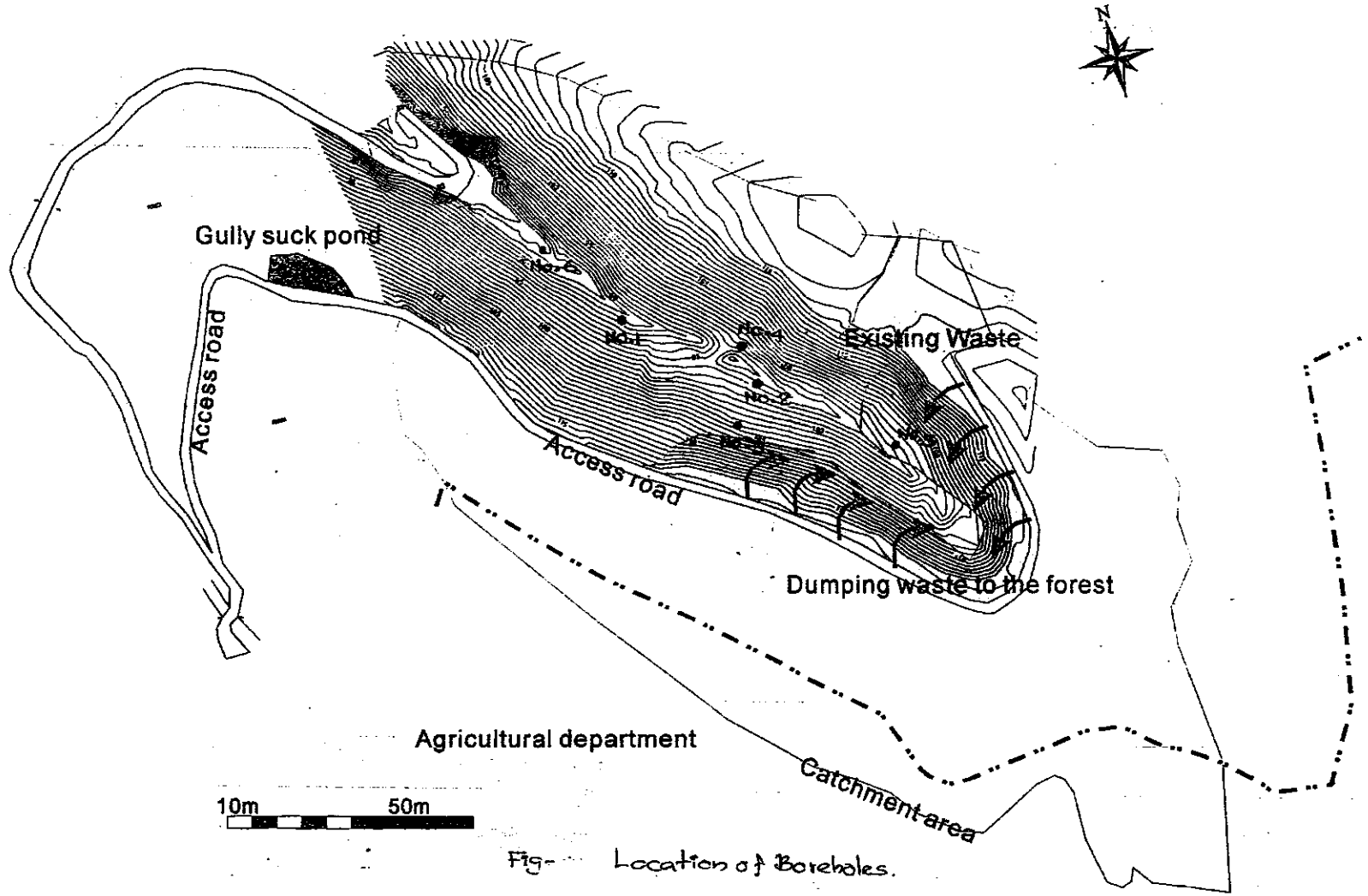
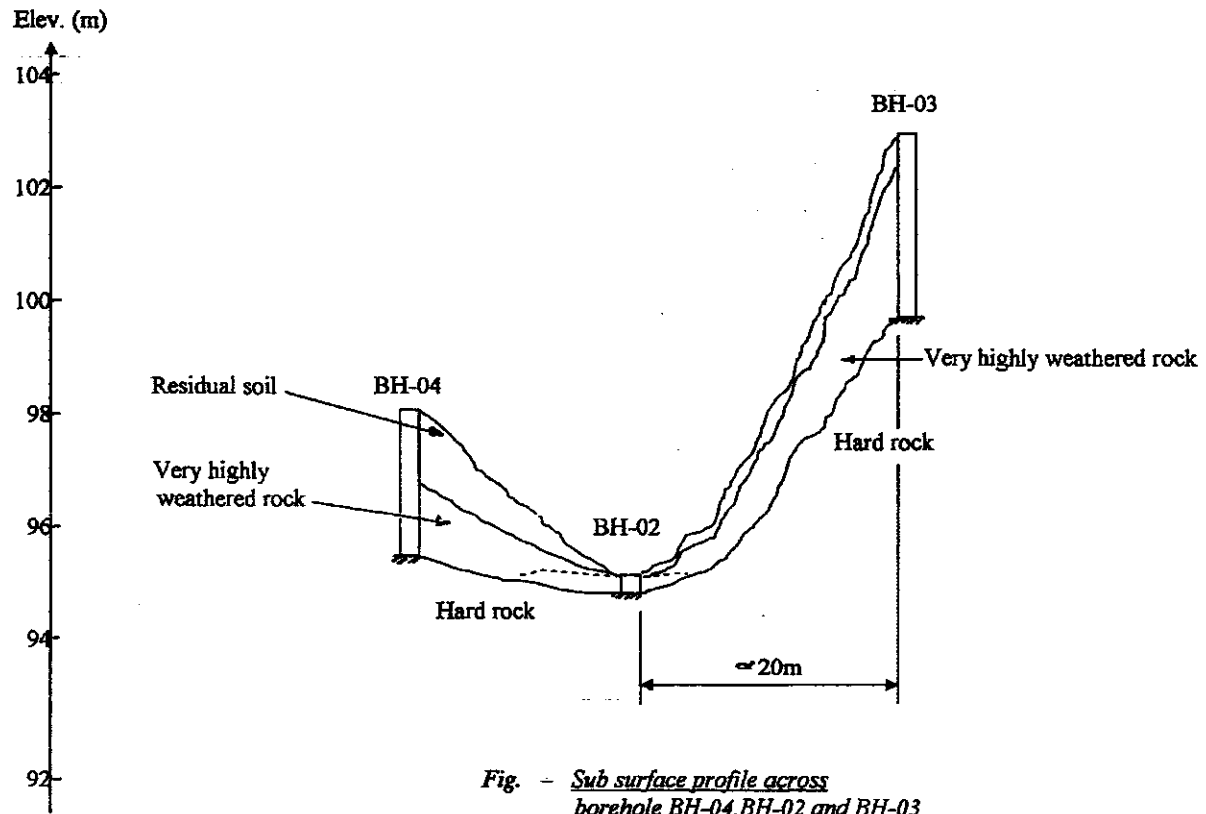


Fig. Location of Boreholes.



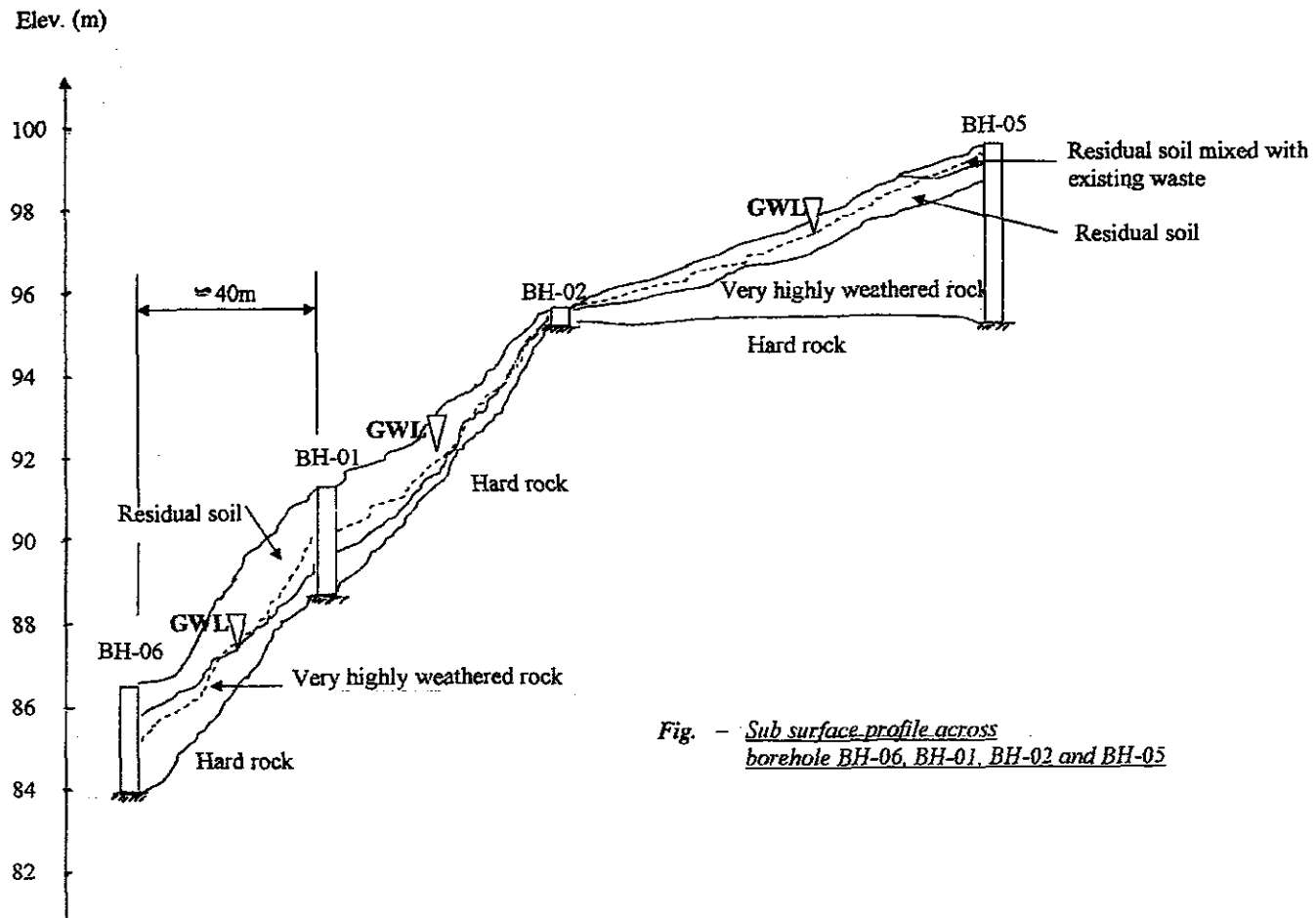


Fig. - Sub surface profile across borehole BH-06, BH-01, BH-02 and BH-05

Annex IX

Our Ref. }
Date } 11 August 2003

Central Environmental Authority

"පරිසර සිංහ", 104, රොබට් ගුනවර්ධන මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.
"பரிசுப்பியன்" 104, ரொபர்ட் குணவர்தன மாவத்தை, பத்தரமுல்லை, இலங்கை.
"Parisara Piyana" 104, Robert Gunawardena Mawatha, Battaramulla, Sri Lanka.

Municipal Commissioner
Nuwara Eliya Municipal Council
Nuwara Eliya.

106 AUG 2003

C P M I

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**INITIAL ENVIRONMENTAL EXAMINATION (IEE) FOR PROPOSED
MOONPLAINS LANDFILL SITE IN NUWARA ELIYA**

This is to inform you that the Central Environmental Authority (CEA), being the Project Approving Agency for the above project has studied the Initial Environmental Examination Report (IEER) submitted by you on 25th June, 2003 and your responses to clarifications and has decided in terms of regulation 09 of the National Environmental (Procedure for approval of projects) Regulations No. 1 of 1993 as amended by the Gazette (Extra -Ordinary) No. 1159/22 dated 02.11.2000, to grant approval for implementation of the above project subject to the terms and conditions given here -under.

- I The Nuwara Eliya Municipal Council (hereinafter referred to as project proponent) is legally bound to ensure that such terms and conditions are adhered to and have full control over a third party that may be involved in project implementation. The CEA should have access to the contract document(s) pertaining to environmental aspects, entered into by the project proponent and outside contractor/s.
- II The project proponent where necessary should obtain fresh approvals in respect of any alterations that are intended to be made to the initial project proposal submitted to CEA, as per the IEER dated 25 June 2003.
- III This approval is valid for 3 years from the date of issue of this letter, unless upon written application to CEA, within 30 days prior to this date, the time period is extended.
- V The project proponent shall intimate to CEA, the date of commencement of project construction activities inclusive of the implementation schedule.

Chairman	Director General	Gen Office	HRD, Admin & Finance Division	Envl. Pollution Control Division	Envl. Mgt. & Assess. Division	Envl. Edu & Awareness Division	Legal Unit
Fax : 872347 T. Phone : 872361 872348	Fax : 872608 T. Phone : 872359	T. Phone : 872278, 872263, 872447-51 872413, 872489 872419	Fax : 872601 T. Phone : 872602, 872301 872607, 872603	Fax : 872605 T. Phone : 873452 873453	Fax : 872296 T. Phone : 872388, 876643 872402, 872345	Fax : 872609 T. Phone : 872297 876641	T. Phone : 872604

පාරිසරික සහ ස්වභාවික සම්පත් අමාත්‍යාංශය
கற்றாடல், இயற்கை வளங்கள் அமைச்சு
MINISTRY OF ENVIRONMENT & NATURAL RESOURCES



- VI Costs to be incurred in giving effect to the implementation of the terms and conditions hereunder should be borne by the project proponent as project implementation costs.
- VII A separate environmental unit should be established by the Project Proponent in order to coordinate all activities connected with the management of environmental aspects of the project.
- VIII A copy of this letter and Initial Environmental Examination Report (IEER) should be kept at the project site at all times, for purposes of perusal by concerned agencies.
- 1 Land Preparation:**
- 1.1 The project proponent should negotiate directly with the Forest Department and enter into an agreement with regard to all project activities and post project activities prior to implementation of the project.
- 1.2 Removal of trees in the proposed site shall be done in such a way not to cause physical damages to the soil.
- 1.3 Excavation of soil should be done according to a plan prepared, based on the space requirement for land filling. The excavated soil should be stockpiled at the proposed stockpile yard as indicated in the Layout Plan (Fig. 3), given in the IEER.
- 1.4 A detailed geological investigation of the bed rock should be undertaken and the joints/discontinuities be mapped as recommended in the Geological Investigation Report of November, 2002 in order to determine the permeability of the bed rock prior to implementation of the project.
- 1.5 Necessary precautionary measures should be employed to prevent any leachate to infiltrate through the existing joints/discontinuities/fractures of the bed rock.
- 2 Leachate Collection and Treatment System**
- 2.1 A leachate collection pipe network should be installed at the bottom of the landfill as indicated in sections 2.2.1.2 and 2.5.2.1 of the IEER in order to collect all leachate generated in the landfill.
- 2.2 All leachate collected should be directed to the leachate treatment plant. The detailed design of the leachate treatment system should be forwarded to CEA and an Environmental Protection Licence (EPL) be obtained prior to commencement of operation.
- 2.3 The treated effluent discharged from the leachate treatment plant should conform to the general standards for discharge of effluent into inland surface waters as laid down in the Gazette Extra Ordinary No 595/16 of 02nd February 1990.



- 2.4 The treated effluent conforming to the above specified standards could be discharged off site into the nearby stream through a constructed wetland as proposed in section 2.2.1.3 of the IEER. The flow level of the stream should conform to the 1 : 8 dilution factor.
 - 2.5 Waste water arising from washing of waste haulage vehicles and other plant equipments should also be directed into the leachate treatment system.
 - 2.6 Coconut fibre and charcoal filter of the treatment plant should be replaced whenever necessary. Sludge arising from the treatment system should be removed periodically and disposed of in the landfill site. Sludge should be analysed frequently in a recognized laboratory in order to determine whether it contains heavy metals. These laboratory results should be submitted for review by CEA.
- 3 Gas Ventilation System**
- 3.1 The landfill site should be provided with a gas ventilation system as stated in sections 2.2.1.4 (e) and 2.5.2.2 of the IEER in order to contain and collect gases generated in the landfill.
 - 3.2 Gas ventilation pipes should be raised with the filling of the landfill.
- 4 Storm Water Drainage System**
- 4.1 A stormwater drainage system should be constructed along the access road at the top of the slope and along the slope of the waste filling area and terraces as suggested in sections 2.2.1.4 (d), 2.5.2.7 and 2.5.2.8 of the IEER to intercept runoff water into the site and within the site.
 - 4.2 Storm water drains should be cleaned frequently in order to prevent from blocking.
- 5 Healthcare Waste Disposal System**
- 5.1 Clinical waste and any waste classified as hazardous in the hazardous waste regulations specified in Gazette Extra -ordinary No. 924/13 dated 23rd May 1996 shall not be permitted to be disposed of in the land fill site.
 - 5.2 Disposal pit for healthcare wastes should be constructed as proposed in section 2.2.1.4 (f) of the IEER. Only waste syringes and sharps should be disposed of in these pits and anatomical infectious waste such as body parts, placentae, etc should not be disposed of in these pits.
 - 5.3 Waste syringes and sharps should be disinfected at the source of generation and transported in leak proof containers such as high density polythene boxes, metallic drums, or barrels.



5.4 The pit should be sealed completely with concrete once it is filled, after construction of a new pit. The abandoned pit must be marked with a warning against the use of the site for construction etc.

5.5 Every step should be taken to prevent contamination of workers and safety gears should be provided to workers who handle health care waste

5.6 Disposal of health care waste at this site is permitted only until such time a separate disposal facility for health care wastes is implemented by the Health Authorities.

6 Gully Suck Treatment System

6.1 Installation of a gully suck treatment facility within the site for sewage treatment shall be permitted only until such time a permanent sewage collection and disposal system is established by the Nuwara Eliya Municipal Council. The gully suck treatment facility will be subject to the EPL process.

6.2 The final treated effluent from the sewage treatment plant should conform to the general standards for discharge of effluent into inland surface waters as laid down in Gazette Extra Ordinary 595/16 of 02nd February 1990.

6.3 The final treated effluent from the sewage treatment plant conforming to the above specified standards could be discharged of into the nearby perennial stream through the constructed wetland if the flow level conforms to the 1:8 dilution factor.

7 Access Road

7.1 The access road to the site should be widened and improved as noted in section 2.2.3 and 2.5.2.6 of the IEER in order to ensure easy access to the site. New road within the landfill site shall be constructed as proposed to reach the working area of the landfill.

7.2 All possible precautions should be taken to avoid sedimentation and erosion problems during construction of access roads.

8 Security and Safety Facilities

8.1 A movable fence, gate and a handrail shall be installed at the land fill site as proposed to prevent waste scattering and to control entry into the site.

9 Operational System

9.1 The waste already deposited within the site shall be relocated at the north western end of the landfill (adjoining the leachate treatment facility) as proposed in the IEER. The wall to be constructed between the leachate treatment facility and the waste filling area (Fig. 6 of the IEER) should be strong enough to retain the waste load



- 9.2 The solid waste deposited in the landfill should be covered with soil and compacted daily. The stockpiling of extra soil generated by the construction of landfill site and dredged soil at the Gregory Lake at Nuwara Eliya shall be utilized for daily cover material.
- 9.3 A gentle slope should be maintained on surface of the waste filling in order to keep the waste load stable. Terracing and turling of the slope of waste filling should be done as indicated in sections 2.2.1.4 (a & b) ,2.5.2.3 and 2.5.2.4 of the IBER .
- 10 Noise**
- 10.1 **During Construction**
The noise levels shall not exceed 75 dB (A) from 0600 hrs. to 2100 hrs. and 50 dB (A) from 21 hrs. each day at the boundaries of the project site as per Gazette Extra Ordinary No. 924/12 dated 23rd May 1996.
- 10.2 **During Operation**
The noise levels shall be maintained at or below 63 dB (A) from 0600 hrs. to 1800 hrs. and 50 dB (A) from 1800 hrs. to 0600 hrs. at boundaries of the site as per Gazette Extra Ordinary No. 924/12 dated 23rd May 1996.
- 11 Buffer Zone**
- 11.1 Adequate buffer zone shall be maintained around the land fill site in order to minimize visual impacts.
- 12 Monitoring Programme**
- 12.1 A Monitoring Committee consisting of representatives of CEA, Forest Department, Urban Development Authority, Irrigation Department, Department of Agriculture, District Secretary/ Nuwara Eliya, Municipal Council/ Nuwara Eliya and any other member deemed necessary by CEA, shall be appointed at the cost of the project proponent. This committee will supervise and monitor all activities of the project, in order to ensure that stipulated conditions and mitigatory measures are being complied with. The terms of reference of the monitoring committee will be formulated by CEA.
- 12.2 The project proponent should submit a detailed environmental monitoring plan to CEA for approval prior to commencement of the project.
- 12.3 The project proponent should submit to CEA the existing records of surface and ground water quality measurements in and around the project site including receiving waters, taken in the recent past in order to ascertain the baseline situation. The sampling points should be marked on a map at a scale which will ensure easy identification.



13 Social Aspects

13.1 The project proponent shall initiate appropriate action to make the local people aware of the mitigation measures suggested to be implemented.

13.2 The project proponent shall employ as many as possible from the local areas.

14 Environmental Protection Licence

14.1 The project proponent shall apply for an Environmental Protection Licence in terms of the National Environmental (Protection and Quality) Regulations No. 1 of 1990 and 1159/22 of 22nd November 2000, published in the Gazette Extra Ordinary No. 595/16 of February 2nd 1990, one month prior to the operations of the sanitary landfill.

Manel Jayamanna
Director General
CENTRAL ENVIRONMENTAL AUTHORITY.

CC : Conservator General of Forests / Forest Dept.
Director General / Urban Devt. Authority
Director General / Irrigation Dept.
District Secretary / District Secretariat / Nuwara Eliya
Divisional Secretary / Divisional Secretariat / Nuwara Eliya
Director / Env't. Pollution Control / CEA

Annex X

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PART I : SECTION (I) – GENERAL

Government Notifications

L.D.-B. 4/81

THE NATIONAL ENVIRONMENTAL ACT, No. 47 OF 1980
Order under Section 23Y

BY virtue of the powers vested in me by Section 23Y of the National Environmental Act, No. 47 of 1980, as amended by Act, No. 56 of 1988, I, Wimal Wickramasinghe, Minister of Environment and Parliamentary Affairs, do by this Order, specify the state agencies set out in the Schedule hereto as the project approving agencies.

Colombo,
18th June, 1993.

DR. WIMAL WICKRAMASINGHE,
Minister of Environment and Parliamentary Affairs.

16 A I කොටස : (1) කෙරුම - ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ අති විශේෂ ලැයිස්තු - 1993.06.24
පළමු කොටස : (1) - இலங்கைச் சனநாயக சோசலிசக் குடியரசு வந்தாண்டப் பத்திரிகை - அறிவிப்புகள் - 1993.06.24
PART I: SEC. (I)- GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 1993.06.24

SCHEDULE

- Ministry of Policy Planning and Implementation
- Ministry of Lands, Irrigation and Mahaweli Development
- Ministry of Power and Energy
- Ministry of Transport and Highways
- Ministry of Industries, Science and Technology
- Ministry of Housing and Construction
- Ministry of Fisheries and Aquatic Resources
- Ministry of Agricultural Development and Research
- Coast Conservation Department
- Central Environmental Authority established by the National Environmental Act, No. 47 of 1980
- Urban Development Authority established by the Urban Development Authority Law, No. 41 of 1978
- Board of Investment of Sri Lanka established by the Greater Colombo Economic Commission Law, No. 46 of 1978 as amended *inter alia* by Act No. 49 of 1992
- Geological Survey and Mines Bureau established by the Mines and Minerals Act, No. 33 of 1992
- Ceylon Tourist Board established by the Ceylon Tourist Board Act, No. 10 of 1966

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L. D.-B. 4/81.

THE NATIONAL ENVIRONMENTAL ACT, No. 47 OF 1980

Order Under Section 23Z

BY virtue of the powers vested in me by Section 23Z of the National Environmental Act, No. 47 of 1980, as amended by Act, No. 56 of 1988, I, Wimal Wickramasinghe, Minister of Environment and Parliamentary Affairs, do by this Order, determine the projects and undertakings set out in the Schedule hereto as projects and undertakings for which approval shall be necessary under the provisions of Part IVC of the Act.

DR. WIMAL WICKRAMASINGHE,
Minister of Environment and Parliamentary Affairs.

Colombo,
18th June, 1993.

SCHEDULE

PART I

PROJECTS AND UNDERTAKINGS IF LOCATED WHOLLY OR PARTLY OUTSIDE THE COASTAL ZONE AS DEFINED BY COAST CONSERVATION ACT, NO. 57 OF 1961

- (1) All river basin development and irrigation projects excluding minor irrigation works (as defined by Irrigation Ordinance chapter 453).
- (2) Reclamation of Land, wetland area exceeding 4 hectares.
- (3) Extraction of timber covering land area exceeding 5 hectares.
- (4) Conversion of forests covering an area exceeding 1 hectare into non-forest uses.
- (5) Clearing of land areas exceeding 50 hectares.
- (6) *Mining and Mineral Extraction.*
 - Inland deep mining and mineral extraction involving a depth exceeding 25 meters.
 - Inland surface mining of cumulative areas exceeding 10 hectares.
 - All off shore mining and mineral extractions.
 - Mechanized mining and quarrying operations of aggregate, marble, limestone, silica, quartz, and decorative stone within 1 kilometer of any residential or commercial areas.

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PART I: Sec (I)-GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 1993.06.24

(7) *Transportation Systems*

- Construction of national and provincial highways involving a length exceeding 10 kilometers.
- Construction of railway lines.
- Construction of airports.
- Construction of airstrips.
- Expansion of airports or airstrips that increase capacity by 50 percent or more.

(8) *Port and Harbour Development*

- Construction of ports.
- Construction of harbours.
- Port expansion involving an annual increase of 50 per cent or more in handling capacity per annum.

(9) *Power Generation and Transmission*

- Construction of hydroelectric power stations exceeding 50 Megawatts.
- Construction of thermal power plants having generation capacity exceeding 25 Megawatts at a single location or capacity addition exceeding 25 Megawatts to existing plants.
- Construction of nuclear power plants.
- All renewable energy based electricity generating stations exceeding 50 Megawatts.

(10) *Transmission Lines*

- Installation of overhead transmission lines of length exceeding 10 kilometers and voltage above 50 Kilovolts.

(11) *Housing and Building*

- Construction of dwelling housing units exceeding 1,000 units.
- Construction of all commercial buildings as defined by Urban Development Authority established by the Urban Development Authority Law, No. 41 of 1978 having built up area exceeding 10,000 square meters.
- Integrated multi-development activities consisting of housing, industry, commercial infrastructure covering a land area exceeding 10 hectares.

(12) *Resettlement*

- Involuntary resettlement exceeding 100 families other than resettlement effected under emergency situations.

(13) *Water Supply*

- All ground water extraction projects of capacity exceeding 1/2 million cubic meters per day.
- Construction of water treatment plants of capacity exceeding 1/2 million cubic meters.

(14) *Pipelines*

- Laying of gas and liquid (excluding water) transfer pipelines of length exceeding 1 kilometer.

(15) *Hotels*

- Construction of Hotels or holiday resorts or projects which provide recreational facilities exceeding 99 rooms or 40 Hectares, as the case may be.

(16) *Fisheries*

- Aquaculture development projects of extent exceeding 4 hectares.
- Construction of fisheries harbours.
- Fisheries harbour expansion projects involving an increase of 50 per cent or more in fish handling capacity per annum.

(17) *All tunnelling projects*

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18 A I කොටස : (I) වෙදලා-ලී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ දැඩි විනයය යටතේ පනත - 1993.06.24
பகுதி I : பகுதி (I) - இலங்கை சனநாயக சோசலிச குடியரசு வந்தமொன்று பத்திரிகை - ஆதினிசேஷமொன்று - 1993.06.24
PART I: Sec. (I)-GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 1993.06.24

- (18) *Disposal of Waste*
 - Construction of any solid waste disposal facility having a capacity exceeding 100 tons per day.
 - Construction of waste treatment plants treating toxic or hazardous waste.
- (19) Development of all Industrial Estates and Parks exceeding an area of 10 hectares.
- (20) *Iron and Steel Industries*
 - Manufacture of iron and steel products of production capacity exceeding 100 tons per day using iron ore as raw material.
 - Manufacture of iron and steel products of production capacity exceeding 100 tons per day using scrap iron as raw material.
- (21) *Non-Ferrous Basic Metal Industries*
 - Smelting of aluminium or copper or lead of production capacity exceeding 25 tons per day.
- (22) *Basic Industrial Chemicals*
 - Formulation of toxic chemicals of production capacity exceeding 50 tons per day.
 - Manufacture of toxic chemicals of production capacity exceeding 25 tons per day.
- (23) *Pesticides and Fertiliser*
 - Formulation of pesticides of combined production capacity exceeding 50 tons per day.
 - Manufacture of pesticides of combined production capacity exceeding 25 tons per day.
- (24) *Petroleum and Petrochemicals*
 - Petroleum refineries producing gasoline, fuel oils, illuminating oils, lubricating oils and grease, aviation and marine fuel and liquified petroleum gas from crude petroleum.
 - Manufacture of petro-chemicals of combined production capacity exceeding 100 tons per day from raw materials obtained from production processes of oil refinery or natural gas separation.
- (25) *Tyre and Tube Industries:*
 - Manufacture of tyre and tubes of combined production capacity exceeding 100 tons per day from natural or synthetic rubber.
- (26) *Sugar Factories*
 - Manufacture of refined sugar of combined production capacity exceeding 50 tons per day.
- (27) *Cement and Lime*
 - Manufacture of Cement.
 - Manufacture of lime employing kiln capacity exceeding 50 tons per day.
- (28) *Paper and Pulp*
 - Manufacture of paper or pulp of combined production capacity exceeding 50 tons per day.
- (29) *Spinning, Weaving and Finishing of Textiles*
 - Integrated cotton or synthetic textile mills employing spinning, weaving, dyeing and printing operations together, of combined production capacity exceeding 50 tons per day.
- (30) *Tanneries and Leather Finishing*
 - Chrome tanneries of combined production capacity exceeding 25 tons per day.
 - Vegetable (bark) of combined production capacity exceeding 50 tons per day.

Provided however, where the projects and undertakings set out in items 20 to 30 are located within Industrial Estates and parks as described at (19) above, the approval shall not be necessary under the provisions of Part IVC of the Act.

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 PART I: SEC. (I)-GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA-1993.06.24

(31) Industries which involve the manufacture, storage or use of Radio Active Materials as defined in the Atomic Energy Authority Act, No. 19 of 1969 or Explosives as defined in the Explosives Act, No. 21 of 1956, excluding for national security reasons.

PART II

(32) All projects and undertakings listed in Part I Irrespective of their magnitudes and irrespective of whether they are located in the coastal zone or not, if located wholly or partly within the areas specified in Part III of the Schedule.

The following industries if located wholly or partly within the areas specified in Part III of the Schedule:

- (33) Iron and Steel.
- (34) Non-Ferrous Basic Metal.
- (35) Basic Industrial Chemicals.
- (36) Pesticides and Fertilizers.
- (37) Synthetic Resins, Plastic materials and Man-made Fibres.
- (38) Other Chemical Products.
- (39) Petroleum and Petro-chemical Products.
- (40) Tyres and Tubes.
- (41) Manufacturing and Refining of Sugar.
- (42) Alcoholic Spirits.
- (43) Malt Liquors and Malt.
- (44) Cement and Lime.
- (45) Non-metallic Mineral Products.
- (46) Paper, Pulp and Paperboard.
- (47) Spinning, Weaving and Finishing of Textiles.
- (48) Tanneries and Leather Finishing.
- (49) Shipbuilding and Repairs.
- (50) Railroad Equipment.
- (51) Motor Vehicles.
- (52) Air Craft.

PART III

1. Within 100m from the boundaries of or within any area declared under-
 the National Heritage Wilderness Act No. 3 of 1988,
 the Forest Ordinance (Chapter 451).
 whether or not such areas are wholly or partly within the Coastal Zone as defined in the Coast Conservation Act, No. 57 of 1981.
2. Within the following areas whether or not the areas are wholly or partly within the Coastal Zone:
 any erodable area declared under the Soil Conservation Act (Chapter 450).
 any Flood Area declared under the Flood Protection Ordinance (Chapter 449) and any flood protection area declared under the Sri Lanka Land Reclamation and Development Corporation Act, No. 15 of 1968 as amended by Act, No. 52 of 1982.
 60 meters from the bank of a public stream as defined in the Crown Lands Ordinance (Chapter 454) and having a width of more than 25 meters at any point of its course.
 any reservation beyond the full supply level of a reservoir.
 any archaeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188).
 any area declared under the Botanic Gardens Ordinance (Chapter 446).

In these regulations unless the context otherwise requires-

"hazardous waste" means any waste which has toxic, corrosive, flammable, reactive, radio active or infectious characteristics.

"reservoir" means an expanse of water resulting from man made constructions across a river or a stream to store or regulate water. Its "environs" will include that area extending up to a distance of 100 meters from full supply level of the reservoir inclusive of all islands falling within the reservoir.

20 A I කොටස : (I) කෙටිය - ශ්‍රී ලංකා ප්‍රජාතන්ත්‍රවාදී සමාජවාදී ජනරජයේ අති විශේෂ ගැසට් පත්‍රය - 1993.06.24
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PART I: SEC. (I)-GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA-1993.06.24

L. D.-B. 4/81.

THE NATIONAL ENVIRONMENTAL ACT, No. 47 OF 1980

REGULATIONS made by the Minister of Environment and Parliamentary Affairs under Section 23CC of the National Environmental Act, No. 47 of 1980 read with Section 32 of that Act.

Dr. WIMAL WICKRAMASINGHE,
Minister of Environment and
Parliamentary Affairs.

Colombo, 18th June, 1993.

Regulations

1. These Regulations may be cited as the National Environmental (Procedure for approval of projects) Regulations, No. 1 of 1993.
2. (i) A project proponent shall not perform the functions and duties of a Project Approving Agency. In the event of a Project Approving Agency becoming a project proponent, the Authority shall designate an appropriate Project Approving Agency.
(ii) The Authority shall determine the appropriate Project Approving Agency in case where more than one Project Approving Agency is involved.
3. In respect of any prescribed project for which an Environmental Impact Assessment Report is required the Project Approving Agency shall grant its approval only with the concurrence of the Authority.
4. Any devolution of the functions of a Project Approving Agency to a Provincial Council, relating to the approval of projects shall be done only with the written concurrence of the Minister.
5. A project proponent of any proposed prescribed project shall as early as possible submit to the Project Approving Agency preliminary information on the project requested by the appropriate Project Approving Agency.
6. (i) The Project Approving Agency shall acknowledge in writing receipt of such preliminary information within six days.
(ii) The Project Approving Agency shall in consultation with the Authority subject such preliminary information to environmental scoping, in order to set the Terms of Reference for the Initial Environmental Examination Report or Environmental Impact Assessment Report, as the case may be, and in doing so the Project Approving Agency may take into consideration the views of state agencies and the public.
(iii) The Project Approving Agency shall convey in writing to the project proponent the Terms of Reference referred to in paragraph (ii) above within fourteen days in the case of an Initial Environmental Examination Report and thirty days in the case of an Environmental Impact Assessment Report from the date of acknowledging receipt of the preliminary information.
(iv) Where, if on environmental scoping the Project Approving Agency considers that the preliminary information submitted by the project proponent as required in regulation 5 above, is adequate to be an Initial Environmental Examination Report, the Project Approving Agency shall proceed as specified hereinafter.
7. (i) Every project proponent shall submit to the Project Approving Agency such number of copies of the Initial Environmental Examination Report as required by the Project Approving Agency.
(ii) Upon receipt of an Initial Environmental Examination Report the Project Approving Agency shall submit a copy thereof to the Authority and by prompt notice published in the *Gazette* and in one national newspaper published daily in the Sinhala, Tamil and English languages, invite the public to make written comments, if any, thereon, to the Project Approving Agency, within thirty days from the date of first appearance of the notice, either in the *Gazette* or in the newspaper.
(iii) The Notice referred to in paragraph (ii) above shall specify the times and places at which the report shall be made available for public inspection.
(iv) The Project Approving Agency shall make available copies of the report to any person interested to enable him to make copies thereof.
8. (i) It shall be the duty of the Project Approving Agency, upon completion of the period of public inspection, to forward to the project proponent the comments received from the public, for review and response, within six days from the date of completion of the period of public inspection.
(ii) The project proponent shall in writing respond to such comments to the Project Approving Agency.
9. Upon receipt of such responses referred to in regulation 8 (ii) above, the Project Approving Agency shall within a period of six days either
(i) grant approval for the implementation of the proposed project subject to specified conditions; or
(ii) refuse approval for the implementation of the proposed project with reasons for doing so.

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 PART I: SEC. (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 1993.06.24

10. Upon receipt of an Environmental Impact Assessment Report the Project Approving Agency shall, within fourteen days, determine whether the matters referred to by the Terms of Reference as set out in regulation 6 (ii) above are addressed, and if the Report is determined to be inadequate the Project Approving Agency shall require the project proponent to make necessary amendments and re-submit the report, together with the required number of copies.
11. (i) Upon receipt of the Report, as specified in regulation 10 above, the Project Approving Agency shall submit a copy thereof to the Authority and by prompt notice published in the Gazette and in one national newspaper published daily in the Sinhala, Tamil and English languages invite the public to make written comments, if any, thereon to the Project Approving Agency within thirty days from the date of the first appearance of the notice, either in the Gazette or in the newspaper.
 (ii) The notification shall specify the times and places at which the Report shall be made available for public inspection.
 (iii) The project Approving Agency shall make available copies of the Report to any person interested to enable him to make copies thereof.
12. It shall be the duty of a Project Approving Agency, upon completion of the period of public inspection or public hearing, if held, to forward to the project proponent comments received for review and response, within six days. The Project Proponent shall respond to such comments in writing to the Project Approving Agency.
13. Upon receipt of such responses as referred to in regulation 12 above, the Project Approving Agency shall with the concurrence of the Authority, within thirty days either-
 (i) grant approval for the implementation of the proposed project subject to specified conditions; or
 (ii) refuse approval for the implementation of the proposed project, with reasons for doing so.
14. It shall be the duty of all Project Approving Agencies to forward to the Authority a report which contains a plan to monitor the implementation of every approved project, within thirty days from granting of approval under regulations 9 (i) and 13 (i) by such agencies.
15. The Project Approving Agency shall publish in the Gazette and in one national newspaper published daily in the Sinhala, Tamil and English languages the approval of any project as determined under regulations 9 (i) and 13 (i) hereto.
16. (i) The Project Approving Agency shall specify a period within which the approved project shall be completed.
 (ii) A project proponent may, within thirty days prior to the expiry of such period, make an application in writing to the Project Approving Agency for an extension of time for the completion of the proposed prescribed project.
17. (i) A project proponent shall inform the appropriate Project Approving Agency of-
 (a) any alteration to a prescribed project approved under regulations 9 (i), and 13 (i); and/or
 (b) the abandonment of such approved project.
 (ii) The project proponent shall where necessary obtain fresh approval in respect of any such alterations that are intended to be made to such project. The Project Approving Agency shall in consultation with the Authority determine the scope and format of the supplemental report required to be submitted for such alterations.
 (iii) The project proponent shall, where a project is abandoned, restore the project site to a condition as specified by the Project Approving Agency.
18. The Project Approving Agency shall communicate to the Project Proponent the administrative charges to be levied by the Project Approving Agency for the purposes of the approval of projects. The Project Approving Agency shall follow the procedure set out in guidelines prepared by the Authority.
19. In these regulations-
 "Authority" means the Central Environmental Authority;
 "Project Proponent" means any Government Department, Corporation, Statutory Board, Local Authority, Company, Firm or Individual who submits any prescribed project for approval;
 "Project" means any undertaking, scheme or plan where commitment of resources, time and funds are envisaged and which comes into existence at the stage where the project proponent has a goal and is actively preparing to make a decision in achieving that goal.
 "Preliminary information" shall include a description of the nature, scope and location of the proposed project accompanied by location maps and any other details as may be requested for by the Project Approving Agency;
 "environmental scoping" means determining the range and scope of proposed actions, alternatives, and impacts to be discussed in an Initial Environmental Examination Report or Environmental Impact Assessment Report;
 "Report" means an Initial Environmental Examination Report or an Environmental Impact Assessment Report as the case may be; and
 "days" means any day other than a public holiday as defined by the Holidays Act, No. 29 of 1971.

07-273/3

ශ්‍රී ලංකා ජනරජයේ විශේෂ වෙනම පත්‍රයේ ප්‍රධාන කොටසට ප්‍රවේශය

Annex XI

ශ්‍රී ලංකා ප්‍රජාතාන්ත්‍රික සමාජවාදී ජනරජයේ ගැසට් පත්‍රය
අති විශේෂ

The Gazette of the Democratic Socialist Republic of Sri Lanka
EXTRAORDINARY

අංක 1159/22 - 2000 කොළඹදින 22 වැනි දින - 2000.11.22
No. 1159/22 - WEDNESDAY, NOVEMBER 22, 2000

(Published by Authority)

PART I : SECTION (I) — GENERAL

Government Notifications

LD. B 4/81

THE NATIONAL ENVIRONMENTAL ACT, No. 47 OF 1980

Order under Section 23A

BY virtue of the powers vested in me by Section 23A of the National Environmental Act, No. 47 of 1980 as amended by Acts Nos. 56 of 1988 and 53 of 2000, I Mahinda Wijekera Minister of Forestry and Environment, do by this Order, determine the activities set out in the Schedule hereto as activities for which Environmental Protection License is required.

MAHINDA WIJEKERA,
Minister Forestry and Environment.

Colombo,
21st November, 2000.

SCHEDULE

THE ACTIVITIES FOR WHICH AN ENVIRONMENTAL PROTECTION LICENCE IS REQUIRED

PART A

1. Caustic soda manufacturing industries.
2. Soaps, detergents or any other cleaning preparations manufacturing industries where 25 or more workers are employed.
3. Acid (Inorganic or organic) manufacturing or repacking industries.
4. Chemical fertilizer manufacturing, formulating, processing or repacking industries.
5. Insecticides, fungicides, herbicides, pesticides manufacturing, formulating, or repacking industries.
6. Oil (mineral oil or petroleum) refineries.
7. Bulk petroleum liquid storage facilities having a total capacity of 150 or more metric tons.
8. Dye and dye intermediate manufacturing or formulating industries.
9. Paints (emulsion or enamel), inks, pigments, varnishes, polish manufacturing or formulating industries.
10. Petrochemical (basic or intermediates) manufacturing or formulating industries.
11. Explosives manufacturing or formulating industries.

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2A. විශේෂ (1) අංශය - ශ්‍රී ලංකාවේ ප්‍රධාන නගර සභා සඳහා වන සංරක්ෂණ පනත - 2000.11.22
Part I: Section (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

12. Match sticks manufacturing industries.
13. Industrial gas manufacturing, processing or refilling industries excluding auto gas filling stations.
14. Asphalt processing plants.
15. Industries involved in the manufacture of polymers or polymer based products (i.e. polyethylene, polyvinyl chloride (PVC), polyurethane, polypropylene, polyester, nylon, polystyrene, resins, fiberglass or other man made fibers etc.)
16. Industries involved in the use of fiberglass as a raw material where 10 or more workers are employed.
17. Synthetic rubber, natural rubber manufacturing or processing of rubber based industries excluding industries which manufacture 100Kg or less per day of ribbed smoke rubber sheets.
18. All types of tyres, tubes manufacturing or tyre retreading industries.
19. Activated carbon, carbon black manufacturing or coconut shell burning industries having the total input capacity of 10,000 or more coconut shells per batch within a single production cycle.
20. Battery manufacturing or reconditioning industries.
21. Any industry involved in the use of asbestos fibres as a raw material.
22. Industries involved in manufacturing, extracting or formulating pharmaceuticals or cosmetic products including intermediates.
23. Industries involved in manufacturing or extracting or formulating Ayurvedic, Indigenous medicinal products where 25 or more workers are employed.
24. Printing presses with lead smelting.
25. Bath industries where 10 or more workers are employed.
26. Textile processing (i.e. bleaching, dyeing, printing) industries or garment washing industries.
27. Commercial laundries with dry cleaning operations using organic solvents where 10 or more workers are employed.
28. Tanneries.
29. Leather finishing industries having effluent generating wet operations
30. Jute processing industries
31. Industries involved in bleaching or dyeing of natural fiber.
32. Power looms having 25 or more machines or power looms with sizing activities
33. Sugar factories or sugar refineries
34. Fermentation industries (Distilleries, Breweries) or alcoholic beverages bottling plants
35. Vegetable, fruit, meat, seafood, milk-processing industries where 25 or more workers are employed
36. Abattoirs
37. Plants (other than coconut) or animal oils/fats extracting industries
38. Coconut oil extraction industries where 25 or more workers are employed
39. Bakery products, biscuits, confectionery manufacturing industries where 25 or more workers are employed
40. Instant tea or coffee processing industries
41. Non-alcoholic beverages manufacturing industries where 25 or more workers are employed
42. Bottling plants having bottle washing operations using caustic soda
43. Dedicated coconut mills
44. Rice mills having wet process and having a production capacity of 5000 kilograms or more per day
45. Poultry farms having 2500 or more birds
46. Hatcheries
47. Piggery, cattle, goat farms having 50 or more animals
48. Animal feed manufacturing industries having a capacity of 25 or more metric tons per day
49. Cigarettes or other tobacco products manufacturing industries where 50 or more workers are employed
50. Zoological gardens
51. Electrical power generating utilities having a cumulative capacity of 300 KW or more excluding hydro or solar or wind power generation.
52. Surface treatment of metal or plastic industries including electroplating, galvanizing industries
53. Iron and steel mills
54. Foundries with cupola, arc furnaces or induction furnaces
55. Non-ferrous metal processing industries such as lead, zinc, copper, aluminium smelting, secondary Lead processing or recovery of metals including silver recovery from photographic chemical solutions.

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PART I: Section (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

56. Cement industries (clinker grinding, manufacturing or repacking)
57. Concrete batching plants having a capacity of 50 or more cubic meters per day.
58. Glass or glass product manufacturing industries
59. Lime kilns having a production capacity of 20 or more metric tons per day
60. Ceramic industries where more than 25 or more workers are employed
61. Processing of non-metallic minerals (i.e. limestone, shell, dolomite, apatite, rock phosphate, sand stone, feldspar, quartz, ilmenite, rutile, zircon, mica, graphite, kaolin etc.)
62. Granite crushing or processing industries having a total production capacity of 25 or more cubic meters per day.
63. Paper and Pulp Industries excluding hand made papers.
64. Any chemical manufacturing industry not elsewhere specified in this list.
65. Any common wastewater (industrial or sewage) treatment plants.
66. Incinerators having an input capacity of 5 or more metric tons per day and crematoriums.
67. All hazardous waste disposal sites.
68. Water treatment plants having 10,000 or more cubic meters per day.
69. Industries involved in chemical treatment and preservation of wood (excluding Boron treatment).
70. Saw mills having a milling capacity of 30 or more cubic meters per day.
71. Hotels, Guest Houses, Rest Houses with 20 or more rooms.
72. Hostels having a boarding capacity of 200 or more boarders.
73. Any industry where 200 or more workers per shift are employed.
74. Mechanized mining activities with multi bore hole blasting with delay detonators.
75. Single bore hole blasting activities with production capacity having 600 or more cubic meters per month.
76. Granite boulders, making or processing industries.
77. Metal fabricating industries, machinery, machine tools, equipments manufacturing or assembling industries where 25 or more workers are employed.
78. Automobile assembly industries.
79. Vehicle service stations or container yards having vehicle service activities.
80. Any industry not indicated above which discharges 3 or more cubic meters of wastewater per day or using toxic chemical in its process.

PART B

1. Soaps, detergents or any other cleansing preparations manufacturing industries where less than 25 workers are employed.
2. Bulk petroleum liquid storage facilities having a total capacity less than 150 metric tons.
3. Ribbed, smoke rubber sheets manufacturing industries having a production capacity of more than 30 kilograms per day and less than 100 kilograms per day.
4. Coconut shell burning industries having a total input capacity of more than 1,000 coconut shells and less than 10,000 coconut shells per batch within a single production cycle.
5. Industries involved in manufacturing, extracting or formulating Ayurvedic, Indigenous medicinal products where more than 10 workers and less than 25 workers are employed.
6. Printing presses excluding lead smelting.
7. Batik industries where less than 10 workers are employed.
8. Industries involved in the use of fibre glass as a raw material where less than 10 workers are employed.
9. Commercial laundries with dry cleaning operations using organic solvents where less than 10 workers are employed.
10. Leather finishing industries other than having effluent generating wet operations.
11. Coconut fibre mills excluding bleaching or dyeing processes of natural fibre are carried out.
12. Power looms having less than 25 weaving machines.
13. Hand looms having more than 10 looms.
14. Sugar cane industries excluding sugar factories or sugar refineries.
15. Vegetable, fruit, meat, seafood, milk-processing industries where more than 5 workers and less than 25 workers are employed.

4 A ආකාරයට : (1) වෙනුවෙන් - ශ්‍රී ලංකා ජනරජයේ ප්‍රජාතන්ත්‍රවාදී ජනරජයේ අති විශේෂ ගැටපත් පත්‍රය - 2000.1.22
PART I: Sec (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

16. Coconut oil extraction industries where more than 10 workers and less than 25 workers are employed.
17. Bakery products, biscuits, confectionery manufacturing industries where more than 5 workers and less than 25 workers are employed.
18. Non-alcoholic beverages manufacturing industries where more than 10 workers and less than 25 workers are employed.
19. Bottling plants other than plants having bottle washing operations using caustic soda.
20. Rice mills having wet process and having a production capacity of less than 5000 kilograms per day.
21. Rice mills having dry operation process (other than having wet process)
22. Grinding mills.
23. Poultry farms having more than 50 birds and less than 2500 birds.
24. Piggeries having more than 5 animals and less than 50 animals.
25. Cattle, goat farms having more than 10 animals and less than 50 animals.
26. Animal feed manufacturing industries having a capacity of less than 25 metric tons per day.
27. Electrical power generating industries having a total capacity of more than 100 KW and less than 300 KW excluding hydro or solar or wind power generation.
28. Concrete batching plants having a capacity of less than 50 cubic meters per day.
29. Concrete pre-cast industries.
30. Mechanized cement block manufacturing industries.
31. Lime kilns having a production capacity of less than 20 metric tons.
32. Ceramic industries where less than 25 workers are employed.
33. Tiles and bricks kilns.
34. Granite crushing or processing industries having a total production capacity of less than 25 cubic meters per day excluding manual crushing operations using hand tools.
35. Incinerators having an input capacity of less than 5 metric tons per day.
36. Industries involved in Boron treatment of wood.
37. Saw mills having a milling capacity of less than 50 cubic meters per day.
38. Carpentry workshops which use electricity power more than 3 HP.
39. Residential hotels, guest houses, rest houses with less than 20 rooms.
40. Non-Residential hotels, restaurants, eating houses with cooking facilities where more than 5 workers are employed.
41. Hostels having a boarding capacity of more than 25 and less than 200 boarders.
42. Garment industries where more than 10 workers and less than 200 workers per shift are employed.
43. Single bore hole blasting activities having a production capacity of less than 600 cubic meters per month or other single bore hole blasting activities using explosives.
44. Metal fabricating industries, machinery, machine tools, equipment manufacturing or assembling industries (including latheworkshops and welding shops) where less than 25 workers are employed.
45. Garages where vehicle repairing activities or maintenance activities are carried out (including the facilities of carrying out, repairing, maintenance and installation of auto air conditions.)

12-263/1

LD.B 4/81

THE NATIONAL ENVIRONMENTAL ACT, No. 47 OF 1980

REGULATIONS made by the Minister of Forestry and Environment under Section 32 of the National Environmental Act, No. 47 of 1980 as amended by Acts Nos. 56 of 1988 and 53 of 2000.

MAHINDA WJESÉKERA,
Minister of Forestry and Environment.

Colombo,
21st November, 2000.

පාලන : (1) අදාළ - ශ්‍රී ලංකා ප්‍රජාතන්ත්‍රවාදී සමාජවාදී ජනරජයේ ප්‍රධාන නියෝග - 2000.1.1.22 5 A
Part I: Section (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

Regulations

National Environmental (Protection and Quality) Regulation No. 1 of 1990 published in *Gazette Extraordinary* No. 595/16 of February 2, 1990 as amended by *Gazette Extraordinary* No. 924/13 of May, 23, 1996 is hereby further amended as follows :-

(1) by the substitution for Regulation 2 thereof of the following :-

"2. No person shall carry on any activity which discharges, deposits or emits waste or noise into the environment causing pollution or noise pollution except--

(a) under the authority of a license issued by the Central Environmental Authority (hereinafter referred to as the "Authority"); and

(b) in accordance with the standards and criteria specified in Schedule I hereto and in any regulation made under this Act."

(2) by the substitution for paragraph (b) of regulation 7 thereof of the following :-

"(b) valid for such period as shall be specified in the license provided, it shall be not for more than a period of three years subject to any suspension or cancellation of the license under Section 23 D of the Act."

(3) by the substitution for paragraph (a) of paragraph (1) of Regulation 9 thereof of the following :-

"(a) at least three months before the date of expiry of the license or one month before effecting any changes, alterations or extensions to the premises at which the acts authorized by the license are carried out as the case may be,"

(4) by the substitution for paragraph (1) of regulation 11 thereof of the following :-

"(1) An applicant for a license who is aggrieved by the refusal of the Authority to grant a license or any holder of a license who is aggrieved by the suspension or cancellation of a license or the refusal to renew a license may, within thirty days after the date of notification of such decision to him, appeal in writing against such refusal, suspension, cancellation or refusal to renew, to the Secretary of the Ministry in charge of the subject of Environment."

(5) by the substitution for Regulation 14 thereof of the following :-

"14. Every person who contravenes the provisions of any regulation, commits an offence punishable under Sub Section (3) of Section 23A of the Act."

(6) by the substitution for item 1 of the General Terms and Conditions of Form B of Schedule II thereof, of the following item :-

"1. The license shall be valid for such period as may be specified in the license, provided it shall be not for more than a period of three years from the date of issue. An application for renewal of the license shall be made at least three months prior to the date expiry of the license."

(7) by the substitution for Schedule III thereof of the following Schedule :-

"SCHEDULE III

LICENSING FEE AND RENEWAL FEE

PART A

1. (a) a fee of Rs. 15,000 shall be levied in respect of each application for the issue; and
2. (b) a fee of Rs. 15,000 shall be levied in respect of each application for the renewal

6A. අනුකූල : (1) අදාළ : ශ්‍රී ලංකා දيمقراطية සමාජවාදී ජනරජයේ ප්‍රධාන මහලේඛය : 2000.11.22
Part I: Sec (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000.

of the Environmental Protection License for the following activities :-

1. Caustic soda manufacturing industries
2. Soaps, detergents or any other cleansing preparations manufacturing industries where 25 or more workers are employed.
3. Acid (Inorganic or organic) manufacturing or repacking industries
4. Chemical fertilizer manufacturing, formulating, processing or repacking Industries
5. Insecticides, fungicides, herbicides, pesticides manufacturing, formulating or repacking industries.
6. Oil (mineral oil or petroleum) refineries
7. Bulk petroleum liquid storage facilities having a total capacity of 150 or more metric tons.
8. Dye and dye intermediate manufacturing or formulating industries
9. Paints (emulsion or enamel), inks, pigments, varnish, polish manufacturing or formulating industries
10. Petrochemical (basic or intermediates) manufacturing or formulating industries
11. Explosives manufacturing or formulating industries
12. Match sticks manufacturing industries
13. Industrial gas manufacturing, processing or refilling industries excluding auto gas filling stations
14. Asphalt processing plants
15. Industries involved in the manufacture of polymers or polymer based products (i.e. polyethylene, polyvinyl chloride (PVC), polyurethane, polypropylene, polyester, nylon, polystyrene, resins, fiberglass or other man made fibers etc.)
16. Industries involved in the use of fiberglass as a raw material where 10 or more workers are employed
17. Synthetic rubber, natural rubber manufacturing or processing or rubber based industries excluding industries which manufacture 100 kilograms or less per day of ribbed smoke rubber sheets.
18. All types of tyres, tubes manufacturing or tyre retreading industries
19. Activated carbon, carbon black manufacturing or coconut shell burning industries exceeding the total input capacity of 10,000 or more coconut shells per batch within a single production cycle.
20. Battery manufacturing or reconditioning industries
21. Any industry involved in the use of asbestos fibre as a raw material
22. Industries involved in manufacturing, extracting or formulating pharmaceuticals or cosmetic products including intermediates
23. Industries involved in manufacturing or extracting or formulating Ayurvedic, Indigenous medicinal products where 25 or more workers are employed.
24. Printing presses with lead smelting
25. Batik industries where 10 or more workers are employed
26. Textile processing (i.e. bleaching, dyeing, printing) industries or garment washing industries
27. Commercial laundries with dry cleaning operations using organic solvents where 10 or more workers are employed
28. Tanneries
29. Leather finishing industries having effluent generating wet operations.
30. Jute processing industries
31. Industries involved in bleaching or dyeing of natural fiber
32. Power looms having 25 or more machines or power looms with sizing activities
33. Sugar factories or sugar refineries
34. Fermentation industries (Distilleries, Breweries) or alcoholic beverages bottling plants
35. Vegetable, fruit, meat, seafood, milk processing industries where 25 or more workers are employed
36. Abattoirs
37. Plants (other than coconut) or animal bile/fats extracting industries.
38. Coconut oil extraction industries where 25 or more workers are employed
39. Bakery products, biscuits, confectionery manufacturing industries where 25 or more workers are employed
40. Instant tea or coffee processing industries.

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Part I: Sec (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

41. Non-alcoholic beverages manufacturing industries where 25 or more workers are employed.
42. Bottling plants having bottle washing operations using caustic soda
43. Desiccated coconut mills
44. Rice mills having wet process and having a production capacity of 5000 kilograms or more per day
45. Poultry farms having 2500 or more birds
46. Hatcheries
47. Piggery, cattle, goat farms having 50 or more animals
48. Animal feed manufacturing industries having a capacity of 25 or more metric tons per day
49. Cigarettes or other tobacco products manufacturing industries where 50 or more workers are employed
50. Zoological gardens
51. Electrical power generating utilities having a cumulative capacity of 300 Kilowatt (KW) or more excluding hydro or solar or wind power generation
52. Surface treatment or metal or plastic industries including electroplating, galvanizing industries
53. Iron and steel mills
54. Foundries with cupola, arc furnaces or induction furnaces
55. Non-ferrous metal processing industries such as Lead, Zinc, Copper, Aluminium smelting, secondary Lead processing or recovery of metals including silver recovery from photographic chemical solutions
56. Cement industries (clinker grinding, manufacturing or repacking)
57. Concrete batching plants exceeding a capacity of 50 or more cubic meters per day
58. Glass or glass product manufacturing industries
59. Lime kilns having a production capacity of 20 or more metric tons per day
60. Ceramic industries where more than 25 or more workers are employed
61. Processing of non-metallic minerals (i.e. limestone, shell, dolomite, apatite, rock phosphate, sand stone, feldspar, quartz, ilmenite, rutile, zircon, mica, graphite, kaolin etc.)
62. Granite crushing or processing industries having a total production capacity of 25 or more cubic meters per day
63. Paper and Pulp Industries excluding hand made papers
64. Any chemical manufacturing industry not elsewhere specified in this list
65. Any common wastewater (industrial or sewage) treatment plants
66. Incinerators having an input capacity of 5 or more metric tons per day and crematoriums
67. All hazardous waste disposal sites
68. Water treatment plants with treatment capacity of 10,000 or more cubic meters per day
69. Industries involved in chemical treatment and preservation of wood (Excluding Boron treatment)
70. Saw mills having a milling capacity of 50 or more cubic meters per day
71. Hotels, Guest Houses, Rest Houses with 20 or more rooms
72. Hostels having a boarding capacity of 200 or more boarders
73. Any industry where 200 or more workers per shift are employed
74. Mechanized mining activities with multi bore hole blasting with delay detonators.
75. Single bore hole blasting activities with production capacity exceeding 600 or more cubic meters per month.
76. Granite boulders making or processing industries.
77. Metal fabricating industries, machinery, machine tools, equipments manufacturing or assembling industries where 25 or more workers are employed.
78. Automobile assembly industries.
79. Vehicle service stations or container yards having vehicle service activities.
80. Any industry not indicated above which discharges 3 or more cubic meters of wastewater per day or using toxic chemical in its process.

PART B

2. (a) a fee or Rupees 3,000 shall be levied in respect of each application for the issue; and
- (b) a fee or Rupees 3,000 shall be levied in respect of each application for the renewal

of the Environmental Protection License for the following activities :—

8 A **ආකාරය : (1) ක්‍රියා - මිලියන ප්‍රමාණවලින් සාමාන්‍යයෙන් ජනවාරයේ දී වසරේ වැඩිම ප්‍රමාණය - 2000.11.22**
 PART I: Sec (1) - GAZETTE EXTRAORDINARY OF THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA - 22.11.2000

1. Soaps, detergents or any other cleansing preparations manufacturing industries where less than 25 workers are employed.
2. Bulk petroleum liquid storage facilities having a total capacity less than 150 metric tons
3. Ribbed smoke rubber sheets manufacturing industries having a production capacity of more than 50 kilograms per day and less than 100 kilograms per day.
4. Coconut shell burning industries having a total input capacity of more than 1,000 coconut shells and less than 10,000 coconut shells per batch within a single production cycle.
5. Industries involved in manufacturing, extracting or formulating Ayurvedic, Indigenous medicinal products where more than 10 workers and less than 25 workers are employed.
6. Printing presses excluding lead smelting.
7. Batik industries where less than 10 workers are employed
8. Industries involved in the use of fibre glass as a raw material where less than 10 workers are employed
9. Commercial laundries with dry cleaning operations, using organic solvents where less than 10 workers are employed.
10. Leather finishing industries other than having effluent generating wet operations.
11. Coconut fibre mills excluding bleaching or dyeing processes of natural fibre are carried out
12. Power looms having less than 25 weaving machines
13. Hand looms having more than 10 loom
14. Sugar cane industries excluding sugar factories or sugar refineries
15. Vegetable, fruit, meat, seafood, milk-processing industries where more than 5 workers and less than 25 workers are employed
16. Coconut oil extraction industries where more than 10 workers and less than 25 workers are employed.
17. Bakery products, biscuits, confectionery manufacturing industries where more than 5 workers and less than 25 workers are employed
18. Non-alcoholic beverages manufacturing industries where more than 10 workers and less than 25 workers are employed.
19. Bottling plants other than plants having bottle washing operations using caustic soda.
20. Rice mills having wet process and having a production capacity of less than 5000 kilograms per day
21. Rice mills having dry operation process (other than having wet process)
22. Grinding mills.
23. Poultry farms having more than 50 birds and less than 2500 birds
24. Piggeries having more than 5 animals and less than 50 animals
25. Cattle, goat farms having more than 10 animals and less than 50 animals
26. Animal feed manufacturing industries, having a capacity of less than 25 metric tons per day
27. Electrical power generating industries having a total capacity of more than 100 KW and less than 300 KW excluding hydro or solar or wind power generation
28. Concrete batching plants having a capacity of less than 50 cubic meters per day
29. Concrete pre-cast industries
30. Mechanized cement block manufacturing industries
31. Lime kilns having a production capacity of less than 20 metric tons
32. Ceramic industries where less than 25 workers are employed
33. Tiles and bricks kilns
34. Granite crushing or processing industries having a total production capacity of less than 25 cubic meters per day excluding manual crushing operations using hand tools
35. Incinerators having an input capacity of less than 5 metric tons per day
36. Industries involved in Boron treatment of wood.
37. Saw mills having a milling capacity of less than 50 cubic meters per day
38. Carpentry workshops which use electricity power more than 3 HP
39. Residential hotels, Guest houses, Rest houses with less than 20 rooms

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40. Non-residential hotels, restaurants, eating houses with cooking facilities where more than 5 workers are employed
41. Hostels having a boarding capacity of more than 25 and less than 200 boarders
42. Garment industries where more than 10 workers and less than 200 workers per shift are employed
43. Single bore hole blasting activities having a production capacity of less than 600 cubic meters per month or other single bore hole blasting activities using explosives
44. Metal fabricating industries, machinery, machine tools, equipment manufacturing or assembling industries (including lathe workshops and welding shops) where less than 25 workers are employed
45. Garages where vehicle repairing activities or maintenance activities are carried out (including the facilities of carrying out, repairing, maintenance and installation of auto air conditions)

12-263/2

LD.B 4/81

THE NATIONAL ENVIRONMENTAL ACT, NO. 47 OF 1980

REGULATIONS made by the Minister of Forestry and Environment under section 32 read with section 23CC of the National Environmental Act, No. 47 of 1980 as amended by Act, Nos. 56 of 1988 and 53 of 2000.

MAHINDA WUSSICKERE,
Minister of Forestry and Environment.

Colombo,
21st November, 2000.

Regulations

National Environmental (Procedure for approval of projects) Regulation No. 1 of 1993 published in *Gazette Extraordinary* No. 772/22 of June 24, 1993 is hereby amended as follows :-

- (1) In regulation 7 thereof -
 - (a) by the substitution for paragraph (i) thereof of the following :-
 - (i) upon receipt of an Initial Environmental Examination Report, the Project Approving Agency shall submit a copy thereof to the Authority;
 - (ii) by the repeal of paragraphs (iii) and (iv) of that regulation ;
- (2) by the repeal of paragraphs (i) and (ii) of regulation 8 thereof ;
- (3) by the substitution for regulation 9 thereof of the following :-
 9. Upon receipt of the Initial Environmental Examination Report, the Project Approving Agency shall within a period of 21 days -
 - (i) grant approval for the implementation of the proposed project subject to specified conditions ; or
 - (ii) request the project proponent to submit an Environmental Impact Assessment Report ; or
 - (iii) refuse approval for the implementation of the proposed project with reasons for doing so.

12-263/3

Reference 2
Operation and Maintenance Manual
for
Moon Plains Sanitary Landfill Site
at Nuwara Eliya

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Reference 2 Operation and Maintenance Manual for Moon Plains Sanitary Landfill Site at Nuwara Eliya

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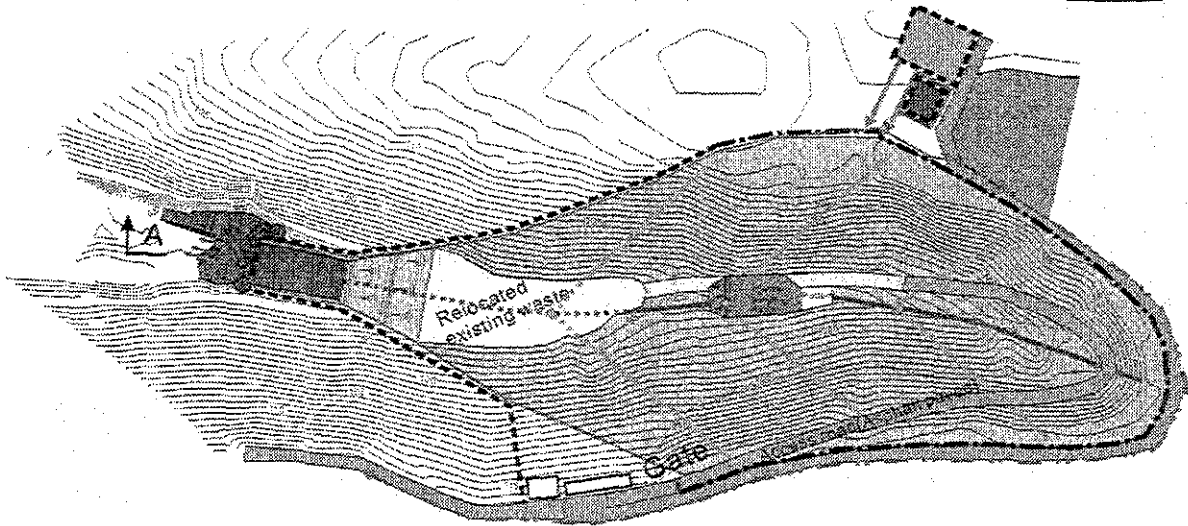
2.1 Waste discharging and covering soil

The waste shall be discharged to the landfill site from the platform. The waste discharging procedure is as follows.

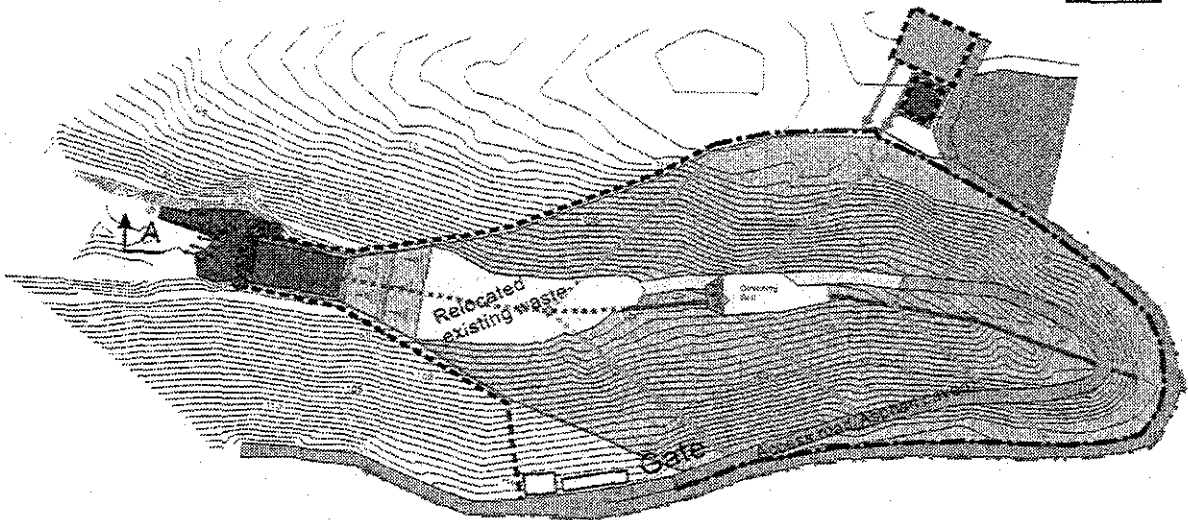
- 1) At the beginning of operation, the waste shall be discharged to the down at the landfill site from platform.
- 2) Bulldozer shall move and compact the discharged waste. The waste must not be scattered and it must be minimize as less as possible in order to decrease the amount of covering soil.
- 3) Covering soil shall be done every day.
- 4) The thickness of covering soil is approximately twenty (20) cm and it shall be done every day. Top soil can be utilized as covering soil
- 5) Covering soil could be excavated within the landfill site without damaging to other facility.
- 6) The area where is covered soil on the waste will become temporary access road for collection vehicle, therefore it must be compacted well by Bulldozer.
- 7) The steel plates can be utilised for the travelling of collection vehicle, when it is rain.
- 8) Waste shall be discharged only from the platform or active filling area from bottom of access road not from the top on the road.

The following figures show the operation procedure of discharging waste and covering soil.

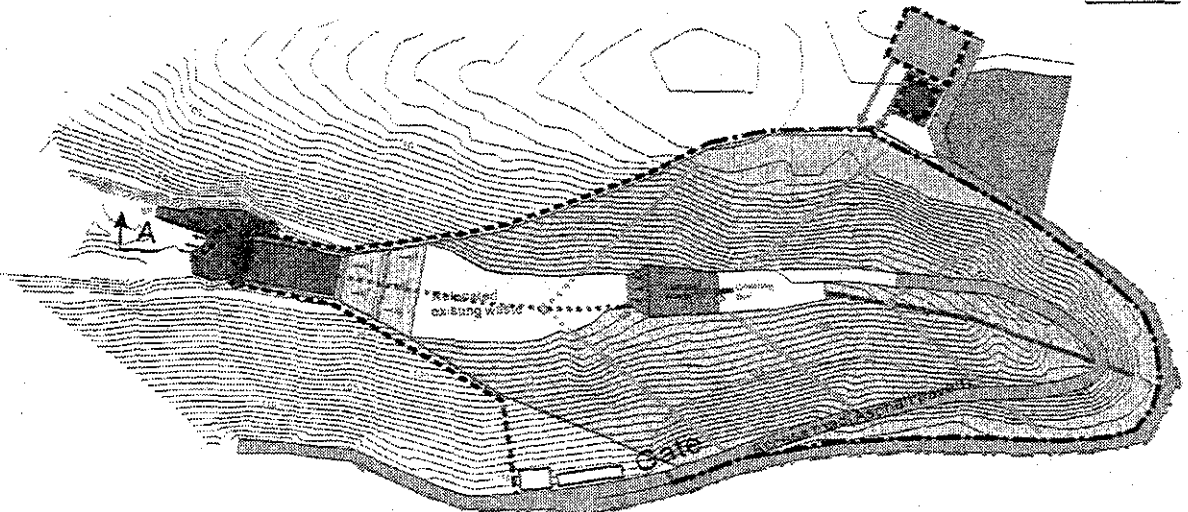
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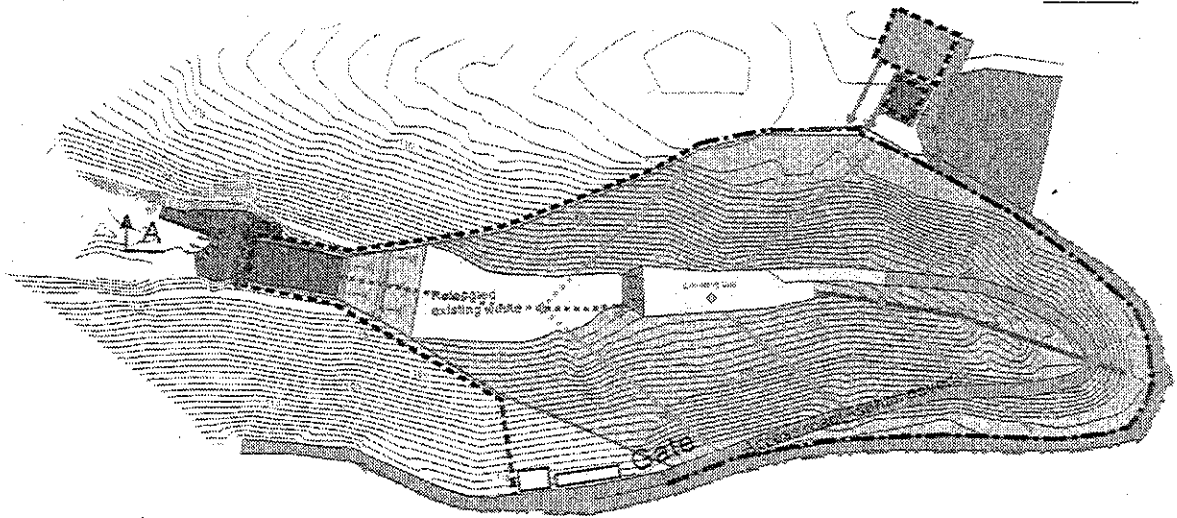
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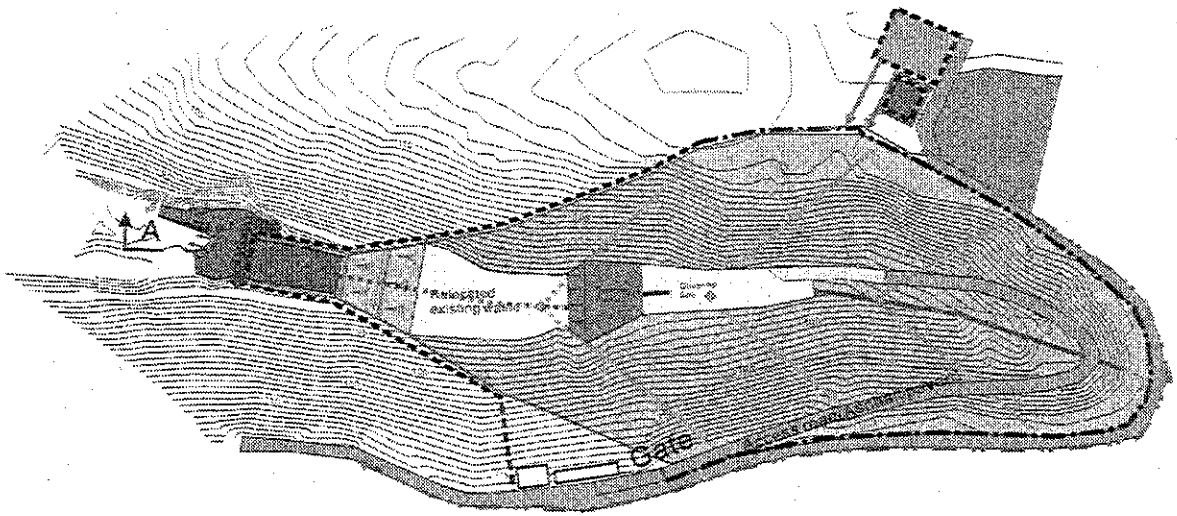
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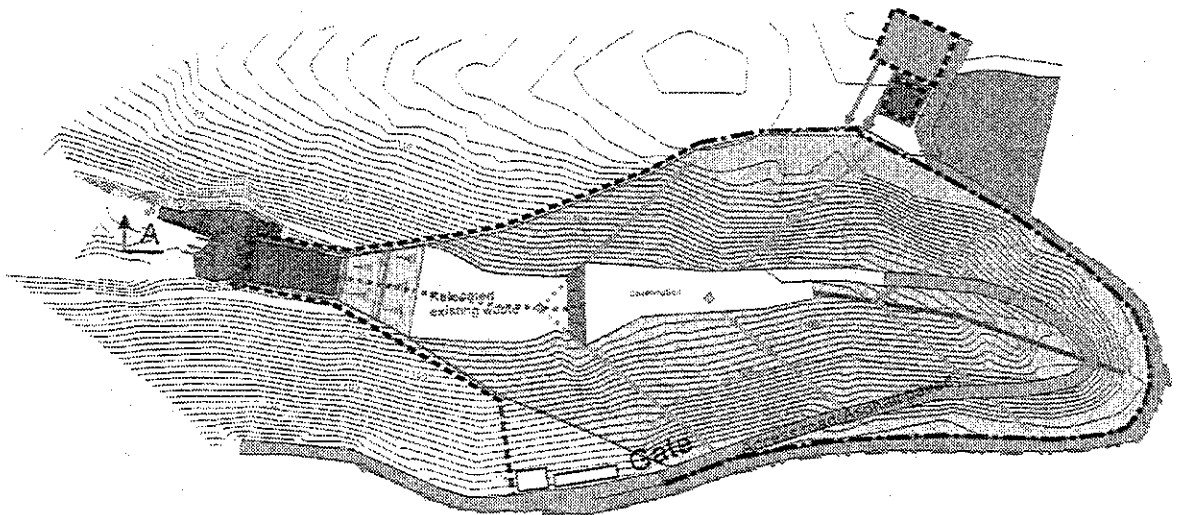
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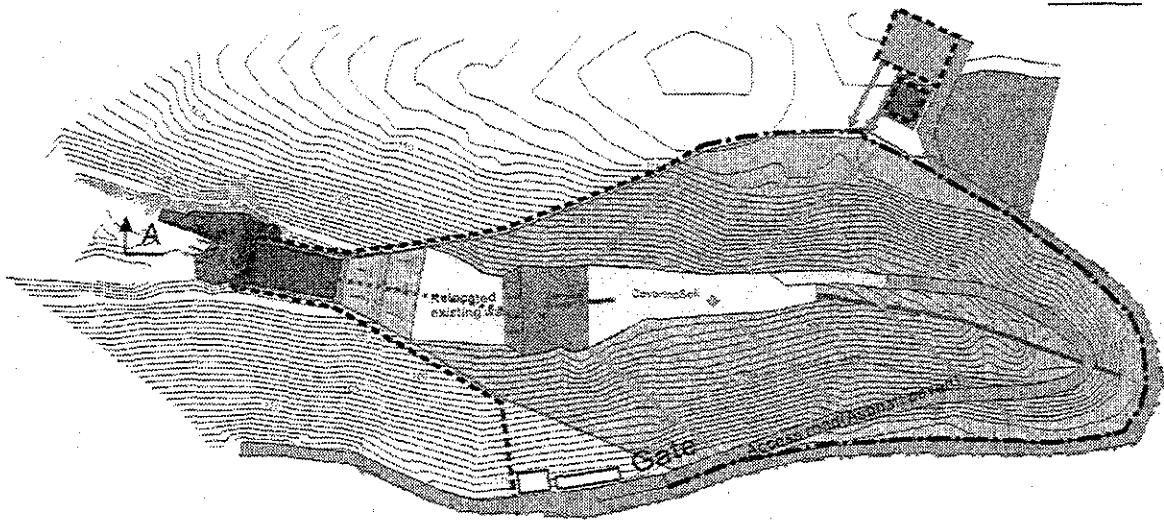
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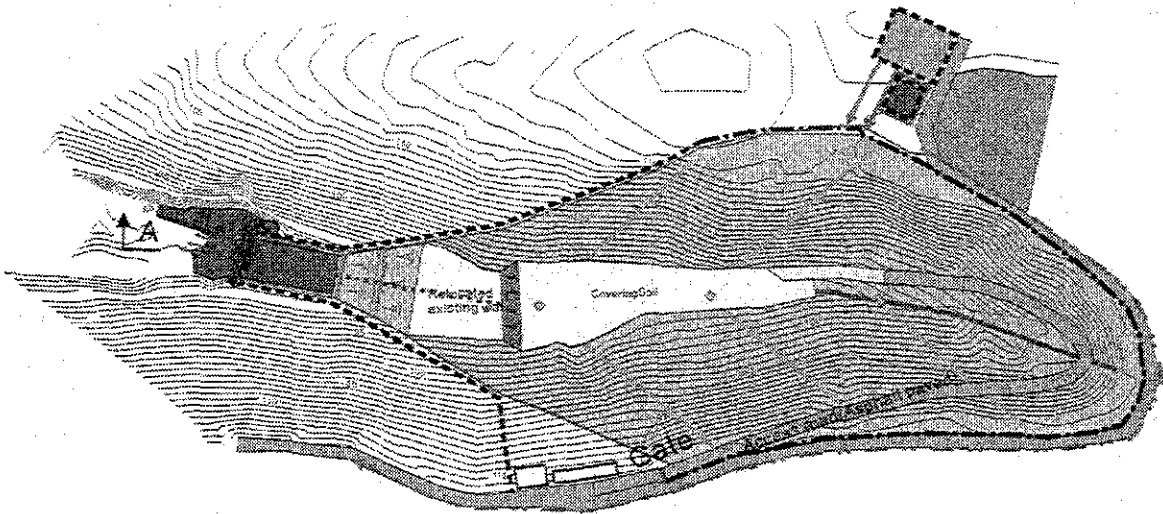
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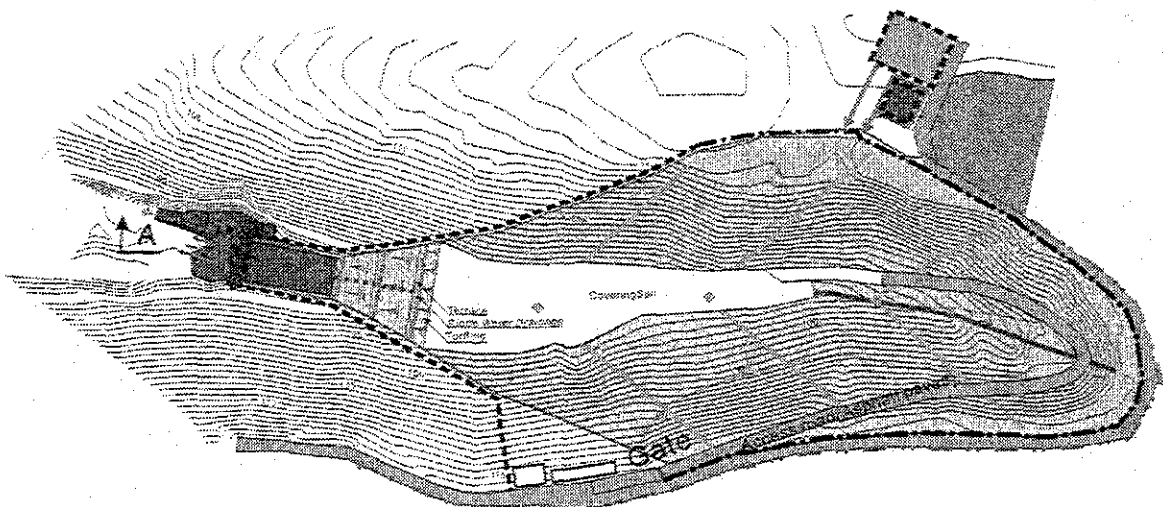
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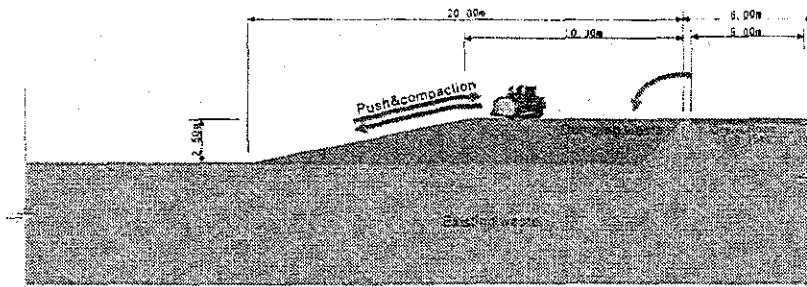
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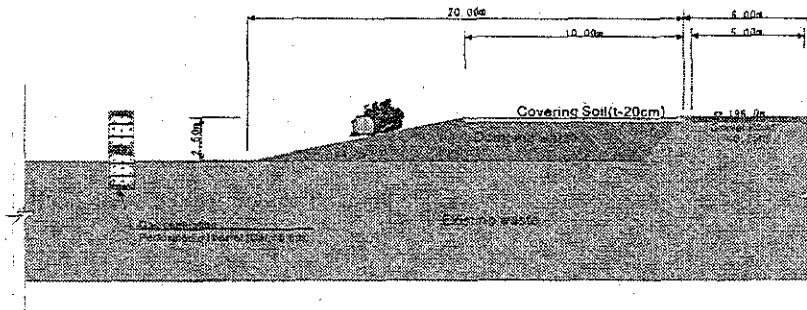
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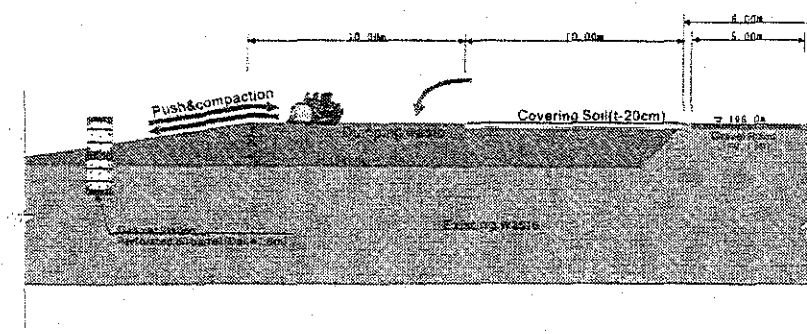
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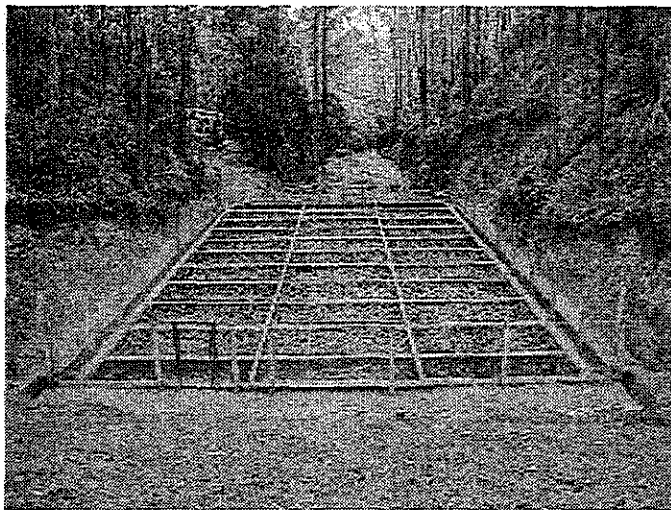


2.2 Leachate Treatment

2.2.1 Leachate treatment facility

The operation and maintenance of leachate treatment facility is as follows

- Leachate treatment facility shall be checked every morning whether somebody or animals fell or not.
- Leachate treatment facility shall be checked every morning whether there is leaking of leachate or not. If leaking is found, inform to Municipal engineer and CPHI immediately.
- Surrounding fence shall be maintained well in order to avoid animals or somebody falling to the leachate treatment facility.
- The soil at the pit for effluent of treated leachate shall be removed regularly.
- The coconuts fibre shall be replaced every five years.
- The charcoal filter shall be replaced regularly.
- The plantation as buffer zone between leachate treatment facility and existing road shall be maintained well.
- When leachate outflow is little, effluent of treated gully suck could be discharged to leachate treatment facility



The leachate treatment facility

2.2.2 Leachate collection facility

The maintenance of leachate collection pipe is as follows.

- Bulldozer is strictly prohibited to pass on the leachate collection facility uncovered by waste. The leachate collection facility is easily damaged by heavy equipments.
- Leachate collection facility shall be covered by waste and not to be covered by soil.
- The rubble or gravel stone around leachate collection facility should not be misplaced or removed



The leachate collection facility

2.2.3 Leachate collection pipe on the terrace

The maintenance of leachate collection pipe is as follows

- When the seeping out of leachate is found on the terrace, the leachate collection pipe might be cloggy. The obstacles shall be removed in order to discharge the leachate properly.



Removing of the obstacles of cloggy leachate collection pipe.