Environmental Monitoring Report

Project Number: 35290-023
August 2018
Period: July 2017 – December 2017

IND: North Eastern Region Capital Cities Development Investment Program (NERCCDIP) – T1 (Meghalaya)

Submitted by:

State Investment Programme Management & Implementation Unit (SIPMIU), NERCCDIP, Urban Affairs Department, Shillong, Meghalaya

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Asian Development Bank

GOVERNMENT OF MEGHALAYA
OFFICE OF THE PROJECT DIRECTOR
STATE INVESTMENT PROJECT MANAGEMENT AND IMPLEMENTATION UNIT
ASIAN DEVELOMENT BANK- ASSISTED NERCCDIP-PROJECT
URBAN AFFAIRS COMPLEX, DHANKHETI, SHILLONG.
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No. SIPMIU/MEG/37/2012/Pt-I/392, Dated Shillong the 23rd Feb, 2018

From: - Shri. B. S. Sohliya,
Project Director,
State Investment Programme Management & Implementation Unit.

To:- Deputy Secretary,
Ministry of Housing and Urban Affairs (MoHUA),
Room No – 237 'C'
Nirman Bhawan,
New Delhi – 110011.

Sub:- Submission of Semi Annual Environmental monitoring Report for Tranche – I & II

Sir,

In inviting a reference to your letter cited above, please find enclosed herewith the Semi Annual Environmental Monitoring Report, July - December, 2017 for Tranche – 1 & II project, Shillong for favour of kind information and perusal.

Yours faithfully,

Enclosed:- As above

Project Director,
SIPMIU, Shillong.

Memo No. SIPMIU/MEG/37/2012/Pt-I/392 - A, Dated Shillong the 23rd Feb, 2018

Copy to :- Mr. Vivek Vishal, Urban Development Specialist, South Asian Department, Asian Development Bank, 4 San Martin Marg, Chanakyapuri, New Delhi - 110021 for information. Copy of the report is enclosed.

Project Director,
SIPMIU, Shillong.

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Semi Annual Environmental Monitoring Report

Project Number 35290-01
Loan 2528 - IND
December, 2017)

India: North Eastern Region Capital Cities Development Investment Program – Shillong Solid Waste Management Subproject (Tranche-I, Shillong, Meghalaya) (July - December 2017)

Prepared by the State Investment Project Management and Implementation Unit (SIPMIU), Urban Affairs Department for the Asian Development Bank.

ABBREVIATIONS

ADB	—	Asian Development Bank
CBO	—	Community Building Organization
CLC	—	City Level Committees
CPHEEO	—	Central Public Health and Environmental Engineering Organization
CTE	—	Consent to Establish
CTO	—	Consent to Operate
DSMC	—	Design Supervision Management Consultant
EAC	—	Expert Appraisal Committee
EIA	—	Environmental Impact Assessment
EMP	—	Environmental Management Plan
GSPA	—	Greater Shillong Planning Area
GRC	—	Grievance Redress Committee
H&S	—	Health and Safety
IEE	—	Initial Environmental Examination
IPCC	—	Investment Program Coordination Cell
lpcd	—	liters per capita per day
MFF	—	Multi tranche Financing Facility
MOEF	—	Ministry of Environment and Forests
MSW	—	Municipal Solid Waste
NAAQS	—	National Ambient Air Quality Standards
NEA	—	National-Level Executing Agency
NER	—	North Eastern Region
NERCCDIP	—	North Eastern Region Capital Cities Development Investment Program
NGO	—	Nongovernmental Organization
NSC	—	National Level Steering Committee
O&M	—	Operation and Maintenance
PMIU	—	Project Management and Implementation Unit
PSP	—	Private Sector Participation
SEA	—	State-level Executing Agency
SEIAA	—	State Environment Impact Assessment Authority
SIPMIU	—	State-level Investment Project Management and Implementation Unit
SMB	—	Shillong Municipal Board
SPS	—	Safeguard Policy Statement
TOR	—	Terms of Reference
UD&PAD	—	Urban Development & Poverty Alleviation Department
UAD	—	Urban Affairs Department
UDD	—	Urban Development Department
ULB	—	Urban Local Body

I. INTRODUCTION

A. BACKGROUND

1. The North-Eastern Region Capital Cities Development Investment Program (NERCCDIP) envisages achieving sustainable urban development in the Project Cities of Agartala, Aizawl, Kohima, Gangtok and Shillong through investments in urban infrastructure sectors. Urban infrastructure and services improvement is proposed in the following sectors: (i) water supply; (ii) sewerage and sanitation; and (iii) solid waste management. The expected impact of NERCCDIP is increased economic growth potential, reduced poverty, and reduced imbalances between the North-Eastern Region (NER) and the rest of the country. The expected outcomes of the Investment Program will be an improved urban environment and better living conditions for the 1.65 million people expected to be living in the NERCCDIP cities by 2018. To this end, NERCCDIP will (i) improve and expand urban infrastructure and services in the cities, including slums; and (iii) strengthen urban institutional management and the financing capacity of the institutions, including the urban local bodies (ULBs). Based on considerations of economic justification, absorptive capacity and sustainability of the implementing agencies, subprojects have been identified in each city in the priority infrastructure sectors.

2. Though NERCCDIP aims to improve the environmental condition of urban areas, the proposed improvements of infrastructure facilities may exert certain adverse impacts on the natural environment. While developing urban infrastructure facilities, impacts during the construction stage are expected to be more severe than impacts during the operation phase, though for a short duration. Exceptions being some facilities such as solid waste landfills and sewage treatment plants, which may also exert adverse impacts during the operation phase, if due care is not taken.

3. NERCCDIP will be implemented over a six year period beginning in 2010, and will be funded by a loan via the Multitranche Financing Facility (MFF) of the Asian Development Bank (ADB). The Ministry of Urban Development (MOUD) is the national Executing Agency. State-level Investment Program Management and Implementation Units (SIPMIU) in each state are responsible for overall technical supervision and execution of all subprojects funded under the Investment Program. The SIPMIU is being assisted by design, management and supervision consultants (DMSC) who are designing the infrastructure, managing the tendering of contracts, and will supervise construction.

4. ADB requires the consideration of environmental issues in all aspects of the Bank's operations, and the requirements for Environmental Assessment are described in ADB's

Safeguards Policy Statement (SPS, 2009). This states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, loans involving financial intermediaries, and private sector loans. ADB has provided on its part, a Project Preparatory Technical Assistance (TA 4348-IND) for the preparation of an urban sector profile of the North-Eastern states, followed by a Technical Assistance (TA 4779-IND) for Project Implementation and Urban Management in the North-Eastern Region (Phase I) to initiate the works under Tranche 1.

5. An Initial Environmental Examination (IEE) has been prepared for the Shillong Solid Waste Management Subproject as part of NERCCDIP -Tranche 1. Under the NERCCDIP Tranche-1 programme, the subproject covers construction of a short-term sanitary landfill site over an area of 6500 sqm.

Extent of the IEE Study

6. The IEE report covers the general environmental profile of Shillong and includes an overview of the potential environmental impacts and their magnitude on physical, ecological, economic, and social and cultural resources within the subproject's influence area during design, construction, and operation stages. An Environmental Management Plan (EMP) is also proposed as part of this report which includes mitigation measures for significant environmental impacts during implementation of the Project, environmental monitoring program, and the responsible entities for mitigation and monitoring.

ADB Policy

7. ADB requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for Environmental Assessment are described in ADB's SPS (2009). This states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, loans involving financial intermediaries, and private sector loans.

8. **Screening and Categorization.** The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impact are assigned to one of the following four categories:

(i) **Category A.** Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.

(ii) **Category B.** Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

(iii) **Category C.** Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.

(iv) **Category FI.** Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all Projects will result in insignificant impacts.

9. **Environmental Management Plan.** An EMP which addresses the potential impacts and risks identified by the environmental assessment shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the Project's impact and risks.

10. **Public Disclosure.** SIPMIU will post the following safeguard documents on its website so affected people, other stakeholders, and the general public can provide meaningful inputs into the project design and implementation:

(i) For environmental category A projects, draft EIA report at least 120 days before Board consideration;

(ii) Final or updated EIA and/or IEE upon receipt; and

(iii) Environmental Monitoring Reports submitted by SIPMIU during project implementation upon receipt.

B. PROJECT PROFILE

Type, Category and Need

11. **Type.** This is a solid waste management subproject intended to improve the current situation in Shillong in terms of providing a disposal area, improving the collection system, and raising the awareness of the community of their responsibility to place their waste at collection points, and to segregate waste that is suitable for recycling.

12. **Category.** Environmental examination indicates the proposed subproject falls within ADB's environmental Category B projects. The Project components will only have small-scale, localized impacts on the environment, and can be mitigated. Under ADB procedures such projects require an IEE to identify and mitigate the impacts, and to determine whether further study or a more detailed EIA may be required.

13. **Need.**The subproject is needed because the present solid waste infrastructure in Shillong is inadequate for the needs of the growing population. There are too few collection points and people deposit their solid waste on open grounds where it creates unhealthy environment and produces health hazard. Although the municipality collects the waste from these areas periodically, the service is not systematic. Similarly for the final disposal of the waste generated by the city, there is a need to replace the 100 TPD old compost plant with a new better one with a higher capacity, there is no systematic and scientific way for the final disposal of the rejects from the compost plant.

14. The primary objective of the subproject is to adopt sanitary landfilling for ultimatedisposal of the rejects from the compost plant as per Municipal Solid Waste (Management and Handling) Rule (MSW Rules) (2000) and the Solid Waste Management Rules 2016 in the interests of health and economic wellbeing of the people of Shillong.

Location and Implementation Schedule

15. The subproject site is located on a vacant land within the existing landfill site at Marten about 8 km outside Shillong city.

16. Although implementation was originally scheduled to start from 2010-2011, actual implementation could only start during March 2012. The original completion period for the work was 18 months. However, due to change in design and quantum of work, the completion period was completed on May 2017. The change of design includes changes from masonry wall to RCC counterfort wall for more stability and increase of capacity by 27000 cubic meters. Water table is not available at 100 meters so drilling depth has been increased

to 248 meters. The previous contractor was unable to complete the task within the stipulated period and has been terminated due to non-performance on October 2015. The fresh contractor B.D. Marbaniang has been selected for completion of remaining work of Tranche I and completed the work.

Description of the Subproject

1. Existing Solid Waste Management

17. **Management.** Solid Waste Management is managed by three different authorities for each town and village viz. (i) the Shillong Municipal Board (SMB) within the municipal area (ii) the Dorbars, outside the municipal area, and (iii) The Shillong Cantonment Board, within the cantonment area. The Meghalaya Government oversees all solid waste management in GSPA.

(i) Shillong Municipal Board – The SMB is responsible for collection transportation and disposal of solid waste generated in Shillong city. The area covered by SMB is 10.25 square kilometers (km^2). The Chief Executive Officer looks after the administration of SMB.

(ii) The Dorbars – The 10 census towns of Shillong Urban Agglomeration (SUA) include Mawlai, Nongthymmai, Madanryting, Pynthorumkhrah, Nongmynsong, Mawpat, Umpling, Nongkseh, Umlyngka and Lawsohtun. Each town is divided into a number of DorbarShnongs and each Dorbar Shnong has a Headman. The DorbarShnong looks after the collection and transportation of solid waste generated in their respective localities.

(iii) Shillong Cantonment Board (SCB) - This is a military area covering 1.84 km^2. The solid waste generated in the Cantonment area is collected and transported, separately by cantonment vehicles. The Cantonment Executive Officer (CEO) looks after the administration of Shillong Cantonment Board (SCB).

18. **Waste Generation.** The solid waste generated in GSPA is 165 metric ton per day (MTD) with waste generation rate at 373 grams per capita per day in Shillong Urban Agglomeration (SUA) area and 274 grams per capita in the areas outside SUA but falling under GSPA. The major solid waste generation sources are households (56 %), markets (23 %), hotels & restaurants (7 %), construction waste (2 %), and street sweeping (7 %).

19. **Segregation.** Waste segregation is not practiced earlier in Shillong. The absence of segregation poses problems to the operation of the existing compost plant in Marten

dumpsite. However, waste segregation at source have started on July 2015 in a few localities of Shillong Municipal Board with the initiative of the NERCCDIP Project. Now all the localities under SMB have started segregation at source with an overall success of around 65 %.segregation

20. However, as far as bio-medical waste is concerned, the system adopted by SMB is found to be satisfactory. The bio-medical waste is collected by a van designed for this purpose and the waste is disposed off at incinerator, installed at Marten dumpsite.

21. **Collection and Transportation System.** The Health and Conservancy Department (HCD) of SMB looks after the work of collection and transportation of solid waste generated within the SMB.

22. Collection of segregated wastes from households in SMB areas is carried out with the help of two collection vehicles for different types of wastes(i.e. one for biodegradable & one for non- biodegradable wastes) in alternate days. Residents of different localities in SMB areas would bring in their segregated wastes in green & blue bins distributed to them through the NERCCDIP Project and disposed them in the two collection vehicles coming to their localities in specific timings. 16 collection vehicles procured through the NERCCDIP Project & 6 vehicles procured through the Swach Bharat Mission were added to the existing fleet of collection vehicles of Shillong Municipal Board. These vehicles collect only from SMB areas which generate about 70 MTD of wastes out of the 165 MTD of waste generated in GSPA. SMB authorities have dismantled all the stationary bins which often create unhygienic conditions and waste scattering.

23. NERCCDIP Project also cover other areas in Greater Shillong Planning Area (GSPA). 59 waste collecting vehicles which includes primary waste collection vehicles, secondary collection vehicles & compactors have been procured for areas outside SMB. Procurement of blue & green household bins is almost complete for areas outside SMB. 31 localities have already signed an agreement with the government for receiving the waste bins and collection vehicles. These facilities have already been handed over to some of these localities.

24. **Disposal.** The collected wastes are disposed at a disposal site located in Marten, located about 8 km from the city. The old 100 TPD compost Plant has been dismantled in January 2017 and a new 170 MTD compost plant is under construction in the same site. The disposal site has been in existence since 1938. To improve the practice of dumping of rejects from the compost plant at the existing site and to comply with the requirements of MSW Rules, the component funded under NERCCDIP Tranche I is construction of an engineered landfill and associated infrastructures (leachate collection facilities, environmental protection measures etc.) in a portion of the site covering an area of 6500 sqm in Tranche-1.. The bid

evaluation report for all the works under Tranche I has been approved by ADB on 12th March 2010 and the approval for issuance of acceptance letter for successful bidders has been issued on 1st April 2010. The actual work has started from March 2012.

25. A compost plant with a capacity of 100 MTD was constructed in the Marten dumpsite in 2002. The compost plant was dismantled on January 2017 and a new 170 MTD capacity will be constructed in its place which is now under construction.

2. Subproject Component

26. The subproject covers construction of a short-term sanitary landfill site with associated works over an area of 6500 sqm at Marten and as detailed in Table-1 below.

Table 1: Shillong Solid Waste Management Subproject Components

Component	Location	Function	Description	Remarks/ Progress	
(i) Civil Works					
Development of emergency sanitary landfill measuring 6,500 m^2		Marten, Mawlai	Final disposal of the rejects/ inert materials of the waste collected from the city.	It is proposed to develop a sanitary landfill for an area of 6,500 sqm in Tranche – 1	No land acquisition required. Construction work completed.
Reinforced cement concrete (RCC) counterfort retaining wall		Marten, Mawlai	To protect the waste from sliding.	Height of retaining wall varies between7.5 Mtr To 12.5 mtr	Construction completed.
Leachate holding and treatment system	Marten, Mawlai	To treat the leachate collected from the landfill area.	Capacity of the leachate holding tank and material proposed.	All required clearances and approvals obtained for 15,000 m^2 emergency landfill site including 6500 m^2.	Construction completed
Concrete drains for surface run off	Marten, Mawlai	As surface drains	250X250 (L= 150 meter)		Construction completed
Approach Road	Marten Mawlai	Access	Length of approach road is 583 meter and width 3.5		Construction completed
Construction of leachate holding	Marten Mawlai	Collection of leachate	1 No.		Construction completed
Tube well with pumping main and pump set	Marten Mawlai	Water supply for maintenance and monitoring of ground water.	248m deep		Construction completed
Construction of ground level service reservoir	Marten Mawlai	Storage of water for maintenance	1 lakh litres capacity (1no)		Construction completed

Table 2: Progress of work till date

Component and Location	Scheduled Start and Completion dates	Actual and targeted Physical and Financial Progress Remarks
(i) Civil Works		
Development of emergency sanitary landfill measuring 6,500 m^2 at Marten Mawlai.	March-2012 Revised completion May 2017	100% progress has been achieved.

II. ENVIRONMENT ASSESSMENT& REVIEW FRAMEWORK

A. ENVIRONMENT LEGAL REQUIREMENT

EIA Notification (2006)

27. The Government of India's EIA Notification of 2006 (replacing the EIA Notification of 1994), sets out the requirement for environmental assessment in India. This states that Environmental Clearance is required for specified activities/projects, and this must be obtained before any construction work or land preparation (except land acquisition) may commence. Projects are categorized as A or B depending on the scale of the project and the nature of its impacts.

28. Category A projects requires Environmental Clearance from the National Ministry of Environment and Forests (MOEF). The proponent is required to provide preliminary details of the project in the form of a Notification, after which an Expert Appraisal Committee (EAC) of the MOEF prepares comprehensive Terms of Reference (TOR) for the EIA study, which are finalized within 60 days. On completion of the study and review of the report by the EAC, MOEF considers the recommendation of the EAC and provides the Environmental Clearance if appropriate.

29. Category B projects require environmental clearance from the State Environment Impact Assessment Authority (SEIAA). The State level EAC categorizes the project as either B1 (requiring EIA study) or B2 (no EIA study), and prepares TOR for B1 projects within 60 days. On completion of the study and review of the report by the EAC, the SEIAA issues the Environmental Clearance based on the EAC recommendation. The Notification also provides that any project or activity classified as category B will be treated as category A if it is located in whole or in part within 10 km from the boundary of protected areas, notified areas or inter-state or international boundaries.

30. The only type of infrastructure provided by the NERCCDIP that is specified in the EIA Notification is solid waste management.[1]

31. The Environmental Clearance has been received from SEIAA on 14th August 2009 for proposed landfill site at Marten dumpsite developed under Tranche 1.

[1] Per EIA Notification (2006) and also Annex 1 of the Project's Environmental Assessment and Review Framework, EC is required for preparation of land by the project management except for securing the land.

Water (Prevention and Control of Pollution) Act (1974)

32. Any component of urban infrastructure project having potential to generate sewage or trade effluent will come under the purview of the Water (Prevention and Control of Pollution) Act, 1974. Such projects have to obtain Consent for Establishment (CFE) under Section 25 of the Act from Meghalaya State Pollution Control Board before starting implementation and Consent to Operate (CTO) before commissioning. The Water Act also requires the occupier of such subprojects to take measures for abating the possible pollution of receiving water bodies.

33. The CFE for the proposed landfill at Marten dumpsite to be developed under Tranche I has been received from MSPCB on 26th November 2009 with validity till October 2010 which is further is extended by MSPCB till 31st October 2017.

Air (Prevention and Control of Pollution) Act (1981)

34. The subprojects having potential to emit air pollutants into the atmosphere have to obtain (CTE under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 from Meghalaya State Pollution Control Board before starting implementation and CTO before commissioning the project. The occupier of the project/facility has the responsibility to adopt necessary air pollution control measures for abating air pollution. If stone crushers, generators and other air pollution sources are to be established as part of the subproject, they will fall under the purview of the Air Act.

Solid Waste Management Rules 2016

35. The Government of India notified Solid Waste Management Rules 2016 in exercise of the powers conferred by Sections 3, 6 and 25 of the Environment (Protection) Act (1986) with the objective of regulating the management and handling of the municipal solid waste. Under the Rules, the municipal authority is required to take all steps to ensure that the municipal solid wastes generated in their jurisdiction are handled and disposed of without causing any adverse impact on human health or environment. This subproject is required to obtain authorization for setting up waste processing and disposal facility (including landfills) from Meghalaya State Pollution Control Board.

Forest Legislation

36. Forest legislation in India dates back to enactment of the Indian Forest Act, 1927. This Act empowers the State Government to declare “any forest land or waste-land, which is the property of Government or over which the Government has proprietary rights or to the whole or any part of the forest produce of which the Government is entitled”, a reserved forest or

protected forest. The State Government may assign to any village-community the rights of Government over a reserved forest - those are called village-forests. Act also allows Government control over forest and lands not being the property of Government.

37. Acts like clearing or break up of any land for cultivation or for any other purpose, damage to vegetation/trees and quarrying or removing any forest produce from reserved forest is prohibited. All these are also applicable to village-forests. For protected forests, with the provision of the Act, the State Government makes rules to regulate activities like cutting of trees and removal of forest produce, clearing or breaking up of land for cultivation or any other purpose, and for protection and management of any portion of protected forest.

38. The Government of India's Forest (Conservation) Act, 1980 (amended in 1988) restricts the deforestation of forests for use of non-forest purposes. According to the Act, State Government requires prior approval of the Government of India for the use of forest land for non-forest purposes (means the breaking up or clearing of any forest land) or for assigning least to any private person or agency not controlled by government. The Forest (Conservation) Rules, 2003 issued under this Act, provide specific procedures to be followed for conversion of forest land for non-forest purposes.

39. Conversion of forest lands that are part of National Parks/Sanctuaries and Tiger Reserve areas (notified under Indian Wildlife [Protection] Act, 1972) is not permitted. In exceptional case, the State Government requires consent of the Indian Board of Wildlife for obtaining approval of the State Legislature for de-notification of the area as a sanctuary.

40. Cutting of trees in non-forest land, irrespective of land ownership, also requires permission from the Meghalaya Forest and Environment Department (MFED). Afforestation to the extent of two trees per each tree felled is mandatory. The SMB with the assistance of the State Government has made a payment of INR 78,76,400/- to the State Forest Department for compulsory afforestation and net present value as per directive of the Govt. of India.

Table 2: Present status of environment& forest and other clearances

Town	Work Package	Applicable Legislation/ Type Of Clearance	Clearance Given By And Date	Subject/ Issue	Remark/ Action Needed
SHILLONG	Tranche I SWM Landfill site	EIA Notification 2006	SEIAA, Meghalaya14 August 2009	Environmental Clearance	Already received and valid till end of the project.
		Forest Conservation Act 1980	MOEF 21 November 2011	Forest Clearance	Already received and valid till end of the project
		Air Act 1981 and Water Act 1974	Meghalaya PCB 26 November 2009	Consent To Establish (CTE)	Already received and valid.

C. COMPLIANCE ON ENVIRONMENTAL LOAN COVENENTS

41. The Environment Loan Covenants under NERCCDIP requires the design, construction, operation and implementation of all sub-project facilities is carried out in accordance with the environmental assessment and review procedures and Initial Environmental Examinations (IEEs) for core sub-components agreed upon between the Government and ADB, and complies with the Government's environmental laws and regulations and ADB's Environment Policy (2002). Any adverse environmental impacts arising from the construction, operation and implementation of sub-component facilities will be minimized by implementing the environmental mitigation and management measures, and other recommendations specified in environmental assessment reports (e.g., IEEs). The Government will ensure environmental requirements will be incorporated in bidding documents and civil works contracts. . Issuance of bid documents will be made after review and clearance of IEE/EIA by ADB and SEIAA or MOEF. SIPMIU/DSMC will prepare and submit semi-annual report to ADB an environmental monitoring report that describes progress in implementation of the EMP and EARP and issues encountered and measures adopted; and compliance with the relevant assurances and loan covenants.

42. The sub project in Shillong is categorized as "B" and accordingly an IEE report has been prepared. The IEE maps the potential environmental impacts and mitigation measures and also specifies an environmental budget for environmental mitigation measures, monitoring requirements and capacity building at various stages of project implementation. IEE was made a part of the bidding document. In view of the fact that the actual implementation of the sub project has started in March 2012. The details of compliance with the environmental loan covenants are reflected in following Table-3.

Table 3: Compliance of Environmental Loan Covenants

Project Specific Covenants	Status/Issues
Preparation of IEE	Prepared and uploaded in SIPMIU websitehttp://sipmiu.nic.in/iee_report.html
Environmental Management Plan	Part of IEE report
Environmental budget	Part of IEE report
IEE to be part of bidding document	Incorporated
Semi-annual environmental monitoring report	To be submitted in January 2018.

D. ENVIRONMENTAL ORGANISATION AND MANAGEMENT

1. Details of Environmental cells setup in SIPMIU and DSMC

43. An Environmental Expert with intermittent input has been provided in DSMC with assistance being provided by an Engineering Assistant. SIPMIU has posted an Assistant Environmental expert being assisted by an administrative staff.

Sl. No.	Officer's Name	Designation	Mobile No	Email Address
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4.	K S Shivaprakash	Team Leader	+91 9449205726	shivaprakash.ks@mottmac.com
5.	Anjay Kumar	Environmental Specialist, DSMC	+91-9313329631	anjay.kumar@mottmac.com

2. Responsibilities for supervision of environmental matters

44. To ensure proper compliance of environmental safeguards, the Environmental Experts of DSMC and Environmental Officer SIPMIU monitors environmental matters and reports to the Project Manager who advises the Project Director.

3. Responsible for carrying out mitigation measures

45. During construction stage, implementation of mitigation measures is the construction contractor's responsibility while during operation stage, Government will decide agency that will be responsible for of maintenance or repair works after completion of construction and start of operation of Landfill.

46. To ensure implementation of mitigation measures during the construction period, contract clauses for environmental provisions will be part of the civil works contracts. Contractors' conformity with contract procedures and specifications during construction will be carefully monitored by SIPMIU and DSMC.

4. Responsible for carrying out monitoring measures

47. During construction, Environmental Specialist (ES) of DSMC and the Assistant Environmental Specialist (AES) of SIPMIU will monitor the construction contractor's environmental performance.

48. During the operation stage, monitoring will be the responsibility of an operator appointed by authority as well as Meghalaya Pollution Control Board.

5. Responsible for reporting

49. DSMC will submit periodic monitoring and implementation reports to SIPMIU, who will take follow-up actions, if necessary. SIPMIU will submit monitoring reports to the PD who will then submit to ADB. SIPMIU will also prepare semi-annual monitoring reports for IPCC and assist IPCC in preparing an semi-annual monitoring report to ADB. The annual report is to focus on the progress of implementation of the EMP and EARP and issues encountered and measures adopted, follow-up actions required, if any, as well as the status of Program compliance with subproject selection criteria, and relevant loan covenants. IPCC will seek clearance for submission and disclosure of the annual environmental monitoring report to ADB.

6. Third Party Agency for EMP

50. No Third Party Agency has been engaged.

7. GRIEVANCE REDRESS MECHANISM

51. Grievance redressal is being handled by SIPMIU. Grievances not redressed by the SIPMIU will be brought to the Independent Grievance Redress Committee (IGRC) set up to monitor project implementation in Shillong. The IGRC, is chaired by Principal Secretary, Urban Affair Department with representatives from the ULB, state government agencies, community-based organizations (CBOs) and NGOs. The IGRC will determine the merit of each grievance, and resolve grievances within 10 days of receiving the complaint. Grievance not redressed by the IGRC will be referred to the appropriate courts of law. The DSMC will keep records of all grievances received including: contact details of complainant, date that the complaint was received, nature of grievance, agreed corrective actions and the date these were effected, and final outcome. The grievance redress process is shown in Annexure-2.

52. There have been no complaints or grievance reported on the sub project till date.

53. All costs involved in resolving the complaints will be borne by the SIPMIU. The IGRCs will continue to function throughout the project duration.

III. EMP COMPLIANCE STATUS

54. Following Table 4 reflects the requirement and status of implementation of the Environmental Management Plan.

Table 4: Compliance with Environmental Monitoring Plan

Description of Impact	Monitoring of Mitigation	Frequency of Monitoring	Monitoring Conducted by	Compliance Status
Top soil conservation & Adequate Drainage arrangements within / around the disposal site	Stockpiles of earth not to be higher than 2 and side slopes shall not be more than 1:2. Proper Drainage arrangements to prevent any water logging within / around the site especially in the area around the leachate pits.	Quarterly verification with site activities	DSMC / SIPMIU	Complied.
Sources of Materials	Construction Contractor documentation	Quarterly submission for construction contractor As needed for DSMC	DSMC / SIPMIU	Complied. Material being sourced from the local market with necessary royalty paid to the Government.
Air Quality	(i) Location of stockpiles;	Twice a year for checking	Contractor/ DSMC /	Complied. Meghalaya Pollution

Description of Impact	Monitoring of Mitigation	Frequency of Monitoring	Monitoring Conducted by	Compliance Status
	(ii) complaints from sensitive receptors; (iii) heavy equipment and machinery with air pollution control devices; (iv) ambient air for respirable particulate matter (RPM) and suspended particulate matter (SPM); (v) vehicular emissions such as sulphur dioxide (SO2), nitrous oxides (NOx), carbon monoxide (CO), and hydrocarbons (HC)	records	SIPMIU	Control Board has conducted the Ambient Air Quality Testing in the month of January 2017 its results are given in **Annexure 5**.
Surface Water Quality	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) number of silt traps installed along drainages leading to water bodies; (iii) records of surface water quality inspection; (iv) effectiveness of water management measures; (v) for inland water: suspended solids, oil and grease, biological oxygen demand (BOD), and coliforms.	Thrice a year	Contractor/ DSMC/SIPMIU	Complied. No such instances found on the site. Meghalaya Pollution Control Board has collected samples in the month of January 2017 its results are given in **Annexure 5**.
Noise Levels	(i) Complaints from sensitive receptors; (ii) use of silencers in noise-producing equipment and sound barriers; (iii) Equivalent day and night time noise levels	Twice a year	Contractor/ DSMC/ SIPMIU	Complied. Meghalaya Pollution Control Board has conducted of Environmental Monitoring in the month of January 2017 its results are given in **Annexure 5**.
Landscape and Aesthetics	i) Waste Management Plan; (ii) complaints from sensitive receptors; (iii) SIPMIU/DSMC to report in writing that the necessary	Quarterly	DSMC/ SIPMIU	Complied. There is no sensitive receptor at the construction site.
Socio-	(i) Employment records;	Quarterly	DSMC/	Complied.

Description of Impact	Monitoring of Mitigation	Frequency of Monitoring	Monitoring Conducted by	Compliance Status
Economic - Employment	(ii) records of sources of materials		SIPMIU	All laborers are from the local area.
Occupational Health and Safety	(i) Site-specific Health and Safety (H&SH&S) Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage for workers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of H&SH&S orientation trainings (viii) personal protective equipment; (ix) % of moving equipment outfitted with audible back-up alarms; (x) sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal.	Quarterly	Contractor/ DSMC/ SIPMIU	
Community Health and Safety	(i) Traffic Management Plan; (ii) complaints from sensitive receptors	Quarterly	Contractor/ DSMC/ SIPMIU	Complied. There is no intervention from any community with the project. While local community has complains about the odor from existing landfill operation. While mitigation measure as spray of biological de-odorizer is being explored to mitigate the odour

Description of Impact	Monitoring of Mitigation	Frequency of Monitoring	Monitoring Conducted by	Compliance Status
				problem.
Quarry Sites and Borrow Pits	i) List of approved quarry sites and borrow pits; (ii) SIPMIU/DSMC report in writing that all necessary environmental restoration work has been adequately performed before acceptance of work.	Quarterly		Complied. Materials are procured from the local market. So, there is no borrow pits and quarry site.
Work Camps	(i) Complaints from sensitive receptors; (ii) water and sanitation facilities for employees; and (iii) SIPMIU/DSMC report in writing that the camp has been vacated and restored to pre-project conditions	Quarterly	Contractor/ DSMC / SIPMIU	Labor camp has not been constructed but sheds for day time rest and shelter during rain has been provided.

OBSERVATION RECOMMENDATION AND ACTION TAKEN

55. The completion of work of Tranche-I is complete with which include construction of Leachate treatment plant, construction of drainage which was completed on May 2017. The work under the sub project was started in March 2012 and completed on May 2017.

56. The facility like drinking water, toilets, houses for rainfall shelters with first aid facility and fire extinguishers have been provided at the site.

57. The excavated soil was transported to a privately owned land situated near the National Highway which being used by the landowner themselves for levelling their land. Some part of the excavated soil is used as back fill at the construction site of Garage cum workshop. Photographs are given in the Annexure-4.

Ambient Air Quality

58. Ambient Air Quality monitoring is being conducted at 2 locations. Meghalaya State Pollution Control Board has been engaged in compliance to the conditions of Environmental Clearance granted by the state level Environmental Impact Appraisal Committee. Particulate Matter (PM_{10}), SO_2, NO_x parameters have been selected for monitoring by MSPCB.

59. Ambient Air Quality monitoring at the landfill site was conducted on 30 January 2017. The concentration of Particulate Matter (PM_{10}) is well within the permissible limit of 100 µg/m^3. The 24 hour average concentration is 73.4µg/m^3 near proposed Garage-cum-workshop area and 71.9µg/m^3 near Emergency landfill site.

60. The average concentration of particulate matter (PM_{10}) is 56.8 µg/m^3at Emergency landfill site and 51.6 µg/m^3 at Garage-cum-workshop site.

61. The concentration of sulphur dioxide and oxides of nitrogen are also well within the permissible limit of 80 microgram per cubic meter. The 24 hour average observed concentration of sulphur dioxide (SO_2) is 2 µg/m^3.

62. Comparing to the baseline condition of sulphur dioxide of concentration varies from 2 to 6.2 microgram per cubic meters. While observed value of the construction time in January 2017, January 2016, June 2014 and June 2015 is 2 µg/m^3.

63. Oxides of nitrogen vary from 19.9 to 34.8 microgram per cubic meters in baseline condition while observed concentration during construction time is 24.5 µg/m^3 in January 2017 and 4.5 µg/m^3 in January 2016 at emergency landfill site. This variation is mainly attributed to the rainfall and cloud cover, because oxide of nitrogen is photochemical in nature which settles on ground in humidity and absence of sunlight.

64. At Garage cum workshop site, concentration of oxides of nitrogen is 19.3 µg/m^3 while last year in January 2016 it was 10.1µg/m^3. This is also attributable to rainfall and cloud cover variation in the area.

Noise level

65. Noise level testing has been conducted at 2 locations first one near the emergency SLF site at the gate and second at near the proposed Garage-cum-workshop at SLF at Marten. The proposed construction site is surrounded by a reserved forest and encircled by the Guwahati-Shillong road National Highways on one side and on the other side lies the old Guwahati Shillong road.

66. The discussion being presented here are of sampling conducted in the month of January 2017, January 2016, June 2015 and June 2014. Noise level presented in dB(A) of 24 hour sampling has been segregated in day and night time samples. The results have been compared with Ambient Noise Level under category of residential zone. While residential habitations are sufficiently away from the project site to get adverse impact. The noise

recipients are the workers of the emergency landfill and construction workers only. The local habitations are not impacted due to noise generated from the construction activity at Emergency Landfill site of Mawiong. Although noise levels at the sampling site are beyond the limit specified for residential zone, the source of noise is traffic of national highways.

67. The ambient noise level near the construction site of RCC counterfort wall has been conducted on 30th/31st January 2017, 28th January 2016, 11th /12th June 2015 and 25th /26th June 2014. The average of two years data of one day sampling of same season has been discussed here. The noise level of 30th January 2017 day time 50.2 dB(A) and night time 40.3 at sanitary landfill site is consistent to the previous year and main sources of noise is road traffic. The noise level at Garage-cum- workshop on 30 January 2017 day time is 66.2 dB(A) and night time 43.5 dB(A). this location is about 25 meters from the national highway so the noise level is higher due the noise contributed by the vehicles plying on the highway but within the permissible limit.

Water Quality

68. Samples of all location have pH value, total dissolved solids (TDS), total suspended Solids (TSS), dissolved oxygen, Chlorides, Zinc. Total Hardness and nitrates are within the desirable limits or permissible limits. Heavy metals tested for Lead, Arsenic, Copper, Cadmium and Nickel are below detectible limits (BDL). The observed monitoring values are consistent with the baseline conditions observed in the 2010.

69. Water sampling conducted at three streams near Marten Landfill site. All the parameters are within the permissible limits specified in Water (Prevention and Pollution) Act 1974. The parameters are also consistent with baseline condition. It is assessed during the monitoring there is no impact on water environment due to construction work at the landfill site. The impact which is estimated is due to the operation of Landfill at Marten.

Leachate Testing

70. Marten landfill site is operating since 1938. It does not have leachate treatment facility and leachate collection system. Leachate sample has been collected from the bottom of the Landfill. The parameters tested for the untreated leachates are beyond the permissible limited but consistent with the baseline condition

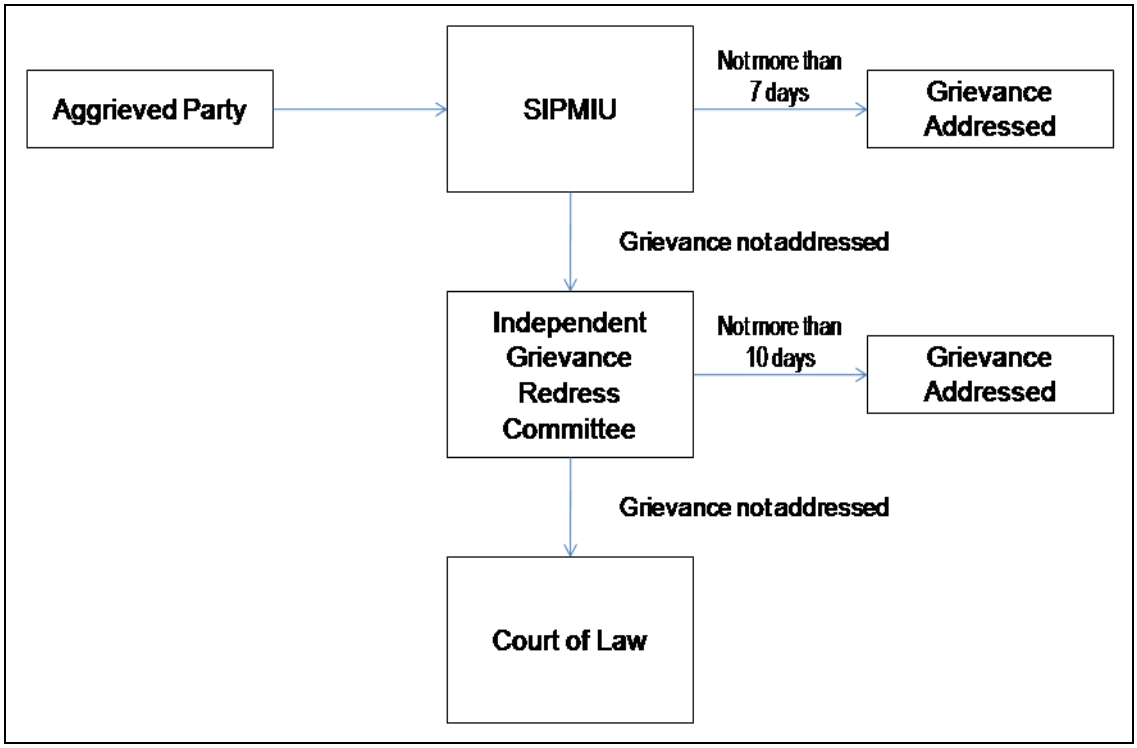
71. Total Dissolved Solids (TDS) in leachate collected in January 2017, January 2016, June 2015 and June 2014 are 16100, 18620, 17043 and 9870 mg/l. The permissible limit for disposal of leachate having TDS concentration as per Solid Waste Management Rules 2016 is 2100 mg/l.

Annexure – 1: Environment Monitoring Team Details.

City: Shillong
Office Address: Urban Affairs Complex, Dhankheti, Shillong

Sl. No.	Officer's Name	Designation	Mobile No	Email Address
1.	Shri B.S. Sohliya	Project Director	---	bsohliya@gmail.com
2.	Shri. F. B. Chyne	Project Manager and Solid Waste Management Specialist, SIPMIU.	9436100719	f.b.chyne@gmail.com
3.	Shri. L. C. J. Lyngdoh	Assistant Environment Specialist, SIPMIU	9774591279	carrylaw85@gmail.com
4.	K S Shivaprakash	Team Leader	9440205726	shivaprakash.ks@mottmac.com
5.	Anjay Kumar	Environmental Specialist, DSMC	9313329631	anjay.kumar@mottmac.com

Annexure 2: Grievance Redress Mechanism



SIPMIU= State-level Investment Project Management and Implementation Unit.

Annexure 3: Contractor Environment Implementation Plan Requirements.

The contractor is required to ensure that the following activities are complied with during the construction period:

1. All the vehicles used for the construction shall comply with relevant environmental standard. Worker to be provided with PPE's like earplugs to minimize the health impacts. Construction in the night time to be restricted to the extent possible.
2. Re-use excavated material in this project wherever possible (eg bunds), Retain soil for covering waste when landfill is operating.
3. Remove waste soil for disposal as soon as it is excavated; Spray stockpiled soil and working areas in windy weather.
4. Conduct all excavation in the dry season.
5. Do not store toxic materials at or near the landfill site; include accident & spill prevention in Method Statement.
6. Contractor should employ at least 50% of workforce from communities in vicinity of work sites if possible.
7. Prepare and implement a site Health and Safety Plan that includes measures to: Exclude the public from all construction sites; Ensure that workers use Personal Protective Equipment; Provide Health & Safety Training for all personnel; Follow documented procedures for all site activities; Keep accident reports and records.
8. Regular water sprinkling to be ensured to minimize the impact. Worker to be provided with PPE's like dust masks.
9. The Design consideration will take care of temporary silt runoff due to construction. Silt fences will be used to mitigate siltation impacts.

Contractor's Site Health and Safety Plan

0364 – 2590677(O)
94361-01181

Email: binmarbaniang@gmail.com

Sri B.D.Marbaniang
Registered Govt.Contractor & Supplier
Office Address: 'ADELINA' Lawmali, Shillong - 793001
Resident Address: Mawlai, Mawroh, Shillong - 793008

Site Health & Safety Plan

1. **Barricading**

a) The site will be barricaded to prevent any disruption to any traffic flow or to neighbours

b) All holes and pits, loading and unloading points will be properly barricaded to prevent any accidents. Deep excavation areas will always be properly barricaded with bamboos, railings, etc.

c) Proper Signboards will be put up wherever necessary as precautionary measure to prevent any mishaps.

2. **Personal Protective Equipment(PPE)**

a) Certified PPEs will be used by all workers on the site.

b) Helmets (yellow for workers & white for site engineers/ supervisors), gloves, dust masks (3M having N 95 Specifications), safety shoes/gumboots will be provided to all workers

c) Safety belts will be used for workers working in heights

d) Earplugs will be provided to workers in noise exposed working conditions

3. **Environment**

a) Construction waste will be disposed properly

b) Construction materials will be stored properly

c) Appropriate drains will be provided for waste water and rain water to prevent pollution

d) All vehicles carrying materials will be adequately covered.

e) Registration number of vehicles used for the project along with copies of pollution check certificate together with a scheduled of operation hours will be recorded.

f) Noisy work will not be carried out at night.

g) There will be no over accumulation of earth, stones, materials at the site.

4. **Working at height**

a) Proper barricades and scaffoldings will be provided for areas constructed at a height.

b) Proper walkway and footboard will be provided at the top.

c) Workers/supervisors will be provided with safety belts
d) All ladders used will be secured from the top/bottom.
e) All platforms, ladders, scaffoldings will be strong enough to take the load.

5. Construction Vehicles/Equipments

a) All vehicles will be operated only by an experienced and licensed operator.
b) Vehicles will maintain speed limits
c) Reversal of vehicles only under the guidance of a helper.
d) Reverse lights/horns will be fitted in all equipments/ vehicles.
e) Registration number of vehicles used for the project along with copies of pollution check certificate together with a scheduled of operation hours will be recorded.

6. Electrical Safety

a) All electric cables will be laid out safely
b) Standard quality plugs will be used
c) All electric joints will be properly insulated
d) A quality circuit breaker will be provided at every electrical connections.
e) Danger signs will be provided in required areas.

7. Excavations

a) All slopes will be maintained properly to prevent soil collapse.
b) If excavation is carried out during the monsoon season, proper protection measures will be employed.
c) All the periphery of the site being excavated will be properly barricaded.
d) Caution display boards will be placed at strategic locations so that it is visible to everyone.

8. Housekeeping

a) All equipments, construction materials, other materials will be kept at designed places.
b) Scraps, unwanted materials will be removed from time to time.
c) Carpenters will removed all nails and wooden waste after completion of the work.
d) Bar benders will remove all wire/bar pieces after completion of the work.
e) Temporary storage areas will be clearly designated.

9. Sanitation at the working site

a) At least two toilets (one for male& one for female workers) will be provided at the working site.
b) Drinking water will be provided to all workers.

10. First Aid Equipments

a) At least two sets of first aid equipments will always be ready at the site in case of injury.

Shri. B. D. Marbaniang
Govt. Regd. Civil & Elect Contractor
O/o : Adelina, Lawmali Shillong 1
Res : Eliana, Mawlai Mawroh, Shillong - 8
Ph No : 0364 - 2592095, 0364 - 2590677

Annexure 4 – Project Photographs

Photo 1 : Scientific Landfill Constructed at Marten in Shillong

Photo 2: Landfill construction is complete with Geotextile, geomembrane and drainage pipes laid

Photographs taken on 23 June 2017

Photo 3: Construction site of construction of RCC counterfort wall at Marten

Photograph taken on 11 December 2016

The construction of landfill under tranche I has been completed. This is first phase of 6500 sqaure meter out of 15000 square meter landfill proposed for construction of scientific land fill. 150 meters of retaining wall comprising of RCC couterfort and stone massonary retaining wall has been constructed. Lining system of geosynthetic liner, HDPE geomembrane, fine sand, network of leachate collection pipe covered with geotextile layer and coarse sand has been laid. This lining has also been provided at stone massonary retaining wall. A drainage layer to collect leachate and transport to the leachate tank where treatment will be given. The clean water will be released on land leading to forest and it will take course of streat finally. The sludge of leachate treatment tank will be taken back to lanfill for disposal as intert.

The construction of land fill had many challenges. Key challenges are :

- Construction of retaining wall on slope of hill having soft soil
- High rainfall and high number of rainy days in a year
- Availability of local labour for construction work and non acceptability of outside labour
- Tranportation of material from distant sources
- Performance of contractor having cashflow

Photo 3:synthetic lining at land fill

Photograph taken on 10 January 2018

Photo 4:Leachate treatment plant

Photograph taken on 10 January 2018

Leachate treatment plant has been constructed. The treatment plan has 3 stage filtration of 20-40 mm stone media and other 2 stage of 10 mm coarse river sand. The leachate characteristics of this land fill does not have heavy metals so tertiary treatment is not required.

Photo 5:Storm water drain covering around the land fill

Photo 6: the drain is lined

Photograph taken on 10 January 2018

Lined drains have been provided around the landfill area to discharge the storm water. This will prevent storm water entering into the landfill and mix with waste and leachate.

Photo 7:Sampling for Ambient Air Quality near Garage

Photo 8:Sampling for Ambient Air Quality near Sanitary Landfill site

Photo 9: Water Sampling for quality testing

Photo 10: Sampling for Leachate Testing

Annexure – 5 – Environmental Testing Analysis and Results

Water Quality Testing

Last Water Sampling was also conducted at the same locations as done in January 2017 and compared with historic results. The concentration does not vary significantly. The results are given below.

SL No.	Parameters	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	pH	7.9	8.3	7.6	7.3	7.3	8.4	7.2	7.2	5.9	7	6	6.2	8.1	7.7
2	Total Dissolved Solids (TDS) (mg/l)	65.0	102	66	68	96	68	102	115	45	33	54	55	120	60
3	Total Suspended Solids (mg/l)	10.0	100	5	20	20	15	25	15	10	10	10	10	20	10
4	Chlorides (mg/l)	6.0	17	7	6	12	18	13	15	5	13	6	5	7	20
5	Total Hardness (CaCO3) (mg/l)	36.0	108	38	36	36	90	56	62	20	24	26	26	88	46
6	Sulphate (mg/l)	15.3	2	13.8	9.8	15.1	1	15.7	23.6	17.3	2.3	3.8	8.9	15.5	15.1
7	Nitrate (mg/l)	0.4	0.26	0.44	0.6	4.5	0.19	5.3	5.95	1	1.4	1.4	1.6	0.27	5
8	Dissolved Oxygen (mg/l)	6.6	7.9	4.8	7.5	7.5	7.3	6.2	7.1	5.2	5.8	6.6	7	6.4	8.5
9	Lead (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
10	Chromium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11	Zinc (mg/l)	0.06	0.05	BDL	0.06	0.06	0.05	BDL	BDL	0.06	0.04	BDL	0.06	0.1	0.08
12	Copper (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
13	Cadmium (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14	Manganese (mg/l)	0.04	0.02	0.08		0.04	0.02	0.14		,04	0.03	0.13		0.04	0.03
15	Nickel (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Arsenic 9mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

SL No	Sampling		SL No	Sampling
1	Downstream 800 meters from Landfill		8	Middle Stream 200 meters 25.6.2014
2	Downstream 800 meters 28.01.2016		9	Spring 1 km from landfill site 30.01.2017
3	Downstrem 800 meters 11.6.2015		10	Spring 1 km from landfill site 28.1.2016
4	Downstrem 800 meters 25.6.2014		11	Spring 1 km from landfill site 11.6.2015
5	Middle Stream 200 meters 30.01.2017		12	Spring 1 km from landfill site 25.6.2014
6	Middle Stream 200 meters 28.1.2016		13	Spring 100 meters 30.01.2017
7	Middle Stream 200 meters 11.6.2015		14	Spring 100 meters 28.1.2016

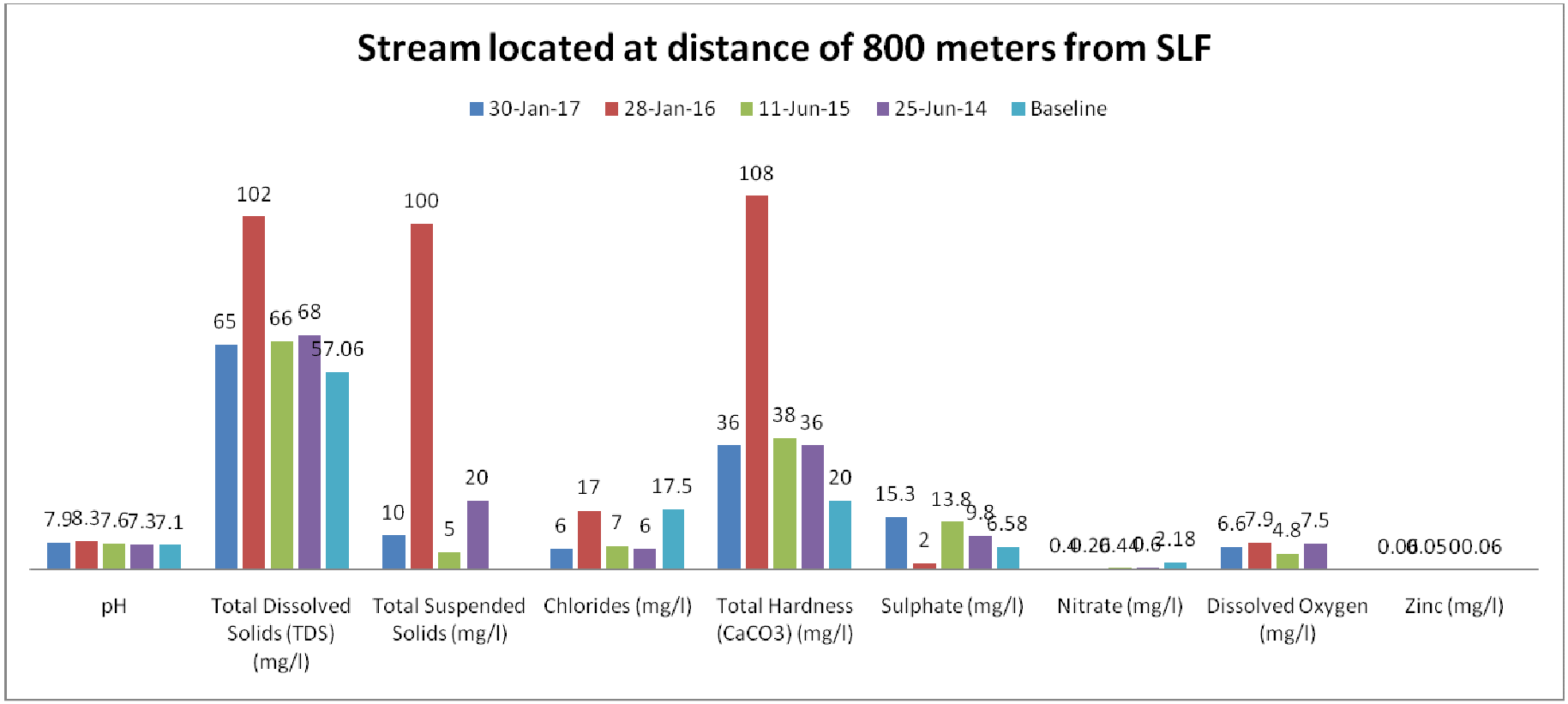
Water sampling conducted at three streams near Marten Landfill site. All the parameters are within the permissible limits specified in Water (Prevention and Pollution) Act 1974. The parameters are also consistent with baseline condition. It is assessed during the monitoring there is no impact on water environment due to construction work at the landfill site. The impact which is estimated is due to the operation of Landfill at Marten Mawiong. The analysis is given below.

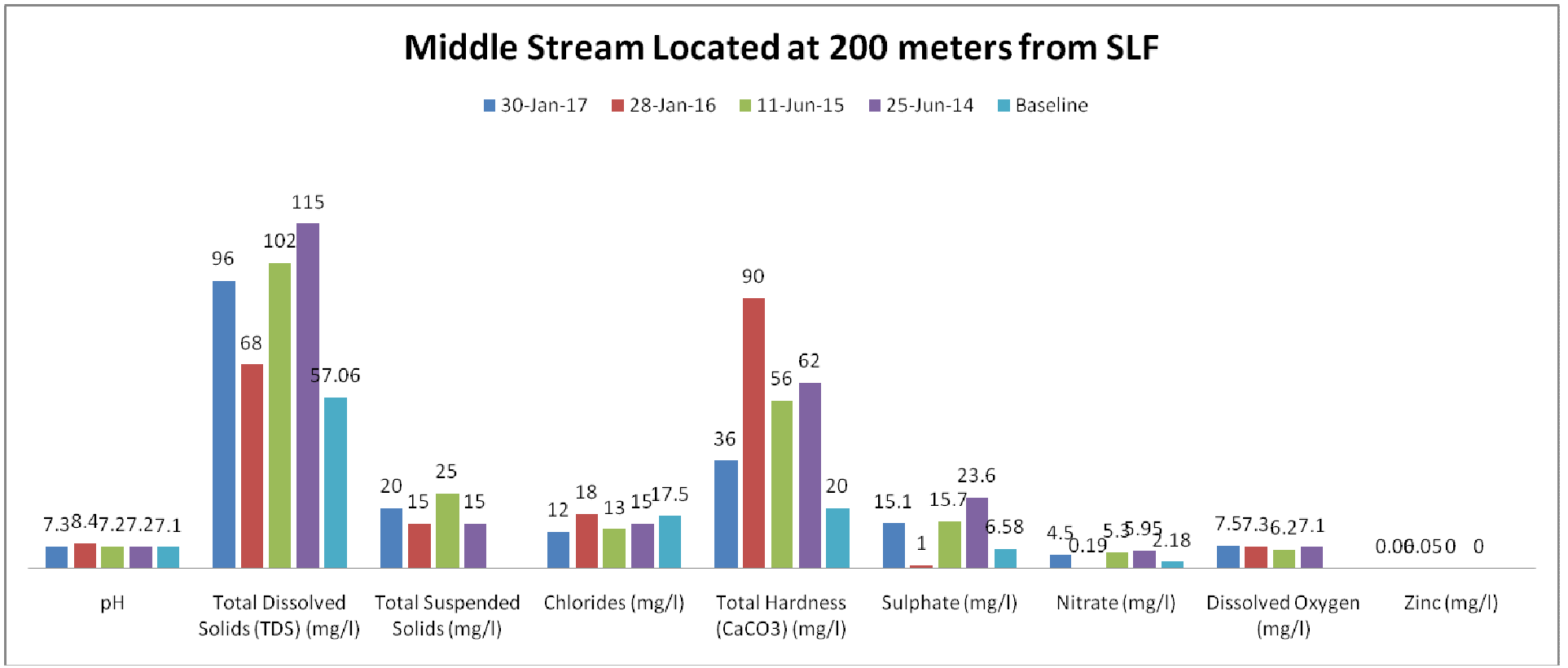
The trend of concentration of TDS, total hardness and Sulphates indicates the influence of landfill. The baseline condition shows that TDS, total hardness and Sulphates are 57.06 mg/l, 20 mg/l and 6.58 mg/l. Samples have been taken from different streams at different distances.

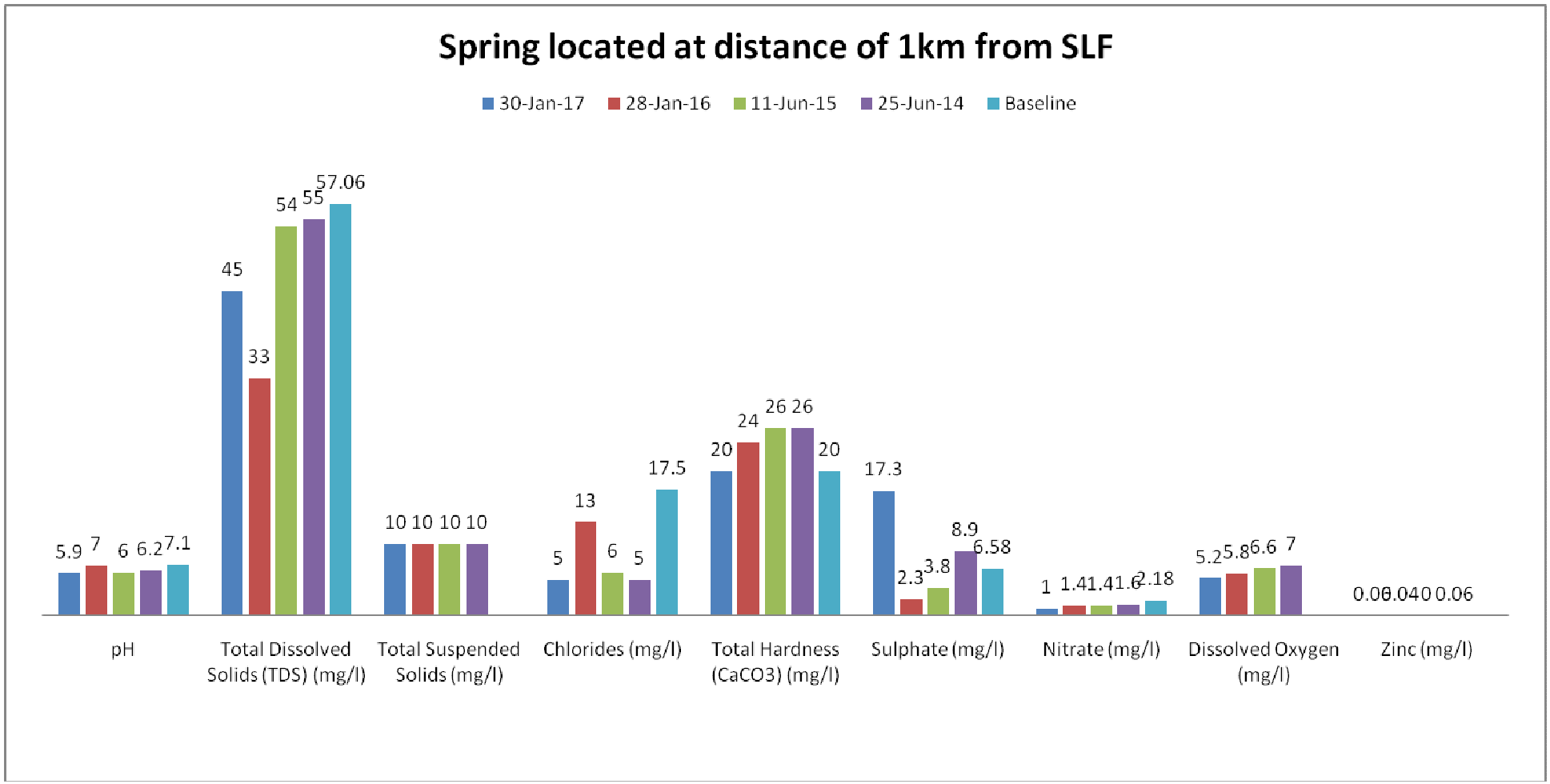
The value of TDS is highest in sample closest to Landfill at distance of 200 meter which is 102 and 115 mg/l in2016, 2015 and 2014. This decreases to 66 and 68 mg/l at distance of 800 meters from the landfill. TDS comes down to 54 and 55 mg/l in samples collected at a distance of 1 km.

Total Hardness is also highest in sample closest to Landfill at distance of 200 meter which is 56 and 62 mg/l in 2015 and 2014. This decreases to 38 and 36 mg/l at distance of 800 meters from landfill. It comes down to 33 mg/l in samples collected at a distance of 1 km.

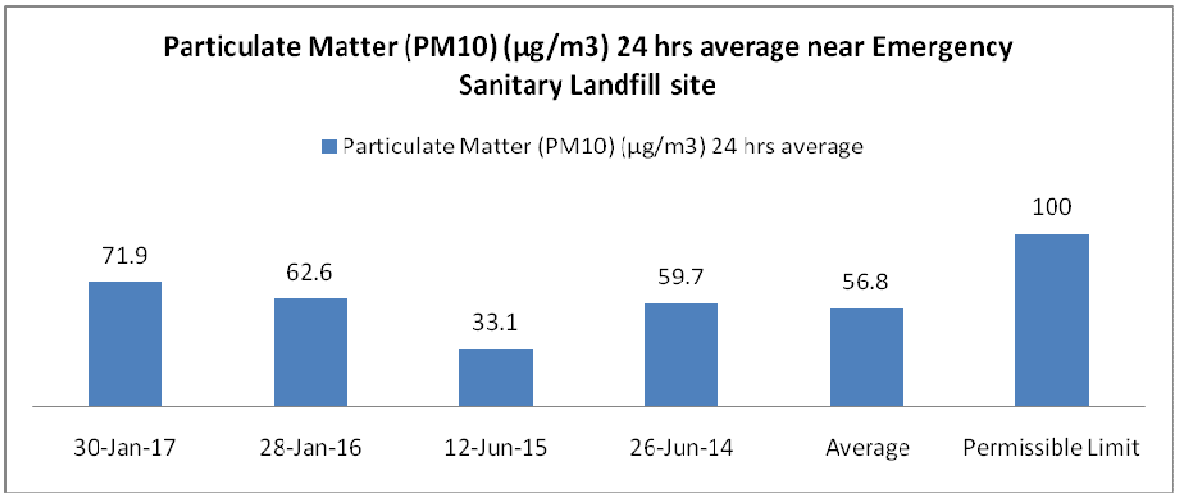
Sulphate is also highest in sample closest to Landfill at distance of 200 meter which is 15.7 and 23.6 mg/l in 2015 and 2014. This decreases to 1 mg/l with increase of distance of 800 meters from landfill. It comes to the 3.8 and 8.9 mg/l in samples collected at a distance of 1 km.

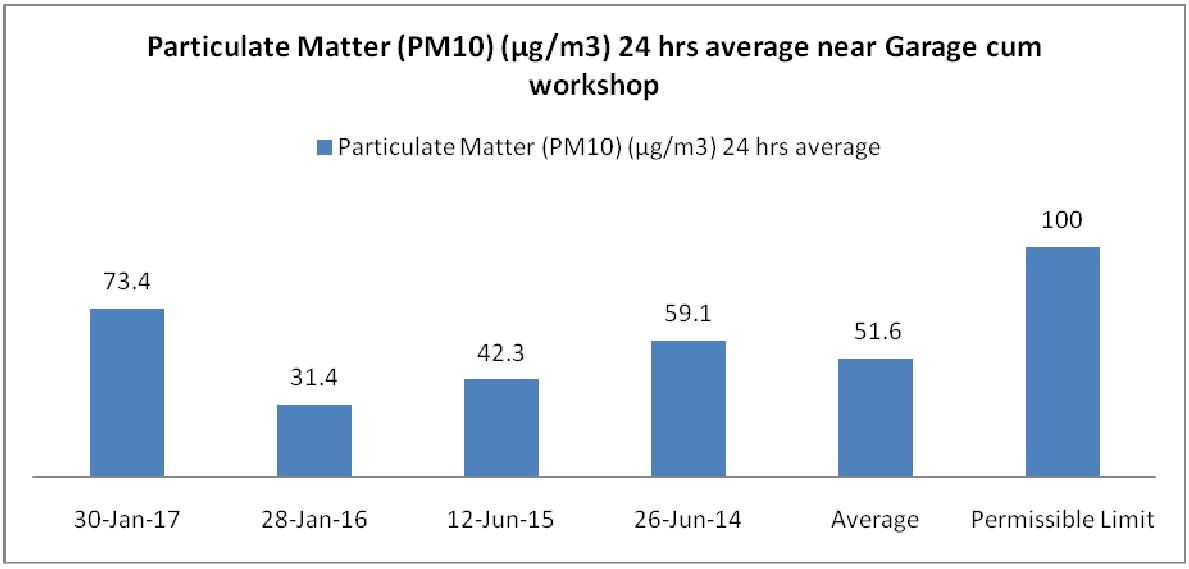


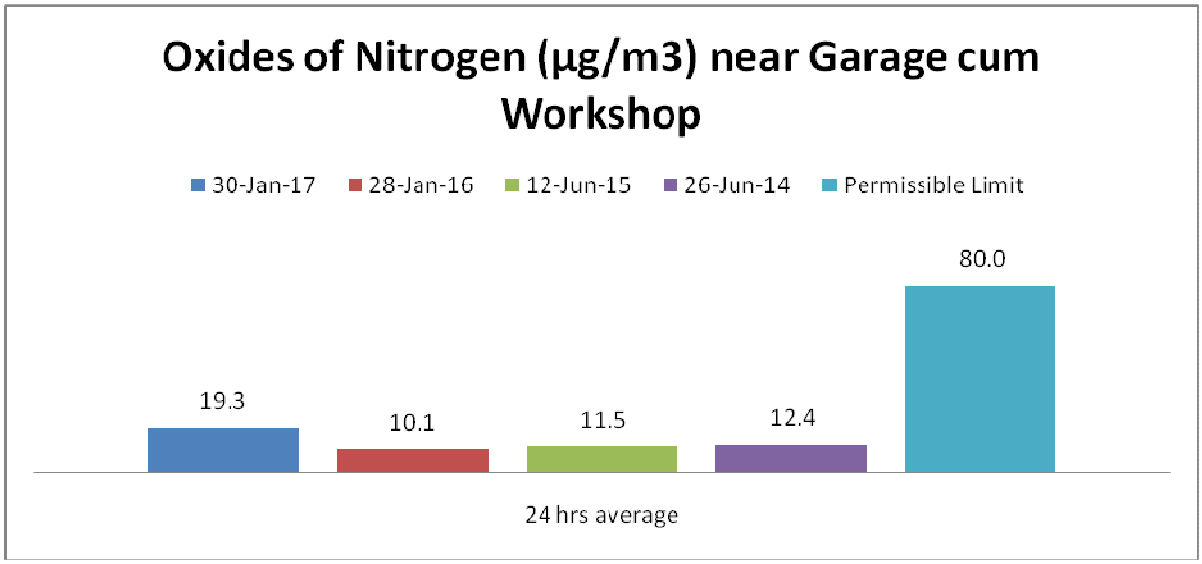

Middle Stream Located at 200 meters from SLF
30-Jan-17
28-Jan-16
11-Jun-15
25-Jun-14
Baseline
7.3
8.4
7.2
7.2
7.1
96
68
102
115
57.06
20
15
25
15
12
18
13
15
17.5
36
90
56
62
20
15.1
1
15.7
23.6
6.58
4.5
0.19
5.3
5.95
2.18
7.5
7.3
6.2
7.1
0.06
0.05
0
0
pH
Total Dissolved Solids (TDS) (mg/l)
Total Suspended Solids (mg/l)
Chlorides (mg/l)
Total Hardness (CaCO3) (mg/l)
Sulphate (mg/l)
Nitrate (mg/l)
Dissolved Oxygen (mg/l)
Zinc (mg/l)

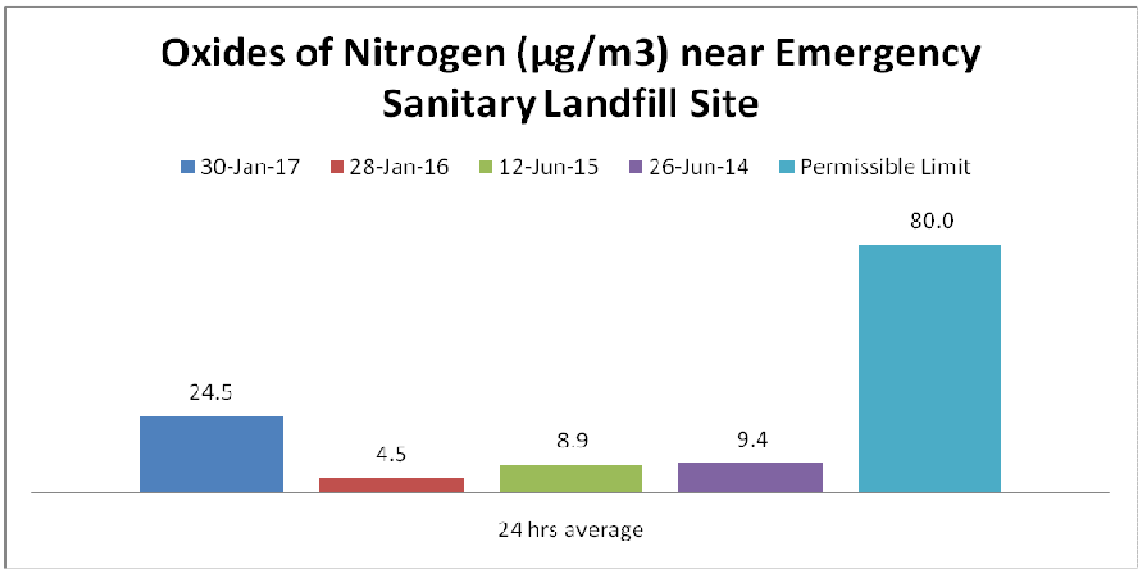

Spring located at distance of 1km from SLF
30-Jan-17
28-Jan-16
11-Jun-15
25-Jun-14
Baseline
5.9 7 6 6.2 7.1
45 33 54 55 57.06
10 10 10 10
5 13 6 5 17.5
20 24 26 26 20
17.3 2.3 3.8 8.9 6.58
1 1.4 1.4 1.6 2.18
5.2 5.8 6.6 7
0.06 0.04 0 0.06
pH
Total Dissolved Solids (TDS) (mg/l)
Total Suspended Solids (mg/l)
Chlorides (mg/l)
Total Hardness (CaCO3) (mg/l)
Sulphate (mg/l)
Nitrate (mg/l)
Dissolved Oxygen (mg/l)
Zinc (mg/l)

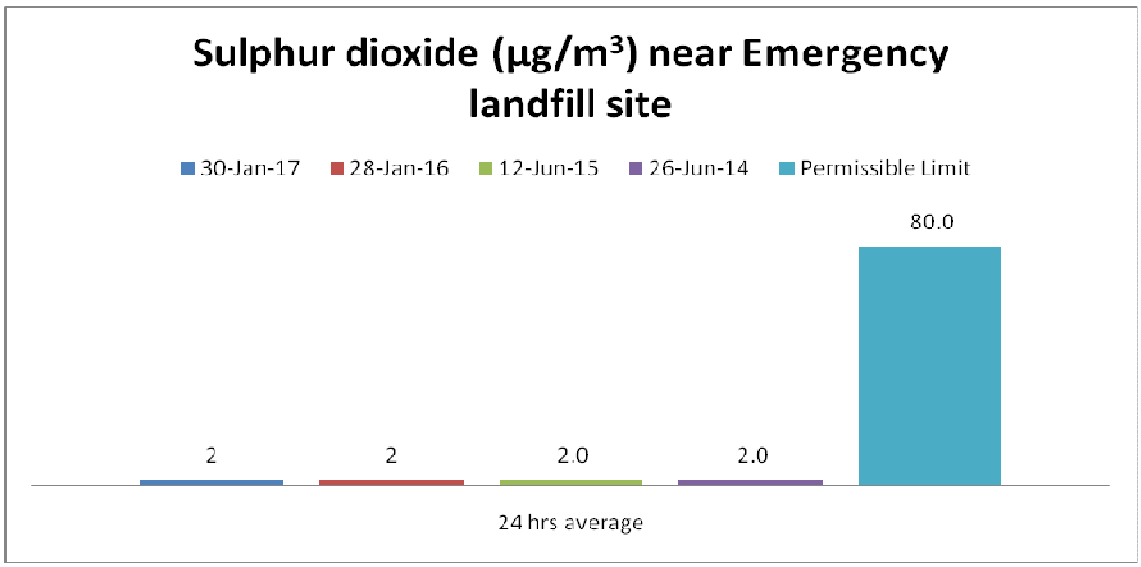
Ambient Air Quality

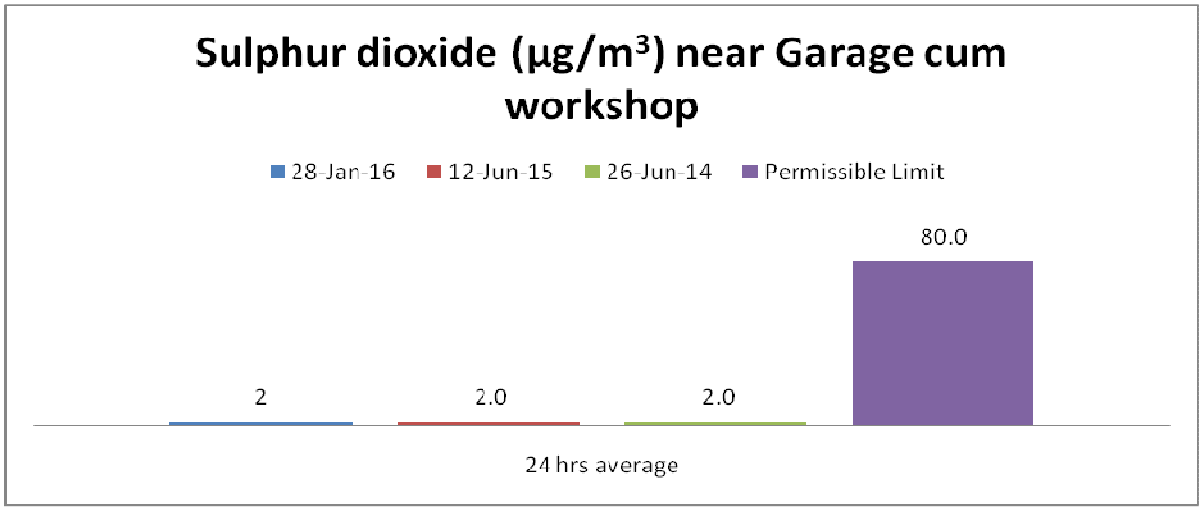







Oxides of Nitrogen (µg/m3) near Emergency Sanitary Landfill Site
30-Jan-17
28-Jan-16
12-Jun-15
26-Jun-14
Permissible Limit
24.5
4.5
8.9
9.4
80.0
24 hrs average


Sulphur dioxide (µg/m³) near Emergency landfill site
30-Jan-17
28-Jan-16
12-Jun-15
26-Jun-14
Permissible Limit
2
2
2.0
2.0
80.0
24 hrs average

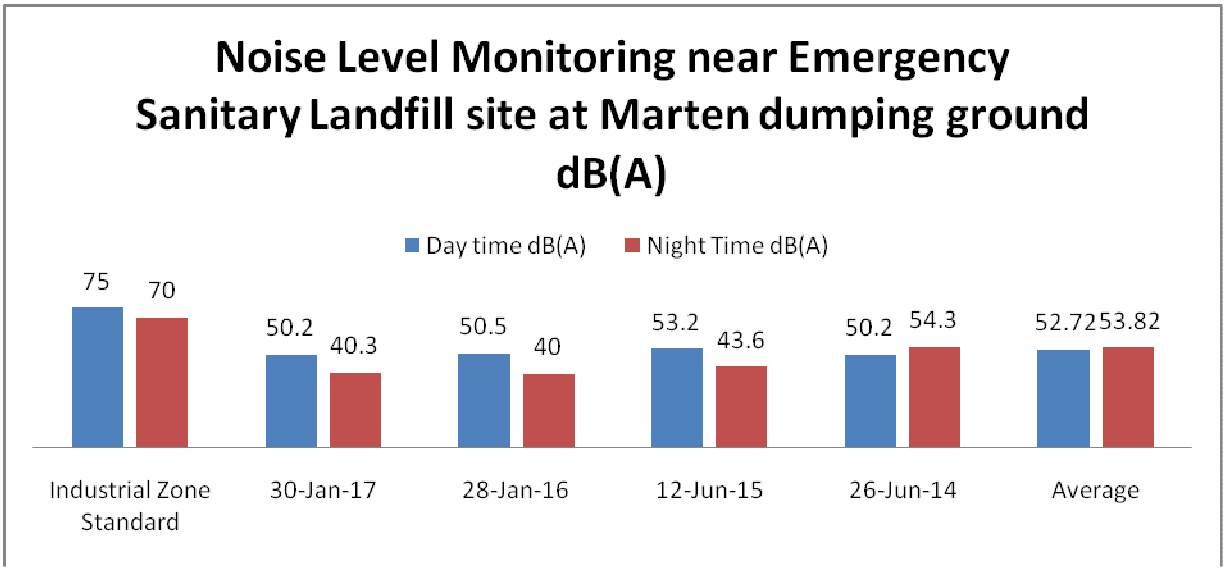

Sulphur dioxide (µg/m³) near Garage cum workshop
28-Jan-16
12-Jun-15
26-Jun-14
Permissible Limit
2
2.0
2.0
80.0
24 hrs average

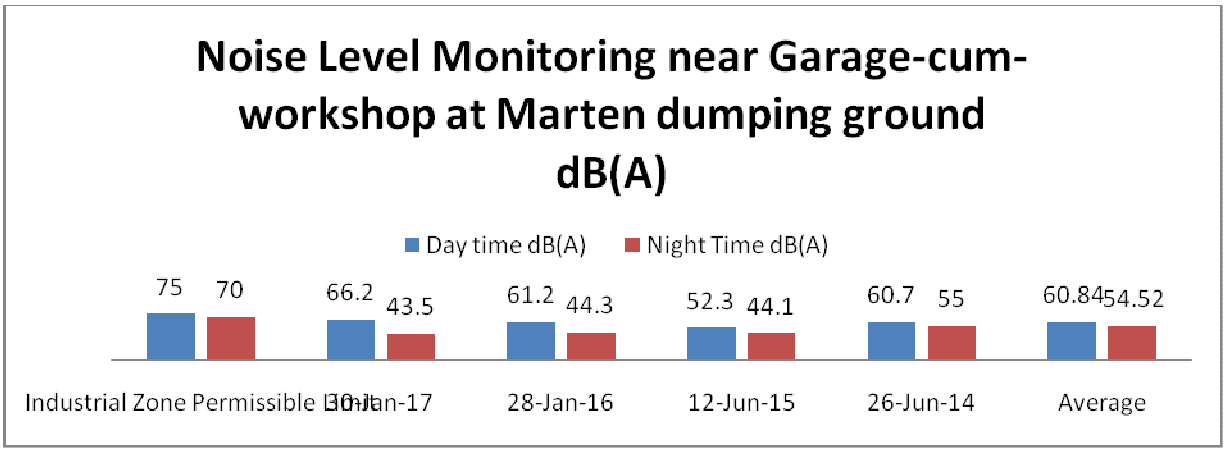
Noise Level Testing

72. Noise level testing has been conducted at 2 locations first one near the emergency SLF site at the gate and second at near the proposed Garage-cum-workshop at SLF at Mawiong. The proposed construction site is surrounded by reserved forest and encircled by road. Onside is Shillong Guwahati National Highways and other side is old Shillong Guwahati road.

73. The discussion being presented here are of sampling conducted in the month of January 2016, June 2015 and June 2014. Noise level presented in dB(A) of 24 hour sampling has been segregated in day and night time samples. The results have been compared with Ambient Noise Level under category of residential zone. While residential habitations are sufficiently away from the project site to get adverse impact. The noise recipients are the workers of the emergency landfill and construction workers only. The local habitations are not impacted due to noise generated from the construction activity at Emergency Landfill site of Mawiong. Although noise levels at the sampling site are beyond the limit specified for residential zone, the source of noise is traffic from the National highway.

74. The ambient noise level near the construction site of RCC counterfort wall has been conducted on 28 January, 11/12 June 2015 and 25/26 June 2014. The average of three years data of one day sampling of same season has been discussed here. The average day time noise level near emergency land fill site at Marten is 52.72 dB (A) while night time is 43.30 dB (A) if odd value of 2014 is excluded otherwise it is 53.82 dB (A). The day time noise level is below the permissible limit specified for residential zone of 55 dB(A) and also commercial area of 65 dB(A). The night time noise level is higher than permissible limit of residential zone of 45 dB(A) but lesser than commercial zone of 55 dB(A)

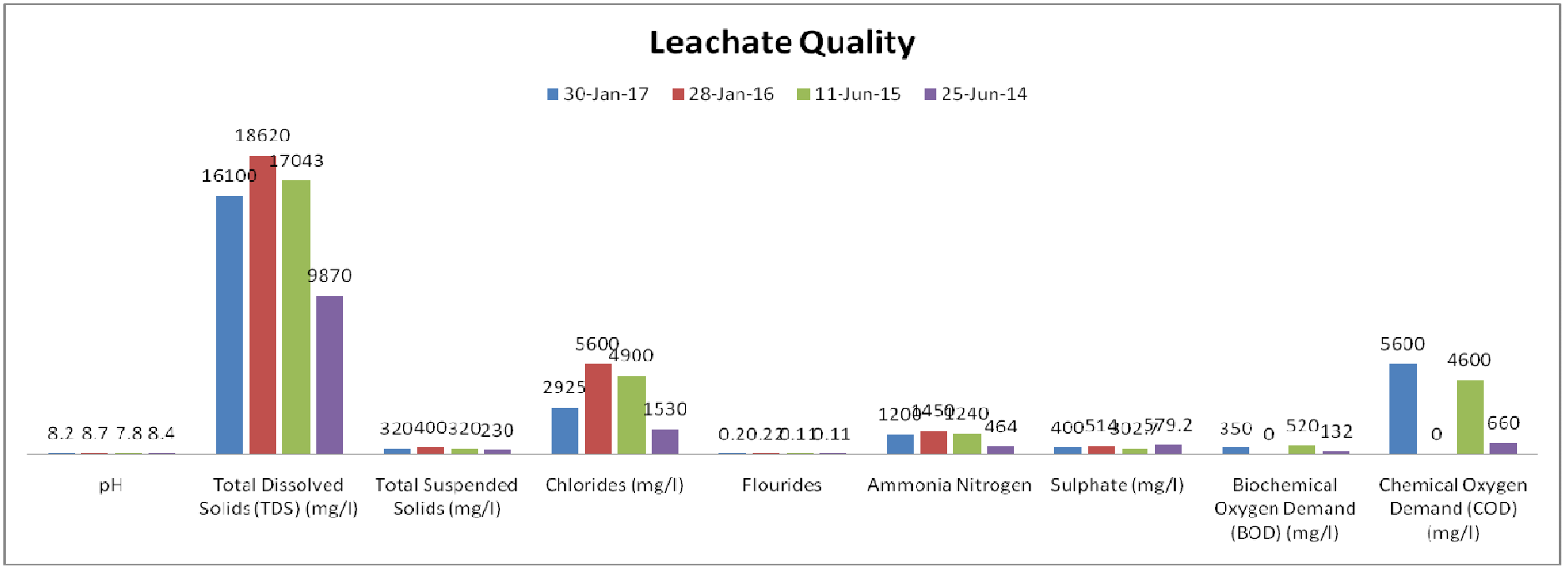



Noise Level Monitoring near Garage-cum-workshop at Marten dumping ground dB(A)
Day time dB(A)
Night Time dB(A)
75
70
66.2
43.5
61.2
44.3
52.3
44.1
60.7
55
60.84
54.52
Industrial Zone Permissible Limit
30-Jan-17
28-Jan-16
12-Jun-15
26-Jun-14
Average

Leachate Testing Report

Marten Mawiong landfill site is operating since 1938. It does not have leachate treatment facility and leachate collection system. Leachate sample has been collected from the bottom of the Landfill.

Total Dissolved Solids (TDS) in leachate collected in June 2014 is 9870 mg/l and leachate collected in 2015 is 17043. The permissible limit for disposal of leachate having TDS concentration as per Solid Waste Management Rules 2016 is 2100 mg/l.



Chemical oxygen demand (COD) and Chlorides are also higher in concentration compare to the standards specified in Solid Waste Management Rules, 2016 of 600 mg/l for chlorides.

Report on Ambient Air Quality, Noise Level and Water Quality submitted by the Meghalaya Pollution Control Board, January 2017.

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD WATER QUALITY TEST REPORT	No. MPCB/CL-TRT /2015-2016/016 Issue No. 01 Issue Date : 21.06.2016

Report No: WQ/2016/332

1. Issue Date : 13.02.2017
2. Name of the Project : Water Quality
3. Sample matrix : Water
4. Date of sample collection : 30.01.2017
5. Samples collected by : MSPCB Shillong
6. Date of sample receipt : 30.01.2017
7. Date of sample analysis : 31st January to 15th February 2017
8. Sample Registration No. : G/30/17/1-4
9. Sample plan reference :
10. Report sent to (Name & Address) : Shri. B. Dutta,Project Director, State Investment Programme Management & Implementation Unit,Urban Affairs Complex, Dhanketi, Shillong.
11. Deviation, if any :
12. Method of sampling : IS-3025-Part I
13. Remarks :

Parameters	Test method Method: APHA 21st Ed. No.	Limit	Sample code/Sampling location			
		Indian Standard for drinking water (IS : 10500-2012)	G/30/17/1 800 m from landfill	G/30/17/2 200m from landfill	G/30/17/3 100 m from landfill	G/30/17/4 Spring (1 km form landfill)
pH	4500-H+ B	6.5-8.5	7.9	7.3	8.1	5.9
Total Dissolved Solids (TDS) (mg/l)	2540C	500.0	65.0	96.0	120.0	45.0
Total Suspended Solids (mg/l)	2540D	-	10.0	20.0	20.0	10.0
Chloride (mg/l)	4500-Cl B	250.0	6.0	12.0	7.0	5.0
Total Hardness ($CaCO_3$)(mg/l)	2340 C	300.0	36.0	36.0	88.0	20.0
Sulphate (mg/l)	4500-SO4-2E	200.0	15.3	15.1	15.5	17.3
Nitrate (mg/l)	4500-NO_3 D	45.0	0.43	4.5	0.27	1.0
Dissolved Oxygen (mg/l)	4500-O C	-	6.6	7.5	6.4	5.2
Lead (mg/l)	3030 E,3111B	0.01	BDL*	BDL*	BDL*	BDL*

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD WATER QUALITY TEST REPORT	No. MPCB/CL-TRT /2015-2016/016 Issue No. 01 Issue Date : 21.06.2016

Chromium (mg/l)		0.05	BDL*	BDL*	BDL*	BDL*
Zinc (mg/l)		5.0	0.06	0.06	0.1	0.06
Copper (mg/l)		0.05	BDL*	BDL*	BDL*	BDL*
Cadmium (mg/l)		0.003	BDL*	BDL*	BDL*	BDL*
Manganese(mg/l)		0.1	0.04	0.04	0.04	0.04
Nickel (mg/l)		0.02	BDL*	BDL*	BDL*	BDL*
Arsenic (mg/l)	3500 As B	0.05	BDL*	BDL*	BDL*	BDL*

*BDL- Below Detectable Limits

Statement:

1. *The results are reported based on the materials received*
2. *Sample will be destroyed after one month from the date of issue of the report.*
3. *The report shall not be reproduced except in full, without the written approval of the laboratory.*

Scientist C

Sr. Scientist

mspcb	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD WATER QUALITY TEST REPORT	No. MPCB/CL-TRT /2015-2016/016 Issue No. 01 Issue Date : 21.06.2016

Report No: WQ/2016/333

1. Issue Date : 13.02.2017
2. Name of the Project : Water Quality
3. Sample matrix : Water
4. Date of sample collection : 30.01.2017
5. Samples collected by : MSPCB Shillong
6. Date of sample receipt : 30.01.2017
7. Date of sample analysis : 31st January to 15th February 2017
8. Sample Registration No. : G/30/17/5
9. Sample plan reference :
10. Report sent to (Name & Address) : Shri. B. Dutta,Project Director, State Investment Programme Management & Implementation Unit,Urban Affairs Complex, Dhanketi, Shillong.
11. Deviation, if any :
12. Method of sampling : IS-3025-Part I
13. Remarks :

Parameters	Test method Method: APHA 21st Ed. No.	Limits	Sample code/Sampling location
		Standards for Land Disposal as per Municipal Solid Waste (Management & Handling) Rules 2000	G/30/17/5 Leacheate
pH	4500-H+ B	5.5-9.0	8.2
Total Dissolved Solids (TDS) (mg/l)	2540C	2100.0	16100.0
Total Suspended Solids (mg/l)	2540D	200.0	320.0
Chloride (mg/l)	4500-Cl B	600.0	2925.0
Sulphate (mg/l)	4500-SO4-2E	-	400.0
Lead (mg/l)	3030 E,3111B	-	BDL*
Chromium (mg/l)		-	BDL*
Zinc (mg/l)		-	1.0
Copper (mg/l)		-	0.25
Cadmium (mg/l)		0.01	BDL*
Manganese(mg/l)		-	0.8

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD WATER QUALITY TEST REPORT	No. MPCB/CL-TRT /2015-2016/016 Issue No. 01 Issue Date : 21.06.2016

Nickel (mg/l)		-	BDL*
Arsenic (mg/l)	3500 As B	0.2	BDL*
Flouride (mg/l)	4500-F-D	-	0.2
Ammonia Nitrogen (mg/l)	4500-NH3A&C	-	1200.0
Biochemical Oxygen Demand (mg/l)	IS-3025 (P-44)	100.0	350.0
Chemical Oxygen Demand (mg/l)	5220-C	-	5600.0

*BDL- Below Detectable Limits

Statement:

1. *The results are reported based on the materials received*
2. *Sample will be destroyed after one month from the date of issue of the report.*
3. *The report shall not be reproduced except in full, without the written approval of the laboratory.*

Scientist C

Sr. Scientist

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD	No. MPCB/CL-TRT/AIR/2015-16/016
mspcb	AMBIENT AIR QUALITY TEST REPORT	Issue No. : 01
		Issue Date :28.04.16

Report No. : AQ/2017/001

1.	Name of the Project	:	Ambient Air Quality		
2.	Sample matrix	:	Ambient Air		
3.	Samples collected by	:	W. Marbaniang		
4.	Date of sample collection	:	30.01.17		
5.	Date & time of sample receipt	:	01.02.17		
6.	Date of sample analysis	:	01.02.17		
7.	Date of Issue	:			
8.	Sample Registration No.	:	A/01/17		
9.	Test method reference	:	IS 5182 Pt. 23, IS 5182 Pt. 2, and IS 5182 Pt. 6.		
10.	Name & Address of Industry/Sampling Location	:	State Investment Project Management & Implementation Unit, Shillong.		
11	Distance between the industry and sampling station	:	Within premises		
12.	Time duration of sampling	:	24 hrs (8 hrs interval for rspm , 4 hrs interval for gaseous)		
13.	Meteorological Parameters				
	General Weather condition	:	Clear		
	Temperature (°C)	:	Min: 7.0	Max: 18.5	
	Relative Humidity (%)	:	Min: 84	Max: 95	
	Wind Speed (km/hr)	:	Min: -	Max: -	Avg: -
	Wind Direction (most prevailing)	:	SW-NE		
	Rainfall (mm)	:	Sum: Nil		

Parameters	Test Method	Permissible Limits (24 hours average) EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009.	Sampling Station Code/Name A/01/17 Near Garage
Particulate Matter (PM 10) ($\mu g/m^3$) (24 hrs avg.)	IS:5182 (Pt-23)	100	73.4
Sulphur dioxide ($\mu g/m^3$) (24 hrs avg.)	IS:5182 (Pt-2)	80	2.0
Nitrogen dioxide ($\mu g/m^3$) (24 hrs avg.)	IS:5182 (Pt-6)	80	19.3

Remarks: Parameters tested were found to be within the prescribed limits of Ambient Air Quality Standards as per EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009.

1. Test values are reported based on the materials received.
2. Sample(s) will be destroyed after 15 days from date of issues of the Test Report.
3. The test report shall not be reproduced except in full, without the written approval of laboratory.

Scientist B

Senior Scientist

CENTRAL LABORATORY

MEGHALAYA STATE POLLUTION CONTROL BOARD

mspcb

AMBIENT AIR QUALITY TEST REPORT

Issue Date 28.04.16

Report No. : AQ/2017/002

	Name of the Project	:	Ambient Air Quality		
	Sample matrix	:	Ambient Air		
	Samples collected by	:	W. Marbaniang		
	Date of sample collection	:	30.01.17		
	Date & time of sample receipt	:	01.02.17		
	Date of sample analysis	:	01.02.17		
	Date of Issue	:			
	Sample Registration No.	:	A/02/17		
	Test method reference	:	IS 5182 Pt. 23, IS 5182 Pt. 2, and IS 5182 Pt. 6.		
3.	Name & Address of Industry/Sampling Location	:	State Investment Project Management & Implementation Unit, Shillong.		
1.	Distance between the industry and sampling station	:	Within premises		
2.	Time duration of sampling	:	24 hrs (8 hrs interval for rspm , 4 hrs interval for gaseous)		
3.	Meteorological Parameters				
	General Weather condition	:	Clear		
	Temperature (°C)	:	Min: 7.0	Max: 18.5	
	Relative Humidity (%)	:	Min: 84	Max: 95	
	Wind Speed (km/hr)	:	Min: -	Max: -	Avg: -
	Wind Direction (most prevailing)	:	SW-NE		
	Rainfall (mm)	:	Sum: Nil		

Parameters	Test Method	Permissible Limits (24 hours average) EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009.	Sampling Station Code/Name A/02/17 Near Dumping site
Particulate Matter (PM 10) (µg/m³) (24 hrs avg.)	IS:5182 (Pt-23)	100	71.9
Sulphur dioxide (µg/m³) (24 hrs avg.)	IS:5182 (Pt-2)	80	2.0
Nitrogen dioxide (µg/m³) (24 hrs avg.)	IS:5182 (Pt-6)	80	24.5

Remarks: Parameters tested were found to be within the prescribed limits of Ambient Air Quality Standards as per EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009.

1. Test values are reported based on the materials received.
2. Sample(s) will be destroyed after 15 days from date of issues of the Test Report.
3. The test report shall not be reproduced except in full, without the written approval of laboratory.

Scientist B

Senior Scientist

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD	No. MPCB/ CL-31/TRT/2015-16/016
mspcb	NOISE LEVEL TESTING REPORT	Issue No. : 01
		Issue Date :28.04.16

Report No.: NL/17/001

1.	Name of the Project	:	Noise Level Monitoring
2.	Sample matrix	:	Noise level
3.	Monitored by	:	W. Marbaniang
4.	Date of monitoring	:	30.01.2017
5.	Date of sample receipt	:	1.02.17
6.	Date of sample analysis	:	1.02.17
7.	Date of Issue	:	
8.	Sample Registration No.	:	N/01/17
9.	Test method reference	:	**CPCB's Protocol for Ambient Noise Level Monitoring**
1.	Name & Address of Industry/Sampling Location	:	State Investment Project Management & Implementation Unit, Shillong.
11.	Category of Area	:	Industrial

Parameters	Limits in {dB(A)Leq} {Noise Pollution(Regulation and Control) Rules,2000.} Under EPA, 1986.		Test method	Sampling Station Code/Name N/01/17
				Near Garage
Ambient Noise Level {dB(A)Leq}	Day Time (6 AM to 10 PM)	75	CPCB's Protocol for Ambient Noise Level Monitoring	66.2
	Night Time (10 PM to 6 AM)	70		43.5
Observations	The sampling location is about 25 meters (approx) away from the main road (National Highway). Traffic noise is a major contribution to the overall noise monitored at the location.			

Remarks: Noise level monitored at the location was found to be within the prescribed limits as per EPA Notification vide S.O. (E), dated, 11.01.2010.

1. Test values are reported based on the information provided to the laboratory.
2. The test report shall not be reproduced except in full, without the written approval of laboratory.

Scientist 'B'

Senior Scientist

	CENTRAL LABORATORY MEGHALAYA STATE POLLUTION CONTROL BOARD	No. MPCB/CL/21/TR/2015-16/01
mspcb	NOISE LEVEL TESTING REPORT	Issue No. : 01
		Issue Date :28.04.16

Report No.: NL/17/002

1.	Name of the Project	:	Noise Level Monitoring
2.	Sample matrix	:	Noise level
3.	Monitored by	:	W. Marbaniang
4.	Date of monitoring	:	30.01.2017
5.	Date of sample receipt	:	1.02.17
6.	Date of sample analysis	:	1.02.17
7.	Date of Issue	:	
8.	Sample Registration No.	:	N/02/17
9.	Test method reference	:	**CPCB's Protocol for Ambient Noise Level Monitoring**
10.	Name & Address of Industry/Sampling Location	:	State Investment Project Management & Implementation Unit, Shillong.
11.	Category of Area	:	Industrial

Parameters	**Limits in (dB(A)Leq)** {Noise Pollution(Regulation and Control) Rules,2000.) Under EPA, 1986.		**Test method**	**Sampling Station Code/Name** **N/02/17**
				Near Dumping site
Ambient Noise Level (dB(A)Leq)	**Day Time** (6 AM to 10 PM)	75	**CPCB's Protocol for Ambient Noise Level Monitoring**	50.2
	Night Time (10 PM to 6 AM)	70		40.3
Observations				

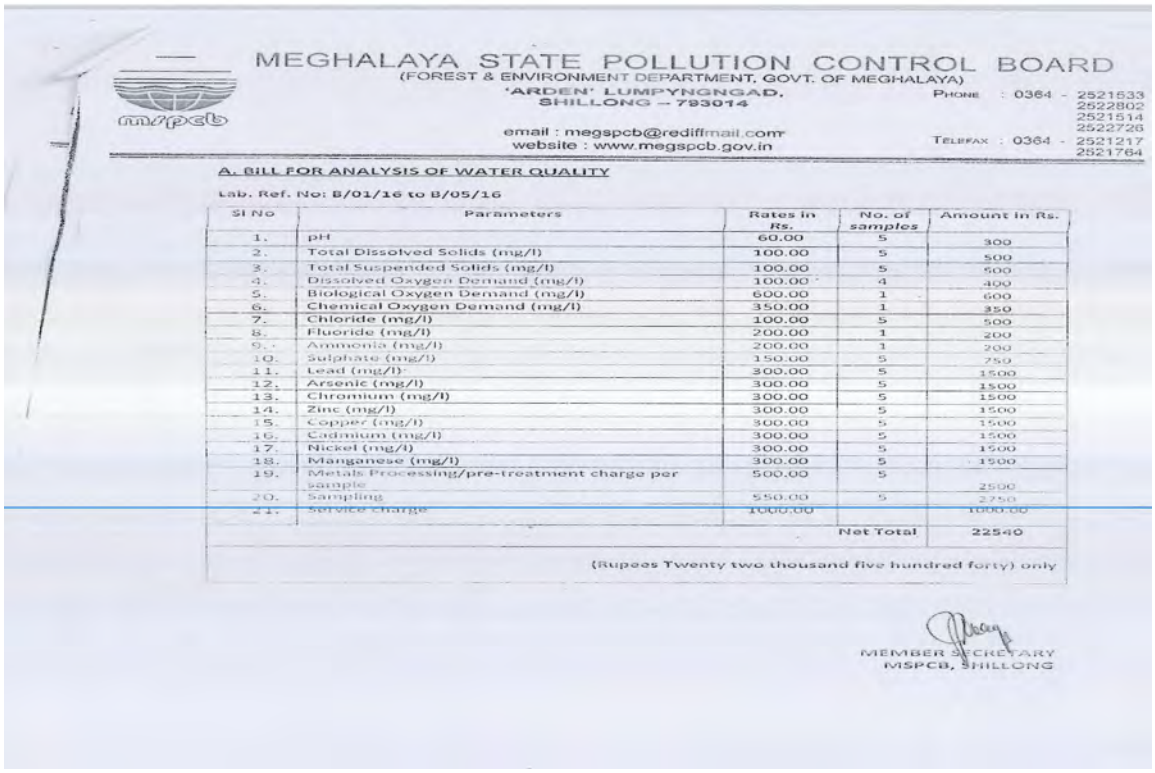
Remarks: Noise level monitored at the location was found to be within the prescribed limits as per EPA Notification vide S.O. (E), dated, 11.01.2010.

1. Test values are reported based on the information provided to the laboratory.
2. The test report shall not be reproduced except in full, without the written approval of laboratory.

Scientist 'B'

Senior Scientist

Report on Ambient Air Quality, Noise Level and Water Quality submitted by the Meghalaya Pollution Control Board, January 2016



MEGHALAYA STATE POLLUTION CONTROL BOARD
(FOREST & ENVIRONMENT DEPARTMENT, GOVT. OF MEGHALAYA)
'ARDEN' LUMPYNGNGAD,
SHILLONG – 793014

email : megspcb@rediffmail.com
website : www.megspcb.gov.in

PHONE : 0364 - 2521533, 2522802, 2521514, 2522726
TELEFAX : 0364 - 2521217, 2521764

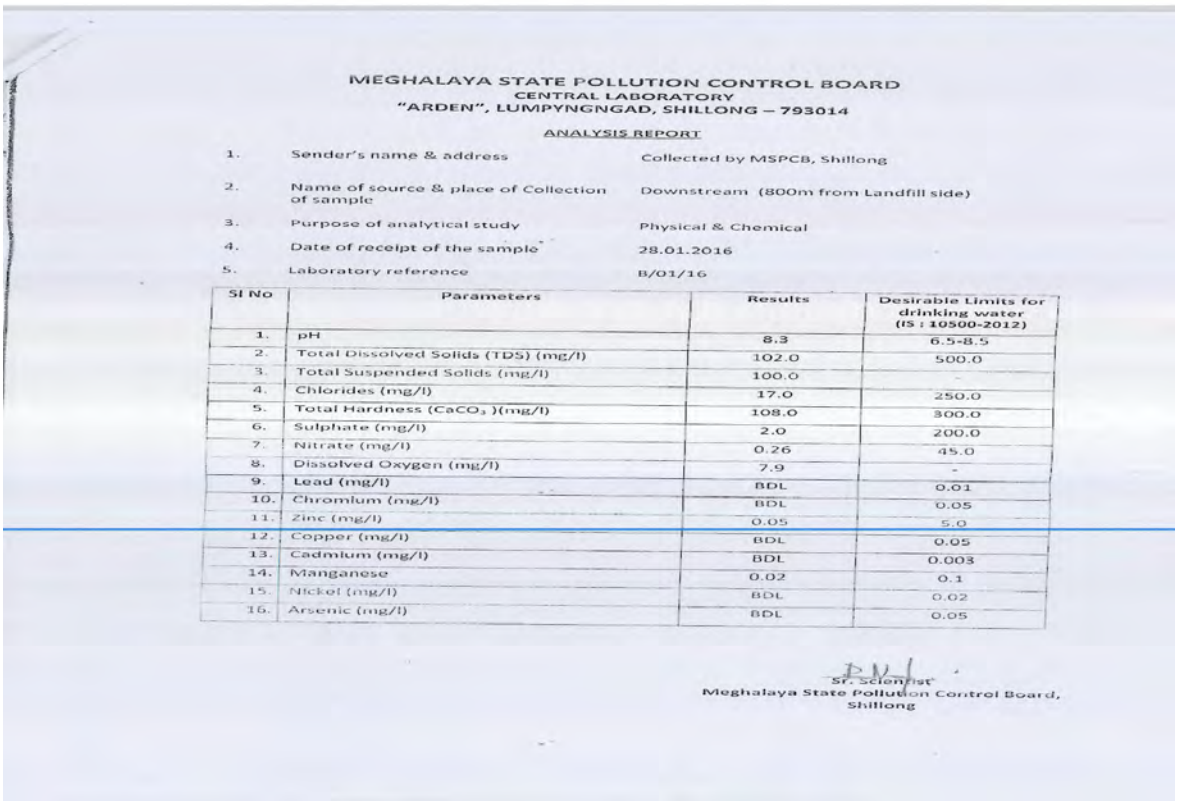
A. BILL FOR ANALYSIS OF WATER QUALITY

Lab. Ref. No: B/01/16 to B/05/16

Sl No	Parameters	Rates in Rs.	No. of samples	Amount in Rs.
1.	pH	60.00	5	300
2.	Total Dissolved Solids (mg/l)	100.00	5	500
3.	Total Suspended Solids (mg/l)	100.00	5	500
4.	Dissolved Oxygen Demand (mg/l)	100.00	4	400
5.	Biological Oxygen Demand (mg/l)	600.00	1	600
6.	Chemical Oxygen Demand (mg/l)	350.00	1	350
7.	Chloride (mg/l)	100.00	5	500
8.	Fluoride (mg/l)	200.00	1	200
9.	Ammonia (mg/l)	200.00	1	200
10.	Sulphate (mg/l)	150.00	5	750
11.	Lead (mg/l)	300.00	5	1500
12.	Arsenic (mg/l)	300.00	5	1500
13.	Chromium (mg/l)	300.00	5	1500
14.	Zinc (mg/l)	300.00	5	1500
15.	Copper (mg/l)	300.00	5	1500
16.	Cadmium (mg/l)	300.00	5	1500
17.	Nickel (mg/l)	300.00	5	1500
18.	Manganese (mg/l)	300.00	5	1500
19.	Metals Processing/pre-treatment charge per sample	500.00	5	2500
20.	Sampling	550.00	5	2750
21.	Service Charge	1000.00		1000.00
			Net Total	22540

(Rupees Twenty two thousand five hundred forty) only

MEMBER SECRETARY
MSPCB, SHILLONG



MEGHALAYA STATE POLLUTION CONTROL BOARD
CENTRAL LABORATORY
"ARDEN", LUMPYNGNGAD, SHILLONG – 793014

ANALYSIS REPORT

1. Sender's name & address — Collected by MSPCB, Shillong
2. Name of source & place of Collection of sample — Downstream (800m from Landfill side)
3. Purpose of analytical study — Physical & Chemical
4. Date of receipt of the sample — 28.01.2016
5. Laboratory reference — B/01/16

Sl No	Parameters	Results	Desirable Limits for drinking water (IS : 10500-2012)
1.	pH	8.3	6.5-8.5
2.	Total Dissolved Solids (TDS) (mg/l)	102.0	500.0
3.	Total Suspended Solids (mg/l)	100.0	-
4.	Chlorides (mg/l)	17.0	250.0
5.	Total Hardness ($CaCO_3$)(mg/l)	108.0	300.0
6.	Sulphate (mg/l)	2.0	200.0
7.	Nitrate (mg/l)	0.26	45.0
8.	Dissolved Oxygen (mg/l)	7.9	-
9.	Lead (mg/l)	BDL	0.01
10.	Chromium (mg/l)	BDL	0.05
11.	Zinc (mg/l)	0.05	5.0
12.	Copper (mg/l)	BDL	0.05
13.	Cadmium (mg/l)	BDL	0.003
14.	Manganese	0.02	0.1
15.	Nickel (mg/l)	BDL	0.02
16.	Arsenic (mg/l)	BDL	0.05

Sr. Scientist
Meghalaya State Pollution Control Board,
Shillong

MEGHALAYA STATE POLLUTION CONTROL BOARD
CENTRAL LABORATORY
"ARDEN", LUMPYNGNGAD, SHILLONG – 793014

ANALYSIS REPORT

1.	Sender's name & address	Collected by MSPCB, Shillong
2.	Name of source & place of Collection of sample	Middle stream (200m from Landfill side)
3.	Purpose of analytical study	Physical & Chemical
4.	Date of receipt of the sample	28.01.2016
5.	Laboratory reference	B/02/16

Sl No	Parameters	Results	Desirable Limits for drinking water (IS : 10500-2012)
1.	pH	8.4	6.5-8.5
2.	Total Dissolved Solids (TDS) (mg/l)	68.0	500.0
3.	Total Suspended Solids (mg/l)	15.0	-
4.	Chlorides (mg/l)	18.0	250.0
5.	Total Hardness ($CaCO_3$)(mg/l)	90.0	300.0
6.	Sulphate (mg/l)	1.0	200.0
7.	Nitrate (mg/l)	0.19	45.0
8.	Dissolved Oxygen (mg/l)	7.3	-
9.	Lead (mg/l)	BDL	0.01
10.	Chromium (mg/l)	BDL	0.05
11.	Zinc (mg/l)	0.05	5.0
12.	Copper (mg/l)	BDL	0.05
13.	Cadmium (mg/l)	BDL	0.003
14.	Manganese	0.02	0.1
15.	Nickel (mg/l)	BDL	0.02
16.	Arsenic (mg/l)	BDL	0.05

Sr. Scientist
Meghalaya State Pollution Control Board,
Shillong

MEGHALAYA STATE POLLUTION CONTROL BOARD
CENTRAL LABORATORY
"ARDEN", LUMPYNGNGAD, SHILLONG – 793014

ANALYSIS REPORT

1.	Sender's name & address	Collected by MSPCB, Shillong
2.	Name of source & place of Collection of sample	Spring (100 m from Landfill side)
3.	Purpose of analytical study	Physical & Chemical
4.	Date of receipt of the sample	28.01.2016
5.	Laboratory reference	B/03/16

Sl No	Parameters	Results	Desirable Limits for drinking water (IS : 10500-2012)
1.	pH	7.7	6.5-8.5
2.	Total Dissolved Solids (TDS) (mg/l)	60.0	500.0
3.	Total Suspended Solids (mg/l)	10.0	-
4.	Chlorides (mg/l)	20.0	250.0
5.	Total Hardness ($CaCO_3$)(mg/l)	46.0	300.0
6.	Sulphate (mg/l)	15.1	200.0
7.	Nitrate (mg/l)	5.0	45.0
8.	Dissolved Oxygen (mg/l)	8.5	-
9.	Lead (mg/l)	BDL	0.01
10.	Chromium (mg/l)	BDL	0.05
11.	Zinc (mg/l)	0.08	5.0
12.	Copper (mg/l)	BDL	0.05
13.	Cadmium (mg/l)	BDL	0.003
14.	Manganese	0.03	0.1
15.	Nickel (mg/l)	BDL	0.02
16.	Arsenic (mg/l)	BDL	0.05

Sr. Scientist
Meghalaya State Pollution Control Board,
Shillong

MEGHALAYA STATE POLLUTION CONTROL BOARD
CENTRAL LABORATORY
"ARDEN", LUMPYNGNGAD, SHILLONG – 793014

ANALYSIS REPORT

1. Sender's name & address: Collected by MSPCB, Shillong
2. Name of source & place of Collection of sample: Spring (1 km from Landfill side)
3. Purpose of analytical study: Physical & Chemical
4. Date of receipt of the sample: 28.01.2016
5. Laboratory reference: B/04/16

Sl No	Parameters	Results	Desirable Limits for drinking water (IS : 10500-2012)
1.	pH	7.0	6.5-8.5
2.	Total Dissolved Solids (TDS) (mg/l)	33.0	500.0
3.	Total Suspended Solids (mg/l)	10.0	-
4.	Chlorides (mg/l)	13.0	250.0
5.	Total Hardness ($CaCO_3$)(mg/l)	24.0	300.0
6.	Sulphate (mg/l)	2.3	200.0
7.	Nitrate (mg/l)	1.4	45.0
8.	Dissolved Oxygen (mg/l)	5.8	-
9.	Lead (mg/l)	BDL	0.01
10.	Chromium (mg/l)	BDL	0.05
11.	Zinc (mg/l)	0.04	5.0
12.	Copper (mg/l)	BDL	0.05
13.	Cadmium (mg/l)	BDL	0.003
14.	Manganese	0.03	0.1
15.	Nickel (mg/l)	BDL	0.02
16.	Arsenic (mg/l)	BDL	0.05

Sr. Scientist
Meghalaya State Pollution Control Board,
Shillong

MEGHALAYA STATE POLLUTION CONTROL BOARD
CENTRAL LABORATORY
"ARDEN", LUMPYNGNGAD, SHILLONG – 793014

ANALYSIS REPORT

1. Sender's name & address: Collected by MSPCB, Shillong
2. Name of source & place of Collection of sample: Leachate (Back of Marten, foothill of the main dumping side)
3. Purpose of analytical study: Physical & Chemical
4. Date of receipt of the sample: 28.01.2016
5. Laboratory reference: B/05/16

Sl No	Parameters	Results	Standards for Land Disposal as per Municipal Solid Waste (Management & Handling) Rules 2000
1.	pH	8.7	5.5-9.0
2.	Total Dissolved Solids (TDS) (mg/l)	18620.0	2100.0
3.	Total Suspended Solids (mg/l)	400.0	200.0
4.	Chlorides (mg/l)	5600.0	600.0
5.	Flourides (mg/l)	0.22	-
6.	Ammonia Nitrogen (mg/l)	1450.0	-
7.	Sulphate (mg/l)	514.0	-
8.	Lead (mg/l)	BDL	-
9.	Chromium (mg/l)	BDL	-
10.	Zinc (mg/l)	0.55	-
11.	Copper (mg/l)	0.16	-
12.	Cadmium	BDL	0.01
13.	Nickel (mg/l)	BDL	-
14.	Manganese (mg/l)	0.72	-
15.	Arsenic (mg/l)	BDL	0.2
16.	Biochemical Oxygen Demand (BOD) (mg/l)	520.0	100.0
17.	Chemical Oxygen Demand (COD) (mg/l)	4600.0	-

Sr. Scientist
Meghalaya State Pollution Control Board,
Shillong

MEGHALAYA STATE POLLUTION CONTROL BOARD
'ARDEN' LUMPYGNGNGAD, SHILLONG-14

AMBIENT NOISE LEVEL TESTING REPORT

Name & Address of Industry		State Investment Project Management & Implementation Unit(SIPMIU), Shillong.	
Location of Sampling		1 (Near BMW Incenerator) Marten Dumping Ground, Mawiong.	
Date of Sampling		28.01.16 – 29.01.16	
Category of Area		Industrial	
Laboratory Reference		N/ 01/2016	
Ambient Noise Level dB(A) Leq	**Time**	**Observed value**	**Prescribed Standard**
	Day	61.2	75.0
	Night	44.3	70.0
Other observations	The sampling location is about 25 meters (approx) away from the main road (National Highway). Traffic noise is a major contribution to the overall noise monitored at the location.		

Remarks: Ambient Noise levels monitored during day and night time was found to be within the limit of standards for Industrial Area as prescribed vide EPA Notificatiion [GSR 1063 (E), Dated 26th Dec. 1989].

Dated:

Senior Scientist
Meghalaya State Pollution Control Board
Shillong

---

mspcb

CENTRAL LABORATORY
MEGHALAYA STATE POLLUTION CONTROL BOARD

AMBIENT AIR QUALITY ANALYSIS REPORT

1.	Name of the Project	:	Ambient Air Quality		
2.	Sample matrix	:	Ambient Air		
3.	Date & time of sample collection	:	28.1.16		
4.	Samples collected by	:	Shri. W.Marbaniang		
5.	Date & time of sample receipt	:	1.02.16		
6.	Date of sample analysis	:	1.02.16		
7.	Sample Registration No.	:	A/01/16, A/02/16		
8.	Date of Issue	:	9.3.2016		
9.	Test method reference	:	-		
10.	Deviation, if any	:	-		
11.	Name & Address of Industry/Sampling Location	:	State Investment Project Management & Implementation Unit, Shillong.		
12.	Distance between the industry and sampling station	:	Within premises		
13.	Time duration of sampling	:	24 hrs (8 hrs interval for rspm , 4 hrs interval for gaseous)		
14.	Meteorological Parameters				
	Weather condition	:	Partially Clear		
	Temperature (°C)	:	Min: 4.2	Max: 12.1	
	Relative Humidity (%)	:	Min: 88	Max: 93	
	Wind Speed (km/hr)	:	Min: -	Max: -	Avg: -
	Wind Direction (most prevailing)	:	-		
	Rainfall (mm)	:	Sum: Nil		

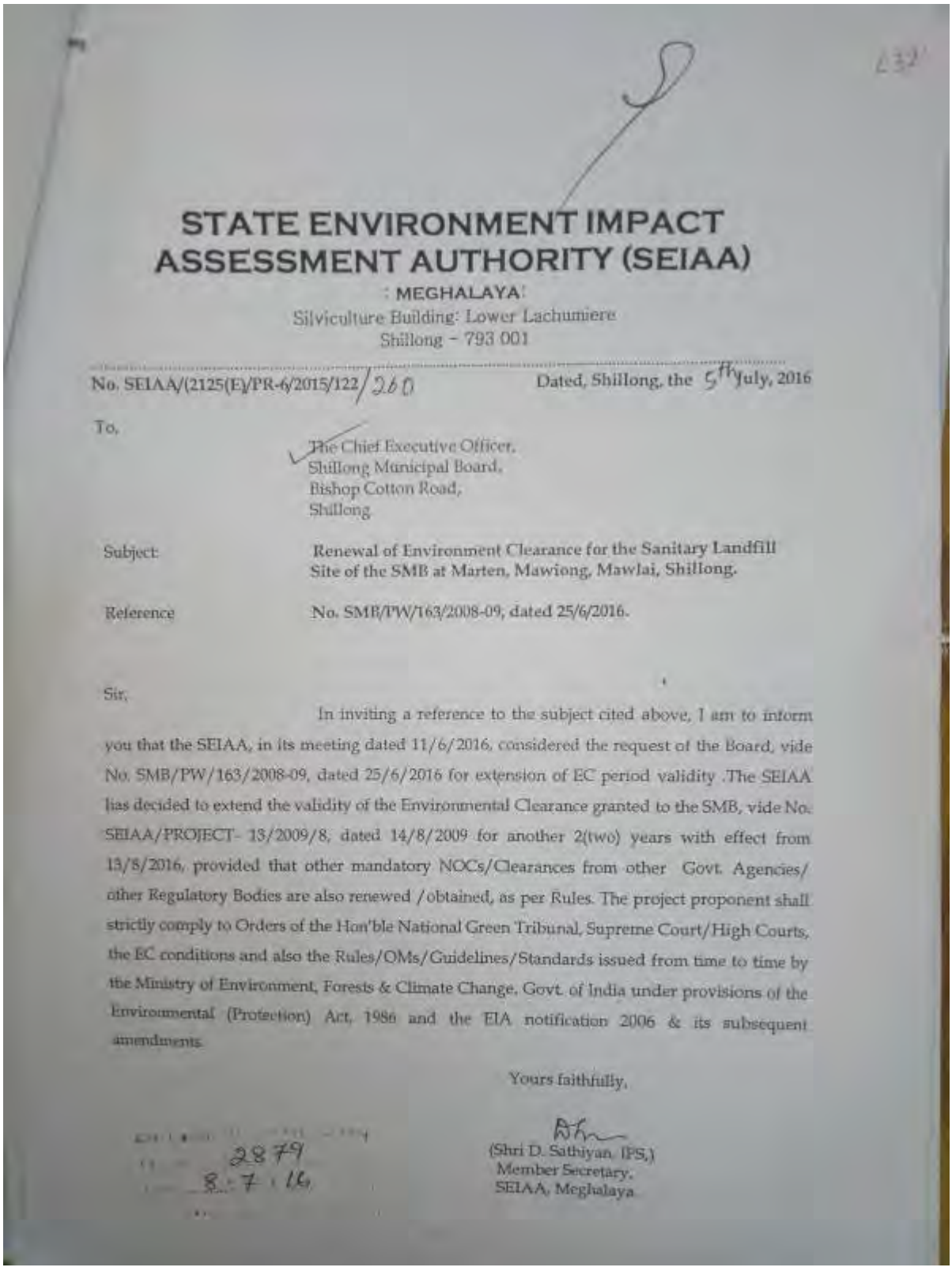
Parameters	Permissible Limits (24 hours average) EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009.	Test method	Sampling Station Code/Name 1 A/01/16 Dumping Site (Near Incinerator) (24 hours average)	2 A/02/16 New Landfill site (24 hours average)
Particulate Matter (PM_{10}) ($\mu g/m^3$)	100	ISC (3rd Edn. 98)	62.6	31.4
Sulphur dioxide ($\mu g/m^3$)	80	IS:5182 (Pt-2)	2.0	2.0
Nitrogen dioxide ($\mu g/m^3$)	80	USEPA,EQN-1277-26	10.1	4.5

Remarks: All parameters tested were found to be within the permissible limits of Ambient Air Quality Standards as per EPA Notification GSR 826(E), dated New Delhi, the 16th Nov. 2009, at both the stations.

Sr. Scientist
MSPCB

Annexure – 6 – Environmental Clearance, Forest Clearance and Consent to Establish obtained for the current period.

Environmental Clearance



STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY (SEIAA)

: MEGHALAYA :

Silviculture Building: Lower Lachumiere
Shillong - 793 001

No. SEIAA/(2125(E)/PR-6/2015/122/260 Dated, Shillong, the 5th July, 2016

To,

The Chief Executive Officer,
Shillong Municipal Board,
Bishop Cotton Road,
Shillong

Subject: Renewal of Environment Clearance for the Sanitary Landfill Site of the SMB at Marten, Mawiong, Mawlai, Shillong.

Reference No. SMB/PW/163/2008-09, dated 25/6/2016.

Sir,

In inviting a reference to the subject cited above, I am to inform you that the SEIAA, in its meeting dated 11/6/2016, considered the request of the Board, vide No. SMB/PW/163/2008-09, dated 25/6/2016 for extension of EC period validity .The SEIAA has decided to extend the validity of the Environmental Clearance granted to the SMB, vide No. SEIAA/PROJECT- 13/2009/8, dated 14/8/2009 for another 2(two) years with effect from 13/8/2016, provided that other mandatory NOCs/Clearances from other Govt. Agencies/ other Regulatory Bodies are also renewed /obtained, as per Rules. The project proponent shall strictly comply to Orders of the Hon'ble National Green Tribunal, Supreme Court/High Courts, the EC conditions and also the Rules/OMs/Guidelines/Standards issued from time to time by the Ministry of Environment, Forests & Climate Change, Govt. of India under provisions of the Environmental (Protection) Act, 1986 and the EIA notification 2006 & its subsequent amendments.

Yours faithfully,

2879
8.7.16

(Shri D. Sathiyan, IFS,)
Member Secretary,
SEIAA, Meghalaya

Memo. No. SEIAA/(2125(E)/PR-6/2015/122-A/ Dated, Shillong, the July, 2016

Copy to:

1) The Secretary, Department of Environment, Govt. of India, Ministry of Environment, Forests & Climate Change, Paryavaran Bhavan, CGO Complex, Lodhi Roads, New Delhi - 110 003 for information.
2) The Deputy Secretary to the Govt. of Meghalaya, Forest & Environment Department, Meghalaya, Shillong for information.
3) The Chairman, Meghalaya State Pollution Control Board, 'Arden', Lum pyngngad, Shillong -793014 for information.
4) The Addl. Principal Chief Conservator of Forests(C), Ministry of Environment, Forest & Climate Change, Regional Office, N.E.Z., Law-U-Sip, Lumbatngen (Near MTC workshop), Shillong - 793021 for information and necessary action.
5) The Director, Urban Affairs & Project Director, State Investment Project Management & Implementation Unit, Meghalaya, Shillong ,for information and necessary action. He is requested to ensure that the project proponent comply with the EC Conditions and the half yearly report should be sent also to the Meghalaya Pollution Control Board for EC Conditions verification/authentication with copy to the SEIAA, Meghalaya.
6) The Member Secretary, SEAC, Meghalaya for information.
7) The Member Secretary, Meghalaya State Pollution Control Board,. 'Arden', Lum pyngngad, Shillong -793014 for information and necessary monitoring.
8) Impact Assessment(IA) Division, Monitoring Cell, Ministry of Environment, Forests & Climate Change, Paryavaran Bhavan, CGO Complex, Lodhi Roads, New Delhi – 110 003 for information and necessary action.
9) Guard File.

Member Secretary,
SEIAA, Meghalaya.

SE
Re-put for
d/t to submit

ANNEXURE - VII

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY
'ARDEN' LUMPYNGNGAD, SHILLONG – 793 014

No. SEIAA/PROJECT-13/2009/8 Dated Shillong, the 14th August 2009

To:

The Chief Executive Officer
Shillong Municipal Board

Sub: *Sanitary Landfill site for Non-biodegradable Municipal Solid Waste Disposal and Compost Plant rejects at Marten, Mawiong, East Khasi Hills District – Environmental Clearance -Regarding*

Dear Sirs,

This has a reference to your application No. SMB/PW/163/08/09/11 Dtd. 09-03-2009 and subsequent letter from the Director, Urban Affairs & Project Director, State Investment Project management & Implementation Unit vide No. SIPMIU/MEG/NERCCDIP/8/2009/7 Dtd. 22-05-2009 seeking prior Environmental Clearance for the above project under the EIA Notification, 2006. The proposal has been appraised as per prescribed procedure in the light of provisions under the EIA Notification, 2006 on the basis of the mandatory documents enclosed with the application viz. Form I, Techno-Economic Feasibility Report, Detailed Project Report, EIA, EMP and the additional clarifications furnished in response to the Terms of Reference for the purpose of carrying out the cumulative Impact Assessment issued by the State Expert Appraisal Committee.

2. It is, inter-alia, noted that the project involves a sanitary landfill site for solid waste disposal on a plot of existing area of 5.25 acres. The existing power available is 125 KVA which is sufficient to meet the requirement. Total cost of the Project is Rs 76.60 million INR. The project is expected to benefit 0.16 million persons and above 0.032 million households in Shillong Municipal Board area directly.

3. The State Expert Appraisal Committee after due considerations of the relevant documents submitted by the project proponent and additional clarifications furnished in response to its observations have recommended for Environmental Clearance as per the provisions of Environmental Impact Assessment Notification – 2006 and its subsequent amendments, subject to strict compliance of the terms and conditions as follows: -

A. SPECIFIC CONDITIONS

i) Given the amount of rainfall that is experienced in the region that would harbor the landfill site and the likelihood of pollution of land and water if a landfill is subjected to flooding, the applicant shall ensure that the surface water drains at the site are adequate to retain and dispose of the heaviest rains. Further, storm drains shall be constructed around the landfill site of the kind capable of withstanding heaviest rain-storms.

ii) Appropriate leachate capturing measures shall be implemented. Drainage interceptors shall be constructed to capture direct runoff from the landfill site such as to redirect the runoff into

(iv) Monitoring plan as envisaged by the applicant in the DPR shall be scrupulously followed without any deviation.

(v) A separate Environmental Management Cell equipped with adequate laboratory facilities shall be set up to carry out the environmental management and environmental quality monitoring functions.

(vi) Implementation of the project vis-à-viz environmental action plans would be monitored by the Regional Office, Ministry of Environment & Forests and SEIAA / SEAC duly assisted by the SPCB. A six monthly compliance status report shall be submitted to the latter institutions apart from posting the same on the website of the applicant.

(vii) The lease terms issued by the State Forest Deptt. vide Notification No. FOR.76/99/16 Dtd. 25th February 2000 need to be strictly adhered to.

(viii) All provisions under Solid Waste (Management & Handling) Rules, 1999 should be strictly complied with.

(ix) In the light of condition 10 under Schedule III of Municipal Solid Waste (Management & Handling) Rules, 1999, for site selection, the Government may consider the appropriateness of obtaining the approval of the Airport Authority if the location is within 20 kms. of the nearest Airport.

The Regulatory Authority may revoke or suspend the clearance on the recommendation of the SEAC, if implementation of any of the above conditions is not satisfactory.

The Regulatory Authority may on the recommendation of SEAC reserve the right to stipulate additional conditions, if found necessary. The Shillong Municipal Board in a time bound manner shall implement these conditions too.

The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and Hazardous Wastes (Management & Handling) Rules, 2003 along with their amendments and Rules.

MEMBER SECRETARY
State Environment Impact Assessment Authority
Meghalaya, Shillong

Forest Clearance

MINISTRY OF ENVIRONMENT & FORESTS
NORTH EASTERN REGIONAL OFFICE
LAWUSIB, UMBATNGIEW
NEAR M.T.C. WORKSHOP, SHILLONG-793021
PHONE NO: 0364-2537600
FAX NO: 0364-2536041
GRAM: PARYAVARAN, SHILLONG

No. 3-MG C 074/2010-SHI/2991-92 "21st November 2011

To

The Commissioner & Secretary
Forest & Environment Department
Government of Meghalaya
Shillong

Sub: Proposal under the Forest (Conservation) Act, 1980 for diversion of 7.28 ha of Reserve Forest land for construction of Sanitary System for disposal of Shillong City Garbage in East Khasi Hills District, Meghalaya.

Sir,

Please refer to the State Government's letter No. FOR.76/99/244 dated 13.04.2011 on the subject mentioned above, seeking approval of the Central Government in accordance with Section 2 of the FCA, 1980, and to say that the proposal has been examined by the State Advisory Group Committee, approval was granted vide this office letter of even number dated 21.07.2011 subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested the Central Government to grant final approval.

In this connection, I am directed to say that on the basis of the compliance report furnished by the State Government vide letter No. FOR.76/99/257 dt. 03.11.2011, final approval of the Central Government is hereby granted under Section-2 of the Forest (Conservation) Act, 1980 for diversion of 7.28 ha of Reserve Forest land for construction of Sanitary System for disposal of Shillong City Garbage in favour of Chief Executive Officer, Municipal Board, Shillong in East Khasi Hills District, Meghalaya, subject to the following conditions:

(i) Legal status of the Forest land shall remain unchanged.

(ii) Compensatory afforestation shall be carried out over 14.56 Ha identified at Umdiker proposed Protected Forest in one compact Block as per the fund deposited by the User Agency.

(iii) In addition to the above normal compensatory afforestation, Penal Compensatory Afforestation equivalent to above CA i.e. 14.56 Ha. is to be carried over the identified land for raising Penal C.A..

(iv) Tree felling shall be done only when it is unavoidable under strict supervision of the State Forest Department.

(v) No damage to the flora and fauna of the surrounding area shall be caused.

(vi) The forest land shall not be used for any purpose other than that specified in the proposal.

(vii) No labour camps shall be established either inside the diverted area or other forest land.

(viii) The forest land proposed to be diverted shall under no circumstances be transferred to any other agency, department or person either through lease or otherwise.

(ix) The layout of the plan of the proposal shall not be changed without the prior approval of the Central Government.

(x) The matter of violation of F (C) Act, 1980 has been kept presently in abeyance as the Govt. of the State is in urgent need of land for the sake of public health and sanitation; but this approval shall be subject to the final decision of the competent authority in the matter of related violation of F (C) Act, 1980.

(xi) Any other conditions as may be found appropriate in future for the betterment of environment & wildlife, may be imposed by CCF (C), North Eastern Regional Office.

Yours faithfully,

(B. S. Kharnawphlang)
Conservator of Forests (C)

Copy to:

1. Principal Chief Conservator of Forests & Head of Forest Force, Department of Forests & Environment, Government of Meghalaya, Shillong.

Conservator of Forests (C)

MEGHALAYA STATE POLLUTION CONTROL BOARD
(FOREST & ENVIRONMENT DEPARTMENT, GOVT. OF MEGHALAYA)
'ARDEN' LUMPYNGNGAD,
SHILLONG – 793014
email : megspcb@rediffmail.com
website : www.megspcb.gov.in
PHONE : 0364 - 2521533, 2522802, 2521514, 2522726
TELEFAX : 0364 - 2521217, 2521764

No. MPCB/CON-8(2009)/2016-2017/50 Dtd. Shillong, the 12th August, 2016

RENEWAL OF CONSENT TO ESTABLISH

CONSENT TO ESTABLISH under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, as amended and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended (to be referred as Water Act and Air Act respectively).

CONSENT is granted to M/s SHILLONG MUNICIPAL BOARD vide T.O. No. MPCB/CON-8(2009)/2009-2010/12, dtd: 26/11/2009 for Setting up a SANITARY LANDFILL over an area of 5.2503 acres at MARTEN, MAWIONG, East Khasi Hills District under the following **terms and conditions**:

General Conditions:

1. This Consent has been accorded based on the particulars furnished by the applicant on behalf of M/s SHILLONG MUNICIPAL BOARD and subject to addition of further or more conditions if so warranted by subsequent developments. The Consent will automatically become invalid if any change or alteration or deviation is made in actual practice;

2. The Consent to Establish is valid for a period upto **31st OCTOBER 2017** unless otherwise suspended or revoked. The validity period shall be extended if necessary till such time the industry is commissioned for commercial production;

3. This Consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to the following:-

   (a) Violation of any Terms and Conditions of this Consent;
   (b) Obtaining the Consent by misrepresentation or failure to disclose fully all relevant facts;
   (c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge/emission.;

4. This Consent does not convey any property right in either real or personal property or any exclusive privileges, nor does it authorizes any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulation;

5. Applications for Consent to Operate (in prescribed Forms) and Authorisation (in prescribed Form)under Municipal Solid Wastes (Management and Handling) Rules, 2000 shall have to be submitted at least 3(three)months prior to commissioning of the Landfill;

6. No air, water and soil pollution shall be created by the Landfill beyond the prescribed permissible limits;

7. To maintain the environment and ecology of the area, development of green belt by planting selected species of trees, the height of which should not be less than 5 (five) metres when matured and at a spacing of 1 (One) metre should be made invariably around the Landfill Site;

8. As per the provisions of the Water (Prevention and Control of Pollution) Act, 1974 as amended and the Air (Prevention and Control of Pollution) Act, 1981 as amended that any Officer empowered by the Board on its behalf shall have without interruption, the right at any time to enter the Plant for inspection, collection of sample for analysis and may call for any information as deemed necessary. Denial this right will cause withdrawal of the Consent Order;

MEGHALAYA STATE POLLUTION CONTROL BOARD
(FOREST & ENVIRONMENT DEPARTMENT, GOVT. OF MEGHALAYA)
'ARDEN' LUMPYNGNGAD,
SHILLONG – 793014
email : megspcb@rediffmail.com
website : www.megspcb.gov.in
PHONE : 0364 - 2521533
2522802
2521514
2522726
TELEFAX : 0364 - 2521217
2521764

9. The SMB shall comply with all the environment protection measures and safeguards recommended in the EIA / EMP;

10. Construction of the Sanitary Landfill shall be in accordance with the standards/guidelines stipulated under the Municipal Solid Wastes (Management and Handling) Rules, 2000.

11. The terms and conditions stipulated in the Environmental Clearance issued by the SEIAA, Meghalaya vide No. SEIAA / PROJECT-13 / 2009 / 8, dt 14 – 8 - 2009 should be strictly complied with.

Specific Conditions:

A) Air Aspect:-

1. A specific cell dedicated for environment management in the industry including a well equipped environmental laboratory managed by trained and experienced personnel shall have to be established;

2. Provision should be made for setting up of at least three ambient air quality monitoring station with 120^0 angle between stations for monitoring the ambient air quality including micro meteorological data. Selection of station should be done in consultation with this Board.

3. A gas collection and control facility to collect and extract the gas from within and the top of the landfill for treatment or energy recovery shall have to be provided.

B) Water Aspect:

1. A proper surface water drainage system to collect and remove all surface runoff from the landfill site shall have to be provided;

2. A leachate collection and treatment facility to collect and treat the leachate extracted from the base of the landfill shall have to be provided;

3. The SMB should ensure that the liner system at the base and sides of the landfill are efficient enough to prevent migration of leachate or gas to the surrounding soil;

4. Final cover system at the top of the landfill should be such that it enhances surface drainage, prevents infiltrating of water and supports surface vegetation.

MEMBER SECRETARY

Copy to:-

1. The Director, Urban Affairs, Meghalaya, Shillong for kind information.
2. The CEO, M/s SHILLONG MUNICIPAL BOARD, Bishop Cotton Road, Opp. Sherwood Bungalow, Shillong - 793001 for information and necessary action.
3. RCTE-2016

312

MEGHALAYA STATE POLLUTION CONTROL BOARD

'ARDEN' LUMPYNGNGAD,
SHILLONG – 793014

email : megspcb@rediffmail.com

PHONE : 0364 - 2521533
2522802
2521514
2522726
TELEFAX : 0364 - 2521217
2521764

No. MPCB/CON-8(2009)/2015-2016/ 44 Dtd. Shillong, the 2nd April, 2015

RENEWAL OF CONSENT TO ESTABLISH

CONSENT TO ESTABLISH under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, as amended and under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981, as amended (to be referred as Water Act and Air Act respectively).

CONSENT is granted to M/s SHILLONG MUNICIPAL BOARD vide T.O. No. MPCB/CON-8(2009)/2009-2010/12, dtd: 26/11/2009 for Setting up a SANITARY LANDFILL over an area of 5.2503 acres at MARTEN, MAWIONG, East Khasi Hills District under the following **terms and conditions**:

General Conditions:

1. This Consent has been accorded based on the particulars furnished by the applicant on behalf of M/s SHILLONG MUNICIPAL BOARD and subject to addition of further or more conditions if so warranted by subsequent developments. The Consent will automatically become invalid if any change or alteration or deviation is made in actual practice;

2. The Consent to Establish is valid for a period upto 31st **OCTOBER 2015** unless otherwise suspended or revoked. The validity period shall be extended if necessary till such time the industry is commissioned for commercial production;

3. This Consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to the following: -

   (a) Violation of any Terms and Conditions of this Consent;
   (b) Obtaining the Consent by misrepresentation or failure to disclose fully all relevant facts;
   (c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge/emission.;

4. This Consent does not convey any property right in either real or personal property or any exclusive privileges, nor does it authorizes any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulation;

5. Applications for Consent to Operate (in prescribed Forms) and Authorisation (in prescribed Form)under Municipal Solid Wastes (Management and Handling) Rules, 2000 shall have to be submitted at least 3(three)months prior to commissioning of the Landfill;

6. No air, water and soil pollution shall be created by the Landfill beyond the prescribed permissible limits;

SHILLONG MUNICIPAL BOARD
Rec No. 1356
Date 10.4.15
Collection

MEGHALAYA STATE POLLUTION CONTROL BOARD
'ARDEN' LUMPYNGNGAD,
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2522726
TELEFAX : 0364 - 2521217
2521764

3. The SMB should ensure that the liner system at the base and sides of the landfill are efficient enough to prevent migration of leachate or gas to the surrounding soil;

4. Final cover system at the top of the landfill should be such that it enhances surface drainage, prevents infiltrating of water and supports surface vegetation.

MEMBER SECRETARY
Meghalaya State Pollution Control Board,
Shillong

Copy to: -

1. The Director, Urban Affairs, Meghalaya, Shillong for kind information.
2. The CEO, M/s SHILLONG MUNICIPAL BOARD, Bishop Cotton Road, Opp. Sherwood Bungalow, Shillong - 793001 for information and necessary action.
3. RCTE-2015

Annexure 7
Activities/ events/consultations

July- December 2017

NONGRIM HILLS DORBAR SHNONG:1/7/2017

MLA giving away the bins to the first recipients of the locality

Assistant Projector handing over the waste bins to one of the recipient: 1/7/2017

RYNJAH DORBAR SHNONG:12/08/2017

LAWJYNRIEW DORBAR SHNONG :19/08/2017

NONGMENSONG DORBAR SHNONG :26/8/2017

LUMBATNGEN DORBAR SHNONG:23/09/2017

PYNTHORUMKHRAH DORBAR SHNONG:26/9/2017

LUMSHYIAP DORBAR SHNONG:07/10/2017

LUMIABLOT DORBAR SHNONG:14/10/2017

MAWLAI KYNTON MASSAR DORBAR SHNONG:19/10/2017

LANGKYRDING DORBAR SHNONG :26/10/2017

LUMDIENGSOH DORBAR SHNONG:04/11/2017

LUMPYNNGAD DORBAR SHNONG:11/11/2017

MAWLYNREI DORBAR SHNONG :11/11/2017

DEMTHRING DORBAR SHNONG :18/11/2017

MADANRYTING DORBAR SHNONG:25/11/2017

RISA COLONY DORBAR SHNONG:2/12/2017

NONGRAH DORBAR SHNONG:4/12/2017

Annexure 8 – Map Showing Environmental Sampling Location