CHAPTER-V

ROLE OF STATE POLLUTION CONTROL BOARD OF ASSAM IN IMPLEMENTATION OF THE HAZARDOUS WASTES MANAGEMENT RULES

Most of the States in India are facing the problem of improper management of hazardous waste resulting from industrial effluents due to absence of appropriate planning. Assam is not an exception to this problem. Pressure of the industrial activities results in significant risk of environmental degradation in Assam. There has been growing concern of improper management of hazardous wastes in the State. Assam has generated 50,576.5 MT of hazardous waste in the year 2017-18 from 91 numbers of hazardous waste generating industries operating 19 districts of Assam. The situation is alarmingly high. No doubt industrial growth enhances the economy of the region but at the same footing is subject to environmental degradation and climate change like situation. Solution to the problem is not at impossible stage till date, if the occupiers of premises will take possible effort to manage their hazardous waste generation properly.

With this regard, the pollution control board of Assam shall have discharge corresponding duties to take all practical steps to regulate hazardous waste management rules across the State. But in many cases it is observed that there are irregularities in the working of the boar. For example, out of 243 hazardous waste generating industries 173 industries (73%) were function without obtaining authorisation from pollution control board of Assam in the Guwahati city[1]. As a result,

[1] The controller and Auditor General of India, Report : *performance audit of Environmental Degradation in the greater Guwahati Area with special emphasis on the role of Pollution Control Board, Assam (*Report no.3 of 2016, government of Assam)

the board was not in possession of information regarding the quantity of hazardous waste generated in the State. Despite of this the State Pollution Control Board of Assam has not sent the annual inventory as per the prescribed format which was required to be sent to CPCB by 30th September 2017 and thereafter by 30th day of September every year[2].The laboratory facilities are not equipped for analyzing hazardous substances and waste.

5.1. Role of SPCB of Assam in implementation of H&OWM Rules

The irregularities in the board have evoked awareness across the State. The people become vigilant against such recklessness. Therefore the time appears to investigate and evaluate the functioning of the board. It is also important to inquire all respect for Importation of hazardous wastes substances for reuse as well as the industries that will generate toxic wastes. The CPCB, SPCB and MOEF&CC should do research on this and take regulatory measures. The hazardous wastes generating industries operated without authorisation must came under the scrutiny of the SPCBs/PCCs. National legislation regulating hazardous waste may include requirements pertaining to the full range of activities involved in waste management, requirements may be placed on hazardous waste generators, transporters, and installations that recycle, treat, store or dispose of hazardous wastes.

The agrarian economy of Assam has been sustained by the network of rivers and water bodies in Assam. The Kolong river in Nagaon and Bharalu in Guwahati are evidence of human vandalism that alarms the aquatic and human health from toxic waters. Assam has 44 rivers of such critically polluted. The unhindered flow of hazardous waste into the river and massive rise in the hazardous waste in the State are the responsible for such situation. It is evident that flowing water rivers and water

[2] Show cause notice dated 22/12/2017 F. No. B -29016(sc)/1/17/HWMD/15057-15090.

basins in India as well as Assam are containing hazardous effluents. Main pollution problems associated are discharge of ammoniacal effluents, arsenic, chromium bearing excess quantity of effluent during the power tips, sulphur di-oxide into atmosphere, oily effluent by the major industries extracting crude oil and nitrogenous fertilizer units in Assam[3].

Many Organizations as per provisions of notifications shall phase out all equipment, which uses these substances, and our environmental law is strong enough to deal with this rampant hazardous manner of polluting the water of our country. For example; if any person poisons water of a forest area is punishable in contravention of the rules made by the State Government[4]. The alarming increase in hazardous waste generation in Assam is affecting the resident of the region adversely.

In determining the implementation of H&OWM Rules, 2016 in Assam and in striking a balance between the environment and development the SPCB of Assam has a crucial role to play. It is time that economically fastest growing state there shall have to be development but that development shall have to be in closest harmony with environment. The present level of environmental pollution demands to deal with proper management, handling and transboundary of hazardous wastes discharged from hazardous wastes generating industries. The SPCB of Assam has played very significant and pivotal role for the purpose of prevention, control, and abatement of all forms of environmental pollution in the State. The real impetus on implementation of Hazardous wastes management came after direction of Hon'ble Supreme Court on the subject of Hazardous Waste Management of India.

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[3] S.S.Das and BijetaChetry,"An Analytical Study on Climate Change: An Emergent Challenge Before the North Eastern Region of India with Special Reference to the State of Assam" 12 *IJRDMS* 9 (2018)

[4] According to section 26(i) and section 32(f) of Indian Forest Act 1927.

The Supreme Court directed that the industry not having valid authorization under Hazardous Wastes (management & Handling) Rules, 1989 will not operate and the State Pollution Control Boards and Committees have submitted details of hazardous waste generation. Role played by the State Pollution Control Board of Assam has been examined by analyzing the table given below:-

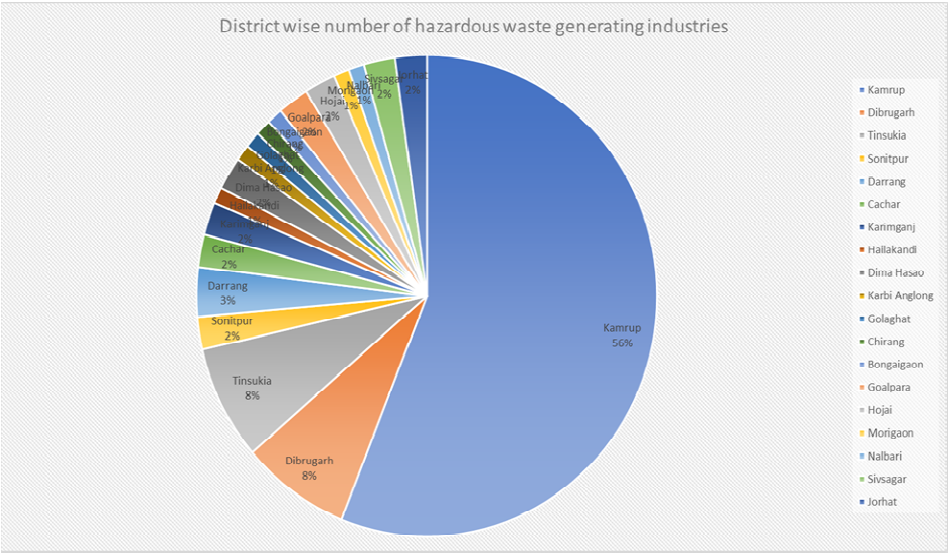
Table no. 4: Format A for Submission of Annual Inventory on Hazardous Waste Management by Occupiers.A1 Details on Hazardous Waste Generation for the year 2017-2018.

Sl. No.	Name of District	Number of HW Generating Industry	Quantity of Hazardous Waste as per authorization (MTA)	Quantity of Hazardous Waste as per Annual Return (MTA)	Quantity Disposed in Captive SLF (MT)	Quantity Disposed through common SLF at TSDF (MT)	Quantity Disposed By captive Incinerator (MT)	Quantity Disposed through common Incinetor at TSDF (MT)	Quantity Co-processed in cement Kiln (MT)	Quantity Utilized under Rule 9 (MT)	Quantity sent to Recyclers of Schedule IV Hazardous Waste (MT)	Captive Utilization (MT)	Quantity of HW Stored at Occupier premises at the end of the year (MT)
1	Kamrup	51		4692.7	265.5						1938.6	1938.6	693.4
2	Dibrugarh	7		9156	9094						56		1100.5
3	Tinsukia	7		3242.68	600						1297	0.18	16426.6
4	Sonitpur	2		Nil									Nil
5	Darrang	3		0.5739			0.13						0.442
6	Cachar	2		0.05									0.05
7	Karimganj	2		1.4									4.6
8	Hailakandi	1		Nil									4
9	Dima Hasao	2		1.275									30.275
10	Karbi Anglong	1		13							13		Nil
11	Golaghat	1		656.39	5.39						251.04		400
12	Chirang	1		31279.4								30193.8	8506
13	Bongaigaon	1		Nil									Nil
14	Goalpara	2		9.433							8.807		0.476
15	Hojai	2		36							36		Nil
16	Morigaon	1		5.01									5.01
17	Nalbari	1		Nil									Nil
18	Sivsagar	2		1481.6							13.84	1467.8	Nil
19	Jorhat	2		2.05								2.05	Nil

Source: Pollution Control Board of Assam

In Table no. 4 the SPCB of Assam exhibits numbers of various hazardous wastes generating industries for every district in Assam. It is evident from the table that Kamrup district has highest number of waste generating industries i.e., 51. Following Dibrugarh and Tinsukia in the second position with 7 number hazardous waste generating industries each. Hailakandi, KarbiAnglong, Golaghat, Chirang, Bongaigoan, Morigaon and Nalbari has least number of waste generating industries with single number of hazardous waste generating unit for each district. It is seen that Assam has total 33 number of districts out of which only 19 districts has hazardous waste generating industries and remaining districts have no trace of hazardous waste generating industries according to the SPCB of Assam.

Figure no. 1: District wise number of hazardous waste generating industries

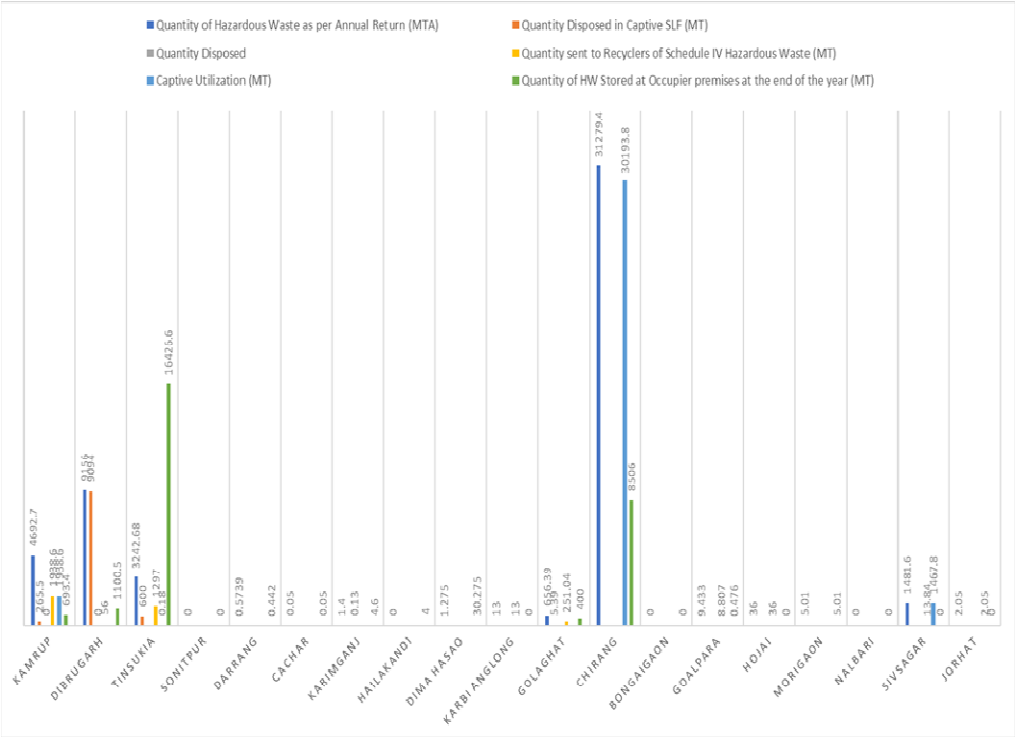


The above Figure no. 1 represents the percentage of hazardous waste generated by various districts of Assam which calculated from Table no. 4.

The Table no. 4 provided no data on quantity of hazardous wastes authorised to be generated in these districts of Assam. The table provided data on quantity of hazardous waste annually returned by these districts of Assam. The Kamrup district has returned 4692.7 MTA with the highest number of hazardous waste generating industries of 51 units. The Dibrugarh district has returned 9156 MTA of hazardous waste with 7 units of hazardous waste generating industries. The Tinsukia district has also 7 units of hazardous waste with a annual return of 3242.68 MTA. Sonitpur district has 2 hazardous wastes units but no return was filed. Darrang district has filed a return of 0.5739 MTA with a hazardous waste generating industry of 3 units. Cachar district has filed a return of 0.05 MTA of hazardous waste with a hazardous waste generating industry of 2 units. Karimganj district has 2 gazardous waste generating units and filed 1.4 MTA hazardous waste annually. Hailakandi district has filed zero return with a single unit of hazardous waste generating industries. Dima Hasao has generated 1.275 MTA hazardous waste annually with 2 units of hazardous waste generating industry. KarbiAnglong district has filed a return of 13 MTA of hazardous waste with a single unit. Golaghat district has one hazardous waste generating that generated 656.39 MTA of hazardous waste annually. The Chirang district has file highest quantity of return among the other district of Assam with 31279.4 MTA which is generated by only one unit. The Bongaigaon and Nalbari district has not filed any returned on hazardous waste generation with one unit of each. Goalpara district has 2 hazardous waste generating units and filed a returned of 9.433 MTA. Hojai district has 2 hazardous waste generating units with annual returned of 36 MTA. Morigaon district has filed a returned of 5.01 MTA with single hazardous waste generating unit. Sivsagar and

Jorhat district has two generating units of each and filed a returned of 1481.6 MTA and 2.05 MTA respectively.

Figure No.2: District wise quantity of hazardous waste as per annual return, quantity disposed in captive SLF, quantity disposed by captive incinerator, quantity sent to recyclers of schedule IV hazardous waste, captive utilization and quantity of hazardous waste stored at occupier premises at the end of the year 2017-2018.



The above Figure no. 2 is the visual representation of the Table no. 4, where quantity of hazardous waste as per annual return, quantity disposed in captive SLF, quantity disposed by captive incinerator, quantity sent to recyclers of schedule IV hazardous waste, captive utilization and quantity of hazardous waste stored at occupier premises at the end of the year 2017-2018.

The Table no. 4 provides data on quantity disposed in captive SLF for some districts. The Kamrup district has a quantity of 265.5 MT of hazardous waste that is

disposed in captive SLF. Dibrugarh district has a quantity disposed in captive SLF of 9094 MT of hazardous waste. The Tinsukia and Golaghat district have a quantity of 600 MT and 5.39 MT of hazardous waste that are disposed in captive SLF respectively. On the other hand other districts have no record of quantity disposed in captive SLF. It is also seen in the table that there is no data provided for quantity disposed through common SLF at TSDF, quantity disposed through common incinerator, quantity co-processed in cement Kiln, quantity utilized under rule 9 for all the districts. Only Darrang district has record of quantity disposed by captive incinerator i.e. 0.13 MT of hazardous waste.

The Table no.4 has provided information on quantity sent to recyclers of schedule IV H&OWM Rules 2016. The Kamrup district has sent a quantity of 1938.6 MT of hazardous waste to the recycler out of its total generation of 4692.7 MTA hazardous waste. The Dibrugarh district has sent 56 MT of hazardous waste to the recycler. Tinsukia district has sent 1297 MT of hazardous waste for recycling. Whereas KarbiAnglong district has sent hazardous waste generated annually i.e. 13 MT to the recycler for recycling. Furthermore Golaghat district has sent 251.04 MT of hazardous waste out of 656.39 MTA to the recycler. Goalpara district has sent 8.807 MT of hazardous waste out of 9.33 MTA for recycling. On the other hand Hojai district has sent total quantity of hazardous waste generated annually to the recycler i.e. 36 MT. Whereas Sivsager district has sent 13.84 MT of hazardous waste to the recycler for recycling annually. On the other hand it is found that no record of recycling hazardous waste quantity at Chirang, Bongaigaon, Morigaon, Nalbari and Jorhat, Dima Hasao, Hailakandi, Karimganj, Cachar, Darrang and Sonitpur of Assam.

The table has also provided the quantity of captive utilization of hazardous waste as against each district of Assam. The Kamrup district has shown captive utilization of 1938.6 MT of hazardous waste annually. The captive utilization of hazardous waste at Tinsukia district is only 0.18 MT. Whereas the Chirang district has 30193.8 MT of hazardous waste that are captive utilization. The captive utilization of hazardous waste at Sivsager district is 1467.8. On the other hand the Jorhat district has captive utilization of total quantity of hazardous waste generation annually i.e. 2.05 MT. The rest of the other district has shown no captive utilization of hazardous waste.

The Table no.4 also display the quantity of hazardous waste stored at occupier premise at the end of the year. The Kamrup district has 693.4 MT of hazardous waste that is stored at the occupier premise of hazardous waste generating industries operated in the district. On the other hand Dibrugarh district has 1100.5 MT of hazardous waste stored at the occupier premises annually. But at the Tinsukia district the quantity is 16426.6 MT which is comparatively high than other district. On the other hand Darrang district has 0.442 MT of hazardous waste stored at the end of the occupier premises. But the Cachar district has stored total quantity of hazardous wastes generated annually in the premises i.e. 0.05. On the other hand Karimganj district has generated 1.4 MTA but stored 4.6 MT which is more than its generation. Subsequently Hailakandi district has shown nil in generation of hazardous waste but stored 4 MT of hazardous waste at the occupier premises at the end of the year. On the other hand Dima Hasao has shown 1.275 MT of hazardous waste generation but stored quantity is more than its generation i.e. 30.275 MT. The Golaghat district has 400 MT of hazardous waste stored at occupier premises at the end of the year. On the other

hand Chirang district has stored 8506 MT of hazardous waste at the end of the year. The Goalpara district has 0.476 MT and Morigaon has 5.01 MT of hazardous waste stored at occupier premises at the end of the year. On the other hand KarbiAnglong, Sonitpur and Bongaigaon district has shown nil storage quantity. But other district viz, Hojai, Nalbari, Sivsagar, Jorhat are not provided any data in this respect.

5.2. Problems in implementation of Hazardous Wastes Management Rules in Assam

Waste cannot be completely eliminated from a society. Waste can be converted into wealth with the help of recycle/utilize/co-process of such waste substances. Recycling is a method through which a waste becomes non-wastes. The wastes should be collected, cleaned and separated in a scientific manner. No facility for utilization and co-procession is a major problem in implementation of hazardous waste management rules in Assam. As per the information provided by state pollution control board of Assam, there is differences between the quantities of waste generated and disposed/recycled/utilized which is due to the carry forward balance of the previous year by various units in Assam. The problem can be analyzed with the help of authorised capacity and quantity recycled by the various authorised recycle units in Assam as per the Table no.5 given below:-

Table No 5. List of the authorised recycler/ utilizer/Co-Processor of hazardous wastes for the year 2017-18.

Sl. No.	Name and Address of the Unit	Name of the items as per Schedule IV of H & OW (M&TM) Rules, 2016	Permitted Capacity (MTA/ KLA)	Quantity Recycled/ processed	Remarks
1.	M/s. Modern Lube Industries, BarsapareIndustria Area, (Behind Bajrang Ispat Ltd.), Guwahati-34	Used oil Waste oil	1000 KLA 1000 KLA	140 KL	
2.	M/s. Progressive Industries, Rani Industrial Area, District: Kamrup,(Asam)	Used Oil Waste oil	500 KLA 1000 KLA	85 KLA Nil	
3.	M/s. East End Petro Chemicals (P) Ltd. Naoholia, Dibrugarh, (Assam).	Used oil	600 KLA	Nil	Not in operation
4.	M/s. Allied Industries, P.O. Makum Junction, Digboi, Dist: Tinsukia, (Assam).	Waste oil	15,000 KLA	250 MTA	
5.	M/s. North East Petrochemicals, Kamarkuchi, Sonapur, Dist: Kamrup	Waste oil	5000 KLA		Not in operation

6.	M/s. PurbanchalChemicals, Vill: Gauripur, P.O. College Nagar, Dist: Kamrup, Assam	Used oil, Waste oil, Lead Acid, Bttery Plates. Lead Scrap/ Residues	1200 MTA	258 MTA	
7.	M/s. Royal Industries, 15th Mile, Vill: Burni, P.O. : Jorabat, Dist: Kamrup, (Assam).	Lead Acid Battery Plates & Lead Scrap	900 MTA	480.11 MTA	
8.	M/s. Nirman Industries, D-7, DICC Campus, Numalijalah, Amingaon, Dist: Kamrup, (Assam).	Lead Acid Battery Plates& Lead Scrap.	1200 MTA		
9.	M/S. S.R. Battery Works, Murmuria Gaon, Na-Pamua, Mariani Road, Cinnamora, Jorhat, (Assam).	Lead Acid Battery Plates & Lead Scrap	2400 MTA	Nil	Not in operation
10.	M/s. Anubhav Industries, Industrial growth Centre, Chaygaon, Vill: Chattabari, P.O.: Chaygaon, Dist: Kamrup, (Assam).	Lead Acid Battery Plates & Lead Scrap	9600 MTA	3542.5 MTA	
11.	M/s. Shree Sai Vamika Industries, Gauripur, Near Shiv sai Steel, North Guwahati, Dist: Kamrup (Assam)	Lead Acid Battery Plates & Lead Scrap	9600 MTA	6788 MTA	

12.	M/s. Kamakhya Power Solutions, 15th Mile, Vill. :Byrnihat, P.O.: Jorabat, Dist: Kamrup(Assam).	Schedul-I(9.2), Lead ash or Particulate Matter from flue gas Schedule III (A1170), Unsorted waste Battery	30MTA 2400 MTA	Nil 2272.76 MTA	

Source: Pollution Control Board, Assam

From the above Table no. 5 it is evident that quantity recycled and processed by these processing units are far less than its permissible capacity. It is seen M/s Modern Lube Industries, Barsapara Industrial Area, (Behind Bajrang Ispat Ltd.), Guwahati-34 is permitted to recycle and process is 1000 KLA for both used oil and waste oil but in reality they recycled and processed only 140 KLA which is far less than the permitted limits.

It is seen from the table that some processing and recycling units are now not in operation. These units are a) M/s East End Petro Chemicals (p) Ltd. Naoholia, Dibrugarh, (Assam) b) M/s North East Petrochemicals, Kamarkuchi, Sonapur, District Kamrup c) M/s S.R Battery Work, Murmuria Gaon, Na-Pamua,Mariani Road, Cinnamora, Jorhat, (Assam).

Moreover the problem in implementation of Hazardous Wastes management rules can be reduced by recycling / utilizing / co processing of hazardous waste by those authorized recycler/ utilizer/ coprocessor operating under the state. But it is

observed from the Table no. 5 that the authorized recycler/ utilizer/ coprocessor in Assam are unable to recycle / utilize / co process their permissible capacity of Hazardous waste. It is evident from the Table no. 6 given below:-

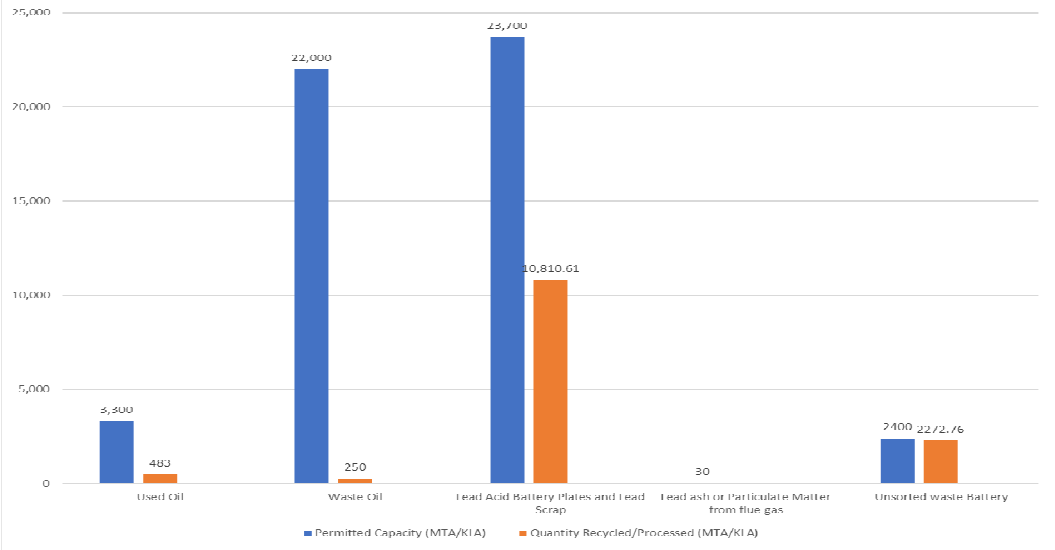
Table no.6: Name of the items as per schedule –IV of H&OWM Rules, 2016 and its total permitted capacity as well as total quantity recycled.

Name of the items as per Schedule IV of H&OW (H&TM) Rules, 2016	Permitted Capacity (MTA/KLA)	Quantity Recycled/Processed (MTA/KLA)
Used Oil	3,300	483
Waste Oil	22,000	250
Lead Acid Battery Plates and Lead Scrap	23,700	10,810.61
Lead ash or Particulate Matter from flue gas	30	
Unsorted waste Battery	2400	2272.76

Further it has been tried to analyze the Table no. 5 of authorized recyclers/utilizers/co-processors of hazardous wastes provided by pollution control board of Assam. Table no.6 has been prepared on the basis of the data provided in the Table no. 5 which shows total used oil for the year 2017-18 to be recycled is 3, 300 KLA but they actually recycled only 483 KLA for the year 2017-18. For the waste oil total permitted annual recycle is 22,000 KLA for all the authorised recyclers in Assam for the year 2017-18 but they have actually recycled only 250 KLA which is far less than actually permitted. For lead acid battery plates and lead scrap the permitted capacity is 23,700 MTA for all the authorised recyclers to be recycled for the year 2017-18 and they have recycled 10,810.61 MTA which is also considerably low. For lead ash or particulate matter from flue gas the permitted capacity is 30 MTA for all

the authorised recycler of Assam but there is no record of recycling of this hazardous waste for the year 2017-18. For unsorted waste battery the authorised recyclers are permitted to recycle 2.400 MTA for the year 2017-18 but they have recycle 2,272.76 MTA for the year 2017-18

Figure no. 3: Display the name of the items as per schedule –IV of H&OWM Rules, 2016 and its total permitted capacity as well as total quantity recycled.



From the Table no. 6 it is clearly evident that the items which are provided in the schedule IV of H&OWM Rules, 2016 are not properly recycled by these authorised recyclers of Assam. It has been tried to show the difference between permitted capacity and quantity recycled or process with this table. Further from the table it has been tried to visualize these data with the help of a diagram which is clearly showing the difference between quantity permitted and quantity actually recycled /processed by these authorised recyclers of Assam for the year 2017-18.

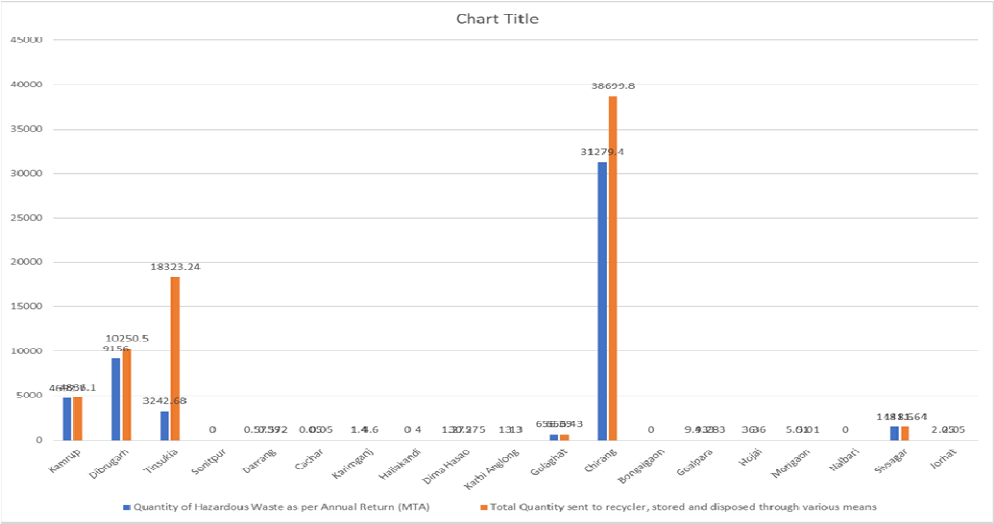
In such a situation reduction of waste will be probable solution by prevention, limitation of the production of wastes by way of source reduction. Sources of wastes can be reducing by change in design, manufacture, materials and products that reduces

the toxicity of wastes to be disposed of. Wastes can be reduced by environmentally sound management and treatment. The wastes that cannot be recycling reuse must be disposed of in a landfill. Such landfills are required to cover typically so that it cannot be contaminated with ground water. Such activities not only reduce the amount of wastes products but also reduce the cost of wastes disposal, treatment and recycle.

5.3. Instances of Gap between generation of hazardous waste and quantity of hazardous waste sent to the recycler, stored at occupier premises and disposed through various means of disposal as per Table no. 4

From the Table no.4 it has been tried to bring out the differences between quantity of hazardous waste as per annual return and total quantity sent to recyclers, stored at occupier premises and disposed through various means of disposal. These differences in various districts are visualized through the Figure no. 4 given below:-

Figure no. 4 display the district wise total quantity of hazardous waste as per annual return and total quantity sent to recycler, stored at occupier premises and disposed through various means.



For the Kamrup district quantity of hazardous waste as per annual return is 4692.7 MTA and total quantity sent to recycler, stored at occupier premise and disposed through various means is 4836.1 MTA. For the Dibrugarh district quantity of hazardous waste as per annual return is 9156 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 10250.5 MTA. Tinsukia district provide a return of 3242.68 MTA but quantity sent to recyclers, stored at occupier premises and disposed through various means is 18323.24 MTA. For the Sonitpur district the quantity of hazardous waste as per annual return is Nil and quantity sent to recyclers, stored at occupier premises and disposed through various means is also Nil. For Darrang district quantity of hazardous waste as per annual return is 0.5739 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 0.572. For the Cachar district quantity of hazardous waste as per annual return is 0.05 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 0.05 MTA. For the Karimganj district quantity of hazardous waste as per annual return is 1.4 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 4.6 MTA. For the Hailakandi district quantity of hazardous waste as per annual return is Nil and quantity sent to recyclers, stored at occupier premises and disposed through various means is 4 MTA.For the Dima Hasao district quantity of hazardous waste as per annual return is 1.275 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 30.275 MTA.For the KarbiAnglong district quantity of hazardous waste as per annual return is 13 MTA and quantity sent to recyclers, stored at occupier premises and disposed through

various means is 13 MTA.For the Golaghat district quantity of hazardous waste as per annual return is 656.39 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 656.43 MTA.For the Chirang district quantity of hazardous waste as per annual return is 31279.4 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 38699.8 MTA. For the Bongaigaon district quantity of hazardous waste as per annual return is Nil and quantity sent to recyclers, stored at occupier premises and disposed through various means is Nil.For the Goalpara district quantity of hazardous waste as per annual return is 9.433 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 9.283 MTA.For the Hojai district quantity of hazardous waste as per annual return is 36 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 36MTA.For the Morigaon district quantity of hazardous waste as per annual return is 5.01 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 5.01 MTA.For the Nalbari district quantity of hazardous waste as per annual return is Nil and quantity sent to recyclers, stored at occupier premises and disposed through various means is Nil.For the Sivsagar district quantity of hazardous waste as per annual return is 1481.6 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 1481.6 MTA.For the Jorhat district quantity of hazardous waste as per annual return is 2.05 MTA and quantity sent to recyclers, stored at occupier premises and disposed through various means is 2.05 MTA.

It is observed in the Table no. 4 that some district have not filed the quantity of hazardous waste returned annually. Those who file the annual return found to be not in accordance with total quantity sent to recyclers, stored at occupier premises and disposed through various means. For example: in Tinsukia district the quantity of hazardous waste as per annual return is 3,242.68 and the total quantity sent to recyclers, stored at occupier premises at the end of the year and disposed through various means is 18,323.24 MTA which is far greater than the quantity of hazardous waste as per annual return.

t is evident from the table no.4 and figure 4 making with the help of data provided by the pollution control board of Assam is that proper record of hazardous waste generation is not maintain in our State. The data which are available are ambiguous in nature. The board does not provide the true picture of hazardous waste generation in the State.

Without proper account of hazardous waste generation in the State the board cannot efficiently managed the hazardous waste in the State. To implement proper hazardous waste management rules, the board has to have a systematic and sincere effort to collect and analyze hazardous waste generation data.

5.4. Enforcement of duties under H&OWM Rules, 2016

Strategic approaches need to be adopted for proper governance of hazardous wastes likewise collection of credible and reliable information on quantity and characteristics of hazardous wastes generation; dispose, prevention, minimization, recycle and control of hazardous wastes in a environmentally sound manner; involvement of science and technological institution for research to mitigate the

impact of hazardous wastes; involvement of government and other stakeholders, legislators to have a consistent initiatives to identity important issues for sustainable solution.

Therefore annual inventory of hazardous wastes is a crucial practice under the H&OWM Rules 2016 but it is a mute question that whether such data provided by the hazardous wastes generating industries are reliable or accurate. Therefore functional approaches need to be improved by the implementing authority. There is need to streamline the efforts by scientific assessment of hazardous substances, development of appropriate policy, implementation of plans and programme relating to the hazardous wastes, monitoring and evaluation of all activities of the wastes generators, collectors, recyclers etc. of hazardous wastes.

Though 2016 notification incorporate the house hold generation of HW, there is a need to include other sources to estimate the reliable and realistic assessment of HW generation and its impacts on environment.[5]As a part of environmental governance, enforcement strategy needs to be a combination of scientific management of hazardous wastes and sustainable development. There must science based enforcement of regulation rather than routine policing. The MoEF&CC must interact with the CPCBs, SPCBs, PCCs, Custom departments, DGFT, Labour departments, department of environment, and departments of commerce of every stastes/UTs for assessing the need for action by the concern agencies in the states. In order to assess the implementation status of key components of H&OWM Rules 2016 the concern

[5] CPCB, Report*: Interim Report of Monitoring Committee on Management of Hazardous Wastes* (Ministry of Environment, Forest and Climate Change, 20019)

agencies should review the data or information through regular inspection of hazardous wastes generating industries and identification of shortfalls in compliance of H&OWM Rules 2016.

The SPCBS/PCCS, state government and UT government have been assigned to take enforcement action under Schedule VII and other provision of the H&OWM Rules, 2016. It is found from the study that the periodic inspection of hazardous wastes handling units are not notified except in the Gujarat, Tamil Nadu, Karnataka, Jammu &Kashmir, Uttar Pradesh, Telangana, Chhattisgarh, Bihar, Haryana and Rajasthan. The reports of 2017-18 have not been reported.

It is observed that the SPCBs/PCCs are not taking action against the violating units regarding provision of daily records, annual returns, manifest document and storage of hazardous wastes beyond time framed etc. Only 15 SPCBs/PCCs namely Goa, Himachal Pradesh, Telangana, Haryana, Odisha, Jammu&Kashmir, Rajasthan, Puducharry, Chhattisgarh, Maharashtra, Gujarat, Karnataka, West Bengal, Madhya Pradesh and Punjab have issued show cause notice and closure direction. Among 15 SPCBs/PCCs only Maharashtra has reported filing of FIR against the violators.

As per the CPCB guideline every SPCBs/PCCs must constitute in-house Hazardous Wastes Response Team with regard to impose financial penalty for environmental damages due to handling and disposal of hazardous wastes. But it is found from the study that only Mizoram, Uttar Pradesh, West Bengal, Punjab, Jharkhand, Jammu &Kashmir, Tripura, Rajasthan, Chandigarh and Puducharry have constituted in-house Hazardous Wastes Response Team and only Odisha have imposed financial penalty under Rule 23 of the H&OWM Rules, 2016.

Furthermore, monitoring report of compliance of various provisions including permission for import and export are not submitted by the other states except by Uttar Pradesh, Tamil Nadu, Odisha, Rajasthan, Puducherry, and Tamil Nadu to the CPCB. The SPCBs/PCCs of Rajasthan and Puducherry are not providing the number of units monitored during 2017-18.

The study also reveals that the SPCBs/PCCs of Haryana, Bihar, Odisha, Telangana, Uttar Pradesh, Gujarat, Rajasthan, Jharkhand and Manipur are not in possession of occupier having authorisation and submitting annual return during 2017-18. Furthermore, only the Telangana, Maharashtra, Rajasthan and West Bengal have verified the annual return submitted by the respective boards.

The detail conditions for maintenance of register for hazardous wastes management as stipulated under the H&OWM Rules, 2016 are only maintained by the SPCB of Tamil Nadu and Mizoram.

It is fond from the study that only Telangana, Haryana and Punjab have online software to monitor and reconcile the manifest documents and others are fails to do so. The state of Jharkhand, Tripura, Assam and Meghalaya are not receiving the copy 1 and 5 from the sender and receiver. The states of Assam, Punjab, Tamil Nadu, Manipur, Meghalaya, and Mizoram are not monitoring the hazardous waste generating units for not sending their wastes as stipulated days but others who monitors the same fails to report such violations of Rules. On the other hand copy 7 are also not received from the receiver in other state except by the Chandigarh, Himachal Pradesh and Goa.

The states of Haryana, Mizoram, Assam, West Bengal, Jharkhand, Kerala and Chhattisgarh have not in possession of any encouraging policy for reuse/recycle and

co-processing of hazardous wastes. Though the other SPCBs/PCCs have developed such policy but details of such policy have not been informed.

The most of the SPCBs/PCCs have developed design and layout of the captive or secured landfill but review of which need to be required in terms of compliance of CPCB's guidelines. Though most of the SPCBs/PCCs have monitored the TSDF facility but quantity of leachate generated in the facility is not proved accurately. Furthermore, some states like Assam, Tripura, Jharkhand and Puduchrry have reporting of captive SLF during 2016-17 inventories but now reporting non-existing of such facility.

It is found from the study so many complaints are filed against the violating activities in the states of Maharashtra, Odisha, Uttar Pradesh, Telangana, Karnataka, Gujarat and Puducherry from the neighboring firm and residents surrounding the TSDF. However, the respective SPCBs/PCCs have not taken any action against such activities. The findings of the present study requires for the urgent need of deterrent legal action in case of non-compliance of H&OWM Rules, 2016 that should be taken by the SPCBs/PCCs. Strategic approaches such as capacity building of man power, infrastructure of the SPCBs/PCCs, laboratories, hazardous waste generating industries and used of IT based tools may enhance the implementation programme.

The monitoring committee visited the office of Jawaharlal Nehru Port Trust on September 25-26 2018 to monitor the execution of duties assigned to custom authority under Rule 13, 14, 15 and schedule VII of H&OWM Rules, 2016. On 15/10/2018 the monitoring committee also visited to the officials of Jawaharlal Nehru Custom House, Mumbai. The problem faced by the custom authority is lack of training, facility,

resource for destruction and infrastructure of the authority and its officials. There is the problem of interpretation of technical language; proper feedback mechanisms are not available.

The custom authority must use Risk Management System (RMS) to review import or export data of various wastes streams that are mis-declared and include them RMS to enable low risk consignments. The custom authority must be provided with financial assistance for environmentally sound management of seized hazardous and other wastes. There shall close collaboration between the different agencies and bodies of the government likewise MoEF&CC, CPCB, SPCBs, Custom and Port Authorities for working in proper direction as per H&OWM Rules, 2016. Jawaharlal Nehru Port Trust in India must take initiatives for harmonization of Basel code with ITC (HS) codes.

Environmental monitoring of landfill site is an essential function of the PCBs. Such monitoring may be carried out within the landfill, in the local air or atmosphere above or around the landfill, unsaturated surface and ground water zone beneath and around the landfill. The board must monitor the parameters likewise leachate head, gas, quality within the landfill as well as long term movement of the landfill cover, quality of pore fluid, gas in the vadose zone, ground water at saturated zone, air quality above the landfill and gas control facility at building or near the landfill must be checked. At the time of monitoring the board may use equipments like ground water sample, leachate sample, active and passive air sampler etc. for monitoring of various means. Each type of monitoring equipment must be finalized by the expert on the basis of topography of the area and the layout of the landfill.

A scientific leachate collection system must be designed as finalized by design engineer in consultation with SPCB or PCC as per site specific conditions at all landfills. It includes drainage lyre, removal system, perforated pipe and sumps collection area. The material used in establishment of leachate collection system must be a good quality so that it is not affected by the leachate quality. Such leachate collection system is a viable solution to store leachate in a holding tank for few days and send it for treatment to appropriate authority.

5.5. Challenges of hazardous waste management in Assam

In due course of regular visit to the office of pollution control board of Assam, the researcher observed that absence of implementation plans and programmes, actions against defaulter or violator of hazardous waste management rules, irregularities in constitution of board's member and their functioning, absence of common TSDF in the State has been identified as a major challenges to manage hazardous waste in Assam. However there are instances of not proper inspections of hazardous waste management industries in Assam. For example: in four out of the nine industries are found not installation of effluents treatment plants in Guwahati city of Assam. But it is found that there are a few instances of issuance of show cause notice to the violator of the provisions. It is evident from that though the board is not short of fund; it fails to utilize it to play an effective role[6].

After consultation with the board's member the researcher finds that there are rampant irregularities in the Pollution Control Board of Assam. Despite the SC and

[6] The controller and Auditor General of India, Report : *performance audit of Environmental Degradation in the greater Guwahati Area with special emphasis on the role of Pollution Control Board, Assam (*Report no.3 of 2016, government of Assam)

NGT repeated directions regarding the appointment of full-fledged chairman and reconstituting the board, the functioning of the State Pollution Control Board of Assam is over the years suffered a lot as it is not manned by competent persons. The Central government had also repeatedly been urging the State governments, including the Assam government, to appoint people who could add value and stature to the State Pollution Control Boards and utilize their experience in preserving the environment but with little response.[7]

There are stipulation and guidelines concerning the appointment of chairperson who is supposed to be a competent authority having special knowledge or practical experience in the domain which he administers. Similarly Member Secretary's post also entails fulfillment of certain laid down conditions. Compromising on these criteria is tantamount to undermining the board's functioning. The meeting of the board is not held as mandate to be held. The last board meeting too was held more than three years, whereas meetings are mandate to be held once in three months.

After these interventions the Assam government has appointed an IFS officer as Chairman-in-charge while the post of member secretary has been vacant for more than three years. its then chairman in charge A.M. Singh has begun cracking the whip, directing derecognition of ten private laboratories located in Guwahati which were empanelled about eight years back by the board without following any norms. The credibility of the reports of test conducted on hazardous wastes furnished by these

[7] Sivasish Thakur, PCBA suffering due to lack of competent people at helm, The Assam Tribune. July 3, 2018 p. 1 to 4

laboratories has also come under scrutiny. The board has also its central laboratory in Guwahati and equipped to conduct all mandatory tests.

Industries seeking licenses used to directly approach these private labs and get the mandatory tests done. Generally the applicants should have come to the Pollution Control Board of Assam which would then refer them to a private lab if the tests cannot be done there. The credibility of the reports of tests conducted on air, water and hazardous wastes furnished by these laboratories have also come under scrutiny. Moreover, the Pollution Control Board of Assam did not get any processing fees from these labs. Due to the outsourcing of the tests, the board used to lose revenue of around Rs. 2 crore a year.[8]

Preparation and development of updated inventory of hazardous and other waste must be mandatory initiative to have information on the quantity of hazardous waste at State level. The central government developed rules and regulations, their implementation and enforcement is the responsibility of the SPCB of Assam. The board is differing in their implementation programme at the State. For instance: the State Pollution Control Board of Assam has not sent the annual inventory as per the prescribed format which was required to be sent to CPCB by 30th September 2017 and thereafter by 30th day of September every year[9]. The implementation at grass root level is very unsatisfactory. The board has sufficient fund the deficiencies could have been tackle. The monitoring work of the board has hampered due to lack of technical staff. Such an approach stands to negate the primary objective of the board. Loophole in

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[8] Rituraj Borthakur, 10 empanelled PCBA labs to be derecognized, The Assam Tribune July 4, 2018, p 1 to 4

[9] Show cause notice dated 22/12/2017 F. No. B -29016(sc)/1/17/HWMD/15057-15090.

current legislations contributed to this problem. If required the existing rules and regulation concerning monitoring of pollution control boards should be changed.

It is difficult to develop alternative technology for total elimination of hazardous waste generation. There is no proper secured landfill facility available in India to dispose of HW till 1997. Guidelines are available in India for Management and Handling of HW. Ranking of the sites for selecting them to be used in HW disposal is an important issue. Today most often used option for disposal of waste is secured landfill. Secured landfills and incineration projects have enormous scope to become an organized sector in environmental management programme of the country.[10] As per the SC's direction that SPCBs shall take strict steps for cancellation of authorisation if it is found violation of any provision of hazardous waste management rules. Therefore the board must inspect the industries at regular intervals either for renewing the licenses or grant of authorisation[11].

The recent blowout at the Baghjan Oil field of Tinsukia on May 27, 2020 raises questions over the role of PCB of Assam in implementation of H&OWM Rules 2016 and other environmental legislations in the State. The continuous spillage of gas from the well has contaminated the surrounding areas that leading to evacuation of approximately six hundred fifty families. The carcass of river dolphins and other animals at the Maguri Motapungbeel shows the ecological damage caused by the incident.

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[10] Shalini Rawat, Rajesh Yadav, et.al., "Hazardous Waste Management Handling and Disposal", volume 3 Issue 5, *SSRG-IJCE 205 (2016)*

[11] *K. Purusdhotam Reddy v. U.O.I* [2001]*Writ Petition No.29629/1998*[A.P. High Court 2001]

The PCB of Assam has issued show cause notice to the Baghjan Oil Field on 10th June, 2020 seeking details of its operation during last fifteen years. The PCB charged that the oil field has been operating without required permission on the other hand the oil field claimed that it has PCB's consent. The NGT constituted an expert committee on 24 June, 2020 to loot into the matter under the chairmanship of Justice B.P. Kakoty, former Judge of the Guwahati High court. It is crystal clear from the report of the expert committee that the Oil India Ltd. did not have mandatory consent since 2006 when the company was first started to the day of blowout. Therefore the company is liable for violating the provision of section 25 and 26 of the Water Act and Air Act as well as Rule 6 of the H&OWM Rules 2016. If the company has not obtained required norms or standard as per the Act or Rules then why the board remained silence before the happening of the blowout of oil field. Such incident discloses the attributes of the PCB of Assam towards the implementation of HWM Rules in Assam.

There is no common TSDF in Assam; therefore huge quantity of hazardous waste lying in the units for years and years which may causes serious risk. Till date the SPCB of Assam does not follow the SC's directions for construction of TSDF of hazardous wastes, still the problem of storage at occupier premises is alarming. The board should insist on installation of common TSDF. Another problem is insufficiency of CPCB recognized vendor in north east region. The board discloses the matter of informal sector involvement in handling of hazardous waste in the state. It is evident from that the board fails to take action against such sectors. Furthermore, the researcher observed that a few hazardous waste generating industries have prepared a

comprehensive on site emergency plan as per provision of law. On site emergency plan is an essential plan in context of our geographical location. There are every possibilities of facing emergency in Assam as because of seismic sensitive region. On site emergency plan would be an effective measure to deals with potential harms to employees and lives of other person and properties.

5.6 Discussion

All the districts of Assam have not generated hazardous waste; according to the record only 19 out of 33 districts are generating hazardous wastes. Among these 19 industries Chirang district recorded highest number of hazardous waste generation only with a one unit of hazardous waste generating industries. Although some districts have higher number of hazardous waste generating industries but they do not generate considerably higher amount of hazardous waste. Some districts recorded one or two number of hazardous waste generating industries but according to the record they do not generate any hazardous waste.

The state has 12 number of authorised recyclers/utilizers/co-processors of hazardous wastes from the record of pollution control board of Assam. Most of the units are situated at Kamrup district. Guwahati, Dibrugarh, Tinsukia and Jorhathave one authorised recyclers of hazardous waste each. Among these recyclers/utilizers/co-processors of hazardous wastessome units are no longer in operation. It is observed from the data these units are not capable of recycle all the hazardous waste generated by the hazardous waste generating industries. These units can only recycled, utilized and co-processed used oil, waste oil, lead acid battery plates, leads scraps unsorted waste batteries and particulates matter from gases.

These authorised recyclers/ utilizers/co-processors of hazardous wastes are permitted to recycle a large quantity of hazardous wastes but those which are operational do not utilize their full capacity of recycle of hazardous waste. It is observed that the state pollution control board of Assam not taking any appropriate step to open new recyclers/ utilizers/co-processors of hazardous wastes in other districts of Assam and to make operational those units which are no more in operation.

From the data provided by the pollution control board of Assam it is observed that there are some disparity among the data of quantity of hazardous waste generation and significant differences it with the total quantity of stored, recycled and disposed through various means. For every district it is seen that the quantity of hazardous waste as per annual return is significantly at the lower side in the comparison to total quantity sent to recyclers, stored at occupiers premises at the end of the year and disposed through various means. Therefore it is evident that the pollution control board of Assam does not take any punishable steps towards these violating industries for maintaining proper record of hazardous waste generation. The role of state pollution control board of Assam is not found in accordance with the rules and regulation framed by the government of India.