BEFORE THE NATIONAL GREEN TRIBUNAL

SOUTHERN ZONAL BENCH

CHENNAI

Application No. 141 of 2013 (SZ) (THC)

Kunjoonjamma Jose
W/o Jose Mathew
Parambathoor JJ Villa
Mundankadavu
Chengannoor- 689 121 **....Applicant**

Vs.

1. Kerala Sate Pollution Control Board
   Represented by its Secretary
   Office of Kerala State pollution Control Board
   Thiruvanathapuram-6695001

2. The Chief Environmental engineer
   Kerala State Pollution control Board
   Thiruvananthapuram-695 001

3. The District Environmental Engineer
   Kerala State Pollution Control Board
   District office
   Aalappuzha- 688 001

4. The Chengannoor Municipality
   Represented by its secretary
   Office of the Chengannoor Municipality
   Chengannoor- 689 121

5. M/s. Perfect Alloys
   Represented by Smt. Riya Manoj,
   Managing Partner
   Mundankavu
   Chengannoor
   Aalapuzha- 689 121

6. Riya Manoj

W/o. Manoj P.J.A
Managing Partner
Perfect Alloys
Mundankavu Muri
Chengannoor
Aalapuzha- 689 121

7. State of Kerala
Represented by the Secretary,
Central Government
Ministry of Environment, Forest and Climate Change
Government Secretariat
Thiruvananthapuram- 695 001

8. Union of India
Represented by Secretary,
Central Government
Ministry of Environment, Forest and Climate Change
New Delhi-110 003

9. Ramesh Babu
S/o. Raveendran Nair
Vengoor House
Kizhakkenada
Chengannur **.....Respondents**

Counsel for the Applicant

M/s. Sarvabhauman Associates & R. Krishna Prasanna

Counsel for the Respondents

1. M/s. M. Ajay &
   Mrs. V.K. Rema Smrithi - Counsel for Respondent No. 1 to 3
2. M/s. P.B. Sahasranaman ,
   M/s. Kamalesh Kannan &
   M/s. Subramanian - Counsel for Respondent No. 4
3. M/s. E. Martin Jayakumar - Counsel for Respondent No. 5 & 6
4. M/s. A. S. Suvitha - Counsel for respondent No. 7
5. M/s. C. Sangamithrai - Counsel for Respondent No. 8
6. M/s. Shivashankar &
7. M/s. K. VenkataSubramanian - Counsel for Respondent No. 9

ORDER

QUORAM

Hon'ble Justice Dr. P. Jyothimani (Judicial Member)

Hon'ble Professor Dr. R. Nagendran (Expert Member)

Delivered by Justice Dr. P. Jyothimani dated 17th December, 2015

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1) Whether the judgement is allowed to be published on the internet ----- yes / no

2) Whether the judgement is to be published in the All India NGT Report -----yes / no

This petition raises an important issue on the emission and deposition of lead particles in air, water and soil alleged to have been effected by the 5th respondent to which the 6th respondent is the managing partner. The 5th respondent is stated to be having an industrial unit engaged in recycling of lead from used acid batteries after their service life to produce lead ingots mainly for reuse in the manufacture of new lead acid batteries. The unit is stated to be situated adjacent to the residence of the applicant who is living in Block No .8 Survey No. 30/4 of Chengannoor village, Alapuzha District. The said unit is said to be a highly polluting one adversely affecting humans, animals and plants. The said respondents are involved in collecting scrap batteries from various market points and subject them to the process of recycling which involves breaking and opening of scrap batteries, smelting in a rotary furnace, refining and casting into ingots. The enormity of such activity by respondent Nos. 5 and 6 require appropriate permission under the Batteries (Management and Handling) Rules, 2001. As per the said Rules, the respondents should make application in Form VI along with consent from the State Pollution Control Board (SPCB) under the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 apart from valid authorisation under Hazardous Wastes (Management and Handling) Rules, 1989 and a Certificate of Registration issued by the District Industries Centre. It is the case of the applicant that the 5th respondent has not obtained valid registration under Rule 9 of the Batteries Rules, 2001. In addition to that, as a recycler, respondent No. 5 has to obtain registration under the Hazardous Wastes Rules, 1989 which has not been obtained. The storage of such lead material is included as a hazardous chemical under Schedule 2 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989.

2. The activity of the respondent Nos. 5 and 6 can lead to dangerous consequences like birth defects of unborn children and may have lethal effects on human beings if the contents of lead in the blood transgress beyond the permissible limit. In addition to that, the lead deposit in soil can cause harm to animals and plants and consequently the human beings who may consume them. The emission of such lead in water as well as air has a tendency of affecting the internal organs including brain and nervous system and may result in reproductive disorders and osteoporosis, neurological impairments like seizures, mental retardation and behavioural disorders. It may result in high blood pressure and consequent heart diseases. These are all born out of the studies made in various countries and research work based on empirical studies.

3. According to the applicant, she has developed an unhealthy life along with her husband and their blood tested at the Toxicology wing of the Amrita Research Centre at Kochi, was found to have lead levels above the permissible limit of 10 mcg/dL. Likewise, samples of blood were taken from many of the local residents which were also found to contain lead level beyond the permissible limit. The blood sample of the applicant was found to contain 26.9 mcg/dL of lead which is abnormal. Further, the well water when analysed was found to contain alarming proportions of lead. This was also confirmed by the State Pollution Control Board (SPCB). It was after finding the alarming situation, the SPCB has issued notice on 19-01-2012 with the intention to close the unit of the 5th respondent. It is also stated that the 4threspondent, Chengannoor Municipality has issued a license to the 5th and 6th respondents to carry on business for the period between 30-03-2011 to 31-03-2012. On receipt of complaints and on inspection, having found deposit of lead/carbon particles on the roof top of the houses, the Municipality had issued stop memo notice to respondent No. 6 on 08-12-2011. It is stated that as against the said stop memo the 6th respondent has moved the Tribunal for Local Self Government Institutions, Thiruvananthapuram by filing Appeal No. 876/2011 and obtained an order of stay in IA No. 510/2011. It is stated that in the meantime, the license granted expired on 31-03-2012 and the Municipality has not extended the same. Therefore, according to the applicant, the 5thand 6th respondents are running the activities in the unit without license and registration prescribed under the environmental laws and therefore, the respondents have no authority to carry on the activities in the said unit. It is also prayed by the applicant

that apart from the closure of the unit, the 6th respondent is liable to restore the environment by taking steps to remove the lead which is exceeding the permissible limits in air, water and soil apart from liability under the Principles of "Polluter Pays" for the damages caused.

4. The applicant has raised various legal grounds including that in the absence of registration under the Batteries Rules, 2001 and Hazardous Wastes Rules, 1989 the 5th respondent's unit is liable to be closed down forthwith. The applicant has also relied upon various judgements of the Hon'ble Supreme Court to substantiate her case that the protection of environment is the responsibility of the State and the Principle of Inter Generational Equity envisaged by the Hon'ble Supreme Court confers on a man a Fundamental Right to freedom and equality and adequate conditions of life in an environment of quality to lead life with dignity and improve environment for the present and future generations along with the right to protect the natural resources of earth including air, water, soil, flora and fauna for future generations. She has relied upon the Judgement of the Hon'ble Supreme Court that in environmental matters principles of *locus standi* should be widened and when once it is proved that the environmental degradation is effected, the polluter is liable. With the above averments, the applicant who has filed a writ petition before the High Court of Kerala which was subsequently transferred to this Tribunal, has prayed for direction against the official respondents to take effective steps to close the unit of respondent Nos. 5 and 6, to direct the official respondents to carry out a detailed scientific study for assessing the environmental damage caused by the 5th respondent in the locality and other reliefs including restoration of proper environment in the area.

5. The 2nd respondent SPCB, in the reply, while stating that the 5th respondent is engaged in recycling of lead from scrap batteries, has submitted that the said respondent has obtained Consent to Operate from the 1st respondent SPCB and the unit is located inside an Industrial Estate even though three are residences close to it. When there was an agitation by the residents, the 5th respondent unit moved the Hon'ble High Court of Kerala by filing W. P. (C) No. 33964 of 2011 seeking for police protection, in which Hon'ble High Court in the order dated 22-06-2012 has directed the 2nd respondent herein to inspect and file a report on the pollution, if any, caused by the 5th respondent unit. Accordingly, the

unit was inspected by the Chief Environmental Engineer on 03-07-2012 and samples of well water from neighbouring residences and soil from neighbourhood apart from emissions from 5th respondent were collected. It is stated that the analysis revealed that water, air and soil were contaminated with lead and that was reported before the Hon'ble High Court in the above writ petition on 31-07-12.

6. In the meantime, the applicant filed the present W.P. (C). No 17129 of 2012 and the Hon'ble High Court considered both the petitions (W. P. (C) No. 33964 of 2011 and W.P. (C). No 17129 of 2012) together and based on the above report, ordered the 5threspondent unit to implement the report of the SPCB within 3 months by taking mitigation measures. It is stated that the 5th respondent has implemented the measures and that was reported by the 2nd respondent to the Hon'ble High Court on February 2013. However, before considering the report, the application stood transferred to this Tribunal. It is stated that the SPCB actually expressed the need to engage an External Expert to assess the adequacy of the pollution control measures and the remediation work taken up by the industrial unit and in this regard the SPCB approached the Central Pollution Control Board (CPCB) for assistance and the same was not forthcoming. The SPCB has decided to monitor the air, well water and soil around the industry for a period of 3 months to find out as to whether the pollution level was increasing, decreasing or remaining static. Accordingly, water and soil samples were collected on 24-05-2013 and again on 20-12-2013 after resistance from complainants and lead was not detected in the water samples collected on 20-12-2013. Therefore, according to the 2nd respondent there is a decreasing trend in lead concentration due to the mitigation steps taken by the unit.

7. It has also been stated that the stack emission analysis done for 3 consecutive months inside the factory shows that the parameters were all within permissible limits. Regarding the soil samples, even though lead contents were found there was a decreasing trend as observed near the storm water outlet from the factory. Therefore, according to the SPCB, a comparative analysis of the report on the samples collected in January 2012 and December 2013 show a decreasing trend of lead contents in water samples as well as soil samples apart from air due to the mitigation steps taken by the unit at the instance of the SPCB. It is stated that a complaint was received on 07-12-2013 that the solid waste containing lead which should have been disposed at the Common Treatment Disposal

Facility (CTSDF) at Cochin was being used by the 5th respondent for land filing in a public place. This was investigated with analysis on 20-12-2013 and found that the sample contained hazardous materials which should have been disposed of at CTSDF. Necessary directions were issued to the unit to remove the waste to CTSDF immediately and in fact the 5th respondent has immediately removed the same and handed over to the CTSDF for disposal.

8. In the additional reply filed by the 2nd respondent dated 1stJanuary 2015, while reiterating that the samples collected between 12-01-2012 to 20-12-2013 have shown a decreasing trend in respect of lead contents in air, water and soil, the 2nd respondent has stated that the SPCB has collected two more sets of samples of water, air and soil on 21-05-2014 and 17-12-2014 and made a comparative analysis. The analysis continues to show the decreasing trend and the stack emissions are also within permissible limits. It is stated by the 2nd respondent that lead was not detected in the well water samples collected on 17-12-2014. Lead was detected in the soil sample but that has also shown decreasing trend. The emission control measures implemented in the stacks to arrest lead, SO_2 and particulates are yielding results. It is also stated that measures taken to prevent carryover of hazardous waste containing lead and its compounds through storm water has helped to arrest contamination of well water.

9. It is further stated that the complaints continued to be received pointing out air pollution due to fugitive emissions during charging of battery waste to the rotary furnace and during the taping of molten lead from the rotary furnaces. Though the 5th respondent had agreed to install additional measures to prevent fugitive emissions within a month the same is yet to be complied with. It is further stated that the solid waste containing lead which should have been disposed of at the CTSDF at Cochin was used by the 5th respondent for land filling in a public place and after complaints were received from public, directions were issued to the 5th respondent to remove the same. However, the act of the 5th respondent in dumping the hazardous waste in public place is in violation of Hazardous Wastes Rules, 2008 which is liable for penalty after obtaining approval from CPCB. On 18-06-2014, approval of CPCB was sought and the same is yet to be received. The 2ndrespondent has stated that the SPCB is closely watching and regularly monitoring

the water, emission and soil around and within the 5th respondent unit and taking prompt action to prevent pollution due to lead from the unit.

10. The 4th respondent Municipality in its memo dated 20th November, 2014 has stated that there is no prayer against the said respondent and it is only a formal party. The 7th respondent Government of Kerala in the affidavit dated 28th February 2014 has stated that the Government has received a complaint from the applicant on 01-07-2012 on the environmental degradation caused by the conduct of the 5th respondent unit run by the 6th respondent apart from another complaint dated 06-07-2011 from Action Council against Pollution from Perfect Alloys Mundancavu, Chenganoor alleging that emissions from 3 stacks of the unit contain carbon monoxide, lead, CO_2 and other particulate matters. The foul smell of gas spread in the area causing nausea and vomiting sensation in children and therefore requested to stop the functioning of the factory. Immediately on receipt of such complaint, the Government has called for a report from SPCB as to whether the unit has valid consent, the unit has complied with the consent conditions, whether Carbon monoxide and lead particles or gases with lead contamination is likely to escape from the factory and status of pollution and hazard caused by the unit. The Government has also called for a report from the Director of Environment and Climate Change who submitted a report on 04-09-2012.

11. It is stated by the 7th respondent that it has called for report as to whether the 5threspondent unit is adhering to the emission standards fixed by the SPCB. The SPCB has reported on 27-07-2013 that the unit has obtained Consent to Operate, the unit is located in the Industrial Estate but there are many residences close to the unit. It is also stated that as per the direction of the Hon'ble High Court, the industry has implemented certain mitigative measures and the SPCB has decided to conduct a study for 3 months in and around the area. In the meantime, the applicant has filed W. P(C). No.17129 of 2012 in the Hon'ble High Court of Kerala which has been transferred to this Tribunal on 07-03-2013. It is stated by the Government that the SPCB in order to carry out remediation work has contacted CPCB for assistance but because of no reply the SPCB decided to conduct monitoring of air, well water and soil around the Industry for 3 months. Some of the samples could not be collected due to obstruction by the complainants. It is stated that on analysis it was found that the parameters in the stack emission are within permissible

limits and lead and soil samples have shown a decreasing trend. The Government has asked for further details as to why the complainants have objected for collection of their well water, to clarify whether permissible limit of lead in trade effluent being 0.1mg/ L (max) is applicable where trade effluents are vented to residential areas and the view of the SPCB on the continuance of such unit with the danger of lead pollution even though the unit is situated in Industrial Estate. The SPCB has not responded to the letter dated 03-02-2014 and the matter is pending before the Hon'ble High Court. It is stated that the Government is closely examining the case of the applicant and make it sure that people are not put to danger due to pollution from the unit. It is stated that immediately after the clarification from the SPCB is received, the Government will take a final decision and therefore the application is premature.

12. The 8th respondent MoEF and CC, New Delhi in the reply dated 31-07-2014 while stating that no relief has been sought from the 8th respondent and the applicant has questioned the legality of the action of the 5th and 6th respondents in operating the recycling unit without registration under Batteries Rules, 2001 and authorisation and registration under Hazardous Wastes Rules, 2008 and the role of the 8th respondent is limited in framing the Rules. It is stated that subsequent to the framing of Hazardous Wastes Rules 2008 under the Environment (Protection) Act, 1986, the recycling of lead acid batteries is regulated by Hazardous Wastes Rules, 2008 which requires authorisation and registration from the concerned SPCB, and the authorisation is mandatory for handling hazardous waste and that falls within the purview of the SPCB. Under the Rules the concerned SPCB/Pollution Control Committee are mandated to perform their functions.

13 The 5th and 6th respondents who are the project proponents, in their reply dated 20th September 2013, while stating that the application is not maintainable, have objected to the application that there is no public interest involved and it is only the private interest to settle score the writ petition has been filed. It has stated that the filing of the writ petition is only to avoid limitation which is prescribed under the National Green Tribunal Act, 2010 (NGT Act) which was already in existence and knowing well the W.P. (C).No. 17129 of 2012 was filed before the Hon'ble High Court of Kerala and therefore the applicant's right under section 14 NGT Act is time barred. The said respondents have stated that they have not exceeded the limits of manufacture in production and 5th

respondent unit is running without causing any pollution and also by providing necessary measures to avoid pollution of air, soil and water. The said respondents have stated that they have not violated any of the statutory rules. It is also stated that the health problem of the applicant is not because of the running of the unit and the private report filed by the applicant cannot be taken into consideration for the closing of the unit of respondent Nos. 5 and 6. There is nothing on the record to show that the applicant is affected because of running of the5threspondent unit. It is also stated that as and when the SPCB has inspected and directed the measures to be taken, the said respondents have taken prompt measures and degree of lead level in water is very much reduced and it is below the limit prescribed by the authorities. According to respondent No. 5, the applicant being a Municipal Councillor for a long time and presently Vice Chairman of Chengannoor Municipality influenced the other Councillors to suspend the license issued to the respondent unit and the unit was suspended without notice. It was in those circumstances the 5th respondent had to approach the High Court for police protection and the High Court has also safeguarded the interest of the unit. The show cause notice issued by the 3rd respondent SPCB was properly explained in accordance with law. The 5th respondent also disowns the knowledge of the test certificate issued to the applicant's husband. Regarding the closure of the unit by the 4th respondent, the appeal is still pending before the Appellate Authority and the 5threspondent has also submitted application for renewal of license. It is stated by the said respondent that they are running the unit within the limits prescribed by the statute and the order of cancellation of license was stayed by the Appellate Authority and therefore running of the unit is not illegal. The representation of the applicant dated 01-07-2012 cannot be a ground for filing this application before the Hon'ble High Court since it has no jurisdiction and filing before Hon'ble High Court is only to avoid the question of limitation under NGT Act, 2010 and by transferring the case by the Hon'ble High Court to this Tribunal it will not exonerate the 5th respondent from the limitation period prescribed by the NGT Act 2010 and same has to be decided by the Tribunal. The grounds raised by the applicant are denied and it is reiterated that the application is not maintainable and filed beyond the period of limitation and renewal of license is now pending before the concerned Tribunal in Appeal No. 285 of 2012. It is also stated that the blood samples and the report show that the lead level in blood is

decreasing and are below normal and the applicant herself is very old and taking Ayurvedic treatment. The water samples taken from well also show that lead level has dropped after compliance of directions issued by the authorities. It is stated that the SPCB after inspection of the unit based on the complaints by the applicant and nearby residents and after considering the objection has issued an Integrated Order of Consent on 22-04-2013 valid up to 31-12-2013. The respondent further submits that the unit is situated in Industrial Centre in the allotted plot for Industrial Development wherein the unit was established. It is stated that against the same unit one Mr. Padma Kumar has filed W.P. (C) No 19976 of 2011 before the Hon'ble High Court of Kerala as Public Interest Litigation and the same is pending and it is stated that the unit is running for 11 years by complying the remedial measures as and when specified by the authorities and therefore the application is not maintainable. It is further stated that as per the direction of Hon'ble High Court in W.P. (C). No 17129 of 2012, after inspecting the unit, the SPCB has issued certain directions and except two directions all others have been complied and distance criteria has been maintained apart from implementing all remedial measures as per the report and the respondents are ready to comply with any other remedial measure within the time given by the Tribunal. With the above averments the respondent Nos. 5 and 6 have prayed for the dismissal of application.

14. The learned Counsel appearing for the applicant has submitted that the unit being a red category one, it should have obtained proper authorisation and registration under the Batteries Rules, 2001 and the Hazardous Wastes Rules, 1989 and in the absence of such statutory registration and authorisation, the consent stated to have been issued by the SPCB has no validity in the eye of law. He has submitted that it is not even the case of the 5thand 6th respondents that they have obtained such registration from SPCB. On the other hand, the respondents are merely stating as if the statutory requirements have been followed. It is his submission that even the Consent to Operate granted by the SPCB is not in force as on date. Therefore, at the first instance there are many statutory violations which are the preventive measures for the probable pollution and the failure of such action will have to be imputed on 5th and 6threspondents and they should not be permitted to run the unit. The license granted to 5th respondent by the Municipality is valid up to 31-12-2013 and the appeal before the Tribunal and stay granted cannot go beyond the

period of validity of license period. In other words, it is his contention that stay cannot be taken advantage of by the project proponent for the purpose of renewal of license which has lapsed on 31-12-2013 and not renewed by the 5th respondent and the pendency of appeal has no meaning. It is his submission that there are *prima facie* evidence to show air, water and soil have been contaminated with lead and it is nobody's case that the pollution is caused by some other industries and even assuming otherwise that the lead level has come down, the obligation of the project proponent cannot be exonerated and for the pollution caused in emitting, disposing and depositing lead more than permissible quantity, the 5th and 6threspondents are to be made liable under the "polluter pays" principle. He has also submitted that the very admission that the 5th respondent has dumped the waste material containing lead in pubic place in filling up on the road side instead of sending it for treatment to the plant at Cochin shows the patent violation and intention to cause degradation by 5th and 6th respondents. In addition to the penalty proposed on the respondents, according to the learned Counsel such conduct itself is *prime facie* proof to show the illegal conduct of the 5th and 6th respondents in polluting the air, water and soil. He has submitted that remediation measures were taken on the admitted fact that the 5th respondent's activity has resulted in pollution affecting the residents. He has stated that an Expert Committee Report is necessary to ascertain the damage caused by the 5threspondent in these years and decide on the penalty to be paid under "polluter pays" as well as for remediation.

15. *Per Contra*, it is the contention of the learned Counsel Mr. Viswanathan appearing for 5thand 6th respondents that, it is a clear case of the personal vendetta by a person holding the post of Municipal Councillor and the application itself has been filed in 2012 as a writ petition in Hon'ble High Court of Kerala when the NGT Act had already come into existence. Therefore it is his submission that in as much as in effect the applicant wants to close down the unit which is having valid Consent to Operate, even otherwise the applicant has to approach the Appellate Authority under the Air and Water Acts if the applicant is questioning the consent order. He has submitted that the SPCB has issued notice on 16-01-2014 and thereafter not proceeded further which means that the SPCB is satisfied with the 5th respondent's remediation measures. It is his submission that from 2005-06, the 5th respondent has been sending 1500 T of wastes to the Common

Hazardous Disposal Facility at Cochin, while so, why should the said respondent put 100 kg on the road side. He has also submitted that the reports filed by the 3rd respondent periodically before this Tribunal show that there has been reduction in the concentration of lead in water, air and soil, indicating that the remediation efforts have been successfully done by the 5th and 6th respondents. He also relied upon the comparative statement of analysis report by SPCB which shows in clear terms that the lead concentration have come down remarkably and therefore there is no cause of action for the applicant for any relief at all. In view of the categorical stand of the SPCB, according to Mr. Viswanathan there is no necessity for this Tribunal to consider the false claim of the applicant for closing down the unit. He has also submitted that the report filed before Hon'ble High Court by the 2nd respondent indicating that the 5th respondent has implemented the suggestions of the SPCB and therefore the application need not be ordered. He has also submitted that if the applicant has got any grievance it is for her to work out her remedy by approaching the Appellate Authority under the Air and Water Acts. Thus, he has submitted that the application is devoid of any merits and hence liable to be dismissed.

16. Mrs. V. K. Rema Smrithi, the learned Counsel appearing for the 3rd respondent SPCB, while admitting that in the initial stage it was found that lead concentrations were above permissible level in and around the 5th respondent unit, the same was continuously monitored by the SPCB for 3 months after giving suitable direction to take remedial measures and it was found that the lead concentration has come down steadily and as on date the lead concentration in air, water and soil in and around the 5th respondent unit is not above normal levels. Therefore, she has submitted that monitoring of the unit for sometime will solve all problems of the petitioner and other neighbours and SPCB must be permitted to go ahead with its own work.

17. We have heard the learned Counsel appearing for applicant as well as respondents elaborately, referred to contents of the pleadings apart from various documents including the report filed by the SPCB apart from statutory rules and carefully considered the issues involved in this case. On an overall analysis of the entire case, the following issues are before us for consideration:

1. Whether the application is maintainable before this Tribunal?

2. Whether the 5th respondent unit run by the 6threspondent has violated various provisions of environmental laws and statutory principles?

3. Whether remedial measures stated to have been taken by the 5thand 6th respondents are sufficient to restore the environment to its original condition and what are further directions necessary for remediation?

4. Whether the 5th respondent unit is liable to be closed?

18. Issue No. 1: Whether the application is maintainable?

At the outset, it is an admitted fact by the 5th and 6th respondents that the 5th respondent unit which is involved in recycling of used lead acid batteries after their service life to produce lead ingots for reuse in the manufacturing of new lead acid batteries was established in the disputed place in the year 2002 which is within the Industrial Estate Area. It is also on record that the SPCB has issued Consent to Operate/ authorisation (renewal) dated 22-04-2013 for the 5th respondent which is valid up to 31-12-2013 with various conditions as per the Water (Prevention and Control of Pollution) Act 1974, Air (Prevention and Control of Pollution) Act 1981 and the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 for using lead to the extent of 16T/day and storage in impermeable containers kept in roofed area with impervious flooring protected from drain and seepage and rotary surface run off and the treatment to be effected at CTSDF. It is also not in dispute that the said unit of the Project proponent falls under red category. Even though it is stated in the written argument submitted on behalf of the 5th and 6th respondents that the Integrated Consent to Operate has been renewed by the SPCB on 27-06-2015 valid till 30-06-2018 subject to the result of this application, such consent order has not been produced before this Tribunal. The payer of the applicant in the writ petition originally filed before the Hon'ble High Court of Kerala which was subsequently transferred to this Tribunal is for a direction against the official respondents to take action against respondent Nos. 5 and 6 and to close down the unit apart from assessment of environmental degradation stated to have been caused by the 5th respondent. In the light of the materials used by the respondents containing lead are

hazardous chemical, the Principal points on which the writ petition was originally laid was that the 5th respondent has been running the unit without having a valid registration under Batteries Rules 2001 and Hazardous Wastes Rules 1989. That apart, under the Manufacture, Storage and import of Hazardous Chemical Rules1989, lead having been included as a hazardous chemical, the unit requires registration under the Rules. In addition to that, the applicant has raised various issues as to how the people living in the surrounding area are affected by the lead contamination in air, water and soil. Therefore, the applicant has not raised anything about the validity or otherwise of the Consent to Operate order stated to have been issued by the SPCB. Squarely on this point we can hold that respondent Nos. 5 and 6 cannot take refugee under the claim of maintainability of the application before this Tribunal on the ground that the applicant challenges the conditions of Consent to Operate granted by SPCB and therefore the applicant must be directed to approach the learned Appellate Authority constituted under the Air and Water Acts. The above said statutory rules especially the Batteries Rules, 2001 having been framed by the Government of India in accordance with the powers conferred under the Environment (Protection) Act, 1986, the same is within the purview of jurisdictional limit of this Tribunal.

19. There is one other contention that the Tribunal for Local Self Institution, Thiruvananthapuram has stayed an order of Chengannoor Municipality dated 12-04-2012 pending disposal of the appeal filed against the said order**.** The question is as to whether the said Interim Order granted by the learned Tribunal would act as an embargo against this Tribunal to proceed with the case. The Chengannoor Municipality, while dealing with the license to operate granted to the 5th respondent under the Kerala Municipality Act, 1994 for the year 2012-13, taking note of the fact that the unit is creating serious pollution problem, decided not to renew the license for the 5th respondent unit for the year 2012-13 based on the Municipal Council's resolution dated 04-04-2012. Therefore, under the said order dated 12-04-2012, the Municipality has rejected the application filed by the 5th respondent for renewal of license to run the unit. It was against the said order dated 12-04-2012 the 5th respondent has filed an appeal before the Tribunal for Local Self Government Institution, Thiruvananthapuram created under the Kerala Municipality Act in Appeal No. 285 of 2012 and the learned Tribunal in the order dated 21-12-2012 passed

in I.A. No. 558 of 2012 has stayed the order of Chengannoor Municipality dated 12-04-2012 till disposal of the appeal. It is stated that the appeal is still pending before the said Tribunal. On the face of it there is no difficulty to hold that the said Appellate Authority's order operates totally in a different field namely the Kerala Municipality Act for renewal of Municipal license for running the unit. The refusal of renewal of license itself is for the year 2012-13 and admittedly after the expiry of the said period the Municipality has not granted any license to the 5th respondent. On the contrary, this Tribunal having been created under the NGT Act, 2010 (Central Act) to consider the environmental issue is considering the subject matter totally on a different field. Therefore, the pendency of appeal before the Tribunal for Local Self Government Institution is again not a bar for this Tribunal to proceed with the application which was originally filed in the Hon'ble High Court of Kerala and renumbered after having been transferred to this Tribunal. Therefore, looking into any angle we are of the considered view that the 5th respondent cannot question the maintainability of this application before this Tribunal and therefore the issue is answered accordingly to the effect that the application is maintainable.

20. **Issue No. 2: Whether respondent Nos. 5 and 6 have violated any statutory provisions?**

The Environment Protection Act, (E. P. Act) 1986 was enacted by the Parliament for protection and improvement of environment and prevention of hazards to human beings, other living creatures, plants and property and it enables the Central Government to make rules to take measures to protect and improve environment as contemplated under Section 3 of the said Act. Section 6 of the Act which confers the rule making power on the Central Government, enables the Central Government to make statutory rules in any of the matters enumerated under section 6 (2) which runs as follows:

> "6 (2):- In particular, and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:--
>
> *(a) the standards of quality of air, water or soil for various areas and purposes;*
>
> *(b) the maximum allowable limits of concentration of various environmental pollutants (including noise) for different areas;*
>
> *(c) the procedures and safeguards for the handling of hazardous substances;*

(d) the prohibition and restrictions on the handling of hazardous substances in different areas;

(e) the prohibition and restriction on the location of industries and the carrying on process and operations in different areas;

(f) the procedures and safeguards for the prevention of accidents which may cause environmental pollution and for providing for remedial measures for such accidents".

21. Section 8 of the EP Act dictates that no person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be prescribed. The term "hazardous substance" is defined under section 2 (e) of the said Act as follows:

"(e) "hazardous substance" means any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plant, micro-organism, property or the environment".

22. In accordance with the powers conferred under Sections 6, 8 and 25 of the EP Act, the Central Government has notified the Batteries Rules, 2001. It is not in dispute that handling of used batteries is hazardous in nature. The above said Batteries Rules which apply to every manufacturer, importer, reconditioner, assembler, dealer, recycler, auctioneer, consumer, defines the term "recycler" under Rule 3 (o) to mean *"an occupier who processes used lead acid batteries or components thereof for recovering lead"*. The term "used batteries" is defined under Rule 3 (r) to mean *"used, damaged and old lead acid batteries or components thereof"*. The said Rule 3 (P) defines a "registered recycler" to mean *"a recycler registered with the Ministry of Environment and Forest or an agency designated by it for reprocessing used lead acid batteries or components thereof"*.

23. Admittedly, the 5th respondent who is carrying on activities involving used batteries is a recycler. The responsibilities of a recycler like that of the 5th respondent is to apply to the MoEF and CC for registration in appropriate form, to follow strictly the terms and conditions of registration, to submit annual returns in proper format, to produce record relating to used batteries to be submitted to the SPCB for inspection, to make mark on the

lead recovered by reprocessing and to create awareness on the hazard of lead as stated in Rule 8 of the Batteries Rules 2001 which is as follows:

"8.Responsibilities of Recycler – Each recycler shall –

(i) apply for registration to the Ministry of Environment and Forests or an agency designated by it if not applied already, by submitting information in Form VI;

(ii) ensure strict compliance of the terms and conditions of registration, however, those already registered with the Ministry of Environment and Forests or an agency designated by it for reprocessing used batteries would be bound by the terms and conditions of such registration;

(iii) submit annual returns as per Form VII to the State Board;

(iv) make available all records relating to receipt of used batteries, sources, quantities and metal yield to be submitted to the State Pollution Control Board for inspection.

(v) Mark 'Recycled' on lead recovered by reprocessing; and

(vi) Create public awareness through advertisements, publications, posters or others with regard to the following-

(a) hazards of lead; and

(b) obligation of consumers to return used batteries only to the registered dealers or deliver at the designated collection centres".

24. Again Rule 9 of the Batteries Rules which prescribes procedure for registration/ renewal of registration of recycler contemplates that the recycler has to apply to the Ministry along with the copy of valid consent under Water and Air Acts along with a copy of valid authorisation issued under the Hazardous Wastes Rules 1989 as amended and copy of a valid certificate of registration with District Industries Centre and with a copy of proof of installed capacity issued by the SPCB/District Industries Centre. On receipt of such application with all the above said documents, the Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it for grant of registration or renewal, should take a decision on the

application for registration within 90 days from the date of receipt of the application and registration will be valid for a period of 2 years and it can be renewed. The registration can also be refused after giving reasonable opportunity to the applicant or it can be suspended or cancelled. Rule 9 of the Batteries Rules is as follows:

"9. ***Procedure for Registration/Renewal of Registration of Recyclers*** *–*

(1) Every recycler of used lead acid batteries shall make an application in Form VI along with the following documents to the Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it for grant of registration or renewal;

(a) a copy of the valid consents under Water (Prevention and Control of Pollution) Act, 1974, as amended and Air (Prevention and Control of Pollution) Act, 1981, as amended;

(b) a copy of the valid authorization under Hazardous Wastes (Management and Handling) Rules, 1989 as amended;

(c) a copy of valid certificate of registration with District Industries Centre; and

(d) a copy of the proof of installed capacity issued by either State Pollution Control Board/District Industries Centre.

(2) The Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it shall ensure that the recyclers possess appropriate facilities, technical capabilities, and equipment to recycle used batteries and dispose of hazardous waste generated;

(3) The Joint Secretary , Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it shall take decision on application for registration within [90] days of receipt of application form with complete details;

(4) The registration granted under this rule shall be in force for a period of two years from the date of issue or from the date of renewal unless suspended or cancelled earlier;

(5) An application for the renewal of registration shall be made in Form VI at least six months before its expiry. The Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it shall renew the registration of the recycler granted under sub rule(4) of this rule, after examining each case on merit;

(6) The Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it may, after giving reasonable opportunity to the applicant of being heard, refuse to grant registration;

(7) The Joint Secretary, Ministry of Environment and Forests or any officer designated by the Ministry or an agency designated by it may cancel or suspend a registration issued under these rules, if in his/her opinion, the registered recycler has failed to comply with any of the conditions of registration, or with any provisions of the Act or rules made there under after giving him an opportunity to explain and after recording the reasons there for;

(8) It shall be the responsibility of the State Boards to monitor the compliance of conditions prescribed while according registration, and

(9) An appeal shall lie against any order of suspension or cancellation or refusal of registration passed by the Joint Secretary to the Ministry of Environment and Forests or any officer designated by the Ministry or agency designated by it. The appeal shall be in writing and shall be accompanied with a copy of the order appealed against and shall be presented within 30 days of passing of the order".

25. Therefore, it is clear that unless and until a recycler registers with the MoEF, the unit cannot handle the used lead acid batteries or components thereof. By virtue of Rule 9 of the Batteries Rules, a recycler merely having a valid authorisation under Hazardous Wastes Rules 1989 cannot act as a recycler unless and until he is registered under the Batteries Rules 2001. In other words, authorisation issued under Hazardous Wastes Rules 1989 as superseded by Hazardous Wastes Rules, 2008 is one of the requirements for registration under the Batteries Rules, 2001.

26. Again, by virtue of the powers conferred under sections 6, 8 and 25 of EP Act and in supersession of Hazardous Waste Rules 1989, the Central Government has made the statutory rules namely Hazardous Wastes (Management and Handling) Rules 2008 with effect from 24th September 2008. Rule 3 (l) of the Hazardous Wastes Rules defines the term "hazardous waste" as follows:

> *"3 (l): "hazardous waste" means any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances, and shall include-*
>
> *(i) waste specified under column (3) of Schedule-I,*
>
> *(ii) wastes having constituents specified in Schedule-II if their concentration is equal to or more than the limit indicated in the said Schedule, and*
>
> *(iii) wastes specified in Part A or Part B of the Schedule-III in respect of import or export of such wastes in accordance with rules 12, 13 and 14 or the wastes other than those specified in Part A or Part B if they possess any of the hazardous characteristics specified in Part C of that Schedule".*

In accordance with the said sub rule, schedule 1 Column 3 of schedule I makes it clear that secondary production of lead including lead bearing residues, lead ash/particulate from flue gas are hazardous wastes. The Hazardous Wastes Rules imposes responsibility of safe and environmentally sound handling by the occupier for handling of hazardous waste. The term "occupier" which is defined under Rule 3 (q) is as follows:

> *"3(q): "occupier" in relation to any factory or premises, means a person who has, control over the affairs of the factory or the premises and includes in relation to any hazardous waste the person in possession of the hazardous waste"*

27. The said provision makes it clear that any person who has control over the factory, in the present case the 6th respondent is an occupier. Rule 5 of the Hazardous Wastes Rules enables the SPCB to issue authorisation to every person who is involved in generation,

processing, treatment, package, storage, destruction, conversion etc. Such authorisation can be renewed as per Rule 5 of the Hazardous Rules as follows:

"5. Grant of authorization for handling hazardous wastes.

(1) Every person who is engaged in generation, processing, treatment, package, storage, transportation, use, collection, destruction, conversion, offering for sale, transfer or the like of the hazardous waste shall require to obtain an authorization from the State Pollution Control Board.

(2) The hazardous waste shall be collected, treated, re-cycled, re-processed, stored or disposed of only in such facilities as may be authorized by the State Pollution Control Board for the purpose.

(3) Every person engaged in generation, processing, treatment, package, storage, transportation, use, collection, destruction, conversion, offering for sale, transfer or the like of the hazardous waste or occupier of the facility shall make an application in Form 1 to the State Pollution Control Board for authorization within a period of sixty days from the date of commencement of these rules: Provided that any person authorized under the provisions of the Hazardous Waste (Management and Handling) Rules, 1989, prior to the date of coming into force of these rules, shall not require to make an application for authorization till the period of expiry of such authorization.

(4) On receipt of the application complete in all respects for the authorization, the State Pollution Control Board may, after such inquiry as it considers necessary and on being satisfied that the applicant possesses appropriate facilities, technical capabilities and equipment to handle hazardous waste safely, grant within a period of one hundred and twenty days an authorization in Form 2 to the applicant which shall be valid for a period of five years and shall be subject to such conditions as may be laid down therein.

(5) The State Pollution Control Board may after giving reasonable opportunity of being heard to the applicant refuse to grant any authorization.

(6) Every person authorized under these rules shall maintain the record of hazardous wastes handled by him in Form 3 and prepare and submit to the State Pollution Control Board, an annual return containing the details specified in Form 4 on or before the 30th day of June following to the financial year to which that return relates.

(7) An application for the renewal of an authorization shall be made in Form 1, before its expiry and the State Pollution Control Board may renew the authorization after examining each case on merit subject to the condition that there has been no report of violation of the provisions of the Act or the rules made there under or conditions specified in the authorization.

(8) The occupier or operator of the facility shall take all the steps, wherever required, for reduction and prevention of the waste generated or for recycling or reuse and comply the conditions specified in the authorization.

(9) The State Pollution Control Board shall maintain a register containing particulars of the conditions imposed under these rules for management of hazardous waste, and it shall be open for inspection during office hours to any person interested or affected or a person authorized by him on his behalf".

28. Rule 8 of the Hazardous Waste Rules enables any person desirous of recycling or reprocessing of the hazardous waste specified in schedule IV shall apply in Form No. 5 to the SPCB for registration along with Consent to Establish granted by the SPCB under the Water and the Air Acts apart from the certificate of registration issued by the District Industries Centre with proof of installed capacity of plant and machineries as stated therein. Rule 8 of Hazardous Wastes Rules which is as follows:

"8. Procedure for grant of registration:

(1) every person desirous of recycling or reprocessing the hazardous waste specified in Schedule-IV may make an application in Form 5 accompanied with a copy each of the following documents for the grant or renewal of the registration:-

(a) consent to establish granted by the State Pollution Control Board under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (21 of 1981);

(b) certificate of registration issued by the District Industries Centre or any other government agency authorised in this regard;

(c) proof of installed capacity of plant and machinery issued by the District Industries Centre or any other government agency authorised in this behalf; and

(d) in case of renewal, certificate of compliance of effluent, emission standards and treatment and disposal of hazardous wastes, as applicable, from the State Pollution Control Board or the Concerned Zonal Office of Central Pollution Control Board.

(2) The Central Pollution Control Board, on being satisfied that the applicant is utilizing environmentally sound technologies and possesses adequate technical capabilities, requisite facilities, and equipment to recycle, reprocess or reuse hazardous wastes, may grant registration to such applicants stipulating therein necessary conditions for carrying out safe operations in the authorized place only.

(3) The Central Pollution Control Board shall dispose of the application for registration within a period of one hundred twenty days from the date of the receipt of such application complete in all respects.

(4) The registration, issued under sub-rule (2) shall be valid for a period of five years from the date of its issue, unless the operation is discontinued by the unit or the registration is suspended or cancelled by the Central Pollution Control Board.

(5) The Central Pollution Control Board may cancel or suspend the registration granted under these rules, if it has reasons to believe that the recycler or re-

processor has failed to comply with any of the conditions of the registration, or with any provision of the Act or rules made thereunder.

(6) The Central Pollution Control Board may after giving a reasonable opportunity of being heard to the applicant, by order, refuse to grant or renew the registration.

(7) The recycler or re-processor shall maintain records of hazardous wastes purchased and processed and shall file an annual return of its activities of previous year in Form 6 to the State Pollution Control Board, on or before the 30th day of June of every year.

Schedule 4 item 17 lists, hazardous waste requiring registration as "lead acid battery plates and other lead scrap / ashes/ residues not covered under Batteries Rules 2011". **Therefore, the combined reading of both the statutory rules makes it clear that the 5th respondent being the recycler of battery has to mandatorily be registered under the Batteries Rules, and such registration is not required under Hazardous Wastes Rules even though under Rule 5 of the said Rules authorisation from the SPCB is a necessary requirement.**

29. In the light of the above said statutory legal position regarding the recycling of batteries like the activity of the 5th and 6th respondents and in the absence of any records produced by the 5th and 6th respondents to show that they are registered under the Batteries Rules it is clear that the 5th respondent is not a "registered recycler" under the said rules. The registration under the Batteries Rules is not merely a statutory formality but it makes a sensible distinction in the sense that it enables the MoEF & CC to register a person as recycler of batteries subject to various terms and conditions which are to be strictly followed and supervised by the SPCB. The registration of a recycler and procedure for registration enumerated above in Rule 8 and 9 of Batteries Rules makes it abundantly clear that the Ministry has an opportunity to impose strict conditions regarding the handling of used batteries which is hazardous thereby the "Precautionary Principle" can be incorporated by the MoEF at the time of registration of a recycler which is mandatory. In as much as the 5th and 6th respondents have not registered themselves in accordance with Battery Rules, opportunity of the MoEF to impose "Precautionary Principle" has

been totally thwarted. The registration helps to prevent mishandling of hazardous materials.

30. Apart from the fact that it is recognized statutorily that handling of lead which is contained in used batteries is hazardous, various scientific studies have proved the effect of handling such hazardous material on the health condition of human beings due to the exposure to the lead particle which are microscopic. There are adverse health effects with elevated blood lead levels. The National Safety Council in its studies published, as produced by the learned Counsel appearing for the applicant has stated that young children under the age of 6 are especially vulnerable to harmful effects because their brain and central nervous system are still being formed**.** Even very low levels of lead in the blood can result in reduced IQ, learning disability, attention deficit disorders, behavioural problems, stunted growth, impaired hearing and kidney damage and on high levels of exposure, a child may become mentally retarded, fall into a coma or even die from lead poisoning. In case of adults, the study shows that lead can increase blood pressure, cause fertility problems, nerve disorders, muscle and joint pain, irritability and memory and concentration problems. In fact, having got the proof on empirical study, the Consumer Product Safety Commission of USA banned lead based paint in the year 1978. A study by "Leading India Out of Lead Pollution" shows that lead is extremely toxic and lead poisoning is a serious health risk to the children and a serious contributor of occupational disease. Lead can enter water, air and soil from natural and anthropogenic sources and can cause adverse effects on many parts of the body- mostly brain, nervous system, kidneys, blood and reproductive system of both sexes. The study also shows that the battery industry is the principal consumer of lead using an estimated 76% annual primary and secondary lead produced. Lead in gasoline has been the major source of lead emission to environment which has been faced out almost universally and presently the production and recycling of lead acid batteries is becoming the major source of lead exposure in India. In fact, that is the reason why the Battery Rules were framed by the Government of India to have a check over the said industries handling hazardous lead. The studies stated above which have resulted in the framing of statutory rules make it abundantly clear, the concern of law makers in controlling and regulating the use of lead from the used batteries. This is sufficient to show that the statutory Batteries Rules are the

effective guidelines and regulations in respect of these hazardous units and if the Rules are not followed, certainly the consequences are bound to be disastrous.

31. No doubt, there are records to show that in respect of some of the individuals residing in the vicinity of the 5th respondent unit the blood lead level is more than the permissible level of 10mcg/dL. The quantitative analysis given by Amrita Institute of Medical Science and Research, Cochin cannot be brushed aside for the simple reason that such reports are from a private institution. The test report of the Central Institute of Fisheries Technology, Cochin also shows that lead levels in well water are much above the permissible quantity. Even the analysis report produced by the SPCB dated 28-12-2011 shows that the well water samples taken from the vicinity are beyond the allowable limit of 0.05mg/L. In fact, based on those materials the SPCB issued a closure intention notice on the 5th and 6th respondents dated 19-01-2012 clearly stating as follows:

> *"whereas analysis of water of the wells on the west and south-west of factory, which were collected on 16-12-2011 and on12-01-2012 shows contamination with lead much above the permissible limit for drinking water and high value of the lead found in the soil taken from the storm water drain along the boundary of factory on 12-01-2012."*

It is not known as to what further action the SPCB took against the 5thand 6th respondents pursuant to the issuance of closure notice and it is not even the case of the 5th and 6th respondents that the said notice is under challenge before any judicial forum. These are the abundant evidence to show that the 5th and 6th respondents are responsible for creating such environmental hazard by polluting air, water and soil and in our considered view such an unwanted hazard could have been avoided if only 5th and 6th respondents had registered under the Batteries Rules. It is this statutory violation which has resulted in the unchecked emission of lead particles due to handling of used batteries by the 5th respondent unit as a recycler. Therefore, *prima facie* we are satisfied that the 5th and 6th respondents have committed a grave error in violating the statutory rule of the Batteries Rules resulting in the hazardous lead contamination in air, water, and soil. Issue No.2 is answered accordingly.

32. **Issue No. 3: remedial measures taken by 5th and 6th respondents – whether sufficient**?

The ill effects of improper handling of hazardous waste was brought to lime light by the applicant in her detailed representation to Union of India, State of Kerala and SPCB in the representation dated 01-07-2012. Thereafter, W. P. (C). No. 17129 of 2012 came to be filed before the Hon'ble High Court of Kerala by her. In the meantime, it appears that the 6th respondent approached the Hon'ble High Court of Kerala at Ernakulam by filing W. P. (C) No. 33964 of 2011 for a direction against the Deputy Superintendent, Chengannoor and Circle Inspector of Police, Chengannoor to give adequate Police protection to run her industrial unit. By an order dated 22-06-2012, a Division Bench of Hon'ble High Court of Kerala has passed the following order.

Joseph J.

Adjourned at the request of the learned counsel for the Pollution Control Board to ascertain the content of air pollution. Call on 09.07.2012.

We record the submission of the learned counsel for the pollution Control Board that the inspection will be conducted on 03-07-2012 at 11 a.m. We direct in the facts of the case that the Chief Environmental Engineer, Kerala State Pollution Control Board will be present at the time of carrying out the inspection. The parties are free to be present. Apart from party respondents, representative of the action council alone will be permitted to be present. The report will be filed giving copies to all the parties in the writ petition by 06.07.2012.

33. Pursuant to the said direction of the Hon'ble Divsion Bench of Kerala High Court, SPCB inspected the 5th respondent unit on 03-07-2012 and collected samples of well water from ten neighbouring residences, sample of storm water flowing to the public drain from the factory premise, soil samples from the public drain, soil sample from the front court yard of the residences to the east of the factory of Shri. Anil Mathew Ottathengil. The emissions from the stacks attached to two rotary furnaces were also monitored and it is stated in the said report that the values of lead exceeded permissible limit in the storm

water flowing from the factory to public drain and lead was detected in the soil from the public drain and in the soil from the residence of Mr. Anil Mathew Ottathengil to the east of the factory. The report has also categorised the quality of well water sample taken from 5 residences exceeding permissible limit of lead in drinking water namely 0.05 mg/L (max) as 0.45, 0.26, 0.39, 0.12 and 0.08. The report also shows that storm water flowing to public drain contained 3.87 mg/L of lead while permissible limit is 0.1 mg/ L (Max).

34. While the air samples from the 3 stacks were found to contain lead within permissible limit, the soil sample from public drain in front of Anthalil was found to contain 113500 mg/kg of lead while the concentration as per the Hazardous Rules 2008 shall not exceed 5000mg/kg. The report of the SPCB has given the reason for contamination of water, air and soil as follows:

- *Improper disposal/ storage of slag containing lead compounds which escaped in ground water as leachate into ground water.*
- *Inadequacy of air pollution control measures which caused lead and its compound to escape through stack and fugitive emissions.*
- *Inadequate housekeeping which caused lead compounds to leach to ground water from spillages inside the factory premises.*

35. The report dated 31-07-2012 has also narrated the implementation of pollution control measures as follows:

*"**Factory Premises**:*

1. *The entire factory courtyard should be concreted to prevent spillages leaching to ground water.*
2. *High-Effiency Particulate Air (HEPA) vacuum cleaners (capable of removing particles of micron size) should be employed to remove spilled lead compounds inside the plants and premises.*
3. *Drain should be constructed all along the periphery of the premises to collect storm water falling in the courtyard and should be treated to remove dissolved lead compounds and entrained lead before its disposal.*

4. *Storm water falling on the roof of the plants should be collected, settled/filtered to remove lead.*

Decontamination station:

1. *Workers should be provided impermeable coveralls to be worn during work.*
2. *Decontamination Station consisting of wash facilities to allow workers to wash off accumulated lead dust and debris from their overall and their body shall be provided.*
3. *Effluents from the decontamination station shall be directed to treatment plant and disposed only after adequate treatment.*

Scrap battery handling:

1. *Comprehensive effluent treatment plant shall be constructed to neutralise acid emptied from scrap batteries or else it should be sold after completely removing all entrained pollutants.*
2. *Adequate facility for the thorough cleaning of casings and plastic parts shall be constructed and the waste water shall be directed to effluent treatment plant.*

Smelter:

1. *Alkali scrubber should be installed to control emissions from smelters.*
2. *Online device for monitoring and printing stack emissions shall be installed in both stacks.*
3. *Separate blowers of adequate power and station should be installed for each hood to completely stop fugitive emissions during charging and tapping.*
4. *Such fugitive emissions should then be directed to the air pollution control equipments attached to the corresponding furnace.*
5. *The stack through which fugitive emissions were exhausted earlier should be dismantled.*
6. *All openings in the roof of the plant should be closed completely to prevent escape of fugitive emissions containing lead fumes and dust.*
7. *Diesel storage should be shifted to a safer and more accessible location outside the smelter plant.*

Refining Pot:

1. *The refining and the ingot casting areas should be housed within walls to contain fugitive emissions.*
2. *The walls of the plant should be realigned to comply with distance criteria.*

Battery Breaking Unit:

1. *The plant should be housed within walls to reduce noise pollution.*
2. *The walls of the plant should be realigned to comply with distance criteria.*
3. *Entire water should be reused and there should be no discharge of effluents from this plant.*

Remediation Measures:

1. *Soil within and outside the factory premise contaminated with lead should be excavated and disposed at the hazardous waste disposal facility at Eranakulam.*
2. *Drinking water shall be provided at company expense to all till lead contamination of their wells is removed.*

Ambient Air, Water and Soil Monitoring:

1. *Ambient air quality stations should be set up and monitored by the company at frequency and from locations to be finalised jointly with the Board.*
2. *Ground water quality in the neighbourhood should be monitored by the company at frequency and from locations to be finalised jointly with the Board.*
3. *Lead in soil within 1 km of the factory should be monitored by the company at frequency and from locations to be finalised jointly with the Board.*

Production Capacity:

1. *Further expansion of production capacity from the present 16T/day of lead will not be permitted in this factory.*

Additional Measures:

Board has taken the following additional measures to ensure early compliance by the company to above directions:

1. *Board will identify an expert, in consultation with the CPCB, who will assess the adequacy of pollution control measures and remediation /decontamination activities of the company.*
2. *Company will be directed to provide Bank Guarantee of Rs. 25 lakh to ensure that all decontamination/remediation works as well as the pollution control measures implemented and that drinking water is supplied to the families till their wells become fit for consumption".*

36. The said report was responded to by the 5th respondent in its letter addressed to the SPCB dated 28-09-2012 stating that majority of the pollution control measures to be implemented as per the report of the SPCB submitted to the Hon'ble High Court in W. P. No. (C) 33964 of 2011 have been complied assuring that the other measures will be effected soon. In the said letter, the 5th respondent has stated that in respect of direction of excavation and removal of soil within and outside the factory premises contaminated with lead, the same has been removed and disposed at CTSDF facility, Ernakulam and also stated that it has offered 3 sources of water supply to the affected people which was rejected by the parties and requested the SPCB to inspect the arrangements provided and give further directions, if any. In any event, in our view, these instructions ought to have been issued by the SPCB at the time of issuing Consent to Operate.

37. When W. P. (C). No. 17129 of 2012 was transferred from the Hon'ble High Court of Kerala, it was renumbered and taken up on 23-07-2013 and by an order dated 9th March 2015 the District Environment Engineer was directed by the Tribunal to make a fresh inspection after giving notice to the parties and address the following aspects:

- *A brief history of the pollution problem in the area*
- *Sourcing and storage of batteries*
- *Process Flow Chart*
- *Sources and quantification of pollution load*
- *Chemical status (Speciation) of the pollutants generated (plumbus /plumbic)*
- *Current Pollution Control practices followed in the unit and its adequacy*

- *Suggestions and recommendations of the SPCB to solve the problem along with time limit for implementation.*

38. The SPCB has conducted another inspection and sampling on 25-03-2015 and analysis was done by The Central Laboratory of the SPCB at Cochin. As it is seen in the status report filed by the SPCB on 22nd April 2015, the SPCB has given a brief history of pollution of the area which was noted on 6th December 2011 when a black powder was noticed in the nearby area of factory including residences, wells and roads. According to the SPCB, in its report two samples collected on 12-01-2012 and 17-12-2014 and the analysis report shows the decreasing trend of pollution and the SPCB has given a series of directions to the unit which were complied with except realignment of wall of the plant in order to increase the distance of the unit from the nearby residences and that was also reported to the Hon'ble High Court in W. P. (C). No. 17129 of 2012 which was transferred as stated earlier, to this Tribunal and renumbered as the present application. There was a further complaint on 07-12-2013 of lead contaminated soil being buried in a public place outside the factory which was found to be true after enquiry and therefore the SPCB issued a show cause notice on 16-01-2014 directing the 5th respondent to remove the lead bearing soil from the public place and send to CTSDF and to show cause as to why action should not be taken for the improper storage of hazardous waste lead and its disposal in a public place. Even though the Company has removed the hazardous waste disposed in public road, the unit is liable for penalty and therefore a proposal to impose a fine of Rs.50000 by the 5th respondent was sent to CPCB for approval and action will be taken after approval from the CPCB is received as per the rules.

39. The report also mentions that the source of scrap batteries are lead acid battery dealers in Kerala and the list of the raw suppliers has been provided. It is further stated that the industry has been periodically filing returns for the purchase of scrap batteries and batteries are stored inside the plant which is fully roofed for protection from rain apart from the fact that the floor of the industry having been concretised with acid proof brick lined in specific areas of draining of scrap batteries.

40. In respect of the process flow chart and process description, it is stated that the composition of lead acid batteries are as metallic lead 35%, lead paste 45%,

polypropylene 7-10%, separators 5% and the unit recovers metallic lead and lead paste. The industry is engaged in recovering and refining of lead from scrap batteries and also scrap lead brought from outside agency. It has a smelting and refining section. It is also stated that mechanised battery breaking section is ready for commissioning for which the unit has applied for consent which has not been issued by the SPCB so far. The report includes a general flow diagram for the smelting and refining processes. The main process of smelting and refining done by the 5th respondent has been explained in the report of the SPCB dated 22-04-2015 as follows:

"The main process consists of two steps, namely the smelting of lead and refining of lead. The smelting process is carried in rotary furnace. The unit has two rotary furnaces. The lead scrap is loaded into the furnace using vibro feeders. The additives added include charcoal, anthracite, soda ash and iron powder. The opening in the rotary furnace through which melted lead is pored out at the end of the process is sealed initially using clay. The furnace is fired using petroleum coke as fuel along with air (now replaced with oxygen). The furnace rotates at a very small r.p.m. The temperature in the furnace becomes close to 1000^0 C. During the first stage of the process, the lead sulphate reacts with carbon forming lead sulphide and carbon dioxide. In the second stage, lead sulphide reacts with iron releasing metallic lead and ferrous sulphide.

Similarly, lead oxide reacts with charcoal (carbon) forming lead and carbon dioxide and lead dioxide reacts with charcoal (carbon) forming lead and carbon dioxide.

The reactions are as follows:

$PbSO_4 + 2C = PbS + 2CO_2$

$PbS + Fe = Pb + FeS$

$2PbO + C = 2Pb + CO_2$

$PbO_2 + C = Pb + CO_2$

After the reaction is complete, the clay seal of the rotary furnace is broken through the smelted jumper block of unrefined lead pours out. The impurities in the charge are removed as slag. The process flow chart of the smelting process is

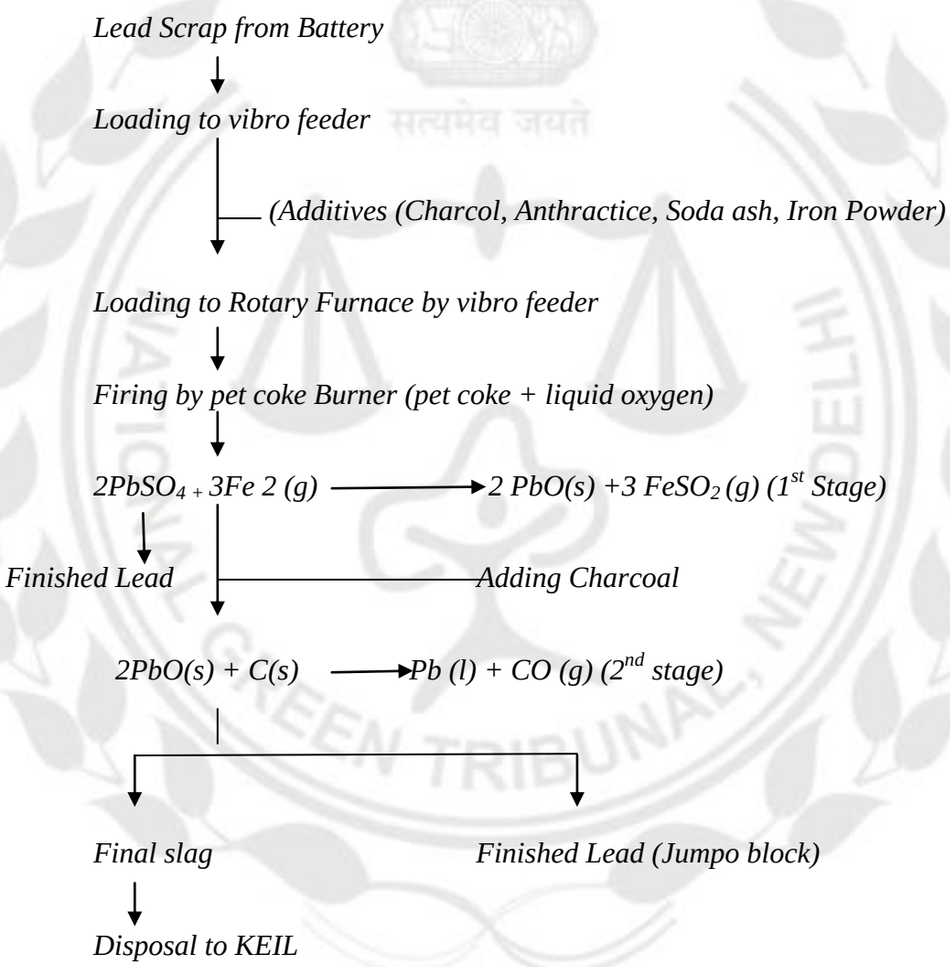
attached as Annexure R3- (7). The final slag generated in the furnace is collected and stored in an area specified for storage of hazardous waste and finally sent to common disposal site at Cochin.

In the refining section, the smelted jumper blocks are loaded into the refining kettles using cranes (2 nos) and melted by firing HSD (high speed diesel) as fuel underneath the kettles. Diesel mono block burner is used for firing. After melting is accomplished, the molten mass is agitated. Refining is done by de-copperizing (removing copper using sulphar), de-tinning (with soda and sodium nitrate) and de-antimoning (with sodium hydroxide). The dross is skimmed out and the molten lead is caste into ingots, which is the final finished product. The dross removed as impurity is further smelted in the rotary furnace to recover the lead contained within. The flow chart of the refining process is attached as annexure R3-(8).

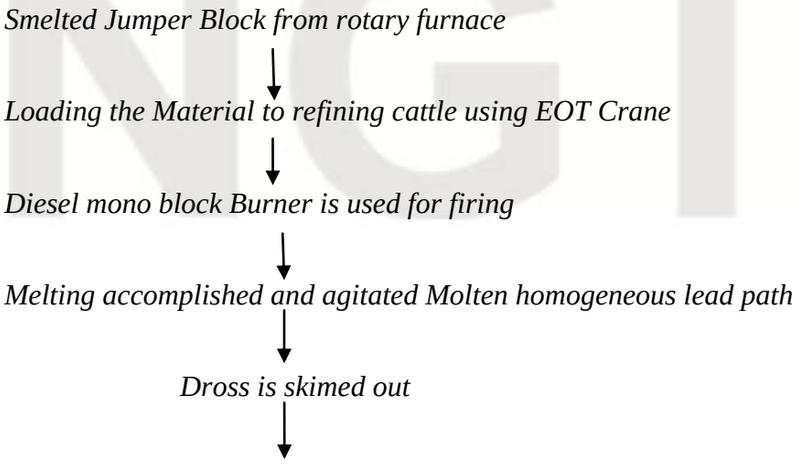
The flow chart of the mechanised battery breaking section (which is not yet Commissioned), is attached as Annexure R3- (9). In the mechanised battery breaking section (which is not yet commissioned), the batteries are fed as a whole into a hopper and vibratory feeder. The vibratory feeder transfers the batteries on to a belt conveyor for subsequent transfer into the battery shredder. The battery shredder shreds the batteries into suitable size for further segregation of various components. The crushed components fall directly on to a wet classifier screen, where a fine spray of water separates the paste from the other scraps. The paste is separated as slurry with water and collected in tank (No.1) below. The other scraps move into the hydrodynamic separator for further separation of components. The battery separators and ebonite contained in the hydro-separation unit are further elutriated and sent to the de-watering screen and de-watered to outside. The fine particles are collected through the screen into tank (No.2). the slurry collected in tank no. 1 is thickened by the addition of a flocculent to settle the solids contained in the slurry. In this tank (No.1), the slurry is allowed to stay in still condition to allow settling of solids, which are continuously extracted by means of a scrapper chain conveyer to transfer into the slurry holding tank. The slurry tank is kept in constant agitation by means of an agitator. Approximately 10-15% of alkali is to be transferred into the slurry tank

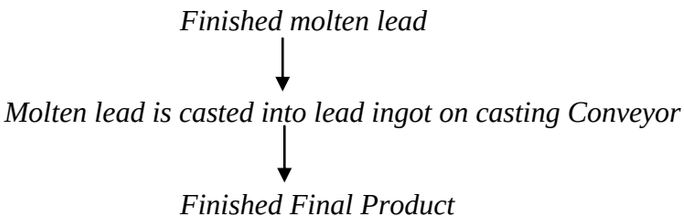
to desulphurise the extracted paste. The slurry pump transfers the slurry to the filer press for separation of the solids as cake. The desulphurised dried cake is sent for lead recovery to the rotary furnace. The filtered solution from the filter press is sent to the paste separation screen for further recirculation. The entire water used in the breaking and separation process is continuously clarified and recirculated by means of acid resistant special pumps".

The flow charts mentioned above are as follows:

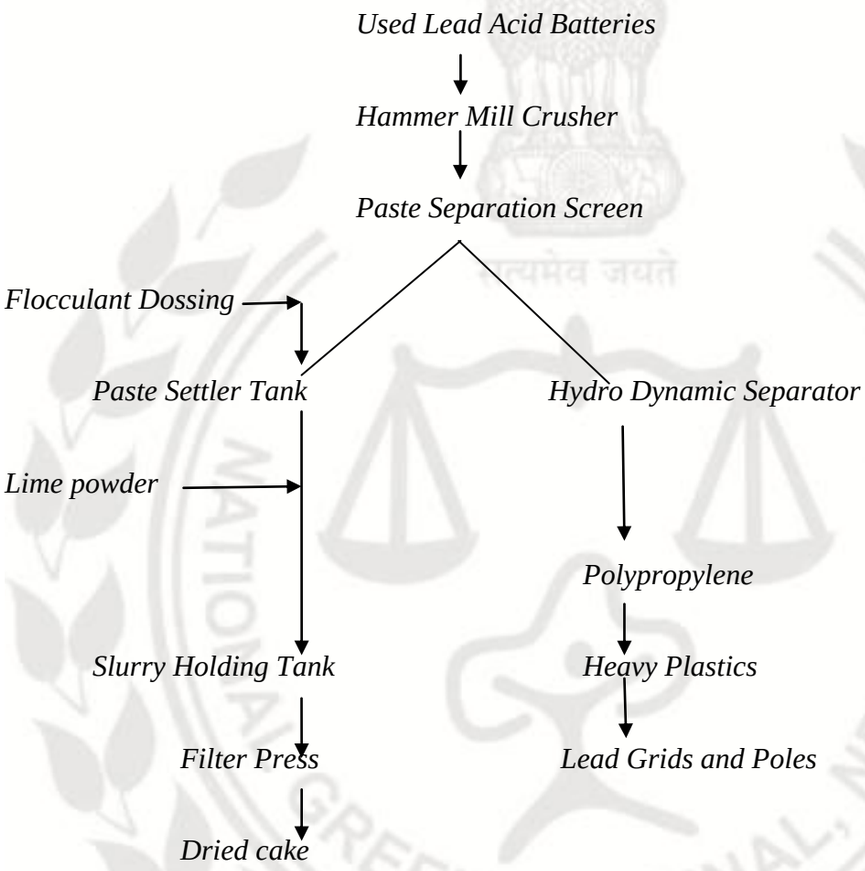


(The process flow chart of the smelting process)





(**The Flow Chart of the Refining Process**)



(Process Flow Diagram for the Breaker Unit)

41. While answering the sources and quantification of pollution load, the report states that the sources include spent acid from the manual battery breaking section, emissions from the rotary chamber, emissions from the refining section, slag generated in the process and rain water run-off from the industry premises carrying lead particles. The composition of raw materials show that out of an approximate weight of 15 MT of raw material a day, lead constitutes 65% namely 9.75 MT a day, apart from moisture, battery casing, additives and slag at 10, 10, 5 and 10%, respectively. A table showing the quantity of pollutants generated per rotary furnace per day out of the rotary furnace are given below:

Sl. No.	Description	Pollutant load per day per rotary furnace
1.	Dust collected in the Cyclone	1kg
2.	Bag House	200kg
3.	Pollution load in stack attached to rotary furnace No.1 as per stack sampling done on 17/12/2014	0.0443 kg/day with respect to lead and 0.044 kg/day with respect to NO_x, SO_2 is below detectable levels.
4.	Pollution load in stack attached to rotary furnace No. 2 as per stack sampling done on 17/12/2014	0.243 kg/day with respect to lead and 1.22 kg/day with respect to NO_x, SO_2 is below detectable levels.
5.	Pollution load in stack attached to refinery furnace as per stack sampling done on 17/12/2014	0.1989 kg/day with respect to lead and 0.286 kg/day with respect to NO_x. SO_2 is below detectable levels.
6.	Slag	1500 kg maximum

42. The chemical status (speciation) of the pollutants generated has been explained that the lead is found in batteries as lead sulphate. The pollutant is present in the fumes mainly as metallic lead, lead oxide or lead sulphate with valency 2, and it is also stated that the run-off water may carry lead sulphate from the factory premises along with it.

43. While answering about the current pollution practices followed in the unit and its adequacy, the SPCB has stated that the spent acid from the battery breaking section is drained through an inclined acid proof floor into a collection tank. From collection tank, it is pumped into the reaction tank and after sufficient quantity of spent acid is accumulated, caustic soda is added to neutralise the acid. Mixing of the contents is achieved using an agitator and polyelectrolyte is added to achieve effective settling and the treated effluent is left over night for effective settling and the supernatant is collected for further use in water scrubbing. The facilities for thorough cleaning of casting and

plastic parts have been provided to divert wastewater to the effluent treatment plant. It is also stated that a mechanised breaking unit in the same unit is ready for commissioning after obtaining consent to establish and waiting for Consent to Operate. The current pollution practices also speak about the emissions from the rotary chamber for which pollution control system has been provided and online monitoring has been installed for monitoring of particulate matter in the rotary furnace stacks. The report further states about the emission from the refining section and its treatment, arrangement for treatment of storm water from the premises and roof top. It also states that for housekeeping, the 6th respondent has provided efficient particulate air vacuum cleaners to remove lead compounds inside the plants and premises. That apart, the unit has also provided a decontamination station consisting of wash facility to allow the workers to wash off accumulated lead dust and debris from their clothes and body apart from stating that the slag (lead contaminated waste) is stored in a separate roofed shed with concrete flooring and disposed through the common facility of the waste provided at Cochin.

44. The report has given the following suggestions and recommendations with time line for its implementation:

> "The Board has issued a number of directions to the unit and the unit has complied with all of them except the direction to realign the walls of the unit in order to increase the distance of the factory from the nearby residences. Looking into the history of complaints against the unit, it is understood that complaints arise during the charging of the rotary furnace or during taping of lead from the rotary furnace. Accordingly this respondent gave the following directions to the unit:
>
> *i) To replace the air with oxygen during firing so to ensure full burning of fuel. Accordingly, the unit has provided liquid oxygen cylinders of 2000 liters capacity for each rotary furnace. This has produced very good results. As major portion of air is nitrogen, replacing air with oxygen considerably reduces NO_x in the stack, minimizes the amount of fuel required and ensures better combustion which in turn reduces the fugitive emission and also reduces the volume of gases in the stack considerably.*

ii) *The fugitive emission is collected using a hood over the rotary furnace. The unit has already increased the capacity of the i.d fan attached to the hood from 10 to 15HP. Still there was chance for escape of emissions during the charging stage. Hence the unit has now provided detachable steel plates to the hood such that these plates extend downwards covering the hood. These plates are detached when the raw materials has to be loaded and attached just before charging.*

It is respectfully submitted that the unit has complied with all the directions of the Board. But if these control measures are not operated properly or there is defect any of the control measures then there may be problems. Hence the most important factor is that there should be continuous maintenance and monitoring of the pollution control facilities.

In this regard the Board suggests the following:

a) *During the inspection, it was noticed that the dust from the bag house hopper was locked manually with a stopper plate to release the dust fully. To control the escape of particles, it is suggested to install a motorized rotary airlock and to collect the dust generated directly into the bags to avoid escaping of any dust particles.*
b) *Ambient stations should be setup and monitored by the Company at frequency and from locations to be finalized jointly with the Board.*
c) *Ground water quality in the neighbourhood should be monitored by the Company at frequency and from locations to be finalized jointly with the Board.*
d) *Lead in soil within 1 km of the factory should be monitored by the Company at frequency and from locations to be finalized jointly with the Board.*
e) *Further expansion of production capacity from present 16 T/day should not be permitted in this factory.*
f) *The overall housekeeping has to be improved. Frequent use of high efficiency particulate air vacuum cleaners (capable of removing particles of micron*

size) to remove spilled lead compounds inside the plants and premises should be practised.

g) *There should be frequent checking and replacement of filter medium in the rain water treatment system".*

45. The additional report filed by the SPCB dated 7th May 2015 has enclosed the report of analysis done by the Central laboratory of the SPCB which indicates that the lead content in water, soil and stack samples are all within the prescribed limits. However, it is stated that even though the lead content is within limits, the detection of lead in soil sample from the public storm water drain implies the necessity of proper maintenance and operation of rain water treatment plant in the factory premises and to improve cleaning and housekeeping regularly. The additional report further states about the proposal by SPCB to CPCB to impose a fine of Rs.50000 on the 5th respondent for improper disposal in public place which is a violation under Rule 25(2) Hazardous Rules 2008 and the 5th respondent was directed to deposit an amount of Rs.50000 into the SPCB's account.

46. We have carefully considered the above said reports filed by the District Environment Engineer of SPCB Kerala dated 22nd April 2015 and 7th May 2015. It is our observation that even though the unit in question is in existence and operation from 2002 admittedly it belongs to red category with high potential to cause environmental damage, and there have been complaints regarding its environmental performance from different corners. On number of occasions the SPCB has failed to impose corrective measures with any seriousness. Though a number of inspections were made by the SPCB and directions were given in piecemeal manner, no comprehensive follow up action seems to have been taken by the SPCB. It is only after specific direction from this Tribunal a detailed report dated 22-04-2015 highlighting the current status and proper directions for addressing the environmental issues was prepared and submitted. It is our considered view that if only the SPCB had taken up this exercise at the earliest point in time much of the environmental damage caused by the unit could have been averted. We therefore direct the SPCB to be vigilant in future, especially in case of industries with high potential to cause environmental damage and prescribe and follow up the measures to prevent the environmental damage by such industries. After all, as the age old adage goes "prevention is always better than cure".

47. It is clear from the said reports that even though certain steps have been taken by the 5th respondent, it remains a fact that by looking into the factory's history, the complaints raised during the charging of the rotary furnace or during the taping of the lead from the rotary furnace and even though suggestion of the SPCB are stated to have been complied with by the 5th respondent by replacing air with oxygen during firing, it is clear that it all depends upon the proper operation of the control measure. One thing is certain, that the 5th respondent unit which has been in operation from 2002 has chosen to comply with the pollution control measures only recently in the year 2015 after many directions were issued by the Hon'ble High Court and this Tribunal. Therefore, we can safely come to a conclusion that from 2002 till 2015 they have been causing pollution to air, water and soil for which as we have stated earlier there are many records from the private agencies like Amrita Institute of Medical Science and Research Centre, Cochin. Therefore, in our considered view, in addition to the implementation of suggestions of the SPCB in the report dated 22nd April 2015 and 7th May 2015, the 5th and 6th respondents should be made liable under the principle of "polluter pays". In our considered view, this liability has to be imposed on the 5th and 6th respondents not only on the basis that there are proof of environmental pollution created by the unit from 2002 till recently but also on the ground that the 5th and 6th respondents have deliberately violated the provisions of Batteries (Management and Handling) Rules in not registering with MoEF which would have certainly lead to certain "precautionary" measures and would have mitigated the damages in these years by suitable directions and periodic monitoring and check by the MoEF and SPCB. We consider that this is a fit and proper case wherein the Tribunal should direct the 5th and 6th respondents to deposit an amount equal to 10% of the annual income with effect from 2002-03 to 2013-14 for a period of 12 years and the said amount shall be paid under the "Polluter Pays" Principle by the 6th respondent to be credited in the account of SPCB in a separate account as "Environmental Protection Fund, Chengannoor", to be used for further remediation including providing of potable drinking water to the people living in the surrounding areas till the recommendations and suggestions of SPCB are implemented in full and continue to be implemented, to be monitored effectively by the SPCB by periodic inspections. The said Issue No. 3 is answered accordingly.

48. **Issue No. 4: whether respondent No.5 unit is liable to be closed?**

It is not in dispute that the Consent to Operate granted to 5th respondent expired on 30th September 2015 and the same has not been renewed by the SPCB. In respect of the industry like that of 5th respondent which is hazardous in nature and belongs to red category, there can be no compromise that it can operate only after a proper renewal order is granted by the SPCB. This is relevant due to the adverse effect of lead contamination in water, air and soil which has been proved by studies both the empirical and scientific, worldwide especially the industries dealing with lead part, in order to save human beings, animals and plants on the earth. Therefore, the above issue is answered to the affect that the 5threspondent shall not be permitted to operate its industrial activity unless and until the SPCB grants order of renewal of Consent to Operate which shall be done by the SPCB strictly in accordance with law and after fully satisfied that the5th respondent has complied with all conditions and directions of SPCB, directions of Hon'ble High Court of Kerala and directions of this Tribunal.

49. In the result, Application No. 141 of 2013 stands partly allowed with the following directions:

1. The industrial activities of 5threspondent unit shall be closed forthwith till the SPCB grants renewal of Consent to Operate beyond 30-09-2015 which shall be done by the SPCB strictly in accordance with law, after satisfying that all directions, suggestions of the SPCB in its Status Report filed dated 22-04-2015 and 07-05-2015 are fully and effectively complied with.
2. The 5th and 6th respondents shall deposit an amount of equal to 10% of annual income from the financial year 2002-03 to 2013-14 for 12 years which shall be deposited with SPCB to be maintained in a separate fund, "Environment Protection Fund, Chenagannoor" and shall be used for the purpose of further remediation as decided by the SPCB.
3. The 5th and 6th respondents shall strictly adhere to the suggestions and recommendations of the SPCB dated 22-04-2015 which are as follows:

a. *To control the escape of practices, it is suggested to install a motorized rotary airlock and to collect the dust generated directly into the bags to avoid escaping of any dust particles.*

b. *Ambient stations should be setup and monitored by the Company at frequency and from locations to be finalized jointly with the Board.*

c. *Ground water quality in the neighbourhood should be monitored by the Company at frequency and from locations to be finalized jointly with the Board.*

d. *Lead in soil within 1km of the factory should be monitored by the Company at frequency and from locations to be finalized jointly with the Board.*

e. *Further expansion of production capacity from present 16 T/day shall not be permitted in this factory.*

f. *The overall housekeeping has to be improved. Frequent use of high efficiency particulate air vacuum cleaners (capable of removing particles of micron size) to remove spilled lead compounds inside the plants and premises should be practised.*

g. *There should be frequent checking and replacement of filter medium in the rain water treatment system.*

4. The 5th and 6th respondents shall also comply with the suggestions of the SPCB in the status report dated 7th May 2015 which is as follows:

"Even though the lead content is within limits, the detection of lead in soil sample from the public storm water drain, into which the rain water from the factory premises discharges, implies the necessity of correct maintenance and operation of the rain water treatment plant in the factory premises. The factory premises have to be cleaned regularly and housekeeping improved. The 5th respondent shall take action for the periodical cleaning of the public drain".

5. The 2nd respondent shall ensure strict compliance of the above said directions and file annual report to the registry of National Green Tribunal, Southern Zone on or before 31st March of every year commencing from 31-03-2016.
6. The 5thand 6threspondents are liable to pay cost of Rs. 25,000 to the applicant.

Dated 17th December 2015 Justice Dr. P. Jyothimani

Judicial Member

Chennai.

Prof. Dr. R. Nagendran
Expert Member