

Point-by-point Rebuttal of Unilever's Key Arguments to Deny Harm and Breach of Law in Kodaikanal

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Unilever continues to maintain that its operations at the thermometer factory in Kodaikanal have not harmed the environment or workers. It alleges that activists who claim otherwise are dealing not in facts but “misinformation and inaccurate claims.”

Below is a presentation of facts with sources cited so that readers can decide for themselves the veracity of claims and counterclaims.

Unilever Claims	Counter Point
<p>The company voluntarily stopped the manufacturing operations immediately and closed the factory (the very next day) after it got to know about this. Soil and air samples collected from the scrap yard and the surrounding area did not show mercury contamination.</p>	<ul style="list-style-type: none">• On 23 March, 2001, TNPCB issued an order via Proc No HWM/4280/TNPCB/2001-1 under Section 5 of Environment Protection Act for closure/stoppage of power supply to the said unit. A copy of the closure notice is at http://kodaimercury.org/tnpcb-closure-order/ "• Kodaikanal has a monsoon-influenced subtropical highland climate. The temperatures are cool throughout the year due to the high elevation of the city. The average annual rainfall in Kodaikanal region is 135 mm.• Mercury pollution was reported in Kodaikanal affecting lakes in the area.• In 2005, apart from tests conducted on Kodaikanal Lake, moss samples collected from trees surrounding the Berijam Lake, located 20 km (12.4 mi) from the factory were also tested. These showed mercury levels in the range of 0.2 µg/kg, while in Kodaikanal Lake the lichen and moss levels were 7.9 µg/kg and 8.3 µg/kg, respectively.

	<ul style="list-style-type: none"> • Fish samples taken from Kodaikanal lake also showed Hg levels in the range of 120 to 290 mg/kg confirming that pollution of the lake had taken place due to mercury emissions from the factory. <p><i>[Source: D. Karunasagar, et.al. 2005. Studies of mercury pollution in a lake due to a thermometer factory situated in a tourist resort: Kodaikkanal, India. Environmental Pollution 143 (2006) 153-158]</i></p>
<p>HUL did not dump mercury contaminated glass waste. The glass scrap with mercury residue was sold in breach of the company’s established procedures to a scrap dealer whose scrapyards were three kilometers away.</p>	<p>The company has always denied violating any law. On 7 March, 2001, Mr. Debasis Ray, Head of Corporate Communications, Hindustan Lever Ltd, categorically “As I told you on telephone, I once again reiterate that our thermometer unit at Kodaikanal does not send any waste mercury or mercury-contaminated waste outside the factory.” This was the same day that a rally of residents from Kodaikanal marched from the scrapyards to Unilever's factory demanding closure for the illegal dumping of mercury wastes. A copy of the letter is available at: http://kodaimercury.org/backdoor/wp-content/uploads/2015/08/HLL_TO_NITY_7_MARCH.pdf</p> <p>The company fails to highlight the systematic nature of the “breach of established procedures.”</p> <p>According to a 2002 report submitted by Unilever's consultant, the company had illegally sold 43.6 tonnes of mercury-bearing scrap containing nearly half a tonne (440 kg) of mercury to unauthorised recyclers and scrap merchants between 1992 and 1999. This includes sales of:</p> <ul style="list-style-type: none"> • 14 tonnes of mercury waste to an unauthorised purchaser in Mysore; • 18 tonnes of mercury waste to an unauthorised recycler in Chennai; • 11.6 tonnes of mercury waste to an unauthorised trader in Coimbatore; and • 5.3 tonnes of mercury waste to an unsuspecting scrap dealer in Kodaikanal.

	<p>Some of the mercury-containing glass waste was used to manufacture marbles that children play with.</p> <p><i>[Source: Table 1-2. Environmental Site Assessment and Risk Assessment for Mercury Thermometer Factory Site Kodaikanal, Tamil Nadu, India. May 2002].</i></p>
<p>HUL has looked at the cause of death of its former workers. Many died from underlying causes like diabetes or heart attack. Some were due to post-surgery, infections like TB or Bronchial infections, others from road accident, suicide, fall from height etc. There has been no death certificate produced listing the cause of death as being related to mercury.</p>	<ul style="list-style-type: none"> • At least 12 of the 45 dead workers died as a result of kidney failure, and most of the workers died at young ages. The International Program on Chemical Safety – a collaboration between UNEP, ILO and WHO – identifies the kidney as a key target organ of mercury exposure. <i>1, 2</i> • Death certificates in India do not ever mention that a kidney failure is caused by mercury or lung cancer in a smoker is caused by tobacco.
<p>Several of the abnormalities cited in recent coverage are ones which global medical experts agree are not caused by mercury. In addition it is an established fact of science that elemental mercury does not have mutagenic potential and does not cause congenital malformations – in other words, cannot be passed on to the next generation.</p>	<ul style="list-style-type: none"> • Elemental as well as organic mercury can easily pass the placenta and can accumulate in the foetus because the foetus is not able to excrete mercury <i>[Bose-O'Reilly, et.al. 2010].3</i> • Studies have shown that women occupationally exposed to elemental mercury vapour had more spontaneous abortions, still-births and congenital malformations than a control group of women not exposed to mercury <i>[Sikorski, R. et al. 1987]. 4</i> • Another study of 349 women shows that complications of childbirth were increased compared to non-exposed women. <i>[Mishonova VN, Stepanova PA, Zarudin VV (1980) Characteristics of the course of pregnancy and births in women with occupational contact with small concentrations of metallic mercury vapors in industrial facilities. Gigiena Truda i Professional'nye Zabolevaniya, 24(2):21–23.]. 5</i> • Studies show various genotoxic, carcinogenic, and teratogenic effects of mercury. The most obvious cases can be observed in some congenital Minamata disease survivors. <i>[Masazumi Harada (2005); Paul B. Tchounwou, et.al. (2003); Grandjean, Philippe. (2007)].6,8</i>

In 2001 and 2002, URS Dames and Moore carried out a comprehensive survey of sites including Pambar Shola Fall, Kodai lake, Scrapyard Site. The URS reports deal with environmental assessment and risk assessment and it found no significant risks due to the mercury. Other assessments have also confirmed the same.

Even by the conservative estimates of Unilever's paid consultant URS Dames and Moore, the soil in the thermometer factory site is extensively contaminated including with hotspots where mercury levels are as high as 5286 mg/kg – nearly 52,000 times higher than naturally occurring background levels in this region. To claim that this does not pose any significant risk is incorrect. [Source: Page 2 of 8 of Table 5 of URS Dames & Moore Report, 2002]

Unilever's consultant claims that 1.35 tonnes of mercury has been dispersed into the Pambar Shola Watershed forests. [Source: Page 4-3 of URS Dames & Moore, 2001]

Results of analyses conducted by a Department of Atomic Energy laboratory in 2015 of mercury levels in sediment, moss and lichen collected from outside the factory revealed high levels of the toxin indicating that the factory was actively leaching poisons into the environment. [See <http://kodaimercury.org/lichen-moss-study-2015/>]

Air and water-borne mercury emissions have contaminated large areas of Kodaikanal and the surrounding forests. A study conducted by the Department of Atomic Energy confirmed that Kodaikanal Lake has been contaminated by mercury emissions and releases [Karunasagar, D, et.al. (2005)]. 9, 10, 11.

According to the same study, the concentration of Total mercury (Hg_T) in fish samples from Kodai Lake was ranged from 120 mg/kg to 290 mg/kg. About 50-58% of the Hg_T was in methylated form of methyl mercury (MeHg). The safe level of methyl mercury recommended by the WHO is 0.5 mg/kg. The fish samples from Kodai Lake was 120 to 290 times of the safe level.

Lichen and moss are good bio-indicators of localized levels of mercury in

	<p>ambient air. Moss samples collected in 2005 from trees surrounding the Berijam Lake, located 20 km from the factory were also tested. These showed mercury levels in the range of 0.2 µg/kg, while in Kodaikanal Lake, the lichen and moss levels were 7.9 µg/kg and 8.3 µg/kg, respectively. [Karunasagar, D, et.al. (2005)].</p> <p>A recent Community Environmental Monitoring study reported the most contaminated samples of lichen and moss were found on the Leverage path in Pambar Shola Reserve Forest from around a stream that flows out of the factory into the Shola watershed. The lichen sample contained 53 mg/kg of mercury; moss contained 8.68 mg/kg. ¹²</p>
<p>Immediately on closure of the factory, HUL appointed Dr P.N. Vishwanathan, retired Director (Industrial Toxicological Research Centre, Lucknow) and member of WHO task group on environmental group criteria for mercury environmental aspects, to carry out an inspection and report any contamination. Dr Viswanathan gave a report in March 2001, which concluded:</p> <p><i>“at present there appears no evidence to show any ecological or human risk due to Hg release from the unit. ... even any shadow of doubt based on unknown or imaginary future risks can be removed.”</i></p>	<ul style="list-style-type: none"> • Dr. Viswanathan was Unilever's paid consultant, not an independent assessor. • The factory was ordered closed on 23 March 2001. Dr. P.N. Viswanathan's assignment was of the same month. This is insufficient time to be able to assess environment, workers and the company's practices to be able to arrive at such a categorical conclusion ruling out ecological and human risk. • Dr. Viswanathan was asked to report any environmental contamination. However, not one environmental sample was taken to support his conclusion. • As Dr. Viswanathan was an environmental specialist (not an occupational health specialist), he was neither asked to nor qualified to comment on worker health. No workers were examined, just as no environmental samples were taken.
<p>HUL's registered medical advisors wrote letters to local doctors in Kodaikanal asking them to inform the company if in their private or hospital practice they have ever encountered any mercury-related ill health effects in our employees who may have come to them for medical treatment sometime or other. None of the doctors reported having encountered any mercury-related ill effects on the employees</p>	<ul style="list-style-type: none"> • This assumes that Kodaikanal's local doctors are all experts in diagnosing mercury related illnesses; • It assumes that local doctors know the occupational history of all persons coming to them for treatment of ailments, and would be able to remember particularly the few that came to them with ongoing employment or past employment in Unilever's thermometer factory.

<p>during their medical treatment.</p>	<ul style="list-style-type: none"> • In any case, there are no letters on record from the local doctors of Kodaikanal reporting absence of mercury-related health effects.
<p>On April 17, 2001, based on the recommendation of Greenpeace, TNPCB directed HUL to appoint Dr Tom Van Tunenbroek of TNO, an eminent consultant, for health surveillance. He concluded on October 1, 2003, as follows:</p> <p><i>“My overall conclusion based on a thorough review of the occupational health surveillance measures (biological monitoring, workplace, environmental monitoring, shop floor health and safety practices and clinical evaluations) as well as the analysis of group and individual loading over the years, based on a wealth of data due to monitoring at a frequency well above WHO standards, is that there has been no harmful exposure to mercury amongst the employees of the Kodaikanal factory leading to chronic or acute mercury poisoning”.</i></p>	<ul style="list-style-type: none"> • Dr. Teunenbroek was Unilever's paid consultant. • He has a dual doctorate in chemistry and molecular biochemistry, and no qualifications as a medical health expert. He is not qualified to talk about health effects. • Not a single worker was examined by the Dr. Tunenbroek. • All information seen by him is information selectively provided to him by Unilever. • The consultant's unquestioning acceptance and endorsement of the company's biological and environmental monitoring protocols, and their clinical evaluations hides the fact that the data was incomplete and inadequate. For instance: <ul style="list-style-type: none"> a) Records of mercury vapour levels in workplace are not available for the entire duration of 1984 to 2001. Section 3.2 titled “Indoor Air Monitoring” of the company-sponsored report of 2002 admitted that “The records for the period between 1994 and 1997 have not been sighted.” [Emphasis added] b) Section 2.4 of the company sponsored report of 2001 admitted that “there have been instances of readings [mercury vapour in the air] exceeding the maximum level during the month of May 2000 in the mercury distillation and crusher areas. The maximum spot reading of mercury in the air, from the records available, has been 0.480 milligram/m3” or 480 µg/m3. This figure is about 10 times higher than the standard set by the factory (0.05 milligram/m3) or 2000 times higher than the WHO’s tolerable concentration level (0.2 µg/m3). [WHO] c) By the company's own admission, more than 1000 workers have worked in the factory for 6 months or more. Of this, the company has records of medical or biological examinations

	<p>of only 130 workers, and an additional 184 workers whose services were terminated around 2001. Data for 70 percent of the workers is not available and the company has given it in writing to the workers about the non-availability of the medical records.</p> <p>URS Dames & Moore, 2002. Sec 3.3 "Medical Surveillance" Page 3-2.</p>
<p>On November 9, 2001, a team of medical experts of the All India Institute of Medical Sciences deliberated on the issue and concluded as follows:</p> <p><i>“The Occupational Health and Safety measures in place at the Kodaikanal factory have succeeded in keeping the exposure of the factory employees to Hg to consistently acceptable low levels. In view of the comprehensive occupational health surveillance carried out over a period of more than 12 years, specially keeping in view the monthly biological monitoring of Hg in urine (as compared with the WHO recommended 6 monthly to yearly evaluations) and detailed individual annual clinical and biochemical records of the employees and the recently (March 2001 and May 2001) carried out comprehensive Clinical – epidemiological and environmental study , there is no evidence to suggest any adverse health effects that can be attributed to mercury exposure..”</i></p>	<ul style="list-style-type: none"> • All India Institute of Medical Sciences has based its conclusion on incomplete data. As pointed out above, mercury vapour readings are neither complete nor indicate that levels did not exceed the tolerable limits. • The team of medical experts gave this opinion based on a powerpoint presentation made by Hindustan Unilever's medical officer in New Delhi. Not a single worker was clinically examined by the experts. • This opinion too is an instance of “paid science.” <p>Appendix E of URS Dames & Moore Report, 2002.</p>
<p>On January 10, 2002, the Indian Association of Occupational Health, India, (IAOH) gave a report of the Expert Committee which concluded: <i>“The IAOH expert group is of opinion that with the measures taken by HLL for protecting workers health & adequate safety measures in place, any adverse consequences of mercury exposure on workers’</i></p>	<ul style="list-style-type: none"> • This too is not a study. It is an opinion based on a presentation of selective data provided by the company. • The Expert Committee has never set foot in Kodaikanal. The Committee has not physically examined a single worker. <p>Appendix E of URS Dames & Moore Report, 2002.</p>

<p><i>health are highly unlikely at the thermometer factory in Kodaikanal.”</i></p>	
<p>On June 29, 2007, the Madras High Court appointed an expert committee to examine the claims of the workmen and HUL, and submit a report. This expert committee, chaired by Dr A. K Srivasatava, Deputy Director and head of the epidemiology division, Indian Toxicological Research Centre (ITRC) Lucknow, had members from ITRC, NIOH, CMC Vellore, AIIMS Delhi and MAMC New Delhi. The composition of the Committee was also consented to by the Petitioners.</p> <p>This committee submitted its report on December 29, 2007, and concluded:</p> <p><i>“Based on the site visit, the clinical evaluation of subjects considered to be most affected by the petitioners on site at Kodaikanal and a comprehensive review of all available material on hand and keeping in view the available contemporary scientific literature the committee members after careful consideration concluded that the committee failed to find sufficient evidence to link the current clinical condition of the factory workers to the mercury exposure in the factory in the past.”</i></p> <p><i>“In view of the reasons as mentioned above the committee does not recommend any further study – the ex-workers not only had an opportunity to get exposed to mercury but also had to go through a process of losing job and facing consequent socio-economic dislocations. This could have induced life style changes which could have had an effect on perceived health status. Hence, at this point in time it will be difficult to bring out the pure ill effects of mercury on them”.</i></p>	<ul style="list-style-type: none"> • Agencies like ITRC and AIIMS had already offered unequivocal opinions on the issue based on the selective data presented by Unilever even prior to being invited to the Committee. • The Committee spent exactly 60 minutes to examine a mere 12 workers out of more than 500 gathered before them to conclude that none of the workers exhibited any symptoms relating to mercury. • The Committee admitted that it found symptoms like tremors and dental caries that are known to occur among those occupationally exposed to mercury. However, the Committee not only chose not to examine further but unilaterally decided that no further investigation by any other scientific body was warranted. • One child examined by the Committee and declared fit and healthy died a week later. (Government of India report, page 97) <p>http://kodaimercury.org/backdoor/wp-content/uploads/2015/10/Report-High-Court-Committee.pdf</p>

Contrary to other claims, there is no authoritative medical data from any report showing that our operations at Kodaikanal caused illness. The Ministry of Labour report that is cited in much of the media coverage was fundamentally flawed in its methodology:

No medical examinations were made by the committee that carried out the study. They only interviewed those who came for examination and made notes on their complaints without examining them.

The report was based on health assessments which did not seek to establish any cause-effect relationship between the ill health of the workers and their time at the factory, despite the fact that their symptoms could have occurred due to many other factors.

- The Ministry of Labour Committee was the most comprehensive one that had amongst its members experts in industrial safety and occupational medicine.
 - a) Dr. R. B. Raidas – Deputy Director General & In-charge, Industrial Medicine Division, Directorate General of Factory Advice Service and Labour Institutes, Govt of India
 - b) Dr. R.K. Elangovan – PhD in Industrial Safety, Director In-charge, Regional Labour Institute, DGFASLI, Chennai
- In addition, the Committee had Deputy Chief Inspector of Factories, and the Certifying Surgeon, Chief Inspectorate of Factories and the Joint Commissioner of Labour.
- In contrast to the 10 workers examined by the Madras High Court Committee, in 2011, Dr. Raidas and Dr. Sam Elango of **the Government of India Committee medically examined 102 people, including workers, deceased workers’ family members, and residents to conclude that at least 66 people were suffering from causes confirmed or suspected to be related to mercury exposure.** (See pages 45 and 111, the [Government of India Committee Report, 2011](#)). One medical doctor from HUL was also present throughout the examination carried on by the Committee members.
- The Committee has not only examined the workers but also compared their findings with the urine mercury levels of the workers as provided by the Company and they arrived at a conclusion on their conditions (See page 77-110, the *Government of India Committee Report, 2011*). The Govt of India committee report found that:
 - a) *“Safety policy, as seen in the documents provided by the management, has not been prepared and declared in consonance with Rule 62 (B) of Tamil Nadu Factories Rules, 1950. . .” (Page 116)*
 - b) *“Safety Operational Procedures provided in the document does not conform to the standards. . .” (Page 117)*

c) *“The records provided by the management do not contain the details of procurement, issue and maintenance of Personal Protective Equipment (PPE) required to be provided to the workers. This infers that the non-providing of PPEs by the management to the workers is in confirmation with [workers'] claim.” (Page 117)*

d) *“...the procedure adopted by the management, that too in writing, directing the workers to use vacuum cleaners for handling mercury spills is in deviation with respect to the standards and guidelines for handling mercury.” (Page 117)*

e) *“...there is prima facie evidence from the personal and medical investigation of victims during the field visit to HLL factory. . .that not only the ex-workers of HLL, Kodaikanal, but also their new-born children have suffered on account of mercury exposure. . .” (Page 127)*

Unilever is keen to kill this report. In 2011, it filed two written petitions in the Madras High Court from preventing the Government of India Committee from conducting a study. When this failed, and the study was conducted, Unilever and its shareholder filed two separate Special Leave Petitions in the Supreme Court of India, which they later withdrew, to prevent the disclosure of the report even before it knew the contents of the report. [Source: The Government of India Committee report can be downloaded at:

<http://kodaimercury.org/final-report-of-the-goi-committee/>]

The safety and wellbeing of our employees and the community is paramount. There was no violation in the running of the factory operations as far as the safety and health of our employees was concerned.

The Government of India Committee report had this to say specifically about the running of the factory:

- a) "Safety policy, as seen in the documents provided by the management, has not been prepared and declared in consonance with Rule 62 (B) of Tamil Nadu Factories Rules, 1950. . ." (Page 116)
 - b) "Safety Operational Procedures provided in the document does not conform to the standards. . ." (Page 117)
 - d) ". . .the procedure adopted by the management, that too in writing, directing the workers to use vacuum cleaners for handling mercury spills is in deviation with respect to the standards and guidelines for handling mercury." (Page 117)
 - e) ". . .there is prima facie evidence from the personal and medical investigation of victims during the field visit to HLL factory. . .that not only the ex-workers of HLL, Kodaikanal, but also their new-born children have suffered on account of mercury exposure. . ." (Page 127)
- [Esther Rani](#) and Edward regret sending their son Britto to work at the factory. He was only 23 years old when he died of kidney failure. With no one to care for them, Esther and Edward are destitute and guilt-ridden.
 - Vishal, 17, complaints of a continuous headache. Doctors suggested an MRI scan but the family doesn't have the money to take him through a medical checkup. His sister Sinduja, 21, suffers with headache and vomiting. Their father Ramachandran worked at the thermometer factory for 15 years.
 - Ashwini Beena, 25, suffers from depression and is epileptic. As a severe consequence of mercury exposure, numerous women suffer from complications in maternal health and irregular periods.

	<ul style="list-style-type: none"> • Predees and Prasana, 15-year-old twin brothers. Their mother G. Ruthpriya worked at the mercury thermometer plant for 5 years (1995-2000), in the packing area and digital section. Predees is suffering from ulcerated tongue and Prasana has bent legs. Both suffer from low IQ and asthma. • Vijayalakshmi visiting a local dentist- her gums have been badly affected. She has been passing blood in her urine and also has an enlarged uterus and tuberculosis. Vijayalakshmi lives about 200 meters from the factory. She now works part time at a local merchant.
<p>Our factories have always been operated with the highest levels of safety.</p>	<p>In September 2015, barely a month after the viral video spotlighted Hindustan Unilever's crimes in Kodaikanal, the Kodaikanal Municipality had to order Unilever to stop illegal work inside its factory, including the removal of mercury-laden asbestos roofing by unprotected workers.</p> <p>Asbestos is a carcinogen banned by 56 countries. Asbestos removal is a hazardous and specialised task involving full-body suits, special masks, and gloves. However, Unilever engaged unprotected workers to dismantle the mercury-soaked asbestos roofing.</p> <p>[See http://kodaimercury.org/unilever-gets-unprotected-workers-to-remove-mercury-soaked-asbestos-in-kodai-factory-kodai-municipality-stops-unilever-s-unauthorised-works-on-site/ and http://www.thehindu.com/news/national/tamil-nadu/stop-repair-works-say-former-workers-of-thermometer-factory/article7683257.ece]</p>

All the workers who were working in the mercury area were provided with safety and protective equipment.

In addition:

Regular health checks were conducted as part of our employee wellbeing policy. The urine samples of all our workers were regularly monitored to ensure compliance to WHO guidelines.

The air quality was monitored to ensure it complied with Government of India norms.

The Government of India Committee report finds that:

- “The records provided by the management do not contain the details of procurement, issue and maintenance of Personal Protective Equipment (PPE) required to be provided to the workers. This infers that the non-providing of PPEs by the management to the workers is in confirmation with [workers'] claim.” (Page 117)
- Christopher Cold Craft worked at the Hindustan Unilever Limited’s mercury plant from 1985 to 1991. Christopher had written a letter to the management requesting to be moved to a different department as he was facing various health problems at his current position. Christopher was forced to leave his job as the company didn’t agree. He passed away in February, 1997, due to kidney failure.
- Giyas Mohamed Gori, 50 years, says he was exposed to gusts of mercury vapour every time he opened the oven in Unilever's thermometer plant. Within 5 years, his teeth began coming loose and falling off. He cannot eat to get enough strength and struggles to support his mentally ill wife and three children. Mercury hurts the gums and teeth.

Page 3-2 of the URS Dames & Moore Report commissioned by Unilever contains details about “Medical Surveillance” in Section 3.3. This section admits that:

- The company has records of medical and/or biological examinations of 130 workers, and an additional 184 workers whose services were terminated around 2001. By the company's own admission to the Madras High Court, more than a 1000 workers have worked in the factory for 6 months or more. In other words, data for 70 percent of the workers is just not available.

All of these were found to be in order.

Page 3-1 of the URS Dames & Moore Report, 2002, commissioned by Unilever contains details about “Indoor Air Monitoring” in Section 3.2. This section reveals that:

- Records of mercury vapour levels in workplace are not complete. The report admits that “The records for the period between 1994 and 1997 **have not been sighted.**” [Emphasis added]

URS Dames & Moore Report, 2001, commissioned by Unilever contains details about “Medical Surveillance” in Section 2.4 of Page 2-4. This section reveals that:

- “there have been instances of readings [mercury vapour in air] exceeding the maximum level during the month of May 2000 in the mercury distillation and crusher areas. The maximum spot reading of mercury in air, from the records available, has been **0.480 mg/m3.**” That is 10 times higher than levels to which it ought to have been maintained at.

Environmental monitoring results have never been accessible for public. There is no communication measures to inform the community and public in Kodaikanal about the status of the environment.

18 children have died and about 1000 workers have been facing health issues due to exposure to mercury vapours from the obsolete thermometer factory of Hindustan Unilever Limited in Kodaikanal.

Below are some conditions of the ex-workers who had lived in Kodaikanal areas:

- A. Lourdu Yesurajan, 58, worked at the factory for 17 years in a hazardous area inside the plant. He now suffers from a heart problem along with various neurological complications.
- Paneer Selvam died of kidney failure at the age of 26. His urea level

was 320 mg/dl as against the normal levels of 15-40mg/dl. Paneer worked as a gardener at HUL.

- Alagarsamy suffers from gum bleeding, skin allergy, eye pain and memory loss. He worked from 1984 to 2001. At 47, Alagarsamy now works as a security guard at an ATM to support his family.
- J. Sudhakar, 37, was a temporary worker, operating machines in the mercury distillation unit for 8 years. He constantly suffers from headache, bodyaches, giddiness, ulcer and blood vomiting. Sudhakar's 10-year-old son, Vijay, has a hole in his heart. Doctors recommend surgery but he doesn't have the money. Vijay lives with his grandparents as he has breathing problems at a high altitude.
- Dominic Bernard, 48 years, worked in Unilever's thermometer factory. He is unsteady after a stroke, and has lost his voice. Dominic's family abandoned him after he became too weak to work. He now helps out at his brother's tea shop. Mercury affects the brain and can also alter the voice.
- J Peter Sundararajan, 52 years, says "Mercury was everywhere, where we stood, in the food we ate, and the water we drank. It came home with workers in their moustaches, beards, and eyebrows.
- Poomari, 52, is the wife of Marimuthu, an ex-worker who died in his early 20s when she was pregnant with their second child. The last time Poomari saw her husband was after he had vomited blood and was taken to a hospital for treatment. Poomari has worked as a domestic helper to raise her children. Both her sons do odd jobs and construction labour to get by.
- Nitesh is the second son of Margaret, an ex-worker of the thermometer factory. Nitesh was born with a damaged brain. Margaret sells cut fruits to tourists, and her youngest son helps her get Nitesh ready for school. Nitesh is unable to do anything for himself.

	<p><i>[Source: <u>KodaiMercury, Poisoned</u> by Sudhansu Malhotra and <u>Candid Today</u>]</i></p>
<p>We acted with speed and a sense of urgency and responsibility when we first became aware of this issue. We commissioned detailed studies by international experts to assess the environmental risk and working with the TNPCB and the SCMC to find the most appropriate way for soil remediation.</p>	<p>In 2001, Unilever's consultant URS Dames & Moore submitted a report that claimed to be a detailed study by an international expert. In this report, the consultant offered a perfect mercury balance based on 125,676 kg of mercury imported to the site. Workers pointed out that the mercury balance was off by 10,810 kg, as a 10.8 tonne consignment of mercury purchased from Bombay was not accounted for. That this was a fact is clear from the difference in mercury import figures between the 2001 and 2002 URS Dames & Moore report.</p> <p>Unilever's international expert took it in its stride, rejigged the Mercury Balance and arrived at a new mercury balance incorporating the 10.8 tonne consignment.</p> <p>In both the 2001 and 2002 reports, the company stated that it will clean up the contaminated sites to a high residential value of 10 mg/kg. Local residents want the site to be cleaned up to a level protective of a watershed forest rather than of a residential user. However, the company has regressed even on its earlier substandard offer and is now insisting that it will clean up to 25 mg/kg – 250 times weaker than naturally occurring levels.</p>
<p>In 2001, we took all the glass scrap with residual mercury from the scrap yard back to our factory for safe storage along with the soil beneath the scrap. We also took action to track down any glass scrap that left the site over the previous 10 years and brought back the available glass scrap from the identified sites.</p>	<p>In 2001, the Tamil Nadu Pollution Control Board and local residents forced the company to retrieve the mercury wastes from the scrap yard.</p> <p>In October 2002, the company admitted to the Tamil Nadu Pollution Control Board that “around Feb-March they had without permission excavated the flooring of the factory and removed highly contaminated soil from below.”</p> <p>Minutes of the TNPCB meeting is at: http://kodaimercury.org/minutes-of-working-committee-meeting-11-oct-2002/</p>

<p>In 2003, 290 tonnes were exported to a mercury recycler (Bethlehem Apparatus Company Inc.) in the USA, after obtaining appropriate permissions.</p>	<p>This was as per the directions of Tamil Nadu Pollution Control Board and not a voluntary act.</p>
<p>Pre-remediation work was started in 2009 but the criteria set by the TNPCB was contested by NGOs, which has delayed these efforts.</p>	<p>Unilever fails to point out that the reason for the delay is public opposition to its efforts to dilute the clean-up standards. In 2001, Unilever said it would clean up the soil to a high Dutch residential standard of 10 mg/kg of mercury in soil. Members of the Local Area Environment Committee pointed out that a residential standard was not acceptable as the factory site drained into and was ecologically contiguous with the Pambar Shola watershed forest. (See Page 4 of 5 of this meeting minutes document)</p> <p>They also pointed out that Unilever’s 2001 proposal was 10 times laxer than soild guideline value for residential use in UK, where the company is headquartered. Residual mercury from a substandard cleanup will leach into the Pambar River and find its way into fish in Vaigai River downstream.</p> <p>Rather than incorporating this critique, and revising standards to protect the forests and water users in Periakulam and Madurai, Unilever is pushing TNPCB to dilute standards to 25 mg/kg – 25 times less stringent than what would be permissible in their home country of United Kingdom. The clean-up is being delayed because of Unilever’s double standards and insistence on applying a clean-up level that would be unacceptable in the United Kingdom.</p> <p>Read more about Unilever's environmental racism at http://kodaimercury.org/double-standards-kodai-unilevers-mercury-fever-kodaikanals-ecological-time-bomb/</p>

There is no single clean-up standard for mercury contamination either in India or any other country. The US EPA, UK Environment Agency and European Environmental Protection Agencies all follow this approach.

Unilever professes to set the Gold Standard in environmental protection. It has applied to the Indian regulators to clean up to 25 mg/kg instead of its originally proposed 10 mg/kg or local citizens' demand of a more stringent standard.

In 2007, Unilever's consultant offered a study that justified the argument for a laxer clean-up standard. This study argued that:

“techno-commercial aspects are also to be considered while deciding the screening level for remediation. The benefits likely to accrue out of stricter norms are to be compared against the additional cost that may be incurred while undertaking such projects.”

[Source: Protocol for Remediation of Mercury Contaminated Site at HLL Thermometer Factory, Kodaikanal. Sponsor: Hindustan Lever Ltd, Kodaikanal. February 2007]

Mercury removal technologies to bring soil mercury levels down to less than 1 mg/kg are available and well-documented."

http://www.researchgate.net/publication/224948712_Remediation_of_mercury_contaminated_sites_-_a_review._J_Hazard_Mater_221-2221-18

The 25 mg/kg standard it proposes as a residential standard is far weaker than standards for industrial use in other countries, including the United States and Egypt.

- Egypt: Clean-up standard for a mercury contaminated site in Egypt was set at 10 mg/kg. [W.J. van den Brink, et.al. 1995] 14
- Hanover, Massachusetts. USA: A heavily contaminated site is being cleaned up to an ecological background value of 0.1 mg/kg. [Tetra Tech EC Inc., 2009] 15
- New York, USA: A heavily contaminated site belonging to Mercury

Refining Co. is being cleaned up to a standard of 5.7 mg/kg for future industrial use. [*Mercury Refining Inc. 1983*]

<http://cumulis.epa.gov/supercpad/cursites/csinfo.cfm?id=0201552>

<http://www.epa.gov/region02/superfund/npl/mercuryrefining/>

United States of America v. The Gillette Company, et al., Civil No.: v. : 1:12-cv-01247-MAD-TWD, Consent Decree for Remedial Action and Recovery of Response Costs