Center for Health, Environment & Justice
P.O. Box 6806 • Falls Church, VA 22040 • Phone: 703.237.2249 • Fax: 703.237.8389 • www.chej.org

The History of Dioxin Exposure and EPA's Health Assessment of Dioxin Over Twenty Years of Delays

1953 – Accident at BASF plant in West Germany releases dioxin into two nearby communities.

1957 – Dioxin identified as an unwanted contaminant of the manufacture of trichlorophenol.

1962-1970 – Agent Orange extensively sprayed in Southeast Asia during the Vietnam War.

1965 – Dow Chemical holds closed door meeting with four rival chemical companies to discuss the health hazards of dioxin and after the meeting writes that it does not want its findings about dioxin made public due to fears of new regulations for the chemical industry.

Mid 1960's – Outbreak of reproductive and developmental effects noted in fish-eating birds of the Great Lakes.

1970 – U.S. bans military use of Agent Orange in Vietnam.

1971 – Dioxin (TCDD) found to cause birth defects in mice.

1974 – Dioxin detected in human breast milk in South Vietnam.

1976 – Chemical plant explodes in Seveso, Italy exposing 37,000 people to a toxic cloud that contains dioxin.

1977 – Dioxin found to cause cancer in rats. Federal court bans U.S. Forest Service use of dioxin-contaminated herbicides on national forests.

1978 – Dioxin discovered at Love Canal in Niagara Falls, NY. Two hundred forty families evacuated in August; less than two years later another 740 families were evacuated.

1978 – Study by Kociba, et al., finds cancer in rats exposed to TCDD; this study will be used as basis for future EPA risk assessments for dioxin.

1981 – Capacitator fire in Binghamton, NY contaminates state office building with PCBs and furans.

1983 – In Times Beach, Missouri, EPA announces buyout of entire town of over 2,000 residents due to dangerous levels of dioxin in the soil. This was the result of the town regularly spraying dioxin-contaminated waste oil on its streets and parking lots to control dust.

1983 to 1985 – General public found to be contaminated with dioxin.

1985 – EPA completes its first health assessment of dioxin, finding that the cancer risk to humans from dioxin exposure is by far the highest defined for any man-made chemical.

1986 – Dioxin found in paper products, due to chlorine bleaching.

1986 – The paper and chlorine industries pressure EPA to reconsider no threshold cancer risk model used by agency to establish "acceptable daily dose" of dioxin which industry claims is too low.

1986 – EPA Administrator asks staff to re-examine data and methodology used by EPA to derive 1985 cancer risk. First reassessment begins.

1986 – EPA sets up internal working group to review models for estimating cancer risk. Group cannot agree on best model to use, so they decide to average the risks predicted by different models.

1988 – EPA releases draft of first reassessment of dioxin that only addresses data and methodology used to estimate 1985 cancer risk.

1988 – EPA Science Advisory Board (SAB) criticizes working group for combing risks from different models and finds no new data to support changing the cancer risk estimate. EPA maintains its 1985 cancer risk estimate.

1990 – EPA and Chlorine Institute (later to become the Chlorine Chemistry Council of the American Chemistry Council) sponsor scientific conference on dioxins held at Banbury Center on Long Island, NY.

1991 – First Citizens Conference on Dioxin held in Chapel Hill, NC; organized to provide the public and grassroots activists with scientific information on the toxicity of dioxins.

1991 – EPA Administrator William Reilly announces EPA will conduct a new (second) reassessment of the health effects of dioxins.

1991 – NIOSH cancer mortality study of U.S. workers finds strong link between cancer and dioxin exposures.

1991 – Scientists report evidence that dioxin acts like a hormone, disrupting many systems in the body.

1993 – Researchers in Italy find increased cancer in residents living near pesticide plant in Seveso that exploded exposing thousands to dioxin in toxic cloud.

1993 – Institute of Medicine of the National Academy of Sciences establishes list of diseases that Vietnam veterans can file claims for health damages caused by exposure to dioxin resulting from use of Agent Orange during the Vietnam War that includes chloracne, cancer from soft tissue sarcoma, Non – Hodgkin's lymphoma, Hodgkin's disease, respiratory cancer (lung, larynx, trachea), prostate, and multiple myeloma.

1994 – Second Citizens Conference on Dioxin held near Times Beach, MO.

1994 – EPA releases new draft reassessment report that confirms cancer risk estimate and finds that non-cancer effects may have greater impact on public health than cancer effects.

1994 – CHEJ kicks off the Stop Dioxin Exposure Campaign.

1995 – EPA Science Advisory Board completes its second review of EPA's draft reassessment of dioxins and finds no major issues with report.

1996 – Third Citizens Conference on Dioxin held in Baton Rouge, LA.

1996 – EPA relocates 358 families living near "Mount Dioxin" in Pensacola, Florida due to high levels of dioxin and other chemicals found throughout neighborhood.

1996 – Study of German workers exposed to dioxin finds increased rate of death from cancer.

1997 – IARC classifies dioxin (TCDD) as a human carcinogen.

1998 – Study of Dutch workers exposed to dioxin finds increased rate of death from cancer.

1998 – The World Health Organization (WHO) reduces its daily tolerable intake (TDI) for dioxins from 10 to 1 to 4 pg/kg body weight per day based on new findings of adverse effects at lower levels.

1998-1999 – San Francisco, Oakland, and Berkeley pass resolutions to enact public health policies on dioxin.

1998-1999 – Studies of Dutch children born to mothers with background dioxin/PCB blood levels find adverse neurodevelopmental and behavioral effects in children as they age.

1999 – Belgian food contamination incident causes dioxin and PCB contamination of animal feed, cattle, pork, poultry, eggs, milk and other fat-containing food items.

1999 – Follow-up of residents exposed to dioxin in Seveso, Italy accident finds higher levels of cancer in those most exposed.

1999 – Follow-up of NIOSH cancer mortality study of U.S. workers finds stronger link between deaths from all cancer types and dioxin exposures.

July 1999 – 167 signers from communities impacted by dioxins, local, state and national environmental health, environmental justice, consumer, labor, parenting and health-affected organizations send letter to EPA Administrator Carol Browning demanding the release of the dioxin reassessment.

June 2000 – EPA releases revision of 1994 Reassessment Report. The revision finds even stronger links between exposure to dioxins and adverse impacts on human health. EPA found the cancer risk to be 10 times higher than in the 1994 report.

2000 – Study of children born to mothers with high dioxin blood levels finds increased immune deficiencies in the children.

August 2000 – Fourth Citizens Conference on Dioxin held in Berkeley, CA.

January 2001 – The National Toxicology Program concludes that dioxin (TCDD) is *known to be a human carcinogen*.

May 2001 – EPA Science Advisory Board completes third review of EPA's draft reassessment of dioxins and recommends that the "agency proceed expeditiously to complete and release" the dioxin reassessment.

August 2001 – Nancy Pelosi and 40 Congressional Representatives write to EPA Administrator Christine Whitman urging the EPA to complete and release the agency's reassessment of dioxin.

September 2001 – EPA announces it will send draft reassessment of dioxin to the White House's Interagency Working Group for review.

February 2002 – Congressman James Walsh (R-NY) requests that EPA submit the draft reassessment of dioxin to a full review by a committee of the National Academy of Sciences.

A**pril 2002 –** Government Accounting Office (GAO) report supports scientific methods used by EPA in draft reassessment of dioxin.

July 2002 – Nancy Pelosi and 65 Congressional Representatives write to EPA Administrator Christine Whitman urging the EPA to complete and release the agency's reassessment of dioxin.

Jan 2003 – Institute of Medicine of the National Academy of Sciences adds diabetes to the list of diseases that Vietnam veterans can file claims for health damages caused by exposure to dioxin resulting from use of Agent Orange during the Vietnam War.

February 2003 – A rider to the 2003 EPA appropriations bill added by Rep. James Walsh requires the National Academies to review the EPA's reassessment if the White House's Interagency Working Group does not come to consensus on the dioxin report within 60 days.

April 2003 – White House's Interagency Working Group fails to come to consensus on the draft dioxin reassessment and supports request for the National Academy of Sciences to review the EPA's reassessment of dioxin.

July 2003 – National Academy of Sciences (NAS) report on Dioxin in Food calls for coordinated agency efforts to reduce dioxin exposures by restricting the use of dioxin-laden animal fats in animal feed and by promoting consumption of low-fat diary and meat diets.

December 2003 – EPA releases revision of 2000 Reassessment Report and continues to conclude that there are strong links between dioxin exposure and adverse impacts on human health. This draft is sent to the NAS for review.

July 2004 – EPA analysis of dioxin levels in fish caught within 52 miles of river near Dow Chemical plant in Midland, MI pose unacceptable risks to public health, especially for pregnant women and women of child bearing age, and to wildlife.

November 2004 – The National Academies holds first meeting of the Committee to Review EPA's Exposure and Human Health Reassessment of TCDD and Related Compounds.

July 2006 – The National Academies releases report confirming earlier studies that found dioxin to be a potent cancer-causing chemical.

October 2008 – Weeks before leaving office, President George W. Bush's EPA orders the formation of another EPA Science Advisory Board to review the EPA's response to the National Academies report.

January 2009 – Over 100 environmental health groups ask newly inaugurated President Barack Obama to stop former President Bush's 'last minute gift to the chemical industry' of a further delay of the dioxin reassessment.

February 2009 – CHEJ and over 70 environmental health groups call on EPA Administrator Lisa Jackson to release the Dioxin Reassessment.

April 2009 – Over 50 community-based, environmental justice, health, and dioxin-impacted groups call on the EPA to release the Dioxin Reassessment Report and share their stories.

May 2009 – Over 60 doctors, nurses and scientists around the country join CHEJ to urge the EPA to release the Dioxin Reassessment Report.

May 2009 – EPA Administrator Lisa Jackson releases EPA's Science Plan for activities related to dioxin including its intent to release the final Dioxin Health Assessment by December 2010.

November 2009 – EPA releases study showing "widespread contamination" of dioxin in fish across the United States.

November 2009 – CHEJ submits comments on EPA's dioxin cleanup goals plan.

December 2009 – The Chlorine Chemistry Division of the American Chemistry Council asks EPA to postpone the development of new Dioxin soil cleanup guidelines until the Dioxin Reassessment is finalized.

December 2009 – EPA misses deadline to release to the public its response to the NAS report, but does release Draft Recommended Interim Preliminary Remediation Goals (PRGs) for Dioxin in Soil at CERCLA and RCRA Sites

January 2010 – EPA and Michigan launch comprehensive Superfund evaluation of Dow Chemical dioxin contamination in Michigan.

March 2010 – Over 170 labor, environmental health, and environmental justice groups submit extensive comments to EPA on their Draft Recommended Interim Preliminary Remediation Goals (PRGs) for Dioxin in soil.

May 2010 – EPA releases to the public their official response to the National Academies report on dioxin which includes for the first time a reference dose (RfD) or a safe daily dose for dioxin.

June 2010 – EPA misses their self-imposed deadline to finalize the dioxin preliminary remediation goals (PRG's).

July 2010 – Analyses by Environmental Working Group show that consuming EPA's proposed reference dose for dioxin over time would result in an incremental dose of the carcinogen that would be 270 times

greater than what EPA considers acceptable for the general population and that a breast-fed infant three to six months old consumes up to 77 times more dioxin than EPA's proposed safe daily dose (RfD).

July 2010 – EPA Science Advisory Board begins fourth review of dioxin, this time focusing on EPA's response to the National Academies. CHEJ delivers letter to SAB at first public meeting that is signed by over 300 organizations and 2,000 individuals from 49 states concerned about dioxin exposure. Many industry representatives and consultants testify at this meeting.

October 2010 – Over 50 organizations from across the country write to the White House Office of Management and Budget (OMB) urging them to complete their review of the dioxin PRGs as soon as possible.

December 2010 – EPA misses their self-imposed deadline to complete the Dioxin Reassessment and release it to the public.

January 2011 – Animal feed containing high levels of dioxin forces closure of more than 1,000 farms in Germany and the slaughter of at least 8,000 egg-laying chickens in Europe's largest dioxin food scare.

January 2011 – Follow-up of residents exposed to dioxin in Seveso, Italy accident finds that breast-fed boys whose mothers were exposed to dioxin during the accident had permanently impaired sperm quality.

April 2011 – Rep. Edward Markey (D-MA) and 72 other members of Congress write to EPA Administrator Lisa Jackson. The letter expresses concern that "EPA has missed this self imposed deadline to finalize and release the report by the end of 2010" and concludes by requesting EPA's "detailed timeline for finalizing and releasing the Dioxin Reassessment once the SAB review is complete."

August 26, 2011: EPA Science Advisory Board (SAB) released their final report reviewing EPA's draft dioxin Reanalysis.

August 29, 2011: EPA announced its final plan for completing their study on dioxin, which EPA has been working on since 1985.

November 2, 2011: IDFA writes to U.S. Department of Agriculture and U.S. Department of Health and Human Services and request that the two agencies "urge EPA to pursue scientific review by the National Academy of Sciences of any proposed reference dose and to coordinate with your agencies any actions that could undermine consumer confidence in the safety of our food supply."

December 7, 2011: IDFA and other members of the Food Industry Dioxin Working Group, urge the White House to intervene on the dioxin reassessment.

December 20, 2011: American Chemistry Council (ACC) requests EPA delay the release of the dioxin reassessment.

January 5, 2012: EPA announced dioxin releases increased by 18% from 2009-2010, and dioxin air releases increased by 10%.

January 10, 2012: Representative Ed Markey (D-MA), Ranking Member of the Natural Resources Committee and senior member of the Energy and Commerce Committee, sent EPA a letter urging the agency to finalize this dioxin study.

January 11, 2012: International Dairy Food Association (IDFA) and other members of the Food Industry Dioxin Working Group, a coalition of agriculture, processing and retail food organizations, formally ask the EPA to withdraw its dioxin risk reassessment from interagency review and remove it from EPA's regulatory schedule.

January 26, 2012: Thousands of individuals and organizations from across the United States have written to EPA urging the agency to finalize this study once and for all.

January 10-31, 2012: Over a two week period, 30 organizations send letters to EPA Administrator Lisa Jackson urging EPA to finalize dioxin studies.

January 31, 2012: EPA once again misses their deadline for finalizing their report on the noncancer impacts of dioxin.