

# Manhattan Project fallout: Nuclear waste health catastrophe in St. Louis, Missouri

**Gary Joad****27 November 2015**

Over the course of almost 70 years, former and current residents from the northern suburbs of St. Louis, Missouri have struggled with the devastating health consequences from a series of nuclear dump sites. Beginning in the mid-1940s, contractors working for the Manhattan Project deposited tens of thousands of tons of radioactive waste in St. Louis County, population 1.001 million as of 2013. Federal and state governments and agencies delayed even beginning cleanup activities for at least 40 years, constituting an appalling indifference to the health risks of the county residents and their families.

After the fatal results of radiation exposure for the seven decades became undeniable and were publicized, principally by the ill residents and their families of northern St. Louis County, the US Environmental Protection Agency (EPA) and the US Army Corps of Engineers, assigned by the federal government to oversee the “solving” of the crisis, displayed no urgency whatsoever in alleviating health risks to area workers and residents. Meanwhile, this last summer the Corp of Engineers documented the presence of radioactive isotopes in ball fields, public parks, playgrounds and backyards of homes.

The Manhattan Project, founded in 1939 by the US government, initiated the research and development for the world’s first nuclear weapons, and resulted in the first and only military uses to date of atomic bombs, dropped on Hiroshima and Nagasaki, Japan on August 6 and 9, 1945. Over 100,000 civilians in both cities were killed instantly, and at least another 100,000 injured. Tens of thousands also suffered the long-term consequences of radiation exposure. Altogether, World War II resulted in the deaths of at least 60 million human beings.

Eventually the Manhattan Project grew to employ over 130,000 people. The cost of the atomic bomb development was almost \$2 billion, or some \$25 billion in 2015 dollars, most of which was used to build factories to produce fissile materials. More than 30 nuclear fuel development sites were spread across the United States, Canada and the UK.

At the outbreak of the war, Edward Mallinckrodt Jr. of G. Mallinckrodt & Co, a very old chemical and pharmaceutical firm in St. Louis, obtained a contract from the US government to purify large quantities of uranium ore imported to the city’s downtown processing plants and other locations around the city from mines in Utah and Colorado; Port Hope, Ontario and Radium City, Northwest Territories, Canada; and the Belgian Congo, West Central Africa.

Initially, the St. Louis purified uranium was sent to the University of Chicago for the demonstration of the first nuclear chain reaction, at the so-called Chicago Pile-1 location, under the supervision of Enrico

Fermi’s research group.

From 1942 to 1957, the Mallinckrodt Co. purified some 50,000 tons of uranium, which was in turn shipped to other US facilities for further refinement in the process of weapons manufacture. Fifty-five gallon drums and piles of nuclear waste were dumped in vacant lots and fields north of St. Louis at and near the World War II Naval Air Station, now Lambert St. Louis International Airport. In the postwar boom, these would become the highly populated suburbs of Berkeley, Hazelwood, Bridgeton, Florissant, Earth City and Weldon Spring. The radioactive debris was stacked outside and open to the elements.

In the 1960s, the federal government approved the sale of a few thousand tons of the nuclear waste materials to private companies, firms which loaded and shipped the material out of state.

Beginning in the late 1980s, after “responsibility” for removal and/or long-term storage of the material was shifted around by the federal government and Congress from one set of reluctant bureaucratic hands to another, the US Army Corp of Engineers was assigned the task of removal of the nuclear waste from the old St. Louis downtown sites, the St. Louis airport area and sites nearby. After almost 10 years and numerous studies, the removal of waste piles began in the late 1990s and was completed late in the last decade, after several hundreds of thousands of cubic yards of contaminated waste and soil was shipped by rail from St. Louis County to federally certified nuclear dump sites, principally in Utah.

The 19-mile-long Coldwater Creek begins just south of Lambert-St. Louis International Airport and courses beneath the runways to the north and northeast near the backyards of homes and businesses, emptying into the Missouri River near its confluence with the Mississippi River. In the decades since the dumping of nuclear waste at the airport and in the flood plains of the streambed, Coldwater Creek has been out of its banks numerous times. Over the many years, children played near and in the creek bottom, families moved into and out of the neighborhoods, all when few people knew of—let alone appreciated and understood—the risks of decades of exposure to uranium, thorium and radium isotopes.

Since at least the early part of this century, persons who had grown up in, or had spent numbers of years in, northern St. Louis County became ever more aware of developing cancers in the area, including the number of persons with unusual tumors at a young age. An emergency department nurse currently living in Detroit, Michigan and who had spent her childhood near Coldwater Creek had a boy who was born with a fatal brain tumor. Another older St. Louis County resident lost both his father to a malignancy and his middle aged son to a rare form of colon cancer occurring in his appendix.

Another middle-aged woman with end stage lung cancer, who never

smoked tobacco, was featured on CBS news recently with several of her neighbors, all of whom either suffered from malignancies or had family members who had cancer. Her backyard fronts Coldwater Creek.

In 2011, north St. Louis County residents established a website, coldwatercreekfacts.com, to spread the message of their common tragedies with a possible common origin.

The group compiled a list of illnesses with the use of a Facebook page, inviting present and former inhabitants of St. Louis County to report illnesses. As of this year, 45 cases of appendix cancer were reported (with a base incidence of less than one case in 100,000 persons), 448 autoimmune illnesses, 184 cases of brain cancer and tumors, 53 cases of Lupus, 84 cases of multiple sclerosis, 315 cases of thyroid illnesses and cancers. Cancers reported up to this year total 1,993.

In 1973, approximately 40,000 tons of radioactive waste were deposited in an unlined 1930s-era rock quarry at a 214 acre location, today called Westlake Landfill in Bridgeton, Missouri, also in northern St. Louis County. From 1979 to 2004, the majority portion of the same quarry was used as a municipal solid waste landfill, today managed by the for-profit Republic Services, the second largest “non-hazardous” solid waste management outfit in the US. In the world of Wall Street finance, it is praised for its swelling share price, attracting America’s richest investors, including Bill Gates and Warren Buffett.

The EPA designated the Westlake Landfill a Superfund cleanup site, although in an October 16 appearance on a CBS radio affiliate in St. Louis an EPA spokesman was reported to have minimized the health risk to county residents.

In 2010, Westlake Landfill was noted by residents, city officials and landfill workers to be burning, deep in the landfill, emitting noxious odors and smoke into the atmosphere. Numerous landfill gas extracting wells penetrate a thick and tough vinyl membrane cover deep into the solid waste mass of the landfill, the well heads of which have been gradually growing hotter, with temperatures and gas emissions confirming spreading of the subterranean fire towards the nuclear waste contained at the north end of the old quarry. As of two months ago, the fire was thought to be about 1,000 feet from the many tons of nuclear debris deposited at Westlake.

City, state and federal officials have been confronted this fall in jammed public meetings by angry and dismayed residents, who fear a landfill fire and/or catastrophic explosion resulting in a citywide dispersal of radioactive debris.

Missouri Attorney General Chris Koster sued Republic Services and commissioned a landfill risk assessment study, which was completed and published in September.

Among the critical findings include the observation that Republic Services is severely over-pumping the gas extraction wells, resulting in an inflow of excessive levels of oxygen that is feeding and spreading the landfill underground fire, now burning for five years. The attorney general’s assessment included a recommendation to shut down the wells immediately to stop feeding the fires with air pumped in from the surface through air leaks in the vinyl cover. The study indicated that numbers of the wells have been excessively pumped as far back as 2007.

The study also noted that while hydrogen, a highly flammable gas, is not typically observed in landfill gas extraction operations, at Westlake Bridgeton LF, very high levels of up to 30 percent and more were confirmed routinely in scheduled gas samplings. In a dire historical warning, the study’s authors also expressly and explicitly

reminded the Missouri attorney general and Republic Services of a catastrophic hydrogen explosion that occurred over New Jersey in May 1937.

The attorney general’s study notes:

“It is not unreasonable to anticipate that a much larger bubble (of hydrogen gas) could develop beneath the EVOH (vinyl membrane cover) in the event of a prolonged power failure ...

H<sub>2</sub> is a highly flammable and explosive gas. Many will recollect the explosion of the Hindenburg dirigible as a graphic reminder of the danger posed by hydrogen gas in bubbles. LFCI (Landfill Fire Control, Inc., the company consulted by the state of Missouri) believes that an emergency plan needs to be developed concerning safe work procedures around these bubbles if one does not exist currently.”

The study adds:

“With elevated temperatures and exposure to oxygen through the observed overdraw condition, the oxidation of char could result in rapid escalation of temperatures. In LFCI’s opinion this condition has the potential to result in a major subsurface fire. Combustion temperatures for char can exceed 1,500 degrees F. There is a strong possibility that such a fire event would result in the melting of the EVOH membrane cap. If not quickly contained, this would allow very rapid incursion of atmospheric air in the subsurface, and potentially, a rapid escalation of the fire. At that point it may prove extremely difficult and highly dangerous to achieve control of the fire due to the risk of equipment collapse.”

Since the Westlake quarry was never lined before landfill filling began in the 1970s, the liquid (leachate) material within the waste mass is of profound health concern for the water table of St. Louis, and for the Missouri and Mississippi Rivers a scant few thousand yards away.

The attorney general’s recent study notes that Westlake LF is highly polluted with arsenic at 7 times water quality guidelines, mercury at 6 times drinking water (DW) limits and chromium at 1.4 times. An even greater concern are the volatile organic species including benzene at 182 times DW limits and 1,4 dichlorobenzene 6.7 times DW limits. A record finding for the company doing the study for St. Louis, however, was acetone at 140mg/L. Elevated cancer rates are noted for populations exposed to acetone concentrations at 6mg/L.

Moreover, butanone was found at 8.7mg/L. The EPA issues a 10-day health advisory for a 10Kg child at 7.5/L concentration, and a lifetime advisory at 4mg/L.

Of further vital importance, the attorney general’s consultants, in their September 2, 2015 report, scientifically documented the off-site migration of both toxins and uranium isotopes from the Westlake LF.

The nuclear waste and health calamity in St. Louis, like the many others around the country and globe, comprises yet another cataloguing of capitalism’s crimes, of the global profit system that constitutes a social and environmental scourge on humankind. And as far as America’s Wall Street elite is concerned, the working population is so much disposable refuse.



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