

April 2, 2009

Ms. Lisa Jackson
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RE: Radioactive Wastes at West Lake Landfill, Bridgeton, Missouri

Dear Ms. Jackson:

Founding President
Lewis C. Green, 1924-2003

On behalf of the Missouri Coalition for the Environment, we are writing you to request that the EPA reconsider its decision to keep highly radioactive wastes in the floodplain of the Missouri River. These wastes from the Manhattan Project/Cold War era were illegally dumped in a municipal landfill, now a Superfund site, in 1973. The prior administrator at the EPA made a decision to leave the wastes there. We believe this decision is unwise because the floodplains are prone to flooding: the "500-year" levee will not keep the wastes isolated from the human biosphere for the requisite centuries. We would like the EPA to remove the wastes from the floodplain.

SUPPORTING MEMORANDUM

In May 2008 the U.S. Environmental Protection Agency issued a Record of Decision (ROD) ratifying a plan to deal with radioactive waste in the West Lake Landfill (Bridgeton Sanitary Landfill). The waste had been illegally dumped there in 1973. Over the years erosion caused some of the radionuclides to migrate onto private property adjacent to the landfill, known as the Buffer Zone/Crossroad Property. (See ROD, pp. 1-3)

The Mallinckrodt Chemical Works (MCW) in St. Louis processed uranium ore from 1942-1957 under contracts with the Manhattan Project and the Atomic Energy Commission. Beginning in 1946, Mallinckrodt dumped the residues of this processing at a tract now known as the St. Louis Airport Site (SLAPS). (ROD 1-2.) The residues that found their way to West Lake Landfill consist of uranium, thorium, and other radioactive elements that occur when those two elements decay. (ROD 23-24.)

The EPA's Selected Remedy is to put rocks, construction rubble and clay on top of the radioactive wastes. Contaminated soil from the Buffer Zone/Crossroad Property would be excavated and consolidated with the radioactive Operable Unit One at the landfill. "Institutional controls" (land use restrictions) are intended to prevent human contact with the radioactive waste during the many thousands of years that it will continue to decay. Long-term monitoring, particularly of groundwater, is contemplated. (See EPA's ROD, pp. xi-xii, 42-47.)

The purpose of this letter is to shine light on the two major inadequacies in the EPA's analysis: (1) the failure to acknowledge the high levels and dangers of the radioactivity in the landfill, and (2) the failure to acknowledge the impact of those wastes on the ground and surface-water and on the air. Furthermore, the EPA failed to propose an alternative remedy.

To avoid charges of misrepresentation, all descriptions of the history and condition of the site are taken from the EPA's own ROD and the accompanying Responsiveness Summary (RS), in which EPA answers public comments on the plan. Where we add information, it is clearly identified.

FUSRAP

As it happens, there is already a federal program for dealing with the same radioactive waste from the earliest decades of the Atomic Age — the Formerly Utilized Sites Remedial Action Program (FUSRAP, commonly pronounced “fuse rap”) presently administered by the U.S. Army Corps of Engineers. Under FUSRAP the Corps is already remediating or has remediated the other St. Louis City and County sites contaminated by MCW wastes: the St. Louis Airport Site and its Vicinity Properties such as Coldwater Creek; the St. Louis Downtown Site; the Hazelwood Interim Storage Site (HISS) and nearby Latty Avenue Vicinity Properties; and the Madison Site in Illinois.

At all these sites contaminated soil and other materials have been excavated and transported to “an out-of-state licensed or properly permitted facility,” according to the Corps' St. Louis District's FUSRAP web page. <http://www.mvs.usace.army.mil/eng-con/expertise/fusrap.html>. One facility is specified by the Corps: Envirocare of Utah's (now EnergySolutions) licensed low-level radioactive waste disposal facility. See <http://www.deq.utah.gov/references/FactSheets/Envirocare.htm>.

EPA'S PROPOSED REMEDY

EPA's remedy for West Lake is to treat it as a municipal waste landfill under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, better known as the Superfund Law). (ROD 49–50.) In addition to the usual cover for landfills, EPA has borrowed some standards from the Uranium Mill Tailings Radiation Control Act (UMTRCA) and proposed “a hybridized cover system incorporating a rock or concrete rubble layer to restrict biointrusion and erosion into the underlying landfilled materials.” (ROD 50–51.)

This hybrid remedy is inadequate. No liner or other physical structure is proposed that would prevent radionuclides from migrating into the groundwater.

EPA's objections to removal of the radioactive waste boil down to three arguments:

1. The waste is not that “hot.”
2. There is no migration pathway by which radionuclides could enter groundwater.
3. The waste is too dispersed in the large volumes of nonradioactive waste in the landfill.

Radioactivity

Radioactive material was found in two parts of the landfill at levels well above background and reference levels: in Area 1 to a depth of 7 feet and in places down to 15 feet; in Area 2 to a depth of 12 feet and, in places, more (ROD 10, 82–86).

EPA acknowledges that Areas 1 and 2 “contain substantial quantities of long-lived radionuclides mixed with the municipal solid waste and thus present conditions that are not typical of landfill sites.” (ROD 28) It says that there are no “hot spots” of particularly concentrated radioactive waste (ROD 31) because the waste is “dispersed in a heterogeneous mix.” (ROD 42) In reconstructing the history of the Mallinckrodt waste EPA determined that the portion destined for West Lake consisted of 8,700 tons of “leached barium sulfate cake” of which 7 tons was uranium; this barium sulfate cake was “reportedly mixed with 39,000 tons of soil” and used as cover on the landfill. (RS 9–10)

EPA acknowledges that there are “data quality issues” with the sampling done at the site and the analysis of the samples. (RS 27–30).

Colloidal Transport

When radionuclides such as the ones left at West Lake are released into water, they can disperse as liquids, particles, or dissolved gases, or can move by colloidal transport. The acceleration of movement of normally immobile contaminants due to linking up with mobile colloids is referred to as colloid-facilitated transport. Many studies on colloidal transport have been done in the years since the EPA conducted its original studies. The EPA’s decision is no longer based on the best available scientific data. In particular, studies in 1999 and 2002 (completed one through three years after the latest EPA West Lake related studies were done), show that the presence of organic substances enhances the transport of radionuclides through groundwater. In short, we believe that these highly radioactive wastes, if abandoned in the floodplain, could end up in the drinking water of untold numbers of St. Louisans who depend on the Missouri River for their drinking water, as well as people downstream who draw their drinking water from the Mississippi after the Missouri drains into it.

Water Contamination

“EPA does not dispute that parts of the landfill are built on the historic or geomorphic flood plain...It is also a fact that the landfill is located behind the Earth City Levee system designed to exceed the 500-year flood protection level. Whether the Site is in a flood plain or not is a function of the definition being applied. There has been no intent on EPA’s part to confuse anybody on this issue.” (RS 50)

We are confused. EPA says the landfill is in a floodplain, yet it’s not because there’s a levee, and that while a flood could reach the “northwestern toe of the landfill,” the cover would protect it. (RS 5)

The Missouri River could carry radioactive waste to drinking water intakes for St. Louis County and City. (RS 31)

EPA concluded that the instances of radioactivity detected in monitoring wells above Maximum Contaminant Levels were not due to migration from the contaminated areas of the landfill (ROD 19–20), or at least not to “significant leaching and migration of radionuclides.” (ROD 21) As to water moving off-site:

“If groundwater monitoring data show no evidence of a contaminant plume underlying the immediate downgradient of the source material, then it is reasonable to conclude that there is no contaminant plume further downgradient at some off-site location that could be attributable to the source material. For this reason, off-site groundwater investigations were not undertaken as part of the RI [Remedial Investigation].” (ROD 21–2)

Hence groundwater will only be monitored. “Statistically significant deterioration in groundwater quality with time as a result of contaminant migration from Areas 1 and 2 shall be cause to reevaluate the remedy.”(ROD 45)

As for the possibility of people drinking contaminated water, “evaluating consumption of groundwater underlying the source is not consistent with a landfill remedy.” (ROD 24)

Safe Removal of the Waste is Feasible

EPA admits that the waste could be excavated: “It is true that safe removal of the waste is possible. However, it is not the option that provides the best balance of trade-offs when considered against the evaluation criteria proved in the NCP” [National Contingency Plan]. (RS 31)

The Corps of Engineers is excavating soil at the St. Louis FUSRAP sites while leaving in place some contaminated soil that is inaccessible because it lies beneath roads, rail lines, buildings or other permanent structures. EPA says, basically, the West Lake waste in is a landfill so we might as well leave it there. Public access in the future will be prevented by institutional controls — land use restrictions. (RS 13–4) Nevertheless, radioactive waste *will be* excavated from the Buffer Zone/Crossroad Property — an area of 196,000 square feet (ROD 10) — and placed in the landfill. (ROD 37, 43–4)

EPA estimates the volume of contaminated material at 24,400 cubic yards in Area 1 and 118,000 cubic yards in Area 2, for a total of 142,400 cubic yards. (ROD 10) Elsewhere the ROD says that over 250,000 cubic yards would have to be excavated (130,00 cubic yards of radiologically contaminated material and 120,000 cubic yards of overburden). (ROD 34) Area 1 covers approximately 10 acres and Area 2, 30 acres, for a total of 40 acres. (ROD 3)

We can compare this to the amount of contaminated material removed from the 21.7-acre St. Louis Airport Site and transported to a federally licensed facility as reported on the St. Louis FUSRAP web page, <http://www.mvs.usace.army.mil/eng-con/expertise/fusrap-slaps.html>. It totals 214,275 cubic yards — 50% more than the volume of contaminated material in West Lake Landfill.

The consequences of an inadequate remedy are illustrated by the Shattuck Superfund Site cleanup in Denver, where the EPA decided to remediate radioactively contaminated soil by mixing it with concrete, fly ash and other materials, and creating a monolith. Three years after that project was completed, EPA issued an amended ROD in 2000, choosing the Corps of Engineers to remove the failed monolith and neighboring soil. Using a movable “Mining Structure,” the Corps successfully removed over 243,000 tons of contaminated material to a permitted offsite radioactive waste disposal facility.
<http://www.epa.gov/region8/superfund/co/shattuck/Shattuckfactsheet.pdf>

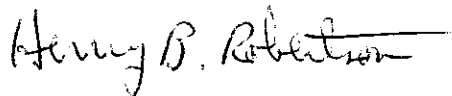
EPA admits that at West Lake "excavation could be done using conventional dust suppression methods, work place monitoring, and personal protective equipment for workers."(RS 52) However, protecting the public from dust and gas during removal is a real concern. Temporary structures are available that can be placed over the work area and even moved across the landfill as the work progresses. In addition to the Shattuck corrective remediation project, examples of such commercially available structures that have been used on projects with nuclear waste include: the movable shelter designed by American Spaceframe Fabricators International to clean up low-level and transuranic waste at the Cold War weapons facility at Hanford Washington (http://www.asfi.net/current_hanford.html and <http://www.asfi.net/pdfs/GimmeShelter.pdf>); and Sprung Instant Structures, listing nuclear waste treatment, environmental remediation and remediation enclosures among their industrial applications (<http://www.sprung.com/en/IndustryGallery/Home.php?indId=9>).

CONCLUSION

We believe that the ROD promulgated by the prior administration was ill-advised and mistaken. We ask that you take this opportunity to correct it.

We do not make this request lightly. If there is anything more we can do to substantiate our position, please let us know. Thank you for giving this your consideration.

Very truly yours,



Henry B. Robertson

Enclosures:

1. Comments by Kay Drey submitted to the EPA regarding the radioactive wastes at West Lake Landfill. December 19, 2006.
2. Letter from Mrs. Drey to John Askew, Regional Administrator, and Cecilia Tapia, Superfund Division Director--Region VII, USEPA. The Charts demonstrate the high levels of radioactivity in the West Lake soils, Operable Unit One. January 18, 2008.

cc: w/o enclosures:

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