

GWOU ADMINISTRATIVE RECORD

SECTION TITLE:

GW-800-801-1.15

The Department of Energy's Proposed Plan for the Groundwater at the Weldon Spring Chemical Plant Area --- a public meeting at the W.S. Interpretive Center. August 13, 2003.

My name is Kay Drey. I live in University City. No doubt the U.S. Department of Energy's primary contractor for the Weldon Spring Site remediation would like to finish packing up and closing down the last traces of its Weldon Spring assignment. But those of us who live nearby, or downstream and downwind, do not have the option of walking away from the Weldon Spring environment. We will be breathing its air and drinking its water for the rest of our lives. That's why tonight's meeting is so important.

If the Department of Energy is allowed to leave radioactive uranium and thorium and their daughter products in the terrain that lies beneath this site,ⁿ the groundwater that flows from Weldon Spring, into the Missouri and Mississippi rivers, upstream from St. Louis --- that groundwater will continue to pick up and disperse these toxins into our biosphere. For as long into the future --- billions of years --- as anyone here can imagine, and beyond. I wish I knew how many times I have said or written that same warning over the past 25 years.

We have been hearing recently about the hazardous health effects our U.S. troops have experienced from exposure to depleted uranium munitions used during the two Gulf wars. To quote from a speech last month by the former director of the Army's depleted uranium project: uranium dust is so fine that it acts like a gas, seeping through the tiny pores of protective masks. "It contaminates air, water and soil for all eternity." (Buffalo News, New York. July 22, 2003)

(quoting from the "Supporting Evaluation for the Proposed Plan," August 2003): If as predicted, uranium that remains radioactive for billions of years could be sorbed by sedimentary material and plants in the springs (p. 57), how, then, is it possible that the levels of uranium could meet federal and state standards in the time frame predicted by the DOE --- namely, from 4 to 80 years? (p.59) Is it reasonable to expect that uranium will remain attached in perpetuity to the surfaces of vegetation growing in and along rapidly flowing spring water, or is it not likely that some of the uranium would be released in plumes or clumps --- to be "transported in both dissolved and particulate forms"? (p.14) Could the organic materials to which the uranium is adsorbed cause the dissolution of the uranium --- similar to chelating agents --- thus accelerating the migration rate of the uranium?

The proposed plan clearly states that "no reduction of toxicity, mobility, or volume through treatment would be accomplished because the contaminated groundwater would not be treated." (p.59) Then, as downstream water consumers, we can only urge you to be as forthright as possible in explaining that our generations alive today, and those in the future, will continue to be exposed to the Weldon Spring uranium, thorium, radium, radon, polonium, actinium, protactinium --- in concentrations and with impacts on health that cannot be accurately monitored or predicted, and most probably cannot be naturally attenuated to levels assessed, by future scientists and physicians, to be safe or even permissible. (I am submitting two lists of radionuclides that indicate their comparative radiotoxicity --- that show we have many of the most dangerous radioactive materials here at Weldon Spring.)

→

As I understand it, natural attenuation is a process usually relied upon for volatile organic compounds, for substances that break down into various degradation products --- a progression that will take virtually forever for some of the radioactive materials at Weldon Spring. Thorium-230 has a half-life of 75,000 years; uranium-238's half-life is 4.5 billion years; and thorium-232 has a half-life of 14 billion years. Are you really asking us to wait forever --- while these materials continue giving off radioactive particles and rays --- for uranium and thorium to "naturally attenuate"? Are your monitoring tools and wells even going to last that long?

And if the concentration levels of the contaminants remain greater than the currently established standards, are we not entitled to a contingency plan more realistic than merely providing for "additional fish sampling at Lake 34" in Busch Conservation Area, and some additional monitoring? (p.57)

The proposed plan is to wait for the radioactive wastes to dilute and disperse themselves somehow, at some point, in the unknown future. I believe that Monitored Natural Attenuation --- walking away from the contaminated groundwater --- in this heterogeneous, complex hydrogeology is not a proposed action, but is instead, I believe, a proposed inaction.

Thank you.

Kay Drey
515 West Point Ave.
University City, MO 63130

8/14/03

Pam -

I would appreciate it if
someone would please attach
this cover and page 21 to the
IAEA pages I gave you
last night. Thanks -

Kay

A Basic

Toxicity Classification

of Radionuclides

REPORT OF JOINT STUDY
OF A GROUP OF CONSULTANTS
TO THE
INTERNATIONAL ATOMIC ENERGY AGENCY



INTERNATIONAL ATOMIC ENERGY AGENCY - VIENNA 1963

TABLE I
RADIONUCLIDES ARRANGED IN ORDER OF THEIR MOST RESTRICTIVE
(MPC)₁ VALUE

→ HIGH TOXICITY

Pa231, Cf249, Th-Nai, Pu239, Pu240, Pu242, Th232, Pu238, Ac227, Th230, Np237, Th228, Am241, Am243, Cm243, Cm245, Cm246, Cf250, Cf252, Cm244, U232, Ra226, Ra228, Sm147, U-Nai, Nd144, U238, Pu241, Pb210, U230, U233, U234, U235, U236, Cm242, Th227, Po210, Ra223, Sr90.

MEDIUM TOXICITY

Upper Sub-Group A

Ra224, Po230, Bk249, I129, Eu154, Ru106, Ce144, Bi210, Ac211, Na22, Co60, Ag110m, I126, I131, Cs134, Eu152(3y), Cs137, Bi207, Pb212, Ac228, In114m, Sb124, Ta182, Cf36, Sc46, Sb125, R192, Tl204, Cs45, Mn54, Y91, Zr95, Sr89, Cd115m, In115, Tc127m, Te129m, I133, Ba140, Tb160, Tm170, Hf181, Tb234.

Lower Sub-Group B

P32, V48, Fe59, Co58, Ni63, Zn65, Rb86, Rb87, Tc99, Cd109, Sn113, Pm147, Sm151, Os185, Hg203, As76, Y90, Zr97, Nb95, Ru103, Ag105, Sn125, Cs135, Eu156, Gd153, Bi212, K42, As74, Se75, Sr85, Nb93m, Zr93, Te125m, Tc132, I135, La140, Tm171, W181, W185, Na24, Sc48, Mn52, Y93, Tc97m, Sb122, Ce141, R142, Rc183, I194, Bi206, Ca47, Co57, Ga72, B82, Cd115, Tc131m, Cs136, R143, Ho166, Rc188, Pa233, Mg89, Ce143, Dy166, Tc96, Ag111, I132, Nd147, Pm149, Rc186, Au198, Tl202, S35, Sr91, Os143, Zn69m, As73, As77, Sr92, Y92, Tc97, Pd109, Ba131, Sm153, Eu152(4.2h), Gd159, E169, W187, Os191, R190, P183, Rn220, Rn222, * Sc47, Mn56, Ni59, Ni65, K87, Ru105, Rh105, I134, E171, Yb175, Lu177, Rc187, P191, P197, Au196, Np239, Si31, Fe55, Pd103, Te127, Au199, Hg197m, Tl200, Tl201, Be7, A41, Cu64, Hg197, Th231, Nd149, Ru97, In115m, Pb203, Cf38, Dy165, Cs51, F18, C14, K85m, Te129, Xe135, Cs131.

LOW TOXICITY

H3, Zn69, Ce71, Nb97, In113m, Cs134m, P193m, P197m, Tc99m, Co58m, Kr85, Xe133, Os191m, Xe131m, Y91m, Sr85m, Tc96m, Rh103m, A37.

* The figure used for this isotope is the same as that given in Basic Safety Standards for Radiation Protection [3].