

January 24, 2015

**TO:** Members of the Rocky Flats Stewardship Council

**FROM:** Mary (Mickey) Harlow retired Rocky Flats Coordinator, City of Westminster

**SUBJECT:** Walnut Creek Uranium Exceedance and Prescribed Burn Comments, January 24, 2015

Judge Fine silver, in his charge of responsibility to the Special Citizen Grand Jury 89-2, convened August 1, 1989, to hear the facts in the Rocky Flats Case regarding Nuclear Crimes at the Rocky Flats Nuclear Weapons Plant provided the following instructions to the Grand Jury:

***“Neither yield your powers nor forgo your independence of spirit because you may tend to expect such high quality from the government agents, that there is a potentially grave risk to your independence of thought and action, which may cause you to lapse into reliance, when you should be dubious and questioning.*** I bring this message to the Stewardship Council today because I believe that it important for this Council to begin questioning whether the information provided to you by the CDPHE, EPA and DOE related to the engineered treatment systems for groundwater contaminated plumes, onsite monitoring and management are working as designed and performing removal of contamination, and meeting onsite water quality standards. . The Contact Records, located on the DOE Legacy Management site, provide this information and should be reviewed. There have been 56 contacts by DOE with the regulator since 2006 when closure occurred.

**SEDIMENTATION PONDS ON WALNUT AND WOMAN CREEK:** The Woman Creek Reservoir Authority took 34 samples of the sediment and two core samples within the reservoir before undertaking required maintenance. The analysis of these samples indicated that there was plutonium and Americium in the reservoir. The amount however was small and below regulatory concern which I was happy to hear. The regulators believed that this indicated that radionuclide’s were not moving off the site during cleanup and closure. My interpretation is different. This sediment analysis indicates that the C2 detention pond on Woman Creek is efficient at removing the radionuclides from the surface water due to sedimentation. DOE, with blessing of the regulators and the RFLMA (Rocky Flats Legacy Management Agreement) plan to remove the dams on both Woman and Walnut Creek and go to flow through with no more sedimentation in 2017. The dams on both the drainages keep the radionuclide from moving with the surface water into our communities. DOE has successfully amended this agreement, since closure. The information is in the Contact Records. Perhaps it is time for the local governments to take legal action to stop the removal of the two dams which are protective of the downstream communities and Woman Creek Reservoir.

**URANIUM EXCEEDANCE IN WALNUT CREEK:** WALPOC, is the Walnut Creek Point of Compliance for water leaving the site. This sampling location was selected three years ago by DOE and the regulators. The rolling twelve month Uranium standard averages for this compliance site indicates an exceedance of the site specific Uranium standard of 16.8 micrograms per liter. However the Contact record for 2015-01 indicates that the drinking water standard of 30 micrograms per liter adopted by EPA for drinking water and adopted by the CDPHE for the site must be exceeded before regulatory action occurs. The last bullet on the last page of the 2015-01 Contact Record states that the hyphenated standard of 16.8-30 micrograms per liter will be documented in a Rocky Flats Legacy Management Agreement 2 document. A drinking water standard applied to nuclear contaminated site with 80% natural occurring uranium and 20% manmade, which includes depleted and highly enriched uranium, this is ludicrous. The Colorado Water Quality Control Commission sets the water quality standards not the Colorado Department of Health and Environment. I read through all the hearing documents of the Commission and this is what I found, no mention of a drinking water standard being applied to Rocky Flats.

***The Water Quality Control Commission Regulation 38.71, Statement of Bases, Specific Statutory Authority and Purpose: January 12, 2009 Rulemaking, effective March 30, 2009. States that:***

***The Commission considered revisions to table 2, standards for uranium, gross alpha and gross beta for segs 4a, 4b and Big Dry Creek. Previous uranium standards (10 picocuries per liter for Walnut Creek and 11 Picocuries per liter for Woman Creek were set in 1966 based on the then current ambient conditions. Recently, post closure surface water runoff has decreased and the relative contribution of uranium from groundwater has increased. However, the change of this hydraulic change has not been quantified. In addition, increased treatment of the Solar Pond Plumes area will result in a decrease of uranium from the soil. Since there is continued uncertainty about the eventual equilibrium, surface water uranium standard and surface water concentrations the Commission decided that human health based criteria were more important than table value standards, new ambient standards or maintaining the current standards. The quality of determining "the lowest practical level will be left to the future when DOE completes a feasibility study of enhanced treatment of the Solar Pond Plume. The Commission adopted a total uranium standard of 16.8 micrograms per liter to protect human health since the goal for the Rocky Flats site has been to protect all uses. Parties to this rulemaking were DOE Legacy management, City of Westminster, City and County of Broomfield, City of Thornton, the EPA.***

DOE believes that the reason for the December 2013 uranium spike that caused the rolling average to exceed the standard was the 1,000 year flood event that occurred in September 2013. The three year record of monitoring data for WALPOC indicates that the driest year was 2012 and the wettest month was September 2013. The Uranium analysis report showed a decrease below the standard in May 2014, five months after the flood. The reason for the exceedance is not clear and the flood is not the answer. The solar ponds engineered treatment system was damaged during the flood and may have contributed to the exceedance. The system is still being repaired and has not functioned properly since it was first installed. Why is there a rolling average for uranium, plutonium and americium for surface water at Rocky Flats? Many people in the community have asked me this question and I pose this question to the Regulators. My research into the Water Quality Control Commission regulations on this topic I found this information on page 178 of their rulemaking documents.

***Portion of Walnut and Woman Creeks within segment 5 (where the majority of the surface disturbing cleanup activities are currently occurring) the methodology for determining attainment is changed to allow for a 12 month flow – weighted rolling average (computed monthly) method to measure ambient levels of plutonium and americium. Commission determined are appropriate due to the unique circumstances related to the accelerated Rocky Flats cleanup.***

Based on this information, how did the regulators determine that it was appropriate for this rolling average to continue way past closure? City water treatment and wastewater treatment plants do not have rolling averages and are not allowed to exceed standards for 5 months. The Department of Energy should be held to the same standards as the local governments. The Walnut Creek drainage goes through the City of Westminster. What is to keep children and animals from playing and drinking in this stream? There are six children now in the community with neural blastoma, (cancer of the nervous system ) doctors expect more cases. This is a statistically significant number for our community.

**SOURCES FOR THE URANIUM EXCEEDANCES AT WALPOC:** According to a presentation at the Waste Management Conference held Feb 29-March 4, 2004 Conference in Tucson Arizona by E.T. Pottoroff, (Colorado Department of Health and Environment) entitled “**Distinguishing Anthropogenic Uranium at the Rocky Flats Environmental Technology Site, Golden Colorado,**” wells in the Solar Ponds show both enriched and depleted uranium. “Elizabeth states that this would be consistent with the ponds history of leaks and fixes of the pond liners.

The solar ponds area of the site has Uranium concentrations up to 2550pCi/l. (The solar ponds were not remediated during cleanup and the engineered treatment system per original design has not functioned properly.) A further source of liquid or dissolved depleted uranium may exist in the South Walnut Creek drainage, possibly linked to the sewage treatment plant." Effluent from the Sewage treatment plant, which received laundry waste containing actinides, was piped to a series of holding ponds which eventually became full. The water was then siphoned from the ponds by spraying on the east, fields between 1952 and 1979, in such excess that the ground became supersaturate and seeped into the groundwater. The spray fields remain another source for Uranium and other radionuclide's migrating to the surface water in the drainage.

#### **FISH & WILDLIFE CONTROLLED BURN AT ROCKY FLATS.**

**Are prescribed burns the appropriate use for ground litter and invasive weed management on radionuclide contaminated sites managed by Federal agencies. ? There needs to be a national discussion on this question. Sites like Rocky Flats which are located in urban areas are now experiencing growth and new homes are being purchased by young families with small children. The precautionary principle, "do no harm" must be the guiding principle for any activities on these contaminated sites such as Rocky Flats.**

**HOW CLEAN IS CLEAN?** This is a hot topic that was hotly debate during the cleanup of the site. **Rocky Flats is not clean** and I am tired of hearing the regulators and DOE telling the public that this is a fact. The cleanup may meet the **regulatory definition** of clean but there is still plutonium, americium, and uranium in the soil of the Wildlife Refuge. The amount is below regulatory concern **but not below public concern.** **I do not support this burn;** other methods for weed control and management are available. I was a participant and member of a distinguished panel of national and international scientists that spent a great deal of time studying the Effects of Low Dose Radiation at the cellular level. The conclusion of this important study was **"there is no safe exposure to radiation, every exposure is remembered in the body, and the exposures are cumulative.** Models like statistics can be manipulated to show whatever answer you are looking for.

**A GIFT WITHOUT FUNDING:** The Department of energy transferred to Fish and Wildlife a fuel load of dead vegetation that has been building up in the grasslands at the site for at least 30 years. Fish & Wildlife has received no funding from the Department of Interior for management of the site since it was transferred in 2007. Most of the fuel load is located on the Refuge lands although some smaller areas are contained in the Central Operating Unit. The Department of energy has a complete and extensive weed and vegetation management program on the site. It would be of benefit to DOE to provide Fish and Wildlife with weed management assistance. This would result in a savings to DOE as it would greatly decrease the

invasive weed seed that would migrate to the Central Operating Unit, thus reducing the amount of money needed for herbicide application. It would also reduce the risk of prescribed burns moving into the Central Operating Unit and offsite to surrounding communities. Prescribed burns have a history of moving to unplanned burn areas.

**ANALYZE THE LITTER AND WEEDS:** Local Governments must insist that the ground litter and vegetation be analyzed for radionuclide contamination before any prescribed burn occurs on the site. The Department of Interior needs to receive letters from the local governments requesting adequate funding for proper management of the invasive weed and litter problem at the Refuge. Wildfires will occur at Rocky Flats whether there is a prescribed burn or not,