

Concerned Health Technicians For A Cleaner Colorado

8470 West 52nd Place, Suite 9. Arvada, CO 80002-3447/(303) 420-2967

RECEIVED
420-2967
R.F.O. - MAIL ROOM

October 25, 1990

1990 OCT 31 A 7:58

USDOE c/o Ms. Beth Brainard
P.O. Box 928
Golden, CO 80402-0928

RE: Proposed Surface Water Interim Measures/Interim Remedial Action
Plan and Decision Document for the 903 Pad, Mound, and East Trenches
Areas, Operable Unit No. 2 public comments.

I am Paula Elofson-Gardine, Director and spokesperson for Concerned Health Technicians For A Cleaner Colorado, member of the Rocky Flats Alliance, and serve as an Officer on the Board of Directors for the Rocky Flats Cleanup Commission. My address is: 8470 W. 52nd Place, Suite 9, Arvada, CO 80002-3447.

The executive summary of this report implies that the water meets NPDES permit requirements, so is no threat to the public. The NPDES permit requirements currently do not include radionuclides, and the new NPDES permit is not out yet. As radioactive constituents of the water flowing in and through the Rocky Flats Plant is a prime concern to many, ~~the contention that this is no threat to the public is not necessarily justified.~~

It appears that field and laboratory studies have not been done to confirm isotopic identity of the seeps, dissolved fractions, particle sizes, and/or solubility or nature of insolubles in this area. The radioactive removal unit assumes ionic radioactive species. This is not an appropriate assumption. I would cite the following reports:

RFP 2901 Soil Decontamination at Rocky Flats
RFP 3914 Dust Transport-Wind Blown and Mechanical Resuspension
RFP 3130 Decontamination of Soil Containing Plutonium & Americium
RFP 3226 Removal of Plutonium Contaminated Soil From the 903 Lip Area During 1976 and 1978

These reports indicate that greater than 50% of the contamination at the 903 area is suspected to be in the less than 0.01 micron size range, whether colloidal and/or insoluble particles. If this study states that it is unable to quantify colloidal materials between the 0.1 to 0.45 micron size range, it is a significant failing considering the earlier studies. (especially considering the sizes are orders of magnitude different, etc.) It is important to identify solubles versus insolubles. If much of the contamination is soluble, it may be amenable to precipitation and flocculation. But if much of the contamination is in the insoluble form, and less than 0.01 microns in size, just how do you propose to deal with these extremely fine particles?

The REVERSE OSMOSIS (R-O) PILOT PLANT has not been listed as an alternative water treatment. Why not? This could save much effort and money, along with possibly being able to remove the more minute particles from the seeps.

ADMIN RECORD

A-0002-000137

Concerned Health Technicians For A Cleaner Colorado

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RE: IM/IRA for 903 Pad, Mound, and East Trenches, p. 2.

Table 4-1 lists dissolved gross alpha radiation at 17.70 pCi/l versus 632.0 pCi/l of total gross alpha radiation. Is this difference indicative of dissolved fractions versus insoluble fractions and/or colloidal particulates? There has been significant discussion amongst several physicists on oversight panels regarding the chemical forms of plutonium at the 903 area. Has the plutonium in soils and in seeps been identified to be ionic (eg: PuCl_4 , PuNO_3 , etc.), or complexed with volatile organics in the elemental state? Some of the discussions centered around concerns regarding volatile and explosive characteristics. Please elaborate upon these discussions/information.

A complete isotopic characterization and identification has not been done. Since Coors reportedly dumped 238-Pu, 235-U, and other Project Pluto wastes at the 903 area, they should be participating as a co-Respondant and Potentially Responsible Party in the assessment and clean-up costs of this area. The failure to completely identify and quantify all radioactive isotopes in this area is a significant deficit, as this could aid in determining relative risk to workers and to the public represented by the spread and environmental migration of these contaminants due to any disturbance of this area. Dr. Whicker from CSU is currently studying the soils and isotopes in this area. Please provide this report for review (and/or progress reports).

There is a lack of hydrogeology and plume dispersion information. This could hamper appropriate interception attempts. For example: sandstone lenses have been notated in the past to be of questionable integrity, with some technicians questioning migration between the alluvia. There are further questions regarding the swiss-cheese approach to ground-water monitoring. Do you know the extent of any alluvia cross-contamination caused by drilling and disturbance of this area? Do you know with any degree of certainty whether or not the radioactive seepage from the 903 Pad area is originating from underground springs and/or groundwater running through the pad? The averaging of flow rates and contaminants is disturbing, as it obscures high's and low's. Please correct this. It is unfortunate that this plan does not address leaching of water through the 903 Pad.

Plutonium transport by wind is notated as a significant and primary source of contaminant spread, but plutonium, americium, uranium, beryllium (plus any other dry contaminant) dust resuspension hazard is not addressed for safety measures for workers with respect to remediation efforts. We have serious concerns regarding encroachment on the 881 Hillside area from these radioactive and/or chemical seeps, leachate, and resuspension. The workers currently working on remediation efforts at the 881 area need to have the appropriate respiratory protection, especially in consideration of the radioactive dust resuspension problem. Inhalation of alpha particles is extremely hazardous. We would also remind you of our many requests for a containment building around remediation areas to control spread of contaminants during earth moving and other activities that will disturb these most contaminated areas of the plant site.

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RE: IM/IRA for 903 Pad, Mound, and East Trenches, p. 3.

Section 2.3.6, Air Contamination: There are several discrepancies noted. Ambient air concentration is stated to be approximately at or within 20.0×10^{-6} pCi/l. Do you mean pCi/m³? You have used an aqueous quantity measure where an air quantity measure should have been used. This has been noted elsewhere in the report, where mg was used instead of pCi, etc. Please correct this and proof read this document for similar errors. The Gerhardt Langer resuspension report indicated much greater levels of airborne contaminants such as plutonium and americium. The DOE's Environmental Measurements Lab in New York historically has shown values of airborne contaminants in this area that has been orders of magnitude greater than the numbers cited w/in this report. Please explain these discrepancies in reporting. Perhaps it would be helpful to adopt Dr. Langer's method of coating the back of the monitor with a thin film of oil to capture these minute particles that you seem to be missing. There is also concern that the RFP is "over-correcting" for background radiation.

The physical description of the proposed water treatment equipment raises several issues. I would cite the following reports:

DP-MS-87-14 Irradiation Effects in Metals
DPE-3586 Radiation Effects on Nonmetallic Materials and Components
 Draft Treatability Studies Plan, EG&G Rocky Flats Environmental Restoration Program, 9/21/90.

It appears that you are planning to utilize materials that could be subject to degradation by the chemicals and radionuclides that are supposed to be filtered or treated in these seeps. The samplings cited in the draft treatability studies plan are not consistent with the levels reported in the IM/IRA document for the same area. Please explain this discrepancy.

We would like to suggest that in the future, you allow at least a 6-week lead time from release of document to the public comment hearing to be held for the document in question. We would be happy to assist in the distribution of the documents to expedite this process for interested parties. We would appreciate receiving a copy of the transcript of the proceedings held 10/23/90. Thank you.

Respectfully Submitted,

Paula Elofson-Gardine

Paula Elofson-Gardine
Director, CHTFACC

cc: House and Senate Armed Services Committees
House and Senate Appropriations Committees
Office of Technology Assessment, Congress of the US
Advisory Committee for Nuclear Facility Safety
Defense Nuclear Facility Safety Board
Committee For Nuclear Responsibility
Nevada-Semipalatinsk Movement

Rocky Flats Cleanup Commission

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(303) 785-2800

Directors:

Rocky Flats Cleanup News 29 July 1990

1
57-9531

More Operable Units (OUs)

ident
field, P.E.
321-7276

The Environmental Protection Agency (EPA) has recently redefined Rocky Flats cleanup under 16 Operable Units (OUs) rather than the original 10 OUs. The current OU lineup is as follows with new additions in italics:

3
ofson-Gardine
420-2967

4
sh
471-3383

Biggs, Ph.D.
454-4266

5
276-7777

DeMeyo, O.D.
642-3117

6
eirich, J.D.
444-6173

7
Erice
nster 466-1212

8
rst
oc

9
m Kerper, Ph.D.
23E-0255

10
Kish, J.D.
23E-0255

11
ra Moore
ood 23E-6166

12
one Pegis
ridge 422-0374

13
stone, P.E.
ood 985-6744

14
Wilson
ser 445-5914

OU	Past Order	Site Grouping
OU 1	OU 1	881 Hillside
OU 2	OU 2	903 Pad, East Trenches, Mound Area <i>East Spray Fields</i>
OU 3	OU 10	5 Offsite Locations including Standley lake, Great Western and Mower reservoirs, and areas east and south of the plant
OU 4	OU 3	Solar Evaporation Ponds/Several Closures
OU 5	OU 4	<i>Woman Creek</i>
OU 6	OU 4	<i>Walnut Creek</i>
OU 7		<i>Present Landfill</i>
OU 8	OU 5	700 Area
OU 9	OU 5	Original Process Waste Lines
OU 10		Consortium of Other Outside Closures (Pesticide Areas, Old Storage Areas)
OU 11	OU3	West Spray Fields
OU 12	OU 6	400/800 Area
OU 13	OU 7	100 Area
OU 14	OU 9	Purely Radioactive Sites
OU 15	OU 5	Inside Building Closures
OU 16	OU 8	Low Priority Sites

The new prioritization represents EPA/Department of Energy (DOE)/Colorado Department of Health (CDH) response to public comment given during the Interagency Agreement (IAG) comment period earlier this year. Public concern over offsite contamination pushed OU 10, Offsite Locations, up to position three. The addition of Woman Creek, Walnut Creek, and Present Landfill also responds to citizen concern. The other new OUs were created in order to help facilitate cleanup. Several former OUs, including OU 5 (700 Area) contained over 40 individual sites. Large OUs have thus been reduced in size.

Preventing migration offsite still stands as the initial cleanup objective. Once all migration is stopped, thorough site cleanup can commence.

Trouble at the 903 Pad

During the spring runoff, water travels across the entire Rocky Flats site. Concern has risen this spring and summer that runoff water is helping create radioactive seeps in the surface water. Seeps allow for quick transport of radioactive materials along the surface. Contamination is spreading in this fashion in all directions, including towards the 881 Hillside. RFCC and EPA have asked that DOE initiate treatability studies to stop this problem. DOE has responded and will undertake treatability studies this Fall and next Spring.

It has also become clear that in situ vitrification is not a viable method for aiding 903 Pad cleanup. The soils do not contain enough silica to allow for glassification. DOE had hoped this new technology would be appropriate for the 903 Pad area. Surface excavation, otherwise known as "hog and haul", has been previously considered. Concern over radioactive dust resuspension has prompted RFCC to request that the cleanup sites be enclosed by simple building structures during all remediation work.

Rocky Flats Cleanup Commission

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Operable Unit 2 (The 903 Pad) Cleanup: the Plans and the Problems

Directors:

In 1958, a drum storage area was established near the southeast corner of Rocky Flats. Drums containing plutonium-contaminated lathe oil were placed in the area until drum corrosion and leakage were discovered in 1959. Rust inhibitors were subsequently added to the new drums as they were stored at this site. Further drum deterioration and soil contamination was discovered in 1964, however. Some drums were removed in 1967 and 1968. In 1969, the area was filled and asphalted. This asphalt area is now referred to as the 903 pad.

The original drum removal program released an unknown quantity of plutonium into the environment. Some air samplers indicated a dramatic rise in plutonium air concentration during drum removal. Soil was also removed from the Lip Area, southeast of the 903 Pad, from 1976 to 1978 and shipped offsite. The average concentration of plutonium in the removed soil was 1,200 disintegration per minute per gram (dpm/gm) or 540 picocuries per gram (pci/gm), with the maximum concentration at 45,000 dpm/gm (20,000 pci/gm). The state standard is 2 dpm/gm (1 pci/gm).

Present cleanup efforts under the Interagency Agreement will focus on completely remediating the 903 pad and Lip Area. These areas are grouped into OU 2, along with the east trenches. Past studies have called for using a "hog and haul" method. This involves injecting grout into the soil and then cutting the soil up into blocks for removal. Inefficiency plagues this method. The current Remedial Investigation/Feasibility Study (RI/FS) process is looking for other remediation methods, including wet screening, attrition scrubbing at high and low pH, and cationic flotation.

Past experience with the 903 area raises two critical issues for cleanup: dust resuspension and water seepage. Cleanup work can cause dust resuspension throughout Operable Unit 2. By resuspending contaminated soils, both workers and the public are exposed to dangerous respirable materials. Dust inhalation represents a pathway for introducing plutonium into the body. Several measures are required to reduce dust resuspension. Providing cleanup workers with respirators and protective clothing is the first measure needed. To protect the public and other plant workers, floorless buildings equipped with HEPA filters need to be placed over cleanup areas during any work. Soil wetting has proven inadequate for this job.

Along with dust resuspension, there exists seepage problems needing immediate attention. During the spring and summer, surface water runoff flows across the Rocky Flats site, including the contaminated areas. Concern has arisen that this water is helping create radioactive seeps in the surface and ground water around the 903 pad. Seeps allow for quick transport of radioactive elements. Contamination is migrating in the environment through this mechanism, including towards the 881 Hillside. The Department of Energy (DOE) has agreed to initiate treatability studies focusing on stopping this migration.

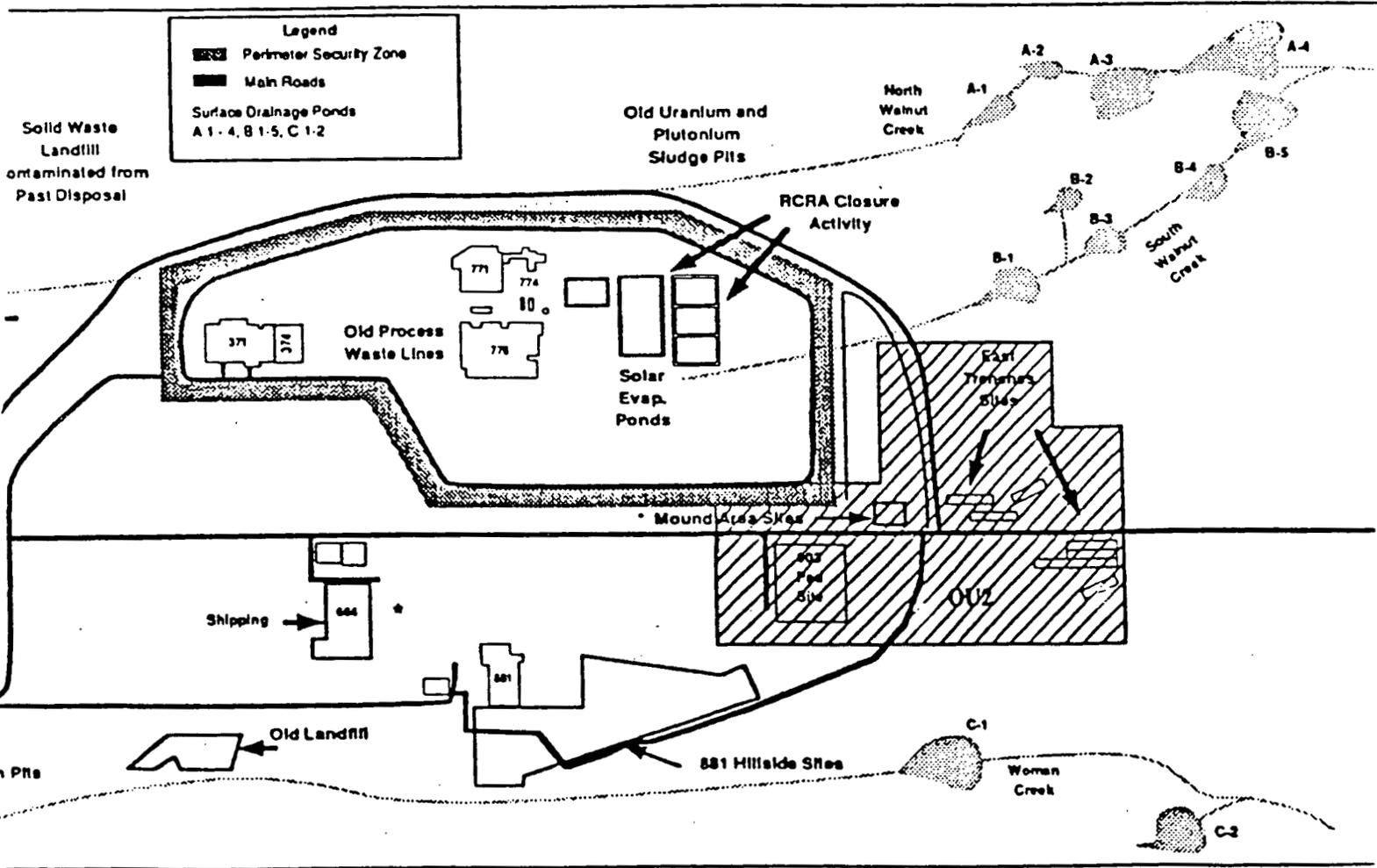
Sources:

RFP 2901 Soil Decontamination at Rocky Flats

RFP 3914 Dust Transport - Wind Blown and Mechanical Resuspension
(9/20/68)

RFP 3130 Decontamination of Soil Containing Plutonium and Americium
(12/82)

RFP 3226 Removal of Plutonium-Contaminated Soil from the 903 Lip Area
During 1976 and 1978 (12/82)



! — 903 Pad Site, Mound Area Sites, East Trenches Sites