

03-RF-01303



DIST	LTR	ENC
DIETER T		
FERRERA, D W	X	
FERRI M S		
LINDSAY D		
LYLE, J		
MARTINEZ L A		
PARKER A.		
POWERS K.		
SHELTON D C	X	
SPEARS M.S		
TRICE, K.D		
TUOR N R		

Rocky Flats Environmental Technology Site

SEP - 9 2003

03-RF-01303
03-DOE-01168

AGUILAR, P		
ALBIN C		
AUBLE M		
BEAN, C		
BUTLER, J L	X	
DECK, C	X	
FRANCIS, M.		
FREIBOTH C		
GEIS A.		
GIBBS F	X	
HUMSTON, T		
KNAPP S.		
LINSINBGLER, H		
MYERS K.		
NESTA S	X	
OLIVER R		
OMAN K.		
PLAPPERT R		
PRIMROSE A.	X	
RICHARDELLA, R		
ROSENMAN A.		
SNYDER, D P	X	
THOMPSON J		
WIEMELT K.	X	
NORTH K.	X	
KEATING M	X	
RODGERS A.	X	
LOBDELL, D	X	
CORRES CONTROL	X	
ADMIN RECD/T130G	X	
TRAFFIC		
PATS/130		

Mr Joe Schieffelin
Permitting and Compliance Unit Leader
Federal Facilities Program
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

REQUEST FOR CONTAINED-OUT DETERMINATION FOR MEDIA EXCAVATED THROUGHOUT
THE EXTENT OF THE 903 PAD - SMN-047-03

Dear Mr Schieffelin

The Rocky Flats Environmental Technology Site (RFETS) is requesting the Colorado Department of Public Health and Environment (CDPHE) to provide a contained-out determination for certain wastes being generated as part of the 903 Pad Waste Removal Project being conducted pursuant to the Rocky Flats Cleanup Agreement (RFCA). This determination would indicate CDPHE's concurrence to the State of Nevada of such a determination. Under such determination, soil media waste from this project could be disposed at the Nevada Test Site (NTS) as straight low level waste if the waste does not contain hazardous constituents. The following provides background information about the project and the basis for such a determination.

Site Background

The 903 Pad Drum Storage Area and associated Lip Area (including the Americium Zone) was an area located in the southeast portion of the facility where drums containing radiologically contaminated oils and volatile organic compounds (VOCs) were stored from 1958 to 1967. Approximately three fourths of the drums contained liquids contaminated with plutonium, while most of the remaining drums held liquid containing uranium (Kaiser-Hill 2000). The liquid in the drums was primarily lathe coolant and solvents in varying proportions. Vacuum pump oils, trichloroethylene (TCE), tetrachloroethylene (PCE), silicone oils, and acetone still bottoms were also stored in the drums. While all of the drums contained radioactive waste, not all contained VOCs.

Leaking drums were noted at the 903 Pad Drum Storage Area in 1959. Contents of the leaking drums were transferred to new drums, and the area was fenced to restrict access. Drum removal and cleanup operations began in 1967, at which time more than 5,000 drums were at the Site. Approximately 450 drums had leaked to some degree, and an estimated 50 drums had leaked their entire contents (Kaiser-Hill 2000). The total amount of leaked material was estimated at around 5,000 gallons of contaminated liquid containing approximately 86 grams of plutonium (U S Department of Energy [DOE], 1995).

From 1968 through 1970, some radiologically-contaminated soil was removed from the 903 Pad Drum Storage Area and the adjacent Lip Area, and some of the surrounding area was regraded at the time. Imported base coarse material and an asphalt cap were placed over the 3.4-acre site creating the 903 Pad Drum Storage Area. During drum removal and cleanup activities, wind and rain spread plutonium-contaminated soils to the east and southeast, resulting in the designation of the 903 Lip Area as IHSS 112 (Figure 1).

CLASSIFICATION	
UCNI	
UNCLASSIFIED	
CONFIDENTIAL	
SECRET	

AUTHORIZED CLASSIFIER
SIGNATURE

Date
IN REPLY TO RFP CC NO

ACTION ITEM STATUS
 PARTIAL/OPEN
 CLOSED
LTR APPROVALS

ORIG & TYPIST INITIALS
SMN pvt



Constituents of concern are plutonium, uranium, americium, TCE, PCE, 1,1,2-trichloro-1,2,2-trifluoroethane, acetone, carbon tetrachloride, methyl ethyl ketone (MEK), and carbon disulfide. If RCRA was in place in the 1960's, the seven hazardous constituents would be associated with F001, F002, F003, and F005 listed hazardous wastes.

903 Area Remedial Strategy

The RFETS' strategy is to remediate the area in accordance with the Rocky Flats Cleanup Agreement. This requires the characterization and removal of soils and asphalt from the area to attain agreed upon cleanup levels.

During routine operations occurring today, RCRA sampling of the 903 Pad Drum Storage Area is being conducted using field-monitoring equipment, with the data being collected as the soil is excavated. Wastes with positive detection of VOCs greater than detectable levels are characterized and managed as Low Level Mixed (LLM) wastes.

Representative sampling of the 903 Lip Area was conducted recently (August 2003) using a "stepped" approach. Characterization samples were collected on three successive lines at 25', 50' and 100' from the edge of the 903 Pad, along the natural flow path from the Pad into the Lip Area. A total of 18 discrete points were sampled at varying depths, resulting in 38 sets of analytical data. Of these sets, only two detections were recorded for any of the identified CoCs, both of which were detects for PCE. These detects occurred at sample points CP37-027 and CQ37-005. Results were 2.54 and 1.73 µg/kg respectively, with reporting limits of 5.18 and 5.41 µg/kg respectively. Statistical analysis of the data indicates, with 95% confidence, that this CoC would be present at below the MDL in the remaining soils. This determination is supported by the empirical data, which does not show any detection above the MDL for this CoC in the remaining samples. Additional samples will be taken around the initial sample locations prior to excavation to delineate the contamination plume. This material will then be disposed of as LLM waste. The remaining material in the Lip Area will be managed as Low Level Waste (LLW). Additional VOCs were discovered in the original samples, but these detections can be classified as naturally occurring (MEK), laboratory contamination, based on their presence in QC blanks (acetone, benzene, naphthalene, toluene), or asphalt constituents (benzene, naphthalene, toluene).

Contaminants

A contaminant list derived from knowledge of the 903 Pad Drum Storage Area was developed by the project team. The contaminants include:

Radionuclides

- Uranium-234
- Uranium-235
- Uranium-238
- Plutonium-239/240
- Americium-241

VOCs/Potential VOCs

- Carbon Tetrachloride (CCl₄)
- Acetone
- 1,1,2-trichloro-1,2,2-trifluoroethane
- Carbon Disulfide
- PCE
- TCE
- MEK

Regulatory Support for Contained-Out Determination

The NTS and State of Nevada have proposed guidelines for conducting a contained in/out determination. As stated at a recent waste conference hosted by NTS, documentation demonstrating the following must be provided:

- the media was representatively sampled and evaluated for total contaminant concentrations (mg/L) and TCLP concentrations where applicable, and

- "listed" constituents must be less than one tenth of the concentration of the RCRA LDR (40 CFR 268.40) for a given constituent, and the TCLP results also must be less than the Safe Drinking Water ACT Standard (MCL), if applicable [using the most conservative value]

The following table indicates these requirements as proposed for the contained-out determination

<u>CONSTITUENT</u>	<u>ONE TENTH LDR STANDARD</u>	<u>SDWA MCL (TCLP)</u>
Acetone	16 ppm	NA
PCE	0.6 ppm	5 ppb
TCE	0.6 ppm	5 ppb
Carbon Tetrachloride	0.6 ppm	5 ppb
Carbon Disulfide	0.48 ppm	NA
1,1,2-Trichloro- 1,2,2-Trifluoro	3 ppm	NA
MEK	3.6 ppm	NA

Conclusion

Based on the criteria provided in the CDPHE Corrective Action Guidance Document (May 2002, version One), the values identified above are bounded by several orders of magnitude, and concentrations below these do not contain hazardous waste. Secondly, sampling data indicates that these wastes do not contain RCRA listed constituents above the more conservative of the noted values in the above table. Hence, we request that CDPHE accept this determination as proposed by DOE and Kaiser-Hill Company. Upon acceptance of this determination, we will provide the information to the State of Nevada for concurrence prior to shipping any waste to the NTS using this determination.

Should you have any questions or need any additional information, please contact Steve Nesta at 303-966-6386

Sincerely,

Stephen Nesta 8/28/03
 Stephen Nesta Date
 Environmental Manager
 Remediation, Industrial D&D, & Site Services
 Kaiser-Hill Company, LLC

Joe Legare 9-8-03
 Joe Legare Date
 Assistant Manager
 for Environment and Stewardship
 U S Department of Energy

MPF pvt

Attachment
As Stated

- cc
- J Hindman - CDPHE
 - D Kruchek - CDPHE
 - D Maxwell - DOE, RFFO
 - R Schassburger - DOE, RFFO
 - S Tower - DOE, RFFO

8/28