Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

0068975

06-AMCP-0143

MAR 14 2006

RECEIVED
MAR 21 2006
EDMC

Ms. Jane Hedges, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Hedges:

RESPONSE TO RESOLUTION 1A OF STATE OF WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY) LETTER DATED NOVEMBER 4, 2005, "DANGEROUS WASTE COMPLIANCE INSPECTION OF CONTAINER MANAGEMENT AT T-PLANT AND CENTRAL WASTE COMPLEX" 67435

References:
(1) RL ltr. to M. A. Wilson, Ecology, from K. A. Klein, "Request for Extension on Response to 'Dangerous Waste Compliance Inspection of Container Waste Management at T Plant and Central Waste Complex,' dated November 4, 2005," 06-AMCP-0060, dtd. November 28, 2005. 67756

(2) Ecology ltr. to K. A. Klein, RL, R. G. Gallagher, FHI, and R. T. Wilde, DFSH, from B. Wilson, "Dangerous Waste Compliance Inspection of Container Waste Management at T-Plant and Central Waste Complex," dtd. November 4, 2005.

The purpose of this letter is to provide the information requested in "resolution 1a" of the November 4, 2005, letter, Reference (2). Specifically, resolution 1a requested the results of the examination of the liquids contained within mixed waste container #RHZ-2134-A19318. As described in the enclosure, the examination results were consistent with the determination that the liquids are hydraulic fluid contaminated with PCBs. Reference (2) requested that the resolution information be provided by January 6, 2006. After discussions with Ecology, an extension to March 31, 2006, was agreed upon and documented in Reference (1).

As the information on the subject container is now available, it is being provided as an attachment to this transmittal. The balance of the information requested in Reference (2) will be provided to Ecology by March 31, 2006.

If you have any questions, please contact me, or your staff may contact Mark French, of my staff, on (509) 373-9863.

Sincerely,

Matthew S. McCormick, Assistant Manager
for the Central Plateau

AMCP:GLS

Attachment

cc w/attach:
G. Bohnee, NPT
N. Ceto, EPA
L. J. Cusack, Ecology
R. Skinnarland, Ecology
B. Wilson, Ecology
S. Harris, CTUIR
R. Jim, YN
K. Niles, ODOE
D. Singleton, Ecology
T. M. Martin, HAB
Administrative Record
Environmental Portal

cc w/o attach:
L. L. Fritz, FHI
R. R. Connolly, FHI

Attachment

Action Requested by Ecology on November 4, 2005
Resolution Action Item 1.a.

RESOLUTION 1.a.

1. Submit to Ecology, no later than January 6, 2006, a report that includes, at a minimum, the following:

   a.) The results of the examination of the liquids containers within mixed waste Container # RHZ-213-A19318.

- ***Describe examination performed and results of the examinations:***

Real Time Radiography (RTR/NDE):

Initial verification of container # RHZ-213-A19318 was performed by Real Time Radiography (RTR) at the Waste Receiving and Processing Facility (WRAP) facility on August 23, 2005. The container was verified to the acceptance criteria and waste analysis plans for T Plant and the Central Waste Complex (CWC). The container failed verification because the content inventory stated the contents were solid, and during the RTR process, bottles containing liquids were viewed. Drum # RHZ-213-A19318 was identified as having two layers of inner containers. The first layer was poly bottles and had no liquids. The second layer of containers had poly bottles of containerized liquids. To confirm the contents of the liquids within the bottles the container was sent to T Plant to be opened, examined, and sampled.

Non-destructive Assay (NDA):

While container # RHZ-213-A19318 was at WRAP, NDA was performed. The NDA (Assay # 21453) results indicated LLW (18.3 nCi/g).

Physical Inspection:

On November 15, 2005, container # RHZ-213-A19318 was opened at T Plant for physical inspection. The lid was removed from the drum and the contents viewed. There were two layers of inner containers. The top layer of 4-liter containers (poly bottles) contained paper, plastic, and rubber, with no liquids. This layer of bottles was removed and set aside. The lower layer of 4-liter poly bottles all contained a brown, oily, one-phased liquid. The liquid contained in the poly bottles displayed the same viscosity. The poly bottles were clearly labeled as *Hydraulic Fluid Contaminated with PCBs at 3200 ppm*, and dated July 26, 1989.

Chemical (Chem) Screening:

Since all poly bottles containing liquids were marked the same, the contents were visibly similar, and the liquid contents had the same viscosity, a sampling of a single

bottle was deemed representative of all bottles. A chemical screen was performed on a sample of the liquid taken from one of the 4-liter poly bottles. The liquid was pipetted from the bottle by the T Plant operators using a disposable pipette. The following tests were performed by the Verification personnel: pH, water reactive, cyanide, oxidizer, sulfide, and peroxide. All the tests were negative, which is consistent with what would be expected for hydraulic fluid. (Note: a negative test result for pH indicates neutral.) T Plant operators then used a disposable pipette to acquire grab samples that were sent for laboratory analysis at the Waste Sampling and Characterization Facility (WSCF). The contents of the container were repackaged back into the original container, # RHZ-214-A19318. Any remaining sample returns were also placed back into the original container

Laboratory Analysis:

WSCF Laboratory was requested to analyze the liquid samples for volatile organic and semi-volatile organic compounds, PCBs, and metals (Analytical Test Plan for Metals in Oils). The laboratory results were received from WSCF on December 22, 2005. The results of the first analysis indicated several chemicals identified at Minimum Detection Limits (MDL) were above regulatory limits. Therefore, the laboratory was requested to perform additional analysis using the TCLP for Semi-VOA testing method to see if they could lower the detection limits with a second analysis. The second set of results, received on January 16, 2006, also had MDL above regulatory limits. Therefore, the more comprehensive results of the first analysis were used for the final waste designation.

- ***Describe the results of the examination (resultant waste designations per WAC 173-303-070 through 100 and description of the physical and chemical properties of the waste) and the documentation and/or data relied upon to determine the identity of the wastes within the drum.***

The liquids were found to be consistent with hydraulic fluid with PCBs stored in poly bottles. Chemicals identified in the waste matrix based on the laboratory results were: 2,4- dinitrotoluene (D030), hexachlorobenzene (D032) and hexachlorobutadiene (D033), and PCBs at 750ppm. There were no flammable or corrosive components in the material. Hexachlorobutadiene is commonly found in hydraulic fluids. The 2,4-dinitrotoluene is an intermediate component in the manufacture of polyurethanes (poly bottles) and could have leached over the 15 years of storage, as it is soluble in oils. The Hexachlorobenzene is a bi-product of the manufacture of solvents and pesticides, and has no commercial uses in the United States. Since these materials could not be tested below MDL and regulatory limits due to the sample matrix, it is possible they are not present in regulated amounts in the hydraulic fluids.

Attachment

Action Requested by Ecology on November 4, 2005
Resolution Action Item 1.a.

- ***Describe how the knowledge gained from these examinations will be applied to other wastes in storage.***

  The waste codes for the materials identified in the laboratory analysis will be added to container, # RHZ-213-A19318 (originally designated with only the PCB waste code), as well as the following containers remaining in storage at the Solid Waste Operations Complex (SWOC) facilities that were also shipped under the same SDAR # 1-1K-4AM (Rev. 0 and Rev. 1).

  - RHZ-213-A19387
  - RHZ-213-A19394
  - RHZ-213-A19395
  - RHZ-213-A19396

  The final waste designations for the above five containers, designated in accordance with WAC 173-303-070 through 100, have been revised to reflect the following waste codes; and the chemical inventories have been revised to include the chemicals identified with these codes.

  - D030 - 2, 4- dinitrotoluene
  - D032 – hexachlorobenzene
  - D033 - hexachlorobutadiene
  - PCBs at 750ppm (TSCA)

  Underlying Hazardous Constituents (UHCs) have been identified based on analytical results. Washington State Codes are not applicable since the waste carries Federal Waste Codes.

- ***Summarize the documentation and/or data relied upon to determine the identity of the liquid wastes within the drums.***

  The following documentation was used to determine the identity of the waste:

- WSCF Analytical Results Report – December 22, 2005
  - Report # 20051899
- WSCF Analytical Results Report – January 16, 2006
  - Report # 20051899, Revised: *TCLP SEMI-VOA ADDED*
- WS Waste Designation Sheet
  - # T-Plant T3-28, *High Hydrocarbon Oil Matrix*
- Container Activity Record - CIN # RHZ-213-A19318, dated November 15, 2005
  - Visual Exam and Chem. Screening Results

Attachment

Action Requested by Ecology on November 4, 2005
Resolution Action Item 1.a.

- Original Generator Waste Documentation
  - Solid Waste Storage/Disposal Record – 1-1K-4AM-1
  - Contents Inventory Sheet (July 24, 1989)
  - WIPP Certification Checklist (July 24, 1989)
  - Inspection Sheet for TRU Waste Drum or Lard Can (July 19, 1989)
  - Storage/Disposal Approval Record for Radioactive Solid Waste (July 19, 1989)