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Richland Operations Office
P.O. Box 550
Richland, Washington 99352

0052571

00-OSS-145

FEB 0 8 2000

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
P. O. Box 47600
Olympia, Washington 98504

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EDMC

Dear Mr. Wilson:

TRANSMITTAL OF CORRECTIVE MEASURE REPORT FOR THE JUNE 3, 1999, NOTICE OF CORRECTION (NOC) RESULTING FROM THE 1998 LAND DISPOSAL RESTRICTION (LDR) COMPLIANCE INSPECTION AT HANFORD (HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER [TRI-PARTY AGREEMENT] MILESTONE M-26-01H), AS AMENDED BY THE STATE OF WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY) NOVEMBER 16, 1999, LETTER

References: (1) Letter, L. Rudd, Ecology, to S. H. Wisness, U.S. Department of Energy (DOE), Richland Operations Office (RL), "Notice of Correction Resulting from the 1998 Land Disposal Restrictions Compliance Inspection at Hanford (Hanford Federal Facility Agreement and Consent Order [Tri-Party Agreement] Milestone M-26-01h)," dated November 16, 1999. 52141

(2) Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement), Mutual Agreement and Extension Regarding Milestone M-26-01, Submit an Annual Hanford Land Disposal Restrictions Report, dated October 26, 1999. 52188

(3) Letter, L. Rudd, Ecology, to G. H. Sanders, RL, same subject, as reference 1, dated September 17, 1999. 51798 51799 51800

(4) Letter, L. Rudd, Ecology, to B. A. Austin, Fluor Daniel Hanford, P. W. Kruger, RL, and D. L. Renberger, Waste Management Hanford, same subject as Reference 1, dated June 3, 1999.

On September 29, 1998, Ecology performed an inspection in support of the 1998 Report on Hanford Site LDR for Mixed Waste, related to the Tri-Party Agreement Interim Milestone M-26-01H. The results of Ecology's inspection were documented in Reference 4, identifying five corrective measures, four alleged violations, and thirteen concerns. In 1999, a series of technical sessions worked to resolve differing interpretations of the 1990 Hanford LDR Requirements Plan. Reference 3 outlines Ecology's agreement that alleged violation one, two and three have been closed out of the NOC and entered into the Tri-Party Agreement Dispute Resolution Process. In Reference 1, Ecology instructs DOE to prepare a corrective measure report and also provides technical clarification to Ecology's June 3, 1999, NOC

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(Reference 4). Additionally, in Reference 2, the Inter Agency Management Integration System extended the due date of this corrective measure report to February 8, 2000.

Enclosed per your request is the corrective measure report. If you have any questions, please contact Mary F. Jarvis, Office of Regulatory Liaison, on (509) 376-2256 or Clifford E. Clark, of my staff on (509) 376-9333.

Sincerely,

James E. Rasmussen

James E. Rasmussen, Acting Director
Office of Site Services

ORL:MFJ

Enclosure

cc w/encl:
J. R. Wilkinson, CTUIR
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ENCLOSURE

RESPONSE TO "RE: NOTICE OF CORRECTION RESULTING FROM THE 1998 LAND DISPOSAL RESTRICTIONS (LDR) COMPLIANCE INSPECTION AT HANFORD (TPA MILESTONE M-26-01H), DATED JUNE 3, 1999", DATED NOVEMBER 16, 1999

Corrective Measure Report

INTRODUCTION

The State of Washington Department of Ecology's (Ecology) sent a Notice of Correction (NOC) to the U.S. Department of Energy (DOE), Fluor Daniel Hanford, Inc. (FDH) and Waste Management Federal Services of Hanford, Inc. (WMH) on June 3, 1999. The NOC contains 4 alleged violations, 13 concerns, and 5 corrective measures. On September 17, 1999, Ecology transmitted a letter to DOE that removed alleged violations #1, #2, and #3, from the NOC. Therefore, this document responds only to alleged violation #4, the associated corrective measures #4 and #5, and concerns #3, #5, #10, and #11 (those concerns that relate to the container inspection and sampling effort). On November 16, 1999, Ecology transmitted a letter to the DOE providing clarification on certain points related to alleged violation #4, as well as removing text from alleged violation #4.

DOE's responses to the NOC's corrective measures #4 and #5 and revised alleged violation #4 are in Sections 1.0 and 2.0, respectively. Section 3.0 gives the response to related concerns. The items in Ecology's June 3, 1999 letter are italicized herein and each is followed by the DOE response. Three amended container files are located at the end of this document.

The term "DOE" is used to identify the responder, since DOE is the holder of the U.S. Environmental Protection Agency (EPA) Identification Number for both generator and Treatment Storage and Disposal (TSD) activities at the Hanford Site. However, DOE's contractors have participated in the development of the response and will, along with DOE, be responsible to implement the corrective measures described in the response text as appropriate.

1.0 RESPONSES TO CORRECTIVE MEASURES

Corrective Measure # 4: ***USDOE failed to properly complete LDR testing, tracking, and recordkeeping requirements for six (6) out of seven (7) container files reviewed.***

NOC statement:

1. *Within ninety (90) days from receipt of this letter, USDOE, FDH, and WMH must review and correct the specific LDR testing, tracking, and recordkeeping deficiencies identified in Violation #4, and provide to Ecology copies of the corrected portions of the Operating Records.*

Response

DOE and Ecology have not reached agreement on specific container file issues. For the deficiencies that the DOE agrees upon, the container files have been updated and are included in this transmittal. The container files consist of the TSD unit portion of the operating documents and the generator files. The agreed-upon deficiencies pertain to three container files: 225B-98-000006 (Tank Truck), 9403139 (Tank Farms Drum), and 9800899 (Pacific Northwest National Laboratory Drum).

There is a distinction in the regulations on whether an LDR notification must be made for a waste transfer identified in WAC 173-303-380(1)(j-o). For off-site shipments the LDR notification is required. On-site movements are not covered by the regulations, however, the same information contained in the notice is provided so that the owner/operator may choose how to document the information required by 40 CFR 268.7. Waste received into the CWC can be associated with an off-site shipment or an on-site movement. DOE and its contractors have adopted a best management practice of maintaining information regarding on-site movement of a waste stream's LDR status using the LDR notification form.

<u>Corrective Measure #5:</u> USDOE failed to properly complete LDR testing, tracking, and recordkeeping requirements for six (6) out of seven (7) container files reviewed.

NOC statement:

1. *Within ninety (90) days from receipt of this letter, USDOE, FDH, and WMH must submit to Ecology a status report on actions taken, since receipt of this letter, to ensure the LDR testing, tracking, and recordkeeping requirements of 40 CFR 268.7 are being met for existing waste containers, as well as newly generated waste containers. The report must include, at a minimum, the number of container files reviewed from specific facilities and waste streams; summaries from self-audits, focusing on review of LDR paperwork; the number of staff, by facility, who have been trained within the last twelve (12) months, or are currently scheduled to be trained in LDR regulations; and the development of any training or workshops to educate staff on proper completion of LDR paperwork.*

Response

After a thorough review of the causes of the problems with the identified containers, DOE found no programmatic problems in complying with recordkeeping requirements. Isolated cases of recordkeeping deficiencies do exist and are promptly corrected when identified. However, DOE and its contractors agree with Ecology that improvements in consistency of the designation process are desirable. To that end, the entire LDR NOC was reviewed to evaluate issues, to ensure a degradation of the current system does not occur, and to improve the designation process when appropriate. Because of this review, a workshop was developed and presented focusing on proper completion of paperwork related to waste designation and LDR requirements. A series of LDR Workshops were presented (8/24/99, 8/25/99, 8/27/99, 9/9/99, and 10/19/99) to a total of 60 people.

2.0 RESPONSE TO REVISED ALLEGED VIOLATION #4

Violation #4: ***Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities (40 CFR Part 268.7)***

NOC statement:
40 CFR 268.7 requires a generator to determine if their waste has to be treated before it can be land disposed, and to retain all data used to make the determination. Ecology reviewed seven (7) Operating Record files; six (6) out of seven (7) had deficiencies associated with determination of Underlying Hazardous Constituents (UHCs), assignment of subcategories, and retaining supporting data in the generator's files.

USDOE failed to properly complete LDR testing, tracking, and recordkeeping requirements for six (6) out of seven (7) container files reviewed.

Response

In the NOC, Ecology alleges that DOE and its contractors are responsible for several testing and recordkeeping violations of Title 40, Code of Federal Regulations (CFR) 268.7. The alleged violations are all related to work performed in support of the land disposal restrictions (LDR) plan and the annual reports for the Hanford Site subject to the M-26 series of milestones in the Hanford Federal Facility Agreement and Consent Order.

- **DOE and its contractors have determined that three of the six listed waste package records contained deficiencies to the requirements of 40 CFR 268.7. These deficiencies were associated with underlying hazardous constituent (UHC) determinations on waste packages: 225B-98-000006 (Tank Truck), 9403139 (Tank Farms Drum), and 9800899 (Pacific Northwest National Laboratory Drum Information). The deficiencies have been corrected as noted below. The three corrected container files are included as attachments.**

1. Container #225B-98-000006 - T Tank [T-Plant Tanker Truck]

NOC statement:

- *On the Land Disposal Notification and Certification form used for container #225B-98-000006 (Tank Truck), space #6a was checked stating "Underlying Hazardous Constituent Determination not Applicable." However, the T Tank designation indicates the presence of characteristic waste (D002); therefore, generators must determine the UHCs that are reasonably expected to be present in the waste (unless a container is being managed as a labpack in accordance with the requirements of 40 CFR 268.42[c]).*

Response

Ecology is correct with the assertion that a UHC determination is required for this waste and was not completed. The Land Disposal Notification and Certification form space #6a should not have been checked stating "Underlying Hazardous Constituent determination not applicable." DOE has recognized this deficiency since the time the T-Tank was added to the LDR report in 1998. In both the 1998 LDR report (DOE/RL-98-09) and the 1999 LDR report (DOE/RL-99-01), the Waste Stream Profile Sheet for the T-Tank, Section 2.4.2 states "UHCs have not been determined for this waste stream." The T-Tank contains waste that has been included in the 1998 and 1999 LDR reports because it does not meet the definition of empty container in Washington Administrative Code (WAC) 173-303-160. The heel in the T-Tank (approximately 150 gallons) was designated for corrosivity (D002) and certain listed waste codes. The corrosive characteristic requires a UHC determination based on the Treatment Standards for Hazardous Wastes (40 CFR 268.40).

2. Container #9403139 Tank Farms

NOC statement:

- *On the Land Disposal Notification and Certification for container #9403139 (Tank Farms Drum), the description of subdivisions (subcategory) is not complete for D006 and D008 waste codes. Line 6a and line 6b were not completed, indicating the generator did not check for the presence of UHCs.*

Response

After careful examination, DOE finds the applicable subcategories were appropriately identified. In its November 16, 1999 letter, Ecology states, "...it does not matter if the word 'subcategory' is absent, it is still a subcategory." The LDR standards include subcategories as necessary to specify certain treatment methods for subdivisions made within a waste code based on waste-specific criteria (see 40 CFR 268.7, "Generator Paperwork Requirements Table", item 4.) Where no subdivisions have been made within a waste code, the applicable treatment standard is properly found by referring to the appropriate column that corresponds to the applicable waste code(s).

The "Treatment Standards for Hazardous Wastes" table in 40 CFR 268.40, second column, contains the "waste description and treatment/regulatory subcategory" information. The waste description given for the D006 and D008 waste codes do not identify the applicable treatment standard as a regulatory subcategory [1]. This is consistent for toxicity characteristic waste numbers D004-D043. The U.S.

[1] The waste description reads as follows: "Wastes that exhibit, or expected to exhibit, the characteristic of toxicity for (cadmium or lead) based on the toxicity characteristic leaching procedure (TCLP) in SW846."

Environmental Protection Agency (EPA) has identified the D006 cadmium containing batteries, the D008 lead acid batteries, and the D008 radioactive lead solids treatment standards as regulatory subcategories for the D006 and D008 waste codes in the 40 CFR 268.40 "Treatment Standards for Hazardous Wastes" table.

The "Land Disposal Notification and Certification Form" is used at Hanford for compliance with 40 CFR 268.7 documentation requirements for mixed waste. This form requires identification of the waste code(s) and any applicable subcategory for the waste, but not for the waste description. The Tank Farms waste is described by the toxicity characteristic waste description for D006 and D008, but is not part of any of the subcategories given under those waste descriptions, i.e. cadmium containing batteries, lead acid batteries, or radioactive lead solids. Consequently, the regulatory subcategory column of information may be left blank, as was done for the waste referenced in this NOC statement. The subcategory box on the LDR form was marked "none" in accordance with current Hanford directions for completing this form (reference: WHC-EP-0846). This practice is also consistent with practice in private industry.

In the second sentence, Ecology is correct in that a UHC determination was required for this waste. Records in the container file indicate waste code D018 was assigned to the waste. A UHC determination for D018 wastes was effective at the time the waste was accepted in storage based on the "Treatment Standards for Hazardous Wastes" table in 40 CFR 268.40.

3. Plutonium Finishing Plant (PFP) Drum (#9521493)

NOC statement:

- *The generator records for container #9521493 did not include the proper waste code for corrosivity. Specifically, the Washington Solid Corrosive Code WSC2 was used. Waste codes from designation are determined at the point of generation, not after being divided or diluted, or in this case, after a liquid corrosive is absorbed in diatomaceous earth. The proper waste code of D002 was not assigned.*

Response

DOE agrees with this statement except for Ecology's presumption about events which occurred prior to declaring the material as waste. The D002 waste code would not apply to the waste since all available knowledge indicates that, at the point of generation, the material was an absorbed acid (i.e., diatomaceous earth containing nitric and sulfuric acids). There is no knowledge indicating a corrosive liquid was absorbed after it was declared a waste. Therefore, waste code WSC2 was appropriately assigned to this waste

There are scenarios where the D002 waste code would not apply at the point of generation. In the case of a spilled material, the point of generation can occur, in

some cases, at the time it is determined that the spilled material cannot be recovered. To clean up the spilled material, sorbent material would be added to the spilled material and the point of generation would occur when the sorbed material is remediated. If the spilled material is corrosive, assignment of the WSC2 waste code is appropriate in this case since the point of generation occurs when the waste is remediated in a solid form. Based on this type of scenario and EPA guidance on the designation of listed waste codes, it would be inappropriate to assume events pertaining to a waste's history prior to the point of discovery.

When determining if a waste contains listed waste, the mere presence of chemicals listed as solvents in waste listings F001-F005 does not necessarily mean that the waste is a listed waste. Knowledge as to whether the constituents were utilized for their solvent properties, were present at a concentration of 10% or more before use, and whether the waste is a still bottom from recovery of solvents is also needed. (See WAC 173-303-9904.) The regulations and associated guidance do not require presumption that such constituents be treated as listed waste in the absence of affirmative, documented process knowledge to the contrary.

4. Container #9601762 Bechtel Hanford Inc. (BHI)

NOC statement:

- *WMH staff stated the designation was based on process knowledge gained from review of written analytical procedures that generated the waste and the specific constituent quantities were derived from these procedures. The container file did not contain any reference to such written analytical procedures. (NOTE: The waste in this container had been designated with the following waste codes: D002, D004, D006, D007, D008, D009, D010, D011. The analyses from WSCF resulted in pH<1 for the three (3) sample sets representing the contents of this waste container. No constituent was found that exceeded regulatory designation or UHC limits. (NOC statement continued later in document.)*

Response

The information required in the generator file by 40 CFR 268.7(a) includes "waste analysis data (when available)." Waste analysis data includes generator knowledge and testing information based on WAC 173-303-300(2) and 40 CFR 265.13(a)(2). Available knowledge was contained in the file since the weight percent information derived from written analytical procedures was part of the file (reference: NOC and page 16 of the March 5, 1999 inspection report). This satisfies the regulatory requirements for the generator file given in 40 CFR 268.7(a). The Solid Waste Engineering Analysis form in the container file identified the toxicity characteristic regulatory threshold for each heavy metal waste code. In this case, the waste was declared characteristic based on available knowledge. Analytical data resulting from the LDR compliance inspection by Ecology confirmed the waste was worst-case designated---an allowable practice to meet As Low As Reasonably Achievable (ALARA) principles (reference: 62 FR 62079 Final MW testing guidance, November 20, 1997). A generator may declare a waste as hazardous in lieu of testing.

Additionally, the use of process knowledge in lieu of sampling and analysis for small, unique waste streams is often most appropriate for waste minimization practices. A small amount of waste can generate a large amount of more difficult to treat secondary waste from sampling and analysis activities. In this particular case, conservative assignment of waste codes is more appropriate than sampling and analysis. The knowledge used in designating the waste was adequate because there was no failure on DOE's part to identify applicable waste codes, as evidenced by Ecology's assertion above that "no constituent was found that exceeded regulatory designation or UHC limits."

NOC statement (continued):

- *On the Land Disposal Notification and Certification form for container #9601762, the description of subdivisions (subcategory) is not complete for D006, D008, and D009 waste codes.*

Response

After careful examination, DOE finds the applicable subcategories were appropriately identified. In its November 16, 1999 letter, Ecology states, "...it does not matter if the word 'subcategory' is absent, it is still a subcategory." The LDR standards include subcategories as necessary to specify certain treatment methods for subdivisions made within a waste code based on waste-specific criteria (see 40 CFR 268.7, "Generator Paperwork Requirements Table", item 4.) Where no subdivisions have been made within a waste code, the applicable treatment standard is properly found by simply referring to the appropriate column that corresponds to the applicable waste code(s).

The "Treatment Standards for Hazardous Wastes" table in 40 CFR 268.40, second column, contains the "waste description and treatment/regulatory subcategory" information. The waste description given for the D006, D008, and D009 waste codes do not identify the applicable treatment standard as a regulatory subcategory[2]. This is consistent for toxicity characteristic waste numbers D004-D043. The U.S. Environmental Protection Agency (EPA) has identified numerous treatment standards as regulatory subcategories for the D006, D008 and D009 waste codes in the 40 CFR 268.40 "Treatment Standards for Hazardous Wastes" table.

The "Land Disposal Notification and Certification Form" is used at Hanford for fulfillment of 40 CFR 268.7 documentation requirements for mixed waste. This form calls for identification of the waste code(s) and any applicable subcategory for the waste, but not for the waste description. The BHI waste is described by the toxicity characteristic waste description for D006, D008, and D009 but is not part of any of the subcategories given under those waste descriptions. As a result, the regulatory subcategory column of information may be left blank, as was done for

[2] The waste description reads as follows: "Wastes that exhibit, or expected to exhibit, the characteristic of toxicity for (cadmium, lead or mercury) based on the toxicity characteristic leaching procedure (TCLP) in SW846."

the waste referenced in this NOC statement. The subcategory box on the LDR form was marked "none" in accordance with current Hanford directions for completing this form (reference: WHC-EP-0846). This is also consistent with practice in private industry.

5. Container #9700906 - 222-S Laboratory

NOC statement:

- *The Land Disposal Notification and Certification Form for container #9700906 includes the waste codes D036 and U169. The form states that the generator had reviewed the Universal Treatment Standards (UTS) list and determined UHC's are present in the waste. This determination was based on the generator's knowledge of the waste and analysis. The generator identified nitrobenzene as a UHC; but nitrobenzene is not the underlying hazardous constituent, it is the primary hazardous constituent. Also, the generator assigned the waste code U169; however, this waste is not a discarded chemical product. The waste was identified as "contaminated rad liquid waste" in the generator file. Also, an independent laboratory analysis (from Paragon Laboratories) revealed the presence of lead (.38 mg/kg) in the sample. Further, the file does not contain adequate process knowledge to determine if the nitrobenzene was used for its solvent properties, in which case the F004 code would be applied to the waste.*

Response

DOE believes this paragraph does not describe a violation, but simply represents a situation where waste has been conservatively over-designated. In sentence one, Ecology correctly states that two waste codes, D036 and U169 were identified in the container file. The assignment of waste code U169 is appropriate since the waste is a discarded chemical product and should have been the only waste code applied. The waste code D036 would not need to be assigned based on 40 CFR 268.9(a) and (b). Assignment of D036 to a waste would require a UHC determination on the waste at the point of generation. Assignment of all potentially applicable codes, even if the regulations did not require them, was a common practice at the time the waste was accepted. The designation practice has been changed to only include those waste codes required by regulation since over designation invokes additional requirements. The paper work for this waste has been amended to reflect the new practice (i.e., removal of the D036 waste code and associated UHC); however, this change is not considered a correction of a deficiency.

In the second, third, and fourth sentences, Ecology asserts that it is a violation to identify a UHC when the constituent is also the constituent of concern under a waste code. There is no concern with this practice as the treatment standards for a constituent under a waste code in 40 CFR 268.40 and the treatment standard for a UHC in 40 CFR 268.48 are universal. That is why EPA refers to the treatment standards as "Universal Treatment Standards." Today's practice has been changed so that LDR information redundancy is avoided.

Ecology asserts in the fifth and sixth sentences that "contaminated rad liquid waste" negates a discarded chemical product determination. Radioactive contamination is not a factor in determining whether a discarded chemical product (laboratory reagent) meets the definition of a "commercial chemical product" subject to designation as listed waste under WAC 173-303-081. This waste was not used and does contain a sole-active ingredient, therefore, assignment of U169 is appropriate. Once a chemical reagent enters a radiological contamination area, it normally cannot be "free-released" out of that area. Therefore, if the unused chemical product is to be discarded, it is declared a "contaminated rad liquid waste" and the applicable listed waste code is assigned. The term "contaminated", in this case, refers to radiological contamination and not contamination via use.

Ecology has included testing results for lead in the seventh sentence that are not applicable to this waste. Since the 222-S Laboratory waste is a discarded chemical product (U169), information on UHCs is not required.

Regarding the last sentence, when a discarded chemical product is designated, it cannot become a spent solvent. Process knowledge is not necessary to discuss how nitrobenzene was used because the discarded chemical product was never used. Furthermore, the presence of a very low concentration of lead in the waste does not contradict the discarded chemical designation since lead could be present as a typical contaminant of a commercial or technical grade product.

6. Container #9800899 - Pacific Northwest National Laboratory

NOC statement:

- *The waste was assigned the waste code D030 indicating the presence of 2,4 Dinitrotoluene; however, this contaminant does not appear on any of the associated paperwork for the waste. (NOTE: The presence/absence of 2,4 Dinitrotoluene is particularly important due to its potential for explosion when heated.) Further, the file does not contain the proper information for assessing the dangerous waste criteria for toxicity. (NOC statement continued later in document.)*

Response

This container is a mixed waste labpack with 11 inner containers. Ecology alleges problems with three of the 11 inner containers (items #4054, #3509, and #3908).

The information required in the generator file by 40 CFR 268.7(a) includes "waste analysis data (when available)." Waste analysis data includes generator knowledge and testing information based on WAC 173-303-300(2) and 40 CFR 265.13(a)(2). One item in the container (item # 4054) was assigned D030 based on association with single-shell tank (SST)/double-shell tank (DST) system waste. Pacific Northwest National Laboratory (Pacific Northwest) applies this waste code to wastes that are derived from working with DST/SST analytical samples through use of the Tank Waste Designation Worksheet. Although the packing slip does not itemize the

constituents and their concentrations associated with SST/DST waste, these constituents are itemized in sections 65 and 66 on the Solid Waste Storage/Disposal Record (SWS/DR). The SWS/DR is a record present in the treatment, storage, and/or disposal (TSD) unit portion of the operating documents and in generator files. A weight percent of DST/SST waste in the waste stream is determined via process knowledge. The waste designator applies appropriate waste codes from the Tank Waste Designation Worksheet. Furthermore, a generator may declare a waste as hazardous based on available knowledge in lieu of actual testing. Assignment of the D030 waste code based on generator knowledge as a "worst case" designation is allowable, especially for mixed wastes in order to meet ALARA principles (reference: 62 FR 62079 Final MW testing guidance). Lastly, it is Pacific Northwest's practice to maintain generator records (waste designation and related supporting documentation) separately from shipping records maintained at the TSD unit. The packing slip maintained in the shipping records provides the means to reference the designation file.

Regarding assignment of D030 (2,4-Dinitrotoluene), DOE and its contractors consider the generator file to contain adequate information to substantiate assignment of the code. Assignment of D030 is based on a methodology to designate laboratory waste denoted as "SST/DST waste." The Hazardous Waste Packaging Slip contains the entry "SST/DST waste .15%." Additional information is not needed since one can ascertain the D030 designation results from the presence of "SST/DST waste .15%." Furthermore, the generator knowledge regarding 2,4-Dinitrotoluene is sufficient to ensure that the waste is not reactive. As a trace constituent of SST/DST waste, the concentration of 2,4-Dinitrotoluene is known to be much less than 0.15%; therefore it imparts no reactive properties to the waste.

The last sentence of the paragraph indicates information for assessing the dangerous waste criteria for toxicity should be in the file. Since no provisions of WAC 173-303-070(5) apply to this waste, WAC 173-303-070(3)(a)(iv) does not require the dangerous waste criteria to be evaluated for this waste.

NOC statement (continued):

- *The Land Disposal Notification and Certification Form for container #9800899 includes waste codes D002, D011, and D030 (the codes associated with the samples analyzed from the two [2] inner containers chosen for this inspection). The form also includes the code D006, associated with another inner container. The description of subdivisions (subcategory) is not complete for D006. In addition, the analysis from WSCF for inner container #3908 indicates that 2,4 Dinitrophenol, o-Nitrophenol, and Chloroform levels exceed the regulatory limits for UHCs; however, these constituents did not appear on the generator's UHC paperwork for this container. WSCF analysis also found acetone and methylene chloride levels that exceed regulatory limits for UHCs. These constituents were identified on the UHC paperwork for the drum, but were attached to waste with F001 and F002 codes assigned to different inner containers.*

Response

After careful examination, DOE finds the applicable subcategories were appropriately identified. In its November 16, 1999 letter, Ecology states, "...it does not matter if the word 'subcategory' is absent, it is still a subcategory." The LDR standards include subcategories as necessary to specify certain treatment methods for subdivisions made within a waste code based on waste-specific criteria (see 40 CFR 268.7, "Generator Paperwork Requirements Table", item 4.) Where no subdivisions have been made within a waste code, the applicable treatment standard is properly found by simply referring to the appropriate column that corresponds to the applicable waste code(s).

The "Treatment Standards for Hazardous Wastes" table in 40 CFR 268.40, second column, contains the "waste description and treatment/regulatory subcategory" information. The waste description given for the D006 waste code does not identify the applicable treatment standard as a regulatory subcategory[3]. This is consistent for toxicity characteristic waste numbers D004-D043. The U.S. Environmental Protection Agency (EPA) has identified numerous treatment standards as regulatory subcategories for the D006, D008 and D009 waste codes in the 40 CFR 268.40 "Treatment Standards for Hazardous Wastes" table.

The "Land Disposal Notification and Certification Form" is used at Hanford for fulfillment of 40 CFR 268.7 documentation requirements for mixed waste. This form calls for identification of the waste code(s) and any applicable subcategory for the waste, but not for the waste description. The Pacific Northwest waste is described by the toxicity characteristic waste description for D006, but is not part of any of the subcategories given under that waste description. Consequently, the regulatory subcategory column of information may be left blank, as was done for the waste referenced in this NOC statement. The subcategory box on the LDR form was marked "none" in accordance with current Hanford directions for completing this form (reference: WHC-EP-0846). This is also consistent with practice in private industry.

In sentences four through six, Ecology states that UHCs not identified on LDR documentation exist above Universal Treatment Standard levels. These levels were discovered as a result of laboratory analysis performed as part of the LDR inspection. The UHC determination on the wastes was performed using generator knowledge of the wastes at the time of preparation of LDR paperwork, as allowed by 40 CFR 268.7(a)(1). The results of the analysis performed on the wastes are being treated as additional knowledge and have been added to the LDR documentation for the container.

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[3] The waste description reads as follows: "Wastes that exhibit, or expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846."

3.0 RESPONSES TO CONCERNS

Concern #3: ***Requested records were not received in a timely manner.***

NOC statement:

- *Five (5) container records were requested by Ecology on October 6, 1998. These records were to be provided to Ecology by October 9, 1998. Three (3) files were received on October 12, 1998; two (2) were received October 14, 1998. These delays caused unnecessary rescheduling and poor coordination for the sampling event, e.g., establishing container-specific sampling needs, assessing transportation requirements for samples, setting up radiological controls at T Plant. (NOC statement continued later in document.)*

Response

A verbal estimate of three business days was provided to Ecology to receive the generator records associated with the waste packages being inspected. Fluor Hanford, Inc. maintains the TSD unit portion of the operating documents for mixed waste being stored in the Central Waste Complex (CWC). The TSD unit portion of the operating documents does not contain the same type and level of information that the generator file does. These files are dispersed throughout the Hanford Site and even offsite (as in the case of the Battelle Columbus waste package). Obtaining the records took longer than initially estimated.

NOC statement (continued):

- *A report on the number of containers and volume, by waste stream, of all containers at CWC was requested on September 29, 1998. The complete report was not provided to Ecology until October 16, 1998. The WMH representative said the delay was due to the report being reviewed to ensure it was a "clean" list. Ecology informed WMH that the request was for the data as it appeared on the date requested, not after being reviewed, and perhaps altered, prior to submission to Ecology.*

Response

Ecology's request was for more information than a report "on the number of containers and volume, by waste stream, of all containers at CWC". Ecology also requested that the report contain information on those containers that 1) need characterization, 2) need verification, and 3) are fully characterized and awaiting treatment. These last three lines of inquiry took a significant amount of time to produce since a prepared database query did not exist that contained the requested information.

Ecology's concern that review of the data prior to transmittal could lead to alteration of the data is unfounded. No data were altered in the review.

Information gathered to respond to a regulatory request is customarily reviewed to ensure that the entire request was fulfilled.

The first five columns of data (i.e., Waste Specification Record number, radioactive waste type, package count, waste volume and waste weight) were queried directly from the Solid Waste Information and Tracking System (SWITS) database. The last three columns of inquiry do not come directly from the SWITS database; instead, the information comes from cognizant project engineer's knowledge of the various waste streams. A report containing "*data as it appears on the date requested*" (i.e., the first five columns of information) can normally be provided to Ecology within one business day of the request (contingent that the SWITS computer is not down). The remaining information had to be compiled from various other sources.

Concern #5: ***Sampling practices for collecting volatiles and semi-volatiles were not adequate to minimize the loss of volatile components to the atmosphere.***

NOC statement:

- *During the sampling event at T Plant, several liquid waste volumes were poured into a bowl and allowed to remain open to the atmosphere for up to an hour while volatile and semi-volatile samples were drawn. Ecology acknowledges the difficulties involved with sampling radioactive waste in a greenhouse environment; however, sample collection methods should be reviewed and improved.*

Response

The sampling practices utilized for collecting volatiles and semi-volatiles from the various liquid matrices met SW-846 guidance parameters. When feasible, the waste packages are open only long enough to collect the required sample volumes. However, when there is not enough waste to fill both sample sets (i.e., split sampling events) or a representative sample needs to be obtained from multiple inner containers, the waste is put into a sample preparation bowls and each sample set is filled accordingly.

Concern #10: ***Generator recordkeeping for the following containers is inaccurate and unclear.***

NOC statement:

- *The generator's Solid Waste Storage/Disposal Record (SWS/DR) for PFP container #951493 is inaccurate and unclear. Regarding the inaccuracy, page 2, item 66, asks the generator to identify the weight percent of the hazardous constituents within the container. The total of constituents equals 219%. Regarding the unclear portion, page 2, item 61, asks the generator to provide an article description, with estimated volume % and estimated weight. The articles described are not broken out per inner container. The reader has no way to know the accurate description of each individual package within the container. (NOC statement continued later in document.)*

Response

The weight percent determinations on line 66 of the subject SWS/DR represent the worst case "upper bounds" of a particular hazardous waste constituent. This is done when a range of concentrations may apply, but the exact concentration of each constituent is not available. As an enhancement, this practice was changed during 1998 to one that requires the generator to input values for each hazardous constituent that, when summed, will add up to 100 percent. The SWS/DR represents information at the package-level, not at the inner container level. To obtain information on the individual inner containers, the content inventory sheets and/or labpack packing lists need to be consulted.

NOC statement (continued):

- *The generator's Hazardous Waste Packing Slip for PNNL container #9800899 incorrectly identifies the federal/Environmental Protection Agency (EPA) waste code F003 as a Washington State Department of Energy (WDOE) code.*

Response

The containers that identified F003 as a "WDOE" waste number were listed as F001-F005 by the mixture rule, as they contained residues from the analysis of waste from the SST/DST systems. Under 40 CFR 261.3(a)(2)(iii), there are certain conditions when a listed waste code might no longer apply. In this particular case, F003 is no longer applicable if the mixture no longer exhibits the characteristic of ignitability because ignitability is the sole basis of the F003 listing. Hence, a Federal F003 designation is not applicable pursuant to 40 CFR 261.3(a)(2)(iii). However, since WAC 173-303 does not have a provision analogous to 40 CFR 261.3(a)(2)(iii), the F003 waste code applies in the State of Washington (reference: Ecology publication #97-439, response to comment #80). As a result, Pacific Northwest listed the F003 code as one that would apply under Washington regulations, but not under EPA's regulations.

Concern #11*: *Process for shipping waste samples to Ecology's off-site laboratory need to be refined.

NOC Statement:

- *Despite advance planning of the sampling event, there were several problems and delays associated with sending Ecology's waste samples from Hanford to Paragon Laboratories, Ecology's laboratory in Colorado. These concerns are associated with receiving radiological screening data from WSCF, arranging off-site transportation, and collecting the required sample volume. In several cases, holding times were not met.*

Response

When dealing with radioactive wastes, the levels of environmental and safety rigor required by the DOE, regulators, stakeholders and the public is high. This rigor increases the time and resources associated with performing sampling and analysis activities on radioactive wastes. The samples associated with Ecology's LDR Compliance Assessment were managed expeditiously, professionally, and in compliance with applicable procedures given the existing constraints.

The following discussion addresses the specific concerns stated in the LDR NOC.

"Receiving radiological screening data from WSCF"
The radiological screening data was provided to Ecology expeditiously and within Waste Sampling and Characterization Facility's normal turnaround time for this type of analysis. Radiological screening information was required by Ecology's contracted laboratory prior to sending the sample sets. This requirement may not be waived.

"arranging off-site transportation"
The arranging of the off-site transportation was handled by the Site's transportation and packaging organization. Airfreight services were utilized for those samples that could be compliantly shipped by that method; otherwise, ground transportation had to be utilized (i.e., the nitrobenzene sample). The samples could have been turned over to Ecology directly after release from the radiological buffer area and they could have made the shipping arrangements. Upon inquiry by Waste Management Federal Services of Hanford, Inc. (WMH) personnel, Ecology did not know if they had the proper authorizations to handle radioactive materials; therefore, WMH shipped the samples at Ecology's request.

"collecting the required sample volume"
Prior to the sampling event, it was agreed with Ecology that split samples would be obtained (i.e., Ecology would get a sample set and DOE would get a sample set). For those containers that did not contain enough waste material to make up complete sample sets, the waste volume present would be divided so each party would receive equal amounts.

Ecology was responsible for selecting the waste packages/inner containers to be sampled and determining the testing parameters for the selected samples. Ecology changed the number and types of testing parameters several times during the course of this event, resulting in sample volume requirement changes.

Obtaining sufficient sample volume to complete the desired testing parameters is a concern that can be discussed during the preplanning stages of future events, and re-addressed as new or changed information is

obtained. An alternate waste package/inner container can be selected when sample volume is determined to be marginal or insufficient.

References

Letter, L. E. Ruud, Ecology, to P. W. Kruger, RL, et al., "Notice of Correction Resulting from the 1998 Land Disposal Restrictions (LDR) Compliance Inspection at Hanford (Hanford Federal Facility Agreement and Consent Order Milestone M-26-01H), " June 3, 1999

Letter, L. E. Ruud, Ecology, to G. H. Sanders, RL, no title or number, 7 pages in length, September 17, 1999

Letter, L. E. Ruud, Ecology, to Steve Wisness, RL, "Notice of Correction Resulting from the 1998 Land Disposal Restrictions (LDR) Compliance Inspection at Hanford (TPA Milestone M-26-01H), dated June 3, 1999," November 16, 1999.

Inspection Report, "Dangerous Waste Compliance Inspection, Land Disposal Restrictions (LDRs)," L. E. Ruud, Inspection Lead, March 5, 1999

DOE/RL-90-41, *Hanford Land Disposal Restrictions Plan for Mixed Wastes*, October 1990

DOE/RL-98-09, *1998 Report Hanford Site Land Disposal Restrictions for Mixed Waste*, April 1998

DOE/RL-99-01, *1999 Report on Hanford Site Land Disposal Restrictions for Mixed Waste*, April 1999

Publication 97-439, *Responsiveness Summary, Amendments to the Dangerous Waste Regulations, Chapter 173-303 WAC, Proposed August 20, 1997, Adopted January 8, 1998*, January 1998, Washington State Department of Ecology

SW-846, *Test Methods for the Evaluation of Solid Waste: Physical/Chemical Methods*, 3rd edition., U.S. Environmental Protection Agency, Washington, D.C.

WHC-EP-0846, *Waste Specification System*, March 15, 1995, Westinghouse Hanford Company

Hanford Federal Facility Agreement and Consent Order, as amended, Ecology, EPA, and DOE, 1989

61 FR 15566, "Land Disposal Restrictions Phase III--Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners," April 8, 1996

62 FR 62079, "Joint EPA/NRC Guidance on Testing Requirements for Mixed Radioactive and Hazardous Waste," November 20, 1997

40 CFR 261.3, "Definition of hazardous waste"

40 CFR 265.13, "General Waste Analysis"

40 CFR 268.40, "Applicability of Treatment Standards"

40 CFR 268.48, "Universal Treatment Standards"

40 CFR 268.7, "Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities"

40 CFR 268.9, "Special Rules Regarding Wastes that Exhibit a Characteristic"

WAC 173-303, "Dangerous Waste Regulations"
- WAC 173-303-070, "Designation of Dangerous Waste"
- WAC 173-303-160, "Containers"
- WAC-173-303-300, "General Waste Analysis"
- WAC-173-303-380, "Facility Recordkeeping"

Corrected Container Files

Tank Truck
Ref: LDR NOC PIN: (225B-98-000006)

Tanker Truck

Ref: LOR NOC PIN: (225B-98-000006)

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. B. Buckley, Jr., 372-1342 G. C. Triner, 372-0771 A. K. McDowell, 373-5619	C. B. Bryan, LMHC	WMH-9951979

Subject: WASTE TRANSFER DOCUMENTATION FOR SHIPMENT NUMBER 99-01 OF WASTE ENCAPSULATION AND STORAGE FACILITY LIQUID WASTE

DISTRIBUTION

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WASTE MANAGEMENT FEDERAL SERVICES
OF HANFORD, INC.
A WASTE MANAGEMENT COMPANY

P.O. Box 700
Richland, WA 99352-0700

WMH-9951979

March 30, 1999

Ms. C. B. Bryan, Manager
Tank Farms Facility Operations
Lockheed Martin Hanford Corporation R2-50
Post Office Box 1500
Richland, Washington 99352-1505

Dear Ms. Bryan:

WASTE TRANSFER DOCUMENTATION FOR SHIPMENT 99-01 OF WASTE ENCAPSULATION AND STORAGE FACILITY LIQUID WASTE

Please find attached the shipment specific information for the transfer of shipment Number 99-01, of the Waste Encapsulation and Storage Facility liquid waste to the 204-AR facility via tanker truck.

If you have any questions you may contact Mr. A. K. McDowell on 373-5619.

Very truly yours,

J. B. Buckley, Jr., Manager
Generator Services
Project Support

nmh

Attachment

WMH-9951979

ATTACHMENT

Shipment Specific Information for Transfer
of Shipment Number 99-01 of WESF Liquid Waste

Consisting of 35 pages,
Including cover page

BEST AVAILABLE COPY

GENERATOR TRANSFER CHECKLIST

WESF Liquid Waste - Shipment #99-01

Date 3/17/99

FACILITY: (CIRCLE ONE)

340	222-S	PUREX	T-PLANT
B-PLANT	OTHER Waste Encapsulation + Storage Facility		

KEY ANALYSES: (FOR DST STORAGE)

ANALYSIS	UNITS	RESULTS
Pu [a]	g/gal	6.62e-5
NO_2^-	(M)	3.45e-6
NO_3^-	(M)	2.23e-5
OH^-	(M)	2.51e-7
Caustic Demand Test [b]	(M OH^-)/gal	0.117
pH [b]		7.4
Cl^- [b]	(M)	4.74e-4M
Exotherms (DSC)		Ø
TOC	g/L	1.49e-2
Organic (visual)		NONE
Volume of Waste	gal	2700
Railcar/Truck Heel [b]	gal	200

ATTACHED DOCUMENTS:

1. LDR NOTIFICATION [✓]
2. LAB DATA SHEETS (LCCS TYPE) [✓]
3. CRITICALITY DATA SHEET [c] [✓]
4. PROFILE SHEET CERTIFICATION SHEET [c] [✓]

[a]Incudes U-235, if U-235 is greater than 1 wt total U Show all calculations and attach to letter.

[b]Required for 204-AR Transfers. Heel volume required for 204-AR prior to loading car with waste. Caustic Demand is only applies to waste recieved at 204-AR un-neutralized (analysis must enable Tank Farms to calculate NaOH required to bring waste to at least 0.01M free hydroxide).

[c]Documents must be signed and dated by generator.

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: WESF Manifest Doc. No. Shipment #99-01

WSRd No. N/A EPA ID. # WA7890008967 State Manifest No. (If applicable) N/A

COMPLETE THE FOLLOWING FORM USING THE INSTRUCTIONS PROVIDED IN WHC-EP-0063-4 Appendix 1.

1. Check One: Wastewater ☑ Non-wastewater ☐

REF #	2. USEPA HAZARDOUS WASTE CODE(S)	3. SUBCATEGORY: ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE CHECK NONE		4. HOW MUST THE WASTE BE MANAGED ENTER APPROPRIATE REFERENCE LETTE
		DESCRIPTION	NONE	
1	F001	F001 - F005 solvent waste		A - (Restricted Waste That
2	F002			Requires Treatment)
3	F003			
4	F004			
5	F005			
6				
7				
8				
9	--			

☑ F001-F005 hazardous constituents are listed on the F001-F005 Spent Solvent Constituent Addendum.
☐ F039 hazardous constituent(s) are identified on the F039 Hazardous Constituent Addendum.
☐ Additional USEPA codes and subcategories are listed on the supplemental sheet provided.

5. If this waste is subject to any California List restrictions, check the appropriate box and enter the letter (either A, C1, C2) referencing the applicable notice or certification statement next to the restriction:

☐ Liquid hazardous wastes containing Nickel at greater than or equal to 134 mg/l. _____
☐ Liquid hazardous wastes containing Thallium at greater than or equal to 130 mg/l. _____
☐ Liquid hazardous wastes containing PCBs at greater than or equal to 50 ppm. _____
☐ Hazardous wastes containing Halogenated Organic Compounds (HOCs) listed in 40 CFR 268, Appendix III greater than 1,00 mg/l or waste waters that are hazardous wastes containing HOCs greater than 10,000 mg/l. _____

6a. For ~~certain~~ ~~D001, D002, D012-D043~~ D001-D043 Characteristic Wastes, address underlying hazardous constituents by checking the appropriate box:

☐ I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that there are no underlying hazardous constituents reasonably expected to be present in this waste.
☐ I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that underlying hazardous constituents ar present in this waste. The underlying hazardous constituents are identified on the Underlying Hazardous Constituents Addendum to the LDR form.
☐ Underlying hazardous constituent determination not applicable, waste is a treatment residue not from original generat

5b. The determination of underlying hazardous constituents was based on:

☐ Generators knowledge of the waste ☐ Analysis (attach when applicable)

If shipment contains waste that will be exclusively managed to the notification statement A (below), list A in Table Colum 4, and submit signed form along with the applicable supplemental pages and addenda, if required.

A - NOTICE FOR RESTRICTED WASTE THAT REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).

☐ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45"

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Tip McTowell Title Engineer Date 3/17/99

NOTICE AND CERTIFICATION STATEMENTS ADDENDUM

Generator Name: WESF Manifest Doc. No. Shipment # 99-01

If the waste in the shipment will be managed other than that described in notice A (main LDR form), insert the letter from below that describes the management of the waste to comply with the land disposal regulations. By entering the letter yo are making the certification.

B. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT
"I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and al applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d), and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage, and disposal facility name above." "I certify under penalty of law that I personally have examine and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certificatio that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibition set forth in Section 268.32 or RCRA Section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting false certification, including the possibility o a fine and imprisonment."

C.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operatio of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properl so as to comply with the performance levels specified in 40 CFR part 268, Subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that th are significant penalties for submitting a false certification; including the possibility of fine and imprisonment."

C.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREA BY THAT TECHNOLOGY)
"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I a aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

C.3 GOOD FAITH ANALYTICAL CERTIFICATION - FOR INCINERATED ORGANICS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operatio of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264, Subpart O, or 40 CFR Part 265, Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unab to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

D. RESTRICTED WASTE SUBJECT TO A VARIANCE
"This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 4 above."

☐ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45

E. WASTE IS LAB PACK WASTE , USING ALTERNATIVE TREATMENT STANDARD UNDER 268.42
"I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack does not contain any wastes identified at Appendix IV to 40 CFR part 268. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

F. CHARACTERISTIC WASTE TREATED TO 268.40 REQUIREMENTS, REQUIRES FURTHER TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS
"I certify under penalty of law that the waste has been treated in accordance to the requirements of 40 CFR 268.40 to remo the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

G. RESTRICTED HAZARDOUS DEBRIS TREATED TO TREATMENT STANDARDS OF 40 CFR 268.45
"I certify under penalty of law that the debris have been treated in accordance with the requirements of 40 CFR 268.45. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form. Completion of the entire LDR f is required. In addition, waste analysis data (where available) should be provided with the LDR form if B, C1, C3, D, E, F are selected.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Rip McEowell Title Engineer Date 3/17/99

F001 - F005 SPENT SOLVENT CONSTITUENT ADDENDUM

Generator Name: WESF Manifest Doc. No. Shipment #99-01

ISRd No. N/A EPA ID. # WA7890008967 State Manifest No. (If applicable) N/A

1. the waste identified on the main LDR form is described by any of the following USEPA hazardous wastes codes: F001, F002, F003, F004, and/or F005, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the main LDR form.

F001 - F005 Spent Solvents (check constituents present)			
Acetone (F003)	✓	Methanol (F003)	
Benzene (F005)		Methylene Chloride (F001, F002)	✓
n-Butyl alcohol (F003)		Methyl ethyl ketone (F005)	✓
Carbon disulfide (F005)		Methyl isobutyl ketone (F003)	✓
Carbon tetrachloride (F001)	✓	Nitrobenzene (F004)	
Chlorobenzene (F002)		2-Nitropropane (F005)	
O-Cresol (F004)	✓	Pyridine (F005)	
Cresols (m- and p- isomers)(F004)	✓	Tetrachloroethylene (F001, F002)	
Cresols - mixed isomers		Toluene (F005)	
Cyclohexanone (F003)		1,1,1 -Trichloroethane (F001, F002)	✓
Dichlorobenzene (F002)		1,1,2-Trichloroethane (F002)	
2-Ethoxyethanol (F005)		1,1,2-Trichloro-1,2,2-trifluoroethane (F002)	
Ethyl acetate (F003)		Trichloroethylene (F001, F002)	
Ethyl benzene (F003)		Trichloromonofluoromethane (F002)	
Ethyl ether (F003)		Xylenes (F003) (sum of o-, p-, and m- isomers)	
Isobutanol (F005)			

PROJECT T-PLANT TANKER

Notebook No. WM-SML-H17

Continued From Page NONE

:96

SAF# S8-164 11-6-98 CROSSWALK # 772031/157

WORK DONE TO RCRA PROTOCOL

LOCATION: TANKER STORED IN THE TUNNEL AT THE 221-T BLDG, 200 WEST

PURPOSE: WASTE VERIFICATION

PERSONNEL:

JG	HOGAN	SAMPLER
KJ	YOUNG	SCIENTIST
SW	KING	OPT
RJ	JUSTO	OPT
RD	CHANNEL	HPT
EA	LINGEFORD	HPT
CL	SMITH	PIC
NM	SHOEMAKER	PIC
K	KOVER	CUSTOMER 3-7300 T3-28

PROCEDURE: ES-SSPM-001 SP:7-1 WORK PACKAGE: DO-020-040

PPE: FULL SET OF ANTI-Cs WITH RESPIRATORS, SPLASH APRON RWP: T-266

SAMPLE EVENT: A LARGE STAINLESS STEEL TANKER TRAILER CONTAINING RESIDUAL WASTE FROM 222-S AND 225B WASTE STREAMS WAS SAMPLED TO VERIFY THAT NO PCB'S WERE PRESENT IN THE WASTE. THE WASTE IS TO BE DIPOSED OF IN THE TANK FARMS. THE TANKER CONTAINED SOME RAINWATER + SLUDGE, AMOUNTS UNKNOWN. THE TANKER WAS IDENTIFIED WITH TWO PIN#'S: 2225-97-000040 AND ~~222~~ 225B-98-000006.

SAMPLE METHOD: SAMPLES WERE OBTAINED FROM THE TANKER WITH THE USE OF A PERISTALTIC PUMP, CLEAN C-FLEX TUBING AND A PIECE OF 1/2" STAINLESS STEEL TUBING. THE LIQUID AND SLUDGE WERE PUMPED FROM THE TANKER INTO A VENDOR CLEANED 10 LTER JAR. AFTER THE SOLIDS HAD SETTLED TO THE BOTTOM OF THE JAR THE LIQUID PORTION WAS PUMPED INTO VENDOR CLEANED SAMPLE CONTAINERS. THE REMAINING LIQUIDS WERE THAN PUMPED BACK INTO

NONE

Continued on Page 52

JG HOGAN

Read and Understood By

J G Hogan 11-11-98

Signed Date Signed Date

PROJECT T-PLANT TANKER

Notebook No. WM-SML-H17

Continued From Page 51

SAMPLE METHOD: (CONT.) THE TANKER. NEXT THE SLUDGE WAS COLLECTED WITH A STAINLESS STEEL SPOON AND PLACED INTO VENDOR CLEANED SAMPLE CONTAINERS. THE REMAINING SLUDGE WAS THEN MIXED WITH RO/DI WATER AND POURED BACK INTO THE TANKER. ALL SAMPLE EQUIPMENT WAS CLEANED PER ES-SSPM-001 SP: 2-5.

RADIATION READINGS ON THE SAMPLES WERE: LIQUID & SLUDGE IN 101 CONTAINER: 90 M/RAD, LIQUID IN SAMPLE BOTTLES: 12 M/RAD, SLUDGE (EXPOSED AT 4"): 1.5 R, SLUDGE IN SAMPLE BOTTLE: 2 M/RAD. ALL READINGS UNCORRECTED. THE CONTAMINATION APPEARED TO BE LOW ENERGY BETA EMITTERS.

TRANSPORTATION: SAMPLES WERE SHIPPED DIRECTLY TO 222-S LAB ON AN "ONSITE ROUTINE RADIOACTIVE SHIPMENT RECORD" VIA GOUT TRUCK.

11-11-98

SAF #: S8-164 Event #: 1

Project Name: T-Plant Tanker

Date: 11/6/98

Sample Point: T-Plant Tanker

Lead Sampler: HOGAN, J.G.

Sample Matrix: SLUDGE/LIQUID

Field Screening Results:

Sample ID / Cust ID	Blank T.F.E	Analysis Parameters / Sub Analysis	Preservative(s)	Container	Serial # / Lot #	Date / Time	E/R	CCC#	Laboratory	IC #
S8154-01	N/A	PCBs (8080) /	Cool to 4°C	250mL AG	5125040	11/6/98 1130		101520	222-S	
S8154-01	N/A	Total Alpha / Beta (Lab Specific) / GEA	None	1000mL P	8209020	11/6/98 1000		101520	222-S	
S8154-01	N/A	Total Alpha / Beta (Lab Specific) / GEA	None	1000mL P	8209020	11/6/98 1000		101520	222-S	

11-11-98

NOTE: ONE FORM ATTACHED THIS PAGE

Continued on Page 53

JG HOGAN

Signed: J G Hogan

Date: 11-11-98

Read and Understood By

Signed

Date

PROJECT

11-11-9

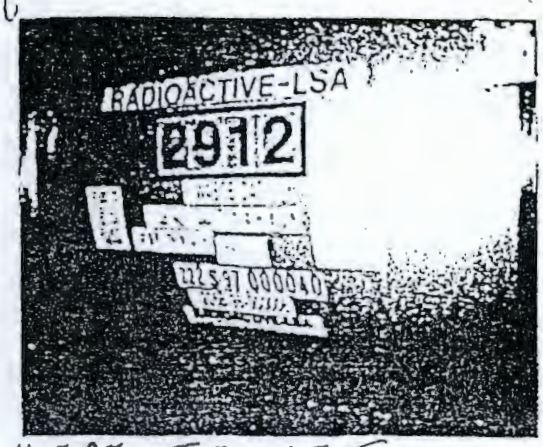
11-5-98 1030 J Hogan

11-11-98

11-5-98 1035 J Hogan

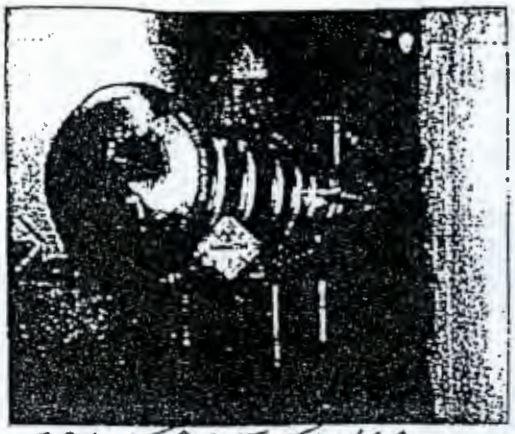
JG HOGAN

JH 11-11-98



11-5-98 T-PLANT TANKER
1030 SAF# S8-164
J Hogan

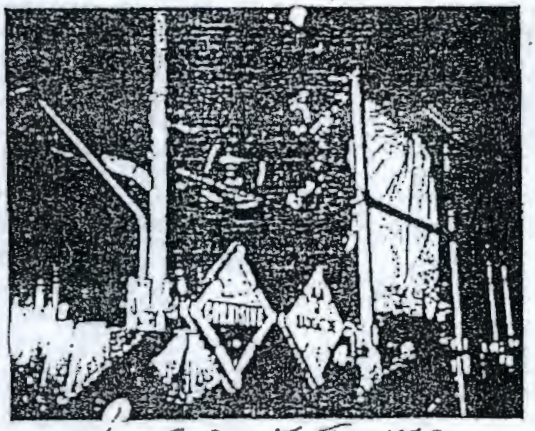
JH 11-11-98



11-5-98 T-PLANT TANKER
1040 SAF# S8-164
J Hogan

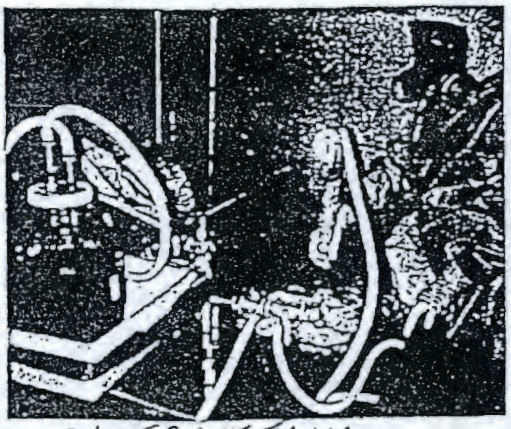
JH 11-11-98

JH 11-11-98



11-5-98 T-PLANT TANKER
1085 SAF# S8-164
J Hogan

JH 11-11-98



11-6-98 T-PLANT TANKER
0930 SAF# S8-164
J Hogan

JH 11-11-98

53 NOTE: FOUR PHOTOS ATTACHED THIS PAGE

Continued on Page NONE

J HOGAN

Read and Understood By

J Hogan 11-11-98

Signed Date Signed Date

Waste Management Northwest	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.C.C # 10 1085

Collector KB Halse	Contact/Requestor D.D. Beers	Tel. No. 3-0766 MSIN S6-81 FAX 2-0264
SAF Number 58-097	Sample Origin TANK-100	Purchase Order/Charge Code KW29B
Project Title WESF TANK 100 Piping	Logbook # WM-SML-4-15	Ice Chest # SML-#11 Temp. 4°C
Shipped To (Lab) 222-S	Method of Shipment Gov. Vehicle	Bill of Lading/Air Bill No. N/A
Protocol No	Data Turnaround 30 days.	Offsite Property No. N/A

Sample No.	Lab. ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
WESF071598-1		W	7-15-98	0210	(1) 250 ags	TOC	H_2SO_4
WESF071598-2		W	7-15-98	0210	(1) 500 P	Total ALPHA / BETA	HNO_3
WESF071598-3		W	7-15-98	0210	(1) 500 P	TDS, pH, visual for separable phase organics	Cool 4°C
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		
					( )		

POSSIBLE SAMPLE HAZARDS/REMARKS MSDS Yes ☐ No ☐
List all known wastes.

SPECIAL INSTRUCTIONS Hold Time

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	KB Halse	KB Halse	7-15-98 0710		K.J. Young	Don Young	7-15-98 0710
Relinquished By			Date/Time	Received By			Date/Time
	Don Young		7-15-98 1215		RL Chambers	RL Chambers	7-15-98/1315
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S = Soil		DS = Drum Solids	
SD = Sediment		DL = Drum Liquids	
SO = Solid		T = Tissue	
SL = Sludge		WT = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION: Disposal Method e.g. Return to customer, per lab procedure, used in process. Disposed By Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6001-500 (07/95)

REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No.s (For lab use only)

Sample Origin	2. Date Sampled	4. Requestor's Name	6. TPCN	7. Org. Code
plant TK-100	7-15-98	D.D. Beers	KW29B	03R00

Project Code	3. Submitted By	5. Requestor's Phone/MSIN/FAX
	K.J. Young	3-0766 / S6-81 / 2-01264

8. Customer ID No.	9. Laboratory Sample No.	10. Volume of Sample	11. Matrix of Sample	12. Requested Analyses	13. Expected Range
ESF071598	256 (1)	250 ml	W	TOC	
ESF071598	257 (1)	500 ml	W	Total Alpha / Beta GEA (GS) - GEA02	
ESF071598	258 (1)	500 ml	W	TDS, ph, Visual for separable phase organics	
CON386	259 (1)	25 ml		(Gross Alpha / Beta, Gamma Spec, Strontium 89)	
CON387	260			90 - Sr 90.	
CON388	261				
CON389	262				
CON390	263				
CON391	264				
CON392	265				

14. Does sample have a MSDS?

☐ Yes HSHF assigned MSDS No. _____

☑ No Description of process that produced waste/sample: liquid effluent catch tank.

15. Is this sample RCRA listed? ☐ Yes ☑ No

Applicable Listed Waste Codes:

☐ Yes ☑ No P Codes: (list) _____

☐ Yes ☑ No U Codes: (list) _____

☐ Yes ☑ No K Codes: (list) _____

☐ Yes ☑ No F Codes: (list) _____

Applicable Characteristic Codes:

☐ Yes ☑ No D001: (how determined) _____ Ignitable

☐ Yes ☑ No D002: (how determined) _____ Corrosive

☐ Yes ☑ No D003: (how determined) _____ Reactive

☐ Yes ☑ No Toxic: (list codes) _____

PCB: Does this waste/sample contain PCBs?

☐ Yes Over 500 ppm

☐ Yes Over 50 ppm

☐ Yes PCBs are suspected

☑ No PCBs are suspected

If YES, what is the source of the PCBs?

☐ Transformer, capacitor, or ballast

☐ Other, specify _____

☐ Unknown

16. Sample Disposition

☐ Return to Customer

☐ Samples found to contain PCBs will be returned to the customer

☑ Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Date Rec'd (Cohrs): 7-15-98

HPT Signature: [signature]

17. QC Required ☑ Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)

☐ Other (list reference document or attach) _____

18. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

19. Requested Turnaround Time

☐ 2 Weeks ☑ 4 Weeks

☐ Other _____

20. By (Rec'd By): [signature] Date: 7-15-98 Time: 1515

21. Chain of Custody

☐ No ☑ Yes

Number: 101085 / 2991-059-

A-6002 365 (05/97)

McDowell, A K

From: Steele, Richard T
Sent: Tuesday, December 01, 1998 1:35 PM
To: Kover, Karola; McDowell, A K; Fuller, Richard K (Keith); Steele, Richard T
Subject: T-PLANT/TANKER RESULTS FOR GRP#98000615

Importance: High

VALIDATED RESULTS SHORT REPORT 01 Dec 1998

Customer ID: S8164-01 /T-PLANT V# 15404 Sample Date: 11/06/98 00:00
Lab Sample#: S98TP00035 Recv. Date: 11/06/98 13:33

PARAMETER	RESULTS	UNITS
PCBs by SW-846 Method 8082		
Aroclor-1016	< 2.0841e+03	ug/Kg
Aroclor-1221	< 2.0841e+03	ug/Kg
Aroclor-1232	< 2.0841e+03	ug/Kg
Aroclor-1242	< 2.0841e+03	ug/Kg
Aroclor-1248	< 2.0841e+03	ug/Kg
Aroclor-1254	5.8378e+03	ug/Kg
Aroclor-1260	< 2.0841e+03	ug/Kg
OTHER ANALYSIS		
Amount of Sam/Present/hotcell	15.3	g
Dose Rate(hotcell) in mrad/hr	495	mrad/hour
PCB Sample Preparation	done	

Customer ID: S8164-02 TANKER/T-PLANT Sample Date: 11/06/98 00:00
Lab Sample#: S98TP00036 Recv. Date: 11/06/98 13:33

PARAMETER	RESULTS	UNITS
Alpha and Beta, Liquid Samples		
Alpha Liq.- Rel. % Count Error	1.91E+01	% Ct. Error
Alpha in Liquid Samples	6.63E-05	uCi/mL
Beta Liq.- Rel. % Count Error	4.74E-01	% Ct. Error
Beta in Liquid Samples	6.03E-02	uCi/mL
GEA for Co60, Cs137		
Cesium-137 by GEA	5.870e-04	uCi/mL
Co-60 GEA Rel. % Count Error	n/a	% Ct. Error
Cobalt-60 by GEA	< 1.869e-05	uCi/mL
Cs-137 GEA Rel. % Count Error	7.49	% Ct. Error

Customer ID: S8164-03 TANKER/T-PLANT Sample Date: 11/06/98 00:00
Lab Sample#: S98TP00037 Recv. Date: 11/06/98 13:33

PARAMETER	RESULTS	UNITS
PCBs by SW-846 Method 8082		
Aroclor-1016	< 1.2000e+01	ug/L
Aroclor-1221	< 1.2000e+01	ug/L
Aroclor-1232	< 1.2000e+01	ug/L
Aroclor-1242	< 1.2000e+01	ug/L
Aroclor-1248	< 1.2000e+01	ug/L
Aroclor-1254	< 1.2000e+01	ug/L
Aroclor-1260	< 1.2000e+01	ug/L

OTHER ANALYSIS
PCB Sample Preparation done

- 1 -

VALIDATED RESULTS SHORT REPORT 01 Dec 1998

Customer ID: S8164-01-DIR 1 TANKER/T-PLANT Sample Date:
Lab Sample#: S98TP00038 Recv. Date: 11/09/98 13:17

PARAMETER	RESULTS	UNITS

Customer ID: S8164-01-DIR 1 TANKER/T-PLANT Sample Date:
Lab Sample#: S98TP00038 Recv. Date: 11/09/98 13:17

PARAMETER	RESULTS	UNITS
OTHER ANALYSIS		
Solids % - Gravimetric	26.6	%

Final Report for TK 100 7/98 WESF Samples
TK 100 7/98

CORE NUMBER: N/A
SEGMENT #: WESF071598-1

SEGMENT PORTION: LIQUID

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S988000256			DSC Exotherm on Perkin Elmer	Joules/g	99.09	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S988000256			Ammonia by ISE-Std Additions	ug/mL	95.33	<1.000	< 1.000	1.010	n/a	n/a	105.1	1.000	n/a
S988000256			Caustic Demand	moles OH-/L	102.4	n/a	4.52e-02	2.31e-02	3.41e-02	64.7	n/a	2.00e-03	n/a
S988000256			Specific Gravity	Sp.G.	98.63	n/a	9.85e-01	9.95e-01	9.90e-01	1.01	n/a	1.00e-03	n/a
S988000256			% Water by TGA on Perkin Elmer	%	99.14	n/a	99.47	99.30	99.38	0.17	n/a	n/a	n/a
S988000256			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.500	13.80	16.00	14.90	14.8	97.50	5.500	n/a
S988000256			Uranium by Phosphorescence	ug/mL	105.4	1.30e-02	1.99e-02	1.91e-02	1.95e-02	4.10	102.6	4.00e-03	2.41E+00
S988000256			U-Phosphorescence Inst. Error	% Inst Error	3.41	2.760	2.410	2.160	2.285	2.16	n/a	n/a	n/a
S988000256			Pu-239/240 by TRU-SPEC Resin	uCi/mL	110.7	<3.53e-06	<3.52e-06	<3.56E-6	n/a	n/a	n/a	3.52e-06	1.00E+02
S988000256		D	Silver-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	74.30	2.00e-02	n/a
S988000256		D	Aluminium-ICP-Acid Dil.	ug/mL	99.00	<5.00e-02	1.13e-01	1.14e-01	1.14e-01	0.88	99.70	1.00e-01	n/a
S988000256		D	Arsenic-ICP-Acid Dil.	ug/mL	103.4	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	102.0	2.00e-01	n/a
S988000256		D	Boron-ICP-Acid Dil.	ug/mL	97.20	<5.00e-02	4.42e-01	4.45e-01	4.44e-01	0.68	98.60	1.00e-01	n/a
S988000256		D	Barium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	98.10	1.00e-01	n/a
S988000256		D	Beryllium ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<1.00e-02	<1.00e-2	n/a	n/a	103.0	1.00e-02	n/a
S988000256		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	98.70	2.00e-01	n/a
S988000256		D	Calcium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	9.360	9.290	9.325	0.75	98.10	2.00e-01	n/a
S988000256		D	Cadmium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<1.00e-02	<1.00e-2	n/a	n/a	103.0	1.00e-02	n/a
S988000256		D	Cerium-ICP-Acid Dil.	ug/mL	101.4	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	101.0	2.00e-01	n/a
S988000256		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	<4.00e-02	<4.00e-2	n/a	n/a	99.50	4.00e-02	n/a
S988000256		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	99.30	2.00e-02	n/a
S988000256		D	Copper-ICP-Acid Dil.	ug/mL	94.80	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	96.30	2.00e-02	n/a
S988000256		D	Iron-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	3.19e-01	3.21e-01	3.20e-01	0.63	99.20	1.00e-01	n/a
S988000256		D	Potassium-ICP-Acid Dil.	ug/mL	99.00	<5.00e-01	1.430	2.190	1.810	42.0	123.0	1.000	n/a
S988000256		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	100.0	1.00e-01	n/a
S988000256		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	100.0	2.00e-02	n/a
S988000256		D	Magnesium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	2.620	2.650	2.635	1.14	104.0	2.00e-01	n/a
S988000256		D	Manganese-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	1.08e-01	1.07e-01	1.07e-01	0.93	97.70	2.00e-02	n/a
S988000256		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	1.52e-01	1.50e-01	1.51e-01	1.32	99.30	1.00e-01	n/a
S988000256		D	Sodium-ICP-Acid Dil.	ug/mL	103.6	<1.00e-01	32.50	33.00	32.75	1.53	157.0	2.00e-01	n/a
S988000256		D	Neodymium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	97.90	2.00e-01	n/a
S988000256		D	Nickel-ICP-Acid Dil.	ug/mL	100.0	<2.00e-02	<4.00e-02	<4.00e-2	n/a	n/a	101.0	4.00e-02	n/a
S988000256		D	Phosphorus-ICP-Acid Dil.	ug/mL	98.40	<2.00e-01	7.220	7.290	7.255	0.96	108.0	4.00e-01	n/a
S988000256		D	Lead-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	104.0	2.00e-01	n/a
S988000256		D	Sulfur-ICP-Acid Dil.	ug/mL	96.40	<1.00e-01	2.83e+02	283.0	283.0	0.00	152.0	2.00e-01	n/a
S988000256		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	<1.20e-01	<1.20e-1	n/a	n/a	99.90	1.20e-01	n/a
S988000256		D	Selenium-ICP-Acid Dil.	ug/mL	95.20	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	98.70	2.00e-01	n/a
S988000256		D	Silicon-ICP-Acid Dil.	ug/mL	98.20	<5.00e-02	5.290	5.300	5.295	0.19	103.0	1.00e-01	n/a
S988000256		D	Samarium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	97.40	2.00e-01	n/a
S988000256		D	Strontium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	2.80e-02	2.81e-02	2.80e-02	0.36	100.0	2.00e-02	n/a
S988000256		D	Titanium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S988000256		D	Thallium-ICP-Acid Dil.	ug/mL	96.60	<2.00e-01	<4.00e-01	<4.00e-1	n/a	n/a	94.50	4.00e-01	n/a
S988000256		D	Uranium-ICP-Acid Dil.	ug/mL	96.60	<5.00e-01	< 1.000	<1.00e0	n/a	n/a	91.00	1.000	n/a
S988000256		D	Vanadium-ICP-Acid Dil.	ug/mL	98.80	<5.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	101.0	1.00e-01	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98B000256		D	Zinc-ICP-Acid Dil.	ug/mL	93.40	<1.00e-02	5.44e-02	5.35e-02	5.39e-02	1.67	100.0	2.00e-02	n/a
S98B000256		D	Zirconium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	99.30	2.00e-02	n/a
S98B000256			Alpha in Liquid Samples	uCi/mL	89.44	<1.05e-06	<2.22e-06	<1.94E-6	n/a	n/a	86.21	2.71e-06	1.65E+02

Final Report for TK 100 7/98 WESF Samples
TK 100 7/98

CORE NUMBER: N/A
SEGMENT #: WESF071598-2

SEGMENT PORTION: LIQUID

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98B000257			DSC Exotherm on Perkin Elmer	Joules/g	99.09	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S98B000257			Ammonia by ISE Std Additions	ug/mL	95.33	<1.000	< 1.000	n/a	n/a	n/a	n/a	1.000	n/a
S98B000257			Caustic Demand	moles OH-/L	102.4	n/a	<2.50e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S98B000257			Specific Gravity	Sp.G.	98.63	n/a	9.16e-01	n/a	n/a	n/a	n/a	1.00e-03	n/a
S98B000257			% Water by TGA on Perkin Elmer	%	99.14	n/a	99.44	n/a	n/a	n/a	n/a	n/a	n/a
S98B000257			Uranium by Phosphorescence	ug/mL	105.4	1.30e-02	1.710	n/a	n/a	n/a	n/a	4.48e-01	2.74E+00
S98B000257			U-Phosphorescence Inst. Error	% Inst Error	3.41	2.760	2.740	n/a	n/a	n/a	n/a	n/a	n/a
S98B000257			Pu-239/240 by TRU-SPEC Resin	uCi/mL	110.7	<3.53e-06	<3.32e-06	<3.34E-6	n/a	n/a	n/a	3.32e-06	1.00E+02
S98B000257		D	Silver-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Aluminum-ICP-Acid Dil.	ug/mL	99.00	<5.00e-02	1.17e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Arsenic-ICP-Acid Dil.	ug/mL	103.4	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Boron-ICP-Acid Dil.	ug/mL	97.20	<5.00e-02	4.39e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Barium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Beryllium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<5.00e-03	n/a	n/a	n/a	n/a	5.00e-03	n/a
S98B000257		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Calcium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	9.410	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Cadmium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<5.00e-03	n/a	n/a	n/a	n/a	5.00e-03	n/a
S98B000257		D	Cerium-ICP-Acid Dil.	ug/mL	101.4	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S98B000257		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Copper-ICP-Acid Dil.	ug/mL	94.80	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Iron-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	2.93e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Potassium-ICP-Acid Dil.	ug/mL	99.00	<5.00e-01	1.970	n/a	n/a	n/a	n/a	5.00e-01	n/a
S98B000257		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Magnesium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	2.670	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Manganese-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	1.09e-01	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	1.45e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Sodium-ICP-Acid Dil.	ug/mL	103.6	<1.00e-01	32.40	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Neodymium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Nickel-ICP-Acid Dil.	ug/mL	100.0	<2.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S98B000257		D	Phosphorus-ICP-Acid Dil.	ug/mL	98.40	<2.00e-01	7.410	n/a	n/a	n/a	n/a	2.00e-01	n/a
S98B000257		D	Lead-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Sulfur-ICP-Acid Dil.	ug/mL	96.40	<1.00e-01	1.700	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	<6.00e-02	n/a	n/a	n/a	n/a	6.00e-02	n/a
S98B000257		D	Selenium-ICP-Acid Dil.	ug/mL	95.20	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Silicon-ICP-Acid Dil.	ug/mL	98.20	<5.00e-02	5.330	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Samarium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S98B000257		D	Strontium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	2.61e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Titanium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257		D	Thallium-ICP-Acid Dil.	ug/mL	96.60	<2.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S98B000257		D	Uranium-ICP-Acid Dil.	ug/mL	96.60	<5.00e-01	<5.00e-01	n/a	n/a	n/a	n/a	5.00e-01	n/a
S98B000257		D	Vanadium-ICP-Acid Dil.	ug/mL	98.80	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S98B000257		D	Zinc-ICP-Acid Dil.	ug/mL	93.40	<1.00e-02	5.35e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98B000257		0	Zirconium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S98B000257			Cobalt-60 by GEA	uCi/mL	105.7	<2.68e-05	<2.73e-05	<2.71e-5	n/a	n/a	n/a	2.73e-05	n/a
S98B000257			Cesium-134 by GEA	uCi/mL	n/a	<2.47e-05	<3.04e-05	<2.93e-5	n/a	n/a	n/a	3.04e-05	n/a
S98B000257			Cesium-137 by GEA	uCi/mL	101.1	<2.79e-05	1.05e-02	1.03e-02	1.04e-02	1.92	n/a	n/a	1.33
S98B000257			Alpha in Liquid Samples	uCi/mL	93.89	<4.26e-07	<2.94e-07	<4.26E-7	n/a	n/a	99.08	7.39e-07	5.00E+02
S98B000257			Beta in Liquid Samples	uCi/mL	104.0	2.57e-06	2.27e-02	2.30e-02	2.29e-02	1.31	114.3	3.29e-06	2.43E-01

Final Report for TK 100 7/98 WESF Samples
TK 100 7/98

CORE NUMBER: N/A
SEGMENT #: WESF071598-3

SEGMENT PORTION: LIQUID

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S988000258			DSC Exotherm on Perkin Elmer	Joules/g	99.09	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Ammonia by ISE-Std Additions	ug/mL	95.33	<1.000	< 1.000	n/a	n/a	n/a	n/a	1.000	n/a
S988000258			Caustic Demand	moles OH-/L	102.4	n/a	<2.50e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S988000258			pH Direct	pH	n/a	n/a	7.390	7.420	7.405	0.41	n/a	1.00e-02	n/a
S988000258			Specific Gravity	Sp.G.	98.63	n/a	9.91e-01	n/a	n/a	n/a	n/a	1.00e-03	n/a
S988000258			Total Dissolv. Solids - Grav.	g/mL	105.4	n/a	1.60e-04	2.00e-04	1.80e-04	22.2	n/a	1.00e-04	n/a
S988000258			% Water by TGA on Perkin Elmer	%	99.14	n/a	99.71	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Uranium by Phosphorescence	ug/mL	105.4	1.30e-02	2.61e-02	n/a	n/a	n/a	n/a	4.00e-03	3.20E+00
S988000258			U-Phosphorescence Inst. Error	% Inst Error	3.41	2.760	3.200	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Pu-239/240 by TRU-SPEC Resin	uCi/mL	110.7	<3.53e-06	<3.18e-06	<3.15E-6	n/a	n/a	n/a	3.1[illegible]e-06	1.00E+02
S988000258		D	Silver-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Aluminium-ICP-Acid Dil.	ug/mL	99.00	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Arsenic-ICP-Acid Dil.	ug/mL	103.4	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Boron-ICP-Acid Dil.	ug/mL	97.20	<5.00e-02	4.25e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Barium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Beryllium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<5.00e-03	n/a	n/a	n/a	n/a	5.00e-03	n/a
S988000258		D	Bismuth-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Calcium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	8.860	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Cadmium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-03	<5.00e-03	n/a	n/a	n/a	n/a	5.00e-03	n/a
S988000258		D	Cerium-ICP-Acid Dil.	ug/mL	101.4	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S988000258		D	Chromium-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Copper-ICP-Acid Dil.	ug/mL	94.80	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Iron-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Potassium-ICP-Acid Dil.	ug/mL	99.00	<5.00e-01	2.120	n/a	n/a	n/a	n/a	5.00e-01	n/a
S988000258		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Lithium-ICP-Acid Dil.	ug/mL	99.60	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Magnesium-ICP-Acid Dil.	ug/mL	101.8	<1.00e-01	2.670	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Manganese-ICP-Acid Dil.	ug/mL	99.20	<1.00e-02	5.57e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.40	<5.00e-02	1.61e-01	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Sodium-ICP-Acid Dil.	ug/mL	103.6	<1.00e-01	33.10	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Neodymium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Nickel-ICP-Acid Dil.	ug/mL	100.0	<2.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S988000258		D	Phosphorus-ICP-Acid Dil.	ug/mL	98.40	<2.00e-01	7.170	n/a	n/a	n/a	n/a	2.00e-01	n/a
S988000258		D	Lead-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Sulfur-ICP-Acid Dil.	ug/mL	96.40	<1.00e-01	1.750	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Antimony-ICP-Acid Dil.	ug/mL	99.60	<6.00e-02	<6.00e-02	n/a	n/a	n/a	n/a	6.00e-02	n/a
S988000258		D	Selenium-ICP-Acid Dil.	ug/mL	95.20	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Silicon-ICP-Acid Dil.	ug/mL	98.20	<5.00e-02	5.430	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Samarium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258		D	Strontium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	2.19e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Titanium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Thallium-ICP-Acid Dil.	ug/mL	96.60	<2.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S988000258		D	Uranium-ICP-Acid Dil.	ug/mL	96.60	<5.00e-01	<5.00e-01	n/a	n/a	n/a	n/a	5.00e-01	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S988000258		D	Vanadium-ICP-Acid Dil.	ug/mL	98.80	<5.00e-02	<5.00e-02	n/a	n/a	n/a	n/a	5.00e-02	n/a
S988000258		D	Zinc-ICP-Acid Dil.	ug/mL	93.40	<1.00e-02	1.55e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258		D	Zirconium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-02	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S988000258			Dose Rate in mrad/hour	mrad/hour	n/a	n/a	<5.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258			Appearance of Sample-Sepl Prep		n/a	n/a	Clear	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Amt of Sam/Present sample prep	mL	n/a	n/a	5.00e+02	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Volume % Settled Solids	%	n/a	n/a	< 1.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S988000258			Color of Sample		n/a	n/a	Colorles	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Organic Vol Present/sampleprep	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S988000258			Alpha in Liquid Samples	uCi/mL	89.44	<1.05e-06	<1.16e-06	n/a	n/a	n/a	n/a	2.71e-06	5.00E+02

Data Summary Table
WESF TK-100

SAMPLING EVENT: 1
SEGMENT #: B0H1Y0

SEGMENT PORTION: N/A

Sample#	B	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S980000065			Mercury by CVAA (Percin Elmer)	ug/mL	96.30	<5.00e-03	<1.00e-02	<0.010	n/a	n/a	70.30	1.00e-02	n/a
S980000065			Strontium-89/90 High Level	uCi/mL	103.4	<2.32e-06	5.62e-04	n/a	n/a	n/a	n/a	2.62e-06	2.20E+00
S980000065			Fluoride-IC-Dionex 4000/4500	ug/mL	106.1	<1.20e-02	<1.32e-01	n/a	n/a	n/a	n/a	1.32e-01	n/a
S980000065			Chloride-IC-Dionex 4000/4500	ug/mL	103.4	3.10e-02	16.87	n/a	n/a	n/a	n/a	1.87e-01	n/a
S980000065			Nitrite-IC - Dionex 4000/4500	ug/mL	99.26	<1.00e-01	< 1.100	n/a	n/a	n/a	n/a	1.100	n/a
S980000065			Nitrate by IC-Dionex 4000/4500	ug/mL	100.2	2.19e-01	2.577	n/a	n/a	n/a	n/a	1.579	n/a
S980000065			Phosphate-IC-Dionex 4000/4500	ug/mL	98.65	<1.20e-01	5.19e-02	n/a	n/a	n/a	n/a	1.320	n/a
S980000065			Sulfate by IC-Dionex 4000/4500	ug/mL	98.75	<1.38e-01	5.011	n/a	n/a	n/a	n/a	1.518	n/a
S980000065			Cesium-137 by GEA	uCi/mL	98.08	<1.62e-05	1.09e-02	n/a	n/a	n/a	n/a	n/a	1.22
S980000065			Alpha in Liquid Samples	uCi/ml	82.97	<5.52e-06	<8.17e-06	n/a	n/a	n/a	n/a	1.94e-07	5.00E+02
S980000065			Aroclor-1016	ug/L	n/a	<1.20e-01	< 1.200	<1.20	n/a	n/a	82.08	1.000	n/a
S980000065			Aroclor-1221	ug/L	n/a	<2.40e-01	< 2.400	<2.40	n/a	n/a	n/a	1.000	n/a
S980000065			Aroclor-1232	ug/L	n/a	<1.20e-01	< 1.200	<1.20	n/a	n/a	n/a	1.000	n/a
S980000065			Aroclor-1242	ug/L	n/a	<1.20e-01	< 1.200	<1.20	n/a	n/a	n/a	1.000	n/a
S980000065			Aroclor-1248	ug/L	n/a	<1.20e-01	< 1.200	<1.20	n/a	n/a	n/a	1.000	n/a
S980000065			Aroclor-1254	ug/L	72.76	<1.20e-01	< 1.200	<1.20	n/a	n/a	n/a	1.000	n/a
S980000065			Aroclor-1260	ug/L	n/a	<1.20e-01	< 1.200	<1.20	n/a	n/a	64.91	1.000	n/a
S980000065			Tetrachloro-m-xylene Surr	% Recovery	72.05	60.90	60.20	57.05	62.62	57.0	57.65	1.000	n/a
S980000065			Decachlorobiphenyl Surr	% Recovery	91.62	62.47	75.13	66.28	70.70	66.3	59.90	1.000	n/a
S980000067	B		Silver -ICP-Acid Digest-Liquid	ug/mL	100.30	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	117.2	1.00e-01	n/a
S980000067	B		Arsenic -ICP-Acid Digest-Liq	ug/mL	101.4	<1.00e-01	< 1.000	<1.00e0	n/a	n/a	100.4	1.000	n/a
S980000067	B		Barium -ICP-Acid Digest-Liquid	ug/mL	102.0	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	106.0	5.00e-01	n/a
S980000067	B		Cadmium -ICP-Acid Digest-Liq	ug/mL	99.20	<5.00e-03	<5.00e-02	<5.00e-2	n/a	n/a	119.0	5.00e-02	n/a
S980000067	B		Chromium -ICP-Acid Digest-Liq	ug/mL	97.00	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	105.2	1.00e-01	n/a
S980000067	B		Lead -ICP-Acid Digest-Liquid	ug/mL	96.00	<1.00e-01	< 1.000	<1.00e0	n/a	n/a	115.2	1.000	n/a
S980000067	B		Selenium -ICP-Acid Digest-Liq	ug/mL	96.80	<1.00e-01	< 1.000	<1.00e0	n/a	n/a	117.5	1.000	n/a

Liquid sample taken from Tank 100 of WESF between Feb. 20, 1998 and Feb 25, 1998. Analysis performed by 222-S Lab. gTM 3/17/99

000017

Data Summary Table
WESF TK-100

SAMPLING EVENT: 1
SEGMENT #: B0:2V2

SEGMENT PORTION: N/A

Sample#	F	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Freq%
S98B000064			Mercury by CVAA (Perkin Elmer)	ug/mL	96.00	<5.00e-01	<1.00e-02	<0.010	n/a	n/a	n/a	1.00e-02	n/a
S98B000064			Strontium-90/90 High Level	uCi/mL	103.4	<2.32e-06	1.96e-06	n/a	n/a	n/a	n/a	2.71e-06	1.00E-02
S98B000064			Fluoride-IC-Dionex 4000/4500	ug/mL	104.1	<1.20e-01	<1.20e-02	n/a	n/a	n/a	n/a	1.20e-02	n/a
S98B000064			Chloride-IC-Dionex 4000/4500	ug/mL	105.4	<1.10e-01	1.20e-01	n/a	n/a	n/a	n/a	1.10e-02	n/a
S98B000064			Nitrite-IC - Dionex 4000/4500	ug/mL	99.26	<1.08e-01	1.55e-01	n/a	n/a	n/a	n/a	1.08e-01	n/a
S98B000064			Nitrate by IC-Dionex 4000/4500	ug/mL	100.2	<1.19e-01	2.47e-01	n/a	n/a	n/a	n/a	1.19e-01	n/a
S98B000064			Phosphate-IC-Dionex 4000/4500	ug/mL	99.45	<1.20e-01	1.89e-01	n/a	n/a	n/a	n/a	1.20e-01	n/a
S98B000064			Sulfate by IC-Dionex 4000/4500	ug/mL	98.74	<1.30e-01	1.47e-01	n/a	n/a	n/a	n/a	1.30e-01	n/a
S98B000064			Cesium-137 by GEA	uCi/mL	98.06	<5.67e-05	<5.55e-05	n/a	n/a	n/a	n/a	5.55e-05	n/a
S98B000064			Alpha in Liquid Samples	uCi/mL	92.97	<8.52e-08	<8.05e-08	n/a	n/a	n/a	n/a	1.91e-07	5.00E-07
S98B000064			Aroclor-1016	ug/L	n/a	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1221	ug/L	n/a	<2.40e-01	< 2.400	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1232	ug/L	n/a	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1242	ug/L	n/a	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1248	ug/L	n/a	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1254	ug/L	72.76	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Aroclor-1260	ug/L	n/a	<1.20e-01	< 1.200	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Tetrachloro-m-xylene Surr	% Recovery	72.05	60.90	59.90	n/a	n/a	n/a	n/a	1.000	n/a
S98B000064			Decachlorobiphenyl Surr	% Recovery	91.43	62.47	53.65	n/a	n/a	n/a	n/a	1.000	n/a
S98B000068	B		Silver -ICP-Acid Digest-Liquid	ug/mL	100.0	<1.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a
S98B000068	B		Arsenic -ICP-Acid Digest-Liq	ug/mL	101.4	<1.00e-01	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a
S98B000068	B		Barium -ICP-Acid Digest-Liquid	ug/mL	102.0	<5.00e-02	<2.50e-01	<2.50e-1	n/a	n/a	n/a	2.50e-01	n/a
S98B000068	B		Cadmium -ICP-Acid Digest-Liq	ug/mL	99.60	<5.00e-02	<2.50e-02	<2.50e-2	n/a	n/a	n/a	2.50e-02	n/a
S98B000068	B		Chromium -ICP-Acid Digest-Liq	ug/mL	97.80	<1.00e-02	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a
S98B000068	B		Lead -ICP-Acid Digest-Liquid	ug/mL	96.00	<1.00e-01	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a
S98B000068	B		Selenium -ICP-Acid Digest-Liq	ug/mL	96.80	<1.00e-01	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a

Liquid sample taken from Tank 100 of WESF between Feb. 20, 1998 and February 25, 1998. Analyses performed by 222-S Lab. 9/M 3/17/99

000018

WESF Liquid Waste
Shipment #99-01

Criticality Data Sheet (CDS) for any transfer of waste from a non-tank farms waste generator into any receiver tank—Generator Verification.

Attach any additional calculations i.e. unit conversions. Use only the latest revision of this form.

Criticality Data Sheet (CDS), Revision 0 Generator Verification					DATA
1. Waste Generating Facility					Waste Encapsulation + Storage Facility
2. Waste Receiving Facility (Tank)					204-AR
3. The shipment date					April 1999
4. Shipment number					#99-01
5. Date of calculation					3/16/99
6. The sample analysis number					598B000256, -257, -258
7. Copy of the laboratory analysis. (The laboratory analysis must include the analytes used in the calculations).					YES ☑ NO ☐
8. The Laboratory Control Standard (LCS)	70% ≤ Plutonium ≤130 %				LCS = 110.7
	80% ≤ Uranium ≤ 120%				LCS = 105.4
9. The sample analysis is reported for:		^{239}Pu	^{235}U	^{233}U	U_{total}
	Results	<3.52e-6	ug/ml	N/A 4.30e-02	1.71 ug/ml
	Duplicate	<3.56e-6	ug/ml	was performed	N/A
	Average	<3.54e-6	ug/ml		1.71 ug/ml
10. The Relative Percent Difference (RPD) is ≤20 %.					RPD = N/A
11. The Spike Recovery % for	75% ≤ Uranium ≤ 125 %.				N/A
	Plutonium				N/A.
12. pH of waste discharged from generator.	Analysis Calculation (underline method)				pH= 7.4
Calculations are attached and independently verified (if necessary).					YES ☑ NO ☐
13. Plutonium equivalence concentration g/l.					1.75e-5 g/l
14. Transfer volume, gallons (l).				1200 gallons	4542 l
15. Estimated Flush volume, gallons (l)				1500 gallons	5678 l
16. Plutonium total mass g.					0.178 grams
15.a [Pu] ≤ 0.001 g/l					YES ☑ (go to 17)
					NO ☐ (go to 15.b)
15.b 0.001 g/l< [Pu] ≤ 0.033 g/l					YES ☐ (go to 15.c)
					NO ☐ * make adjustment
15.c Absorber (X) to (Pu) mass ratio (X/Pu) (the X/Pu must exceed one of the listed subcritical ratios, only if the fissionable material is: 0.001 g/l≤ [Pu] ≤ 0.033 g/l	Chromium (Cr)	135			
	Iron (Fe)	160			
	Manganese (Mn)	32			
	Nickel (Ni)	105			
	Uranium (U)	770			
16. Plutonium total mass ≥ 50 g;	NO ☐ the sum of fractions is not required				
	YES ☐ the sum of the component mass fractions = _____ Include calculations (component mass fraction ≥ 2).				
17. For transfers from PFP the solids > 0.7 vol% of the waste batch.					Solids Vol. % = N/A

WESF Liquid
Shipment #99-01

18. The above checks and calculations are correct and accurate			
Primary verifier name;	Kip McDowell	Kip McDowell	3/16/99
	Printed	Signature	Dated.
19. All the above checks and calculations have been independently verified to be correct and accurate.			
Independent verifier name;	L.L. WEAVER	[illegible]	3/16/99
	Printed	Signature	Dated.

* The concentration of fissionable materials in waste batches transferred into the Tank Farms must not exceed 0.033 *gPu/l* of waste.

WESF LIQUID WASTE SHIPMENT #99-01

WORST CASE VALUES FROM LAB. ANALYSIS

$Pu^{239} = < 3.56E-6$ mCi/ml $= < 3.56E-12$ Ci/ml

SPECIFIC ACTIVITY (Pu^{239}) = 6.13E-2 Ci/g

$Pu^{239} = < 5.81E-11$ g/ml $= < 5.81E-8$ g/L

$U^{TOTAL} = 1.710$ mg/ml $= 1.71E-3$ g/L

* 1% ENRICHMENT (U^{235}) = 1.71E-5 g/L

* .02% U^{233} = 3.42E-7 g/L

Pu EQUIVALENCE = $Pu^{239} + U^{235} + U^{233}$

= < 5.81E-8 g/L + 1.71E-5 g/L + 3.42E-7 g/L

= 1.75E-5 g/L

* BASED ON Theoretical WORST CASE 1% ENRICHMENT.

SSulcaux 3/16/99

Tip McFuell 3/16/99

WESF LLW Waste Stream Profile Sheet, Rev 1

WASTE STREAM PROFILE SHEET

I. WASTE SHIPPER INFORMATION

1. DST customer (waste shipper/generator):

   WMH Generator Services

2. Contact: Kip McDowell

3. Phone: 373-5619 4. Mail stop: T3-05

II. GENERAL WASTE INFORMATION

1. DST customer: WMH Generator Services

2. Waste stream name: WESF LLW

3. Process generating waste: Rain water runoff, Raw water, heel from last liquid batch in WESF Tk-100. (When in operation, the activity that generated LLW at WESF was the decontamination of manipulators for maintenance and repair. The last WESF LLW transfer to B-Plant was made on May 18, 1998 with subsequent transfer to Tank Farms. Tk-100 was then removed from service.)

4. Anticipated volume including any flush water:

   2,700 gallons

5. Anticipated transfer frequency:

   One time

6. Method of transfer (railcar, truck, pipeline):

   219-S Tanker Truck

7. Were analytical data used to fill out this profile sheet?

   X Yes _____ No

If yes, cite document used as the basis for sampling and analysis (i.e., waste analysis plan and/or sampling analysis plan) and attach a complete copy of the latest results.

WMH-9852678

8. Does the waste contain waste which was not generated as part of Hanfords Cleanup?

_____ Yes __X__ No

9. Is the waste subject to the Toxic Substance Control Act? ___ Yes __X__ No

10. Is the waste subject to any disposal requirements other than those mandated under the Resource Conservation and Recovery Act?___Yes __X__ No

If yes, identify those requirements _____

11. At the point of origination, does the waste contain 10% or more organics?
_____ Yes __X__ No

12. Does the waste qualify for the exemption for mixed waste listed in 40 C.F.R. 264.1080 (b) (6)? __X__ Yes ___ No

13. Does waste contain any material that was generated by a spill? __ Yes __X__ No

III. WASTE STREAM COMPOSITION

List all constituents which are greater than 1,000 mg/kg.

1. Component	2. Concentration range (units)	3. Average % (sum of average % of waste stream components must total 100)	4. Basis for composition
Water	99.3 % to 99.8%	99.4 %	PK & A
Other	0.2 % to 0.7 %	0.6 %	PK & A
	_____ to _____		

IV. PHYSICAL PROPERTIES

1. Physical state at 70°F (circle all applicable)

   Liquid Semisolid Solid
   Slurry Sludge Gas

2. Viscosity at 70°F *(degree)* X____ < 10 mPa/ s[1] _____ > 10 mPa/ s[1]

3. Is waste multi-layered? X____ Yes _____ No

   If yes, describe and quantify each layer:

   a. (Top) > 99% liquid

   b. (Middle) No middle layer

   c. (Bottom) < 1% solid in bottom of tanker truck

   d. Suspended solids: X < 1% __ between 1% and 10% __ > 10%

   e. Flash point: X > 200 °F __ between 100 and 200 °F __ < 100 °F

   f. Color: colorless

4 Does the waste contain polychlorinated biphenyls (PCB) X Yes __ No
   If so what is the concentration range:

   Maximum: 6 ppm in solids on a dry weight basis per analysis
   Minimum: 0

5. Does the waste contain organics X Yes ____ No

   If yes what is the range of the organics

   Maximum: 16 mg/l per analysis
   Minimum: 13.8 mg/l per analysis

[1] Millipascals per second

V. SPECIFIC ANALYSIS OF WASTE

Fill in the following chart giving maximum, minimum, or averages for each specific analyte. Also state whether this information is based on process knowledge or actual analytical data.

Parameter	Minunum	Maximum	Average	Basis
Ammonia (grams/liter)	0	0.2	0	A,PK
Chloride (only for waste going to 204-AR) (moles/liter)	0	0.001	0.00024	A,PK
Energetics (net exotherm or no net exotherm)	0	no net	0	A,PK
Hydroxide (moles/liter)	1.0x10E-8	1.0x10E-7	2.51x10E-7	PK
Moisture (volume % water)	97	100	99.4	A,PK
Nitrate (moles/liter)	0	5.0x10E-5	2.2x10E-5	A,PK
Nitrite (moles/liter)	0	5.0x10E-5	3.5x10E-6	A,PK
Organics, separable (visible or no visible organic layer)	0	none	none	A,PK
pH (pH units)	7	8	7.4	A,PK
Sodium (grams/liter)	0	0.10	0.033	A,PK
Sodium Hydroxide (grams/liter)	0	0.10	0	PK
Solids (volume %)	0	1	0.018	A,PK
Specific gravity	0.91	1.0	0.96	A,PK
Total Organic Carbon (grams/liter)	0	0.10	0.016	A,PK
Americium-241 (curies/liter)	0	2.2x10E-9	0	A,PK
Cesium-137 (curies/liter)	0	1.0x10E-4	5.5x10E-6	A,PK
$^{239/240}$Pu or (curies/liter)	0	3.6x10E-9	0	A,PK
Strontium 90 (curies/liter)	0	1.0x10E-6	4.7x10E-7	A,PK

Parameter	Minimum	Maximum	Average	Basis
Uranium (total or Uranium 233/235) (grams/liter)	0	0.00171	5.84xE-04	A,PK
Yitrium-90 (curies/liter)	0	1.0x10E-6	4.7x10E-7	PK
Neutron Absorbers (required if Pu equivalent $\geq$ 0.001g/L) Absorbers = chromium, iron, manganese, nickel, aluminum, and zirconium	NA	NA	NA	NA

VI. REACTIVITY AND STABILITY

1. What are the Reactivity Group[1] number(s) for this waste?

   106 (Water and Mixtures Containing Water)

2. Is this material stable? X____ Yes _____ No

   If no, explain: _____

3. Is this material shock sensitive? _____ Yes X____ No

   If yes, explain: _____

1. From EPA, 1984, *Design and Development of Hazardous Waste Reactivity Testing Protocol*, EPA-600/2-84-057, U. S. Environmental Protection Agency, Washington D.C. Alternatively the categories specified in 40 CFR 265 appendix V may be specified.

VII. DANGEROUS WASTE INFORMATION

1. Is this waste a dangerous waste as defined by WAC 173-303?

   X____ Yes _____ No

2. If it is a dangerous waste, list the applicable Hazardous and/or Dangerous Waste number(s) and explain the basis for the number. For example if you assign DOO1, the reason for selection is that the flash point is less than 140 °F.

Hazardous/Dangerous Waste number	Reason for selection
F001	1,1,1-Trichloroethane used for degreasing
F002, F003, F004, F005	Heel in tanker truck contains F Listed solvent waste from previous 222S lab waste transfers

3. Is waste a mixed waste? X____ Yes _____ No

4. List any reportable quantities listed in 40 CFR 302.4 which are applicable to the waste.

Constituent	Reportable quantity
F001 Waste	10 lbs
F002 Waste	1,000 lbs
F003 Waste	5,000 lbs
F004 Waste	100 lbs
F005 Waste	5,000 lbs

1.WAC 173-303, 1994, "Dangerous Waste Regulations," *Washington Administrative Code*

VIII. LAND DISPOSAL RESTRICTION INFORMATION

Fill in the following information pertaining to all applicable Land Disposal Restrictions (LDR) (See 40 CFR 268.40[1] and WAC 173-303-140[2]). For certain waste designated as D001, D002, D003, D004, and/or D0012-D043, also indicate any underlying hazardous constituents which do not meet LDR requirements (see 40 CFR 268.7[1]).

Washington and/or EPA Dangerous (Hazardous) Waste Number	Waste Constituent for which the DST system must monitor Place an * before the entry if this is for an underlying hazardous constituent.	Treatability Group (wastewater or nonwastewater)	Treatment Standard
F001, F002, F003, F004, F005	Acetone	WW (wastewater)	0.28 mg/l
	Carbon Tetrachloride	WW	0.057 mg/l
	o-cresol	WW	0.11 mg/l
	m-cresol, p-cresol	WW	0.77 mg/l
	Methylene chloride	WW	0.089 mg/l
	MEK	WW	0.28 mg/l
	Methyl Isobutyl Ketone	WW	0.14 mg/l
	1,1,1 Trichloroethane	WW	0.054 mg/l

1. 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.

2. WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

IX. SUPPLEMENTAL INFORMATION AND ACCOUNTABILITY STATEMENT

1. Is there an attachment containing additional information?

   X____ Yes _____ No (list below)

   BWHC 9856672, "Waste Encapsulation and Storage Facility Waste in 222S Laboratory Tanker".

2. I hereby certify that to the best of my knowledge all information submitted in this and all attached documents contain true and accurate descriptions of this waste. Any sample that was analyzed or submitted was representative as defined in 40 CFR 261 Appendix I[1] or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the DST customer and generator has been disclosed.

   Authorized Signature: Kip McDowell

   Name and Title: Kip McDowell, Environmental Engineer

   Date: 3/25/99

B&W Hanford Co.

a McDermott Company

To	T. M. Blaak, Chemist Double Shell Tank Engineering Lockheed Martin Hanford Corporation	S5-13
	C. H. Mulkey, Environmental Scientist Environmental Permits/Policy Lockheed Martin Hanford Corporation	R1-51
From	E. R. Hafla, Engineer WESF Technical Support Group B&W Hanford Company	S6-51
Doc No	BWHC 9856672	
Subj	WASTE ENCAPSULATION AND STORAGE FACILITY WASTE IN 222S LABORATORY TANKER	
Date	August 10, 1998	

Eric Hafla 8/12/98

With B Plant scheduled to complete deactivation by September 30, 1998, the Waste Encapsulation and Storage Facility (WESF) has to decouple from the B Plant waste system. It was determined that the WESF Low Level Waste (LLW) tank, TK-100, should be replaced to ensure a 20-year mission life. The activity that routinely generates LLW at WESF is the decontamination of manipulators for maintenance and repair. In February 1998, both liquid and sludge from TK-100 were sampled and the results are found in WMH-9852678.

Prior to the final waste transfer, each of the WESF drains was flushed with approximately 100 gallons of raw water. The last WESF LLW transfer to B Plant was made on May 18, 1998 with subsequent transfer to Tank Farms. This final transfer left about 400 gallons of sludge and about 80 gallons of liquid in TK-100. The TK-100 sources were isolated and no activities generating LLW to TK-100 have been performed since then.

On June 16, 1998, approximately 260 gallons of raw water was added for shielding purposes because workers removing the tank were receiving too much dose. On June 19, 1998, an early morning rainstorm filled TK-100 with about 900 gallons of water and TK-100 vault with an estimated 100 gallons of water. The water in the vault was later jetted into TK-100.

On July 15, 1998 about 85 gallons of deionized laboratory water was added through some facility drains to obtain samples to clear up regulatory issues concerning TCA and the facility drains. The analysis showed that, if any TCA was in the drains, it was below detectable limits. At the same time, the TK-100 contents were sampled for analysis of TOC, pH, TB, AT, TDS, and GEA. The water in TK-100 was pumped through a filter arrangement to the 222S laboratory tanker on July 30, 1998.

The analysis of the waste sample obtained in February showed WESF's LLW to be very dilute. The analysis of the water pumped into the 222S laboratory tanker is also very dilute (July 15 sample). The Waste Profile Sheet was completed using the analysis from the February sample, and the analysis of the water transferred to the 222S laboratory tanker confirmed conformance to the Waste Profile Sheet. Knowledge of the activities associated with TK-100, the isolation work, and analysis of the July 15 sample shows the water transferred into the 222S laboratory tanker is mostly rain water, with some raw and de-ionized water.

If you have any questions or comments, please call me on 372-0143.

pan

Attachment

CONCURRENCE:

Paul T Saueressig 8/12/98

P. T. Saueressig, Team Coordinator
WESF Facility Support

Date

Certification of Conformance to Information Submitted on Profile Sheet

I hereby certify that shipment # 99-01 of Waste Encapsulation & Storage Facility (WESF) liquid waste, described in "WESF LLW Waste Stream Profile Sheet, Rev. 1", which is scheduled for transfer to the DST System in April 1999:

1. Matches the information contained in the waste profile sheet,
2. The process which generated this waste has not changed since the last shipment of this waste,
3. The waste codes and requirements to meet Land Disposal Restrictions are the same as those indicated in the waste profile sheet,
4. The PCB content is less than 6 ppm, and
5. The waste is not TSCA regulated.

Name: Kip McDowell Date 3/25/99

Signature: Kip McDowell

Title: Environmental Engineer

Organization: WMH Generator Services

Name: Wayne Toebe Date 3/26/99

Signature: WE Toebe

Title: Environmental Engineer

Organization: FDH Environmental Integration

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. B. Buckley, Jr., 372-1342 A. K. McDowell, 373-5619	J. J. Badden, LMHC	WMH-9954099

Subject: WASTE TRANSFER DOCUMENTATION FOR SHIPMENT NUMBER 99-01 OF WASTE ENCAPSULATION AND STORAGE FACILITY LIQUID WASTE, REV. 1

DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		Fluor Daniel Hanford, Inc.		
		President's Office	H5-20	
		A. G. Miskho	H6-06	X
X W.E.T. per email GTM 6/23/99		W. E. Toebe	H6-23	X
		J. D. Williams	H6-06	
		Lockheed Martin Hanford Corporation		
		T. M. Blaak	S5-13	X
		M. L. Dexter	R1-51	X
		K. D. Fowler	R2-11	X
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		R. O. Bell	T3-04	X
		J. B. Buckley, Jr.	T3-04	
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		B. R. Hill	T3-02	
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		P. W. Martin	T3-04	
x GTM 6/21/99		A. K. McDowell	T3-05	
		T. L. Moore	H6-30	X
		J. O. Perkins	H6-30	X
		T. J. Plush	H6-10	
		G. C. Triner	T3-05	
		J. L. Westcott	T3-04	
		R. T. Wilde	H6-10	
		L. F. Willis	H6-30	
		JBB File/LB	T3-04	X

WASTE MANAGEMENT FEDERAL SERVICES
OF HANFORD, INC.
A WASTE MANAGEMENT COMPANY

P.O. Box 700
Richland, WA 99352-0700

June 21, 1999

WMH-9954099

Mr. J. J. Badden, Manager
Tank Farms Facility Operations
Lockheed Martin Hanford Operations S5-07
Post Office Box 1500
Richland, Washington 99352-1505

Dear Mr. Badden:

WASTE TRANSFER DOCUMENTATION FOR SHIPMENT NUMBER 99-01 OF WASTE ENCAPSULATION AND STORAGE FACILITY LIQUID WASTE, REV. 1

The waste designation and Land Disposal Restriction (LDR) information for Waste Encapsulation and Storage Facility Liquid Waste Shipment #99-01 provided to Tank Farms in WMH-9951979 has been reevaluated and revised. The change consists of adding D002 waste code to the waste designation, conservatively adding additional D codes to the LDR form and identifying polychlorinated biphenyls as an underlying hazardous constituent. All codes identified on the revised LDR form are found on the Hanford Facility Part A Permit Application for the Double Shell Tank System.

Please find attached the revised LDR form and page changes to the waste stream profile sheet. If you have any questions associated with this information, please call Mr. A. K. McDowell of my staff on 373-5619.

Very truly yours,

J. B. Buckley, Jr., Manager
Generator Services

bs

Attachments 2

WMH-9954099

ATTACHMENT 1

LAND DISPOSAL NOTIFICATION AND CERTIFICATION, PACKAGE: WESF-99-01

Consisting of 3 pages,
Including cover page

LAND DISPOSAL NOTIFICATION AND CERTIFICATION
PACKAGE: WESF99-01

Generator Name: SWPO
Package No.: WESF99-01
Manifest Doc. No.: _____
WSRd No.: 404 01
Manifest Line Item: ____
EPA ID.#: WA7890008967

1. Wastewater X Non-wastewater ___

2. USEPA Hazardous Waste Codes	3. Subcategory	4. Waste Management Reference Letter
D002	Corrosive characteristic wastes	A
D004	arsenic characteristic	A
D005	barium characteristic	A
D006	cadmium characteristic	A
D007	chromium characteristic	A
D008	lead characteristic	A
D009	all wastewaters	A
D010	selenium characteristic	A
D011	silver characteristic	A
D018	benzene characteristic	A
D019	carbon tetrachloride characteristic	A
D022	chloroform characteristic	A
D028	1,2-dichloroethane characteristic	A
D029	1,1-dichloroethylene characteristic	A
D030	2,4-dinitrotuoluene characteristic	A
D033	hexachlorobutadiene characteristic	A
D034	hexachloroethane characteristic	A
D035	methyl ethyl ketone characteristic	A
D036	nitrobenzene characteristic	A
D038	pyridine characteristic	A
D039	tetrachloroethylene characteristic	A
D040	trichloroethylene characteristic	A
D041	2,4,5-trichlorophenol characteristic	A
D043	vinyl chloride characteristic	A
F001	F001-F005 solvent wastes	A
F002	F001-F005 solvent wastes	A
F003	F001-F005 solvent wastes	A
F004	F001-F005 solvent wastes	A
F005	F001-F005 solvent wastes	A

6a. X I have reviewed the UTS list of 268.48 and per 268.7(a), I have determined that underlying hazardous constituents are present in this waste. The underlying hazardous constituents are identified in the Underlying Hazardous Constituent Addendum to the LDR form.

6b. The determination of underlying hazardous constituents was based on:

X Generators knowledge of the waste X Analysis (attach when applicable)

A - NOTICE FOR WASTE THAT REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).

F001 - F005 SPENT SOLVENT CONSTITUENTS

1,1,1-TRICHLOROETHANE
ACETONE
CRESOL
4-METHYL-2-PENTANONE
METHYL ETHYL KETONE
DICHLOROMETHANE

UNDERLYING HAZARDOUS CONSTITUENTS	CONCENTRATION	UNIT
POLYCHLORINATED BIPHENYLS	< 50	MG/L

LAND DISPOSAL NOTIFICATION AND CERTIFICATION
PACKAGE: WESF99-01

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Kip McFarell Title Environmental Engineer Date 6/17/99
Cmmt Generator Services

WMH-9954099

ATTACHMENT 2

PAGE CHANGES TO WASTE STREAM PROFILE SHEET

Consisting of 5 pages,
Including cover page

2. Is this material stable? X____ Yes _____ No

If no, explain: _____

_____

3. Is this material shock sensitive? _____ Yes X____ No

If yes, explain: _____

_____

1. From EPA, 1984, *Design and Development of Hazardous Waste Reactivity Testing Protocol*, EPA-600/2-84-057, U. S. Environmental Protection Agency, Washington D.C. Alternatively the categories specified in 40 CFR 265 appendix V may be specified.

VII. DANGEROUS WASTE INFORMATION

1. Is this waste a dangerous waste as defined by WAC 173-303?

X____ Yes _____ No

2. If it is a dangerous waste, list the applicable Hazardous and/or Dangerous Waste number(s) and explain the basis for the number. For example if you assign DOO1, the reason for selection is that the flash point is less than 140 °F.

Hazardous/Dangerous Waste number	Reason for selection
F001	1,1,1-Trichloroethane used for degreasing
F002, F003, F004, F005	Heel in tanker truck contains F Listed solvent waste from previous 222S lab waste transfers
D002	Heel in tanker from previous transfer was pH > 12.5; conservative calculation indicates current contents could exceed 12.5

3. Is waste a mixed waste? X____ Yes _____ No

4. List any reportable quantities listed in 40 CFR 302.4 which are applicable to the waste.

Constituent	Reportable quantity
F001 Waste	10 lbs
F002 Waste	1,000 lbs
F003 Waste	5,000 lbs
F004 Waste	100 lbs
F005 Waste	5,000 lbs
D002 Waste	100 lbs

1.WAC 173-303, 1994, "Dangerous Waste Regulations," *Washington Administrative Code*

VIII. LAND DISPOSAL RESTRICTION INFORMATION

Fill in the following information pertaining to all applicable Land Disposal Restrictions (LDR) (See 40 CFR 268.40[1] and WAC 173-303-140[2]). For certain waste designated as D001, D002, D003, D004, and/or D0012-D043, also indicate any underlying hazardous constituents which do not meet LDR requirements (see 40 CFR 268.7[1]).

Washington and/or EPA Dangerous (Hazardous) Waste Number	Waste Constituent for which the DST system must monitor Place an * before the entry if this is for an underlying hazardous constituent.	Treatability Group (wastewater or nonwastewater)	Treatment Standard
F001, F002, F003, F004, F005	Acetone	WW (wastewater)	0.28 mg/l
	o-cresol	WW	0.11 mg/l
	m-cresol, p-cresol	WW	0.77 mg/l

D029	1,1-dichloroethylene	WW	0.025 mg/l & meet 268.48
D030	2,4-dinitrotolulene	WW	0.32 mg/l & meet 268.48
D033	Hexachlorobutadiene	WW	0.055 mg/l & meet 268.48
D034	Hexachloroethane	WW	0.055 mg/l & meet 268.48
D035	MEK	WW	0.28 mg/l & meet 268.48
D036	Nitrobenzene	WW	0.068 mg/l & meet 268.48
D038	Pyridine	WW	0.014 mg/l & meet 268.48
D039	Tetrachloroethylene	WW	0.056 mg/l & meet 268.48
D040	Trichloroethylene	WW	0.054 mg/l & meet 268.48
D041	2,4,5-Trichloroophenol	WW	0.18 mg/l & meet 268.48
D043	Vinyl Chloride	WW	0.27 mg/l & meet 268.48
UHC	Total PCBs	WW	0.1 mg/l

1. 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.

2. WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
J. B. Buckley, Jr., 372-1342 G. C. Triner, 372-0771 A. K. McDowell, 373-5619	J. J. Badden, LMHC	WMH-9954395

Subject: TRANSMITTAL OF WASTE ENCAPSULATION AND STORAGE FACILITY LOW-LEVEL WASTE STREAM PROFILE SHEET, REVISION 3

DISTRIBUTION

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		J. L. Westcott	T3-04	
		R. T. Wilde	H6-10	
		L. F. Willis	H6-30	
		JBB File/LB	T3-04	X

WASTE MANAGEMENT FEDERAL SERVICES
OF HANFORD, INC.
A WASTE MANAGEMENT COMPANY

P.O. Box 700
Richland, WA 99352-0700

June 28, 1999

WMH-9954395

Mr. J. J. Badden, Manager
Tank Farms Facility Operations
Lockheed Martin Hanford Corporation S5-07
Post Office Box 1500
Richland, Washington 99352-1505

Dear Mr. Badden:

TRANSMITTAL OF WASTE ENCAPSULATION AND STORAGE FACILITY
LOW-LEVEL WASTE STREAM PROFILE SHEET, REVISION 3

Please find Attached, Revision 3, of the Waste Encapsulation and Storage Facility Low-Level Profile Sheet and associated transfer paperwork.

If you have any questions you may contact Mr. A. K. McDowell, Technical Services, on 373-5619.

Very truly yours,

J. B. Buckley, Jr., Manager
Generator Services

nmh

Attachment

WMH-9954395

ATTACHMENT

WESF Low-Level Waste Stream Profile Sheet, Rev. 3

Consisting of 12 pages,
Including cover page

WASTE STREAM PROFILE SHEET

I. WASTE SHIPPER INFORMATION

1. DST customer (waste shipper/generator):

   WMH Generator Services

2. Contact: Kip McDowell

3. Phone: 373-5619 4. Mail stop: T3-05

II. GENERAL WASTE INFORMATION

1. DST customer: WMH Generator Services

2. Waste stream name: WESF LLW

3. Process generating waste: Rain water runoff, Raw water, heel from last liquid batch in WESF Tk-100. (When in operation, the activity that generated LLW at WESF was the decontamination of manipulators for maintenance and repair. The last WESF LLW transfer to B-Plant was made on May 18, 1998 with subsequent transfer to Tank Farms. Tk-100 was then removed from service.) The tanker truck which will be used to transport the WESF LLW to 204-AR does contain a heel from previous 222S Lab waste transfers. The information in this profile sheet takes into account the contribution from the 222S waste heel.

4. Anticipated volume including any flush water:

   2,700 gallons

5. Anticipated transfer frequency:

   One time

6. Method of transfer (railcar, truck, pipeline):

219-S Tanker Truck

7. Were analytical data used to fill out this profile sheet?

X____ Yes _____ No

If yes, cite document used as the basis for sampling and analysis (i.e., waste analysis plan and/or sampling analysis plan) and attach a complete copy of the latest results.

WMH-9852678 for WESF waste; SAF # S8-164 for sampling of tanker truck heel

8. Does the waste contain waste which was not generated as part of Hanfords Cleanup?

_____ Yes __X__ No

9. Is the waste subject to the Toxic Substance Control Act? ___ Yes __X__ No

See email, W.E. Toebe to C. H. Mulkey, "Re: PCBs and 222-S Lab Truck", dated 4/26/99.

10. Is the waste subject to any disposal requirements other than those mandated under the Resource Conservation and Recovery Act?___Yes __X__ No

If yes, identify those requirements _____

11. At the point of origination, does the waste contain 10% or more organics?
_____ Yes __X__ No

12. Does the waste qualify for the exemption for mixed waste listed in 40 C.F.R. 264.1080 (b) (6)? __X__ Yes ___No

13. Does waste contain any material that was generated by a spill? ___ Yes __X__ No

III. WASTE STREAM COMPOSITION

List all constituents which are greater than 1,000 mg/kg.

1. Component	2. Concentration range (units)	3. Average % (sum of average % of waste stream components must total 100)	4. Basis for composition
Water	98% to 100%	98.4 %	PK & A
Other	0.2 % to 0.7 %	0.6 %	PK & A
Solids	0 to 2%	1	A & PK

IV. PHYSICAL PROPERTIES

1. Physical state at 70°F (circle all applicable)

   Liquid Semisolid Solid
   Slurry Sludge Gas

2. Viscosity at 70°F *(degree)* X____ < 10 mPa/ s' _____ > 10 mPa/ s'

3. Is waste multi-layered? X____ Yes _____ No

   If yes, describe and quantify each layer:

   a. (Top) > From WESF liquid waste – 99.7 % liquid, 0.3 % solids

   b. (Middle) No middle layer

   c. (Bottom) <; Heel from previous 222S lab waste transfers – 73.4 % liquid, 26.6 % solid

   d. Suspended solids: X < 1% __ between 1% and 10% __ > 10%

   e. Flash point: X > 200 °F __ between 100 and 200 °F __ < 100 °F

   f. Color: colorless

4 Does the waste contain polychlorinated biphenyls (PCB) X Yes __ No
If so what is the concentration range:

Maximum: 6 ppm in solids on a dry weight basis per analysis
Minimum: 0

5. Does the waste contain organics X Yes ____ No

If yes what is the range of the organics

Maximum: 16 mg/l per analysis
Minimum: 13.8 mg/l per analysis

[1] Millipascals per second

V. SPECIFIC ANALYSIS OF WASTE

Fill in the following chart giving maximum, minimum, or averages for each specific analyte. Also state whether this information is based on process knowledge or actual analytical data.

Parameter	Minimum	Maximum	Average	Basis
Ammonia (grams/liter)	0	0.2	0	A,PK
Chloride (only for waste going to 204-AR) (moles/liter)	0	0.001	0.00024	A,PK
Energetics (net exotherm or no net exotherm)	0	no net	0	A,PK
Hydroxide (moles/liter)	1.0x10E-8	.1	1.0e-7	A.PK
Moisture (volume % water)	98	100	98.4	A,PK
Nitrate (moles/liter)	0	5.0x10E-5	2.2x10E-5	A,PK
Nitrite (moles/liter)	0	5.0x10E-5	3.5x10E-6	A,PK

Parameter	Minimum	Maximum	Average	Basis
Organics, separable (visible or no visible organic layer)	none	none	none	A,PK
pH (pH units)	7	14	7.4	A,PK
Sodium (grams/liter)	0	0.10	0.033	A,PK
Sodium Hydroxide (grams/liter)	0	2.0	0	PK
Solids (volume %)	0	2	1	A,PK
Specific gravity	0.97	1.0	0.99	A,PK
Total Organic Carbon (grams/liter)	0	0.10	0.016	A,PK
Americium-241 (curies/liter)	0	2.2x10E-9	0	A,PK
Cesium-137 (curies/liter)	0	1.0x10E-4	5.5x10E-6	A,PK
$^{239/240}$Pu or (curies/liter)	0	3.6x10E-9	0	A,PK
Strontium 90 (curies/liter)	0	1.0x10E-6	4.7x10E-7	A,PK
Uranium (total or Uranium 233/235) (grams/liter)	0	0.00171	5.84xE-04	A,PK
Yitrium-90 (curies/liter)	0	1.0x10E-6	4.7x10E-7	PK
Neutron Absorbers (required if Pu equivalent $\geq$ 0.001g/L) Absorbers = chromium, iron, manganese, nickel, aluminum, and zirconium	NA	NA	NA	NA

VI. REACTIVITY AND STABILITY

1. What are the Reactivity Group[1] number(s) for this waste?

   106 (Water and Mixtures Containing Water), 10 (Caustics)

2. Is this material stable? X____ Yes _____ No

If no, explain: _____

_____

3. Is this material shock sensitive? _____ Yes X____ No

If yes, explain: _____

_____

1. From EPA, 1984, *Design and Development of Hazardous Waste Reactivity Testing Protocol*, EPA-600/2-84-057, U. S. Environmental Protection Agency, Washington D.C. Alternatively the categories specified in 40 CFR 265 appendix V may be specified.

VII. DANGEROUS WASTE INFORMATION

1. Is this waste a dangerous waste as defined by WAC 173-303?

X____ Yes _____ No

2. If it is a dangerous waste, list the applicable Hazardous and/or Dangerous Waste number(s) and explain the basis for the number. For example if you assign DOO1, the reason for selection is that the flash point is less than 140 °F.

Hazardous/Dangerous Waste number	Reason for selection
F001	1,1,1-Trichloroethane used for degreasing
F002, F003, F004, F005	Heel in tanker truck contains F Listed solvent waste from previous 222S lab waste transfers
D002	Heel in tanker from previous transfer was pH > 12.5; conservative calculation indicates current contents could exceed 12.5

3. Is waste a mixed waste? X____ Yes _____ No

4. List any reportable quantities listed in 40 CFR 302.4 which are applicable to the waste.

Constituent	Reportable quantity
F001 Waste	10 lbs
F002 Waste	1,000 lbs
F003 Waste	5,000 lbs
F004 Waste	100 lbs
F005 Waste	5,000 lbs
D002 Waste	100 lbs

1.WAC 173-303, 1994, "Dangerous Waste Regulations," *Washington Administrative Code*

VIII. LAND DISPOSAL RESTRICTION INFORMATION

Fill in the following information pertaining to all applicable Land Disposal Restrictions (LDR) (See 40 CFR 268.40[1] and WAC 173-303-140[2]). For certain waste designated as D001, D002, D003, D004, and/or D0012-D043, also indicate any underlying hazardous constituents which do not meet LDR requirements (see 40 CFR 268.7[1]).

Washington and/or EPA Dangerous (Hazardous) Waste Number	Waste Constituent for which the DST system must monitor Place an * before the entry if this is for an underlying hazardous constituent.	Treatability Group (wastewater or nonwastewater)	Treatment Standard
F001, F002, F003, F004, F005	Acetone	WW (wastewater)	0.28 mg/l
	o-cresol	WW	0.11 mg/l
	m-cresol, p-cresol	WW	0.77 mg/l

	Methylene chloride	WW	0.089 mg/l
	MEK	WW	0.28 mg/l
	Methyl Isobutyl Ketone	WW	0.14 mg/l
	1,1,1 Trichloroethane	WW	0.054 mg/l
D002	Corrosive	WW	DEACT & meet 268.48
D004	Arsenic	WW	1.4 mg/l & meet 268.48
D005	Barium	WW	1.2 mg/l & meet 268.48
D006	Cadmium	WW	0.69 mg/l & meet 268.48
D007	Chromium	WW	2.77 mg/l & meet 268.48
D008	Lead	WW	0.69 mg/l & meet 268.48
D009	Mercury	WW	0.15 mg/l & meet 268.48
D010	Selenium	WW	0.82 mg/l & meet 268.48
D011	Silver	WW	0.43 mg/l & meet 268.48
D018	Benzene	WW	0.14 mg/l & meet 268.48
D019	Carbon Tetrachloride	WW	0.057 mg/l & meet 268.48
D022	Chloroform	WW	0.046 mg/l & meet 268.48
D028	1,2-dichloroethane	WW	0.21 mg/l & meet 268.48

D029	1,1-dichloroethylene	WW	0.025 mg/l & meet 268.48
D030	2,4-dinitrotolulene	WW	0.32 mg/l & meet 268.48
D033	Hexachlorobutadiene	WW	0.055 mg/l & meet 268.48
D034	Hexachloroethane	WW	0.055 mg/l & meet 268.48
D035	MEK	WW	0.28 mg/l & meet 268.48
D036	Nitrobenzene	WW	0.068 mg/l & meet 268.48
D038	Pyridine	WW	0.014 mg/l & meet 268.48
D039	Tetrachloroethylene	WW	0.056 mg/l & meet 268.48
D040	Trichloroethylene	WW	0.054 mg/l & meet 268.48
D041	2,4,5-Trichloroophenol	WW	0.18 mg/l & meet 268.48
D043	Vinyl Chloride	WW	0.27 mg/l & meet 268.48
* UHC	Total PCBs	WW	0.1 mg/l

1. 40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, as amended.

2. WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

IX. SUPPLEMENTAL INFORMATION AND ACCOUNTABILITY STATEMENT

1. Is there an attachment containing additional information?

   _____ Yes X No (list below)

2. I hereby certify that to the best of my knowledge all information submitted in this and all attached documents contain true and accurate descriptions of this waste. Any sample that was analyzed or submitted was representative as defined in 40 CFR 261 Appendix I[1] or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the DST customer and generator has been disclosed.

   Authorized Signature: Kip McDowell

   Name and Title: Kip McDowell, Environmental Engineer

   Date: 6/23/99

Certification of Conformance to Information Submitted on Profile Sheet

I hereby certify that shipment # 99-01 of Waste Encapsulation & Storage Facility (WESF) liquid waste, described in "WESF LLW Waste Stream Profile Sheet, Rev. 3", which is scheduled for transfer to the DST System on June 29, 1999:

1. Matches the information contained in the waste profile sheet,
2. The process which generated this waste has not changed since the last shipment of this waste,
3. The waste codes and requirements to meet Land Disposal Restrictions are the same as those indicated in the waste profile sheet,
4. The PCB content is less than 6 ppm, and
5. The waste is not TSCA regulated.

Name: Kip McDowell Date 6/23/99

Signature: Kip McDowell

Title: Environmental Engineer

Organization: WMH Generator Services

PIN # 9403139
Tank Farms Drum

PIN # 9403139

Tank Farmo Drum

Waste Management Federal Services of Hanford, Inc. | **Internal Memo**

From: Generator Services - Operating Facilities 33240-99-YMS-009
Phone/MSIN: 373-2887 T3-04
Date:
Subject: LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM FOR CONTAINER 9403139 (ETFF-95-132-042): CORRECTION AND UPDATE

To:	G. C. Triner	T3-05
cc:	P. W. Martin	T3-04
	P. C. Miller	R1-51
	M. F. Pascual	T4-05
	J. J. Street	T3-04
	YMS File/LB	T3-04

Reference(s):

1. Letter, L. Ruud DOEC to B. A. Austin, FDH, "Notice of Correction From the 1998 Land Disposal Restrictions Compliance Inspection at Hanford (TPA) Milestone M-26-01H", 9953849 A, dated June 2, 1999.
2. LDR Notification and Certification Form for Container 9403139 (ETFF 95-132-042) Portfolio 28043.

By this memorandum, I am submitting the attached revised Land Disposal Restriction (LDR) Notification and Certification Form, Attachment 1, for container 9403139 (ETFF-95-132-042). This form should replace the original LDR Notification and Certification Form submitted with the shipment of Portfolio 28043 in August 1996 (Reference 2).

This revised form corrects the error identified in Reference 1, i.e., the failure to identify Underlying Hazardous Constituents (UHCs) in the waste. Additionally, the attached form updates the LDR information to the current effective LDR regulations of 40 CFR Part 268, including identification of the most restrictive UHC limits from Phase II and Phase IV Land Disposal Restrictions. LDR and UHC determinations have been made for each inner bag of waste at the point of generation. Table 1, Attachment 2, shows the bag-by-bag designation and UHCs, along with a brief description of the process knowledge and analytical basis for these determinations.

Please include the attached LDR Notification and Certification Form in the TSD operating record. Additionally, the Solid Waste Information Tracking System (SWITS) should be updated to list the UHC constituents and their concentrations as itemized on the LDR form. Further,

RECORD COPY

9403139

we noted SWITS incorrectly lists waste code D005, but not D006. The D005 code should be removed from the SWITS record and waste code D006 should be added.

If you have any questions, please contact M. D. Ellefson at 372-0733.

Y. M. Shehadeh
Team Lead

bs

Attachment 2

RECORD COPY

33240-99-YMS-009

ATTACHMENT 1

LAND DISPOSAL NOTIFICATION AND
CERTIFICATION PACKAGE:
9403139

Consisting of 2 pages,
Including cover page

RECORD COPY

SWIR353

LAND DISPOSAL NOTIFICATION AND CERTIFICATION PACKAGE: 9403139

Generator Name: TANKFARM
Package No.: 9403139

Manifest Doc. No.: 28043
WSRd No.: 522 00

Manifest Line Item: 010
EPA ID.#: WA7890008967

1. Wastewater ___ Non-wastewater X

2. USEPA Hazardous Waste Codes	3. Subcategory	4. Waste Management Reference Letter
D006	cadmium characteristic	A
D007	chromium characteristic	A
D008	lead characteristic	A
D010	selenium characteristic	A
D018	benzene characteristic	A

6a. X I have reviewed the UTS list of 268.48 and per 268.7(a), I have determined that underlying hazardous constituents are present in this waste. The underlying hazardous constituents are identified in the Underlying Hazardous Constituent Addendum to the LDR form.

6b. The determination of underlying hazardous constituents was based on:

X Generators knowledge of the waste X Analysis (attach when applicable)

A - NOTICE FOR WASTE THAT REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).

UNDERLYING HAZARDOUS CONSTITUENTS	CONCENTRATION	UNIT
BARIUM	8.66	MG/L
ETHYLBENZENE	280	MG/KG
SILVER	1.33	MG/L
TOLUENE	1300	MG/KG
XYLENE (MIXED ISOMERS)	1540	MG/KG

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature [signature] Title Sr. Scientist Date 6/24/89

RECORD COPY

33240-99-YMS-009

ATTACHMENT 2

DESIGNATION AND PHASE II / PHASE IV UNDERLYING
HAZARDOUS CONSTITUENTS FOR
9403139

Consisting of 2 pages,
Including cover page

RECORD COPY

Table 1
Designation and Phase II / Phase IV Underlying Hazardous Constituents for 9403139

Bag No.	Waste Description	Basis of Designation and LDR Determination	Waste Codes	UHCs
1	Cleanup materials from gasoline/oil spill	Waste code D018 and organic UHCs are assigned based on MSDS 18212. Waste was sampled (sample number S6076-01) to evaluate suspected TC metals.	D018	Cadmium, lead, ethyl benzene, toluene, xylene
2	Diesel fuel spill cleanup	The designation is conservatively based on MSDS 21513A; Tank Farms data from similar diesel spills indicates that D018 is not appropriate.	WT02	Not applicable
3/4	Solvent (Solvo-Kleen) rags from compressor cleaning	Designation is based on MSDS 12292 and analysis of sample FT-5036-03. The MSDS indicates that the solvent is non-regulated and does not contribute UHCS. Sample analysis indicates metal constituents.	D006, D008, D010	Barium, chromium, silver
5	Rags with mineral spirits	This material was designated based on MSDS 18104.	None	Not applicable
6/7	Unused products - nickel based lubricant products	The materials were designated based on MSDSs 11717 and 17022.	None	Not applicable
8	Cured epoxy paint contaminated materials	This material is designated based on MSDS 33729; the product contains chromium.	D007	None
9	Unused product - Fast Orange hand cleaner	This material is designated based on MSDS 25424.	WT02	Not applicable
10	Decontamination waste containing CitriStrip	This waste is designated based on MSDS 33021.	WT02	Not applicable
Summary of applicable waste codes and UHCs for drum. Note that constituents for which waste codes are assigned are not listed as UHCs.			D006, D007, D008, D010, D018, WT02	Barium, silver, ethyl benzene, toluene, xylene

RECORD COPY

ADDENDUM

Portfolio 28043

Resolution Report

Mark Ellefson, T3-05
Telephone: 372-0733

PIN#: 9403139
Facility: CWC

As part of Ecology's LDR inspection, corrections need to be made to the SWITS data for this container. The following are the required changes:

- Remove waste code D005
- Add waste code D006
- Add the following constituents to the waste components record:

Barium	0.000866%
Ethylbenzene	0.028%
Silver	0.000133%
Toluene	0.13%
Xylene	0.154%

These changes do not affect the WSRd or management of the waste in the CWC.

RECORD COPY

PIN: 9800899
PNNL Drum Information

PN: 9800899

PNNL: Drum Info.

ADDENDUM

Resolution Report

Mark Ellefson 6/24/99
~~Richard L. Austin~~ T3-05
Telephone: (509) 372-0678

MJE 6/24/99
PIN #: ~~980899~~ 9800899
Facility: CWC

As part of the LDR Corrections

a preshipment review and verification was completed.

PNNL submitted the attached changes to the hazardous constituents and LDR Notification and Certification for this container. Please make the changes indicated in the attached letter to the SWITS database and incorporate the corrected paperwork in the TSD files. These changes do not affect the management of the container, which is currently in storage at CWC.

This waste should be managed according to the requirements of WSRd 402-01 (see attached); and should be stored at the CWC for Acid Storage

This container should be marked and labeled to meet the transportation and storage requirements for wastes under ~~WSRd 402-01~~

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
G. T. Thornton, PNNL	J. B. Buckley, Jr., WMH	WMH-9954325

Subject: CHANGES TO LAND DISPOSAL RESTRICTION NOTIFICATION INFORMATION FOR DRUM PNL-MW-98-039 (CIN 9800899) FROM PACIFIC NORTHWEST NATIONAL LABORATORY

DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		Waste Management Federal Services of Hanford, Inc.		
		J. B. Buckley, Jr.	T3-04	X
		M. L. Martin	P8-34	X
		G. C. Triner	T3-05	X
		M. S. Waters	T3-05	X
		JBB File/LB	T3-04	X
		Waste Management Federal Services, Inc., Northwest Operations		
		J. A. Nielsen	T3-05	X

Pacific Northwest
National Laboratory
Operated by Battelle for the
U.S. Department of Energy

June 15, 1999

Mr. J.B. Buckley, Jr.
Manager, Generator Services
Waste Management Federal Services
Of Hanford, Inc.
P.O. Box 700, MSIN T3-04
Richland, WA 99352-0700

Dear Mr. Buckley:

CHANGES TO LAND DISPOSAL RESTRICTION NOTIFICATION INFORMATION FOR DRUM PNL-MW-98-039 (CIN 9800899) FROM PACIFIC NORTHWEST NATIONAL LABORATORY

In August 1998, the Department of Ecology performed an inspection at CWC and the above mentioned PNNL container was selected to be subject to a full suite of chemical analysis. As a result of these analyses several constituents were identified above the Universal Treatment Standards (UTS) levels that had not been reported on the Solid Waste Storage/Disposal Request (SWSDR) and LDR forms. The constituents indicated in the analytical report were acetone, methylene chloride, chloroform, 2-nitrophenol, and 2,4-dinitrophenol.

Upon further investigation of the waste generating process, it was determined that the acetone, chloroform, and 2,4-dinitrophenol could reasonably be expected to have been contributed by the process. However, the methylene chloride and 2-nitrophenol could only be deduced to be contamination from the analytical process or breakdown products from other chemicals used in the generating process. But since they were identified by the analysis they will be carried as UHCs.

Therefore, the following changes need to be made to the documents associated with PNL-MW-98-039 (CIN 9800899).

Please add chloroform at 1.0e-7%, 2,4-dinitrophenol at 1.0e-6%, and 2-nitrophenol at 1e-7%, to sections 65 and 66 respectively on the SWSDR. Section 67 should read "liquid" for each constituent.

Item # 3908 on the packing slip should include 7.6 ppm acetone, 0.88 ppm chloroform, 20 ppm 2,4-dinitrophenol, 4.5 ppm methylene chloride, and 0.85 ppm 2-nitrophenol. The F003 waste code should also appear under the WDOE code column as the acetone was used as a solvent.

902 Battelle Boulevard • P.O. Box 999 • Richland, WA 99352

Telephone (509) 376-7688 ■ e-mail thornton.glenn@pnl.gov ■ Fax (509) 373-5744

The UHC Addendum of the LDR form should include acetone, chloroform, 2,4-dinitrophenol, and 2-nitrophenol as UHCs. All should have the management code "A".

Attached are copies of the forms with the corresponding changes. If you have any questions regarding these changes, please contact D.L. McMullin, of my staff, on 373-5575.

Very truly yours,

Glenn T. Thornton, Manager
Radioactive Waste & Materials Group

GTT:jkj

Attachment

SOLID WASTE STORAGE / DISPOSAL RECORD

STORAGE / DISPOSAL LOCATION INFORMATION

1. Area	4. Module	7. Beginning Coordinate	8. Ending Coordinate
2. Facility	5. Tier	N	N
3. Unit	6. Position	W	W

I Certify that a physical inspection of the waste package to the extent possible and a cross check of the applicable documentation have been performed in accordance with Solid Waste Operations Procedures.

9. Signature	10. Date

11. Primary PIN (CIN) 980899	12. Secondary PIN PNL-MW-98-039
13. Waste Category [x]Cat 1 [ ] Cat 3 [ ] > Cat 3	14. Classification [] LLW [x] MW [ ] TRU [ ] TRU-M

15. Is Waste Classified [ ] Y [x]N	20. Container Type 55 gal galvanized	25. Tare Wt. (Kg) 29
16. Company PNNL	21 LxWxH or DxL 24" X 35"	26. Gen Group ID PNNL
17. Point of Origin 305B/300	22. Cont. Vol. (M^3) 0.208	27. Contact Shari J Crowner
18. Billing Code K63218	23. Date Packaged 4/29/98	28. Address P8-45
19. WRM No. N/A	24. Gross Wt. (Kg) 101	29. Phone 376-3980

I Certify that, to the best of my knowledge, the information entered in this and any attached documentation is complete and accurate, and the waste package is in compliance with -EP-0063 and the indicated Waste Specification Record (WSRd).

30. Signature Shari J Crowner	31. Date 8-20-98

References

32. WSRd No. 402-00	33. RSR No. B3459	34. DOE/NRC 741 No. NA	PDR No. NA

36. SWIMS Cat. NC	39. Seal No. NA	TRU/TRU-M WASTE ONLY
37. WRAP Cat. CL	40. Dose Rate 10 mR/hr @ contact	42 Org. Mat. Vol. % NA
38. Thermal Power 8.23e-05 W/m^3	41. DE Curies NA	43. Org Mat. Wt. (Kg) NA

44. FISSION / ACTIVATION NUCLIDES

Nuclide	Curies	Nuclide	Curies	Nuclide	Curies
Co-60	8.66e-04	Sr-90	2.17e-04	Cs-137	6.33e-04
Eu-154	1.55e-06	Ni-63	5.015e-5	Cd-109	7.306e-05
Co-57	2.164e-05	Sr-85	9.28e-05	Zn-65	2.38e-06
Ba-133	6.6e-08	Cs-134	2.28e-07		

46. TRU / FISSILE / SOURCE MATERIAL

Nuclide	Weight (g)	PE Ci	FGE	Alpha Ci	Nuclide	Weight (g)	PE Ci	FGE	Alpha Ci
Pu-239	0.000735	N/A	N/A	N/A	NA/	N/A	N/A	N/A	N/A
Am-241	2.23E-06								
U-235	1.282407								
U-238	130.2679								
Np-237	0.00186								
U-234	9.73E-07								

47. ^{239}Pu Dist_na_%	48. Neutron Dose NA	49. Totals	131.6			

SOLID WASTE STORAGE / DISPOSAL RECORD (REV 3. 11/17/94)

50. Primary PIN (CIN) 9800899	51. Secondary PIN PNL-MW-98-039	
52. WA State Waste Designation [X] DW [ ] EHW [ ] N/A	53. Manifest No. 98017	54. Manifest Date 8-20-98
55. Applicable Waste Codes D002, D006, D007, D008, D011, D030, F001, F002, F003, F004, F005, WT02, WP02		56. Is waste LDR? [X]Y [ ]N Is waste Debris [ ] Y [X] N
57. Waste generating Description Analytical and research waste	58. PH <2	59. Flash Point N/A
	60. Estimated Liquid Volume (L)	

61. Article Description	62. Estimated Volume %	63. Estimated Wt. (kg)
90 mil HDPE liner	7	5.5
anti-corrosive rad pad	0.1	0.1
polypropylene absorbant	42.9	5.03
glass	2	4
plastic	3	3
Containerized liquid (hazardous and non-hazardous constituents) see block 65	45	54.37
64. TOTALS	100	72

65. Hazardous Constituent	66. Weight %	67. Physical Properties
Nitric acid (7697-37-2)	2.322E-03	liquid
Hydrochlroic acid (7647-01-0)	3.678E-06	Liquid
Chromium (7440-47-3)	1.471E-05	liquid
Lead (7439-92-1)	6.081E-04	liquid
o-cresol (95-48-7)	1.006E-06	liquid
p-cresol (106-44-5)	1.006E-06	liquid
Acetone (67-64-1)	2.642E-06	liquid
methylene chloride (75-09-2)	1.398E-02	liquid
methyl ethyl ketone (78-93-3)	2.055E-07	liquid
methyl isobutyl ketone (108-10-1)	2.642E-07	liquid
1,1,1-trichloroethane (71-55-6)	2.202E+07	liquid
m-cresol (108-39-4)	1.006E-06	liquid
Silver (7440-22-2)	1.733E-04	liquid
Cadmium (7440-43-9)	1.048E-05	liquid
sulfuric acid (7664-93-9)	2.122E+00	liquid
sodium hydroxide (1310-73-2)	1.048E-02	liquid

68. Comments none

SOLID WASTE STORAGE / DISPOSAL RECORD (REV 3. 11/17/94)

50. Primary PIN (CIN) 9800899	51. Secondary PIN PNL-MW-98-039	
65. Hazardous Constituent(continued)	66. Weight %	67. Physical Properties
hydrofluoric acid (7664-39-3)	3.092E-01	liquid
Ethanol (64-17-5)	6.621E-02	liquid
sodium phosphate (7601-54-9)	1.471E-02	liquid
oxalic acid (144-62-7)	4.598E-04	liquid
ammonium binoxalate (5972-72-5)	4.598E-04	liquid
2,4-dinitrotoluene	~~2.~~ 1,60c-3	liquid
Chloroform	1e-7	liquid
2,4-dinitrophenol	1e-6	liquid
2-nitrophenol	1e-7	liquid

7-31-98

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: SJ CROWNER/ US DOE Manifest Doc. No. 98017

WSRd No.402-00 EPA ID. # WA7890008967 State Manifest No. (If applicable) N/A

COMPLETE THE FOLLOWING FORM USING THE INSTRUCTIONS PROVIDED IN WHC-EP-0063 Appendix I.

1. Check One: Wastewater O Non-wastewater X

REF #	2. USEPA HAZARDOUS WASTE CODE(S)	3. SUBCATEGORY: ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE CHECK NONE		4. HOW MUST THE WASTE BE MANAGED? ENTER APPROPRIATE REFERENCE LETTER
		DESCRIPTION	NONE	
1	D002	CORROSIVE MANAGED IN NON-CWA		A
2	D006		X	A
3	D007		X	A
4	D008		X	A
5	D011		X	A
6	D030		X	A
7	F001		X	A
8	F002		X	A
9	F003		X	A

X F001-F005 hazardous constituents are listed on the F001-F005 Spent Solvent Constituent Addendum.
O F039 hazardous constituent(s) are identified on the F039 Hazardous Constituent Addendum.
X Additional USEPA codes and subcategories are listed on the supplemental sheet provided.

5. If this waste is subject to any California List restrictions, check the appropriate box and enter the letter (either A, C1, C2) referencing the applicable notice or certification statement next to the restriction:

O Liquid wastes containing Nickel at greater than or equal to 134 mg/l. _____
O Liquid wastes containing Thallium at greater than or equal to 130 mg/l. _____
O Liquid wastes containing PCBs at greater than or equal to 50 ppm. _____
O Liquid wastes containing Halogenated Organic Compounds (HOCs) listed in 40 CFR 268, Appendix III at greater than or equal to 1,000 mg/l or Nonliquid wastes containing HOCs at greater than or equal to 1,000 mg/kg. _____

6a. For D001, D002, D012-D043 Characteristic Wastes, address underlying hazardous constituents by checking the appropriate box:

O I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that there are no underlying hazardous constituents reasonably expected to be present in this waste.
X I have reviewed the UTS list of 268.48, and per 268.7(a), I have determined that underlying hazardous constituents are present in this waste. The underlying hazardous constituents are identified on the Underlying Hazardous Constituents Addendum to the LDR form.

6b. The determination of underlying hazardous constituents was based on:

X Generators knowledge of the waste X Analysis

If shipment contains waste that will be exclusively managed to the notification statement A (below), list A in Table Column 4, and submit signed form along with the applicable supplemental pages and addenda, if required.

A - NOTICE FOR RESTRICTED WASTE THAT REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).

O For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45".

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Shain J Crowner Title S+E Assoc. Date 8-20-98

BC9800899
page 2 of 4

F001 - F005 SPENT SOLVENT CONSTITUENT ADDENDUM

Generator Name: SJ CROWNER/ US DOE Manifest Doc. No. 98017

WSRd No.402-00 EPA ID. # WA7890008967 State Manifest No. (If applicable)_N/A

If the waste identified on the main LDR form is described by any of the following USEPA hazardous wastes codes: F001, F002, F003, F004, and/or F005, then each constituent MUST be identified below by checking the appropriate box, and this page must accompany the shipment, along with the main LDR form.

F001 - F005 Spent Solvents (*check constituents present*)			
Acetone (F003)	X	Methanol (F003)	
Benzene (F005)		Methylene Chloride (F001, F002)	X
n-Butyl alcohol (F003)		Methyl ethyl ketone (F005)	X
Carbon disulfide (F005)		Methyl isobutyl ketone (F003)	X
Carbon tetrachloride (F001)		Nitrobenzene (F004)	
Chlorobenzene (F002)		2-Nitropropane (F005)	
O-Cresol (F004)	X	Pyridine (F005)	
Cresols (m- and p- isomers)(F004)	X	Tetrachloroethylene (F001, F002)	
Cyclohexanone (F003)		Toluene (F005)	
o-Dichlorobenzene (F002)		1,1,1 -Trichloroethane (F001, F002)	X
2-Ethoxyethanol (F005)		1,1,2-Trichloroethane (F002)	
Ethyl acetate (F003)		1,1,2-Trichloro-1,2,2-triflouroethane (F002)	
Ethyl benzene (F003)		Trichloroethylene (F001, F002)	
Ethyl ether (F003)		Trichloromonofluoromethane (F002)	
Isobutanol (F005)		Xylenes (F003) (sum of o-, p-, and m- isomers)	

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

BC9900899

SUPPLEMENTAL PAGE # 3 of 4

Generator Name: SJ CROWNER

Manifest Doc. No. 98017

WSRd No.402-00 EPA ID # WA7890008967 State Manifest No. (If applicable) N/A

This form is a continuation of the main LDR form for a waste identified by more than nine USEPA waste code/category groups. Complete this form using the instructions for the main LDR form. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form!

REF #	2. USEPA HAZARDOUS WASTE CODE(S)	3. SUBCATEGORY, ENTER THE SUBCATEGORY DESCRIPTION. IF NOT APPLICABLE CHECK NONE.		4. HOW MUST THE WASTE BE MANAGED? ENTER APPROPRIATE REFERENCE LETTER
		DESCRIPTION	NONE	
10	F004		X	A
12	F005		X	A
13	WT02		X	A
14	WP02		X	A
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

X F001-F005 hazardous constituents are listed on the F001-F005 Spent Solvent Constituent Addendum.
O F039 hazardous constituent(s) are identified on the F039 Hazardous Constituent Addendum.
X Additional USEPA codes and subcategories are listed on the supplemental sheet provided.

BC990089
page 4 of 4

UNDERLYING HAZARDOUS CONSTITUENTS ADDENDUM
or
F039 HAZARDOUS CONSTITUENTS ADDENDUM

Generator Name: SJ CROWNER/ US DOE Manifest Doc. No. 98017

WSRd No.402-00 EPA ID #_WA7890008967 State Manifest No. (If applicable) __N/A_

This is an addendum to the main Land Disposal Notification and Certification Form. Use this form to identify hazardous constituents in F039 wastes or underlying hazardous constituents (UHCs) in D001, D002, D012-D043 wastes (40 CFR 268.2(i), 268.48). Write the letter (A, B1, B3, or C, for reference to the notice and certification statements) beside each constituent present, to properly describe how the constituents must be managed under 40 CFR 268.7. This page by itself IS NOT an acceptable Land Disposal Notification and Certification Form!

REF #	USEPA HAZARDOUS WASTE CODE(S) (F039, D001, D002, D012-D043)	UNDERLYING HAZARDOUS CONSTITUENT or F039 HAZARDOUS CONSTITUENT	HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM THE MAIN FORM
1	D002, D030	CHROMIUM, NICKEL, METHYLENE CHLORIDE, LEAD, SILVER, CADMIUM	A
2		Acetone	A.
3	RKM 6/1/97	Chloroform	A.
4		2,4-dinitrophenol	A.
5		2-nitrophenol	A.
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

O Additional USEPA codes and subcategories are listed on the supplemental sheet provided.

00S99

Hazardous Waste Packing Slip

8/20/98 8:17:09 AM

anifest #	Profile #	Date	Drum #	DOE/Private	Facility	Package Type
98017	NA	4/29/98	PNL-MW-98-039	DOE	305B	Labpack

roper DOT Shipping Name

"RQ" Waste Radioactive Material, Low Specific Activity, n.o.s.

rum Type	Gross Weight	UN/NA #	Packing Group	Hazard Class
UN1A2 55 Gal	101.00 Kg	UN2912	N/A	7 (Radioactive Material)

Request # / Item # / Gen. ID #	Material Description	Container Type Size / Waste Mass	WP #	Waste Codes EPA	Waste Codes WDOE
97-R011 / 1839 / NFBC	NITRIC ACID 1%, HYDROCHLORIC ACID .01%, IRON 1500PPM, CHROMIUM 400PPM, NICKEL 200PPM, MOLYBDENUM 50PPM, WATER 98.775%	GLASS / .5 L / 0.25 kg	K49893	D002 D007	
97-R364 / 3509 / 306-96-1	METHYLENE CHLORIDE .2%, WATER 83.47%, 102AP SAMPLES 3.17%, PROCESS SEWER SAMPLES 3.17%, 300N SAMPLES 3.17%, SST WASTE .2%, SILVER 24.8PPM, CADMIUM 1.5PPM, CHROMIUM 23PPM, LEAD 24PPM, SODIUM PHOSPHATE 2.4%, URANIUM NITRATE 0.23%, SULFURIC ACID 4%	GLASS / 3.8 L / 3.80 kg	K63218	F001 F002 F004 F005 D002 D006 D007 D008 D011	W702 W702 F003
98-R035 / 3908 / 96019	NICKEL NITRATE .00001%, CADMIUM NITRATE .00001%, COBALT NITRATE .00001%, STRONTIUM NITRATE .00001%, ZINC NITRATE .00001%, PIPERAZINE-N,N'-BIS(2-ETHANESULFONIC ACID) 1.1476%, POTASSIUM NITRATE .3838%, NITRIC ACID 2.394%, WATER 96.07455% Acetone 7.0 ppm, Chloroform 0.88 ppm, 2,4-dinitrophenol 20 ppm 2-nitrophenol 0.85 ppm, methylene chloride 4.5 ppm. EJM 6/4/99	GLASS / 3.8 L / 3.80 kg	K49893	D002	F003
98-R042 / 4054 / 25-701-06	SULFURIC ACID 6.04%, SILVER NITRATE .05%, POTASSIUM PERSULFATE 3.06%, SODIUM HYDROXIDE .03%, CALCIUM CARBONATE .11%, WATER 90.54%, SST/DST WASTE .15%, ALPHA-D-GLUCOSE .02%	POLY / 20 L / 19.00 kg	K63218	D002 F001 F002 F004 F005 D011 D030	W702 F003
98-R050 / 4067 / 25-HF-20	HYDROFLUORIC ACID 4.2%, HYDROCHLORIC ACID 4.4%, NITRIC ACID .8%, ETHANOL .9%, WATER 89.7%	POLY / 4 L / 4.00 kg	K63218	D002	W702
98-R050 / 4068 / 98-525-U	WATER 99.45%, SULFURIC ACID .15%, HYDROCHLORIC ACID .1%, NITRIC ACID .1%, SODIUM PHOSPHATE .2%	GLASS / 4 L / 4.00 kg	K63218	D002	W702
98-R056 / 4092 / 309-507	NITRIC ACID 14%, OXALIC ACID .01%, AMMONIUM BIOXALATE .01%, WATER 85.95%, HYDROFLUORIC ACID .03%	GLASS / 2.5 L / 2.50 kg	K69761	D002	
98-R056 / 4093 / 09-429SF	NITRIC ACID 17.5%, HYDROFLUORIC ACID .01%, WATER 82.49%	GLASS / 1 L / 1.00 kg	K69761	D002	
98-R089 / 4235 / P1-97-005	WATER 98%, NITRIC ACID 2%	POLY / 20 L / 15.00 kg	K63218	D002	
98-R092 / 4239 / 31-110-4	URANYL ACETATE (2.5 PPM) .00025%, NITRIC ACID .10625%, WATER 99.8935%	GLASS / 1 L / 1.00 kg	K14464	D002	
97-R011 / 4279 / NFBC	NITRIC ACID 1%, HYDROCHLORIC ACID .01%, IRON 1500PPM, CHROMIUM 400PPM, NICKEL 200PPM, MOLYBDENUM 50PPM, WATER 98.775%	GLASS / .02 L / 0.02 kg	K49893	D002 D007	

Total Weight 54.37 Kg

Container Listing for Package ID: 9800899
for Source Facility: %
Location Facility: %
Unit: % Quadrant: %
Primary Waste Type: %

Package ID: 9800899
Secondary Package ID: PNL-MW-98-039

Accumulation Date: 04/29/98
Packaged Date: 04/29/98
Certification Date: 07/31/98
Ship Date: 08/20/98
Shipping Deadline: 07/27/98
TSD Accept Date: 08/24/98

Primary Waste Type: M
Secondary Waste Grp: LLW
Package Status: T
In Hic Flag:
Req. or Portfolio #: 30552
Nonconformance Codes: CR(1), XR(1)
Routine Status: 100% ROUTINE

Waste Type Description: MIXED LOW LEVEL
Debris Flag: N
WSRd No / Rev: 402 00
Data Quality Cd:

Chemical Nature: ORGANIC
Physical State: SOLID
Alert Reason:

Container Type Code / Descr: DM / 208 LITER
Container Volume (meters): 0.2080
Labpack Flag: Y

Container Empty Tare Wt.(kg): 29.0000
Waste Weight (kg): 61.3700
Packaging Weight (kg): 10.6300
Container Gross Wt.(kg): 101.0000

Container Contents: ANALYTICAL AND RESEARCH WASTE

SWE Comments:
SWO Comments:

Generator Information
Generating Company: PNNL - PACIFIC NORTHWEST NATIONAL LABORATORIES (BATTELLE)
Company Type: GEN
Charge Code & COA: K86592
Generator Comments:
Additional Comments:

Generator ID: 2G534
Generator: SJ CROWNER

Generator Group: PNL
Source Facility: 305B

Hazardous Package Detail
Waste Status: USED
Haz Waste Volume: 0.2080
Designation Code: RD
Waste Stream: M002
Subpart CC Flag:

Container Status: FULL
Haz Properties: CORROSIVE
DW Waste Numbers: F001 F002 F003 F004 F005 D002 D006 D007 D008 D011 D030
Landban Codes: Y Y Y Y Y Y Y Y Y Y Y
Other Landban #1: #2: #3:

Flashpoint:

pH Value: <.=2

Radioactive Package Detail
Profile Number:
Seal Number:
Assay Number:
Assay Date:
Waste Category: WC1

RSWIMS Container Cnt: 1
SWIMS Waste Category: NOT CLASSIFIED BY THE OTHER CATEGORIES
WRAP Category: CONTAINERIZED LIQUIDS (LABPACK)

Combustible Flag: Y
Exceeds ISB Limit:
Waste Make-up Code: F
Void Space Filler:

Shielding: NONE
Vent Flag: N
Handling: CONTACT
NRC Class:

% Organic Volume: 2
Organic Wt.(kg): 2.00

Thermal Power(w/cu.m.): 8.23000E-05
Dose Rate: 1.00000E+01
Neutron Dose Rate:
Tot Alpha (Ci): 1.01128E-04
Tot Beta-Gamma (Ci): 2.77369E-03
Tot Pu Equivalent (Ci): 5.46260E-05
Tot Pu-FGE: 1.28317E+00
Tot DE-Ci: 6.91820E-05
Excluded from DE-Ci:

Current Location Information
Facility ID: 221T
Unit: R5
Quadrant:
Module:

Storage Category: D
Container Alert Flag:

Tier Level:
Tier Position:

GPS Data Flag:

Loc. Beg. Coordinates - N:
W:
Loc. End. Coordinates - N:
W:

Container Listing for Package ID: 9800899
for Source Facility: %
Location Facility: %
Unit: % Quadrant: %
Primary Waste Type: %

Relocation History
Last Relocation Date: 10/15/98

Relocation Date	From Facility	Unit	Quadrant
08/24/98	2402WC	L01	

Repackaging History

Current Container(s)	Previous Container(s)	Date	Action Taken
9800899	980899	09/03/98	RE-LABEL

Isotope Information

Isotope Number	Isotope Name	Alpha Ci	PE-Ci	PU-FGE	Isotope Activity	Unit
3	SR-90 - Y90				2.17000E-04	CI
7	CS-134				2.28000E-07	CI
8	CS-137 -- BA-137M				6.33000E-04	CI
13	CO-60				8.66000E-04	CI
19	TOTAL BETA/GAMMA				2.77369E-03	CI
21	NP-237	1.31095E-06	1.31130E-06	2.79000E-05	1.86000E-03	GM
26	AM-241	7.65559E-06	7.67120E-06	4.18125E-08	2.23000E-06	GM
40	EU-154				1.55000E-06	CI
50	NI-63				5.01500E-05	CI
90	ZN-65				2.38000E-06	CI
92	CD-109				7.30600E-05	CI
100	PU-239	4.55950E-05	4.56435E-05	7.35000E-04	7.35000E-04	GM
102	SR-85				9.28000E-05	CI
106	BA-133				6.60000E-08	CI
118	CO-57				2.16400E-05	CI
202	U-234	6.07853E-09			9.73000E-07	GM
203	U-235	2.77090E-06		1.28241E+00	1.28241E+00	GM
206	U-238	4.37896E-05			1.30268E+02	GM

Waste Component Records

Component ID	Component Text	PPM	Weight (kg)	Weight %	EPCRA
106-44-5	P-CRESOL		0.0000	1.0E-6	N
108-10-1	4-METHYL-2-PENTANONE		0.0000	2.64E-7	N
108-39-4	M-CRESOL		0.0000	1.0E-6	N
121-14-2	2,4-DINITROTOLUENE		0.0000	1.0E-6	N
1310-73-2	SODIUM HYDROXIDE		0.0067	1.05E-2	N
144-62-7	OXALIC ACID		0.0003	4.6E-4	N
51-28-5	DINITROPHENOL, 2,4-		0.0000	1E-6	N
64-17-5	ETHANOL		0.0420	6.62E-2	N
67-64-1	ACETONE		0.0000	2.64E-6	N
67-66-3	CHLOROFORM		0.0000	1E-7	N
71-55-6	1,1,1-TRICHLOROETHANE		0.0000	2.2E-7	N
7439-92-1	LEAD		0.0004	6.08E-4	N
7440-22-4	SILVER		0.0001	1.73E-4	N
7440-43-9	CADMIUM		0.0000	1.05E-5	N
7440-47-3	CHROMIUM		0.0000	1.47E-5	N

Container Listing for Package ID: 9800899
for Source Facility: %
Location Facility: %
Unit: % Quadrant: %
Primary Waste Type: %

Waste Component Records

Component ID	Component Text	PPM	Weight (kg)	Weight %	EPCRA
75-09-2	DICHLOROMETHANE		0.0089	1.4E-2	N
7601-54-9	SODIUM PHOSPHATE, TRIBASIC		0.0093	1.47E-2	N
7647-01-0	HYDROCHLORIC ACID		0.0000	3.68E-6	N
7664-39-3	HYDROFLUORIC ACID		0.1960	3.09E-1	N
7664-93-9	SULFURIC ACID		1.3400	2.122	N
7697-37-2	NITRIC ACID		0.0015	2.32E-3	N
7732-18-5	WATER		50.5000	79.74	N
78-93-3	METHYL ETHYL KETONE		0.0000	2.06E-7	N
88-75-5	O-NITROPHENOL		0.0000	1E-7	N
95-48-7	O-CRESOL		0.0000	1.0E-6	N
GCN055	INERT MATERIAL (PAPER, WOOD, PLASTIC, ETC.)		9.2000	17.78	N
			61.3052		

Packaging Records

Content Description	Volume %	Weight (kg)
90 MIL LINER	7	5.50
ABSORBENT, ORGANIC	42.9	5.03
ANTI-CORROSIVE RADPAD	.1	0.10
		10.63

Manifest/Shipping Information

Type	Manifest #	Item	RSR #	RSR Type	DOT Spec	DOT Cat	Req Num	Shipment Scheduled	Date Shipped	Shipment Arrived	Manifest Returned	Tran Cmpny	Tran Type	Dest Cmpny	Dest Type	Receiving Facility	Shp Rtn
ON	98017	03A	RSR3459		1A2				08/20/98			DYN	TRA			CWC	

LAND DISPOSAL NOTIFICATION AND CERTIFICATION
PACKAGE: 9800899

Generator Name: PNL
Package No.: 9800899
Manifest Doc. No.: 98017
WSRd No.: 402 00
Manifest Line Item: 03A
EPA ID.#: WA7890008967

1. Wastewater ___ Non-wastewater X

2. USEPA Hazardous Waste Codes	3. Subcategory	4. Waste Management Reference Letter
D002	Corrosive characteristic wastes	A
D006	cadmium characteristic	A
D007	chromium characteristic	A
D008	lead characteristic	A
D011	silver characteristic	A
D030	2,4-dinitrotuoluene characteristic	A
F001	F001-F005 solvent wastes	A
F002	F001-F005 solvent wastes	A
F003	F001-F005 solvent wastes	A
F004	F001-F005 solvent wastes	A
F005	F001-F005 solvent wastes	A

6a. X I have reviewed the UTS list of 268.48 and per 268.7(a), I have determined that underlying hazardous constituents are present in this waste. The underlying hazardous constituents are identified in the Underlying Hazardous Constituent Addendum to the LDR form.

6b. The determination of underlying hazardous constituents was based on:

X Generators knowledge of the waste X Analysis (attach when applicable)

A - NOTICE FOR WASTE THAT REQUIRES TREATMENT
This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).

F001 - F005 SPENT SOLVENT CONSTITUENTS

1,1,1-TRICHLOROETHANE
ACETONE
4-METHYL-2-PENTANONE
M-CRESOL
METHYL ETHYL KETONE
DICHLOROMETHANE
O-CRESOL
P-CRESOL

UNDERLYING HAZARDOUS CONSTITUENTS	CONCENTRATION	UNIT
CADMIUM	1.05E-5	WT%
CHLOROFORM	.88	MG/KG
CHROMIUM	1.47E-5	WT%
DINITROPHENOL, 2,4-	20	MG/KG
LEAD	6.08E-4	WT%
NICKEL	200	MG/L
O-NITROPHENOL	.85	MG/KG
SILVER	1.73E-4	WT%

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature _____ Title _____ Date _____