

EXHIBIT C

DANGEROUS WASTE VIOLATIONS

Based on the facts provided below, Ecology determined that the following violations occurred at the Waste Receiving and Processing Facility (WRAP) and the Central Waste Complex Operating Unit Group (CWC) of the Hanford Site. For the purposes of this Order, CWC consists of storage units and closure units.

A. WRAP

Inspections by Ecology occurred at WRAP on May 20, July 27, and September 17, 2012. Based on Ecology's inspection and investigation, it found the following violations:

1. Failure to timely notify Ecology of a release to the environment. Any person who is responsible for spills or nonpermitted discharges which result in emissions to the air must immediately notify all local authorities in accordance with the local emergency plan and the local regional office of Ecology. WAC 173-303-145(2)(b) Spill Notification.

WRAP personnel failed to recognize a release to the air and timely notify Ecology. On April 26, 2011, WRAP personnel discovered liquid on the floor at the base of a drum located at WRAP 2404WB building. It was later determined that a release from a drum of mixed waste had occurred in the 2404WB building. According to the original designation, the contents of the leaking drum were solid hazardous debris. However, the drum contained plutonium in addition to nitric acid, beryllium, and sulfuric acid, which are extremely dangerous to workers as an inhalation hazard.

2. Failure to timely implement a Contingency Plan. The provisions of the contingency plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous constituents which could threaten human health or the environment. 40 CFR 265.51(b) incorporated by reference in WAC 173-303-400(3) as an applicable standard for facilities required to comply with the interim status requirements.

In responding to the April 26, 2011 discovery of liquid at the 2404WB building, USDOE and CHPRC failed to implement the Contingency Plan and properly notify Ecology of an

emergency circumstance. Documents obtained through an Ecology information request state that a human health hazard was present during the time of the release. The instruction for building personnel to move to the door is an evacuation, an indicator of a threat to workers. Both factors should have triggered Contingency Plan implementation.

3. Failure to designate waste according to required procedures. A person is responsible for designating their waste as dangerous waste or extremely hazardous waste in accordance with the process provided in the dangerous waste regulations. WAC 173-303-070(3) and 170(1)(a) Requirements for generators of dangerous waste.

The leaking drum discovered at the 2404WB building was one of seventeen drums associated with the Hanford Engineering Development Laboratory (HEDL) wastestream. These drums were incorrectly designated. Dangerous waste numbers D004-D011, D022, D027-D030, D034, D037, D043, F001-F005, and a number of toxicity characteristic waste numbers were applied to the wastestream on the basis of Acceptable Knowledge documentation for the Richland Mixed Building 325 Debris (“RLM325D”) mixed debris waste stream. The appropriate waste code of D002 was not applied until the drum leak occurred and the liquid from the drum was found to have a pH below 2. The leaking drum’s contents were identified as an acid less than 2 pH on the WRAP glovebox table three months before the drum leak yet no D002 waste code was applied to the drum.

4. An owner or operator must confirm knowledge about a dangerous waste before it is treated, stored, or disposed. Detailed chemical, physical, and/or biological analysis of a dangerous waste must be obtained prior to storage, treatment, or disposal. The purpose for the analysis is to ensure that a dangerous waste is managed properly. WAC 173-303-300(1), (2) General waste analysis. WAC 173-303-300 applies to a facility owner or operator and is incorporated by reference, in WAC 173-303-400(3)(a)(i).

USDOE and CHPRC failed to correctly confirm knowledge of the drums from the HEDL wastestream prior to accepting it into the WRAP facility for storage. Chemical analysis was not obtained prior to acceptance into the facility.

The information package used by WRAP as acceptable knowledge to designate and characterize the waste for safe management was not sufficient or reliable to substitute for laboratory analysis. Acceptable knowledge packages consolidate multiple waste-streams from various processes into one “designation.” The variability of the wastestream between containers and within containers was not considered adequate in characterizing the waste and the hazards associated with managing the waste. USDOE and CHPRC failed to make sure the acceptable knowledge package information was accurate, complete, and representative of the wastestream in order to ensure proper waste management.

5. An owner or operator must inspect his facility to prevent malfunction and deterioration, operator errors, and discharges which may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health. WAC 173-303-320(1). WAC 173-303-320(1) is incorporated by reference as an interim status standard in WAC 173-303-400(3)(a)(i).

USDOE failed to perform dangerous waste weekly inspections for four weeks in May 2011 for the 2404WB building at the WRAP. The release discovered at the 2404WB building on April 26, 2011, did not excuse USDOE from conducting weekly inspections at that building.

6. Failure to take immediate remedial action when a hazard was imminent or had already occurred. Where a hazard is imminent or has already occurred, remedial action must be taken immediately. WAC 173-303-320(3). WAC 173-303-320 is incorporated by reference as an interim status standard in WAC 173-303-400(3)(a)(i).

WRAP personnel failed to timely respond and correct deterioration of the 2404WB building’s leaking roof structure. WRAP personnel knew from prior inspections and a CHPRC WRAP drum leak Root Cause Analysis Report (August 8, 2011) that there was an on-going issue of leaks in the roof of the 2404WB building. These leaks compromised the ability of waste management personnel to promptly and effectively identify liquids on the floor of the storage building as a spill or release from a container as opposed to being accumulated rainwater.

7. Failure to record on an inspection log or summary the date and notations of observations made and the date and nature of repairs or remedial actions taken to note and repair leaking roofs, and failure to place the information into the operating record. The owner or operator of a facility must keep a written operating record at their facility that includes the records and results of inspections as required by WAC 173-303-320(2)(d). WAC 173-303-380(1)(e), Facility recordkeeping. WAC 173-303-380 is incorporated by reference as an interim status standard in WAC 173-303-400(3)(a)(i).

Ecology USDOE and CHPRC notified on September 13, 2012 that the one of the purposes of Ecology's September 17, 2012 site visit was to review WRAP operating records. When Ecology field staff arrived as arranged, the dangerous waste inspection records were not readily available, and were provided instead on September 25 and October 2, 2012, by USDOE and CHPRC. Ecology noted that the radiological records contained general information about the roof leaks and repairs, but the dangerous waste inspection records did not contain specific information as is required by WAC 173-303-320(2)(d).

8. Failure to adequately label containers with the major risk, and/or to maintain identification of containers. The owner or operator must ensure that labels are not obscured, removed, or otherwise unreadable in the course of inspections required under WAC 173-303-320. WAC 173-303-630(3) Identification of containers. WAC 173-303-630(3) is incorporated by reference as an interim status standard in WAC 173-303-400(3)(a)(ii).

Labels on the HEDL wastestream containers failed to identify corrosivity as one of the major risks associated with the waste. Dangerous waste labels with "corrosive - D002, acid, solid/liquid" were placed on the containers twenty (20) days after the drum leaked and was confirmed to contain a corrosive liquid.

9. Compatibility of waste with containers. The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to

contain the waste is not impaired. 40 CFR 265.172 incorporated by reference in WAC 173-303-400(3)(a) as an applicable standard for facilities required to comply with interim status requirements. See also WAC 173-303-630(4).

The contents inside the drum that leaked at the 2404WB building were (1) misdesignated, (2) mischaracterized as solid hazardous waste, and (3) had not been verified. The contents were not solid debris. The drum was later discovered to contain corrosive wastes that had not been neutralized. Placement of wastes with a pH of less than 2 into a steel one-trip drum not designed to be fully chemical resistant constitutes placement of waste in a container that is incompatible.

10. Failure to protect containers. The owner or operator must protect their containers from the elements by means of a building or other protective covering to prevent a release of waste or waste constituents due to the nature of the waste or design of the container. WAC 173-303-630(2), (7)(d) Containment. WAC 173-303-630 is incorporated by reference for interim status facilities in WAC 173-303-400(3)(ii).

Deterioration of the 2404WB building, specifically the leaking roof structure, has compromised its ability as part of the containment system to protect containers and the system from the elements. As noted earlier, WRAP personnel failed to conduct weekly inspections during four weeks in May 2011. The on-going issue of leaks in the roof of the 2404WB building compromised the ability of waste management personnel to identify liquids on the floor of the storage building as a spill or release from a container as opposed to a found liquid assumed as being accumulated rainwater.

B. CWC

Inspections occurred on March 7, 8, 14, and 15, 2012, at the CWC. Based on Ecology's inspection and investigation, it found the following violations:

1. Failure to timely notify Ecology of an imminent or actual emergency situation or a release which could threaten human health or the environment. Whenever there is an imminent or actual emergency situation, including a release that poses an imminent threat

to human health and the environment, notification is required by WAC 173-303-360(2)(a)(ii), (d)(ii).

The original release from box 231-Z-DR-11 was discovered through routine radiation monitoring that resulted in the identification of a contaminated area on December 20, 2011. According to radiological technicians, alpha radiation is present when there is waste present. Alpha radiation was discovered on the outside of box 231-Z-DR-11 on December 20, 2011, therefore a release of dangerous waste was discovered on this date. USDOE and CHPRC should have contacted Ecology with this information on December 20, 2011, but did not notify Ecology of the release until February 7, 2012 (50 days after the initial discovery of the spill/discharge).

2. Failure to take appropriate and immediate mitigation and control actions after a spill or discharge. The person responsible for a spill or nonpermitted discharge must take appropriate immediate action to protect human health and the environment. WAC 173-303-145(3) Mitigation and Control.

Personnel at the CWC are responsible for taking immediate actions to mitigate spills or discharges of dangerous waste or hazardous substances at CWC. For the release from box 231-Z-DR-11, when liquid was observed on February 6 the CWC did not have spill containment pans available immediately for mitigating the release. Spill containment pans were not deployed for three days after the spill was identified, from February 6, 2012 until February 9, 2012 at box 231-Z-DR-11.

3. Failure to designate waste according to required procedures. A person is responsible for designating their waste as dangerous waste or extremely hazardous waste in accordance with the process provided in the dangerous waste regulations. WAC 173-303-170(1)(a) Requirements for generators of dangerous waste; WAC 173-303-070(3) Designation procedures.

As regulated generators of dangerous waste, USDOE and CHPRC are required to designate its waste in accordance with WAC 173-303-070 and -170. USDOE and CHPRC failed

to designate the waste in the drums holding liquids collected from box 231-Z-DR-11. Wastes derived from listed waste must be designated with the associated listed waste codes.

4. Failure to obtain samples in accordance with procedures designed to yield representative analytical results of an acceptable quality required by the analytical methods. Ecology will consider a sample to be a representative sample when it is obtained using any of the applicable sampling methods described in WAC 173-303-110(2) Representative samples. Quality control procedures specified by the testing method or an approved equivalent method must be followed for the analytical result to be considered valid for designation and test procedures. WAC 173-303-110(1), (3) Test procedures. Compliance with representative samples and analytical test procedures is required when testing is utilized to comply with WAC 173-303-170(1) and by reference, WAC 173-303-070(3) for designation, or to comply with WAC 173-303-300 for characterization.

Samples obtained of the release from box 231-Z-DR-11 in February 2012 by operations staff at CWC were placed in a Nalgene bottle and not the appropriate sample bottles for collecting representative sampling as specified by the methods for volatile organic compounds. CWC operations staff collected samples on their own initiative (initial sample collection), and then collected split samples (later sample collection) when Ecology requested samples. Operations staff collecting the initial samples did not follow established test methods, protocols, analytical and quality control procedures, or the required sample collection method.

5. An owner or operator must confirm knowledge about a dangerous waste before it is treated, stored, or disposed. Detailed chemical, physical, and/or biological analysis of a dangerous waste must be obtained prior to storage, treatment, or disposal. The purpose for the analysis is to ensure that a dangerous waste is managed properly. WAC 173-303-300(1), (2) General Waste Analysis. WAC 173-303-300 is included in the final facility standards in WAC 173-303-600(1).

USDOE and CHPRC failed to confirm the contents of box 231-Z-DR-11 after the box arrived at CWC. USDOE and CHPRC relied solely on acceptable knowledge packages

containing historical information to determine how to manage box 231-Z-DR-11 at the CWC. Decisions were made to place the box in the outdoor expansion area based on assumptions that the information about the box contents was sufficient and reliable. The box was identified as containing hazardous debris solids that does not contain any free liquids. The box leaked liquid that contains hazardous constituents into the environment. The acceptable knowledge package should have been confirmed by obtaining chemical, physical, and/or biological analysis prior to storage.

6. Failure to inspect adequately to detect deterioration of a container. The owner or operator must inspect his facility to prevent malfunction and deterioration, operator errors, and discharges which may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health. WAC 173-303-320(1) General inspection. WAC 173-303-320 is included in the final facility standards in WAC 173-303-600(1).

USDOE and CHPRC failed to perform dangerous waste inspections at the CWC expansion area so as to prevent malfunction, deterioration, and discharges. The malfunction or deterioration of box 231-Z-DR-11 caused a release of dangerous waste constituents to the environment.

7. Failure to conduct daily inspections of areas subject to spills. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. Areas subject to spills must be inspected daily when in use. WAC 173-303-320(1), (2)(c) (emphasis added). WAC 173-303-320 is included in the final facility standards in WAC 173-303-600(1).

USDOE and CHPRC were only conducting inspections of the CWC expansion area on a weekly basis. Based on USDOE's and CHPRC's experience with non-conforming boxes and containers from the waste retrieval project trenches, USDOE or CHPRC should have been performing daily dangerous waste inspections at the CWC expansion area. The expansion area does not have a containment system capable of preventing liquids from entering underlying soils.

In addition, box 231-Z-DR-11 is aging (at least 30 years old) and is not intended for long term outdoor storage.

8. Failure to immediately remedy problems revealed during the inspection of box 231-Z-DR-11. An owner or operator must remedy any problems revealed by inspections and on a schedule which prevents hazards to the public (human) health and the environment. Where a hazard is imminent or has already occurred, remedial action must be taken immediately. WAC 173-303-320(3). WAC 173-303-320 is included in the final facility standards in WAC 173-303-600(1).

CWC personnel failed to timely respond and take remedial action in response to the release from box 231-Z-DR-11. Given the observation of elevated radiation levels on December 20, 2011, and the observation of visible dripping liquid to the ground from box 231-Z-DR-11 on February 6, 2012, remedial actions such as providing secondary containment should have occurred without delay.

9. Failure to provide, or maintain spill control equipment in dangerous waste storage areas. All facilities must be equipped to avoid or mitigate unplanned sudden or nonsudden release of dangerous waste, which includes spill control equipment. WAC 173-303-340(1)(c) Preparedness and prevention.

The CWC outdoor expansion area has no secondary containment, roof cover, or adequate container covers. The CWC did not have spill containment pans available immediately. Spill containment pans were not deployed until February 9, 2012, at box 231-Z-DR-11.

10. Failure to provide operating records upon request from Ecology. The owner or operator of a facility must keep a written operating record at their facility. WAC 173-303-380(3)(a) Facility recordkeeping.

USDOE denied Ecology access to CWC operating records on multiple occasions; i.e., February 7, 8, and 21, April 19, and May 23, 2012. The denial of access to records caused Ecology delays in completing the release investigation.

11. Failure to maintain containers in good condition. If a container holding dangerous waste is not in good condition or if it begins to leak, the owner or operator must transfer the dangerous waste from the container to a container that is in good condition or manage the waste in some other way that complies with the requirements of chapter 173-303 WAC. WAC 173-303-630(2) Condition of containers.

Box 231-Z-DR-11 is constructed of a steel frame with concrete walls, floor, and lid. The box shows signs of severe rust and deterioration. The box is not adequately stored for a container of this type. Once learning of the poor condition of box 231-Z-DR-11, CWC staff failed to transfer the waste in that box to a container in good condition or manage the waste in compliance with the Dangerous Waste regulations.

12. Failure to adequately label containers with the major risk, and/or to maintain identification of containers. Containers must be labeled in a manner which adequately identifies the major risk(s) associated with the contents of the containers for employees, emergency response personnel, and the public; the owner or operator must ensure that labels are not obscured, removed, or otherwise unreadable in the course of inspection required under WAC 173-303-320. WAC 173-303-630(3) Identification of containers.

Box 231-Z-DR-11 was not labeled properly so that a facility operator conducting the dangerous waste (DW) weekly inspection could see the label at one end or another without stepping in between boxes. Required DW labels were placed on the box after the leaking incident began.

The drums containing leaked waste from box 231-Z-DR-11 should have been labeled with the waste codes from the originating box as waste derived from listed waste.

13. Failure to properly store box 231-Z-DR-11. A container holding dangerous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. WAC 173-303-630(5)(b) Management of containers.

Box 231-Z-DR-11 is stored in the open subject to extreme weather conditions and without cover or containment. The box has deteriorated to the point of leaking to the environment.

14. Failure to provide an adequate secondary containment system. The owner or operator must have a containment system that is capable of collecting and holding spills and leaks. WAC 173-303-630(7) Containment. WAC 173-303-630(7) is included in the final facility standards in WAC 173-303-600(1).

Box 231-Z-DR-11 was transferred from the low level burial grounds and stored at the CWC outdoor expansion area in 2009 according to USDOE records. The CWC outdoor expansion area is a graveled surface area that does not have a secondary containment system. In addition, the CWC expansion area did not have a system to protect containers from the elements by means of a building or other protective covering. Box 231-Z-DR-11 had not been confirmed to contain no free liquids.