Class 1 Permit Modification

Correct Inconsistency Regarding Radiological Surveys Correct Inconsistencies Regarding Waste Confirmation Correct Procedure Numbers for Inspections Correct Equation Reference Correct How RH TRU Mixed Waste Will be Managed When Equipment Malfunctions Clarify Requirements for TRU Mixed Waste Handlers Revise Section Numbers

> Waste Isolation Pilot Plant Carlsbad, New Mexico

> > November 20, 2006

WIPP HWFP #NM4890139088-TSDF

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Acronyms and Abbreviations

CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
DOE	Department of Energy
HWFP	Hazardous Waste Facility Permit
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
PMN	Permit Modification Notification
RCRA	Resource Conservation and Recovery Act
TSDF	Treatment, Storage and Disposal Facility
WIPP	Waste Isolation Pilot Plant
WTS	Washington TRU Solutions LLC

Overview of the Permit Modification Notification

This document contains several Class 1 Permit Modification Notifications (**PMN**) to the Hazardous Waste Facility Permit (**HWFP**) at the Waste Isolation Pilot Plant (**WIPP**), Permit Number NM4890139088-TSDF hereinafter referred to as the WIPP HWFP.

These PMNs are being submitted by the U.S. Department of Energy (**DOE**), Carlsbad Field Office (**CBFO**) and Washington TRU Solutions LLC (**WTS**), collectively referred to as the Permittees, in accordance with the WIPP HWFP, Condition I.B.1 (20.4.1.900 New Mexico Administrative Code (**NMAC**) incorporating Title 40 of the Code of Federal Regulations (40 **CFR**) §270.42(a)). The changes in this document are necessary for the following reasons:

- to remove inconsistent language regarding radiological surveys;
- remove inconsistent statements and clarify confusing language regarding waste confirmation;
- correct procedure numbers;
- correct equation reference;
- correct RH TRU mixed waste management procedures during equipment malfunction;
- clarify training requirements for RH TRU mixed waste handlers
- revise section numbers.

These changes do not reduce the ability of the Permittees to provide continued protection to human health and the environment.

The requested modification to the WIPP HWFP and related supporting documents are provided in this PMN. The proposed modification to the text of the WIPP HWFP has been identified using a <u>double underline</u> and revision bar in the right hand margin for added information, and a strikeout font for deleted information. All direct quotations are indicated by italicized text.

Attachment A

Description of the Class 1 Permit Modification Notifications

No.	Affected Permit Section	ltem	Category
1	a. Attachments I3 and M1	Remove inconsistent language	A.1
2	a. Attachment B7	Remove inconsistent language and clarify confusing language	A.1
3	a. Attachment D	Revise procedure numbers	A.1
4	a. Attachment B2	Correct equation reference	A.1
5	a. Attachment M1	Revise incorrect language	A.1
6	a. Attachment H1	Add RH training requirements	B.5.b
7	a. Attachment N	Correct section numbers	A.1

Table 1. Class 1 Hazardous Waste Facility Permit Modification Notification

Description:

An inconsistency has been identified between Attachment I3, Table I3-3 and the text in Attachment M1, Section M1-1d(3) which must be corrected. Surface contamination surveys are conducted on the waste canister from the RH-TRU 72-B cask but are not conducted on facility canisters as they are removed from the shielded inserts. A similar inconsistency has also been identified in Attachment M1, Section M1-d(3)In which the term "dose rate" has been used incorrectly in reference to the initial surface contamination surveys. A further inconsistency was identified in Attachment M1, Section M1-d(3) concerning when contamination surveys are completed.

Basis:

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

Radiological surveys occur at various times during the management of Remote-Handled (**RH**) TRU mixed waste. When these surveys occur is indicated in Attachment I3, Table I3-3. An inconsistency has been identified in this table and must be corrected. As stated in Attachment M1, Section M1-1d(3), surface contamination surveys are conducted on the RH-72B canisters as they are being lifted into the facility cash from the RH-TRU 72-B casks. These surveys are not required for the facility canister by Attachment M1, Section M1-1d(3). This modification will correct that inconsistency.

A similar correction is required in Attachment M1, Section M1-d(3) in which the term "dose rate" has been incorrectly applied to what should be termed a "contamination survey" to be consistent with the radiological surveys performed on Contact-Handled TRU mixed waste as specified in Section M1-1d(2).

In addition, the language is clarified in Section M1-1d(3) to indicate that surveys may be completed after the manifest has been signed.

Revised Permit Text:

a.1. Attachment I3, Table I3-3

	Surface Contamination	
Step s in RH TRU Mixed Waste Processing	Survey	Dose Rate Survey

Exterior of cask on arrival at WIPP	Х	Х
During removal of impact limiters on RH- TRU 72-B cask	Х	Х
During removal of outer lid closure from RH-TRU 72-B cask	Х	Х
During removal of inner lid closure from RH-TRU 72-B cask	Х	
During removal of upper impact limiter on the CNS 10-160B cask	Х	Х
After removal of upper impact limiter on the CNS 10-160B cask	Х	Х
After removal of the CNS 10-160B cask from the lower impact limiter	Х	Х
After transfer of the CNS 10-160B cask lid into the Hot Cell	Х	
During transfer of waste drum carriages into the Hot Cell	Х	
During transfer of waste into the facility canister in the Hot Cell	Х	
During transfer of the waste canister from the RH-TRU 72-B cask or shielded insert to the facility cask	Х	
Interior of shipping cask inside the RH Bay after unloading of waste canister or drums	Х	
Exterior of shield plug subsequent to final canister emplacement		X
Interior of facility cask after completion of waste emplacement	X	

a.2. Attachment M1, Section M1-1d(3)

The RH TRU mixed waste will be received in the RH-TRU 72-B cask or CNS 10-160B cask loaded on a trailer, as illustrated in process flow diagrams in Figures M1-26 and M1-27, respectively. These are shown schematically in Figures M1-28 and M1-29. Upon arrival at the gate, external radiological surveys, security checks, and shipping documentation reviews are performed <u>and</u>. Upon completion of these checks, the Uniform Hazardous Waste Manifest is signed., and the <u>The</u> generator's copy of the

Uniform Hazardous Waste Manifest is returned to the generator. Should the surface dose rate results of the contamination survey exceed acceptable levels, the shipping cask and transport trailer remain outside the WHB in the Parking Area Unit, and the appropriate radiological boundaries (i.e., ropes, placards) are erected around the shipping cask and transport trailer. A determination will be made whether to return the cask to the originating site or to decontaminate the cask.

Description:

Three inconsistencies have been identified in Attachment B7 which must be corrected.

The current language in Attachment B7 regarding when waste confirmation occurs does not agree with permit condition II.C.1.a.ii and must be corrected.

The current language in Attachment B7 regarding the frequency of training drum re-qualification does not agree with the requirements in Attachment H2 and must be corrected.

Clarifying language must be inserted into Attachment B7 to verify that the confirmation records are non-permanent records.

Basis:

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

The Permittees are required to perform waste confirmation on a representative population of each certified waste stream shipment. This task must be performed before the waste is received at the WIPP facility. The HWFP has inconsistencies between Attachment B7 and Permit Condition II.C.1.a.ii which must be corrected.

The Permittees confirmation personnel are required to be able to identify certain items in a test drum via radiography. Attachment H2 requires that these personnel requalify on the test drum on a biennial (every two years) basis. Attachment B7 incorrectly requires this requalification to be performed on a biannual (twice per year) basis. This change will make the HWFP consistent.

Attachment B7, Section B7-1b, states that radiography video and audio recordings are considered to be non-permanent records in the WIPP operating record. There is no similar statement regarding records obtained for confirmation using visual examination. To make this portion of the HWFP consistent the Permittees are adding language to Section B7-1e(2) to clarify that all records generated during waste confirmation are non-permanent records.

Revised Permit Text:

a.1. Attachment B7, Introduction

The Permittees also examine a representative subpopulation of waste prior to shipment to confirm that the waste contains no ignitable, corrosive or reactive waste; and that assigned Environmental Protection Agency (**EPA**) hazardous waste numbers are allowed by the Permit. The waste confirmation activities described herein occur prior to shipment of the waste from generator/storage site to receipt of TRU mixed waste at WIPP.

a.2. Attachment B7, Section B7-1b(2)

A training drum with internal containers of various sizes shall be scanned biannually <u>biennially</u> by each operator. The video and audio media shall then be reviewed by a radiography subject matter expert to ensure that operators' interpretations remain consistent and accurate. Imaging system characteristics shall be verified on a routine basis.

a.3. Attachment B7, Section B7-1e(2)

Upon completion of the Permittee management review, the waste confirmation data for the shipment shall be submitted to the WIPP facility operating record <u>as non-permanent</u> <u>records</u>. Waste confirmation data includes radiography and VE data forms, video/audio media, and review checklists.

Description:

Several procedure numbers in Table D-1a are incorrect and need to be revised.

Basis:

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

The Permittees are required to list all appropriate procedures which apply to the inspection of RH waste and RH waste handling equipment in Attachment D, Table D-1a. During the Operational Readiness Review it was noted that several procedure numbers were incorrect and need to be revised.

Revised Permit Text:

a.1. Attachment D, Table D-1a

TABLE D-1a RH TRU MIXED WASTE INSPECTION SCHEDULE/PROCEDURES								
System/				Inspection ^a Frequency and Job Title of	Procedure Number		Inspe	ection Criteria
Equipment Name	Responsible Organization	Personnel Normally Making Inspection	(Latest Revision)	Deterioration ^b	Leaks/ Spills	Other		
Cask Transfer Car(s)	Waste Operations	Pre-evolution ^{c.d.e} See list 1	WP05-WH1701 PM041186 <u>PM041187</u> (Semi-Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication		
RH Bay Overhead Bridge Crane	Waste Operations	Preoperational ^{c,d,e,i} See list 1	WP05-WH1741 PM041232 (Quarterly & Annual) PM041117 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication		
Facility Cask	Waste Operations	Pre-evolution ^{c.d.e.f} See list 1	WP05-WH1713 PM041201 (Annual) PM041203 (Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical PM.		
RH Bay Cask Lifting Yoke	Waste Operations	Preoperational ^{e,d,e,i} See list 1	WP05-WH1741 PM041233 <u>PM041169</u> (Annual)	Yes	NA	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication		
Facility Cask Transfer Car	Waste Operations	Pre-evolution ^{e.d.e.f} See list 1	WP05-WH1704 PM041186 (Quarterly) PM041195 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication Electrical Inspection		

TABLE D-1a RH TRU MIXED WASTE INSPECTION SCHEDULE/PROCEDURES						
Svstem/		Inspection ^a Frequency and Job Title of	Procedure Number		Inspe	ection Criteria
Equipment Name	Responsible Organization	Personnel Normally Making Inspection	(Latest Revision)	Deterioration	Leaks/ Spills	Other
Facility Cask Rotating Device	Waste Operations	Pre-evolution ^{e.d.e.f} See list 1	WP05-WH1713 PM041175 (Annual) PM041176 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication Electrical Inspection
Facility Grapple	Waste Operations	Pre-evolution ^{e.d.e.f} See list 1	WP05-WH1721 PM041172 (Quarterly) PM041177 (Annual)	Yes	NA	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear. Non-Destructive Examination
6.25-Ton Grapple Hoist	Waste Operations	Pre-evolution ^{c.d.e.f} See list 1	WP05-WH1721 PM041173 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication
Transfer Cell Shuttle Car	Waste Operations	Pre-evolution ^{e.d.e.f} See list 1	WP05-WH1705 PM041184 (Semi-Annual) PM041222 (Annual)	Yes	Yes	Pre-evolution Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection.
Cask Unloading Room	Waste Operations	Preoperational ^{c,d,e,f,h,]} See list 1	WP05-WH1744	Yes	NA	Floor integrity
Hot Cell	Waste Operations	Preoperational ^{c,d,e,f,g,h,i} See list 1	WP05-WH1744	Yes	NA	Floor integrity
Hot Cell Overhead Powered Manipulator	Waste Operations	Preoperational ^{c.d.e.i} See list 1	WP05-WH1743 PM041215 (Annual) PM041216 (Annual) IC411037 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration
Hot Cell Bridge Crane	Waste Operations	Preoperational ^{c.d.e.i} See list 1	WP05-WH1742 PM041217 (Annual) PM041209 (Annual) IC411038 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration.
Transfer Cell	Waste Operations	Preoperational ^{c,d,e,f,h,i} See list 1	WP05-WH1744	Yes	NA	Floor integrity
Facility Cask Loading Room	Waste Operations	Preoperational ^{c,d,e,f,h,I} See list 1	WP05-WH1744	Yes	NA	Floor integrity
Closed Circuit Television Camera	Waste Operations	Preoperationalc,i See list 1	WP05-WH1757	NA	NA	Operability

TABLE D-1a RH TRU MIXED WASTE INSPECTION SCHEDULE/PROCEDURES						
System/		Inspection ^a Frequency and Job Title of	Procedure Number	edure mber		ection Criteria
Equipment Name	Responsible Organization	Personnel Normally Making Inspection	(Latest Revision)	Deterioration ^b	Leaks/ Spills	Other
Radiation Monitoring Equipment	Radiation Control	Preoperational ^{c.d.e} See list 2	WP12-HP124 IC240010 WP12-HP130 IC240007 WP12-HP131 WP12-HP1245 IC240010 WP12-HP1307 IC240007 WP12-HP1314 (Annual)	Yes	NA	Operability Checks, Functional Checks, Instrument calibrations, Flow Calibration, Efficiency Checks.
Cask Unloading Room Crane	Waste Operations	Preoperational ^{c.d.e.i} See list 1	WP05-WH1719 PM041190 (Quarterly & Annual) PM041191 (Annual) PM041192 (Annual) IC411035 (Annual)	Yes	Yes	Pre-operational Checks and Operating Instructions. Mechanical Inspection for Wear and Lubrication. Electrical Inspection. Load Cell Calibration.
Horizontal Emplacement and Retrieval Equipment	Waste Operations	Pre-evolution ^{c.d.e.f} See list 1	WP05-WH1700 PM052010 (Monthly) PM052011 (Annual) PM052013 PM052012 PM052014 (Annual)	Yes	Yes	Assembly and Operating Instructions. Electrical Inspection. Position Transducer Calibration. Tilt Sensor Calibration.
41-Ton Forklift	Waste Operations	Preoperational ^{c.d.e.i} See list 1	WP05-WH1602 PM074061 PM052003 (Hours of Use) PM074027 (Quarterly) PM074029 &PM074051 (Annual)	Yes	Yes	Pre-Operational Checks. PM performed every 100 hours of operation, every 500 hours of operation or every 5 Years. Quarterly Engine Emission Test. Annual Electrical Inspection. Annual NDE.
RH Bay	Waste Operations	Preoperational ^{c.d,e,h,i} See list 1	WP05-WH1744	Yes	NA	Floor integrity
Surface RH TRU Mixed Waste Handling Area	Waste Operations	Preoperational [®] See List 1	WP- 05 WH1744	Yes	Yes	Posted Warning, Communications

Description:

An incorrect equation reference is shown in Attachment B2.

Basis:

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

In Attachment B2, Section B2-2b various equations were re-numbered when the new HWFP was issued. When this re-numbering occurred a reference to the equation used to calculate the UCL₉₀ was not updated.

Revised Permit Text:

a.1. Attachment B2, Section B2-2b

If the observed sample n^* estimate results in greater than 20 percent more required samples than were originally calculated, then the additional samples required to fulfill the revised sample estimate shall be collected and analyzed. The determination of n^* is an iterative process that continues until the difference between n^* and the previous sample determination is less than 20 percent. Then, the UCL_{g_0} is calculated using equation $\frac{B2-10}{B2-6}$. In this case, UCL_{g_0} is the 90 percent upper confidence VOC concentration, \bar{x} is the calculated mean VOC concentration and s is the standard deviation. The value of $t_{(\alpha,n-1)}$ is taken from Table 9-2 of Chapter 9

Description:

In Attachment M1, Section M1-1e(2), the HWFP does not distinguish between how Contact-Handled and Remote-Handled TRU mixed waste is managed during an equipment malfunction.

Basis:

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

In Attachment M1, Section M1-1e(2) the HWFP states that during an equipment malfunction both Contact-Handled and Remote-Handled Packages that are approaching their venting limit are moved into the Waste Handling Building and the containers are removed and placed into permitted storage areas. This is not true for Remote-Handled TRU mixed waste. The Packages are moved into the Waste Handling Building but the containers are not removed from the Package. This change clarifies that language.

Revised Permit Text:

a.1. Attachment M1, Section M1-1e(2)

If the reason for retaining the TRU mixed waste containers is due to an equipment malfunction that prevents the timely movement of the waste containers into the underground, the waste containers will be kept in the Contact-Handled or Remote-Handled Package until day 30 (after receipt at the WIPP) or the expiration of the 60 day limit, whichever comes sooner. At that time the Contact-Handled or Remote-Handled Package will be moved into the WHB. and the Contact-Handled TRU mixed waste containers will be removed and placed in one of the permitted storage areas in the WHB Unit. The Remote-Handled Package will be vented, however, the containers will not be removed from the shipping Package. If there is no additional space within the permitted storage areas of the WHB Unit, the DOE will discuss an emergency permit with the NMED for the purposes of storing the waste elsewhere in the WHB Unit. Waste containers will be inspected when removed from the Contact-Handled Packaging and weekly while in storage in the WHB Unit. Contact-Handled or Remote-Handled Packages will be inspected weekly while they contain TRU mixed waste containers as discussed above.

Description:

In Attachment H1, under the description of TRU Mixed Waste Handlers the Permittees describe the training required to fill this position. Under the list of required training, TRU mixed waste handlers are required to have completed one of the waste handling operations qualification cards. Attachment H2 adds two RH TRU mixed waste handling operations qualification cards that are not listed in Attachment H1. A change is needed in Attachment H1 to clarify that the RH qualification cards are required for RH TRU mixed waste handlers.

Basis:

The change is an "other" change in the training plan and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, B.5.b).

Discussion:

In Attachment H1, the HWFP lists the training requirements for TRU mixed waste handlers. With the incorporation of RH waste into the HWFP it is necessary to clarify that RH TRU mixed waste handlers qualification cards, as defined in Attachment H2, are necessary to meet the TRU mixed waste handler training requirements for RH TRU mixed waste handlers. This modification clarifies that language.

Revised Permit Text:

a.1. Attachment H1, TRU Mixed Waste Handlers

Training (Type/Amount):

- General Employee Training (GET-19X/GET-20X)
- General Employee Training Refresher (GET-19XA/GET-20XA)
- Waste Handling Operations Qualification Card Signature
 - <u>CH TRU Mixed Waste Handler -</u> (WH-01A Backfill Technician, Floor, Yard, and Emplacement Technician, and WH-01B Waste Handling Technician or WH-02 Waste Handling Engineers) and Waste Handling Operations Guidebook (WH-GUIDE-1)
 - <u>RH TRU Mixed Waste Handler (RH-01A, RH-01B, RH-01C) RH Waste</u> <u>Handling Technician Qualification Card or RH Waste Handling Engineer</u> <u>Qualification Card (RH-02) and Waste Handling Operations Guidebooks</u>
- Radworker II (RAD-201)
- Hazardous Waste Worker (HWW-101/102)
- Respiratory Protection (SAF-630/631)
- Hazardous Waste Responder (HWR-101, 101A)
- Hazardous Waste Transportation (HMT-102)
- Forklift Safety (EQP 402) (Once)
- Conduct of Shift Operations (OPS 115) (Once)
- Technical Safety Requirements (OPS 122) (Once)
- Incident Rigger (OPS 402) (Biennial)

- •
- 40-Hour Inexperienced Miner (SAF 501/502) (Annual) Subject Matter Expert/On the Job Trainer (TRG 293/298) (Biennial) Waste Handling Systems (STC-003<u>/STC-015</u>) (Once) •
- •

Description:

Several section numbers in Attachment N have incorrect numbering assigned. **Basis:**

The change is an administrative and informational change to the HWFP and therefore is a Class 1 notification pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42, Appendix I, A.1).

Discussion:

The Permittees have identified several portion of Attachment N which have been incorrectly numbered and do not proceed in a sequential order. This modification will correct those inconsistencies..

Revised Permit Text:

a.1. Attachment N, Table of Contents

N-5a Quality Assurance Objectives for the Measurement of Precision, Accuracy,

Sensitivity, and Completeness	<u>N-15</u>
N-5a(1) Evaluation of Laboratory Precision	N-15
N-5a(2) Evaluation of Field Precision	N-16
N-5a(3) Evaluation of Laboratory Accuracy	N-16
N-5a(d 4) <u>Evaluation of Sensitivity</u>	<u>N-17</u>
N-5a(e <u>5</u>) <u>Completeness</u>	<u>N-17</u>

a.2 Attachment N, Section

N-5a(d4) Evaluation of Sensitivity

The presence of aerosol salts in underground locations may affect the MDL of the samples collected in those areas. The intake manifold of the sampling systems will be protected sufficiently from the underground environment to minimize salt aerosol interference.

The MDL for each of the nine target compounds will be evaluated by the analytical laboratories before sampling begins. The initial and annual MDL evaluation will be performed in accordance with 40 *Code of Federal Regulations* §136 and with EPA/530-SW-90-021, as revised and retitled, "Quality Assurance and Quality Control" (Chapter 1 of SW-846) (1996).

N-5a(e<u>5)</u> Completeness

The expected completeness for this program is greater than or equal to 90 percent. Data completeness will be tracked monthly.