Annual Change Report 2008/2009

From July 1, 2008 to June 30, 2009

November 13, 2009

Prepared for:

The Department of Energy

Prepared by:

Washington Regulatory and Environmental Services
an affiliate of
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Introduction

As part of continuing compliance, the U.S. Environmental Protection Agency (EPA) requires the U.S. Department of Energy (DOE) to provide information on any change in conditions or activities pertaining to the disposal system since the most recent compliance application. This requirement is identified in Title 40 Code of Federal Regulations (CFR), Section 194.4(b)(4), which states:

> "No later than six months after the administrator issues a certification, and at least annually thereafter, the Department shall report to the Administrator, in writing, any changes in conditions or activities pertaining to the disposal system that were not required to be reported by paragraph (b)(3) of this section and that differ from information contained in the most recent compliance application."

In meeting the requirement, the DOE provides an annual report each November of all applicable changes under the above requirement. This annual report informs the EPA of changes to information in the most recent compliance application (the 2004 Compliance Recertification Application (CRA)). Significant planned changes must be reported to the EPA prior to implementation by the DOE. In addition, Title 40 CFR, Section 194.4(b)(3) requires that significant unplanned changes be reported to the EPA within 24 hours or ten days, depending on the severity of the activity or condition. Planned changes are submitted on an individual basis. All other changes are reported annually.

Changes in activities or conditions are reviewed to determine if 40 CFR Section 194.4(b)(3) reporting is necessary. The enclosed tables list those items identified for reporting under 40 CFR Section 194.4(b)(4). The majority of the items described in this report are inspections, reports, and modifications to written plans and procedures for Waste Isolation Pilot Plant (WIPP) operations.

This report captures the summary of each change within five tables:

1. Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4) documents EPA and DOE interactions during the reporting period with a one or two sentence description of each correspondence.

2. Table 2: Procedure Revision Table documents changes to relevant plans and procedures during the reporting period.

3. Table 3: Waste Emplacement Summary Report documents the Transuranic (TRU) waste inventory for the waste parameters identified Section 24 of CRA-2009. The summary provides the total emplaced inventory in the repository as of June 30, 2009.

4. Table 4: Performance Assessment, Software, and Hardware Changes documents the changes to relevant codes, software, and hardware that have occurred during the current reporting period.

5. Table 5: Passive Institutional Controls Activities documents the relevant activities that would be applicable to the development of Passive Institutional Controls (PICs). This table has been added in compliance with the EPA revised PIC schedule. (Reyes to Moody, March 7, 2008)

In accordance with the EPA's requests and feedback over the past ten years, this report incorporates many of the suggestions and guidance for capturing the appropriate level of detail

and the layout of information with respect to the WIPP certification criteria. This report does not include all administrative changes to procedures. Examples of administrative changes to procedures that were not included are editorial changes, reformatting, correcting the title of references, correcting inconsistency within a procedure, and other changes that do not change the substance or intent of the document.

Table 1:

Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.4 Conditions of Compliance Certification	2007/2008 Annual Change Report	DOE to EPA October 30, 2008. DOE submitted to the EPA the Annual Change Report for 2007/2008. EPA to DOE June 16, 2009. EPA determined that the 2007/2008 Annual Change Report submittal is adequate.
194.4 Conditions of Compliance Certification	Shielded Container Planned Change Request (PCR)	DOE to EPA December 1, 2008. DOE requested that the EPA proceed with the review of the PCR for the shielded containers, submitted on November 15, 2007. This request was made so the approval for the shielded container can be granted prior to submittal of the 2009 Compliance Recertification Application. EPA to DOE December 11, 2008. The EPA did not feel it was appropriate to approve DOE's request for review of the PCR for the shielded container stating "three items must be completed before we can issue an approval. 1) The container must be approved by the US Nuclear Regulatory Commission (NRC). 2) The container must be approved by the US Department of Transportation (DOT). 3) Criticality Analysis Report and 4) The Waste Isolation Pilot Plant (WIPP) site contractor must complete the shielded container Documented Safety Analysis (DSA)." DOE to EPA January 21, 2009. DOE submitted the self-certification to the Department of Transportation requirements of the shielded container. DOE to EPA June 10, 2009. DOE submitted to the EPA a Nuclear Regulatory Commission (NRC) certificate of compliance (No. 9279) for shielded container use in a HalfPACT package.
194.8(b) Waste characterization programs at transuranic waste sites	Transuranic Waste Acceptance Criteria	DOE to EPA February 5, 2009. DOE submitted revision 6.3 of the Transuranic Waste Acceptance Criteria for EPA review.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Baseline and follow-up inspections of Savannah River Site (SRS) Remote-handled (RH) TRU waste characterization program	EPA to DOE August 12, 2008. EPA approval of SRS Central Characterization Program (CCP) for RH debris waste packaged in 87 drum liners from Battelle Columbus Laboratory Decommissioning Project. Docket No. A-98-49, II-A4-104.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Continued compliance inspection of the Idaho National Laboratories (INL) CCP-Contact-Handled (CH) waste	EPA to DOE March 25, 2009. EPA provided the results of the continued compliance inspection (No. EPA-INL-CCP 09.08-24) (Docket No. A-98-49; II-A4-112). EPA approved the INL-CCP CH TRU Waste Characterization program.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Baseline approval of the CH TRU waste characterization program of CCP at Oak Ridge National Laboratory (ORNL)	EPA to DOE August 21, 2008. EPA approval of the CH TRU waste characterization program of CCP at ORNL. Docket No. A-98-49, II-A4-103. EPA to DOE January 26, 2009. EPA approved S5000 waste at ORNL CCP. The limitations stated in the previous letter of August 21, 2009, concerning the TRU waste characterization program for CH retrievably-stored waste is applicable.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Quality assurance programs at waste generator sites	EPA to DOE October 7, 2008. The EPA did not identify any instances of non-conformance with the requirements for conducting audits established in Nuclear Quality Assurance (NQA) standards for the Hanford Quality Assurance Program. The EPA's inspection sample showed that the DOE properly conducted the audit of Hanford's QA Program.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	General Electric Vallecitos Nuclear Center (GE-VNC) CCP	DOE to EPA October 20, 2008. DOE notified the EPA of the operational readiness of the RH Program at GE-VNC/CCP. DOE to EPA October 21, 2008. DOE provided the EPA with CCP documents for pre-baseline information. This information is to be placed on the EPA docket for the baseline inspection of the RH waste located at GE-VNC. EPA to DOE November 13, 2008. The EPA transmitted to the DOE the scope of the baseline inspection (Inspection No. EPA-GEVNC-CCP-RH. 12.08-8) of the CCP at GEVNC. EPA to DOE December 11, 2008. The EPA provided the results of Inspection No. EPA-GEVNC-CCP-RH.12.08-8. There was one finding and four concerns requiring responses. DOE to EPA January 30, 2009. DOE submitted responses to concerns GEVNC-CCP-RH-AK-08-001F through GEVNC-CCP-RH-RC-08-006CR raised during baseline inspection No. EPA-GEVNC-CCP-RH-12-08.8. EPA to DOE May 6, 2009. EPA completed and supplied the DOE with a copy of the CCP QA Audit results performed at the Vallecitos waste generator site. The Audit results identified no issues relating to the QA requirements established in the Nuclear Quality Assurance (NQA) standards.
Subpart B-Compliance Certification and Re-Certification Applications 194.11 Completeness and Accuracy of Compliance Applications	Completeness review	EPA to DOE May 21, 2009. EPA notified DOE that the completeness review on the compliance recertification submitted on March 24, 2009 has begun and submitted to the DOE 32 questions to facilitate their review.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
Subpart B-Compliance Certification and Re-Certification Applications 194.12 Submission of Compliance Applications	Distribution of paper and electronic copies	DOE to EPA December 3, 2008. The DOE requested a change in the distribution of paper and electronic copies of the CRA-2009 application. EPA to DOE January 8, 2009. The EPA approved DOE's request to submit copies of the CRA-2009 and other related documents as follows: • One paper and five electronic copies of the CRA-2009. • Five electronic copies of references cited in CRA-2009. • One electronic copy of the CRA-2009 and references distributed to the three New Mexico reading rooms, as well as the Secretary of the New Mexico Environment Department and the Governor of the State of New Mexico as per the Land Withdrawal Act.
194.14(b) Design of the Disposal System	Status of Experiments in the WIPP Underground	DOE to EPA January 8, 2009. DOE submitted to the EPA the notification of intent to begin the Low Background Radiation Experiment (LBRE). EPA to DOE January 28, 2009. EPA approves the LBRE. <u>SEGA and MEGA</u> Collaborating scientists continue to operate their experiment, requiring frequent exchanges of bottles filled with liquid nitrogen to cool the apparatus. The MEGA apparatus was dismantled in preparation of installation of the SEGA detector. <u>EXO</u> Experimental modules continue to be outfitted, and tested. <u>LBRE</u> Collaborators developed experimental protocols. Above-ground and underground incubators were set up. <u>DM-TPC</u> <u>CBFO</u> submitted the "notification of intent" to EPA May 28, 2009. Once EPA concurs, the experiment will be emplaced in the northern part of NExA.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.21 Inspections	Follow-up Inspection Los Alamos National Laboratory (LANL)	EPA to DOE July 30, 2008. EPA follow-up inspection at LANL regarding the events that led to the emplacement of a waste drum (#LAS817174) with an open non-conformance report. EPA to DOE August 21, 2008. EPA concurs with full resumption of shipments from LANL in accordance with the scope of their existing approval.
194.21 Inspections	40 CFR 191, Subpart A inspection report	EPA to DOE October 6, 2008. EPA transmitted to the DOE the report of inspections performed at the WIPP site during the week of July 21, 2008. Docket A-98-49, II-B3-108.
194.21 Inspections	Waste characterization inspection ORNL	EPA to DOE June 24, 2009. EPA notified the DOE that they will perform an unannounced inspection of the ORNL CCP focused on RH TRU debris waste.
194.22 Quality Assurance (QA)	Inspection of the QA Program of the CCP and QA audit of the Carlsbad Field Office (CBFO)	EPA to DOE August 27, 2008. EPA inspection sample showed that CBFO Audit A-08-07 was properly executed in accordance with NQA standards. EPA also audited the QA program of CBFO and showed that CBFO's QA program continues to be properly executed.
194.22 Quality Assurance	CBFO QA Program	DOE to EPA September 26, 2008. DOE response to the Finding and Concerns in the EPA inspection report. Docket No. A-98-49, II-A1-100.
194.23 Models and Computer Codes	Chemical Conceptual Models	EPA to DOE February 3, 2009. EPA verified and approved the Chemical Conceptual Model in the Performance Assessment (PA). Four models were extensively reviewed, including the gas generation, the chemical conditions, the dissolved actinide source term, and the colloidal actinide source term models.
194.24 Waste characterization	Calibration and Confirmation Report ORNL	DOE to EPA August 14, 2008. Revision 3 to the Calibration and Confirmation Report for the Segmented Gamma Scanner (SGS) operated by CCP at ORNL. This revision extends the density calibration range. EPA to DOE October 8, 2008. EPA determined that the SGS system is adequate for characterization of CH TRU waste at ORNL-CCP.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization	Certification for the RH CCP TRU waste program at Argonne National Laboratory (ANL)	DOE to EPA August 14, 2008. Request for review and concurrence of certification for the RH CCP TRU waste program at ANL through audit A-08-03 to implement full Visual Examination approval. DOE to EPA September 10, 2008. Request for review and concurrence on the amendment to the RH Tiering of the certification for the RH CCP TRU waste program at ANL resulting from audit A-08-03. EPA to DOE August 26, 2008. EPA concurrence of the waste characterization equipment, procedures and waste streams for ANL CCP. EPA to DOE October 7, 2008. The EPA concurred with the revised draft recertification letter to CCP at ANL amending the RH Tiering to Tier 1.
194.24 Waste characterization	Recertification of CCP at ANL	DOE to EPA January 6, 2009. DOE request EPA concurrence of the draft recertification for ANL-CCP. EPA to DOE January 8, 2009. EPA concurs that the waste characterization equipment, procedures, and waste streams for both CH and RH waste comply with all of EPA's approvals for waste characterization at ANL-CCP.
194.24 Waste characterization	Recertification for the Hanford waste characterization program	DOE to EPA August 15, 2008. Request for review and concurrence of the recertification for the Hanford waste characterization program resulting from Audit A-07-11. EPA to DOE August 19, 2008. EPA concurred with the certification of the Hanford TRU waste characterization program for CH waste. Docket No. A-98-49, II-A4-101.
194.24 Waste characterization	Tier 1 Acceptable Knowledge (AK) change at Hanford	DOE to EPA October 21, 2008. CBFO requested EPA approval of a change to the Hanford baseline for K Basin waste to be sent to WIPP. EPA to DOE January 12, 2009. EPA denies the Tier 1 change for K Basin Waste at Hanford, citing insufficient Acceptable Knowledge (AK) information. DOE to EPA March 6, 2009. Submitted documents requested regarding the Tier 1 change for K Basin waste. Submitted documents provided additional information pertaining to the characteristics of Grouted KE Basin North Load out Pit Sludge, waste stream RLKEBASIN01.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization	Recertification of LANL-CCP	DOE to EPA November 7, 2008. The DOE submitted to the EPA for review and concurrence the draft recertification memo for LANL-CCP. EPA to DOE November 10, 2008. The EPA concurred with DOE's draft recertification of the LANL CCP. DOE to EPA April 27, 2009. The DOE submitted the draft Certification Expansion memo to the EPA for the LANL RH debris S5000 waste. Waste stream LA-MHD03.002.
194.24 Waste characterization	Certification for the ORNL CCP waste characterization program	DOE to EPA August 29, 2008. Request for review and concurrence of the initial certification for the ORNL CCP waste characterization program resulting from Audit A-08-04 and Audit A-08-06. EPA to DOE September 3, 2008. EPA concurs with the authorization of characterization and certification of the TRU CH, retrievably stored, debris (S5000) waste at ORNL CCP. EPA to DOE February 18, 2009. EPA concurs that the waste characterization equipment, procedures and waste streams agree with EPA's existing approvals at ORNL. DOE to EPA June 17, 2009. DOE submitted a draft CH recertification letter for ORNL to the EPA for concurrence.
194.24 Waste characterization	Certification for the ORNL CCP waste characterization program	DOE to EPA October 3, 2008. The DOE provided a copy of DOE/WIPP-02-3214, Revision 1, Draft BB, "Remote-Handled TRU Waste Characterization Program Implementation Plan" (WCPIP). This revision is provided in response to EPA concern CBFO-RH-RC-08-001CR from inspection EPA-ORNL-CCP-RH-06.08-8. EPA to DOE March 16, 2009. EPA concurs with the change in wording from "payload" to "container" in the WCPIP. EPA encourages DOE to revise the WCPIP prior to any new RH program baseline inspection.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization	Expansion of CCP-ORNL	DOE to EPA November 7, 2008. DOE provided a draft letter to EPA for the expansion of CCP at ORNL. This expansion reflects EPA's approval to extend the calibration range of the ORNL CCP SGS as a Tier 1 change. EPA to DOE November 10, 2008. EPA concurred with DOE's draft recertification of the expansion letter for ORNL CCP. EPA to DOE January 8, 2009. EPA determined that the DWAS/IPAN (Drum Waste Assay System/ Imaging Passive/Active Neutron Counter) system, with the increased calibration range, is adequate for characterization of CH TRU waste at ORNL. (Docket no. A-98-49; II-A4-109). DOE to EPA January 26, 2009. Request for review and concurrence of the draft expansion memo and attachments for the CCP CH program at ORNL.
194.24 Waste characterization	Tier 1 change	DOE to EPA May 6, 2009. DOE submitted a Tier 1 change to CCP-AK-ORNL-501, Revision 2, "CCP Remote-Handled Transuranic Radiological Characterization Technical Report for Remote-Handled Transuranic Waste from Oak Ridge National Laboratory Radiochemical Engineering Development Center Waste Stream: OR-REDC-RH-HET to include SETF Time Period. DOE to EPA May 13, 2009. DOE submitted to EPA a Tier 1 change for the CCP TRU waste program to add the soils/gravel (S4000) waste summary category group to the certification.
194.24 Waste characterization	Expansion certification of the Advanced Mixed Waste Treatment Project (AMWTP)	DOE to EPA September 15, 2008. Request for review and concurrence of the AMWTP expansion certification to include container-in-container sampling and the addition of procedure INST-OI-75 "*Container-in-Container Sampling"*. DOE to EPA February 26, 2009. The DOE submitted, for review, the draft recertification letter for the AMWTP, Audit A-08-19.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization 194.24 Waste characterization	Tier 2 changes to CCP at Idaho National Laboratory (INL), SRS, ANL, LANL, and AMWTP	EPA to DOE August 18, 2008. EPA reviewed information provided by DOE pertaining to the Tier 2 changes to the waste characterization activities conducted by CCP at INL, SRS, ANL, LANL, and AMWTP. EPA did not object to any of the changes. DOE to EPA October 21, 2008. The CBFO granted authority for specific characterization and certification activities for AMWTP, Hanford, and CCP at INL, SRS, ANL, and LANL. EPA to DOE January 14, 2009. EPA approved the Tier 2 changes. DOE to EPA January 28, 2009. DOE submitted notification of Tier 2 changes for AMWTP, Hanford, and CCP activities at ANL, INL, LANL, ORNL and SRS for FY09 1st quarter. DOE to EPA February 23, 2009. DOE submitted additional material requested by the EPA for the Tier 2 changes. Additional material included revised AK sufficiency documents and waste stream descriptions and procedures. DOE to EPA April 23, 2009. DOE submitted notification of Tier 2 Changes for AMWTP, Hanford, and CCP activities at ANL, INL, LANL, ORNL and SRS for FY09 2nd Quarter. EPA to DOE May 11, 2009. EPA agrees with the Tier 2 changes submitted by the DOE for CCP INL, SRS, ANL, LANL, Hanford and AMWTP for 1st Quarter FY09.
194.24 Waste characterization	INL CCP	DOE to EPA January 23, 2009. DOE submitted responses to the EPA pertaining to concerns raised during inspection EPA-INL-CCP-VE-T1.
194.24 Waste characterization	Tier 1 change at INL CCP	EPA to DOE October 7, 2008. The EPA approved changes to the Waste Assay Gamma Spectrometer (WAGS), a non-destructive assay (NDA) system, used by CCP to assay CH waste at INL. Docket number: A-98-49, II-A4-107. DOE to EPA February 26, 2009. The DOE provided a Facility Modification Proposal to the EPA for review. This is a Tier 1 change to replace the digital spectrum analyzers for the Integrated Waste Assay System.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization	Tier 2 change at INL CCP	DOE to EPA November 13, 2008. DOE submitted a notification of a Tier 2 change at CCP-INL to add visual examination of retrievably stored waste. EPA to DOE November 25, 2008. The EPA submitted the scope of the Tier 1 change inspection of the visual examination process(es) implemented by the CCP at INL. The EPA determined that the Tier 2 notification by the DOE should actually be a Tier 1 change. EPA to DOE January 8, 2009. EPA performed a Tier 1 evaluation and found deficiencies requiring response before approval can be given. DOE to EPA February 26, 2009. DOE submitted a Tier 2 change to the EPA for the new software to be used in the drum assay system. EPA to DOE March 4, 2009. EPA approves the process of generating VE information utilizing Audio/Video recordings (CCP-TP-163) produced during the waste packaging process for all NTS debris waste containers. INL-CCP and other EPA-approved CCP sites may use this approved process for characterizing CH TRU debris waste packaged at other Small Generator Sites.
194.24 Waste characterization	Recertification for the INL-CCP	DOE to EPA December 16, 2008. DOE submitted to EPA for review and concurrence, the draft recertification of the INL-CCP for audits A-08-10 and A-08-22. DOE also requested EPA approval of calibration range extension to the INL CCP Contact Handled WAGS.
194.24 Waste characterization	Recertification of CCP at SRS	EPA to DOE October 24, 2008. The EPA concurred that the waste characterization equipment, procedures, and waste streams encompassed in DOE's draft recertification letter comply with EPA's existing approvals for CH waste at SRS-CCP. DOE to EPA April 2, 2009. DOE submitted to EPA for review, the draft expansion of certification for RH debris (S5000) waste characterization activities for Battelle Columbus Laboratory (BCL) waste stream SR-RL-BCLDP-001. DOE to EPA May 26, 2009. DOE submitted to EPA the draft recertification memo for Audit A-09-01 of CCP at SRS. EPA to DOE May 27, 2009. EPA concurred with DOE on the draft recertification for CCP at SRS. The draft recertification includes CH TRU debris (S5000) and soil (S4000) and RH TRU debris (S5000) and RH debris waste stored at SRS.

Table 1: Changes in WIPP Conditions or Activities Reportable under Title 40 CFR Section 194.4(b)(4)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.24 Waste characterization	Tier 1 change at SRS	DOE to EPA March 9, 2009. DOE requests EPA to inspect the Nondestructive Assay Box Counter for use at SRS to assay 55-gallon drums, standard waste boxes, and standard large boxes. This is a Tier 1 change. DOE to EPA June 19, 2009. DOE submitted a Tier 1 change request for the remaining BCL waste streams stored at SRS. CCP-AK-SRS-510, CCP-AK-SRS-520, and CCP-AK-SRS-540 are the waste stream acceptable knowledge summary reports provided for review by the EPA. DOE to EPA June 25, 2009. DOE submitted the revised "Nondestructive Assay Box Counter (NABC) Calibration Validation and Confirmation Report for the Neutron Modality". This document was revised to address EPA concern SRS-CCP-NDA-T1-NABC-06-001CR.
194.44 Engineered Barriers	Magnesium Oxide (MgO)	DOE to EPA March 16, 2009. Notification of implementation of the 1.2 excess factor for MgO emplacement and verification of 96% +/-2% reactivity.

Table 2:

Procedure Revision Table

Table 2: Procedure Revision Table

Procedure	Rev. & Effective Date	Description
NP 6-1, Document Review Process	Rev. 7 07/01/08	This revision was a result of an EPA Technical Inspection which identified several review process recommendations: • Document that calculations are correct, • Capturing informal review results in the formal review. • Verifying that assumptions and logic are clearly stated.
NP 9-1, Analyses	Rev. 7 07/01/08	This revision was a result of an EPA Technical Inspection which identified several analyses process recommendations: • Documenting those calculations are correct. • Capturing informal review results in the formal review. • Provide more complete and clearer explanations for assumptions and conclusions. • Verifying that assumptions and logic are clearly stated.
WP 02-EM1002, Electric Submersible Pump Monitoring System Installation and Operation	Rev. 3 07/03/08	This revision was the result of updating equipment and procedures for the use of an electric submersible pump during hydrologic and environmental monitoring.
WP 02-EM1005, Groundwater Serial Sample Analysis	Rev. 5 08/11/08	This revision was developed as a result of steps identified during a recent Job Hazard Analysis review.
WP 05-WH1011, CH Waste Processing	Rev 27, 28, 29 08/14/08	This revision was developed to incorporate procedural and Job Hazard Analysis updates.
WP 05-WH1758, RH Waste Handling Abnormal Operations	Rev 5 09/04/08	This revision was updated with two new sections. Section 22, Preparing an empty RH TRU 72B trailer for transport, and section 23, preparing an empty RH TRU 72B trailer for loading.
SP 12-19, Calibration and Checking of Oxygen, Humidity and CO_2 Sensors	Rev. 1 10/14/08	This revision adjusts the calibration check and recalibration time limits to more accurately reflect the stability of the equipment. This is in response to SNL Corrective Action Request W-08-17. This procedure is used to calibrate equipment used in the Iron, Lead, Sulfide and EDTA Solubility Studies.
SP 12-24, Calibration of Humidity Meters	Rev 0 10/15/08	This is a new procedure describing the requirements for calibration of humidity meters.
WP 05-WH1011 CH Waste Processing	Rev 30 11/03/08	This revision is the result of changes in packaging procedures.
WP 05-WH1710 72-B RH Processing	Rev 12 11/05/08	This revision added specific requirements for adjustment of lifting tabs.
NP 13-1, Control of Samples and Standards	Rev 5 11/06/08	Forms NP 13-1-1 and NP 13-1-2 were removed from NP 13-1. All sample and standard disposal will be documented in a scientific notebook or supplement. If any sample archival is necessary, this will be documented in a scientific notebook or supplement.

Table 2: Procedure Revision Table

Procedure	Rev. & Effective Date	Description
WP 02-1 WIPP Groundwater Monitoring Program Plan	Rev 8 11/13/08	This revision is to include additions to the plan to satisfy Data Quality Objectives (DQOs) that were not included for Water Level Measurement and Pressure Density Measurements. Added Section 10.1.2 Water Level Monitoring Program DQOs Added Section 10.1.3 Performance and Acceptance Criteria
SP 12-19, Calibration and Checking of Oxygen, Humidity and CO2 Sensors	Rev 2 11/25/08	This revision adjusts the calibration check acceptance criteria for the Oxygen sensors.
SP 12-25, Calibration, Use, and Maintenance of Cary 300 Conc UV-Visible Spectrophotometer	Rev 0 12/22/08	This is a new procedure describing the requirements for calibration, use, and maintenance of the Cary 300 Conc UV-Visible spectrophotometer. This procedure describes the proper use of a device that is used in the MgO Reaction Path and Kinetics experiments.
WP 05-WH.01, WIPP Waste Handling Operations WWIS User's Manual	Rev 4 02/05/09	This revision incorporates the MgO reduction from 1.67 to 1.2 excess factor and resulting change in super sack weight.
SP 12-26, Calibration and use of C-Squared Hydrogen Meter	Rev 0 02/12/09	This is a new procedure that describes the use and calibration of the C-Squared Hydrogen Meter, which is capable of measuring hydrogen concentrations up to 100%.
WP 02-EC3002 Delaware Basin Drilling Database Upgrade Process	Rev 3 03/02/09	This revision represents a change from Microsoft Access database to a SQL server based web application to enter, collect, and query data.
SP 12-1, Use of Laboratory Balances and Scales	Rev 3 05/05/09	The criteria change on the balance calibration check is part of the SNL corrective action for CAR W-09-08.
SP 9-11, Calculation of Densities for Groundwater in WIPP Wells	Rev 0 05/19/09	This is a new procedure that prescribes the Sandia WIPP process for the calculation of densities for groundwater in WIPP wells.

Table 3:

Waste Emplacement Summary Report

Table 3: Waste Emplacement Summary Report

TRU Waste Inventory				
	Reporting Period[1] Emplaced Container Volume (m^3)		**Cumulative[2] Emplaced Container Volume (m^3)**	
RH TRU	20		109	
CH TRU	1,644		60,792	
Waste Components Inventory				
	Reporting Period[1] Emplaced Mass (kg)	**Cumulative[2] Emplaced Mass (kg)**	**Maximum Emplacement Limiting Value[3] (kg)**	**Percent of Limiting Value[3] Emplaced**
Cellulose, Plastic, Rubber Materials[4]	390,389	6,402,057	22,000,000	29.11%
	Reporting Period[1] Emplaced Mass (kg)	**Cumulative[2] Emplaced Mass (kg)**	**Minimum Emplacement Limiting Value[3] (kg)**	**Percent of Limiting Value[3] Emplaced**
Fe-Metals[5]	457,904	17,306,416	20,000,000	86.53%
Non-Fe Metals	2,599	327,696	2,000	Minimum met
Residual Liquids	Liquid waste is prohibited at WIPP. The total residual liquid in any payload container shall not exceed one percent by volume of that payload container.			

Emplaced Radiological Activity Inventory (curies)				
Radionuclide	**Cumulative Activity in FY 2007/2008 Annual Change Report[6]**	**CH Repository Reporting Period Activity[6]**	**RH Repository Reporting Period Activity[6]**	**Total Activity as of June 30, 2009[6]**
^{241}Am	1.876E+05	1.913E+05	4.841E+01	1.914E+05
^{137}Cs	3.813E+02	2.035E+00	9.523E+02	9.543E+02
^{238}Pu	1.608E+05	2.131E+05	3.144E+01	2.131E+05
^{239}Pu	2.744E+05	2.802E+05	6.130E+01	2.802E+05
^{240}Pu	6.667E+04	6.811E+04	3.510E+01	6.815E+04
^{242}Pu	1.041E+01	1.149E+01	3.470E-02	1.152E+01
^{90}Sr	2.846E+02	3.352E+00	7.024E+02	7.058E+02
^{233}U	3.258E+00	3.679E+00	9.838E-02	3.777E+00
^{234}U	2.704E+01	3.573E+01	1.891E-01	3.592E+01
^{238}U	1.063E+01	1.099E+01	2.649E-03	1.099E+01
Total	**6.901E+05**	**7.527E+05**	**1.831E+03**	**7.546E+05**

Table 3: Waste Emplacement Summary Report

MgO[7] and Cellulose, Plastic & Rubber (CPR) Mass Emplaced Per Waste Panel	Panel	Room	MgO (kg)	CPR* (kg)	Excess Factor
	1	all	4,482,355	1,237,732	1.87[8]
	2	2-7	5,972,300	1,241,928	2.26[8]
	2	1	691,515	186,200	1.71
	3	7	960,120	104,831	4.03
	3	6	954,405	228,033	1.95
	3	5	1,022,985	284,651	1.70
	3	4	960,120	255,054	1.79
	3	3	931,545	243,860	1.89
	3	2	944,880	227,889	2.03
	3	1	662,940	183,072	1.76
	4	7	942,975	248,903	1.90
	4	6	925,830	267,494	1.71
	4	5	946,785	265,295	1.71
	4	4	1,013,460	290,608	1.70
	4	3	1,015,365	285,762	1.70
	4	2	933,176	374,333	1.22[7]
	4	1	676,275	265,912	1.24
	5	7	438,150	204,476	*1.03
	5	6	0	6,011	*.00

1. Reporting Period includes emplacement that occurred between July 1, 2008 and June 30, 2009.
2. Cumulative period includes emplacement from the beginning until June 30, 2009.
3. Limiting Value—Values from CRA 2009 Section 24. These values are based on inventory assumptions.
4. Cellulose, Plastic, Rubber Materials (CPR) includes CPR within the waste, container materials and emplacement materials.
5. Fe-Metals include both materials in the waste and containers in total.
6. There is no decay correction for the listed isotope activities.
7. New minimum value for excess factor of MgO to be implemented as approved by EPA (February 11, 2008) reduces excess factor from 1.67 to 1.20 and ensures 96% +/-2% reactivity.
8. MgO, CPR and Excess Factor results for all of panel 1 and rooms 2-7 of panel 2 have been recalculated to replace averaged data with actual emplaced data.

* These are active emplacement rooms which will not have all the required MgO emplaced until both CH and RH waste emplacement has been completed.

Note

Waste emplacement is a three step process. The first step is emplacement of RH waste into the walls of the emplacement room. The second step involves CH waste emplacement into the room. The third step involves emplacement of MgO onto the waste stacks as each row is completed and the MgO calculations are performed.

Table 4:

Performance Assessment, Software, and Hardware Changes

Table 4: Performance Assessment, Software, and Hardware Changes

WIPP Use Codes/Software and Code Version	Version Date	Description
NONLIN Version 2.0	11/13/08	Software was requalified for Linux/Unix based platforms. Minor modifications to the code (primarily error handling) for consistency between platforms were made. NONLIN Version 2.01 is the new code version.
NUMBERS 1.23	01/08/09	New utility code used for computing within the Sandia Engineering Analysis Code Access System (SEACAS).
GROPE 1.41	01/08/09	New utility code used for computing within SEACAS.
ALBEBRA2 1.28	01/08/09	New utility code used for computing within SEACAS.
APPREPRO 2.06	01/08/09	New utility code used for computing within SEACAS.
FASTQ 3.18	02/05/09	New utility code used for computing within SEACAS.
BLOTII2 1.59A	02/19/09	New utility code used for computing within SEACAS.
ORIGEN2 Version 2.2	N/A	Retired code. No replacement.

Table 5:
Passive Institutional Controls Activities

Table 5: Passive Institutional Controls Activities

DATE	Description of Activity
09/29/08	Purchased and received Laser engraved thin sintered silicon carbide plates from a division of the Japanese government known as the Radioactive Waste Management Funding and Research Center in Tokyo, Japan. These engraved plates will be tested for use as both long term signage and document archivability. The thin sintered silicon carbide plates will be attached to columns of granite for testing purposes in accordance with the Permanent Markers Testing Program Plan.
12/03/2008	WIPP became a member of the Cultural, Artistic and Scientific knowledge for Preservation, Access and Retrieval (CASPAR) community. CASPAR is an international community for the preservation and retrieval of digital information. CASPAR is pursuing the formation of an international digital repository for the archiving of records and information for thousands of years into the future. The result of this research could meet or exceed WIPP's requirement for record archives identified as Passive Institutional Controls.
09/05/2009	WIPP has initiated review of the American Standard Testing Methods (ASTM) for building materials and metals in preparation of determining the appropriate testing regimen for determining long term weatherability of permanent markers.

Summary

The DOE believes the changes reported in this version of the WIPP Change Report do not represent significant changes pertaining to the disposal system.

References

Letter from Reyes (EPA) to Moody (DOE), March 7th, 2008.