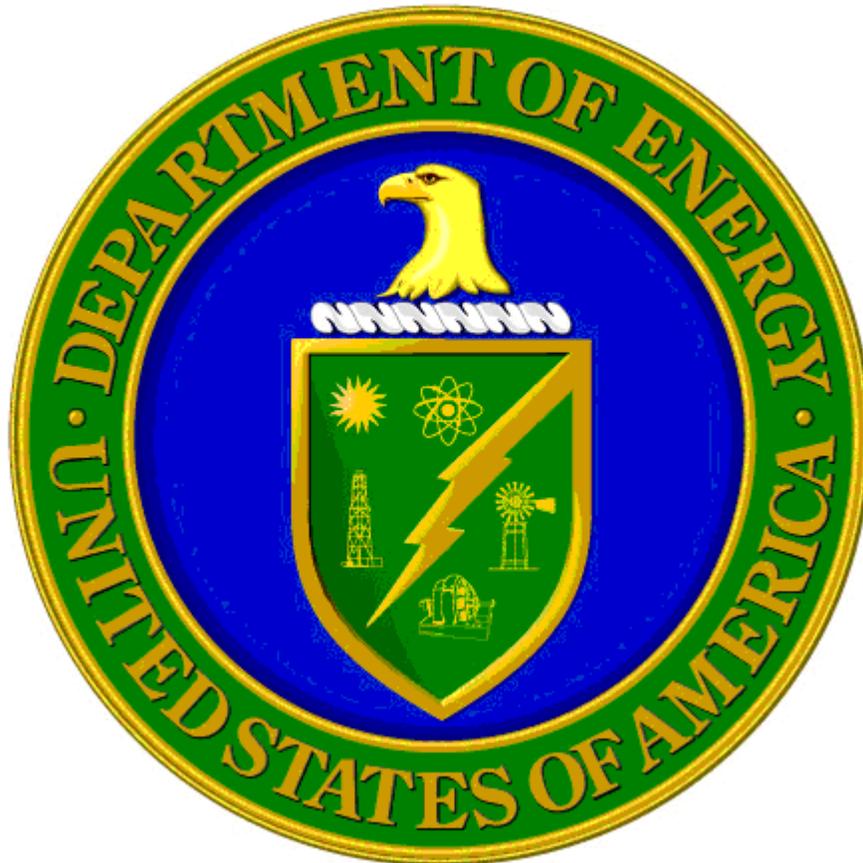


Annual Change Report 2011/2012

From July 1, 2011, to June 30, 2012

October 2012



Prepared for:

The Department of Energy

Prepared by:

Nuclear Waste Partnership LLC

Regulatory Environmental Services

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Introduction

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.”

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 2009 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 seven tables for the period July 1, 2011, through June 30, 2012:

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.

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

Table 3: Waste Emplacement Summary Report documents the transuranic (TRU) waste inventory for the waste parameters. The summary provides the total emplaced inventory in the repository as of June 30, 2012.

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.

Table 5: Passive Institutional Controls Activity 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 PICs schedule. (Reyes to Moody, March 7, 2008)

Table 6: EPA Waste Characterization Inspections – January 2008 to June 2012 documents inspections performed by the EPA pertaining to Tier 1 changes to the baseline approvals at all generator and disposal sites for TRU waste. This table was added to the Annual Change Report at the request of the EPA during the EPA/DOE management meeting held July 29, 2010. Inspections prior to January 2008 were documented in Table CARD 8-1 *EPA Waste Characterization Inspections* submitted with the five-year recertification applications. (EPA request, July 29, 2010)

Table 7: EPA Quality Assurance Audits by Site – January 2008 to June 2012 documents audits performed by the EPA at all generator and disposal sites for TRU waste disposal. This table was added to the Annual Change Report at the request of the EPA during the EPA/DOE management meeting held July 29, 2010. Audits prior to January 2008 were documented in Table CARD 8-2 *EPA Quality Assurance Audits by Site* submitted with the five-year recertification applications. (EPA request, July 29, 2010)

In accordance with the EPA's requests and feedback, 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 titles 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)

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.4(b)(3) Conditions of Compliance Certification	Planned Change Request (PCR), Planned Change Notice (PCN)	<p><u>EPA to DOE August 8, 2011</u>. Approval of the shielded container PCR for remote-handled (RH) TRU waste inventory disposal.</p> <p><u>DOE to EPA August 30, 2011</u>. Submittal of the PCR for Repository Reconfiguration.</p> <p><u>DOE to EPA September 28, 2011</u>. Submittal of the PCR for Panel Closure Redesign.</p> <p><u>EPA to DOE December 22, 2011</u>. EPA submitted review questions and comments pertaining to the PCR for Panel Closure Redesign.</p> <p><u>DOE to EPA February 14, 2012</u>. Submittal of the PCN for placement of Magnesium Oxide Supersacks.</p> <p><u>DOE to EPA April 17, 2012</u>. DOE responded to EPA's comments and review questions pertaining to the Panel Closure Redesign PCR.</p>
194.4(b)(4) Conditions of Compliance Certification	Annual Change Report	<p><u>DOE to EPA October 24, 2011</u>. Submittal of the 2010/2011 Annual Change Report.</p> <p><u>EPA to DOE April 20, 2012</u>. EPA determined that the 2010/2011 Annual Change Report is adequate.</p>

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 ¹	Argonne National Laboratory (ANL)– Tier 1 request	<p><u>DOE to EPA July 13, 2011</u>. Tier 1 request for ANL-Central Characterization Program (CCP) RH waste to evaluate the radiological characterization approach of the AERHDM Fuel Examination Waste (FEW) from the K-Wing.</p> <p><u>DOE to EPA September 21, 2011</u>. Submittal of additional information to support ANL-CCP Tier 1 request for RH AERHDM FEW from the K-Wing.</p> <p><u>DOE to EPA September 28, 2011</u>. Response to technical comments on Appendix B of ANL-CCP RH characterization of the AERHDM FEW from the K-Wing.</p> <p><u>DOE to EPA January 3, 2012</u>. Tier 1 request for ANL-CCP RH waste to evaluate the radiological characterization approach of the solidified liquid waste from the K-Wing, building 205, 55-gallon containers.</p> <p><u>EPA to DOE February 13, 2012</u>. EPA approved the RH AERHDM K-Wing FEW waste. EPA Docket No. A-98-49; II-A4-158.</p> <p><u>DOE to EPA March 28, 2012</u>. DOE response to the follow-up questions/clarifications for the solidified liquid waste from the K-Wing, building 205 Tier 1 request.</p> <p><u>DOE to EPA March 29, 2012</u>. Request for extension to EPA issue ANL-CCP-T1-RC-12-001CR, pertaining to the evaluation of the radiological characterization approach of the solidified liquid waste from the K-Wing, building 205 for the ANL-CCP.</p> <p><u>EPA to DOE June 14, 2012</u>. EPA approval of the Tier 1 request for the addition of the K-Wing solidified liquid waste to the RH waste stream AERHDM. EPA Docket No. A-98-49; II-A4-162.</p>

¹ Tier 1 and Tier 2 activities will be identified under Section 194.8 at the request of the EPA during a meeting held on December 3, 2009.

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	Bettis Atomic Power Laboratory (BAPL) – Baseline inspection	<u>EPA to DOE July 28, 2011.</u> Approval of BAPL CCP to characterize RH TRU debris waste stream BT-T001. EPA Docket No: A-98-49; II-A4-151.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Hanford – Tier 1 request	<u>DOE to EPA July 7, 2011.</u> Submittal of additional documentation to support the Tier 1 request for Hanford-CCP to add the Summary Category Group (SCG) S3000. <u>EPA to DOE November 10, 2011.</u> EPA approved waste stream RLCCPPUNIT. EPA Docket No. A-98-49; II-A4-154.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Idaho National Laboratory (INL) – Tier 1 request	<u>DOE to EPA August 30, 2011.</u> Tier 1 request to add waste stream IN-ID-NRF-SPC to the CCP-RH certification at INL. <u>EPA to DOE March 12, 2012.</u> EPA approval for disposal at WIPP of the RH TRU waste stream IN-ID-NRF-SPC. EPA Docket No. A-98-49; II-A4-159. <u>DOE to EPA March 28, 2012.</u> Tier 1 request to evaluate the radiological approach of 48 additional RH canisters from waste stream AERHDM at INL-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
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Los Alamos National Laboratory (LANL)– Tier 1 request	<p><u>DOE to EPA July 5, 2011</u>. Tier 1 request for the deployment of the Super High Efficiency Neutron Counter (Super HENC).</p> <p><u>EPA to DOE October 28, 2011</u>. EPA approved the use of the Super HENC for waste characterization at LANL-CCP. EPA Docket No. A-98-49; II-A4-153.</p> <p><u>DOE to EPA February 23, 2012</u>. Submittal of requested batch data reports (BDRs) for the Tier 1 approval of the LANL-CCP HENC2 calibration change and the Tier 2 addition of the High Efficiency – Real-Time Radiography (HE-RTR) to the LANL-CCP certification.</p> <p><u>EPA to DOE April 30, 2012</u>. EPA approval of the Tier 1 request to extend the calibration range of the HENC2.</p> <p><u>DOE to EPA May 24, 2012</u>. Submittal of Tier 1 request for LANL density extension for the HENC1 and submittal of the calibration report.</p> <p><u>DOE to EPA June 4, 2012</u>. Tier 1 request for extended calibration of the Super HENC at LANL.</p> <p><u>DOE to EPA June 14, 2012</u>. Submittal of information requested by EPA to facilitate its review of the LANL density extension for the HENC1 and the Super HENC.</p> <p><u>DOE to EPA June 21, 2012</u>. Response to EPA request for information in support of the continued compliance audit of the HE-RTR Unit at LANL.</p>

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	Sandia National Laboratory (SNL) – Baseline inspection	<p><u>DOE to EPA August 2, 2011.</u> Submittal of additional information requested during EPA’s baseline inspection of CCP RH waste characterization. EPA concern SNL-CCP-RH-AK-11-01CR.</p> <p><u>DOE to EPA August 11, 2011.</u> Submittal of additional information requested by EPA during the August 5, 2011, phone conference.</p> <p><u>EPA to DOE November 23, 2011.</u> EPA determined that the RH debris waste stream SNL-HCF-S5400-RH waste characterization program was adequate for (1) the AK process for 19 containers of group PKE00044, and (2) the radiological characterization process in CCP-AK-SNL-501, revision 1. EPA Docket No. A-98-49; II-A4-155.</p> <p><u>DOE to EPA December 15, 2011.</u> Tier 1 request to add containers generated from PKE00027/54 and PKE00047 to the existing waste stream SNL-HCF-S5400-RH.</p> <p><u>DOE to EPA March 26, 2012.</u> Response to request for additional information for the Sandia PKE00027 sample representatives.</p> <p><u>EPA to DOE March 28, 2012.</u> EPA approval to add containers generated from waste groups PKE00027/54 and PKE00047 to waste stream SNL-HCF-S5400-RH. EPA Docket No. A-98-49; II-A4-160.</p>
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Savannah River Site (SRS) – Baseline inspection	<p><u>EPA to DOE August 9, 2011.</u> Transmittal of scope of baseline inspection (EPA-SRS-CCP-RH-08-11.8) of CCP at SRS for RH TRU debris (S5000) waste stream.</p> <p><u>EPA to DOE April 18, 2012.</u> EPA baseline inspection approval of the RH TRU waste characterization activities at SRS CCP’s RH TRU program. EPA Docket No. A-98-49; II-A4-161.</p>

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	Fiscal Year (FY)– 11 Quarterly Tier 2 reports, second quarter	<u>EPA to DOE July 5, 2011</u> . EPA concurrence of FY11 second quarter Tier 2 changes at Advanced Mixed Waste Treatment Plant (AMWTP) and CCP. Additional documents requested by EPA. <u>DOE to EPA July 15, 2011</u> . Submittal of additional documents requested by EPA for FY11 Tier 2 changes for second quarter.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	FY11 Quarterly Tier 2 reports, third quarter	<u>DOE to EPA August 11, 2011</u> . Notification of Tier 2 changes for AMWTP and CCP activities at ANL, Hanford, INL, LANL, Oak Ridge National Laboratory (ORNL) and SRS for FY11 third quarter. <u>EPA to DOE November 9, 2011</u> . EPA did not object to any of the Tier 2 changes for the third quarter of FY11. Additional information was requested by the EPA to support their decision. <u>DOE to EPA December 1, 2011</u> . Submittal of additional documents requested by the EPA for Tier 2 changes for the third quarter of FY11.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	FY11 Quarterly Tier 2 reports, fourth quarter	<u>DOE to EPA November 1, 2011</u> . Notification of Tier 2 changes for AMWTP and CCP activities at ANL, Hanford, INL, LANL, ORNL and SRS for FY11 fourth quarter.
194.8 Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	FY12 Quarterly Tier 2 reports, first quarter	<u>DOE to EPA February 9, 2012</u> . Notification of Tier 2 changes for AMWTP and CCP activities at ANL, BAPL, Hanford, INL, LANL, ORNL, SNL and SRS for FY12 first quarter. <u>EPA to DOE March 28, 2012</u> . EPA did not object to any of the Tier 2 changes for AMWTP and CCP reported for the first quarter of FY12.

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	FY12 Quarterly Tier 2 reports, second quarter	<p><u>DOE to EPA April 24, 2012</u>. Notification of Tier 2 changes for AMWTP and CCP activities at ANL, BAPL, Hanford, INL, LANL, ORNL, SNL and SRS for FY12 second quarter.</p> <p><u>EPA to DOE June 4, 2012</u>. EPA did not object to any of the Tier 2 changes reported for the second quarter of FY12.</p> <p><u>DOE to EPA June 12, 2012</u>. Submittal of documentation requested pertaining to the FY12 Tier 2 second quarter changes.</p>

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
194.14(b) Design of the Disposal System	Status of Experiments in the WIPP Underground	<p><u>SEGA (Segmented Enriched Germanium Assembly) and MEGA (Multiple Element Germanium Array)</u> Scientists continued to operate their experiment, requiring occasional exchanges of bottles filled with liquid nitrogen to cool the detector.</p> <p><u>EXO (Enriched Xenon Observatory)</u> Components of the experiment continued to be tested, adjusted and data collected. Construction is 90% complete. Collaborators continue filling the detector with liquid enriched xenon (80% ¹³⁶Xe).</p> <p><u>LBRE (Low Background Radiation Experiment)</u> None reported.</p> <p><u>DMTPC (Dark Matter Time Projection Chamber)</u> Detectors were operated safely and reliably during the reporting period.</p> <p><u>Salt Disposal Investigations (SDI)</u></p> <ul style="list-style-type: none"> • <u>DOE to EPA August 11, 2011.</u> DOE notified EPA of their intent to begin preparatory activities for the SDI project. • <u>EPA to DOE November 17, 2011.</u> EPA did not object to the DOE conducting the initial mining phase of the SDI activity. • Phase 1 mining activities began December 2, 2011 and are scheduled to be completed February 11, 2013. • <u>DOE to EPA June 20, 2012.</u> Notification of revisions to the Salt Disposal Investigations Testing Concepts entitled Salt Defense Disposal Investigations (SDDI).

Regulatory Requirements	Implementing Document or Activity that Changed	Description of the Change and DOE Assessment of the Impact of the Change
194.21 Inspections	Unannounced inspection INL-CCP	<p><u>EPA to DOE September 14, 2011.</u> Notification of an unannounced continued compliance inspection of the TRU waste characterization program at INL. This inspection was concurrent with an inspection at the DOE Carlsbad Field Office (CBFO) to evaluate characterization of Nuclear Radiation Development (NRD).</p> <p><u>EPA to DOE January 4, 2012.</u> Results of the unannounced inspection (EPA Inspection No. EPA-NRD-CH-UA-09.11-24) performed on September 19-20, 2011. Concurrent inspections were conducted of the CCP program for CH TRU waste at INL and CBFO. EPA confirmed that INL-CCP characterization of Small Quantity Sites (SQS) waste from NRD is consistent with the conditions and limitations set forth in EPA's baseline approval and subsequent Tier 1 changes. EPA Docket No. A-98-49; II-A4-157.</p>
194.21 Inspections	Annual WIPP inspection	<p><u>EPA to DOE November 23, 2011.</u> EPA performed the annual WIPP inspection and determined "that the activities related to emissions monitoring during waste management and storage, monitoring of the ten parameters for long-term containment and waste emplacement were adequate and complied with 40 CFR Part 191, Subpart A and the 1998 Certification Decision." EPA Docket No. A-98-49; II-B3-116.</p>
194.22 Quality Assurance	Quality Assurance Audit	<p><u>EPA to DOE April 9, 2012.</u> EPA audits determined that the CBFO QA Program continues to be properly executed and did not find any nonconformance with NQA-1-1989 compliance. EPA Docket No. A-98-49; II-A1-110.</p>
194.24 Waste Characterization	RH TRU waste Characterization Program Implementation Plan	<p><u>DOE to EPA June 1, 2012.</u> Submittal of the DOE/WIPP-02-3214, Revision 3, Draft D, <i>Remote-Handled TRU Waste Characterization Program Implementation Plan</i> for review.</p>

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
194.42 Monitoring	Ground Water Monitoring Plan	<u>DOE to EPA April 9, 2012</u> . Notification of changes to the Groundwater Monitoring Plan as a result of the New Mexico Environment Department (NMED) approval of the Class 2 permit modification request.

Table 2:
Procedure Revision Table

Table 2: Procedure Revision Table

Procedure	Rev. & Effective Date	Description
Washington TRU Solutions LLC Quality Assurance Program Description (QAPD) WP 13-1	Rev. 31, January 5, 2012	<ul style="list-style-type: none"> • Added reference to TRUPACT-III Certificate of Compliance. • Added requirement to review and update the QAPD annually and submit a summary to CBFO. • Revised Contractor Assurance System section to reflect DOE O 226.1B changes. • Added TRUPACT-III to examples of Nuclear Regulatory Commission (NRC)-licensed packaging. • Deleted sections 1.1.14, 1.1.15, and 1.1.16. • Relocated statement that any WIPP employee having a concern for employee safety, the safety of the environment, or the quality or regulatory compliance of the activity has the responsibility and authority to suspend the performance of that activity. • Added inventory requirements specific to safety software. • Added description of software grading.
Audits and Surveillances NP 18-1	Rev. 9, January 5, 2012	<ul style="list-style-type: none"> • The purpose of this revision is to extend the required period of conducting the annual internal/external audit from every year to every three years, with the option to perform the audit more frequently if determined to be necessary. This change in the frequency of performing the internal/external audit of the SNL-CPG QA Program was evaluated and approved by CBFO in a letter issued on September 1, 2011 (ERMS #556139). This procedure change satisfies the corrective action response to Corrective Action Report (CAR) 12-004 issued by CBFO QA.
Container Overpacking WP 05-1010	Rev. 7, February 15, 2012	<ul style="list-style-type: none"> • Deleted all sections that do not pertain to overpacking of a ten drum overpack (TDOP).

Procedure	Rev. & Effective Date	Description
Water Level Data Handling and Reporting WP 02-EM1026	Rev. 4, February 22, 2012	<ul style="list-style-type: none"> • Deleted statement pertaining to delivery of data reports to the NMED. • Updated document to reflect changes in the Hazardous Waste Facility Permit modification. • Updated step 4.4 to direct Environmental Monitoring & Hydrology to submit monthly data to Sandia National Laboratories – Carlsbad, and retain related correspondence.
Waste Data System Program and Data Management Plan WP 08-NT.01	Rev. 24, February 27, 2012	<ul style="list-style-type: none"> • Section 1.0 updated/clarified wording about the Waste Data System (WDS) associated applications. • Subsection 4.1 removed requirement to update plant engineering documents formerly associated with the WDS. • Subsection 4.8 deleted the description of manual container and payload transportation checks. • Section 5.0 replaced “WWIS” references with “WDS” throughout section. • Subsection 6.1 specified criteria for password creation
Serial and Final Sample Collection WP 02-EM1006	Rev. 10, February 27, 2012	<ul style="list-style-type: none"> • Updated document to reflect changes in the Hazardous Waste Facility Permit modification.
Anion and Cation Analysis WP 02-EM1007	Rev. 4, February 27, 2012	<ul style="list-style-type: none"> • Updated document to reflect changes in the Hazardous Waste Facility Permit modification. • Change sample requirements from composite to single grab sample.
Data Review for the Annual Culebra Groundwater Report WP 02-EM1025	Rev. 4, February 27, 2012	<ul style="list-style-type: none"> • Updated document to reflect changes in the Hazardous Waste Facility Permit modification
Administrative Processes for Environmental Monitoring and Hydrology Programs WP 02-EM3001	Rev. 16, February 28, 2012	<ul style="list-style-type: none"> • Updated document to reflect changes in the Hazardous Waste Facility Permit modification. • Removed all references to Detection Monitoring Program (DMP) sampling and DMP sample number development.

Table 2: Procedure Revision Table

Procedure	Rev. & Effective Date	Description
WIPP Groundwater Monitoring Program Plan WP 02-1	Rev. 11, February 28, 2012	<ul style="list-style-type: none"> • Terminology, field sampling requirements and methods, and parameters updated to reflect the current Hazardous Waste Facility Permit. • Updated the references and driver documents. • Groundwater reporting mechanism changes from the Annual Site Environmental Report (ASER) to the Culebra Groundwater Report.
Electric Submersible Pump Operation WP 02-EM1002	Rev. 5, February 28, 2012	<ul style="list-style-type: none"> • Changed procedure title to “Electric Submersible Pump Operation.” • Deleted numerous sections, steps and attachments that were obsolete.
Groundwater Serial Sample Analysis WP 01-EM1005	Rev. 9, February 28, 2012	<ul style="list-style-type: none"> • Updated document to reflect changes in the Hazardous Waste Facility Permit modification.
Waste Data System Software Verification and Validation Plan WP 08-NT.05	Rev. 11, March 12, 2012	<ul style="list-style-type: none"> • Section 4.1.1 added information about issuing and approving requirements in the matrix. • Section 4.1.3 added information about conduct of peer reviews.
SP 9-13 Data Thinning and Removal of Barometric and Earth Tide Effects from Water-Level Data	Rev. 0, March 12, 2012	<ul style="list-style-type: none"> • This new procedure describes the method, reasoning, and science behind the data thinning and removal of barometric and earth tide effects from water-level data obtained from wells in close proximity to the WIPP.
Characterization Sampling, Shipping, and Documentation WP 02-EC1001	Rev. 10, March 15, 2012	<ul style="list-style-type: none"> • Reworded and reformatted sections 9.0 and 14.0 for clarity. • Added new Electronic Attachment (EA02EC1001-1-0) and replaced references to attachment 1. • Reformatted section 1.0 for clarity and updates. • Added steps 4.1 through 4.4 for responsibilities during contamination events. • Added new section 5.0 (Sampling In-Depth or Volume Contamination for Radiological Waste). • Modified section 12.0 for folder labeling process.

Procedure	Rev. & Effective Date	Description
Waste Data System Configuration Management and Software Quality Assurance Program WP 08-NT.04	Rev. 19, March 27, 2012	<ul style="list-style-type: none"> • Subsections 2.8 and 2.9 removed requirements for development of a Test assignment spreadsheet. • Subsection 3.3.2 updated item 6 to replace developer with Data Base Administrator (DBA) and added item 7 regarding updating online help when making major/minor modifications to WDS software. • Subsection 3.3.6.2 added new System Software types.
Contamination Control WP 12-HP3400	Rev. 9, April 17, 2012	<ul style="list-style-type: none"> • Changed dose limit on Total dpm/100 cm³ for Transuranics from 100 to 500.
SP 12-14 Use of pH Meters and Electrodes	Rev. 3, May 1, 2012	<ul style="list-style-type: none"> • Added a section that provides pCH⁺ correction factors to be used when measuring pH in concentrated brines. Added an appendix that discusses the process for determining these correction factors.
WIPP Emergency Management Program WP 12-9	Rev. 33, May 23, 2012	<ul style="list-style-type: none"> • Added information to better clarify items and to be consistent with the requirements of DOE Order 151.1C.
Manually Acquired Geomechanical Instrument Data WP 07-EU1301	Rev. 7, May 24, 2012	<ul style="list-style-type: none"> • Deleted sections 2.0, 3.0 and 4.0. • Revised the equipment list.
Radiological Surveys WP 12-HP1100	Rev. 17, May 24, 2012	<ul style="list-style-type: none"> • Revised steps 4.1, 4.2 and 4.4. • Revised Surface Contamination Limits table to mirror WP 12-5, Radiation Safety Manual
SP 12-33 Calibration, Use and Maintenance of the Accelerated Surface Area and Porosimetry System (ASAP 2020)	Rev. 0, June 21, 2012	<ul style="list-style-type: none"> • This procedure prescribes the SNL WIPP process for the calibration, operation, and maintenance of the Micromeritics ASAP 2020 as part of the laboratory geochemistry research activities in the support of the WIPP Project.
CH Waste Processing WP 05-WH1011	Rev. 44, June 28, 2012	<ul style="list-style-type: none"> • Rearranged, deleted and reinserted bullet items in the Precautions and Limitations section. • Added various notes and cautions in the Performance section. • Revised step 2.5.8.

Table 3:
Waste Emplacement Summary Report

TRU Waste Inventory				
	Reporting Period ¹ Emplaced Volume (m ³)		Cumulative ² Emplaced Volume (m ³)	
RH TRU	29		281	
CH TRU	6,420		82,103	
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	476,387	8,234,378	22,000,000	37.43%
	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	1,997,954	24,764,128	20,000,000	Minimum met
Non-Fe Metals	34,824	386,099	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 2010/2011 Annual Change Report ⁶	CH Repository Reporting Period Activity ⁶	RH Repository Reporting Period Activity ⁶	Total Activity as of June 30, 2012 ⁶
²⁴¹ Am	2.190E+05	2.296E+05	4.794E+02	2.301E+05
¹³⁷ Cs	3.659E+03	7.886E+00	8.106E+03	8.114E+03
²³⁸ Pu	3.470E+05	4.417E+05	5.575E+02	4.423E+05
²³⁹ Pu	3.039E+05	3.159E+05	2.199E+02	3.161E+05
²⁴⁰ Pu	7.465E+04	7.780E+04	1.964E+02	7.800E+04
²⁴² Pu	1.900E+01	2.389E+01	3.079E-01	2.420E+01
⁹⁰ Sr	2.645E+03	1.520E+01	5.335E+03	5.350E+03
²³³ U	6.033E+00	6.161E+00	3.032E-01	6.464E+00
²³⁴ U	6.386E+01	8.036E+01	5.563E-01	8.092E+01
²³⁸ U	1.415E+01	1.687E+01	3.021E-02	1.690E+01
Total	9.510E+05	1.065E+06	1.490E+04	1.080E+06

Table 3: Waste Emplacement Summary Report

MgO⁷ 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	285,755	1.70
	4	2	931,545	374,327	1.22 ⁷
	4	1	668,655	265,884	1.23
	5	7	937,260	353,262	1.28
	5	6	875,477	140,009	2.85
	5	5	782,346	298,808	1.24
	5	4	737,167	225,425	1.64
	5	3	714,286	215,937	1.61
	5	2	730,612	194,045	1.84
	5	1	485,714	135,742	1.75
	6	7	744,218	167,581	2.11
	6	6	666,667	189,857	1.74
	6	5	248,980	112,862	*1.18
	6	4	0	1,845	*.00
1. Reporting Period includes emplacement that occurred between July 1, 2011, and June 30, 2012.					
2. Cumulative period includes emplacement from the beginning until June 30, 2012.					
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 minimum reactivity of 94%.					
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 contact-handled (CH) and RH waste emplacement have 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

WIPP Use Codes/Software and Code Version	Version Date	Description
nSIGHTS 2.41A	07/21/11	Replaced BETCO option with “Pressure Type Conversion” option. Replaced the Gaussian Elimination matrix solver with an LU decomposition solver to reduce numerical error.
TDB 1.00 (new software)	09/21/11	This new database software is used to store and manipulate data collected from the LevelTROLL [®] downhole memory gauge.
PAPDB 2.00	03/12/12	The data were migrated to MySQL running on the Solaris platform. The tables were redesigned to simplify use and the unused or unnecessary tables were removed.
SDBREAD_LIB 4.00	04/04/12	SDBREAD_LIB was changed to interface with the new PAPDB Version 2.00.
MATSET 9.20	04/17/12	MATSET was changed to interface with the new PAPCB Version 2.00 accessed by SDBREAD_LIB Version 4.00.
PRELHS 2.40	04/25/12	PRELHS was changed to interface with the new PAPCB Version 2.00 accessed by SCBREAD_LIB Version 4.00.

Table 5:
Passive Institutional Controls Activity

Table 5: Passive Institutional Controls Activity

DATE	Description of Activity
02/28-29/2012 and 04/11/2012	CBFO lead two panel sessions at Waste Management Symposia 2012. Session 34 (with EPA), “Geologic Repository Warning Messages to the Future – Ensuring Continuity of Memory and Messages to Future Generations,” focused on the design and content of warning messages to the future, being developed by various repository programs around the world. Session 64B, “Records, Knowledge and Memory (RK&M) International Workshop,” was to gather ideas and views on the permanent marker system for geologic repositories of nuclear waste and focused on identifying an international uniform message that should be told to future generations. The summaries of these sessions were published in the proceedings for Waste Management Symposia 2012 and presented at the International Atomic Energy Agency (IAEA)/Nuclear Energy Agency (NEA)/RK&M workshop held April 11, 2012, in Paris, France.
06/30/2012	CBFO completed numerous questionnaires and submitted numerous regulatory documents to the International RK&M NEA project. The result of CBFO’s involvement with the RK&M project for this report has been the production of an RK&M glossary to define important concepts and terminology and attendance via teleconference of the first RK&M Workshop.

Table 6: EPA Waste Characterization Inspections – January 2008 to June 2012.

Table 6:
EPA Waste Characterization Inspections – January 2008 to June 2012

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
Advanced Mixed Waste Treatment Plant (AMWTP)/Accelerated Retrieval Project (ARP)			
March 2, 2010, Desk-top evaluation	Tier 1 evaluation adding BN-510 waste stream	AMWTP/ARP	EPA Docket No. A-98-49; II-14-127, June 10, 2010
November 17-18, 2010	EPA unannounced continued compliance inspection		EPA Docket No. A-98-49; II-A4-143, March 16, 2011
Argonne National Laboratory-Illinois (ANL)			
May 28, 2008	Tier 1 SRS-CCP RH Visual Examination (VE) newly packaged waste	ANL-CCP	EPA Docket No. A-98-49; II-A4-102, July 10, 2008
May 20-21, 2010, Desk-top evaluation	Tier 1 SRS-CCP addition of 30 containers to AERHDM waste stream		EPA Docket No. A-98-49; II-A4-132, September 13, 2010
June 29, 2010, Desk-top evaluation	Tier 1 SRS-CCP addition of 120 containers to AERHDM waste stream		EPA Docket No. A-98-49; II-A4-134, September 28, 2010
EPA Inspection - May 4 & 18, 2010	Tier 1 SRS-CCP addition of 30-gallon containers of FEW to previously approved RH debris AERHDM waste stream		EPA Docket No. A-98-49; II-A4-140, November 22, 2010
EPA Inspection September 2011	Tier 1 to add eight 55-gallon K-Wing Fuel Examination Waste containers to RH debris waste stream AERHDM		EPA Docket No. A-98-49, II-A4-158, February 13, 2012
EPA Inspection	Tier 1 to evaluate		EPA Docket No. A-98-49: II-A4-162, June 14, 2012

Table 6: EPA Waste Characterization Inspections – January 2008 to June 2012.

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
January 3, 2012 (11-2060)	Radiation Characterization Approach of Solidified Liquid Waste from K-Wing, Building 205, 55-gallon.		
Bettis Atomic Power Laboratory (BAPL)			
EPA Baseline Inspection – August 30, 2010, September 23, 2010, December 8, 2010 and April 12-13, 2011	EPA Baseline Inspection No. EPA-BAPL-CCP-RH-04.11-8	BAPL-CCP	EPA Docket No. A-98-49; II-A4-151, July 2011
General Electric Vallecitos Nuclear Center (GEVNC)			
December 2-4, 2008	CCP RH Initial Certification	GEVNC-CCP	EPA Docket No. A-98-49; II-A4-115, August 26, 2009
Hanford-CCP			
April 27-29, 2010	CH Baseline Inspection	Hanford	EPA Docket No. A-98-49; II-A4-138, December 21, 2010
Idaho National Laboratory (INL)-CCP			
June 9, 2008, Desk-top evaluation	Tier 1 Waste Area Groups (WAGS) density range extension	INL	EPA Docket No. A-98-49; II-A4-107, October 7, 2008
December 9-11, 2008	Tier 1 addition of VE CH S5000 retrievably stored waste stream		EPA Docket No. A-98-49; II-A4-110, March 4, 2009
December 8-9, 2009	Tier 1 addition of ID-HFEF-S5400-RH Lot 1A and ID-ANLE-S5000		EPA Docket No. A-98-49; II-A4-122, February 1, 2010

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
	waste streams		
April-May 2010 Desk-top evaluation	Tier 1 addition of ID-MFC-S5400-RH waste stream		EPA Docket No. A-98-49; II-A4-126, June 11, 2010
December 8-9, 2009, January 12-13, 2010, and February 17, 2010	Tier 1 addition of ID-INTEC-RH waste stream		EPA Docket No. A-98-49; II-A4-130, August 17, 2010
July 13, 2009, to June 2010 Desk-top evaluation	Tier 1 addition of Osprey and ID-HFEF-S5400-RH Lot 1B waste stream		EPA Docket No. A-98-49; II-A4-131, August 23, 2010
July 1, 2009 Desk-top evaluation	Tier 1 HENC operating range extension		EPA Docket No. A-98-49; II-A4-119, September 22, 2010
September 22, 2009	Tier 1 addition of ID-RTC-S3000 waste stream		EPA Docket No. A-98-49; II-A4-137, November 1, 2010
August 9-10, 2010	Tier 1 addition of IN-ID-NRF-153 waste stream		EPA Docket No. A-98-49; II-A4-135, November 1, 2010
November 16-17, 2010	Continued Compliance Inspection		EPA Docket No. A-98-49; II-A4-142, March 16, 2011
October 4-5, 2011	Tier 1 to include RH waste stream IN-ID-NRF-SPC		EPA Docket No. A-98-49; II-A4-159, March 12, 2012
Los Alamos National Laboratory (LANL)-CCP			
May 8-10, 2007	Initial RH Certification		EPA Docket No. A-98-49; II-A4-96, February 19, 2008
May 25-26, 2010	Tier 1 HENC 2 Report (non-approval)	LANL	EPA Docket No. A-98-49; II-A4-139, November 8, 2010

Table 6: EPA Waste Characterization Inspections – January 2008 to June 2012.

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
May 25-26, 2010	LANL-CCP CH TRU Continued Compliance Inspection		EPA Docket No. A-98-49; II-A4-141, February 9, 2011
April 28, 2010 (10-0810)	CH Tier 1 request expanding the calibration range to the HENC2 to accommodate CH lead-lined 55- gallon drums		EPA docket No. A-98-49; II-A4-139, April 30, 2012
Oak Ridge National Laboratory (ORNL)-CCP			
June 2007	CH Baseline Inspection	ORNL	EPA Docket No. A-98-49; II-A4-103, August 25, 2008
(Desk-top evaluation)	Tier 1 CH Calibration Extension for segmented gamma scanner (SGS)		EPA Docket No. A-98-49; II-A4-108, October 8, 2008
November 17, 2008	Tier 1 CH Calibration Extension for Drum Waste Assay System (DWAS) Imaging Passive Active Neutron (IPAN)		EPA Docket No. A-98-49; II-A4-109, January 8, 2009
June 30-July 2, 2008	EPA RH Baseline Inspection No. EPA-ORNL-CCP-RH-06.08-8		EPA Docket No. A-98-49; II-A4-111, February 3, 2009
May 6, 2009	Tier 1 OR-REDC-RH-HET to include Solvent Extraction Test Facility (SETF) Time Period (November 1978- November 1991) waste		EPA Docket No. A-98-49;II-A4-120, November 30, 2009

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
August 11-12, 2009	Tier 1 addition of CH S4000 SCG waste		EPA Docket No. A-98-49; II-A4-117, October 7, 2009
February 23-24, 2010	Tier 1 addition of CH VE and adding the IQ3		EPA Docket No. A-98-49; II-A4-125, March 30, 2010
February-March, 2010 Desk-top evaluation	Tier 1 addition of RH SETF Pre-79 waste stream		EPA Docket No. A-98-49; II-A4-124, April 21, 2010
Sandia National Laboratory (SNL)-CCP			
December 2011 to January 2012	Tier 1 to include RH containers generated from waste groups PKE00027/54 and PKE00047 to existing waste stream SNL-HCF-S5400-RH	SNL	EPA Docket No. A-98-49; II-A4-160, March 28, 2012
Savannah River Site (SRS)-CCP			
July 17-19, 2007, July 31-August 2, 2007, and December 4-5, 2007	Tier 1 addition of SRS Battelle Columbus Laboratory (BCL) waste stream SR-RL-BCLDP.001		EPA Docket No. A-98-49; II-A4-104, August 25, 2008
March 24-26, 2009	Tier 1 addition of Non-destructive Assay Box Counter (NABC)		EPA Docket No. A-98-49; II-A4-114, August 4, 2009

Table 6: EPA Waste Characterization Inspections – January 2008 to June 2012.

Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Site	Docket Number/Approval Date
September 30, 2010, Desk-top evaluation	Tier 1 addition of CH S3000 waste	SRS	EPA Docket No. A-98-49; II-A4-123, March 23, 2010
November 2009 – March 2010	Tier 1 addition of SR-BCLDP.001.001, SR-BCLDP.001.002, SR-BCLDP.002, SR-BCLDP.003, SR-BCLDP.004.002, SR-BCLDP.004.003 waste streams		EPA Docket No. A-98-49; II-A4-129, September 13, 2010
March 24-26, 2009	Tier 1 extension of calibration to the NABC		EPA Docket No. A-98-49; II-A4-133, September 14, 2010
May 12, 2011 timeframe, EPA Desk-top evaluation	Tier 1 allowing use of American Society for Testing and Materials (ASTM) standard efficiency calibration method for NABC.		EPA Docket No. A-98-49; II-A4-148, May 31, 2011
July 26, 2011 (11-1419)	RH EPA Baseline adding SR-RH-FBL.01 (remainder of RH at SRS)		EPA Docket No. A-98-49; II-A4-161, April 18, 2012

Table 7:
EPA Quality Assurance Audits by Site – January 2008 to June 2012

Table 7: EPA Quality Assurance Audits by Site – January 2008 to June 2012

Site	Date	Purpose
Advance Mixed Waste Treatment Plant	August 18-20, 2009	Recertification Audit A-09-19
	August 23-26, 2010	Recertification Audit A-10-24
	November 1-3, 2011	Recertification Audit A-12-03
Argonne National Laboratory East-CCP	July 10, 2008	RH VE Newly Packaged Waste Audit A-08-03
	August 5-7, 2008	CCP RH Recertification Audit A-08-24
	August 4-6, 2009	CCP RH Recertification Audit A-09-21
	August 3-5, 2010	CCP RH Recertification Audit A-10-23
	August 2-4, 2011	CCP RH Recertification Audit A-11-20
Bettis Atomic Power Laboratory (BAPL)	April 19-21, 2011	Initial Certification Audit A-11-12
	April 24-26, 2012	Closeout Audit A-12-10
Carlsbad Field Office	June 29-July1, 2010 August 3-4, 2010	Audit of the DOE Peer Review used to qualify historical information for TRU waste streams SR-BCLDP-004.002 and SR-BCLDP-004.003. EPA Docket No. A-98-49; II-A1-108.
General Electric Vallecitos Nuclear Center (GEVNC)-CCP	December 2-4, 2008	Initial RH S5000 Certification Audit A-09-05
	January 26-28, 2010	Recertification Audit A-10-04
Hanford-CCP	April 6-8, 2010	Initial Certification Audit A-10-07
	April 5-7, 2011	Recertification Audit A-11-10
	May 15-17, 2012	Recertification/Closeout Audit A-12-11
Idaho National Laboratory-CCP	January 29-30, 2008	Expansion Audit (NMED approval of AK) Audit A-08-11
	May 13-15, 2008	Recertification Audit A-08-10 INL and A-08-22 ID Labs
	December 9-11, 2008	VE of Records Audit A-09-08
	May 5-7, 2009	Recertification Audit A-09-14 INL and A-09-13 ID Labs

Site	Date	Purpose
	June 8-10, 2010	Recertification Audit A-10-16 INL and A-10-17 ID Labs
	June 7-9, 2011	Recertification Audit A-11-13 INL Labs and A-11-14 INL
	June 11-14, 2012	Laboratory Recertification Audit A-12-14 and CCP Recertification Audit A-12-13
Los Alamos National Laboratory-CCP	February 19, 2008	Initial Certification Audit A-07-12 and A-07-13
	April 15-17, 2008	CCP CH and RH Recertification Audit A-08-16
	December 9-11, 2008	Addition of VE CH S5000 Retrievably Stored Waste Audit A-09-08
	April 7-9, 2009	CCP CH and RH Recertification Audit A-09-12
	April 27-29, 2010	CCP CH and RH Recertification Audit A-10-14
	May 17-19, 2011	CCP CH and RH Recertification Audit A-11-11
Oak Ridge National Laboratory-CCP	November 13-15, 2007	AK and NDA Activities Audit A-08-06
	June 30-July 2, 2008	Initial RH Certification Audit A-08-12
	January 13-15, 2009	CH Recertification Audit A-09-07
	June 23-25, 2009	RH Recertification Audit A-09-22
	July 28-30, 2009	Addition of S4000 SCG Audit A-09-24
	February 9-11, 2010	CH and RH Recertification Audit A-10-08
	February 8-10, 2011	CH and RH Recertification Audit A-11-08
Savannah River Site-CCP	October 28-30, 2008	CH and RH Recertification Audit A-09-01
	March 24-26, 2009	Addition of NABC Audit A-09-17
	June 23-24, 2009	Addition of Real-time Radiography (RTR) #4 Audit A-09-16
	October 27-29, 2009	BCL RH Recertification and CH S3000 Initial Certification Audit A-10-01
	October 26-28, 2010	Recertification Audit A-11-01 and RTR Unit 4 for Standard Large Boxes (SLB2s) and LCNDE for Standard Waste Boxes (SWBs) and SLB2s.

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 7, 2008.