Waste Isolation Pilot Plant

Annual Change Report 2019/2020

From July 1, 2019 to
June 30, 2020

July 2020

Waste Isolation Pilot Plant
Annual Change Report 2019/2020

U.S. Department of Energy
Carlsbad Field Office

July 2020

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Acronyms and Abbreviations

AMWTP	Advanced Mixed Waste Treatment Project
ANL	Argonne National Laboratory
ARP	Accelerated Retrieval Project
CBFO	Carlsbad Field Office
CCP	Central Characterization Program
CFR	Code of Federal Regulations
CH	contact-handled
CH-TRUCON	CH-TRU Waste Content Codes
CPR	Cellulose, Plastic and Rubber
CRA	Compliance Recertification Application
DOE	U. S. Department of Energy
DRZ	disturbed rock zone
DSA	Documented Safety Analysis
DTC	dose-to-curie
EPA	U. S. Environmental Protection Agency
EPHA	Emergency Planning Hazards Assessment
EXO	Enriched Xenon Observatory
INL	Idaho National Laboratory
ISOCS	*in situ* object counting system
JHA	Job Hazard Analysis
KE	Key Element
kg	kilogram
LANL	Los Alamos National Laboratory
LBRE	Low Background Radiation Experiment
LLNL	Lawrence Livermore National Laboratory
LWA	Land Withdrawal Act
m^3	cubic meters
MEGA	Multiple Element Germanium Array
MgO	Magnesium Oxide
NMSU	New Mexico State University
NWP	Nuclear Waste Partnership LLC
ORNL	Oak Ridge National Laboratory
PCB	polychlorinated biphenyl
PCS	panel closure system
QA	Quality Assurance
RH	remote-handled
ROM	run of mine
SAC	Safety Awareness Committee
SDDI	Salt Defense Disposal Investigations
SDI	Salt Disposal Investigations
SEGA	Segmented Enriched Germanium Assembly
SNL	Sandia National Laboratories
SQA	Software Quality Assurance

SRS	Savannah River Site
TE	Transportation Engineer
TRAMPAC	TRU Waste Authorized Methods for Payload Control
TRU	transuranic
VSDS	Visual Survey Data System
WAC	Waste Acceptance Criteria
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant

1.0 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 codified in Title 40 Code of Federal Regulations (CFR) Part 194.4(b)(4) (EPA 1996), which states:

> Not 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.

Each November, the DOE provides an annual report of applicable changes at the Waste Isolation Pilot Plant (WIPP) under this requirement. Applicable changes include non-significant changes to information in the most recent compliance application; i.e., the 2019 Compliance Recertification Application (DOE 2019).

In a June 17, 2002, letter to the DOE, the EPA provided examples of routine operations and maintenance activities for the WIPP facility that are considered to be non-significant to the Compliance Certification/Recertification. Examples of these activities include mining a ventilation overcast, installation of equipment/instruments related to geo-mechanical and groundwater monitoring as required by the EPA, and installation of ground control monitoring devices.

Significant planned changes are reported by the DOE to the EPA prior to implementation. Significant changes include those that would result in crucial information contained in the Compliance Certification/Recertification no longer being valid, or would result in noncompliance with the requirements in 40 CFR Part 191 and the criteria in 40 CFR Part 194. Planned changes are submitted on an individual basis. Significant unplanned changes are reported to the EPA within 24 hours, or 10 days, in accordance with Title 40 CFR Part 194.4(b)(3) (EPA 1996).

Proposed changes in activities or conditions are reviewed to determine if 40 CFR Part 194.4(b)(3) reporting is necessary. The annual report summarizes the items identified as requiring reporting under 40 CFR Part 194.4(b)(4) (EPA 1996). The majority of the items reported are inspections, reports, and modifications to written plans and procedures for WIPP operations.

This report captures the description of each change for the period July 1, 2019, through June 30, 2020, in the seven tables described below:

Information required by 40 CFR Part 194.4(b)(4):

Table 1: Changes in WIPP Conditions or Activities Reportable Under Title 40 CFR Part 194.4(b)(4) documents EPA and DOE interactions during the reporting period, with a high-level summary of each correspondence.

Table 2: Procedure/Plan Revision 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, 2020.

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

Extra-regulatory information requested by the EPA:

Table 5: Passive Institutional Controls Activity documents activities applicable to the development of Passive Institutional Controls. This table was added at the request of the EPA (Reyes to Moody, 2008a).

Table 6: EPA Waste Characterization Inspections - July 1, 2019 to June 30, 2020 documents inspections performed by the EPA pertaining to Tier 1 changes to the baseline approvals at generator and storage 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.

Table 7: EPA Quality Assurance Audits by Site - July 1, 2019 to June 30, 2020 documents audits performed by the EPA for generator and storage 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.

In accordance with the EPA's requests[1] and feedback, this report incorporates 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 administrative changes to procedures such as editorial changes, reformatting, correcting references, correcting inconsistency within a procedure, and other changes that do not alter the substance or intent of the document.

The changes reported in this WIPP Annual Change Report do not represent significant changes pertaining to the disposal system.

[1] EPA to McFadden, 1998; Page to Klein, 1999a; Page to Triay, 1999b; Marcinowski to Triay, 2000; Marcinowski to Triay, 2001; Marcinowski to Triay, 2002a; Marcinowski to Triay, 2002b; Marcinowski to Triay, 2002c; Marcinowski to Triay, 2002d; Marcinowski to Triay, 2003b; Marcinowski to Triay, 2003c; Gitlin to Detwiler, 2004; Gitlin to Triay, 2005a; Gitlin to Piper, 2005b; Gitlin to Moody, 2006a; Gitlin to Moody, 2006b.

2.0 INFORMATION REQUIRED BY TITLE 40 CFR PART 194.4(b)(4)

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
40 CFR 194.4(b)(3), Conditions of Compliance Certification	Planned Change Notices and Planned Change Requests	None to report
40 CFR 194.4(b)(4), Conditions of Compliance Certification	2018/2019 Annual Change Report	DOE to EPA, November 12, 2019 Submittal of the 2018/2019 Annual Change Report in accordance with 40 CFR 194.4(b)(4).
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Advanced Mixed Waste Treatment Project (AMWTP)	EPA to DOE, July 10, 2019 Concur with draft recertification memo to add mobile *in situ* object counting system (ISOCS) to AMWTP TRU waste characterization program.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Argonne National Laboratory (ANL)	None to report.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Idaho National Laboratory (INL)	None to report.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Los Alamos National Laboratory (LANL)	EPA to DOE, November 26, 2019 EPA concurrence on draft recertification memo and attachments. The Carlsbad Field Office (CBFO) plans to issue mobile ISOCS Large Container #3 to LANL's TRU waste characterization program.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Oak Ridge National Laboratory (ORNL)	None to report.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Sandia National Laboratories (SNL)	None to report.
40 CFR 194.8,	Savannah River Site (SRS)	None to report.

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP		
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Waste Acceptance Criteria (WAC)	EPA to DOE, August 27, 2019 Concurrence with contents of WAC revision 10.0-Draft C-Updates which relate to activities that determine compliance with 40 CFR Part 194 waste characterization requirements.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Lawrence Livermore National Laboratory (LLNL)	None to report.
40 CFR 194.8, Approval Process for Waste Shipment from Waste Generator Sites for Disposal at the WIPP	Tier 2 Reports	DOE to EPA, December 19, 2019 CBFO response to EPA request for documents from the CBFO notification of tier 2 changes for the FY 2019 fourth quarter. DOE to EPA, January 22, 2020 CBFO notification of tier 2 changes for AMWTP and Central Characterization Program (CCP) activities for FY 2020 first quarter.
40 CFR 194.11-15	Certification/Recertification	DOE to EPA December 20, 2019 Submittal of the Deferred Performance Assessment for the Compliance Recertification Application 2019. DOE to EPA June 11, 2019 Transmittal of DOE response 1 to EPA completeness question 1 for CRA 2019.
40 CFR 194.14(b), Design of the Disposal System	Status of Experiments in the WIPP Underground July 1, 2019 to March 31, 2020.	EPA to DOE November 4, 2019 Approval of request to continue the canister heater experiment in the WIPP underground. **SEGA (Segmented Enriched Germanium Assembly) and MEGA (Multiple Element**

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
		Germanium Array) The SEGA/MEGA activities are currently on hold and the Q-room area of S-90 is partitioned off pending evaluation of the status of ground stability. **EXO (Enriched Xenon Observatory)** <u>April 1 – June 30</u> • EXO scientific equipment has been removed from the WIPP underground and returned to the appropriate member of the collaboration. Conexes were moved out of the NExA drift (staged in E-140) and the cleanroom air conditioner (and associated air handler ducts) was removed up to Module 6 to allow for bolts to be installed in the back and for the floor to be trimmed. Removal of the remaining lead and modules is planned. **LBRE (Low Background Radiation Experiment)** <u>January 1 – March 31</u> • New Mexico State University (NMSU) low background summer experiments were completed in August 2019. • No physical activities were performed at the WIPP facility during this quarter (Jan 1-Mar 31, 2020), but a population of nematodes continued to be maintained in incubators located underground. <u>April 1 – June 30</u> • NMSU began a new series of experiments incubating *E. coli* this quarter. In addition, a population of nematodes continues to be maintained in incubators in the

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
		underground laboratory. **Salt Disposal Investigations (SDI)/Salt Defense Disposal Investigations (SDDI)** <u>July 1 – December 31</u> • Instruments are installed in the drilled borehole arrays in SDI (N940 & ~E500) and final adjustments are being made prior to beginning the Brine Availability Test in Salt. One array will be heated, and the other array maintained at ambient temperature. • The prototype canister heater continued heating and data continues to be collected from the installed instrumentation. • Data collection continues in the existing boreholes in E140 & ~N1050 with the heater off. • Adjustments continue to be made prior to beginning the Brine Availability Test in Salt. One array will be heated and the other array maintained at ambient temperature. <u>January 1 – March 31</u> • Brine availability test in salt was removed from service during the site-wide power outage in March. • One array is heated and the other array measures ambient conditions. • The prototype canister heater continued heating and data continues to be collected from the installed instrumentation. • Data collection continues in the existing boreholes in E140 & ~N1050 with the heater off. <u>April 1 – June 30</u>

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
		• The heater was removed from the existing boreholes in E140 & ~N1050 to allow for videoing of changes in the borehole and sampling of brine in the back of the borehole. Ambient conditions continue to be monitored. • 58 total 12-inch-diameter by ~36-inch-long cores past the initial disturbed rock zone (DRZ) were collected for geotechnical testing this quarter. Data will be collected on the core by SNL, and both Clausthal University of Technology and Institut für Gebirgsmechanik in Germany to help improve the clay seam model.
40 CFR 194.21, Inspections	WIPP Facility and Generator Site Inspections	EPA to DOE, January 28, 2020 Notification that March 2019 and May 2019 inspection of WIPP facility encountered procedural issues that led to two inspection concerns and one inspection finding. EPA to DOE, January 28, 2020 Notification that the EPA was able to visually confirm installment of run of mine (ROM) salt panel closure system (PCS) as well as canister heater test in August 2019 inspection of the WIPP facility. EPA to DOE, January 28, 2020 Results of EPA inspection of the WIPP facility performed the week of March 19-21, 2019, and May 14-16, 2019, under 40 CFR Part 191, Subpart A. EPA concluded that the DOE continues to meet commitments and regulatory requirements to track waste, monitor the disposal system, measure any radioactive releases, calculate potential dose to the public, and document the results of these activities. EPA E-docket: EPA-HQ-OAR-2001-0012-0487.

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
		See Table 6: EPA Waste Characterization Inspections.
40 CFR 194.22, Quality Assurance (QA)	Quality Assurance Audit	See Table 7: EPA Quality Assurance Audits by Site.
40 CFR 194.22(a)	Quality Assurance	None to report.
40 CFR 194.23, Models and Computer Codes	Performance Assessment, Software, and Hardware Changes	See Table 4: Performance Assessment, Software, and Hardware Changes.
40 CFR 194.24(a)	Waste Characterization	None to report.
40 CFR 194.24(b)	Waste Characterization	None to report.
40 CFR 194.25	Future States Assumptions	None to report.
40 CFR 194.26	Expert Judgment	None to report.
40 CFR 194.27	Peer Review	None to report.
40 CFR 194.31	Application of Release Limits	None to report.
40 CFR 194.32	Scope of Performance Assessments	None to report.
40 CFR 194.33	Consideration of Drilling Events in Performance Assessments	None to report.
40 CFR 194.34	Results of Performance Assessments	None to report.
40 CFR 194.41	Active Institutional Controls	None to report.
40 CFR 194.42(a), Monitoring	Ground Water Monitoring	• WIPP-11 plugged and abandoned on 9/4/19. • H-5b plugged and abandoned on 9/6/19. • Drilling for H-5bR began on 9/7/19. • H-19b1 was plugged and abandoned on 9/12/19. • Casing for H5bR was set on 9/12/19. • Drilling for WIPP-11R began on 9/15/19. • Casing set for WIPP-11R on 9/21/19.

Table 1: Changes in WIPP Conditions or Activities Reportable Under 40 CFR Part 194.4(b)(4) July 1, 2019 to June 30, 2020		
Regulatory Requirements	**Implementing Document or Activity that Changed**	**Description of the Change and DOE Assessment of the Impact of the Change**
40 CFR 194.42(c)	Pre-closure Monitoring	None to report.
40 CFR 194.42(d)	Post-closure Monitoring	None to report.
40 CFR 194.42(e)	Pre-closure and Post-closure Monitoring Plans	None to report.
40 CFR 194.43	Passive Institutional Controls	See Table 5: Passive Institutional Controls Activity.
40 CFR 194.44	Engineered Barriers	None to report.
40 CFR 194.45	Consideration of the Presence of Resources	None to report.
40 CFR 194.46	Removal of Waste	None to report.
40 CFR 194.51	Consideration of Protected Individual	None to report.
40 CFR 194.52	Consideration of Exposure Pathways	None to report.
40 CFR 194.53	Consideration of Underground Sources of Drinking Water	None to report
40 CFR 194.54	Scope of Compliance Assessments	None to report
40 CFR 194.55	Results of Compliance Assessments	None to report

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
08-NT.04, WIPP Waste Information System Configuration Management and Software QA Program	Revision 28, 7/17/2019	• Modified Section 3.5.1 In-Use Tests. • Modified Section 4.2.4. • Modified last paragraph of Section 8.0 Problem Report. • Added Waste Data System (WDS) Verification and Validation Comments and Resolution in Section 6.0. • Changed acronym ITP for IUT (In-Use Test) and deleted ITR.
12-ER4916, Consequence Assessment Dose Projection	Revision 26, 7/30/2019	Complete rewrite to align with DOE Order 151.1D and Emergency Planning Hazards Assessment (EPHA).
	Revision 27, 04/29/2020	• Added clarifying comments and text throughout. • Updated list of receptors of interest.
D-0101, Specification for Prepackaged MgO Backfill	Revision 11, 8/12/2019	Added Section 2.2 - Sustainable Procurement Expectation.
12-HP1500, Radiological Posting and Access Control	Revision 23, 8/15/2019	Documented Safety Analysis (DSA) Rev. 6a Page Change 002a: • Removed reference to Safety Awareness Committee (SAC) 5.5.8 in Section 5.26 and added new Steps 5.26.1 through 5.26.5. • Added Key Element (KE) 7-5 to Limitations. • Performed minor editorial updates.
05-WH1058, CH Waste Handling Abnormal Operations	Revision 24 and Revision 24-FRI, 8/22/2019	• Added Steps 5.5.2 through 5.5.13 to implement RP 2019-02, “Response Plan to Address Receipt of Deformed Standard Waste Box.” • Specified additional equipment in Step 5.5.8 and added Step 5.5.9.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
	Revision 23, 8/15/2019	• Updated Job Hazard Analysis (JHA) Precautions. DSA Rev. 6a Page Change 002a: • Removed SAC 5.5.8 and replaced with KE 7-5.
12-ER3906, Categorization and Classification of Operational Emergencies	Revision 20, 8/26/2019	• Revised to comply with DOE Order 151.1D. • Revised to implement EPHA changes.
09-ES4001, Subsidence Survey Data Acquisition Report	Revision 5, 9/3/2019	• Split Introduction into Purpose and Scope sections. • Added hazards and controls from updated JHA, 09-ES4001-JHA. • Updated calibration note and Steps 4.2 and 5.1.2[A] to reflect Management Level Determination 1281. • Made minor editorial and formatting updates throughout to conform to the Procedure Writer's Manual (WP 15-PS.2).
DOE/WIPP-01-3194, CH-TRU Waste Content Codes (CH-TRUCON)	Revision 69, 9/3/2019	• Added new CH-TRUCON Code SN 125/225, along with the associated chemical list in Appendix C. • Revised the Appendix C chemical lists for CH-TRUCON Codes ID 111/211, ID 121/221, and LA 126/226. Content Code LA 133/233 has expired.
12-HP3500, Airborne Radioactivity	Revision 26, 9/5/2019	• Made minor changes. • Added Station A Step 5.2.3[B].

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
12-HP1100, Radiological Surveys	Revision 25, 9/9/2019	• Incorporated use of Visual Survey Data System (VSDS) software. • Updated JHA and affected precautions. • Removed Attachment 3 Minimum Detectable Activity tables for 5-, 8-, 10-, 15-, 20-, and 30-second counts. • Rewrote completely Attachment 5, Decision Level for Neutron Instrument in Scaler Mode.
08-NT3020, TRU Waste Receipt	Revision 28-FR3, 9/18/2019	• Changes made to align Attachment 4 to the CH TRAMPAC, correcting vent times for controlled packages. • Deleted condition in note after 1.0, that the transportation engineer may complete Step 2.27.1 at any time if copies of the Shipping Site Control Checklist for Controlled Checklists are available prior to waste receipt. • Added scheduled to departure time in 2.24, 2.27, and Attachment 4, and changed Shipping Site Control Checklist for Controlled Checklist to WIPP Eight-Week Rolling Schedule. • Deleted language related to accounting for time zone differences in Step 2.27.1 and Attachment 4.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
12-RL.01, Radiochemistry Quality Assurance Plan	Revision 23, 9/19/2019	• Changes made in response to NWP internal QA Audit I19-07. Clarification of fume hood checks, equipment used for destructive analysis, log books, and equipment IDs. • Added last bullet of 2.1.5 regarding the Laboratory Supervisor responsibility of recruitment, hiring, assignment, evaluation, and termination of personnel. • Removed Section 9.4, Storage. • Added WP 12-RL3030, "Ludlum 3030 Instrument Count Log," to Radiochemistry Instrumentation Procedures on Attachment 1. • Separated supplemental equipment from Attachment 2 and incorporated into new Attachment 3.
12-HP1314, Remote-Handled Waste Service Room	Revision 9, 9/25/2019	• Changed procedure type to Technical. • Added JHA and QAPD to references.
05-WH1011, CH Waste Processing	Revision 63-FR2, 10/11/2019	• Removed unneeded Precautions. • Clarified Steps 5.2.24 and 5.2.29. • Split Step 5.2.26 into two actions.
	Revision 63-FR3, 11/13/2019	• Updated to address RP-2019-03, Response Plan to Address Receipt of Degraded 55-Gallon Drum.
	Revision 63-FR4, 12/05/2019	Modified Limitation, bullet 1.
	Revision 64, 04/30/2020	Major revision. No change bars displayed. • Updated JHA; revised and removed affected Precautions. • Eliminated unclear notes and terminology. • Streamlined Radiological Control Technician actions. • Rearranged process steps throughout for ease of use.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
05-WH1025, CH Waste Downloading and Processing	Revision 25-FR1, 10/14/2019	Removed unneeded Precautions and added Hazardous Waste Facility Permit designator to 3.2.
05-WH1010, Container Overpacking	Revision 14-FR1**,** 11/14/2019	Incorporated changes from Field Revision.
05-WH1025, CH Waste Downloading and Processing	Revision 25-FR2, 10/16/2019	• Removed step repeat numbering from Step 5.1.1, bullet 4, and added to steps in 5.1 and 5.2. • Deleted Step 5.1.3; action repeated in subsequent step. • Removed note and Steps 5.2.14 and 5.2.15.
	Revision 25-FR3, 12/5/2019	Modified Precaution and Limitation 3.2.
05-WH1058, CH Waste Handling Abnormal Operations	Revision 24-FR2, 12/5/2019	• Modified Section 3.2, Limitation, bullet two. • Removed Steps 5.5.2 through 5.5.14, which were specific to facility pallet SWB PADTEMP9A and response plan RP 2019-02.
WP 16-2, Software Screening and Control	Revision 17, 1/15/2020	• Incorporated requirement for a Software QA (SQA) Plan or SQA Elements Checklist for Type D software and software designated as Safety Software. Added requirement to Type D Software – Specific Applications section of the procedure. Revised SQA process flow chart to remove branch for Type D software to by-pass the SQA Plan. • Removed DOE/WIPP-12-3429, Information Management Plan, because it is obsolete. This reference was for Digital Signature Software approval requirements. Since Digital Signature requirements apply to all software and there are no requirements related to controlled software, this section was removed.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
		The entry was also removed from the References table. • Added DOE Order 414.1D to the References table as a baseline document. • Added WP 16-IT1004, WIPP TARP procedure to the References table as a referenced document. • Made corrections to the QAS-102 Software Custodian Training and the QAS-02 Software Custodian Authorization Card entries in the References table. Corrections were also made in the Software Custodian section of the procedure. • Moved the Information Resource Management Approval requirements section to the beginning of the Performance section. • Moved Review Checklist section near other related life cycle documentation sections. • Made miscellaneous editorial corrections. • Changed Cognizant Individual to Software Custodian. • Moved Type C software requirements to its own section. • Added a definition to define Firmware and changed requirements to match Engineering requirements.
WP 12-HP1500, Radiological Posting and Access Control	Revision 24, 2/25/2020	• Changed RCDM to RCM (Radiological Control Manager). • Added Precaution (final bullet) and Limitation bullet 5.
WP 12-HP3200, Radioactive Material Control	Revision 23, 3/16/2020	Added bullet 2 under Step 5.2.8.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
WP 08-NT3020, TRU Waste Receipt	Revision 29, 3/19/2020	• Removed Task Card TE-02 as a requirement. • Added Task Card TE-06 for FacOps personnel performing Transportation Engineer (TE) duties. • Moved steps for completing Attachment 4. • Changed how Attachment 4 is obtained after completion. • Added steps for returning manifests to the generator. • Added steps for entering manifests in the EPA eManifest web site. • Added steps for sending Certificates of Disposals for PCB (polychlorinated biphenyl) wastes to the generator. • Put into procedure template. • Made minor editorial changes throughout.
WP 13-1, Quality Assurance Program Description	Revision 39, 3/26/2020	Changed in Section 1.2.
NP 6-2, Document Control Process	Revision 6, 2/18/2020	Section 2.2 of this procedure was revised to add recall provisions for delegate and QA staff.
SP 12-8, Use and Maintenance of Bruker Analytical X-Ray Systems D8 Advance X-Ray Diffractometer	Revision 4, 3/27/2020	Modified this document to reflect the newly installed instrument and attachments. QA acceptance criteria did not change for the instrument. Appendices were added to describe the various stages and accessories for the instrument, and additional material was added for the process of matching X-ray Diffraction scans using the Enterprise Validation Authority software.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
SP 12-40, Calibration and Use of the Gamry Interface 1010E Potentiostat/Galvanostat	Revision 0, 3/10/2020	Issued this procedure which prescribes the SNL WIPP process for the calibration of the Gamry Interface 1010E Potentiostat/Galvanostat Electrochemical system. This document is not a substitute for the manufacturer's instruction manuals for the Gamry Interface 1010E Potentiostat/Galvanostat or the manufacturer's recommendations for the potentiostat calibration.
WP 02-PC.02, Delaware Basin Drilling Surveillance Plan	Revision 9, 05/12/2020	Minor change. Updated website names.
WP 12-HP3400, Contamination Control Management Control Procedure	Revision 13, 05/20/2020	Complete rewrite. No change bars displayed. • Moved content into WP 12-HP3401, Potentially Contaminated Personnel and Areas. • Reordered and updated remaining sections. • Updated Attachment 5, Guidelines for Donning and Removing Protective Clothing.
WP 02-EM1010, Field Parameter Measurements and Final Sample Collection	Revision 3, 04/07/2020	• Updated to new procedure template • Updated Reference Table • Updated Equipment List • Updated Precautions and Limitations • Editorial changes throughout • Updated Attachments
WP 02-EC3002, Delaware Basin Drilling Database Upgrade Process	Revision 10, 06/03/2020	• Changed the name of Drillinginfo to Enverus.com. • Changed the procedure for accessing and gathering Texas well data to reflect the changes to the Enverus website. • Added steps for back-checking Texas well data in the case of significant increase in oilfield activity. • Changed the name of IHS Enerdeq to IHS Markit.

Table 2: Procedure/Plan Revision July 1, 2019 to June 30, 2020		
Procedure/Plan	**Revision, Effective Date**	**Description of Change**
WP 02-EM1014, Groundwater Level Measurement	Revision 10-FR1, 06/09/2020	Field revision one changes.

Note: these procedural changes relate only to programs that are important to the demonstration of compliance with EPA's long-term disposal standards at 40 CFR Part 191, Subparts B and C. Changes to operational procedures that are unrelated to long-term compliance are not considered in this report.

Table 3: Waste Emplacement Summary Report, July 1, 2019 to June 30, 2020

TRU Waste Inventory		
	Reporting Period[1] Emplaced Volume (m^3)*	**Cumulative[3] Emplaced Volume (m^3)**
RH TRU	1.98 (LWA TRU Waste Volume)[2]	360.52 (LWA TRU Waste Volume)[2]
CH TRU	1,177.04 (LWA TRU Waste Volume)[2]	69,002.93 (LWA TRU Waste Volume)[2]

Waste Components Inventory				
	Reporting Period[1] Emplaced Mass (kg)*	**Cumulative[3] Emplaced Mass (kg)**	**Maximum Emplaced Limiting Value[4] (kg)**	**Percent of Limiting Value[4] Emplaced**
Cellulose, Plastic, Rubber Materials[5]	81,251	9,163,035	22,000,000	41.43%
Fe-Metals[6]	398,825	29,409,426	20,000,000	Minimum met
Non-Fe Metals	3,411	449,808	2,000	Minimum met

Emplaced Radiological Activity Inventory (curies)				
Radionuclide	**Cumulative Activity in FY 2018/2019 Annual Change Report[7]**	**CH Repository Reporting Period Activity[7]**	**RH Repository Reporting Period Activity[7]**	**Total Activity as of June 30, 2020[7]**
^{241}Am	2.652E+05	2.200E+03	4.000E-01	2.673E+05
^{137}Cs	1.447E+04	2.710E+00	1.000E+01	1.448E+04
^{238}Pu	4.855E+05	9.600E+03	5.000E-01	4.951E+05
^{239}Pu	3.373E+05	1.500E+03	1.000E-01	3.388E+05
^{240}Pu	8.357E+04	3.900E+02	1.000E-01	8.397E+04
^{242}Pu	2.817E+01	3.000E-01	3.000E-04	2.846E+01
^{90}Sr	7.694E+03	1.638E+01	5.000E+00	7.715E+03
^{233}U	7.037E+00	2.160E-01	0.000E+00	7.253E+00

Table 3: Waste Emplacement Summary Report, July 1, 2019 to June 30, 2020				
^{234}U	8.847E+01	1.660E+00	1.000E-03	9.013E+01
^{238}U	1.811E+01	1.200E-01	2.000E-05	1.823E+01
Total	**1.194E+06**	1.371E+04	1.610E+01	**1.208E+06**
Magnesium Oxide (MgO)[8] and Cellulose, Plastic and Rubber (CPR) Mass Emplaced Per Waste Panel				
Panel	**Room**	**MgO (kg)**	**CPR* (kg)**	**Excess Factor**
1	All	4,482,356	1,237,685	2.01[9]
2	2-7	5,972,300	1,242,279	2.27[9]
2	1	691,515	186,469	1.71
3	7	960,120	109,685	3.83
3	6	954,405	229,646	1.93
3	5	1,022,985	284,651	1.70
3	4	960,120	255,172	1.79
3	3	931,545	243,860	1.89
3	2	942,975	228,067	2.02
3	1	662,940	183,088	1.76
4	7	942,975	248,903	1.90
4	6	925,830	267,494	1.71
4	5	948,690	265,302	1.71
4	4	1,049,655	290,739	1.76
4	3	1,015,365	285,755	1.70
4	2	931,545	374,327	1.22[8]
4	1	668,655	265,884	1.23
5	7	937,260	353,286	1.28

Table 3: Waste Emplacement Summary Report, July 1, 2019 to June 30, 2020				
5	6	875,477	140,033	2.85
5	5	782,346	298,832	1.24
5	4	737,167	225,449	1.64
5	3	714,286	215,961	1.61
5	2	730,612	194,069	1.84
5	1	485,714	135,766	1.75
6	7	744,218	167,605	2.11
6	6	666,667	189,775	1.74
6	5	474,294	203,497	1.24
6	4	471,586	202,434	1.25
6	3	406,533	171,330	1.25
6	2	291,716	121,710	1.22
6	1	235,107	80,223	1.46
7	7	57,692	15,900	1.76
7	6	103,401	28,853	1.90
7	5	310,204	76,159	1.77
7	4	163,265	32,358	2.12
7	3	321,088	110,790	1.30

Footnotes

1. Reporting Period is July 1, 2019 through June 30, 2020.
2. Pursuant to the January 16, 2019, CBFO Policy on Implementation of a Tracking Methodology to Ensure Compliance with the Total Capacity Limit for Transuranic Waste in Public Law 102-579, the Waste Isolation Pilot Plant Land Withdrawal Act, as Amended by Public Law 104-201 (H.R. 3230, 104th Congress), Land Withdrawal Act (LWA) volumes will now be reported. Cumulative period includes from the beginning of emplacement until June 30, 2020.
3. Limiting Value—Values from CRA 2019 Section 24. These values are based on inventory assumptions.
4. Cellulose, Plastic, Rubber (CPR) materials includes the waste, container materials, emplacement materials, and non-containerized waste.
5. Fe-Metals include both materials in the waste and containers in total.

Table 3: Waste Emplacement Summary Report, July 1, 2019 to June 30, 2020

6. There is no decay correction for the listed isotope activities. Isotopic activities reported are from the time of the original assay. It is understood that some isotopes may have reached secular equilibrium after disposal.
7. New minimum value for excess factor of MgO to be implemented as approved by EPA (Reyes, J 2008b) reduces excess factor from 1.67 to 1.20 and ensures minimum reactivity of 94%.
8. MgO, CPR, and Excess Factor results for panel 1 and rooms 2-7 of panel 2 have been recalculated to replace averaged data with actual emplaced data.

Table 4: Performance Assessment, Software, and Hardware Changes, July 1, 2019 to June 30, 2020

WIPP Codes/Software and Code Version	Version Date	Date of Change	Description of Change
CCDFGF 7.04	NA	3/11/2020	Increase the maximum number of panels from 10 to 19.
DRSPALL 1.22	NA	3/16/2020	Automate the validation process and adjust the acceptance criteria for quantitative metrics.
MERGESPALL 1.02	6/23/2020	6/23/2020	Qualified code for placement on the official software baseline list rather than qualified as a “one-time-use” code.

3.0 EXTRA-REGULATORY INFORMATION REQUESTED BY THE U. S. ENVIRONMENTAL PROTECTION AGENCY

Table 5: Passive Institutional Controls Activity, July 1, 2019 to June 30, 2020

Date	Description of Activity
March 9-13, 2020	Representatives of CBFO and Regulatory Environmental Services attended the 2020 Waste Management Conference in Phoenix, Arizona, to support a panel session for advances in research into records knowledge and memory preservation.

Table 6: EPA Waste Characterization Inspections, July 1, 2019 to June 30, 2020

Generator Site	Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Docket Number/Approval Date
Advanced Mixed Waste Treatment Project (AMWTP)/Accelerated Retrieval Project (ARP)	May 15-16, 2018	Tier 1 Dual Utilization of dose-to-curie (DTC) Data to Characterize CH Waste	CBFO Tier 1 request was submitted on April 30, 2018. EPA awaiting additional information from AMWTP. Awaiting EPA approval.
Argonne National Laboratory-Illinois (ANL)		None to report.	
Hanford		None to report.	
Idaho National Laboratory (INL)	January 27-29, 2020	EPA conducted Tier 1 Inspection of Waste Stream ID-NRF-SPC-103	CBFO submitted Tier 1 request on February 14, 2019. CBFO Management approval on June 15, 2020. Awaiting EPA report and approval.
Lawrence Livermore National Laboratory (LLNL)	August 5-7, 2019	EPA Baseline Inspection of CH TRU Waste	EPA Baseline approval was on May 6, 2020. Docket No.: A-98-49; II-A-4-230.

Table 6: EPA Waste Characterization Inspections, July 1, 2019 to June 30, 2020

Generator Site	Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Docket Number/Approval Date
Los Alamos National Laboratory (LANL)	August 5-7, 2019	EPA Baseline Inspection	Awaiting EPA submittal into Federal Register.
Oak Ridge National Laboratory (ORNL)	August 23, 2019	Tier 1 Request For Waste Stream OR-REDC-RH-HET, Appendix 1	CBFO submitted Tier 1 request on August 23, 2019. Awaiting EPA review.
	January 22, 2020	ORNL Laboratory Inspection (TWPC and RMAL)	EPA approved final report on January 22, 2020.
	January 22, 2020	Tier 1 Approval of ORNL Tier 1 for RTR for OR-WA1-RH-SOIL	CBFO Tier 1 request submitted on June 20, 2019. EPA Final Report approved on January 22, 2020.
	January 22, 2020	Tier 1 Request For Waste Stream OR-W1A-RH-SOIL	CBFO submitted Tier 1 on March 21, 2019. SFTP site has documentation. EPA Final Report approved on January 22, 2020.
	February 2, 2020	Tier 1 Evaluation of the CCP Remote-Handled Transuranic Waste Characterization Program for ORNL: Waste Stream OR-W1A-RH-SIL	DOCKET NO: A-98-49; II-A4-225 EPA AIR D-DOCKET NO: EPA-HQ-OAR-2001-0012-0489, DOCKET NO: A-98-49: II-A4-226 EPA AIR DOCKET NO: EPA-HQ-OAR-2001-0012- 0490, DOCKET NO: A-98-49, II-A4-227 EPA AIR E-DOCKET NO: EPA-HQ-OAR-2001-0012-0491

Table 6: EPA Waste Characterization Inspections, July 1, 2019 to June 30, 2020

Generator Site	Date of Inspection	EPA Inspection No./Tier 1 Evaluation	Docket Number/Approval Date
Sandia National Laboratories (SNL)	November 14, 2019	Proposed Baseline Approval of the Remote-Handled Transuranic Waste Characterization Program Implemented at Sandia National Laboratories	Baseline Report was approved on January 16, 2020. EPA-HQ-OAR-2019-0634-0001
Savannah River Site (SRS)		None to report.	

Table 7: EPA Quality Assurance Audits by Site - July 1, 2019 to June 30, 2020

Site	Audit Date	Purpose
Advanced Mixed Waste Treatment Project (AMWTP)	None to report.	
Argonne National Laboratory - East (ANL-E)-CCP	July 16-18, 2019	Recertification Audit. Audit # A-19-24
Carlsbad Field Office (CBFO)	None to report.	
Hanford-CCP	None to report.	
Idaho National Laboratory (INL)-CCP	December 10-12, 2019	Recertification Audit. Audit # A-20-06
Lawrence Livermore National Laboratory (LLNL)	March 30-April 2, 2020	Indeterminates were audited in A-20-30.
Los Alamos National Laboratory (LANL)-CCP	None to report.	
Los Alamos National Laboratory-Carlsbad Operations (LANL-CO)	February 10-13, 2020	EPA Audit of LANL-CO Software QA Program. Audit # AUD-LANL-CO-Feb 2020
Nuclear Waste Partnership LLC	None to report.	

Table 7: EPA Quality Assurance Audits by Site - July 1, 2019 to June 30, 2020		
Site	**Audit Date**	**Purpose**
(NWP)		
Savannah River Site (SRS)-CCP	November 4-6, 2019	Recertification Audit. Audit # A-20-07
Sandia National Laboratories-Carlsbad Office (SNL-CO)	February 10-13, 2020	EPA Audit of Sandia National Labs-Carlsbad Program Group Software QA Program. Audit # AUD-SNL-CPG-Feb 2020
	May 26-28, 2020	Recertification Audit. Audit # A-20-16

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