

**ATTACHMENT E**

**INSPECTION SCHEDULE, PROCESS AND FORMS**

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## ATTACHMENT E

### INSPECTION SCHEDULE, PROCESS AND FORMS

#### Introduction

This Permit Attachment describes the facility inspections (including container inspections) that are conducted to detect ~~malfunctions, deterioration, operator errors, and discharges that may cause or lead to releases of hazardous waste or hazardous waste constituents to the environment or that could be a threat to human health~~malfunctions and deterioration, operator errors, and discharges which may be causing—or may lead to—(1) release of hazardous waste constituents to the environment or (2) a threat to human health, in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) (incorporating Title 40 of the Code of Federal Regulations (CFR) §264.15(a)).

#### E-1 Inspection Schedule

Equipment instrumental in preventing, detecting, or responding to environmental or human health hazards, such as monitoring equipment, safety and emergency equipment, security devices, and operating or structural equipment are inspected. ~~The equipment will be inspected for malfunctions, deterioration, potential for operator errors, and discharges which could lead to a release of hazardous waste constituents to the environment or pose a threat to human health.~~

The ~~WIPP facility has~~Permittees have developed and ~~will~~ maintain a series of written procedures that include all the detailed inspection procedures and forms ~~necessary used~~ to comply with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)), during the Disposal Phase. Tables E-1 and E-1a list each item or system requiring inspection under these regulations, the inspection frequency, the organization responsible for the inspection, the applicable inspection procedure, and what to look for during the inspection. The regulations at 20.4.1.500 NMAC (incorporating 40 CFR §§264.15(b), 264.174, and 264.602) list requirements that are applicable to the Waste Isolation Pilot Plant (WIPP) facility. Permit Attachment D, Table D-2, Emergency Equipment Maintained at the Waste Isolation Pilot Plant, identifies the emergency equipment and corresponding locations to be inspected in accordance with Table E-1.

The Permittees maintain Operational~~operational~~ procedures detailing the inspections required under 20.4.1.500 NMAC (incorporating 40 CFR §§264.15(a) and (b)), ~~are maintained~~ in electronic format on the WIPP computer network, ~~in the Operating Record~~ and, as appropriate, in controlled document locations at the WIPP facility. Frequency of inspections is discussed in detail in Section E-1a(2). Inspections are conducted often enough to identify problems in time to correct them before they pose a threat to human health or the environment and are based on regulatory requirements. The operational procedures assign responsibility for conducting the inspection, the frequency of each inspection, the types of problems to be watched for, what to do if items fail inspection, and directions on record keeping. ~~The operational procedures are maintained at the WIPP facility. Tables E-1 and E-1a summarize inspections, frequencies, responsible organizations, and the types of anticipated problems as well as the references for the operational procedures.~~ Inspection records are maintained at the WIPP site facility for three years. Beginning with the effective date of this Permit, records that are over the ~~three-year~~three-year retention period are either maintained at the WIPP site facility or transferred to the WIPP Records Archive located in Carlsbad, NM New Mexico until closure. ~~The records maintained at~~

~~the WIPP Records Archive are stored in facilities that are temperature and humidity controlled especially for the long term storage of records and readily retrievable and available for inspection.~~

Waste handling equipment and area inspections are typically controlled through established procedures and the results are recorded in logbooks or on ~~data sheets~~inspection forms. Operators are trained to consult the logbook to identify the status of ~~any a~~ piece of waste handling equipment prior to its use. Once a piece of equipment is identified to be operable, a preoperational or pre-evolution inspection is initiated in accordance with the appropriate inspection procedure in Tables E-1, ~~and E-1a, or in operational procedures~~. Inspection results as described below, are entered in the applicable logbook or data sheet or inspection form.

Inspections include identifying malfunctions or deteriorating equipment and structures. Inspection results and data, including deficiencies, discrepancies, or needed repairs are recorded. A negative inspection result does not necessarily lead to a repair. A deficiency, such as low fluid level, may be corrected by the inspector immediately. A discrepancy, such as an increasing trend of a data point, may necessitate additional inspection prior to the next scheduled frequency. The actions taken (corrected, additional inspection, procurement action, or Action Request (AR) for repair submitted) are recorded on the inspection form, the WIPP automated ~~Maintenance maintenance Management management~~ tracking program ~~(CHAMPS)~~ work order sheet, or the equipment logbook, whichever is applicable.

Items that are operational with restrictions are operated in accordance with applicable compensatory measures. Items that are not operational are scheduled for repair or replacement in accordance with work authorization procedures. In such cases, compensatory measures may be needed until the equipment is returned to service. These compensatory measures will provide an equivalent level of protection, be documented in WIPP facility files (e.g., equipment logbook, inspection form), and include an appropriate inspection schedule, when applicable.

Normally, the individual inspecting the equipment/system is not qualified to make repairs and consequently, prepares an AR if repairs are needed. The AR is tracked by the WIPP automated maintenance management tracking program CHAMPS system through the work-control process. When parts are received and work instructions are completed, the work order can be scheduled. ~~The schedule is discussed daily to ensure facility configuration can support scheduled and work items and to allocate and coordinated~~ d with other facility activities the resources necessary in order to complete the items.

Work orders are released for work by the responsible organization. When repairs are complete the responsible organization tests the equipment to ensure the repairs corrected the problem, then closes out the work order, ~~to and~~ returns the equipment to an operational status ~~for normal operations to resume~~. Implementation of these procedures constitutes compliance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(c)).

The Permittees meet the Requirements requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15(d)), ~~are met by~~ performing the inspections for each item or system included in Tables E-1 and E-1a. Beginning with the effective date of this Permit, the results of the inspections are maintained in the ~~operating Operating record Record~~ for three years and are then transferred to the WIPP Records Archive where they are maintained until closure. The inspection logs or summary records include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other

1 remedial actions. Major pieces of waste handling equipment are inspected using proceduralized  
2 inspections. Current copies of inspection forms are ~~maintained in the Operating Record on file at~~  
3 ~~the WIPP facility~~. Non-administrative changes to inspections (i.e., changes that affect the  
4 frequency or content of ~~the inspections schedules~~) ~~to inspection forms~~ must be submitted to the  
5 NMED in accordance with the appropriate portions of 20 NMAC 4.1.900 (incorporating 40 CFR  
6 §270.42). The status of these pieces of waste handling equipment is ~~maintained~~ recorded in an  
7 equipment logbook that is separate from the checklist. The logbook contains information  
8 regarding the condition of the equipment. Equipment operators are required, by the inspection  
9 checklist, to consult the logbook ~~regarding the status of the equipment as the first activity in the~~  
10 ~~inspection procedure~~. This logbook is maintained in the ~~operating~~ Operating Record.  
11 ~~CH~~ Contact-handled (CH) transuranic (TRU) mixed waste equipment that is controlled by a  
12 logbook includes the waste handling forklifts, ~~all~~ waste handling cranes, the adjustable center of  
13 gravity lift fixture, the CH TRU waste underground transporter, the ~~facility~~ transfer vehicles, the  
14 trailer jockey, the Ten-Drum Overpack (TDOP) Upender, the Payload Transfer Station, and the  
15 push-pull attachment. ~~RH~~ Remote-handled (RH) TRU mixed waste equipment that is controlled  
16 by a logbook includes the 140/25-ton RH Bay overhead bridge crane, cask transfer cars, 25-ton  
17 cask unloading room crane, transfer cell shuttle car, RH Bay cask lifting yoke, facility grapple,  
18 6.2-ton overhead hoist, facility cask rotating device, hot cell overhead powered manipulator, 15-  
19 ton hot cell crane, facility cask transfer car, 41-ton forklift, facility cask, and emplacement  
20 equipment. Inspections of the Cask Unloading Room, Hot Cell, Transfer Cell, Facility Cask  
21 Loading Room, ~~and RH Bay~~ and radiation monitoring equipment will be ~~are~~ recorded on data  
22 ~~sheets~~ inspection forms. In addition to the inspections listed in Tables E-1 and E-1a, many  
23 pieces of equipment are subject to regular preventive maintenance, ~~which~~ This includes more  
24 in-depth inspections of mechanical systems, load testing of lifting systems, calibration of  
25 measurement equipment and other actions as recommended by the equipment manufacturer  
26 and/or as required by DOE Orders. These preventive maintenance activities, along with the  
27 Permit-required inspections in Tables E-1 and E-1a, make mechanical failure of waste handling  
28 equipment unlikely. The WIPP ~~Safety Analysis Report~~ Documented Safety Analysis (DOE/WIPP-  
29 3372, 1999) ~~and the WIPP Remote-Handled Waste Preliminary Safety Analysis Report (RH~~  
30 ~~PSAR) (DOE, 2000)~~ contains the results of a systematic analysis of waste handling equipment  
31 and the hazards associated with potential mechanical failures. ~~Equipment subject to failures that~~  
32 ~~cannot practically be mitigated is retained for analysis and is the basis for contingency planning.~~  
33 The inspection procedures ~~maintained in the Operating Record~~ kept on file at the WIPP facility  
34 for operational and preventive maintenance are implemented to assure the equipment is  
35 maintained. ~~An example equipment inspection checklist and a typical logbook form are shown~~  
36 ~~as Figures E-1 and E-2. Actual checklists or forms are maintained within the Operating Record.~~

### 37 E-1a General Inspection Requirements

38 Tables E-1, ~~and~~ E-1a, and E-2 of this Permit Attachment list the major categories of monitoring  
39 equipment, safety and emergency systems, security devices, and operating and structural  
40 equipment that are important to the prevention or detection of, or the response to,  
41 environmental or human health hazards caused by hazardous waste. These systems may  
42 include numerous subsystems. These systems are inspected according to the frequency  
43 frequencies listed in Tables E-1 and E-1a, ~~a copy of which is maintained at the WIPP facility.~~  
44 The frequency of inspections, which is ~~are~~ based on the nature of the equipment or the hazard  
45 and regulatory requirements. ~~When in use, daily inspections are made of areas subject to spills,~~  
46 ~~such as TRU mixed waste loading and unloading areas in the WHB Unit, looking for~~  
47 ~~deterioration in structures, mechanical items, floor coatings, equipment, malfunctions, etc., in~~  
48 ~~accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)).~~

1 As required in 20.4.1.500 NMAC (incorporating 40 CFR §264.33), the WIPP facility inspection  
2 procedures for communication and alarm systems, fire-protection equipment, and spill control  
3 and decontamination equipment include provisions for testing and maintenance to ensure that  
4 the equipment will be operable in an emergency.

#### 5 E-1a(1) Types of Problems

6 The inspections for the systems, equipment, and structures, ~~etc.~~, listed in Tables E-1 and E-1a,  
7 include the types of problems (e.g., malfunctions; ~~;~~ visible cracks in tubing, coatings, ~~or~~ welds; ~~;~~  
8 and deterioration) to be looked for during the inspection of each item or system, if applicable,  
9 and are in compliance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(3)).

#### 10 E-1a(2) Frequency of Inspections

11 Tables E-1, and E-1a, ~~and E-2 of this Permit Attachment~~ list the inspection frequencies and  
12 monitoring schedule for equipment and systems subject to the 20.4.1 NMAC hazardous waste  
13 management requirements. The frequency is based on the rate of possible deterioration of the  
14 equipment and the probability of an environmental or human health incident if the deterioration  
15 or malfunction, or any operator error, goes undetected between inspections. When in use, daily  
16 inspections are made of areas subject to spills, such as TRU mixed waste loading and  
17 unloading areas in the Waste Handling Building (WHB) Unit, and involve looking for  
18 deterioration in structures, mechanical items, floor coatings, equipment, malfunctions, etc., in  
19 accordance with 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)). ~~Areas subject to spills,~~  
20 ~~such as loading and unloading areas, are inspected daily when in use, consistent with the~~  
21 ~~requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)).~~

22 When RH TRU mixed waste is present in the RH Complex, inspections are conducted visually  
23 and/or using closed-circuit video cameras in order to manage worker dose and to minimize  
24 occupational radiation exposures to as low as reasonably achievable (**ALARA**). More extensive  
25 inspections of these areas are performed at least annually during routine maintenance periods  
26 and when RH TRU mixed waste is not present, as identified in Table E-1a.

#### 27 E-1a(3) Monitoring Systems

28 There are two monitoring systems used at the WIPP facility to provide assurance that facility  
29 systems are operating correctly, that areas can be used safely, and that there have been no  
30 releases of hazardous waste constituents. These systems ~~are shown in Table E-2 and~~ include  
31 the geomechanical monitoring system and the central monitoring system (**CMS**). The  
32 geomechanical monitoring system is used to assess the condition of mined excavations to  
33 ~~assure no~~ identify the development of unsafe conditions before they are allowed to develop. The  
34 CMS continuously assesses the status of ~~the fixed radiation monitoring equipment,~~ electrical  
35 power, fire alarm systems, ventilation system, and other facility systems including water tank  
36 levels. In addition, the CMS collects data from the meteorological monitoring system. Key  
37 equipment monitored by these two systems are identified in Table E-1 and include a specified  
38 inspection frequency.

1 E-1b Specific Process Inspection Requirements

2 The regulation at 20.4.1.500 NMAC (incorporating 40 CFR §264.15(b)(4)), **requires** inspections  
3 of specific portions of a facility, rather than the general facility. These include container storage  
4 areas and miscellaneous units. Both are addressed below.

5 E-1b(1) Container Inspection

6 ~~The Permittees use Containers containers are used~~ to manage TRU mixed waste at the WIPP  
7 facility. These containers are described in Permit Part 3, Section 3.3.1, and Permit Attachment  
8 A1, Section A1-1b. ~~Off-site waste that will be managed and stored as CH TRU mixed waste will~~  
9 ~~arrive in 55-gallon drums arranged as seven (7) packs, in Ten Drum Overpacks (TDOP), in 85-~~  
10 ~~gallon drums arranged as four (4) packs, in 100-gallon drums arranged as three (3) packs, in~~  
11 ~~standard waste boxes (SWB), in standard large box 2s (SLB2s) or shielded containers as (3)-~~  
12 ~~packs.~~ The waste containers will be visually inspected to ensure that the waste containers  
13 are in good condition and that there are no signs that a release has occurred. This visual  
14 inspection ~~shall~~ does not include the center drums of ~~7~~ seven-packs and waste containers  
15 positioned such that visual observation is precluded due to the arrangement of waste  
16 assemblies on the facility pallets. If CH TRU mixed waste handling operations should stop for  
17 any reason with containers located on-in the TRUPACT-II CH package Unloading Dock (e.g., at  
18 the TRUDOCKs storage area of the WHB Unit) or in room Room 108) ~~while still in the Contact-~~  
19 ~~Handled Packages~~, primary waste container inspections ~~could not~~ cannot be accomplished until  
20 the containers of waste are removed from the ~~shipping containers~~ CH package.

21 As described in Permit Attachment A1, Section A1-1d(3), off-site waste ~~that will be~~ managed  
22 and stored as RH TRU mixed waste ~~will arrive~~ in ~~a~~ containers inside Nuclear Regulatory  
23 Commission ~~(NRC)-certified casks designed to provide shielding and facilitate safe handling.~~  
24 ~~Canisters, will be loaded singly into an RH TRU 72-B cask. Drums will be loaded into a CNS 10-~~  
25 ~~160B cask.~~ The cask ~~will be~~ is visually inspected upon arrival. ~~Because RH TRU mixed waste is~~  
26 ~~stored in the Parking Area Unit in sealed casks, there are no additional requirements for~~  
27 ~~engineered secondary containment systems.~~ Following removal of the canisters ~~and or~~  
28 the interior of the cask ~~will be~~ is inspected and surveyed for evidence of contamination that may  
29 have occurred during transport.

30 Off-site waste ~~that will be~~ managed and stored as RH TRU mixed waste is managed and stored  
31 in the RH Complex of the WHB. The RH Complex includes the following: RH Bay, the Cask  
32 Unloading Room, the Hot Cell, the Transfer Cell, and the Facility Cask Loading Room. ~~As RH~~  
33 ~~TRU mixed waste is held in canisters within a canister rack the physical inspection of the drum~~  
34 ~~or canister is not possible.~~ Inspections of RH TRU mixed waste in these areas occurs remotely  
35 via closed-circuit cameras a minimum of once weekly when stored waste is present. ~~Because~~  
36 ~~RH TRU mixed waste is in sealed casks, there are no additional requirements for engineered~~  
37 ~~secondary containment systems.~~ ~~However, the~~ The floors in the RH Complex (including the RH  
38 Bay, Facility Cask Loading Room and Cask Unloading Room) are coated concrete and during  
39 normal operations (i.e., when waste is present), the floor of the RH Complex is inspected  
40 visually or by using close-circuit cameras on a weekly basis to verify that it is in good condition  
41 and free of visible cracks and gaps.

42 Inspections of RH TRU mixed waste containers stored in the Hot Cell and Transfer Cell are  
43 conducted using remotely operated cameras. RH Remote-handled TRU mixed waste in the Hot  
44 Cell is stored in either drums or canisters. The containers in the Hot Cell are inspected to



1 ensure that they are in acceptable condition. ~~RH Remote-handled~~ TRU mixed waste in the  
2 Transfer Cell is stored in the RH-TRU 72-B cask or shielded insert; therefore, inspections in this  
3 area focus on the integrity of the cask or shielded insert. ~~RH Remote-handled~~ TRU mixed waste  
4 in the Facility Cask Loading Room is stored in the facility cask; therefore, inspections in this  
5 area focus on the integrity of the facility cask.

6 Inspections ~~will be~~are conducted in the Parking Area Unit (PAU) at a frequency not less than  
7 once weekly when waste is present and focus on the inventory and integrity of the shipping  
8 containers and the spacing between trailers carrying the CH or RH packages. This aisle spacing  
9 is maintained at a minimum of four feet. These inspections are applicable to loaded ~~Contact-~~  
10 ~~Handled~~CH and ~~Remote-Handled~~RH Packagespackages. ~~The perimeter fence located at the~~  
11 ~~lateral limit of the Parking Area Unit, coupled with personnel access restrictions into the WHB~~  
12 ~~Unit, will provide the needed security. The perimeter fence and the southern border of the WHB~~  
13 ~~shall mark the lateral limit of the Parking Area Unit. Radiologically controlled areas can be~~  
14 ~~established temporarily with barricades. More permanent structures can be installed. The~~  
15 ~~western boundary can be established with temporary barricades since this area is within the~~  
16 ~~perimeter fence. Access to radiologically controlled areas will only be permitted to personnel~~  
17 ~~who have completed General Employee Radiological Training (GERT), a program defined by~~  
18 ~~the Permittees, or escorted by personnel who have completed GERT. This program ensures~~  
19 ~~that personnel have adequate knowledge to understand radiological posting they may~~  
20 ~~encounter at the WIPP site. The fence of the Radiologically Controlled Area, south from the~~  
21 ~~WHB airlocks, was moved to provide more maneuvering space for the trucks delivering waste.~~  
22 Since TRU mixed waste to be stored in the Parking Area UnitPAU ~~will be~~is in sealed ~~Contact-~~  
23 ~~Handled~~CH or ~~Remote-Handled~~RH Packagespackages, there ~~will be~~are no additional  
24 requirements for engineered secondary containment systems. ~~Inspections of the Contact-~~  
25 ~~Handled and Remote-Handled Packages stored in the Parking Area Unit shall be conducted at~~  
26 ~~a frequency no less than once weekly and will focus on the inventory and integrity of the~~  
27 ~~shipping containers and the spacing between trailers carrying the Contact-Handled or Remote-~~  
28 ~~Handled Packages. This spacing will be maintained at a minimum of four feet.~~

29 Container inspections ~~will be~~are included as part of the surface TRU mixed waste handling  
30 areas (~~i.e. Parking Area Unit and WHB Unit~~)-inspections described in Tables E-1 and E-1a.  
31 These inspections ~~will~~also include the Derived Waste Storage Areas of the WHB Unit. ~~The~~  
32 ~~Derived Waste Storage Areas will consist of containers of 55 or 85-gallon drums or SWBs for~~  
33 ~~CH TRU mixed waste and 55-gallon drums for RH TRU mixed waste. A Satellite~~satellite  
34 accumulation area (**SAA**) may be required in an area adjacent to the TRUDOCKs for CH TRU  
35 mixed waste. A SAA may also be required in the RH Bay and Hot Cell for RH TRU mixed  
36 waste. These SAAs will be set up on an as needed basis at or near the point of generation and  
37 the derived waste will be discarded into the active derived waste container. ~~All SAAs~~Satellite  
38 accumulation areas ~~will be~~are inspected in accordance with 20.4.1.300 NMAC (incorporating 40  
39 CFR §262.17).

#### 40 E-1b(2) Miscellaneous Unit Inspection

41 The regulations at 20.4.1.500 NMAC (incorporating 40 CFR §264.602), requires that ~~inspections~~  
42 ~~required in the inspection requirements of~~ 20.4.1.500 NMAC (incorporating 40 CFR §264.15 and  
43 §264.33), as well as any additional inspection requirements needed to protect human health  
44 and the environment, be met. The requirements of 20.4.1.500 NMAC (incorporating 40 CFR  
45 §264.15 and §264.33) are discussed in Section E-1 of this Permit Attachment, along with how  
46 the WIPP facility complies with those requirements for standard types of inspections. Inspection

1 ~~frequencies for geomechanical monitoring equipment are provided in Table E-1. The monitoring~~  
2 ~~schedule for of the~~ geomechanical instrumentation system is given addressed in Table E-2E-1.  
3 As described in Permit Attachment A2, Section A2-b(2), the geomechanical monitoring program  
4 at the WIPP facility is an integral part of the ground-control program. Hazardous waste disposal  
5 units, access drifts, the Waste Shaft Station, and the underground transport route are monitored  
6 to provide confirmation of structural integrity. Geomechanical data on the performance of the  
7 repository shafts is collected as part of the shaft inspections. The results of geomechanical  
8 monitoring are reported annually, as identified in Permit Attachment A2, Section A2-b(2).

9 References

10 ~~DOE, 1999. "WIPP Safety Analysis Report," DOE/WIPP-95-2065. Rev. 4, U.S. Department of~~  
11 ~~Energy. Washington, D.C. DOE/WIPP-3372. *Waste Isolation Pilot Plant Documented Safety*~~  
12 ~~*Analysis.*~~

13 ~~DOE, 2000. "WIPP Remote-Handled Waste Preliminary Safety Analysis" (RH PSAR), U.S.~~  
14 ~~Department of Energy. Washington, D.C.~~

15

1

## FIGURES

2

TYPICAL EQUIPMENT WEEKLY CHECK LIST		
<input checked="" type="checkbox"/> <b>OK</b> <input checked="" type="checkbox"/> <b>Adjustment Made</b> <input type="checkbox"/> <b>Repairs Required</b> AR Written [ ] Yes [ ] No      AR # _____ (check or complete appropriate information)		
ITEM INSPECTED	Condition	Comments/Corrective Action
<b>Mechanical Checks:</b> (examples)		
Oil level		
Radiator fluid level		
Automatic transmission fluid level		
Operate all valves/check gauges		
Emergency brake		
Fuel level (> ¾ full)		
Oil pressure (at warm idle)		
Tire Pressure		
Sirens, horn, & back-up alarm		
<b>Deterioration Checks:</b> (examples)		
Fan belts		
Battery (terminals, cables)		
Run generator 5 min.		
Hose, nozzles & valves		
<b>Leaks/Spills Checks:</b> (examples)		
Leaks around pump		
Foam tank level		
<b>Required Equipment:</b> (examples)		
Inspect SCBAs (> 4050 psi)		
Hand tools & equipment		
Trauma Kit		
<b>Inspected by:</b> _____		
Print Name	Signature	Time/Date
<b>Inspected by:</b> _____		
Print Name	Signature	Time/Date
<b>Reviewed by:</b> _____		
Print Name	Signature	Time/Date
<b>Comments:</b> _____		
_____		
_____		

**NOTE: All items that are mandatory for every inspection form are shown in bold.**

**Figure E-4  
Typical Inspection Checklist**

HOUR METER READING _____ EQUIPMENT NO. _____			
<b>DEFICIENCIES NOTED:</b> _____			
_____			
_____			
PRE OPS COMPLETED PER {Procedure Number} SAT _____ <b>PROBLEMS NOTED</b> _____			
<b>CORRECTIVE ACTIONS TAKEN:</b> _____			
_____			
_____			
_____			
_____			
<b>OPERATOR SIGNATURE</b>	<b>DATE</b>	<b>TIME</b>	<b>SUPERVISOR SIGNATURE/DATE</b>
_____	_____	_____	_____
<b>NOTE: All items that are mandatory for every inspection form are shown in bold.</b>			

**Figure E-2  
Typical Logbook Entry**

## TABLES

**Table E-1  
 Inspection Schedule/Procedures**

<b>System/Equipment Name</b>	<b>Responsible Organization</b>	<b>Inspection<sup>a</sup> Frequency</b>	<b>Procedure Number and Inspection Criteria<sup>h</sup></b>
Air Intake Shaft Hoist	Underground Operations	Preoperational <sup>c</sup>	WP 04-HO1004 Inspecting for Deterioration <sup>b</sup> , Safety Equipment, Communication Systems, and Mechanical Operability <sup>m</sup> in accordance with Mine Safety and Health Administration (MSHA) requirements
Ambulance (Surface) and Medical Cart (Underground)	Fire Department	Weekly	WP 12-FP0030 Inspecting for Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , and Required Equipment <sup>n</sup>
Adjustable Center of Gravity Lift Fixture	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1410 Inspecting for Mechanical Operability <sup>m</sup> and Deterioration <sup>b</sup>
Backup Power Supply Diesel Generators	Facility Operations	Monthly	WP 04-ED1301 Inspecting for Mechanical Operability <sup>m</sup> and Leaks/Spills by starting and operating both generators. Results of this inspection are <del>logged in accordance with WP 04-AD3008</del> <u>recorded on EA04AD3008-47-0</u>
Facility Inspections (Water Diversion Berms)	Facility Engineering	Annually	WP 10-WC3008 Inspecting for Damage, Impediments to water flow, and Deterioration <sup>b</sup>
Central Monitoring Systems (CMS)	Facility Operations	Continuous	Automatic Self-Checking
<del>Contact Handled (CH)</del> TRU Underground Transporter	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1603 <u>WP 05-WH1604</u> Inspecting for Leaks/Spills, Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , <del>and</del> area around transporter clear of obstacles, <u>and on-board automatic fire suppression system</u>
Conveyance Loading Car	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1406 Inspecting for Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , path clear of obstacles, and guards in the proper place

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>b</sup>
Facility Transfer Vehicle	Waste <del>Handling</del> Operations	<del>Preoperational</del> <sup>6</sup> Pre-evolution <sup>p</sup>	WP 05-WH1204 <del>Pre-evolution Checks and Operating Instructions,</del> Inspecting for Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , path clear of obstacles, and guards in the proper place
Emergency Lighting	Fire Department	Monthly/ <del>annually</del> Annually	WP 12-FP0051 Inspecting for Deterioration <sup>b</sup> , and Operability of indicator lights in accordance with NFPA 101
Exhaust Shaft	Underground Operations	Quarterly	PM041099 Inspecting for Deterioration <sup>b</sup> <del>and Leaks/Spills</del>
Eye Wash and Shower Equipment	<del>Equipment Custodian</del> Environmental, Safety, Industrial Health	Weekly	WP 12-IS1832 Inspecting for Deterioration <sup>b</sup>
		Semi-annually	WP 12-IS1832 Inspecting for Deterioration <sup>b</sup> and Fluid Levels—Replace as Required
Fire Detection and Alarm System	Fire Protection Engineering	Semi-annually/ <del>annually</del> Annually	WP 12-FP0027 Inspecting for Deterioration <sup>b</sup> and Operability of underground fuel station fire suppression system in accordance with NFPA 17 (semi-annual inspection); Inspecting for Deterioration <sup>b</sup> and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72 (annual inspection)
		<del>Monthly/quarterly/annually</del>	<del>WP 12-FP0028</del> <del>Inspecting for Deterioration<sup>b</sup>, and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72</del>



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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>b</sup>
		<u>Monthly/Quarterly/Annually</u>	<u>WP 12-FP0028</u> <u>Inspecting for Deterioration<sup>b</sup>, and Operability of the alarm panel and transmitter, audible/visual alarm devices, detectors, and pull stations in accordance with NFPA 72</u>
Fire Extinguishers <sup>j</sup>	Fire Department	Monthly	WP 12-FP0036 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, Expiration, seals, fullness, and pressure
Fire Hoses	Fire Department	Annually (minimum)	WP 12-FP0031 Inspecting for Deterioration <sup>b</sup> and Leaks/Spills
Fire Hydrants	Fire Protection Engineering	Semi-annual/ <del>annually</del> <u>Annually</u>	WP 12-FP0034 Inspecting for Deterioration <sup>b</sup> and Leaks/Spills
Fire Pumps	Fire Protection Engineering	Weekly	WP 12-FP0026 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, fire water valve position(s), and panel light status
		<del>Annually (Electric Pump)</del>	<del>WP 12-FP5113</del> <del>Inspecting for Deterioration<sup>b</sup>, operability, flow, discharge pressure, suction pressure, and pump speed</del>
		<del>Annually (Diesel Pump)</del>	<del>WP 12-FP5114</del> <del>Inspecting for Deterioration<sup>b</sup>, operability, flow, discharge pressure, suction pressure, and pump speed</del>
		<u>Annually (Electric Pump)</u>	<u>WP 12-FP5113</u> <u>Inspecting for Deterioration<sup>b</sup>, operability, flow, discharge pressure, suction pressure, and pump speed</u>
		<u>Annually (Diesel Pump)</u>	<u>WP 12-FP5114</u> <u>Inspecting for Deterioration<sup>b</sup>, operability, flow, discharge pressure, suction pressure, and pump speed</u>

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>b</sup>
Fire Sprinkler Systems	Fire Protection Engineering	Monthly  Quarterly  Annually	WP 12-FP0023, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, and water pressures  WP 12-FP0024, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, and water pressures  WP 12-FP0025, WP 12-FP0063, and WP 12-FP0064 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, water pressures, and main drain test
Fire and Emergency Response Vehicles (Fire Trucks, Fire Suppression Cart, and Rescue Cart)	Fire Department	Weekly	WP 12-FP0033 Inspecting for Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , Leaks/Spills, and Required Equipment <sup>n</sup>
<u>Electric Forklifts Used for Waste Handling</u>	<u>Waste Operations</u>	<u>Preoperational<sup>c</sup></u>	<u>WP 05-WH1401</u> <u>WP 05-WH1402</u> <u>WP 05-WH1403</u> <u>Inspecting for Leaks/Spills, Mechanical Operability<sup>m</sup>, Deterioration<sup>b</sup>, and presence of on-board fire extinguisher</u>
<u>Diesel Forklifts Used for Waste Handling (Electric and Diesel forklifts, Push-Pull Attachment)</u>	<u>Waste Handling Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1201, WP 05-WH1207, <del>WP 05-WH1401, WP 05-WH1402, WP 05-WH1403, and</del> WP 05-WH1412 Inspecting for Leaks/Spills, Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , and <del>On-on-</del> board <u>automatic</u> fire suppression system
Automatic on-board fire suppression systems	Fire Protection Engineering	Monthly/Semi-annually	WP 12-FP0085 WP 12-FP0060 Inspecting for Mechanical Operability <sup>m</sup> and Deterioration <sup>b</sup>
Hazardous Material Response Equipment	Fire Department	<del>Quarterly</del> <u>Monthly</u>	WP 12-FP0033 Inspecting for Deterioration <sup>b</sup> , and Required Equipment <sup>n</sup>

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>h</sup>
Head Lamps	Facility Personnel	Daily <sup>i</sup>	Head lamps are operated daily and are repaired or replaced upon failure
Miners First Aid Station	Fire Department	Quarterly	WP 12-FP0035 Inspecting for Required Equipment <sup>n</sup>
Mobile Phones	Facility Personnel	Daily <sup>i</sup>	Mobile Phones are operated daily and are repaired or replaced upon failure
Mine Pager Phones (between surface and underground)	Facility Operations	Monthly/Annually <sup>o</sup>	WP 04-PC3017 WP 04-PC3018 Testing of Mine Pager Phones at essential locations
MSHA Air Quality Monitor	Maintenance/ Underground Operations	Daily <sup>i</sup>	WP 12-IH1828 Inspecting for Air Quality Monitoring Equipment Functional Check
Perimeter Fence, Gates, Signs	Security	Daily	WP 17-SS1023 Inspecting for Deterioration <sup>b</sup> and <del>Posted</del> <del>Warnings</del> <u>Required Permit Part 2, Section 2.6.4 warning signs</u>
Mine Rescue Self-Contained Breathing Apparatus (SCBA)	Mine Rescue Team	30 days	WP 12-ER3007 Inspection for Deterioration <sup>b</sup> and Pressure <sup>g</sup>
-Fire Department SCBA	Fire Department	Weekly/ <del>monthly</del> <u>Monthly</u>	WP 12-FP0029 Inspecting for Deterioration <sup>b</sup> and Pressure
Site Notification System; Underground Evacuation Alarm System	Facility Operations	Monthly/Annually	WP 04-PC3017 WP 04-PC3018 Testing of PA and Underground Alarms
Radio Equipment	Facility Personnel	Daily <sup>i</sup>	Radios are operated daily and are repaired or replaced upon failure
Salt Handling Shaft Hoist	Underground Operations	Preoperational <sup>c</sup>	WP 04-HO1002 Inspecting for Deterioration <sup>b</sup> , Safety Equipment, Communication Systems, and Mechanical Operability <sup>m</sup> in accordance with MSHA requirements

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>b</sup>
Self-Rescuers and Self-Contained Self-Rescuers	Underground Operations	Quarterly	WP 04-AU1026 Inspecting for Deterioration <sup>b</sup> and Functionality in accordance with MSHA requirements
Surface <u>CH</u> TRU Mixed Waste Handling Area <sup>k</sup>	Waste <u>Handling Operations</u>	Preoperational- <sup>c</sup> or Weekly <sup>e</sup>	WP 05-WH1101 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, Required Aisle Space <sup>d</sup> , <u>Posted Warnings Required Permit Part 2, Section 2.6.4 warning signs</u> , Communication Systems, Container Condition, and Floor coating integrity
TRU Mixed Waste Decontamination Equipment	Waste <u>Handling Operations</u>	Annually	WP 05-WH1101 Inspecting for Required Equipment <sup>f</sup>
Underground Openings—Roof Bolts and Travelways	Underground Operations	Weekly	WP 04-AU1007 Inspecting for Deterioration <sup>b</sup> of Accessible Areas
Underground—Geomechanical Instrumentation System (GIS)	Geotechnical Engineering	Monthly	WP 07-EU1301 Inspecting for Deterioration <sup>b</sup>
Underground TRU Mixed Waste Disposal Area	Waste <u>Handling Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1810 Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, mine pager phones, <u>equipment</u> , unobstructed access, <u>required Permit Part 2, Section 2.6.4 warning signs</u> , debris, and ventilation
Uninterruptible Power Supply (Central UPS)	Facility Operations	Daily	WP 04-ED1542 Inspecting for Mechanical Operability <sup>m</sup> and Deterioration <sup>b</sup> with no malfunction alarms. Results of this inspection are <u>logged in accordance with WP 04-AD3008-recorded on EA04AD3008-20-0</u>
TDOP Upender	Waste <u>Handling Operations</u>	<u>Preoperational-<sup>e</sup>Pre-evolution<sup>p</sup></u>	WP 05-WH1010 <u>Pre-evolution Checks and Operating Instructions</u> , Inspecting for Mechanical Operability <sup>m</sup> and Deterioration <sup>b</sup>

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>b</sup>
Waste Handling Cranes	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1407 Inspecting for Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , and Leaks/Spills
Waste Hoist	Underground Operations	Preoperational <sup>c</sup>	WP 04-HO1003 Inspecting for Deterioration <sup>b</sup> , Safety Equipment, Communication Systems, and Mechanical Operability <sup>m</sup> , Leaks/Spills, in accordance with MSHA requirements
Water Tanks	Facility Operations	Daily	WP 04-AD3008 Inspecting for Deterioration <sup>b</sup> , valve lineup, and water levels. Results of this inspection are <del>logged in accordance with WP 04-AD3008</del> recorded on <u>EA04AD3008-12-0 and EA04AD3008-13-0</u>
Push-Pull Attachments	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1401 <u>WP 05-WH1412</u> Inspecting for Damage, <u>Mechanical Operability<sup>m</sup></u> , and Deterioration <sup>b</sup>
Trailer Jockey	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1405 Inspecting for Leaks/Spills, Mechanical Operability <sup>m</sup> and Deterioration <sup>b</sup>
Closure Bulkheads	Underground Operations	Semi-annually	PM000011 <del>PM000015</del> Integrity and Deterioration <sup>b</sup> <del>of</del> <u>in</u> Accessible Areas
Bolting Robot	Waste <del>Handling</del> <u>Operations</u>	Preoperational <sup>c</sup>	WP 05-WH1203 Mechanical Operability <sup>m</sup>
Yard Transfer Vehicle	Waste <del>Handling</del> <u>Operations</u>	<del>Preoperational<sup>c</sup></del> <u>Pre-evolution<sup>p</sup></u>	WP 05-WH1205 <u>Pre-evolution Checks and Operating Instructions</u> , Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , Path clear of obstacles and Guards in proper place
Payload Transfer Station	Waste <del>Handling</del> <u>Operations</u>	<del>Preoperational<sup>c</sup></del> <u>Pre-evolution<sup>p</sup></u>	WP 05-WH1208 <u>Pre-evolution Checks and Operating Instructions</u> , Mechanical Operability <sup>m</sup> , Deterioration <sup>b</sup> , and Guards in proper place

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System/Equipment Name	Responsible Organization	Inspection <sup>a</sup> Frequency	Procedure Number and Inspection Criteria <sup>h</sup>
Monorail Hoist	Waste <del>Handling</del> Operations	<del>Preoperational</del> <sup>L</sup> <u>Pre-evolution</u> <sup>P</sup>	WP 05-WH1202 <u>Pre-evolution Checks and Operating Instructions</u> , Mechanical Operability <sup>m</sup> , Deterioration <sup>p</sup> , and Leaks/Spills
Bolting Station	Waste <del>Handling</del> Operations	Preoperational <sup>c</sup>	WP 05-WH1203 Mechanical Operability <sup>m</sup> , Deterioration <sup>p</sup> , and Guards in proper place

**Table E-1 (Continued)**  
**Inspection Schedule/Procedures Notes**

- a Inspection may be accomplished as part of or in addition to regularly scheduled preventive maintenance inspections for each item or system. Certain structural systems of the WHB, ~~and~~ Waste Hoist ~~and Station A~~ are also subject to inspection following severe natural events including earthquakes, tornados, and severe storms. Structural systems include columns, beams, girders, anchor bolts and concrete walls.
- b Deterioration includes: obvious visible cracks, erosion, salt build-up, damage, corrosion, loose or missing parts, malfunctions, and structural deterioration.
- c "Preoperational" signifies that inspections are required prior to the first use during a calendar day. For calendar days in which the equipment is not in use, no inspections are required. For an area this includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that all functional components and emergency equipment is present and operational.
- e These weekly inspections apply to container storage areas when containers of waste are present for a week or more.
- g Inspections are performed per manufacturer's maintenance instructions.
- h Inspections and PM's are not required for equipment that is out of service. However, if compensatory measures have been established to ensure an equivalent level of protection during the period that the equipment is out of service (e.g., required equipment/supplies from an out-of-service emergency vehicle have been temporarily relocated), appropriate inspections will be scheduled, conducted, and documented in the Operating Record, in accordance with Attachment E, Section E-1.
- i Head Lamps, Mobile Phones, and Radios are not routinely "inspected." They are typically used in day-to-day operations. They are used until they fail, at which time they are replaced and repaired.
- j Fire extinguisher inspections are performed in accordance with NFPA 10.
- k Surface CH TRU mixed waste handling areas include the ~~Parking Area Unit~~PAU, the WHB unit, and unloading areas.
- l No log forms are used for daily readings. However, readings that are out of tolerance are reported to the CMR and logged by CMR operator. Inspection includes daily functional checks of portable equipment.
- m Mechanical Operability means that the equipment has been checked and is operating in accordance with site safety requirements (e.g., proper fluid levels and tire pressure; functioning lights, alarms, sirens, and power/battery units; and belts, cables, nuts/bolts, and gears in good condition), as appropriate.
- n Required Equipment means that the equipment identified in Table D-2 is available and usable (i.e., not expired/depleted and works as designed).
- o Mine pager phones in non-essential locations are not routinely "inspected". Many are used in day-to-day operations. They are used until they fail, at which time they are repaired. Mine pager phones are used routinely by Underground Operations.
- p "Pre-evolution" signifies that inspections are required prior to equipment use in the waste handling process. A TRUPACT-III shipment evolution is considered to be the process that begins with placing a loaded TRUPACT-III package on the Yard Transfer Vehicle (YTV) in the PAU, includes waste storage in the WHB Unit, and ends when the empty TRUPACT-III is removed from the YTV in the PAU. Additionally, a TDOP-Upender evolution is considered to be the process that begins with the empty TDOP placed on the Upender, and ends with storage of the overpacked waste container in the WHB Unit.
- q In the PAU, the aisle spacing between trailers carrying the CH or RH packages are maintained at a minimum of four feet. In the CH Bay Storage Area of the WHB Unit, a minimum aisle space of 44 inches between loaded facility pallets is maintained. Also, in the CH Bay, a minimum aisle space of 44 inches is maintained between the walls of the CH Bay and a loaded facility pallet.

**Table E-1a  
RH TRU Mixed Waste Inspection Schedule/Procedures**

System/ Equipment Name	Responsible Organization <sup>di</sup>	Inspection <sup>a</sup> Frequency	Procedure Number (Latest Revision) <sup>i</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Cask Transfer Car(s)	Waste Operations	Pre-evolution <sup>c,d,e</sup>	WP_05- WH1701  <del>PM041187 (Semi-Annual)</del>	Yes	NA	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication</del>
RH Bay Overhead Bridge Crane	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP_05- WH1741  <del>PM041232 (Quarterly) PM041117 (Annual)</del>	Yes	Yes	Pre-operational Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication</del>
Facility Cask	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP05-WH1713  <del>PM041204 (Annual) PM041203 (Annual)</del>	Yes	<del>NA</del> Yes	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication. Electrical PM.</del>
RH Bay Cask Lifting Yoke	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP_05- WH1741  <del>PM041169 (Annual)</del>	Yes	NA	Pre-operational Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication</del>
Facility Cask Transfer Car	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP_05- WH1704  PM041186 (Quarterly) PM041195 (Annual)	Yes	Yes	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication Electrical Inspection</del>
Facility Cask Rotating Device	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP05-WH1713  <del>PM041175 (Annual) PM041176 (Annual)</del>	Yes	Yes	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication Electrical Inspection</del>
Facility Grapple	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP_05- WH1721  <del>PM041172 (Quarterly) PM041177 (Annual)</del>	Yes	NA	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear. Non-Destructive Examination</del>
6.25-Ton Grapple Hoist	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP05-WH1721  <del>PM411028 (Annual)</del>	Yes	Yes	Pre-evolution Checks and Operating Instructions.  <del>Mechanical Inspection for Wear and Lubrication</del>



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System/ Equipment Name	Responsible Organization <sup>d,i</sup>	Inspection <sup>a</sup> Frequency	Procedure Number (Latest Revision) <sup>j</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Transfer Cell Shuttle Car	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP_05-WH1705 <del>PM041184 (Semi-Annual)</del> <del>PM041222 (Annual)</del>	Yes	Yes	Pre-evolution <del>Pre-operational</del> Checks and Operating Instructions. <del>Mechanical Inspection for Wear and Lubrication.</del> <del>Electrical Inspection.</del>
Hot Cell Overhead Powered Manipulator	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP_05-WH1743 <del>PM041215 (Annual)</del> <del>PM041216 (Annual)</del> <del>IC411037 (Annual)</del>	Yes	Yes	Pre-operational Checks and Operating Instructions. <del>Mechanical Inspection for Wear and Lubrication.</del> <del>Electrical Inspection.</del> <del>Load Cell Calibration</del>
Hot Cell Bridge Crane	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP_05-WH1742 <del>PM041217 (Annual)</del> <del>PM041209 (Annual)</del> <del>IC411038 (Annual)</del>	Yes	Yes	Pre-operational Checks and Operating Instructions. <del>Mechanical Inspection for Wear and Lubrication.</del> <del>Electrical Inspection.</del> <del>Load Cell Calibration.</del>
Closed Circuit Television Camera	Waste Operations	Preoperational <sup>c,i</sup>	WP_05-WH1757	NA	NA	Operability
<del>Radiation Monitoring Equipment</del>	<del>Radiation Control</del>	<del>Preoperational<sup>e,d,e</sup></del>	<del>WP12-HP1245</del> <del>IC240010</del> <del>WP12-HP1307</del> <del>IC534000</del> <del>WP12-HP1314 (Annual)</del>	<del>Yes</del>	<del>NA</del>	<del>Operability Checks, Functional Checks, Instrument calibrations, Flow Calibration, Efficiency Checks.</del>
Cask Unloading Room Crane	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP_05-WH1719 <del>PM041190 (Quarterly)</del> <del>PM041191 (Annual)</del> <del>PM041192 (Annual)</del> <del>IC411035 (Annual)</del>	Yes	Yes	Pre-operational Checks and Operating Instructions. <del>Mechanical Inspection for Wear and Lubrication.</del> <del>Electrical Inspection.</del> <del>Load Cell Calibration.</del>

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System/ Equipment Name	Responsible Organization <sup>d,l</sup>	Inspection <sup>a</sup> Frequency	Procedure Number (Latest Revision) <sup>l</sup>	Inspection Criteria		
				Deterioration <sup>b</sup>	Leaks/ spills	Other
Horizontal Emplacement Machine and Retrieval Equipment or functionally equivalent equipment	Waste Operations	Pre-evolution <sup>c,d,e,f</sup>	WP 05- WH1733* <del>WP05-WH1700</del> PM052010 (Semi-Annual) <sup>k</sup> PM052011 (Annual) PM052013 PM052012 PM052014 (Annual)	Yes	Yes	Assembly and Operating Instructions. <del>Electrical Inspection. Position Transducer Calibration. Tilt Sensor Calibration.</del> * Procedure WP 05- WH1733 is currently not active. The procedure number has been designated for the Horizontal Emplacement Machine when activities are initiated to support resumption of RH waste emplacement.
41-Ton Forklift	Waste Operations	Preoperational <sup>c,d,e,i</sup>	WP 05- WH1602 <del>PM074064</del> PM052003 (Hours of Use) PM074027 (Quarterly) PM074029 & PM074051 (Annual)	Yes	Yes	Pre-Operational Checks and on-board automatic fire suppression system PM performed every 100 hours of operation, every 500 hours of operation or every 5 Years. Quarterly Engine Emission Test. Annual Electrical Inspection. Annual NDE.
Surface RH TRU Mixed Waste Handling Area	Waste Operations	Preoperational <sup>c,d,e,f,g,h,j</sup>	WP-05 WH1744	Yes	Yes	Inspecting for Deterioration <sup>b</sup> , Leaks/Spills, Required Aisle Space <sup>m</sup> , Required Permit Part 2, Section 2.6.4 warning signs, Posted Warning, Communications, Systems, Container Conditions, and Floor Coating Integrity.

**Table E-1a (Continued)**  
**RH TRU Mixed Waste Inspection Schedule/Procedures Notes**

- a Inspection may be accomplished as part of or in addition to regularly scheduled preventive maintenance inspections for each item or system. Certain structural systems of the WHB are also subject to inspection following severe natural events including earthquakes, tornados, and severe storms. Structural systems include columns, beams, girders, anchor bolts, and concrete walls.
- b Deterioration includes: visible cracks, erosion, salt build-up, damage, corrosion, loose or missing parts, malfunctions, and structural deterioration.
- c “Pre-evolution” signifies that inspections are required prior to equipment use in the waste handling process. (An evolution is considered to be from the receipt of a cask into the RH Bay through canister emplacement in the underground.) For an area, preoperational inspection includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that functional components and emergency equipment are present and operational. When the equipment is not in use, no inspections are required.
- d When equipment needs to be inspected while handling waste (i.e., during waste unloading or transfer operations), general cleanliness and functional components will be inspected to detect any problem that may harm human health or the environment. The inspection will verify that emergency equipment is present.
- e Inspection of RH TRU mixed waste equipment and areas in the RH Complex applies only after RH TRU mixed waste receipt begins.
- f The inspection/maintenance activities associated with these pieces of equipment are performed when the RH Complex is empty of RH TRU mixed waste. If contamination is present, a radiation work permit may be needed.
- g For the Hot Cell and Transfer Cell, if RH TRU mixed waste is present, camera inspections will be performed in lieu of physical inspection.
- h The integrity of the floor coating will be inspected weekly if RH TRU mixed waste is present.
- i “Preoperational” signifies that inspections are required prior to the first use in a calendar day. For an area, preoperational inspection includes: area is clean and free of obstructions (for emergency equipment); adequate aisle space; emergency and communications equipment is readily available, properly located and sign-posted, visible, and operational. For equipment, this includes: checking fluid levels, pressures, valve and switch positions, battery charge levels, pressures, general cleanliness, and that functional components and emergency equipment are present and operational. When the equipment is not in use, no inspections are required.
- j Responsible organizations refers to the organization that owns the equipment. Preventive Maintenance (PM) procedures are conducted by either mine maintenance or surface operations maintenance personnel and Instrument Calibration (IC) procedures are conducted by instrument and calibration maintenance personnel.
- k Inspection will be performed after 250 evolutions (actual and training emplacements), if such usage occurs prior to the semi-annual inspection.
- l Inspections ~~and PM's~~ are not required for equipment that is out of service.
- m In the RH Bay of the WHB Unit, a minimum aisle space of 44 inches between loaded casks is maintained. For other locations within the RH Complex, sufficient aisle space is maintained to assure that emergency equipment can be assessed or moved to the necessary locations.

**Table E-2  
 Monitoring Schedule**

<b>System/Equipment Name</b>	<b>Responsible Organization</b>	<b>Monitoring Frequency</b>	<b>Purpose</b>
<del>Geomechanical<sup>b</sup></del>	<del>Geotechnical Engineering</del>	<del>Monthly</del>	<del>To evaluate the geotechnical performance of the underground facility and to detect ground conditions that could affect operational safety</del>
<del>Central Monitoring System</del>	<del>Facility Operations</del>	<del>System Dependent</del>	<del>Monitor and provide status for the following facility parameters:            Electrical Power Status<sup>d</sup>            Fire Alarm System<sup>e</sup>            Ventilation System Status<sup>f</sup>            Meteorological Data System<sup>g</sup>            Facility Systems (compressors<sup>g</sup>, pumps<sup>h</sup>, water tank levels<sup>i</sup>, waste hoists<sup>j</sup>)</del>

~~<sup>b</sup>—Equipment is listed as Underground Geomechanical Instrumentation System (GIS) in Table E-1.~~

~~<sup>d</sup>—Equipment listed as Backup Power Supply Diesel Generator in Table E-1.~~

~~<sup>e</sup>—Equipment listed as Fire Detection and Alarm System in Table E-1.~~

~~<sup>f</sup>—Equipment listed as Ventilation Exhaust in Table E-1.~~

~~<sup>g</sup>—Not RCRA equipment.~~

~~<sup>h</sup>—Equipment listed as Fire Pumps in Table E-1.~~

~~<sup>i</sup>—Equipment listed as Water Tank Level in Table E-1.~~

~~<sup>j</sup>—Equipment listed as Waste Hoist in Table E-1.~~