40 CFR Part 191
Subparts B and C
Compliance Recertification Application 2026
for the
Waste Isolation Pilot Plant

Inspections
(40 CFR 194.21)

United States Department of Energy
Waste Isolation Pilot Plant

Carlsbad Field Office
Carlsbad, New Mexico

Compliance Recertification Application 2026
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(40 CFR 194.21)

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ACRONYMS AND ABBREVIATIONS

CCA	Compliance Certification Application
CFR	Code of Federal Regulations
CH	contact-handled
CPR	cellulose, plastics, and rubber
CRA	Compliance Recertification Application
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
WDS	Waste Data System
WIPP	Waste Isolation Pilot Plant

ELEMENTS AND CHEMICAL COMPOUNDS

MgO	magnesium oxide

21.0 INSPECTIONS (40 CFR 194.21)

21.1 Requirements

§ 194.21 Inspections

(a) The Administrator or the Administrator's authorized representative(s) shall, at any time:

(1) Be afforded unfettered and unannounced access to inspect any area of the WIPP, and any locations performing activities that provide information relevant to compliance application(s), to which the Department has rights of access. Such access shall be equivalent to access afforded Department employees upon presentation of credentials and other required documents.

(2) Be allowed to obtain samples, including split samples, and to monitor and measure aspects of the disposal system and the waste proposed for disposal in the disposal system.

(b) Records (including data and other information in any form) kept by the Department pertaining to the WIPP shall be made available to the Administrator or the Administrator's authorized representative upon request. If requested records are not immediately available, they shall be delivered within 30 calendar days of the request.

(c) The Department shall, upon request by the Administrator or the Administrator's authorized representative, provide permanent, private office space that is accessible to the disposal system. The office space shall be for the exclusive use of the Administrator or the Administrator's authorized representative(s).

(d) The Administrator or the Administrator's authorized representative(s) shall comply with applicable access control measures for security, radiological protection, and personal safety when conducting activities pursuant to this section.

21.2 Background

Title 40 Code of Federal Regulations (CFR) 194.21 (U.S. EPA 1996) provides the U.S. Environmental Protection Agency (EPA) with the authority to:

- Inspect any area of the Waste Isolation Pilot Plant (WIPP), and any locations performing activities that provide information relevant to compliance application(s),
- Obtain samples, including split samples, and monitor and measure aspects of the disposal system and the waste proposed for disposal in the disposal system, and
- Examine records maintained by the U.S. Department of Energy (DOE) pertaining to WIPP.

The EPA inspections at WIPP include:

- Magnesium oxide (MgO) emplacement,
- Waste emplacement,
- Monitoring programs established to collect data for each of the monitored parameters identified in Table 21-1, and
- The examination of documentation (records) to verify compliance with disposal regulations.

Table 21-1. Monitored Parameters

Geomechanical Parameters • Creep closure • Extent of deformation • Initiation of brittle deformation • Displacement of deformation features Hydrological Parameters • Culebra groundwater composition • Change in Culebra groundwater flowrate and direction Waste Activity Parameters • Waste activity subsidence parameter • Subsidence measurements Drilling-related Parameters • Drilling rate • The probability of encountering a Castile brine reservoir

Information and data from previous compliance certification and recertification applications, which form the basis of past DOE compliance positions and EPA decision documents, are found in the 2019 Compliance Recertification Application (CRA-2019) (U.S. DOE 2019a).

21.3 Changes or New Information Since the CRA-2019

Table 21-2 lists the inspections conducted or reported on by the EPA under the authority of 40 CFR 194.21 subsequent to the January 8, 2018, cut-off date for the CRA-2019. The EPA did not perform inspections in 2018, 2020, 2021, or 2024.

Table 21-2. Post-CRA-2019 40 CFR 194.21 Inspection Results (2017–2023)

Date of Inspection	Inspection Type	Inspection Results	Reference
October 24-26, 2017	Inspections at WIPP to examine the DOE's ability to monitor the 10 parameters listed in the Compliance Certification Application (CCA) section 7.0, Table 7-7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, as listed in Table 21-1. The inspection showed that monitoring sample collection and sample/data analysis procedures were complete and appropriate, staff were adequately trained and implemented the procedures adequately, and appropriate quality assurance measures were applied. The EPA also concluded that the DOE waste emplacement activities and records continued to be adequate and that cellulose, plastic, and rubber (CPR) and MgO were appropriately tracked. EPA Docket: EPA-HQ-OAR-2001-0012-0477	U.S. EPA 2018

Date of Inspection	Inspection Type	Inspection Results	Reference
May 14–16, 2019	Inspections at WIPP to examine the DOE's ability to monitor the 10 parameters listed in the CCA section 7.0, Table 7-7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, as listed in Table 21-1. The inspection determined that monitoring sample collection and sample/data analysis procedures were complete and appropriate, staff were adequately trained and implemented the procedures effectively, and appropriate quality assurance measures were applied. The EPA also concluded that the DOE waste emplacement activities and records continued to be adequate and that CPR and MgO were appropriately tracked. At the time of the inspection, EPA inspectors found that two heater experiments were taking place in the WIPP underground and notification to the EPA according to established procedures had not taken place for either experiment. The EPA stated that in one of the experiments, the canister heater adjacent to the air intake shaft was outside of the area designated for experiments and required EPA approval. On March 26, 2019, Lee Ann Veal, EPA, sent a letter to Todd Shrader, DOE, "Heater Tests Conducted in the Waste Isolation Pilot Plant Underground without Appropriate Notification to the EPA" (U.S. EPA 2019a). The letter requested information on heater experiments and directed that any unapproved experiments be discontinued pending EPA review. On April 30, 2019, Todd Shrader, DOE, responded to Lee Ann Veal, EPA, "Response to the EPA Letter dated March 26, 2019 and Status on the Salt Disposal Investigation and Salt Defense Disposal Investigation at the Waste Isolation Pilot Plant" (U.S. DOE 2019b). On November 4, 2019, in a letter from Lee Ann Veal, EPA, to Kirk Lachman, DOE, the EPA concurred that the current canister heater "experiment does not disrupt the facility's ability to safely emplace waste or the certified design of the disposal system" and provided that the DOE "may therefore continue the test" (U.S. EPA 2019b). The EPA also noted one inspection finding associated with the heater experiments.	U.S. EPA 2020

Date of Inspection	Inspection Type	Inspection Results	Reference
		During the inspection on May 15, 2019, inspectors verbally requested documents. The requested documents were not provided by the DOE in accordance with the criteria of 40 CFR § 194.21(b) that states, "Records (including data and other information in any form) kept by the Department pertaining to WIPP shall be made available to the Administrator or the Administrator's authorized representative upon request. If requested records are not immediately available, they shall be delivered within 30 calendar days of the request." The DOE failed to deliver the requested information within 30 calendar days; more than 60 days passed before the EPA received the requested information. As a result, the EPA found the DOE to be in violation of the WIPP certification criteria, as noted above. The EPA requested that DOE management and staff ensure that future document requests be provided to facilitate effective communication between the DOE and the EPA. The EPA stated they believed this adequately addressed the finding and no response from DOE was required. EPA Docket: EPA-HQ-OAR-2001-0012-0700	
May 24-26, 2022	Inspections at WIPP to examine the DOE's ability to monitor the 10 parameters listed in the CCA section 7.0, Table 7-7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, as listed in Table 21-1. The inspection determined that monitoring sample collection and sample/data analysis procedures were complete and appropriate, staff were adequately trained and implemented the procedures effectively, and appropriate quality assurance measures were applied. The EPA found that the DOE had maintained sufficient parameter monitoring during the past year and had the procedures and requirements in place to sustain the program into the next year. During the emplacement inspection, the EPA reviewed the procedures for processing and emplacing contact-handled (CH) waste and MgO. In addition, the response to the leaking waste shipment from the Idaho National Laboratory in April 2022 that activated the	U.S. EPA 2022b

Date of Inspection	Inspection Type	Inspection Results	Reference
		DOE's emergency and waste handling procedures suggested that the systems and procedures at WIPP to ensure safety and prevent releases of radionuclides were adequate. The EPA concluded that the DOE waste emplacement activities and records continued to be adequate and that CPR and MgO were appropriately tracked. The EPA observed some minor areas for improvement during the emplacement inspection. The EPA inspection team encountered procedural issues that led to an inspection concern associated with the tracking of MgO in the Waste Data System (WDS). On September 22, 2022, in a letter from Tom Peake, Director, Center for Waste Management and Regulations Radiation Protection Division, EPA, to Michael Gerle, Director, Environmental Regulatory Compliance, Carlsbad Field Office, the EPA requested information concerning an error in reporting the MgO excess factor generated by the WDS (U.S. EPA 2022a). The DOE responded to the EPA's request for information on October 31, 2022, in a letter from Michael Gerle, Director, Environmental Regulatory Compliance Division Carlsbad Field Office to Tom Peake, Director, Center for Waste Management and Regulations Radiation Protection Division, EPA (U.S. DOE 2022). The error was traced back to a reference to the wrong variable on the report (i.e., the report query selected the excess factor for the disposal room using the panel number instead of the disposal room number). A review of the extent of condition was performed and it was determined that the issue was limited to Panel 7, Rooms 4 through 6. The WDS team follows a prescribed Institute of Electrical and Electronics Engineers procedure for the development and testing of software revisions, which requires each WDS revision to be developed and released in a prescribed order. The software error was to be corrected in the next release, WDS Release 3.5, which was under development at the time of the inspection and expected to be finalized in spring 2023.	

Date of Inspection	Inspection Type	Inspection Results	Reference
		EPA Docket: EPA-HQ-OAR-2001-0012-0767	
May 16-18, 2023	Inspections at WIPP to examine the DOE's ability to monitor the 10 parameters listed in the CCA section 7.0, Table 7-7, and to verify the proper emplacement of waste and MgO in the WIPP repository.	The EPA found that the DOE effectively monitored the required 10 parameters identified in Table 7-7 of the CCA, as listed in Table 21-1. The inspection determined that monitoring sample collection and sample/data analysis procedures were complete and appropriate, staff were adequately trained and implemented the procedures effectively, and appropriate quality assurance measures were applied. The EPA found that the DOE had maintained sufficient parameter monitoring during the past year and had the procedures and requirements in place to sustain the program into the next year. The EPA expressed its belief that many of the existing monitoring parameters and analyses have the potential to enhance the understanding of WIPP repository behavior for the Performance Assessment and, as such, will discuss an appropriate path forward with the DOE to ensure these parameters are monitored, analyzed, and used to strengthen predictions about the future performance of the disposal system. The EPA found the procedures for processing CH waste were adequate and in accordance with specified plans documented in the CCA. The EPA also concluded that the DOE waste emplacement activities and records continued to be adequate and that CPR and MgO were appropriately tracked. The EPA noted the reporting error impacting the MgO excess factor in the WDS found during the 2022 inspection is to be corrected in WDS version 3.5; this will be verified upon release of version 3.5, which at the time was expected in late 2023. WDS version 3.5 was subsequently released on March 4, 2024; this version corrected the excess factor on a room and panel basis. EPA Docket: EPA-HQ-OAR-2001-0012-0782	U.S. EPA 2023

During each of the inspections listed in Table 21-2, the DOE met all the requirements of 40 CFR 194.21, including actively supporting the EPA's inspection activities and providing the EPA with unfettered access to facilities, requested records, and private office space. The DOE continues to comply with 40 CFR 194.21, and there are no outstanding issues with the EPA regarding this regulation.

21.4 References

(*Indicates a reference that has not been previously submitted.)

U.S. Department of Energy (DOE) 2019a. Title 40 CFR Part 191 Subparts B and C. Compliance Recertification Application for the Waste Isolation Pilot Plant. Carlsbad, NM: Carlsbad Field Office. DOE/WIPP-19-3609. March 26, 2019. *

U.S. DOE 2019b. Letter from Todd Shrader, Manager, Carlsbad Field Office, Department of Energy to Ms. Lee Ann B. Veal, Director, Radiation Protection Division, Center for Federal Regulation, Environmental Protection Agency, "Response to the EPA Letter dated March 26, 2019 and Status on the Salt Disposal Investigation and Salt Defense Disposal Investigation at the Waste Isolation Pilot Plant." April 30, 2019.*

U.S. DOE 2022. Letter from Michael Gerle, Director, Environmental Regulatory Compliance Division, Carlsbad Field Office, Department of Energy to Mr. Tom Peake, Director, Center for Waste Management and Regulations, Radiation Protection Division, "Response to the Environmental Protection Agency's September 22, 2022 Letter Regarding Reporting the Magnesium Oxide Excess Factor Generated by the Waste Data System." October 31, 2022.*

U.S. Environmental Protection Agency (EPA) 1996. 40 CFR Part 194: Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations: 61 Federal Register, 5223-5245 (February 9, 1996).

U.S. EPA 2018. Letter from Lee Ann B. Veal, Director, Radiation Protection Division, U.S. Environmental Protection Agency to Mr. Todd Shrader, Manager, Carlsbad Field Office, U.S. Department of Energy, E-DOCKET: EPA-HQ-OAR-2001-0012-0477, EPA Inspection Number EPA-WIPP-10.24-26 b and c of the Waste Isolation Pilot Plant, Monitoring and Emplacement Inspection Reports, October 24-26, 2017. August 2, 2018.*

U.S. EPA 2019a. Letter from Lee Ann B. Veal, Director, Radiation Protection Division, U.S. Environmental Protection Agency to Mr. Todd Shrader, Manager, Carlsbad Field Office, U.S. Department of Energy, "Heater Tests Conducted in the Waste Isolation Pilot Plant Underground without Appropriate Notification to the EPA." March 26, 2019.*

U.S. EPA 2019b. Letter from Lee Ann B. Veal, Director Radiation Protection Division, U.S. Environmental Protection Agency to Kirk Lachman, Acting Manager, Carlsbad Field Office, U.S. Department of Energy, EPA concurred with the DOE's conclusion that the canister heater experiment does not disrupt the facility's ability to safely emplace waste or the certified design

of the disposal system and provided DOE approval to continue the experiment. November 4, 2019.*

U.S. EPA 2020. Letter from Lee Ann B. Veal, Director, Radiation Protection Division, U.S. Environmental Protection Agency to Mr. Gregory Sosson, Acting Manager, Carlsbad Field Office, U.S. Department of Energy, E-DOCKET: EPA-HQ-OAR-2001-0012-0700, Monitoring and Emplacement Inspection Reports for the Waste Isolation Pilot Plant, May 14-16, 2019. January 28, 2020.*

U.S. EPA 2022a. Letter from Tom Peake, Director, Center for Waste Management and Regulations, to Mr. Michael Gerle, Director, Environmental Regulatory Compliance, Carlsbad Field Office, U.S. Department of Energy, EPA requested information concerning an error in reporting the Magnesium Oxide (MgO) excess factor generated by the Waste Data System (WDS). September 22, 2022.*

U.S. EPA 2022b. Letter from Lee Ann B. Veal, Director, Radiation Protection Division, U.S. Environmental Protection Agency to Mr. Reinhard Knerr, Manager, Carlsbad Field Office, U.S. Department of Energy, E-DOCKET: EPA-HQ-OAR-2001-0012-0767, Monitoring and Emplacement Inspection Reports for the Waste Isolation Pilot Plant, May 24–26, 2022. November 14, 2022.*

U.S. EPA 2023. Letter from Lee Ann B. Veal, Director, Radiation Protection Division, U.S. Environmental Protection Agency to Mr. Mark Bollinger, Manager, Carlsbad Field Office, U.S. Department of Energy, E-DOCKET: EPA-HQ-OAR-2001-0012-0782, Monitoring and Waste Emplacement Inspection Report for the Waste Isolation Pilot Plant, May 16–18, 2023. November 6, 2023.*