

6450-01-P

DEPARTMENT OF ENERGY

Record of Decision for Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory, California

AGENCY: U.S. Department of Energy, Office of Environmental Management.

ACTION: Record of Decision for Groundwater Remediation, Area IV, Santa Susana Field Laboratory.

SUMMARY: The U.S. Department of Energy (DOE) announces its decision to initiate groundwater remediation in Area IV of the Santa Susana Field Laboratory (SSFL). DOE-EM will implement the preferred alternatives for groundwater remediation identified in the SSFL Area IV Final Environmental Impact Statement (EIS), with the exception of Building 4100/Building 56 Landfill Trichloroethylene (TCE) Plume, for which DOE will implement monitored natural attenuation. This alternative is a combination of the Treatment Alternative and the Monitored Natural Attenuation Alternative. This action will be taken in accordance with applicable federal, state, and local laws and regulations, and approvals made by the California Department of Toxic Substances Control (DTSC). This action will also be taken consistent with agreements and decisions resulting from interagency consultations conducted in accordance with applicable federal, state, and local laws and regulations, including the Programmatic Agreement executed with the California State Historic Preservation Officer pursuant to the National

Historic Preservation Act and the Biological Opinion issued by the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act.

ADDRESSES: This Record of Decision (ROD), the SSFL Area IV Final EIS, and related National Environmental Policy Act (NEPA) documents are available at the DOE SSFL Area IV website (<http://etec.energy.gov>) and the DOE NEPA website (<http://energy.gov/nepa>).

FOR FURTHER INFORMATION CONTACT: For further information on the SSFL Area IV Final EIS, the ROD, and DOE cleanup actions within Area IV of SSFL, please contact, Mr. John Jones, Energy Technology Engineering Center (ETEC) Federal Project Director, U.S. Department of Energy at john.jones@emcbc.doe.gov. For general information on DOE's NEPA process, please contact Mr. Bill Ostrum, NEPA Compliance Officer, U.S. Department of Energy, Office of Environmental Management, 1000 Independence Avenue SW., Washington, DC 20585-0103; Telephone: (202) 586-2513; or Email: william.ostrum@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

Background

DOE prepared the SSFL Area IV Final EIS (DOE/EIS-0402) in accordance with NEPA (42 U.S.C 4321 et seq.), Council on Environmental Quality (CEQ) NEPA regulations (40 CFR parts 1500-1508), and DOE's NEPA Implementing Procedures (10 CFR part 1021)¹. DOE

¹ The CEQ published on July 16, 2020 the "Final Rule Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act". The SSFL Area IV EIS was started prior to September 14, 2020 (the effective

announced its intent to prepare an EIS on May 16, 2008, (73 FR 28437) and conducted public scoping. DOE prepared a Draft EIS and distributed it to interested parties.

Following the U.S. Environmental Protection Agency (EPA) notice of availability of the SSFL Area IV Draft EIS (82 FR 4336; January 13, 2017), DOE conducted public hearings and invited comment on the Draft EIS. After considering comments received on the Draft EIS, DOE addressed the comments and prepared a Final EIS that was issued with EPA's Notice of Availability (83 FR 67282; December 28, 2018). On September 27, 2019, DOE announced its decision to demolish the 18 buildings it owns in Area IV of the SSFL and to dispose of or recycle the resulting building materials off-site (84 FR 51149; September 27, 2019).

The California Department of Toxic Substances Control (DTSC) is in the process of completing its *Program Environmental Impact Report for the Santa Susana Field Laboratory, Ventura County, California* (SSFL EIR), prepared under the California Environmental Quality Act (CEQA). The DTSC SSFL EIR also assesses proposed groundwater remediation actions at SSFL. Should DTSC—in its CEQA Findings of Fact and/or Resource Conservation and Recovery Act (RCRA) Statement of Basis for groundwater cleanup—make a decision inconsistent with the DOE NEPA EIS and this ROD, DOE will confer with DTSC and determine whether modifications or additional actions related to groundwater cleanup in Area IV and the Northern Buffer Zone (NBZ) are required.

date for CEQ's updated NEPA regulations). DOE completed the EIS and is issuing this ROD pursuant to DOE's NEPA regulations and the 1978 CEQ regulations.

SSFL, located on approximately 2,850 acres in the hills between Chatsworth and Simi Valley, California, was developed as a remote site to test rocket engines and conduct nuclear research. Rocket engine testing by North American Aviation (later Rockwell International [Rocketdyne]) began in 1947. In the mid-1950s, the Atomic Energy Commission (AEC), a predecessor agency to DOE, funded nuclear research on a 90-acre parcel within Area IV of SSFL. The Energy Technology Engineering Center (ETEC) was established on this parcel as a “center of excellence” for liquid metals research. A total of 10 small reactors were built and operated as part of nuclear research that ended in 1982. DOE-directed liquid metals research continued until 1988.

DOE initiated the investigation of groundwater at Area IV in 1986 when the first monitoring well was installed. Since that time DOE has installed more than 130 monitoring wells to identify the presence and type of groundwater contamination. The investigation work was summarized in the *Final RCRA Facility Groundwater Remedial Investigation Report, Area IV* (August 2019). The groundwater investigation work involved the 14 solid waste management units assigned to DOE in the DTSC 2007 Consent Order for Corrective Action (2007 CO) and areas adjacent to these units including the NBZ and the Brandeis property. The investigation identified seven areas in Area IV with differing groundwater impact issues related to solvents, metals, and radionuclides, released from the years of energy and liquid metals research. Proposed groundwater remedies were identified in the Area IV groundwater corrective measures study that was conducted at the same time the Final EIS was developed. Impacts of implementing the measures are described in the Final EIS.

The DOE/EETC SSFL Area IV locations with impacted groundwater are:

- Former Sodium Disposal Facility (FSDF) Volatile Organic Compound (VOC) Plume
- Building 4100/Building 56 Landfill Trichloroethylene (TCE) Plume
- Building 4057 Tetrachloroethylene (PCE) Plume
- Hazardous Materials Storage Area (HMSA) TCE Plume
- Building 4010 Tritium Plume
- Radioactive Materials Handling Facility (RMHF) Leach Field (Strontium 90 and TCE)
- Metals Clarifier/DOE Leach Field 3 TCE Plume

Purpose and Need for Agency Action

The DOE Office of Environmental Management's (DOE-EM) purpose and need for action remains as stated in the SSFL Area IV Final EIS. DOE-EM needs to complete remediation of Area IV and the NBZ to comply with applicable requirements for cleanup of radiological and hazardous substances. Pursuant to this ROD, and upon consideration by DTSC of the Groundwater Corrective Measures Implementation Plan (CMIP), DOE-EM will initiate remediation of groundwater in a manner that is protective of the environment and the health and safety of the public and its workers.

Proposed Action

DOE-EM's proposed action is to remediate groundwater at seven locations in Area IV.

DOE will also continue the ongoing groundwater monitoring of other locations in Area IV and the NBZ in accordance with the 2007 CO to confirm no groundwater contamination.

The final groundwater cleanup goals will be established by DTSC as it evaluates the corrective measures and reaches its conclusions in the RCRA Statement of Basis. DTSC will confer with DOE regarding DTSC's decisions regarding groundwater remediation.

This ROD addresses only DOE's decision for groundwater remediation. DOE previously announced its decision to demolish the 18 buildings it owns in Area IV of the SSFL and dispose of or recycle the resulting building materials off-site (84 FR 51149; September 27, 2019). DOE will issue subsequent ROD(s) to document its decision for soil remediation.

The actions DOE will undertake to remediate groundwater are presented below.

FSDF VOC Plume

The FSDF groundwater is impacted by VOCs (chlorinated solvents) and metals contained in bedrock fractures primarily between 15 feet and 60 feet below ground surface. In November 2017 DOE initiated an interim measure to extract groundwater from the fractures. The interim action reduced VOC concentrations from 10,000 micrograms per liter ($\mu\text{g/L}$) to approximately 1,000 $\mu\text{g/L}$. The maximum contaminant level (MCL) for TCE is 5 $\mu\text{g/L}$. DOE plans to continue the action of dewatering the fractures and evaluating bedrock back-diffusion effects for 5 years. Extracted groundwater will be temporarily stored in an on-site tank and then transported off-site for treatment and disposal. After 5 years of action, DOE will evaluate the effectiveness of the fracture dewatering, and then evaluate additional actions if necessary, based on the effectiveness of the remedy

at reducing chemical concentrations, and the assessment of the back-diffusion rate of the contaminants from bedrock into the fracture groundwater.

Building 56 Landfill

One well at the landfill is impacted by TCE above 5 µg/L. Trend data for the last six years demonstrates a continued decline of TCE concentration at the well from 56 µg/L in 2015 to 22 µg/L in 2020. DOE's evaluation of data for the landfill area indicates that the landfill is not the source for the TCE. The decline in TCE at the landfill also indicates that the observed contamination reflects the presence of a leading edge of a plume, originating upgradient to the landfill. DOE proposes to continue monitoring the impacted well to confirm the decline in TCE at the landfill site.

Building 4057 PCE Impacted Groundwater

One well in the vicinity of Building 4057 is impacted by the chlorinated solvent PCE. DOE proposes to install additional extraction wells near the impacted well and pump the water for temporary storage into an on-site tank. The impacted groundwater will be transported off-site for treatment and disposal. The effectiveness of the remedy in reducing chemical concentrations will be evaluated on a five-year basis. If the pumping remedy is determined to not be effective, DOE will assess the need for an alternative remedy.

HMSA TCE Plume

The HMSA represents the largest groundwater impact in Area IV. TCE is present in alluvium and weathered bedrock material and in competent bedrock. DOE is considering two remediation options for the MMSA: pump and treat and in situ chemical/biological oxidation. Due to the large volume of impacted groundwater, DOE will determine whether it is possible to reuse the treated groundwater (such as for dust control) or discharge it locally. If reuse or discharge is not feasible, DOE proposes conducting a pilot study to assess whether the plume can be treated in situ by chemical and/or biological means to reduce the TCE levels. If successful, the in-situ treatment would be extended to address the entire area of impacted groundwater. The success of in situ treatment would be assessed on a five-year basis.

Building 4010 Tritium Plume

An area of groundwater in the north central portion of SSFL Area IV is impacted by the radioactive isotope of hydrogen, termed tritium. Seven wells in this area have been sampled for tritium for 16 years and the concentrations of tritium have declined from 119,000 picocuries per liter (pCi/L) in 2004 to 26,000 pCi/L in 2020. Only two wells remain above the MCL of 20,000 pCi/L. This decline is consistent with the 12.5-year half-life of tritium. The wells with the highest tritium concentrations are within Area IV and the leading edge of the plume at about 1,000 pCi/L is observed in the NBZ. Due to the tight bedrock conditions, groundwater flow is slow in this area and the plume has moved less than 1,000 feet since its release 30 years ago. DOE proposes to continue to

monitor the natural attenuation of the tritium in groundwater through annual sampling of several wells. Concentrations of tritium are anticipated to be below the drinking water standard (MCL) of 20,000 pCi/L within the next 10 years.

RMHF TCE and Strontium 90 Impacted Groundwater

A small area north of the RMHF exhibits TCE contamination near the applicable MCL of 5 µg/L. DOE proposes to continue to monitor the natural attenuation of TCE concentrations at this location; data collected from wells at this location show a decline of TCE from 20 µg/L in 1998 to 5.4 µg/L in 2020. Bedrock beneath the former RMHF leach field is impacted by the radionuclide Strontium-90. When groundwater elevation rises in wet rainfall years, the groundwater comes into contact with the impacted bedrock. DOE proposes to excavate for off-site disposal at a mixed low-level waste facility the bedrock containing the Strontium-90. Monitoring wells installed near the former leach field site will then be sampled to demonstrate the effectiveness of the bedrock removal in protecting groundwater.

Metals Clarifier/DOE Leach Field 3 TCE

A small area in the south-central portion of Area IV is impacted by TCE near the applicable 5 µg/L MCL. This area has been monitored for 20 years and the data demonstrate a continued decline in TCE levels. DOE proposes to continue monitoring the wells with TCE to provide data demonstrating the continued attenuation of TCE at this location (Monitored Natural Attenuation).

Alternatives

In the SSFL Area IV Draft and Final EIS, DOE-EM evaluated No Action, monitored natural attenuation, pump and treat, bedrock vapor extraction, source isolation, and bedrock removal as groundwater remediation alternatives. In the Area IV Corrective Measures Study, DOE evaluated these technologies plus in situ groundwater treatment using biological and chemical oxidation, thermal remediation, and bedrock fracturing.

Potential Environmental Impacts

In the SSFL Area IV Final EIS DOE-EM analyzed environmental issues and the potential impacts related to land resources, geology and soils, surface water, groundwater, biology, air quality and climate change, noise, transportation and traffic, human health, waste management, cultural resources, socioeconomics, environmental justice, and sensitive-aged populations. DOE-EM also evaluated the potential impacts of the irreversible and irretrievable commitment of resources, the short-term uses of the environment, and the maintenance and enhancement of long-term productivity. These analyses and results are described in the SSFL Area IV Final EIS, including the Summary and Section 2.8.

In identifying the preferred alternative for groundwater remediation, for each of the impacted areas, and in making the decisions announced in this ROD, DOE-EM considered the potential impacts that would result from the groundwater pumping, in situ treatment, bedrock removal, and monitored attenuation actions. Table S-9 of the SSFL Area IV Final EIS Summary provides a summary and comparison of potential

environmental consequences associated with each groundwater remediation alternative. The impacts of all preferred groundwater remediation alternatives to the physical, social, and natural environments will be minimal and manageable.

Environmentally Preferable Alternatives

The environmentally preferable alternatives are the groundwater Treatment Alternatives, Bedrock Removal, and Monitored Natural Attenuation. Groundwater pumping and in situ treatment technologies, and monitored natural attenuation have the least severe environmental impacts compared with other alternatives considered for each impact area at most locations. Bedrock excavation reduces by approximately 150 years groundwater monitoring, groundwater control, and investigation work at the former RMHF leach field site.

Permits, Consultations, and Notifications

DOE-EM will implement the proposed groundwater remediation activities in accordance with the Groundwater CMIP to be approved by California DTSC. If local discharge of treated groundwater is considered, DOE will coordinate water release with the Los Angeles Regional Water Quality Control Board. DOE will obtain necessary permits for any potential installation and operation of groundwater treatment systems. DOE-EM is complying with Section 106 of the National Historic Preservation Act through completion and implementation of the Programmatic Agreement (PA) with the California State Historic Preservation Officer (September 13, 2019). DOE will follow the requirements of the PA as it develops and eventually implements the Groundwater

CMIP. DOE also consulted with the U.S. Fish and Wildlife Service (USFWS) for compliance with Section 7 of the Endangered Species Act. Area IV of SSFL includes federally designated critical habitat for the endangered Braunton's milk-vetch. USFWS issued its Biological Opinion related to DOE's proposed actions on August 28, 2018. (<http://www.ssflareaiveis.com/documents/feis/Biological%20Opinion.pdf>).

Public and Agency Involvement

Following the 2007 federal court decision resulting from a legal challenge to the DOE 2003 Environmental Assessment (EA) and its subsequent Finding of No Significant Impact (FONSI), DOE published in the *Federal Register* an Advanced Notice of Intent (ANOI) to prepare an EIS (72 FR 58834; October 17, 2007). The ANOI was issued to request early comments and to obtain input on the scope of the EIS. The NOI to prepare an EIS and to announce scoping meetings was published in the *Federal Register* on May 16, 2008 (73 FR 28437). The public scoping period started on May 16, 2008, and continued through August 14, 2008. Scoping meetings were held in Simi Valley, California (July 22, 2008), Northridge, California (July 23, 2008), and Sacramento, California (July 24, 2008).

Preparation of the Draft EIS was delayed due to the need to collect soil and groundwater characterization data for Area IV and the NBZ. The lack of characterization data was an issue raised in EPA's and the State of California's comments on the 2003 EA. EPA collected characterization data for radionuclides from October 2010 to December 2012. DOE (under DTSC oversight) collected characterization data for chemicals from

October 2010 to June 2014. While the characterization data were being collected, DOE ETEC continued public involvement through release of newsletters and conducting Community Alternatives Development Workshops in 2012. Due to the length of time between the 2008 NOI and completion of characterization, DOE ETEC published in the *Federal Register* on February 7, 2014, an Amended NOI for the SSFL Area IV EIS (79 FR 7439). Additional scoping meetings were held in Simi Valley, California on February 27, 2014, and in Agoura Hills/Calabasas, California on March 1, 2014. The scoping period ended on March 10, 2014. The Notice of Availability of the SSFL Area IV Draft EIS was published in the *Federal Register* on January 13, 2017 (82 FR 4336). An Amended Notice Extending the Comment Period to April 13, 2017 was published in the *Federal Register* on March 17, 2017 (82 FR 14218).

Comments Received on the *Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory*

The Notice of Availability of the SSFL Area IV Final EIS was published in the *Federal Register* on December 28, 2018 (83 FR 67282). DOE-EM distributed the SSFL Area IV Final EIS to Congressional members, State and local governments; other federal agencies; culturally affiliated American Indian tribal governments; non-governmental organizations; and other stakeholders, including members of the public who requested the document. Also, the SSFL Area IV Final EIS was made available via the Internet (<http://www.SSFLAreaIVEIS.com>). In the SSFL Area IV Final EIS, DOE-EM announced the preferred alternatives for groundwater remediation as a combination of the Treatment Alternative and the Monitored Natural Attenuation Alternative. Preferred treatment

technologies included groundwater pump and treat, bedrock removal, and monitored natural attenuation.

DOE-EM received 885 letters or emails regarding the SSFL Area IV Final EIS. DOE-EM considered all comments contained in the letters and emails received during the review period. Some of the comments reiterated issues raised during the comment period on the SSFL Area IV Draft EIS. DOE previously evaluated all comments submitted on the SSFL Area IV Draft EIS and provided responses to those comments in the SSFL Area IV Final EIS, Volume 3, Comment Response Document. The ROD for Building Demolition (84 FR 51149) addressed the general comment issues (as well as those specific to building demolition) received on the Final EIS. Comments related to groundwater remediation are summarized.

DOE-EM received comment letters from EPA, Region IX; DTSC; The Boeing Company; City of Los Angeles; Natural Resources Defense Council/Committee to Bridge the Gap; Physicians for Social Responsibility – Los Angeles; Rocketdyne Cleanup Coalition; Southern California Federation of Scientists; and the SSFL Community Advisory Group. DOE-EM also received 876 comment emails from individuals. DOE reviewed and responded to all comments received through March 28, 2019. There were no comments received after that date.

Active Remediation Comment – Commenters alleged that DOE was not proposing active groundwater remediation and was planning to leave groundwater with contaminants above permissible levels.

Response – The commenters misstated DOE’s proposed groundwater actions presented in the Final EIS. The Final EIS states that the maximum contaminant level (MCL or drinking water standard) would be the goal for locations requiring active remediation. The Final EIS states that active remediation is proposed to address contamination for the FSDF, PCE Plume, HMSA, and RMHF Strontium-90 bedrock. The cleanup actions would be continued until concentrations reach the cleanup goal.

Monitored Natural Attenuation Comment – Commenters also objected to DOE’s proposal to use monitored natural attenuation as a process for groundwater remediation.

Response – In the Final EIS DOE states that monitored natural attenuation would be considered only for those locations with concentrations near the contaminant’s MCL and with data demonstrating continued decline in concentration. The Final EIS states that monitored natural attenuation would be considered for the Tritium Plume, RMHF TCE Plume, and the Metals Clarifier TCE Plume as contaminants at those locations are either at or near their MCLs and are anticipated to be at MCLs within 10 years.

Compliance with the 2007 CO – Commenters stated that DOE was not following the 2007 CO. The commenters did not state what aspects of the 2007 CO were not being met.

Response – DOE has been compliant with the 2007 CO, working in coordination with California DTSC. This includes the sampling of Area IV monitoring wells in accordance with the *SSFL Water Quality Sampling and Analysis Plan* (SSFL WQSAP; Haley and

Aldrich, 2010). DOE developed and DTSC approved the work plan for groundwater characterization. DOE implemented the work plan installing 33 new wells, bringing the total number of monitoring wells in Area IV to over 130 wells. This network is adequate to assess groundwater remedies for each location of Area IV. As DOE designs the groundwater remedies to be described in the Groundwater CMIP, DOE will be identifying additional locations for new monitoring wells to be installed in Area IV. In compliance with a directive from DTSC, DOE implemented the groundwater interim measure at the FSDF, which is already reducing VOC concentrations. DOE collected over 500 groundwater samples during the last five years consistent with the 2007 CO requirements. The results of the efforts were reported in the *RCRA Facility Groundwater Remedial Investigation Report (August 2019)*, reviewed by and conditionally approved by DTSC. Finally, in accordance with the 2007 CO, DOE prepared the Area IV Groundwater Corrective Measures Study Report, which has been reviewed by DTSC. With the issuance of this ROD, DOE will prepare the Groundwater CMIP which will describe the technical details of the groundwater remedies identified herein. DTSC in turn will review and comment on the Groundwater CMIP.

Groundwater Remedy Changes since the Final EIS

The Final EIS DOE identified pump and treat as the preferred treatment technology for the Building 56 Landfill TCE Plume. Data collected since issuance of the Final EIS has determined that the Building 56 Landfill is not the source of observed TCE contamination. The source appears to be upgradient of the landfill. The groundwater data for the landfill location show a continuous decline in TCE concentrations, indicative

of the leading edge from a plume from another location. DOE will continue to monitor the declining TCE concentrations at the landfill site. Under these conditions, continued groundwater monitoring near the landfill would have less environmental impact than a pump and treat action, which could draw additional contaminants from the source to the landfill.

DOE Comment Review and Changes Conclusion

DOE has considered the above mentioned comments and changes and concludes that they do not present “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts” within the meaning of 40 CFR 1502.9(c) and 10 CFR 1021.314(a) and therefore does not require preparation of a supplement analysis or a supplemental EIS.

Decision

DOE-EM has decided to implement pump and treat for the FSDF VOC and Building 4057 PCE plumes; conduct an in situ treatment pilot study for the HMSA TCE plume; perform a bedrock removal action for RMHF Strontium-90 impacted bedrock; and implement monitored natural attenuation for the Building 56 Landfill, Tritium Plume, RMHF Leach Field TCE, and Metals Clarifier/DOE Leach Field 3 Plume. These actions reflect DOE’s Preferred Alternatives for groundwater remediation as described in the SSFL Area IV Final EIS, with the one exception of the change to the Building 56 Landfill noted above. Under this alternative, DOE-EM will prepare a Groundwater CMIP describing for each groundwater impact area the details for each remedial action, handling and disposal of

treatment residuals created during the actions, monitoring requirements, and the goal for completion of the actions.

The DOE Groundwater CMIP will be subject to DTSC review under the CEQA. In October 2017, DTSC released a draft Programmatic Environmental Impact Report (EIR) describing cleanup actions for the entirety of SSFL. Approval of remedies and selection of goals will be identified in the DTSC RCRA Statement of Basis. DOE-EM will implement the groundwater actions consistent with DTSC's EIR findings and approval of the Groundwater CMIP. DOE will continue to perform interim monitored natural attenuation, which does not require a final EIR, of the FPDF plume, metals clarifier plume, tritium plume, and building 56 landfill plume, until final remedies are concurred upon with DTSC. Other actions, such as the Sr-90 removal of bedrock, will not be performed until the final EIR is published.

In reaching this decision, DOE-EM balanced the environmental information in the Final EIS with potential environmental impacts of groundwater remediation, current and future mission needs, technical and security considerations, availability of resources, and public comments on the SSFL Area IV Draft and Final EIS. Groundwater remediation supports DOE-EM's program initiatives for site cleanup and closure. Groundwater contaminant concentrations exceed levels considered safe for human health and ecological receptors. The current and future land use of the Area IV property is open space/recreational in accordance with the *Grant Deed of Conservation Easement and Agreement* (Ventura County 2017) and the Ventura County General Plan. The groundwater remediation actions presented in this ROD are consistent with the current

and future land use. Implementing the Preferred Alternative will allow DOE-EM to continue its progress of cleaning up and eliminating liabilities for legacy nuclear research properties.

Mitigation Measures

The installation of monitoring wells has the potential for temporary air quality emissions from diesel powered equipment. The transport of treatment residuals and extracted groundwater also has the potential for diesel exhaust emissions. Temporary water storage and treatment systems will be installed in already disturbed areas and operations are anticipated to be powered by solar systems. Overall, the groundwater remediation impacts are anticipated to be minimal. This decision adopts the mitigation and monitoring measures relevant to groundwater remediation that are identified in Chapter 6 of the Final EIS, the Programmatic Agreement, and the Biological Opinion. Practicable means to avoid or minimize environmental harm from the selected alternatives have been, or will be, adopted. Prior to active groundwater remediation, DOE-EM will prepare a mitigation and monitoring plan that will address how DOE-EM will minimize air emissions. Diesel emissions will be controlled using well installation and bedrock removal equipment and highway trucks fitted with pollution control equipment maintained to manufacturer specifications. Hazardous chemicals and radionuclides captured in treatment media will be packaged to prevent releases during transport. Occupational safety risks to workers will be minimized by adherence to federal and state occupational safety laws, and DOE requirements, regulations, and orders. Workers will also be protected by use of engineering and administrative

controls. Emergency preparedness will also include an Accident Preparedness Program to address protection of the public during transport of groundwater treatment residuals. Stormwater control best management practices will be implemented to prevent surface water runoff from demolition sites. The plan will also incorporate by reference the monitoring and mitigation measures relevant to groundwater remediation established in the Programmatic Agreement and Biological Opinion.

Signing Authority

This document of the Department of Energy was signed on November 2, 2020, by William I. White, Senior Advisor for Environmental Management to the Under Secretary for Science, Office of Environmental Management, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with the requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy.

The administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington DC on November 2, 2020.

William I. White
Senior Advisor for Environmental Management to the Under Secretary for Science
Office of Environmental Management
U.S. Department of Energy