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**PLN-5504
Rev. 2**

Regulatory Compliance Plan for the Luckey Formerly Utilized Sites Remedial Action Program Remediation Project

**U.S. Army Corps of Engineers
Buffalo District, Buffalo, New York**

Applicability: Luckey FUSRAP Remediation	Effective Date: 10/20/2016	Owner: Project Manager
		Signature: 



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History of Revisions

Revision	Issue Date	Action	Description
0	05/20/2016	New document	Initial issue.
1	06/28/2016	Revise document	Comments from the Buffalo tech editor.
2	10/20/2016	Revise document	Addressing comments from the Stakeholder review.



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ACRONYMS

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
ALARA	as low as reasonably achievable
APP	accident prevention plan
ARAR	applicable or relevant and appropriate requirements
BRP	backfill and restoration plan
CAA	Clean Air Act
CBDPP	Chronic Beryllium Disease Prevention Program
CCP	contamination control plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CELRB	Corps of Engineers Buffalo District
CFR	Code of Federal Regulations
COC	constituent of concern
CQCP	contractor quality control plan
CWA	Clean Water Act
DoD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
EC	engineering circular
EM	engineer manual
EP	engineer pamphlet



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EPA	(U.S.) Environmental Protection Agency
ER	engineer regulation
FSSP	final status survey plan
FUSRAP	Formerly Utilized Sites Remedial Action Program
HAZWOPER	hazardous waste operations and emergency response
HTRW	hazardous, toxic, and radioactive waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
NCP	National Contingency Plan
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
OEPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
OSHA	Occupational Safety and Health Administration (or Act)
QC	quality control
RCRA	Resource Conservation and Recovery Act
RCP	regulatory compliance plan
RPP	radiation protection plan
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act
SOP	site operations plan



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SSHP	site safety and health plan
SWPPP	stormwater pollution prevention plan
TEDE	total effective dose equivalent
TENORM	technologically enhanced naturally occurring radioactive material
TSCA	Toxic Substances Control Act
UFGS	Unified Facilities Guide Specification
USACE	United States Army Corps of Engineers
USC	United States Code
WMP	water management plan
WMTDP	waste management, transportation, and disposal plan



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1. INTRODUCTION

1.1 Background and Purpose

The United States Army Corp of Engineers (USACE) Buffalo District has selected Portage, Inc., to remediate the Luckey Formerly Utilized Sites Remedial Action Program (FUSRAP) Site (hereinafter referred to as the “site”) located in Luckey, Wood County, Ohio. Portage prepared this document in partial fulfillment of Contract W912P4-15-D-0006, Task Order 0001. Portage is remediating the site under USACE’s FUSRAP, which was established to identify, investigate, and clean up or control sites previously used by the Atomic Energy Commission (AEC) and its predecessor, the Manhattan Engineer District. Materials on the site are contaminated with FUSRAP-related constituents of concern (COCs), which include beryllium, lead, radium-226, thorium-230, uranium-234, and uranium-238.

The primary objective of the remediation project described herein is the timely and effective cleanup of the site in accordance with the *Luckey Site, Luckey, Ohio, Record of Decision for Soils Operable Unit* (USACE 2006). The selected remedial alternative calls for excavating impacted soils, on-site and off-site contiguous soils, where contamination has migrated through natural means. The aim is to achieve cleanup goals for unrestricted use by the critical group identified for the Luckey Site, the subsistence farmer. Portage will place clean backfill in excavated areas. It will ship excavated soils above the established cleanup goals off-site for disposal at a licensed/permitted disposal facility.

This alternative meets the evaluation criteria while protecting human health and the environment and complies with applicable or relevant and appropriate requirements (ARARs). Portage will remediate the site so as to provide a level of protection to the public and remediation workers consistent with applicable radiation exposure guidelines and to achieve as low as reasonably achievable (ALARA) exposure levels.

This regulatory compliance plan (RCP) addresses the federal and state regulatory requirements and USACE guidance governing site activities; it also outlines the laws, rules, regulations, and standards Portage will follow. To this end, Portage will protect human health and the environment and maintain the ALARA philosophy. Portage’s project organization, key personnel, and overall strategy for site remediation are described in the *Site Operations Plan for the Luckey Formerly Utilized Sites Remedial Action Program Remediation Project* (USACE 2016a).

The means, methods, and procedures involved in completing the remedial action at this site are presented in the project work plans. These plans are referenced throughout this RCP and include the following:

- *Site Operations Plan* (SOP) (USACE 2016a) – The SOP describes the buildings, methods and procedures Portage will use to complete remediation in accordance with USACE guidelines, thereby maintaining a safe and productive work environment. The SOP describes Portage’s



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overall plan for completing the remediation of the Luckey Site, and it references the supporting work plans, listed below, for further details.

- *Water Management Plan (WMP)* (USACE 2016b) – The WMP describes methods for preventing surface water run-on and controlling surface runoff water, including methods for collecting, storing, and managing water from active excavations and waste handling areas. The WMP consists of two components; the first is a waste water pollution prevention plan, which addresses the management of potentially contaminated water in the excavations and active work areas, including collection, treatment, and discharge. The second component of the WMP is the stormwater pollution prevention plan (SWPPP), which addresses practices to be used to control surface water run-on and runoff at the site.
- *Contractor Quality Control Plan (CQCP)* (USACE 2016c) – The CQCP provides procedures to ensure that work activities comply with the USACE *Final Scope of Work, Remediation of Soils Operable Unit, Luckey Site* (USACE 2014), other supporting project work plans, and USACE quality control (QC) requirements.
- *Accident Prevention Plan (APP)/Site Safety & Health Plan (SSHP)* (USACE 2016d) – The APP/SSHP specifies policies and practices designed to control exposure to physical, chemical, biological, and radiological health hazards, and to protect personnel and property from loss due to accidents.
- *Chronic Beryllium Disease Prevention Plan (CBDPP)* (USACE 2016e) – The CBDPP provides details of the program that will be followed at the Luckey Site to prevent and minimize beryllium exposure by remediation workers and the public.
- *Radiation Protection Plan (RPP)* (USACE 2016f) – The RPP addresses radionuclides that will be encountered at the site, and it provides details of the methods, materials, and equipment that will be used to prevent and minimize remediation worker and public exposure to radiation.
- *Quality Assurance Project Plan* (i.e., the *Sampling and Analysis Plan (SAP)*) (USACE 2016g) – The SAP consists of two components: a field sampling plan and a quality assurance project plan. The SAP describes specific testing and QC protocols and procedures for air, soil, water, and waste sampling at the site for both personnel safety and field remediation/waste characterization purposes.
- *Waste Management, Transportation, and Disposal Plan (WMTDP)* (USACE 2016h) – The WMTDP specifies policies and practices that will be implemented regarding the handling, transportation, and disposal of wastes.
- *Contamination Control Plan (CCP)* (USACE 2016i) – The CCP defines the means and methods by which contamination controls will be established and maintained. The CCP provides details



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regarding plans for monitoring and controlling the spread of contamination, whether through soil or airborne emissions, outside of the exclusion zone and the site boundary. The CCP also includes procedures for measuring, documenting, and responding to potential airborne contaminants, with a focus on the site perimeter.

- *Backfill and Restoration Plan (BRP)* (USACE 2016j) – The BRP presents the means and methods for completing site restoration in accordance with the USACE final scope of work (USACE 2014). The BRP describes the placement of backfill materials, placement and grading of topsoil to surrounding contours, and seeding and mulching activities.
- *Final Status Survey Plan (FSSP)* (USACE 2016k) – The FSSP provides the requirements for environmental data collection to demonstrate compliance with radionuclide, beryllium, and lead soil cleanup at the Luckey Site. Protocols defined in the FSSP follow typical site closure protocols defined in the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* (EPA, NRC, DOD, and DOE 2000).

2. APPROACH

The FUSRAP was initiated in 1974 to identify, assess, and clean up sites with residual radioactive contamination resulting from research and development activities associated with the U.S. early atomic weapons program. In 1997, Congress transferred management of FUSRAP to the USACE from the Department of Energy (DOE), and the two agencies formalized a Memorandum of Understanding in March 1999. As part of FUSRAP management, USACE is overseeing investigation and remediation of radiological contamination at the Luckey Site in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 United States Code [USC] § 9601 et seq.), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300.430[f][2]).

Work at the site shall also proceed following additional guidelines known as ARARs. Section 121(d) of CERCLA requires that on-site remedial actions attain federal environmental ARARs, or more stringent state environmental ARARs, upon completion of the remedial action, unless a waiver to an ARAR is justified and invoked. The NCP (40 CFR 300.5, “Definitions”) provides the official definition of the two components of ARARs as follows:

- “*Applicable requirements* means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.”
- “*Relevant and appropriate requirements* means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal



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environmental or state environmental or facility siting laws that, while not applicable to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.”

The NCP also requires compliance with ARARs during implementation of remedial actions and during removal actions to the extent practicable. The ARARs for the Luckey Site, as they pertain to the soils remediation, are summarized in Section 3.1 of this Plan.

3. REGULATORY REQUIREMENTS

The following sections provide a review of the requirements determined to be applicable as well as relevant and appropriate for site remediation, and they present a compilation of the specific laws, rules, regulations, and standards governing safety and operational requirements Portage will follow during the actual execution of the remedial action. Section 3.1 lists the ARARs identified in the *Record of Decision for the Soils Operable Unit* (USACE 2006) while Section 3.2 discusses other laws, rules, regulations, and standards that could affect remediation activities at the Luckey Site.

3.1 ARARs for Soils Remediation at the Luckey Site

3.1.1 10 CFR Part 20 – Radionuclides

Title 10 Code of Federal Regulations (CFR) Part 20 is applicable to Nuclear Regulatory Commission (NRC) licensed facilities. The NRC promulgated the regulation to ensure consistent standards for determining the extent to which lands must be remediated before remediation can be considered complete and the NRC license terminated. The Luckey Site does not have an NRC license. Therefore, the rule is not applicable.

The regulation applies to any facility licensed by the NRC to manage special nuclear, source, or byproduct radionuclide material undergoing decontamination and remediation for release of the property for reuse. The Luckey Site is an industrial facility undergoing decontamination in order to remove radioactive residuals so the property may be released for reuse. The radioactive residuals at the Luckey Site are residuals of uranium ore, naturally occurring uranium in the beryllium ore, and/or residuals from contaminated scrap metal sent to the site during AEC activities. These radiological constituents are included in the radiological constituents addressed by 10 CFR Part 20. In addition, the type and size of the facility at the Luckey Site is consistent with the type and size of facilities regulated by 10 CFR Part 20. The media to be remediated and the radiological COCs at the Luckey Site are generally the same or similar to those found at sites subject to the regulation. The standards in 10 CFR Part 20 are:



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- Unrestricted use: Total effective dose equivalent (TEDE) limited to 25 mrem/yr to the average member of the critical group and as low as reasonably achievable.
- Restricted use: Durable land-use controls that ensure the TEDE to the critical group do not exceed 25 mrem/yr, ALARA, license termination plan, public input, and 100 mrem/yr or 500 mrem/yr, under specific regulatory conditions, to the critical group if land-use controls fail.
- The critical group is defined based on reasonable future use of a site. For the Luckey Site, that group has been identified as the subsistence farmer.

In summary, 10 CFR Part 20 is both relevant and appropriate for use in the development of media-specific cleanup goals at the Luckey Site. The rule addresses situations sufficiently similar to the circumstances of the release at the Luckey Site and is appropriate and well-suited to the circumstances of the release. The rule requires evaluation of the critical group, which is based on reasonable future land use. Table 8.1 of the *Record of Decision for Soils Operable Unit* (USACE 2006) defines cleanup goals for radionuclides based on 10 CFR Part 20. Activities listed in the table correspond to a dose of 25 mrem/yr for unrestricted land use by the critical group, which has been determined to be the subsistence farmer. If a mixture of radionuclides is present, then the sum of ratios applies.

3.1.2 OAC 3701:1-38-22 – Radionuclides

Ohio Administrative Code (OAC) 3701:1-38-22 contains limitations for AEC-related radionuclides that are the same as those found in 10 CFR Part 20 Subpart E. The requirement has been promulgated by the State of Ohio, as an agreement state, to ensure consistent standards for determining the extent to which lands in Ohio must be remediated before decommissioning of a site can be considered complete, and the state license can be terminated. The OAC 3701:1-38-22 is applicable to state-licensed facilities. The Luckey Site has no state license; therefore, the regulation is not applicable at the Luckey Site.

However, OAC 3701:1-38-22 is also relevant and appropriate for the same reasons that 10 CFR Part 20, Subpart E is relevant and appropriate. The regulation addresses situations sufficiently similar to the circumstances of the release at the Luckey Site, and its use is appropriate and well-suited to the circumstances of the release. The OAC 3701:1-38-22 establishes a standard for unrestricted release of property of 25 mrem/yr and ALARA as the total effective dose equivalent to an average member of a critical group. The critical group is defined as “the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances” (OAC 3701:1-38-01[A][35]).

3.1.3 TSCA 403 – Lead in Soil

On January 5, 2001, the U.S. Environmental Protection Agency (EPA) issued a final rule under Section 403, “Lead; Identification of Dangerous Levels of Lead; Final Rule,” of the Toxics



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Substances Control Act (TSCA) (40 CFR Part 745, “Lead-based Paint Poisoning Prevention in Certain Residential Structures”). Under the new standards, lead is considered a hazard if there are greater than 40 µg of lead in dust per square foot on floors, 250 µg of lead in dust per square foot on interior window sills, and 400 mg/kg of lead in bare soil in children’s play areas, or 1,200 mg/kg average for bare soil in rest of the yard. This final rule was effective on March 6, 2001.

The lead hazard standards were developed to aid in setting priorities to address the risks from lead at residential and child-occupied facilities affected by lead-based paint. As noted above, it does set a standard for levels of lead in bare soil for children in play areas and in yards considered to be hazardous. The rule would not be considered applicable, since the source of lead impacts at the Luckey Site are not from the presence of lead-based paint. However, the constituent (lead) and the exposure scenario (residential exposure to children) are the same as those being addressed at the Luckey Site. Therefore, this rule should be considered relevant and appropriate for use at the Luckey Site for lead concentrations in soil because the reasonably foreseeable use of the property is for a resident, subsistence farmer who may have children playing on bare soil. There are two allowable concentrations of lead in soils specified in the rule. The USACE chose to use the more restrictive concentration of 400 mg/kg of lead in bare soil in children’s play areas. Thus, 400 mg/kg was selected as the media-specific cleanup goal for lead in soil at the Luckey Site.

3.2 Requirements for the Execution of the Remedial Action

Portage and its subcontractors will adhere to all applicable laws, rules, regulations, and standards of federal, state, and local authorities in executing remediation at the Luckey Site. The following sections summarize the regulatory authorities and agencies that serve as the framework for the project execution. These laws, regulations, standards, and overseeing agencies are presented and defined in this section, and the summary of the laws, regulations, and standards and their application to the site are presented in Section 3.3.

3.2.1 Permitting

Pursuant to Section 121(e) of CERCLA (42 USC 9621[e]), permits typically required under federal and state laws or statutes (such as the Federal Clean Water Act [CWA] [33 USC § 1251 et seq.] or Clean Air Act [CAA] [42 USC § 7401 et seq.]) are not required for the portion of remedial actions conducted on-site. However, on-site operations completed by USACE and its contractors must comply with all substantive requirements of federal, state, and local laws and regulations.

Permits required for off-site operations (e.g., solid waste transport) will be obtained through the appropriate regulating entity and the U.S. Department of Transportation (DOT). Additional details on the permits associated with off-site waste management and handling are discussed in the WMTDP (USACE 2016h). Ohio DOT Special Hauling Permits may be necessary in the delivery and demobilization of facilities and equipment to/from the site, and vendors will identify them during the procurement process.



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3.2.2 Statutory Authorities

This section introduces the major safety, environmental, and preservation statutes/laws that frame remedial actions at radiological and chemically contaminated sites, with a specific focus on the Luckey Site. These laws provide agencies with the authority to develop and implement regulations, guidance, and standards affecting radiation protection and cleanup of radioactive waste.

- Atomic Energy Act of 1954 (AEA) (42 USC § 2011 et seq.), as amended. Through the formation of the AEC, this Act promulgated the basic criteria for the development, management, processing, and utilization of radioactive materials in a manner that protects public health and the environment. In 1974, under the Energy Reorganization Act (42 USC § 5801) the AEC was reorganized to separate the functions of national defense and development and energy-related work (established under what is now the DOE) and nondefense-related radioactive material regulation under the then newly created NRC. The NRC regulates source, byproduct, and special nuclear material, as defined in the AEA.
- Comprehensive Environmental Response, Compensation, and Liability Act (42 USC § 9601 et seq.), as amended. This Act serves as the basis for the cleanup of abandoned or closed waste sites and provides the requirements for the response to uncontrolled releases of hazardous substances to the environment. Under CERCLA, the process of evaluating a site and its existing or potential hazards was established. This includes preparing a site-specific remedial investigation and feasibility study. Based on alternatives presented in the feasibility study, a proposed plan is developed, which identifies the preferred alternative, and a record of decision is developed which identifies the selected remedy to be implemented. This is followed by completing remedial design and remedial action to address the release or threat of release of contamination. The Act authorizes the U.S. EPA to complete remedial action in response to releases or substantial threats of releases of hazardous substances into the environment.
- Superfund Amendments and Reauthorization Act of 1986 (SARA) (Public Law 99-499). Passage of SARA did not change the basic structure of CERCLA; instead, it modified existing requirements on remedial alternative evaluations and long-term reviews of the implemented remediation effectiveness. This Act also promulgated new standards for the health and safety of workers at hazardous waste sites.
- Resource Conservation and Recovery Act (Solid Waste Disposal Act) (RCRA) (42 USC § 6901 et seq.). This Act provides for the regulation of solid and hazardous waste, requiring detailed management of waste from generation to final disposal, under the “cradle to grave” management system. This process was established to prevent new uncontrolled hazardous releases from occurring and provide better protection for human health and the environment. Under RCRA, solid and hazardous wastes are defined and classified, and the processes for



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conducting and permitting the treatment, storage, and disposal of these wastes are set forth. Further, the duties of hazardous waste generators and transporters are established.

Under the definitions of RCRA, source, by-product, or special radioactive materials arising out of the AEA are expressly excluded from the definition and thus from regulation under RCRA, pursuant to 40 CFR 261.4 (a)(4). If, however, a radiological waste also contains listed hazardous waste or exhibits characteristics of hazardous waste, the waste would be determined to be *mixed waste* and the regulations of both AEA and RCRA would apply.

- Toxic Substances Control Act (TSCA) (15 USC § 2601 et seq.). The TSCA regulates the manufacture, distribution in commerce, processing, use, and disposal of chemical substances and mixtures. Like RCRA, radioactive materials covered by the AEA are expressly excluded from the TSCA. The TSCA typically becomes involved with an AEA site when other chemicals, such as asbestos, radon, or polychlorinated biphenyls, are identified and require management.
- Federal Water Pollution Control Act Amendments of 1972, and as amended in 1977, commonly referred to as the Clean Water Act (or CWA) (33 USC § 1251 et seq.). The CWA established interim water quality goals aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's surface waters. The objective of the CWA is to prevent, reduce, and eliminate discharges of pollutants by developing a national monitoring program and procedures for interfacing with state programs of a similar nature. Major requirements of the CWA include establishing discharge effluent limits, establishing the National Pollutant Discharge Elimination System (NPDES) permitting program, and setting toxicity-based water quality standards.
- Clean Air Act (CAA) (42 USC § 7401 et seq.). The CAA protects and enhances the nation's air quality by establishing the national ambient air quality standards, new source performance standards, and monitoring and reporting provisions. Under this Act, radionuclides are defined as a hazardous air pollutant.
- Occupational Safety and Health Act (29 USC § 651 et seq.). The Occupational Safety and Health Act was passed to ensure worker and workplace safety, and it resulted in the creation of the Occupational Safety and Health Administration (OSHA). The goal of the law was to ensure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. This Act also created the National Institute for Occupational Safety and Health as a research institution to establish standards for workplace health and safety. The OSHA is a division of the U.S. Department of Labor. It oversees the administration of the Act and enforces standards in all 50 states.



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- Hazardous Materials Transportation Act, as amended by the Hazardous Materials Transportation Uniform Security Act (49 USC § 1801 et seq.). These Acts establish requirements for transportation of hazardous materials, including procedures and requirements for classification, packaging, labeling, marking, shipping, and placarding of hazardous materials.
- Presidential documents:
 - *Executive Orders:*
 - Floodplain Management, Executive Order 11988, requires federal agencies to evaluate the potential effects of actions they may take in a floodplain area, to the maximum extent possible, with respect to adverse impacts associated with the direct and indirect development of these areas. Regulation of floodplain management is provided at 40 CFR 6.302(b).
 - Protection of Wetlands, Executive Order 11990, requires federal agencies to evaluate the potential effects of actions on wetlands and to avoid undertaking any actions, to the maximum extent possible, that would negatively impact wetlands. The regulation providing wetland protection is 40 CFR 6.302(a). The Clean Water Act's Section 404 prohibits the discharge of dredged or fill material into waters of the United States without a permit from USACE.

3.2.3 Federal Regulatory Agencies

Portage will follow promulgated requirements of the following federal agencies during remedial action. Some of these agencies may have regulatory oversight for one or more of Portage's activities at the Luckey Site.

- NRC – Responsibilities of the NRC include regulatory and oversight duties associated with radiological materials and operations other than national defense or energy research and development. Specifically, the NRC provides standards for licensing, radiation safety, and protection for source, byproduct, and special nuclear materials licenses. The NRC also provides requirements for packaging, transporting, and disposal of radioactive waste.
- OSHA – The OSHA regulations apply to the safety and health of workers on hazardous, toxic, and radioactive sites. These OSHA standards are for both general industry, as well as the construction industry. They include requirements for training personnel who will be involved with hazardous waste site cleanup projects.
- U.S. EPA – The U.S. EPA promulgates the standards under the authority of RCRA and CERCLA, which define solid and hazardous waste and provide for the remedial investigations and actions to be completed to address hazardous waste releases. The U.S. EPA also regulates



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the standards of the TSCA, CWA, and CAA, which are defined in Section 3.2.2. The U.S. EPA’s objectives are to protect the public and environment by establishing limits on pollutant concentrations in air, water, and soil environments.

- DOT – The DOT oversees transportation of goods and commerce over federal highway, air, railroad, and maritime routes. Specific DOT regulations apply to the packaging, labeling, and all intrastate and interstate shipment of hazardous wastes and mixed (radioactive and RCRA hazardous) waste.
- DoD and USACE – The U.S. Army is the Department of Defense (DoD) executive agent for managing the disposal of the majority of DoD radioactive waste (with the exception of the Navy’s propulsion program), and overseeing the disposal and health and safety issues involving radioactive materials at DoD sites. Under the FUSRAP, USACE is responsible for the oversight of sites such as the Luckey Site.

3.2.4 State Regulatory Agencies

The State of Ohio agencies with regulations that may apply to removal actions at the Luckey Site include the Ohio Environmental Protection Agency (OEPA) and the Ohio Department of Health (ODH). Applicable regulations and standards related to remedial action are found in the Ohio Revised Code (ORC) and OAC.

3.3 SUMMARY OF APPLICABLE REQUIREMENTS AND STANDARDS

Table 3-1 is a detailed list of the laws, rules, regulations, and standards Portage will follow during project execution. It includes the title; regulatory agency and reference; and the major guideline, rule, or standard. Table 3-1 specifically includes all laws and regulations from the U.S. EPA, OSHA, DOE, NRC, OEPA, and ODH related to various aspects of excavation, transportation, disposal, and documentation activities to be performed. The table also includes references to the supporting work plans prepared for this project, as identified in Section 1.0 of this plan. These supporting work plans present the means and methods Portage will use to conduct the remedial action in compliance with the applicable laws, regulations, and standards presented in this RCP.

Table 3-1 also includes the regulations and standards of the DOT regarding the transport and documentation of the waste generated by the remedial action. Specific regulations addressing radiation protection, handling, transportation, and disposal are applicable because of the nature of contamination identified in previous investigations and targeted for the remedial action. Regulations addressing hazardous material not defined as radioactive are relevant and appropriate because of the presence of these materials, as a result of former industrial activities at the site and due to the potential for small-scale releases associated with equipment used for excavation and transportation.



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Table 3-2 lists the relevant USACE engineer manuals (EMs); engineer pamphlets (EPs); engineer regulations (ERs); and engineering circulars (ECs) applicable to hazardous, toxic, and radioactive waste (HTRW) sites and potentially applicable to the remedial action Portage will complete at the Luckey Site. Table 3-2 also lists Unified Facilities Guide Specifications (UFGSS) and Corps of Engineers Buffalo District (CELRB) technical requirements that apply to Portage's remedial action at the Luckey Site.



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Table 3-1. Potential regulatory requirements for the Luckey Site remediation.

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
FEDERAL:				
OSHA	Occupational Safety and Health Standards, General Industry	29 CFR 1910	<p>Specifies the health and safety requirements applicable to the conditions, practices, means, methods, and operations for general industry working conditions.</p> <p>Includes § 1910.120, “Hazardous Waste Operations and Emergency Response” (HAZWOPER), which sets forth training and safety requirements specific to CERCLA cleanup sites; uncontrolled hazardous waste sites; operations at transportation, storage, and disposal facilities; and emergency response to releases or threats thereof for</p>	<p>Provides the general guidelines Portage will follow for safe conduct of site work and worker protection (i.e., fall protection, personal protective equipment, heavy equipment operation, material handling and storage, use of tools, and electrical/fire safety).</p> <p>The APP/SSHP (USACE 2016d), provides an analysis of the site hazards and details Portage’s established procedures for providing a safe and healthy working environment for personnel. There will be evidence that all remediation workers have attended a 40-hour course, which will include training on hazard communication. If any worker completed the 40-hour course more than 12 months before initial site mobilization, Portage will provide evidence of an 8-hour refresher covering the period of initial site</p>



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			hazardous waste.	<p>mobilization. An 8-hour refresher shall be completed every 12 months thereafter.</p> <p>Certificates documenting course attendance and medical fit-for-duty forms will be maintained on-site. The site superintendent will also have 8-hour supervisory training.</p> <p>If personal identifying information is collected in addressing this requirement, it will be protected in accordance with the Health Insurance Portability and Accountability Act.</p>
OSHA	Safety and Health Requirements for Construction	29 CFR 1926	Provides health and safety criteria similar to § 1910, but the § 1926 criteria are specific to the construction industry, pursuant to the “Contract Work Hours and Safety Standards Act” (40 USC § 333 et seq.).	Health and safety requirements under § 1926 will be followed at all times, including sanitation, housekeeping, first aid, electrical/fire safety, emergency action plans, material handling, personal protective equipment, tool use, and applicable construction safety training. See APP/SSHP (USACE 2016d)].



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
OSHA	Recording and Reporting Occupational Injuries and Illnesses	29 CFR 1904	Provides the criteria and methodologies for determining, recording, and reporting work-related illnesses, injuries, and fatalities.	<p>Portage will maintain records pursuant to § 1904 related to the Luckey Site.</p> <p>Records will be kept on-site at all times during remediation, and will include medical surveillance, training certifications, and accident investigation/reporting forms. Corporate data will also be made available for inspection by conspicuous placement of OSHA 300 logs. Following completion of the project, Portage will maintain these records for at least three years in its corporate office records.</p> <p>If personal identifying information is collected in addressing this requirement, it will be protected in accordance with the Health Insurance Portability and Accountability Act.</p>



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
NRC	Notices, Instructions and Reports to Workers: Inspection and Investigations	10 CFR 19	Establishes requirements for notices, instructions, and reports to be provided by licensed employers to workers employed in radiological working conditions. Specifically, pursuant to §19.12, employers shall instruct employees in the areas of health protection, radioactive material storage and transfer, reporting requirements, and responsibilities related to radiological employment.	As discussed in the APP/SSHP (USACE 2016d) and RPP (USACE 2016f), all employees and subcontractors involved with on-site operations who might be exposed to radiological materials will have been trained in accordance with Portage's Radiation Safety Program.
NRC	Standards for Protection Against Radiation	10 CFR 20	Applies to the decommissioning of facilities licensed under this chapter and release of part of a facility or site for unrestricted use, as well as other facilities subject to the Commission's	10 CFR 20 was used to develop the cleanup criteria for the FUSRAP radiological COCs in the Luckey <i>Record of Decision for Soils Operable Unit</i> . The FSSP (USACE 2016k) defines the process for ascertaining cleanup consistent with these standards.



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			jurisdiction under the AEA of 1954, as amended, and the Energy Reorganization Act of 1974, as amended.	
NRC	Packaging and Transportation of Radioactive Material	10 CFR 71	Establishes requirements for packaging, preparation for shipment, and transportation of licensed material.	The material to be excavated and disposed of might be regulated as a DOT Class 7 (radioactive) hazardous material.
U.S. EPA	National Primary and Secondary Ambient Air Quality Standards	40 CFR 50	Establishes numerical values for air pollutants that must be met at air emission sources for the respective pollutant. Specifically, § 50.6 establishes values for dust emissions (Particulate Matter [PM _{2.5}]).	Dust suppression activities (e.g., water mist application in excavations, waste handling areas, and haul roads) will be used to minimize dust at the site. Air monitoring to verify effectiveness will be performed during remediation as described in the APP/SSHP (USACE 2016d), the CCP (USACE 2016i), and the SAP (USACE 2016g).
U.S. EPA	National Emission Standards for Hazardous Air Pollutants (NESHAP)	40 CFR 61	Identifies hazardous air pollutants and their application to stationary	Portage will implement dust suppression to minimize dust migration from both a radiological and



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			sources for those specific pollutants.	chemical standpoint. Portage will perform air monitoring to verify effectiveness during remediation as described in the APP/SSHP (USACE 2016d), the CCP (USACE 2016i), and the SAP (USACE 2016g).
U.S. EPA	Discharge of Oil	40 CFR 110	Establishes the definition of and reporting requirements for discharges of oil to navigable waters of the U.S. Oil discharges are defined as those which result in either a violation of applicable water quality standards, or cause a film or sheen upon surface water or adjoining shorelines.	Portage will follow good housekeeping and materials management practices to prevent oil spills. Practices will include monitoring refueling operations, storing flammable fuels (gasoline cans) in approved storage lockers with secondary containment, having large quantities of diesel fuel for equipment delivered to the site rather than storage on-site, having site personnel at refueling locations at all times during on-site refueling, and using spill/drip pans. If spills occur, workers will follow emergency procedures established in Appendix A to the APP/SSHP (USACE 2016d), and the National Response Center



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
				(800-424-8802) will be notified as required in § 110.6.
U.S. EPA	Designation of Hazardous Substances	40 CFR 116	Designates hazardous substances pursuant to the Clean Water Act, and applies to discharges of the substances listed in Table 116.4 of this Part.	Minor quantities of the listed chemicals (§ 116, Table 116.4) will be used in conjunction with this remedial action. Portage will use them to decontaminate field sampling equipment for select samples for chemical analysis. Limited quantities (less than 5 gal) will be stored on-site in locked cabinets approved for these chemicals.
U.S. EPA	U.S. EPA Administered Permit Program: The National Pollutant Discharge Elimination System (NPDES)	40 CFR 122 and 40 CFR 123	Describes the NPDES program for approved and permitted discharges to waterways and delegates authority of the NPDES program to approved state programs for state-level management.	It is anticipated that treated wastewater will be discharged to Toussaint Creek. Since the Luckey Site is a CERCLA site, a NPDES permit, administered by the State of Ohio, is not required; however, the site will meet the substantive requirements of such a permit, including effluent discharge limits required by Ohio regulations. This will all be addressed in the WMP.



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
U.S. EPA	RCRA Hazardous Waste Management	40 CFR 260–265	Sets forth provisions, terms, and standards for generators, transporters, and owners/operators of treatment, storage, or disposal facilities with respect to hazardous waste	It is anticipated that a portion of the waste to be excavated and disposed of may be mixed waste. Monitoring will be performed during remediation, supplemented by laboratory analysis, to evaluate the applicability of the RCRA hazardous waste regulations when suspect waste is encountered during excavation in accordance with the WMTDP and SAP.
U.S. EPA	Land Disposal Restrictions	40 CFR 268	Identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.	It is anticipated that a portion of the waste to be excavated and disposed of may be mixed waste. Monitoring will be performed during remediation, supplemented by laboratory analysis, to evaluate the applicability of the land disposal restrictions when suspect waste is encountered during excavation in accordance with the WMTDP and SAP. Land disposal restrictions will be satisfied per the requirements of the treatment storage and disposal facility.



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
U.S. EPA	U.S. EPA Administered Permit Programs: The RCRA Hazardous Waste Permit Program	40 CFR 270	Establishes the permit regulations and provisions for the issuance of a Hazardous Waste Permit under Subtitle C of the Solid Waste Disposal Act (42 USC § 6901 et seq.) and covers basic U.S. EPA permitting requirements, such as application requirements, standard permit conditions, and monitoring and reporting requirements for treatment, storage, and/or disposal of RCRA hazardous waste.	It is not anticipated that any treatment of RCRA hazardous waste will occur on-site. Portage will ensure that any off-site treatment, storage, and disposal facility(ies) will have the necessary operating permits, as discussed in the WMTDP.
U.S. EPA	National Oil and Hazardous Substances Pollution Contingency Plan	40 CFR 300	Establishes the NCP, whose purpose is to provide the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants.	Under FUSRAP, the USACE is provided the authority to conduct remedial actions at sites where specific radionuclides from specific sources have been released. Remediation activities will be performed consistent with the NCP and in accordance with the project work plans.



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
U.S. EPA	Toxic Substances Control Act – Lead in Soil	40 CFR 745	Sets a standard for levels of lead in soil considered to be hazardous. A 400 mg/kg measurement was selected as the media-specific cleanup goal for lead in soil at the Luckey Site.	The FSSP (USACE 2016k) defines the process for ascertaining cleanup consistent with these standards.
DOT	Regulations governing the transportation of DOT-defined hazardous materials	49 CFR 171 to 174 and 49 CFR 177	List and classify those materials that DOT has designated as hazardous materials for purposes of transportation and prescribes the requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials. General requirements are provided, as well as those specific to carriage by rail (49 CFR 174) and public highway	Waste material could be classified as Class 7, Class 9, or unclassified/unregulated waste. If the waste material is determined to be Class 9 hazardous waste based on the reportable quantities in § 172.101, Table 2 to Appendix A, or by definition, then the requirements of these Parts would apply. Details of waste packaging, labeling, and handling are presented in the WMTDP (USACE 2016h). Waste management activities will be overseen by the waste manager with documented training for radioactive waste packaging, transportation, and



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			(49 CFR 177).	disposal in accordance with 49 CFR 172, Subpart H, Hazmat Employee Training. Shipping papers, laboratory data, and emergency contact information will be maintained with the shipments at all times.
DOT	Specifications for Packagings	49 CFR 178	Prescribes the manufacturing and testing specifications for packaging and containers used for the transportation of hazardous materials in commerce.	Material and waste storage containers brought/used on this project will conform to the manufacturing and testing specifications of this Part.
STATE:				
OEPA	Water Quality Standards	OAC 3745-1	Sets provisions for the control of discharges through best available, demonstrated control technology relative to specific regulated pollutants.	Activities at the site are being conducted so as to ensure the implementation of best management practices that reduce the pollutants in stormwater discharges during construction and pollutants associated with post-construction activities. The WMP (USACE 2016b), including the attached



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
				SWPPP, provides details relative to these activities.
OEPA	Ambient Air Quality Standards	OAC 3745-25-02	Establishes numerical values for air pollutants that must be met at air emission sources for the respective pollutant.	Dust suppression activities (e.g., water mist application in excavations, waste handling areas, and haul roads) will be used to minimize dust at the site. Air monitoring to verify effectiveness will be performed during remediation as described in the APP/SSHP (USACE 2016d), the CCP (USACE 2016i), and the SAP (USACE 2016g).
OEPA	Voluntary Action Program, Generic Numerical Standards and Property-Specific Risk Assessment Procedures	OAC 3745-300-08 and 09	Establishes numerical standards for hazardous substances and petroleum used to demonstrate compliance with applicable standards, provided the exposure scenario for the property comports with land use and activity patterns used to derive the	Provides standards for chemical contaminants in excavated soils that establish the use of such soils as place-back material, assuming that the soils meet other specified requirements. Application of these standards are described in the BRP (USACE 2016j).



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			generic numerical standard.	
OEPA	Rules for inspection and licensing of solid waste facilities	ORC 3734.02(P)(2)	The owner or operator of a solid waste facility shall not accept for transfer or disposal technologically enhanced, naturally occurring radioactive material (TENORM) if that material contains or is contaminated with radium-226, radium-228, or any combination of radium-226 and radium-228 at concentrations equal to or greater than 5 pCi per gram above natural background.	The documented site history and data has led Portage to determine that the source of radioactive contamination of the Luckey soil is TENORM; therefore, a source-based waste disposition strategy is allowed under the State's recently promulgated regulations for landfill disposal and exemptions of TENORM-contaminated material. Working within the exemption-from-licensure process will allow soils with radium-226, radium-228, or any combination of radium-226 and radium-228 at concentrations less than 5 pCi/g (plus background of 1.75 pCi/g) to be disposed of at a permitted solid waste disposal facility. This process is defined within the WMTDP (USACE 2016h).



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
ODH	Radiation Control	OAC 3701:1-38	Establishes standards for protection against ionizing radiation.	Provides general guidelines Portage will follow for the protection of workers and the public against the effect of ionizing radiation. Actions defined by Portage are discussed in the APP/SSHP (USACE 2016d) and RPP (USACE 2016f), in terms of employees and subcontractors involved with on-site operations who might be exposed to radiological materials, and the waste handling processes defined within the WMTDP (USACE 2016h).
ODH	Radiation Control – Notices, Instructions, and Reports to Workers	OAC 3701:1-38-10	Establishes requirements for notices, instructions, and reports to be provided by licensed employers to workers employed in radiological working conditions.	As discussed in the APP/SSHP (USACE 2016d) and RPP (USACE 2016f), all employees and subcontractors involved with on-site operations who might be exposed to radiological materials will have been trained in accordance with Portage’s Radiation Safety Program and will be provided with proper posting and reporting relative to exposures.



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ODH	Radiation Control – Decommissioning	OAC 3701:1-38- 22	Contains limitations for AEC-related radionuclides that are the same as those found in 10 CFR Part 20 Subpart E. The requirement has been promulgated by the State of Ohio, as an agreement state, to ensure consistent standards for determining the extent to which lands in Ohio must be remediated before decommissioning of a site can be considered complete, and the state license can be terminated. This OAC 3701:1-38-22 establishes a standard for unrestricted release of property of 25 mrem/yr and ALARA as the total effective dose equivalent to an average member of a critical group.	The FSSP (USACE 2016k) defines the process for ascertaining cleanup consistent with these standards.
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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
ODH	Radiation Protection Standards for TENORM	OAC 3701:1-43	Establishes radiation protection standards for TENORM, including the possession, use, processing, manufacture, distribution, transfer, and disposal of TENORM.	The documented site history and data has led Portage to determine that the source of radioactive contamination of the Luckey soil is TENORM; therefore, a source-based waste disposition strategy is allowed under the State's recently promulgated regulations for landfill disposal and exemptions of TENORM-contaminated material. Working within the exemption-from-licensure process will allow soils with radium-226, radium-228, or any combination of radium-226 and radium-228 at concentrations less than 5 pCi/g (plus background of 1.75 pCi/g) to be disposed of at a permitted solid waste disposal facility. This process is defined within the WMTDP (USACE 2016h).
ODH	Packaging and Transportation of Radioactive Material	OAC 3701:1-50	Establishes requirements for packaging, preparation for shipment, and	Details of waste packaging, labeling, and handling are presented in the WMTDP (USACE 2016h).



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Table 3-1. (continued.)

Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
			transportation of radioactive material.	
ODH	Radiation Control Program	ORC 3748	Authorizes the ODH to be the radiation control agency for the State of Ohio, including the development and implementation of programs for the control of sources of radiation. One aspect of this program relates to the disposal of radioactive waste, including waste classified as TENORM.	The documented site history and data have led Portage to determine that the source of radioactive contamination of the Luckey soil is TENORM; therefore, a source-based waste disposition strategy is allowed under the State's recently promulgated regulations for landfill disposal and exemptions of TENORM-contaminated material. Working within the exemption-from-licensure process will allow soils with concentrations of radium-226 less than 5 pCi/g (plus background of 1.75 pCi/g) to be disposed of at a permitted solid waste disposal facility. This process is defined within the WMTDP (USACE 2016h).
OEPA	Water pollution and sludge management	ORC 6111.04	Sets provisions for the control of discharges	Activities at the site are being conducted in a manner to ensure



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Agency	Regulation, Standard Requirement, Criteria	Citation or Reference	Description	Application to Site
	violations prohibited		through best available, demonstrated control technology relative to specific, regulated pollutants.	the implementation of best management practices that reduce the pollutants in stormwater discharges during construction and pollutants associated with post-construction activities. The WMP (USACE 2016b), including the attached SWPPP, provides details relative to these activities.



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Table 3-2. USACE guidance documents for HTRW sites.

USACE Document Number	Document Title
<i>ENGINEER MANUALS:</i>	
EM 200-1-3	<i>Requirements for the Preparation of Sampling and Analysis Plans</i>
EM 200-1-6	<i>Chemical Quality Assurance for HTRW Projects</i>
EM 385-1-1	<i>Safety and Health Requirements Manual</i>
EM 385-1-80	<i>Radiation Protection Manual</i>
EM 1110-1-1005	<i>Control and Topographic Surveying</i>
EM 1110-1-4000	<i>Monitoring Well Design, Installation, and Documentation at Hazardous, Toxic, and Radioactive Waste Sites</i>
<i>ENGINEER PAMPHLETS:</i>	
EP 200-1-1	<i>Process and Procedures for Shipping Hazardous Wastes and Other Hazardous Materials</i>
EP 310-1-6a and 6b	<i>Sign Standards Manual</i>
EP 415-1-266	<i>Resident Engineering Management Guide for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects</i>
EP 1110-1-33	<i>Spill Reporting Procedures for USACE Hazardous, Toxic and Radioactive Waste Projects</i>
<i>ENGINEER REGULATIONS:</i>	
ER 200-1-7	<i>Chemical Data Quality Management for Environmental Restoration Activities</i>
ER 385-1-80	<i>Ionizing Radiation Protection</i>
ER 385-1-92	<i>Safety and Occupational Health Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW) Activities</i>
ER 385-1-99	<i>USACE Accident Investigation and Reporting</i>
<i>ENGINEERING CIRCULARS:</i>	
EC 200-1-3	<i>Off-Site Disposal of Materials from Formerly Utilized Sites Remedial Action Program</i>
<i>UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS):</i>	
UFGS Section 01 22 00.00 10	<i>Measurement and Payment</i>



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USACE Document Number	Document Title
UFGS Section 01 32 01.00 10	<i>Project Schedule</i>
UFGS Section 01 32 16.00 20	<i>Construction Progress Documentation</i>
UFGS Section 01 33 00	<i>Submittal Procedures</i>
UFGS Section 01 35 26	<i>Governmental Safety Requirements</i>
UFGS Section 01 35 29.13	<i>Health Safety & Emergency Response Procedures for Contaminated Sites</i>
UFGS Section 01 35 45.00.10	<i>Chemical Data Quality Control</i>
UFGS Section 01 45 00.00 10	<i>Quality Control</i>
UFGS Section 01 50 00	<i>Temporary Construction Facilities and Controls</i>
UFGS Section 01 57 23	<i>Temporary Storm Water Pollution Control</i>
UFGS Section 01 58 00	<i>Project Identification</i>
UFGS Section 02 41 00	<i>Demolition</i>
UFGS Section 02 61 13	<i>Excavation and Handling of Contaminated Material</i>
UFGS Section 02 81 00	<i>Transportation and Disposal of Hazardous Materials</i>
UFGS Section 02 82 16.00 20	<i>Engineering Control of Asbestos Hazard Control Activities</i>
UFGS Section 31 11 00	<i>Clearing and Grubbing</i>
CORPS OF ENGINEERS BUFFALO DISTRICT (CELRB) TECHNICAL REQUIREMENTS (from Section B of Luckey Scope of Work):	
N/A	<i>CELRB Air Monitoring Requirements</i>



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USACE Document Number	Document Title
N/A	<i>CELRB Analytical Laboratory Requirements and Data Deliverables</i>
N/A	<i>CELRB Beryllium Exposure Standard Variance Letter</i>
N/A	<i>CELRB Chronic Beryllium Disease Prevention Program, Beryllium Hazard Analysis, and Beryllium Work Permit Outlines</i>

4. REFERENCES

10 CFR 19, 2008, “Notices, Instructions and Reports to Workers: Inspection and Investigations,” *Code of Federal Regulations*, Office of the Federal Register, January 1, 2008.

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