



US Army Corps
of Engineers

Published HTRW Technical Guidance Documents

Objective

The US Army Corps of Engineers (USACE) Guidance Development Program provides the necessary Hazardous, Toxic, and Radioactive Waste (HTRW) guidance documents for insuring consistency within the USACE Environmental Restoration Programs. In the area of environmental restoration, where technologies, specifications, and regulations change continuously, it is especially important to maintain up to date guidance documents. The following documents are generally applicable to all USACE environmental cleanup work.

Document Designations

Unified Facilities Guide Specifications (UFGS)
Design Guides (DG)
Engineer Circulars (EC)
Engineer Manuals (EM)

Engineer Pamphlets (EP)
Engineer Regulations (ER)
Engineer Technical Letters (ETL)

Published Documents

Section 1: Environmental Guide Specifications (UFGS)

NUMBER	TITLE
UFGS 01240A	Cost and Performance Report
UFGS 01351A	Safety, Health, and Emergency Response (HTRW/UST)
UFGS 01450A	Chemical Data Quality Control
UFGS 01810A	Commissioning and Demonstration for Soil Vapor Extraction (SVE) Systems
UFGS 01830A	Operation, Maintenance, and Process Monitoring for Soil Vapor Extraction (SVE) Systems
UFGS 02111	Excavation and Handling of Contaminated Material
UFGS 02115A	Underground Storage Tank Removal
UFGS 02115N	Removal and Disposal of Underground Storage Tanks
UFGS 02120A	Transportation and Disposal of Hazardous Materials
UFGS 02140A	Select Fill and Topsoil for Landfill Cover
UFGS 02150A	Piping; Off-Gas
UFGS 02151A	Soil Washing Through Separation/Solubilization
UFGS 02160A	Solidification/Stabilization (S/S) of Contaminated Material
UFGS 02180A	Remediation of Contaminated Soils and Sludges by Incineration
UFGS 02181A	Remediation of Contaminated Soils by Thermal Desorption

UFGS 02190A	Bioremediation Using Landfarming Systems
UFGS 02191A	Bioremediation of Soils Using Windrow Composting
UFGS 02262A	Soil-Bentonite (S-B) Slurry Trench
UFGS 02318A	Test Fill
UFGS 02372A	Waste Containment Geomembrane
UFGS 02373	Geotextile
UFGS 02374A	Geosynthetic Drainage Layer
UFGS 02375A	Geogrid Soil Reinforcement
UFGS 02376A	Geosynthetic Clay Liner (GCL)
UFGS 02377A	Clay Barrier Layer
UFGS 02522A	Ground-Water Monitoring Wells
UFGS 02525N	[Extraction] [Monitoring] Wells
UFGS 02714A	Drainage Layer
UFGS 11215A	Fans/Blowers/Pumps; Off-Gas
UFGS 11220A	Precipitation/Coagulation/Flocculation Water Treatment
UFGS 11225A	Downflow Liquid Activated Carbon Adsorption Units
UFGS 11226A	Vapor Phase Activated Carbon Adsorption Units
UFGS 11242A	Chemical Feed Systems
UFGS 11301A	Air Stripper
UFGS 11311	Parallel Plate [or Vertical Tube], Gravity Oil-Water Separator
UFGS 11360A	Recessed Chamber Filter Press System
UFGS 11377	Advanced Oxidation Processes (AOP)
UFGS 11378	Thermal (Catalytic) Oxidation Systems
UFGS 11393	Filtration System
UFGS 13280A	Asbestos Abatement
UFGS 13281A	Lead Based Paint Hazard Abatement, Target Housing & Child Occupied Facilities
UFGS 13281N	Engineering Control of Asbestos Containing Materials
UFGS 13282N	Lead in Construction
UFGS 13283N	Removal/Control and Disposal of Paint with Lead
UFGS 13284N	Removal and Disposal of Polychlorinated Biphenyls (PCBs)
UFGS 13285N	Removal and Disposal of PCB Contaminated Soils
UFGS 13405A	Process Control
UFGS 15200A	Pipelines, Liquid Process Piping

*NOTE: UFGS that cover similar subjects and those that have been identified for later consolidation into a single specification section are identified with an alpha designation (“A” for USACE, “N” for NAVFAC, “F” for AFCESA)

Section 2: Environmental Technical Manuals (DG, EC, EM, EP, & ETL)

Chemistry Related Documents

NUMBER	TITLE
EM 200-1-1	Validation of Analytical Chemistry Laboratories
EM 200-1-6	Chemical Quality Assurance for HTRW Projects

EM 200-1-7	Performance Evaluation (PE) Program
ER 1110-1-263	Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities
ER 1110-1-8100	Laboratory Investigations Testing

Cost Engineering Related Documents

NUMBER	TITLE
EP 1110-1-19	A Guide to Preparing and Reviewing Remedial Action Reports of Cost and Performance
ER 1110-3-1301	Cost Engineering Policy Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) - Remedial Action Cost Estimate

Execution Related Documents

NUMBER	TITLE
EM 200-1-2	Technical Project Planning (TPP) Process
EM 200-1-3	Requirements for the Preparation of Sampling and Analysis Plans
EM 1110-1-1200	Conceptual Site Models for Ordnances and Explosives (OE) and Hazardous, Toxic, and Radioactive Waste (HTRW) Projects
EM 1110-35-1	Management Guidelines for Low-Level Radioactive Waste (LLRW) and Mixed Waste (MW) Site Remediation
EP 200-1-3	Environmental Restoration at Formerly Used Defense Sites
EP 415-1-261 (Vol 5)	Quality Assurance Representative's Guide
EP 415-1-266	Resident Engineer Management Guide (REMG) for Hazardous, Toxic, and Radioactive Waste (HTRW) Projects
EP 420-1-1	Installation Support Handbook
EP 715-1-5	Architect-Engineer Contracting Guide - Hazardous, Toxic, Radioactive Waste (HTRW) Contracting
EP 1110-1-13	USACE Guidebook to Military Programs Environment Support
EP 1110-3-6	United States Army Corps of Engineers (USACE) Technology Transfer Systems
EP 1110-3-8	Public Participation in the Defense Environmental Restoration Program (DERP) for Formerly Used Defense Sites (FUDS)
ER 37-5-3	EPA/Corps Superfund Program - Financial Closeout of IAG
ER 1110-1-8157	Geotechnical Data Quality Management for Hazardous Waste Remedial Activities
ER 1110-2-500	Corps/EPA Superfund Program Funding and Reporting Requirements
ER 1165-2-132	Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects
ETL 1110-1-154	Standard Outlines for Scopes-of-Work for Investigation and Studies at Hazardous, Toxic & Radioactive Waste (HTRW) Sites

Risk Assessment Related Documents

NUMBER	TITLE
EM 200-1-4, Vol I	Risk Assessment Handbook - Volume I: Human Health Evaluation
EM 200-1-4, Vol II	Risk Assessment Handbook, Volume II: Environmental Evaluation
EP 200-1-15	Environmental Quality - Standard Scopes of Work for HTRW Risk Assessments

Regulatory Related Documents

NUMBER	TITLE
EP 200-1-2	Process and Procedures for RCRA Manifesting
EP 200-1-9	Effectively Working with State and Federal Regulators
EP 200-2-3	Environmental Compliance Guidance and Procedures
ETL 1110-3-459	Hazardous Waste Storage Criteria

Remedial Technology Related Documents

NUMBER	TITLE
DG 1110-1-1	Design Guidance for Ground Water/Fuel Extraction and Ground Water Injection Systems
DG 1110-1-2	Adsorption Design Guide
DG 1110-1-3	Engineering and Design-Air Stripping
EM 200-1-5	Design, Installation and Utilization of Fixed-Fenceline Sample Collection and Monitoring Systems
EM 1110-1-502	Technical Guidelines for Hazardous and Toxic Waste Treatment and Cleanup Activities
EM 1110-1-4000	Monitoring Well Design, Installation, and Documentation at Hazardous Toxic, and Radioactive Waste Sites
EM 1110-1-4001	Soil Vapor Extraction and Bioventing
EM 1110-1-4002	Guidance For Low-Level Radioactive Waste (LLRW) and Mixed Waste (MW) Treatment and Handling
EM 1110-1-4005	In-Situ Air Sparging
EM 1110-1-4006	Removal of Underground Storage Tanks (USTs)
EM 1110-1-4008	Liquid Process Piping
EM 1110-1-4010	Multi-Phase Extraction
EM 1110-1-4011	Construction Quality Assurance (CQA) Plan Requirements for Hazardous Waste Landfills
EP 1110-1-27	Operation and Maintenance of Extraction and Injection Wells at HTRW Sites
ETL 1110-1-158	Treatability Studies for Solidification/Stabilization of Contaminated Material
ETL 1110-1-159	Filtration Treatment Systems
ETL 1110-1-160	Landfill Off-Gas Collection and Treatment Systems
ETL 1110-1-161	Ultraviolet/Chemical Oxidation
ETL 1110-1-162	Checklist for Hazardous Waste Landfill Cover Design
ETL 1110-1-163	Checklist for Design of Vertical Barrier Walls for Hazardous Waste Sites

ETL 1110-1-171	Tri-Service Site Characterization and Analysis Penetrometer System (SCAPS)
ETL 1110-1-173	Thermal Desorption
ETL 1110-1-175	Practical Aspects of Applying Geostatistics at Hazardous, Toxic, and Radioactive Waste Sites
ETL 1110-1-176	Bioremediation Using Landfarming Systems
ETL 1110-1-178	Horizontal Directional Drilling for Environmental Applications
ETL 1110-3-367	Trace Organic Compounds in Potable Water Supplies
ETL 1110-3-442	Ultraviolet Disinfection at Army Wastewater Treatment Facilities
ETL 1110-3-457	Plate and Frame Filter Press
NUMBER	TITLE
ETL 1110-3-466	Selection and Design of Oil/Water Separators at Army Facilities
ETL 1110-3-477	Alternative Sludge Dewatering Techniques for Wastewater Treatment Facilities

Safety and Occupational Health Related Documents

NUMBER	TITLE
EM 385-1-1	Safety and Health Requirements Manual
EM 385-1-80	Radiation Protection Manual
EM 1110-1-4007	Safety and Health Aspects of HTRW Remediation Technologies
EP 1110-1-11	Asbestos Abatement Guideline Detail Sheets
EP 1110-1-21	Air Pathway Analysis for the Design of Hazardous, Toxic, and Radioactive Waste (HTRW) Remedial Action Projects
EP 1110-1-22	Asbestos Surveys and Assessments - Standard Scope of Work
EP 1110-1-23	Asbestos Abatement Air Monitoring Standard Scope of Work
EP 1110-1-28	Lead Hazard Risk Assessment for Target Housing/Child - Occupied Facilities Standard Scope of Work
EP 1110-1-29	Lead Hazard Clearance Inspection Standard Scope of Work
EP 1110-1-30	Pre-Design Lead/Asbestos Surveys Standard Scope of Work
EP 1110-1-31	Combined Lead Inspection/Risk Assessment for Target Housing Property Transfers - Standard Scope of Work
ER 385-1-80	Ionizing Radiation Protection
ER 385-1-92	Safety and Occupational Health Requirements for Hazardous, Toxic and Radioactive Waste (HTRW) Activities

Points of Contact

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How to Obtain USACE Guidance

All USACE guidance documents are updated quarterly on the National Institute of Building Sciences (NIBS) Construction Criteria Base (CCB) CD-ROM system.

For subscription information visit: <http://www.ccb.org/subscribe.html>.
All DOD/DOE/GSA personnel receive CCB subscription at no cost.

For HTRW guidance documents only, visit:
<http://hq.environmental.usace.army.mil/newsinfo/library/guidance/guidance.html>

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