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H. Information Owner/Author/Requestor
Jason A. Hulstrom
(Print and Sign)

Responsible Manager
Roberta E. Day
(Print and Sign)

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(Print and Sign)

I. Reviewers

	Yes	Print	Signature	Public Y/N (If N, complete J)
General Counsel	☒	Raymond T. Swenson		(Y) / N
Office of External Affairs	☐			Y / N
DOE-RL	☒	Francis M. Roddy		(Y) / N
Other	☒	OUO-SME: Steve S. Lowe	7/27/09	(Y) / N
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RESPONSIBLE CONTACTS

	Name	Phone Number
Author:	Jason A. Hulstrom	373-0082
Manager:	Roberta E. Day	376-1302

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Author:	07/21/09	RELEASE / ISSUE
Name: (Print) Jason A. Hulstrom	Date	JUL 27 2009 DATE: STA: 15 HANFORD RELEASE ID: 20
Responsible Manager:	21 July 09	
Name: (Print) Roberta E. Day	Date	
Other:	7.21.09	
Name: (Print) Gregory T. Berlin	Date	

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Revision 1

Cost Estimate for the 200-MG-1 Operable Unit Engineering Evaluation/ Cost Analysis Removal Actions

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

Approved for Public Release;
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Revision 1

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P.O. Box 1600
Richland, Washington

R. D. Aardal 07/27/2009
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Terms

CS	confirmatory sampling
ERDF	Environmental Restoration Disposal Facility
FH	Fluor Hanford, Inc.
FP	fixed price
IC	institutional control
MESC	maintain existing soil cover
MNA	monitored natural attenuation
NFA	no further action
OU	operable unit
QA	quality assurance
RCT	radiological control technician
RTD	removal, treatment, and disposal
SWB	standard waste box
WIPP	Waste Isolation Pilot Plant

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1 Introduction

1.1 Purpose

This document provides a backup of the cost estimates conducted to support the DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites*. DOE/RL-2008-44 evaluates the following four removal action alternatives:

- No action alternative
- Maintain existing soil cover/institutional controls/monitored natural attenuation (MESC/IC/MNA) alternative
- Confirmatory sampling/no further action (CS/NFA) alternative
- Removal, treatment, and disposal (RTD) alternative.

DOE/RL-2008-44 provides descriptions of the alternatives. This cost estimate addresses the following:

- Site-specific conditions and assumptions that provide the bases for the estimate
- Description of estimating methods used
- Estimating assumptions
- Tabulation of the cost estimates for the alternatives.

1.2 Overview

Cost estimates for DOE/RL-2008-44 have a target accuracy of -30 percent to +50 percent, as specified in EPA/540/R-00/002, *A Guide to Developing and Documenting Cost Estimates during the Feasibility Study*, OSWER 9355.0-75. The cost estimates provide a discriminator for deciding between similar protective and implemental alternatives for a specific waste site. Therefore, the costs are relational, not absolute, for alternatives evaluation.

Cost estimate methods were developed using the cost models developed by Fluor Hanford, Inc. (FH), Project Controls and Estimating Department. DOE/RL-2008-44 does not evaluate the economies attained by combining multiple sites in a single removal action or by including 200-MG-1 Operable Unit (OU) waste sites with common alternatives or aggregated remediation activities in other OUs.

Appendix A presents the cost comparison tables.

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2 Alternative Cost Estimate

This chapter describes the cost estimates, summarizes the total present-worth costs, and provides summary and backup information. Present-net-worth costs were estimated using the real discount rate published in Appendix C of OMB Circular No. A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, which was effective through January 2009.

Although present worth costs are used in DOE/RL-2008-44 for evaluation of alternatives, other estimates are provided as well. Nondiscounted costs were developed in response to recommendations in EPA/540/R-00/002, but serve only as a comparison purpose in DOE/RL-2008-44. The utility of the nondiscounted constant dollar cost is to demonstrate the impact of a discount rate on the total present value cost. Constant dollar costs provide a comparison on the resources required for the alternatives. Site information for the MESC/IC/MNA, CS/NFA, and RTD alternatives is provided in Tables A-1 through A-3.

2.1 No Action Alternative

In this alternative, legal restrictions, access controls, or active remedial measures are not applied. Taking no action implies walking away from the site and allowing the waste to remain in its current configuration, affected only by natural processes. No maintenance or other activities are included.

Because the No Action alternative assumes that no further actions will be taken, costs are assumed to be zero.

2.2 Maintain Existing Soil Cover/ Institutional Controls/Monitored Natural Attenuation Alternative

The primary annual/periodic costs associated with this alternative are surveillance, cover maintenance, and monitoring, along with a one-time soil sampling of the site. This alternative does not include long-term groundwater monitoring since the 200-MG-1 OU waste sites are generally shallow and do not pose a threat to groundwater. The costs for these annual/periodic activities are based on the area of the waste site. Tables A-4 and A-5 provide details of the capital and annual/periodic cost estimates, respectively.

The unit cost for surveillance and maintenance are assumed to be the same as the current unit cost for surveillance and maintenance activities conducted annually on the waste sites. The unit cost accounts for such activities as site radiation surveys, vegetation/pest control, fence/signing maintenance, and repair of the existing soil cover on the sites where it is present. Because the existing soil cover is maintained annually, costs for replacing all or large portions of the existing cover at specified intervals (i.e., every 20 years) are considered unnecessary.

The cost associated with MNA is for the radiological surveys of surface soils. The costs are assumed to be similar to those for current survey practices at the sites and are included in the surveillance and maintenance costs.

Vadose zone and groundwater monitoring costs are not included in this alternative. Sites covered by this OU do not have high concentrations of contaminants in the shallow zone and do not pose a threat to groundwater.

Institutional controls, which can have one-time or recurring costs (e.g., capital, annual operations and maintenance, or periodic), are non-engineering or legal/administrative measures to reduce or minimize the potential for exposure to site contamination or hazards by limiting or restricting site access.

Examples include IC plans, restrictive covenants, property easements, zoning, deed notices, advisories, groundwater use restrictions, and site information databases. An IC plan describes the controls for a site and how they are to be implemented. A site information database would provide a system for managing data necessary to characterize the current nature and extent of contamination. Institutional controls are project-specific costs that can be an important component of a remedial alternative and, as such, should generally be estimated separately from other costs, usually as a sub-element. Institutional controls may need to be updated or maintained either annually or periodically.

The IC cost model used for this alternative was developed by the FH Project Controls and Estimating Department. The duration for IC only considers an initial, 1-year period. The annual/periodic activities are based on the 150-year length of time specified for DOE/RL-2008-44.

Sampling of the waste site will occur in the initial year, the same as the IC process. The sampling is to verify that no additional remediation work will be required at a waste site. The number of samples required is based on the size of the waste site area and the expected depth of the contamination. The type of sample analysis will be based on the type of contamination expected at the site.

The combined present-net-worth costs for surveillance and maintenance, MNA, and IC activities represent the present-worth cost for this alternative. The real discount rate of 2.8 percent is used for discounting real (constant-dollar) flows for the duration. The nondiscounted costs are presented for comparison purposes.

2.3 Confirmatory Sampling/No Further Action Alternative

The confirmatory sampling process will verify that removal actions are not required at certain waste sites. The number of samples is assumed to be linked to the size of the waste site area and the expected depth of the contamination. The analytical methods used are based on the type of contamination expected at the site. This process will be used at sites that are expected to have little if any detectable contamination. Tables A-6 and A-7 provide details of the capital and annual/periodic cost estimates.

The primary costs associated with this alternative are surveillance and cover maintenance. The annual/periodic activities are based on the 2-year review period for acceptance of the analytical data.

2.4 Removal, Treatment, and Disposal Alternative

Tables A-1 and A-2 list the excavation depths and other site information for the RTD alternative. The RTD alternative considers removal and disposal of very small sites and sites that contain structure slabs/foundations, debris, or large volumes of contaminated soil.

Tables A-8 and A-9 provide details of the capital and annual/periodic cost estimates for the RTD alternative. No annual/periodic or IC costs are associated with the RTD alternative because contaminants are assumed to be removed, eliminating the need for long-term surveillance and maintenance. The removal and disposal work, along with the remedial engineering activities, make up the present-worth costs for this alternative.

3 Estimating Method Assumptions

3.1 Global Assumptions

3.1.1 Labor

Fixed-price (FP) construction craft labor rates are those listed in Appendix A of the *Site Stabilization Agreement for All Construction Work for the U.S. Department of Energy at the Hanford Site*. The rates include base wages, fringe benefits, and other compensation, as negotiated between FH and the National Building and Construction Trades Department American Federation of Labor-Congress of Industrial Organizations. Other factors to cover additional costs for Workman's Compensation, Federal Insurance Contributions Act, and state and federal unemployment insurance to develop a fully burdened rate by craft have been incorporated. The labor rates used are for 2008.

The FH labor rates for management, engineering, safety oversight, and technical support are based on the FH-approved planning rates for fiscal year 2008.

3.1.2 Markups

3.1.2.1 Direct Cost Factors

- Sales tax has been applied to all materials and equipment purchases at 8.3 percent.
- Construction consumables are estimated at 3.5 percent of FP direct craft labor costs to allow for small items (e.g., small tools, tape, plastics, and gloves).
- A general supervisor factor of 3 percent has been applied to FP craft labor hours.

3.1.2.2 Indirect Cost Factors

- FP contractor overhead, profit, bond, and insurance costs have been applied at 26.5 percent on FP labor, materials, and equipment.
- FH general and administrative overhead of 15 percent has been applied to all FH labor, material, and equipment. The general and administrative overhead also is applied to the FP contractor costs.

3.1.3 General Assumptions

- FH cost estimating templates for site remediation were used as the basis for each waste site. Templates used include standard RTD and very small RTD.
- Construction labor, material, and equipment units have been estimated based on standard commercial estimating resources and databases: Means, 2007, *Facility Construction Cost Data*; *Rental Rate Blue Book for Construction Equipment*, database; and Richardson's *Process Plant Construction Estimating Standards*. The units may have been factored or adjusted by the estimator, as appropriate, to reflect influences by contract, work site, or other identified project or special conditions.
- Quotes from local commercial sources have been used for materials that need to be acquired for the construction of barriers or temporary improvements.
- Equipment rates are based on 21 working days per month.
- Equipment operation is based on one shift of 8 hours per day.
- Work week equals 5 days per week.

- Work stoppages or shutdowns because of inclement weather are not factored into the estimates or planning schedules for this study.
- Work delays or stoppages caused by waiting for laboratory results or approval for backfilling waste site excavations are not factored into the estimates or planning schedules for this study.
- The cost estimates include costs for design, work plan preparation, or any other preparation costs normally associated with activities occurring before field mobilization.
- Remedial design capital costs are based on EPA/540/R-00/002, Exhibit 5-8. The following guide is used in this study.
  - For projects with construction costs less than $100,000, remedial design is planned at 20 percent of construction costs.
  - For projects with construction costs from $100,000 to $500,000, remedial design is planned at 15 percent of construction costs.
  - For projects with construction costs from $500,000 to $2 million, remedial design is planned at 12 percent of construction costs.
  - For projects with construction costs from $2 million to $10 million, remedial design is planned at 8 percent of construction costs.
  - For projects with construction costs greater than $10 million, remedial design is planned at 6 percent of construction costs.
- Escalation has not been included in the calculations. All costs are fiscal year 2008.
- All Environmental Restoration Disposal Facility (ERDF) costs were based on the attachment to 0800732, "Environmental Restoration Disposal Facility Waste Disposal Requirements and Fiscal Year 2008 Environmental Restoration Disposal Facility Rates for Other Hanford Contractors."
- All sample costs are associated with prices taken from Waste Encapsulation and Storage Facility Lab price list.
- Contingency rates are based on EPA/540/R-00/002.

3.2 Maintain Existing Soil Cover/ Institutional Controls/Monitored Natural Attenuation Alternative

3.2.1 General Assumptions

This alternative includes the following assumptions.

- Costs were calculated based on the area of the waste site and the expected depth of the contamination. The minimum site area for this study is 0.5 a (21,780 ft^2). Costs based on area became unrealistically low for waste sites smaller than 0.5 a (21,780 ft^2).
- The annual/periodic activities are based on the 150-year length of time specified for DOE/RL-2008-44.
- Fencing and monuments/signs for ICs and fencing maintenance are considered institutional costs and are considered in this cost estimate.

- MESC/IC/MNA includes the following seven general activities:
  - Implementation of IC plan – Sets up the controls for a site by implementing restrictive covenants, property easements, zoning, deed notices, advisories, groundwater use restrictions, and a site information database. Activity occurs in the first year.
  - Waste site cover inspection – Two-person crew performs annual inspections of the waste site cover.
  - Radiation survey of surface soil – Two-person crew performs annual radiation surveys of the waste site.
  - Existing cover maintenance – Annual cover soil repair performed to fix holes, wind damage, etc.; work includes loading/hauling cover soil, spreading, dust control, and reseeding.
  - Weed/pest control – A radiological control technician (RCT) will perform annual control of weeds and burrowing animals or other pests.
  - Fence/sign maintenance – An RCT will perform annual maintenance of existing site fences and signs, includes removal of windblown vegetation and trash.
  - Waste site review reporting – The waste site condition report is prepared every 5 years.
- The pricing or production rates that make up the cost estimate were obtained from one of the following sources:
  - Experience on similar projects
  - Means, 2001, *ECHOS Environmental Remediation Cost Data – Unit Price*
  - Means, 2007
  - *Rental Rate Blue Book for Construction Equipment* database.

3.2.2 MESC/IC/MNA Sampling Process

For the 200-MG-1 OU, the following MESC/IC/MNA sampling process will be used to verify that no additional remediation work will be required at a waste site. This work occurs once in the first year.

1. MESC/IC/MNA Field Sampling
   a. These samples verify additional remediation work is not required at the waste site.
   b. This process begins after the research of the site waste stream/history has been completed.
   c. The minimum number of sample holes/boreholes per waste site will be four. If the waste site is less than 4 ft deep, then four samples will be required (one sample per sample hole). For sites deeper than 4 ft, eight samples will be required (two samples per borehole).
   d. The planning cost is $5,722 per sample for onsite lab analysis and $1,293 per sample for offsite lab analysis and shipping; total cost is $7,016 per sample for the full suite of analysis. If the sample is to support the radiological analysis, then the cost is $3,303 per sample.

e. For waste sites that have an expected depth of contamination of less than 4 ft, the following will occur:

- The waste site will be sampled by hand.
- The sampling crew will have one field sampler, one RCT, and one facility supervisor. Equipment will be hand tools and a pickup truck. Sample rate will be 2 hours per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- One sample will be taken from each excavation hole. The depth of the sample will be determined by analysis of the waste site data and history.

f. For sites that have an expected depth of contamination of 4 to 10 ft, the following will occur:

- Waste site will be sampled using a mini excavator.
- A sampling crew will have one operator, one teamster, one field sampler, one RCT, and one facility supervisor. Equipment will be mini excavator and a 1-ton pickup truck with trailer. Sample rate will be 1 hour per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- Two samples will be taken from each excavation hole. The depth of the sample will be determined by analysis of the waste site data and history.

g. For waste sites that have an expected depth of contamination of 10 ft or more, the following will occur:

- Waste site will be sampled using a truck-mounted auger drill rig.
- A sampling crew will have two operators, one teamster, one laborer, one field sampler, one RCT, and one facility supervisor. Equipment will be a truck-mounted auger drill rig and a 1-ton pickup truck with trailer. Sample rate will be 2 hours per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- Two samples will be taken from each borehole. The depth of the sample will be determined by analysis of the waste site data and history.

2. Confirmatory Process Final Report

a. After the completion of site sampling (including analysis report), a preliminary report will be produced to help determine future action at each waste site. The report will include the preliminary site information from the remedial engineering phase of the work.

b. The following preparation time is planned for the confirmatory process final report: environmental engineer/scientist, 80 hours; drafter/engineering technician, 40 hours; and survey crew, 9 hours.

3.3 Confirmatory Sampling/No Further Action Alternative

3.3.1 General Assumptions

For the 200-MG-1 OU, the following confirmatory sampling process will be used to verify that no additional remediation work will be required at a waste site. This sampling process is based on the current 100-Area Sampling Plan.

1. Confirmatory Process Remedial Engineering

   a. Based on the estimated cost of CS/NFA remedial engineering for similarly sized waste sites, the following costs will be used:

      - Sites <15,000 ft^2 – $18,000
      - Sites 15,000 to 25,000 ft^2 – $45,000
      - Sites 25,000 to 45,000 ft^2 – $80,000
      - Sites 45,000 to 100,000 ft^2 – $120,000
      - Sites >100,000 ft^2 – $150,000.

2. Confirmatory Process Field Sampling

   a. These samples are to show that no additional remediation work is required at the site.

   b. This process begins after the remedial engineering and other research of the site waste stream/history have been completed.

   c. The minimum number of sample holes/boreholes per site will be based on the size of the waste site, as follows:

      - Sites <15,000 ft^2 – 4 samples holes/boreholes
      - Sites 15,000 to 25,000 ft^2 – 8 samples holes/boreholes
      - Sites 25,000 to 35,000 ft^2 – 12 samples holes/boreholes
      - Sites 35,000 to 45,000 ft^2 – 16 samples holes/boreholes
      - Sites 45,000 to 100,000 ft^2 – 20 samples holes/boreholes
      - Sites 100,000 to 200,000 ft^2 – 24 samples holes/boreholes
      - Sites >200,000 ft^2 – 28 samples holes/boreholes.

   d. Quality Assurance (QA) samples required will be a minimum of either two samples or 5 percent of the total number of samples, whichever is greater.

   e. The planning cost is $5,722 per sample for onsite lab analysis and $1,293 per sample for offsite lab analysis and shipping; total cost is $7,016 per sample for the full suite of analysis. If the sample is to support the radiological analysis, then the cost is $3,303 per sample.

   f. Appendix A shows the official Waste Sampling and Characterization Facility and offsite commercial lab analysis tests with costs that will make up the main categories of sampling at the waste sites.

g. For waste sites that have an expected depth of contamination of less than 4 ft, the following will occur:

- Waste sites will be sampled by hand.
- The sampling crew will have one field sampler, one RCT, and one facility supervisor. Equipment will be hand tools and a pickup truck. Sample rate will be 2 hours per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- One sample will be taken from each excavation hole. The depth of the sample will be determined by analysis of the waste site data and history.

h. For waste sites that have an expected depth of contamination of 4 to 10 ft:

- Waste sites will be sampled using a mini excavator.
- A sampling crew will have one operator, one teamster, one field sampler, one RCT, and one facility supervisor. Equipment will be a mini excavator and a 1-ton pickup truck with trailer. Sample rate will be 1 hour per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- Two samples will be taken from each excavation hole. The depth of the sample will be determined by analysis of the waste site data and history.

i. For waste sites that have an expected depth of contamination of 10 ft or more, the following will occur:

- Waste sites will be sampled using a truck-mounted auger drill rig.
- A sampling crew will have two operators, one teamster, one laborer, one field sampler, one RCT, and one facility supervisor. Equipment will be a truck-mounted auger drill rig and a 1-ton pickup truck with trailer. Sample rate will be 2 hours per sample.
- The sample preparation prior to lab analysis and follow up report will require a sample technician for 4 hours and a supervisor for 0.5 hour for each group of four samples.
- Two samples will be taken from each borehole. The depth of the sample will be determined by analysis of the waste site data and history.

3. Confirmatory Process Radiological Grid Surveys

a. Before the start of the field sampling process, each waste site will have a Radiological Grid Survey of the site surface. The surveys will determine the areas of concern that could require sampling.

b. Completion of surveys for waste sites that are less than 1 a (43,560 ft^2) will require 2 hours of survey crew and equipment (pickup truck with trailer and radiation survey equipment) time.

c. Completion of surveys for waste sites that are greater than 1 a (43,560 ft^2) will take 2 hours of survey crew and equipment time for each additional acre of surface.

d. The surveys will cover 50 percent of the surface area.

e. Each site will require a report on the radiological survey performed at the completion of the fieldwork. Each report will require 8 hours of RCT support, 8 hours of health physicists, 1 hour of QA, and 1 hour of supervisor time.

4. Confirmatory Process Final Report

a. After the completion of site sampling (including analysis report) and the radiological site report, a preliminary report will be produced to help determine future action at each waste site. The report will include the preliminary waste site information from the remedial engineering phase.

b. The following preparation time is planned for the confirmatory process final report: environmental engineer/scientist, 80 hours; drafter/engineering technician, 40 hours; and survey crew, 9 hours.

3.4 Removal, Treatment, and Disposal Alternative

Ditches, retention basins, underground structures, unplanned releases, and building foundations requiring removal are excavated to the required depth and contaminated material is removed to the ERDF for disposal. The sites are then backfilled and remediated. Excavation depth and width are different for each type of waste site.

3.4.1 General Assumptions

This alternative includes the following general assumptions.

- The RTD work scope will not affect any operating facility or structure.
- All waste sites either are shut down or are not currently in use.
- All pipelines or other utilities have been previously isolated from the waste sites.
- All contaminated liquids, sludge, or other loose debris have been removed from the retention basins, cribs, trenches, ditches, French drains, and injection wells.
- Four types of RTD cost models are based on certain types of expected remediation work for this OU. The four types of cost models are standard RTD, very small sites, surface RTD sites, and the rail siding removal. All cost models can be for a standalone site or a group of sites.
  - The standard RTD cost model covers sites that have a maximum excavation depth of 35 ft, surface or subsurface concrete/steel demolition, pipeline removal, or any combination of the three. Typical sites covered by this model are trenches, ditches, retention basins, underground tanks, foundations, ponds, and septic drain fields.
  - The very small site cost model is for sites that have a contaminated waste removal of less than 100 yd^3 and a maximum depth of 10 ft. These sites should have a short duration time for the work (2 weeks or less). Typical sites covered by this model are small, unplanned releases, drains, and dumping areas.

- The surface RTD sites cost model is for sites that have maximum excavation depth of 4 ft and no demolition or pipeline removal. Typical sites covered by this model are unplanned releases (e.g., surface spills) and dumping areas.
- The rail siding removal is only for sites that involve the removal of a rail and ties as part of the RTD work. Most of these sites remove approximately 2 ft of contaminated ballast and subgrade.

3.4.2 General Assumptions for Standard Removal, Treatment, and Disposal Process

The standard RTD process includes the following assumptions.

1. Fieldwork (e.g., mobilization/demobilization, excavation, backfill, revegetation, and some of the post construction work) will be performed by an FP contractor. The project management, RCT support, sampling, and safety oversight will be performed by FH. The waste disposal work involved with hauling from the site to the ERDF and ERDF dumping cost/fees will be performed by the environmental restoration contractor responsible for the ERDF.
2. Mobilization and startup include site training; mobilization of equipment and personnel; installation of temporary construction fences; construction of staging/container storage areas and access roads; and setting up office, change, and storage trailers with utilities, temporary survey buildings, and decontamination areas. The assumption for the 200-MG-1 OU is that 10 waste sites will be remediated per the FP contract. The mobilization costs will be prorated over the 10 sites.
3. The excavation sites will have contaminated waste removed. The sides of the excavation will be sloped at 1.5:1 to the bottom of the excavation, except for those sites that do not require the excavation to go below 5 ft. During the removal process, heavy equipment will be kept out of the excavation site.
4. For excavation sites, overburden will be removed with a 2- to 3-yd^3 excavator and two haul trucks. The soil will be stockpiled near the waste site. A highway truck with a water tank trailer is used to control dust during this activity. The production rate for one crew is 146 yd^3/hr. An FH RCT supports the work at 1.5 hours per excavation crew hour.
5. Contaminated waste will be excavated using a 2- to 3-yd^3 hydraulic crawler excavator. The contaminated soil will be directly placed into lined ERDF containers and hauled from the excavation site. A highway truck with a water tank trailer is used to control dust during this activity. Crew labor consists of one operator, one laborer, and one truck driver. The production rate for one crew is 52 yd^3/hr. An FH RCT supports the work at 1.5 hours per excavation crew hour.
6. An industrial safety technician will be onsite at all times during the excavation process to monitor for unplanned hazardous gases.
7. Soil samples will be taken from the overburden and the ERDF containers for verification at the completion of the excavation. For the 200-MG-1 OU, the following sampling process (based on the Multi Increment Sampling process) is to be used.
   a. Sampling required for ERDF waste
      - The planning cost is $1,434 per sample.

b. Noncontaminated soil sampling

- The soil being sampled is the overburden that is uncontaminated and will not be removed from the site.
- For planning purposes, there will be one overburden stockpile for every 5,000 yd^3 of overburden soil.
- There will be one sample per stockpile.
- Additional focused sampling will be required at a minimum of one sample or 15 percent of the total number of noncontaminated soil samples, whichever is greater.
- The planning cost is $7,016 per sample for the full suite of analysis and $3,303 per sample for the radiological suite of analysis.

c. Radiological grid surveys

- This process will occur once at the completion of the excavation process and before the pre-verification process sampling starts.
- Sites that are less than 1 acre (43,560 ft^2) will take 2 hours of survey crew and equipment time to complete a survey.
- Sites that are greater than 1 acre (43,560 ft^2) will take 2 hours of survey crew and equipment time for each additional acre of surface to complete a survey.
- Sites will be surveyed at 50 percent of the surface area.

d. Pre-Verification Process Sampling

- These samples are the preliminary samples to determine if all of waste has been excavated from a site.
- This process will happen once during the excavation process.
- If the samples show that the site has met the requirement, then the verification process will start.
- The minimum number of samples per site will be based on size of the waste site:
  - Sites <15,000 square feet – One samples
  - Sites 15,000 to 25,000 square feet – Two samples
  - Sites 25,000 to 35,000 square feet – Three samples
  - Sites 35,000 to 45,000 square feet – Four samples
  - Sites 45,000 to 100,000 square feet – Five samples
  - Sites 100,000 to 150,000 square feet – Six samples
  - Sites 150,000 to 200,000 square feet – Seven samples
  - Sites >200,000 square feet – Eight samples.
- The planning cost is $1,046 per sample.

e. Verification Process Sampling

- These samples are the final samples to show that all waste has been removed from the site.
- This process happens once after the completion of the excavation process and the pre-verification process/analysis confirms removal of all the waste.
- The minimum number of samples per site will be based on size of the waste site:
  - Sites <15,000 square feet – One sample
  - Sites 15,000 to 25,000 square feet – Two samples
  - Sites 25,000 to 35,000 square feet – Three samples
  - Sites 35,000 to 45,000 square feet – Four samples
  - Sites 45,000 to 100,000 square feet – Five samples
  - Sites 100,000 to 200,000 square feet – Six samples
  - Sites >200,000 square feet – Seven samples.
- Additional focused sampling will be required. It will be a minimum of one sample or 15 percent of the total number of verification soil samples, whichever is greater.
- Required QA samples will be a minimum of two samples or 5 percent of the total number of verification process samples, whichever is greater.
- The planning cost is $5,722 per sample for onsite lab analysis and $1,293 per sample for offsite lab analysis and shipping; total cost is $7,016 per sample for the full suite of analysis. If the sampling is to support the radiological analysis, then the cost is $3,303 per sample.

f. Air Monitoring and Sampling – Environmental

- The environmental air monitoring will involve a round of samples from both air monitors at the start of the project, at the completion of work, and quarterly during the project.
- For waste sites with an area less than 15,000 square feet and with less than 150 yd^3 of contaminated waste, the environmental air-monitoring requirement will not apply.
- The cost is $384 per sample.

8. The ERDF container handling and loading process starts with a site haul truck picking up an empty container at the staging area. The container will be moved to a preparation area, where laborers will install a bed liner and a half-time RCT will inspect the container. The haul truck and container proceed to the loading area. After loading, the liner will be sealed and the container is secured by laborers. The container will be moved to the survey building where three RCTs will inspect and survey the container and truck for contamination. From there, the haul truck and container will be weighed on a platform scale and then driven to the storage area. The container will be unloaded from the truck at the storage area. Three trucks are required to support each contaminated excavation crew.

9. The ERDF disposal fee, transportation, and handling costs are estimated at $869 per container. An environmental restoration contractor driver and truck/trailer will move a loaded container to the ERDF and place an empty container in the staging area. The estimated costs include the rental of the containers used. For planning purposes, the capacity of an ERDF container is 13 yd^3 of contaminated waste.

10. Backfilling is performed by the following three different operations:

    a. The moving of the stockpiled overburden back to the excavation site will require one crew. The equipment used by a crew is one 4- to 5-yd^3 loader and two haul trucks. Labor is one operator and two truck drivers. The production rate for one crew is 275 yd^3/hr.

    b. The moving of borrow material to the excavation site typically is performed by one crew hauling from an on-site pit source. The equipment used by a crew is one 5-yd^3 loader, five 32-yd^3 highway dump trucks with trailers, and one water truck. Labor is one operator and seven truck drivers. The production rate for one crew is 185 yd^3/hr.

    c. Spreading and compaction of the backfill at the site is performed by one crew. The equipment used per crew is one 300-hp dozer and one 4,000-gal water truck/trailer. Labor consists of one operator, one truck driver, and one laborer. The production rate for one crew is 275 yd^3/hr.

11. Revegetation of the waste sites outside the Core Area (as designated in DOE/RL-2008-44), includes planting native dry land grass using tractors with seed drills and hand broadcasting. All disturbed areas (e.g., around the waste site, stockpile, staging areas, and access roads) will be replanted. The work includes preparing the site for planting and mulching after the seeding.

12. The FH project management team consists of a part-time project manager, with a full-time field supervisor and part-time engineering support. Part-time QA radiological control and safety personnel provide oversight; other personnel provide part-time support for contract management and project controls. Total hours for this staff are planned at 22.5 hours per day. The duration of this work is based on total project duration.

13. The FP contractor field supervisory team consists of a full-time construction manager and field supervisor, along with part-time QA, construction safety, and clerical support. Two pickup trucks are included in the cost. Total hours for this staff are planned at 21 hours per day. The duration of this work is based on total project duration.

14. Demobilization includes demobilization of equipment and personnel, removing temporary construction fences, construction of staging/container storage areas, access roads, office/change/storage trailers, temporary survey buildings, and decontamination areas. The demobilization costs will be prorated over the 10 sites using the same assumptions as mobilization.

15. Contaminated retention basins, belowground concrete structures, and building foundations will require demolition as part of the removal work. All basins, French drains, belowground structures, and tanks are empty of any sludge or debris before demolition.

    a. Overburden is removed the same as for other contaminated waste site removals.

    b. Building foundations will be excavated to a minimum of 1 ft outside each foundation wall and 1 ft below the lowest point of the structure. All soil excavated within this boundary will be considered contaminated waste.

    c. Concrete structures and slabs will be reduced to rubble with an impact hammer, pulverizer, or crusher mounted on a hydraulic excavator. After that, the debris will be loaded into an ERDF container. Concrete retention basins or other structures that have been backfilled with low strength, controlled-density fill will have the controlled-density fill removed by excavation. The controlled-density fill will be handled the same as contaminated soil.

d. Steel structures or tanks are to be cut up using a shear mounted on a hydraulic excavator. After that, the debris will be loaded into an ERDF container.

e. The ERDF containers have a 6-in. sand bed on the bottom of the liners and bedding sand placed with the demolition debris to ensure the liners are not damaged.

f. The excavation of the overburden soil, the processing of ERDF containers, sampling, backfilling, and revegetation of the excavation will be the same as described for other standard RTD sites.

3.4.3 General Assumptions for Very Small Site Removal, Treatment, and Disposal Process

The small site RTD process includes the following assumptions.

1. Fieldwork (e.g., mobilization/demobilization, excavation, backfill, revegetation, and some of the post construction work) will be performed by an FP contractor. The project management, RCT support, sampling, and safety oversight will be performed by FH. The waste disposal work involved with hauling from the site to the ERDF and ERDF dumping cost/fees will be performed by the environmental restoration contractor responsible for the ERDF.

2. Mobilization and startup is the same as described in Section 3.4.2, Number 2. The assumption for 200-MG-1 OU is that 20 very small waste sites will be remediated per FP contract. The mobilization costs will be prorated over the 20 sites.

3. The excavation sites will have contaminated waste removed. The sides of the excavation will be sloped at 1.5:1 to the bottom of the excavation, except for those sites that do not require the excavation to go below 5 ft. During the removal process, heavy equipment will be kept out of the excavation site.

4. For excavation sites, overburden will be removed with a 1.25-yd^3 loader backhoe. The soil will be stockpiled near the waste site. A highway truck with a 3,000-gal water tank is used to control dust during this activity. The production rate for one crew is 25 yd^3/hr. For most sites that require the full suite of sample analysis and where there is less than 100 yd^3 planned overburden removal, the soil is considered contaminated.

5. Contaminated waste will be excavated using a 1.25-yd^3 loader backhoe. The contaminated soil will be placed directly into lined ERDF containers and hauled from the excavation site. A highway truck with a 3,000-gal water tank is used to control dust during this activity. Crew labor consists of one operator, one laborer, and one truck driver. The production rate for one crew is 12 yd^3/hr. An FH RCT supports the work at 1.5 hours per excavation crew hour.

6. The sampling process is the same as described in Section 3.4.2, Number 7.

7. The ERDF disposal costs for the very small sites are based on the cost per ton of waste and the cost to transport a container to the ERDF. The disposal fee at the ERDF is $23.94 per ton for waste generated at 200 West or 200 East Areas. The ERDF disposal fee shown in the estimate is based on the tons of waste. The second part includes the driver labor, transportation charge, and Environmental Remediation Contract direct labor charges. Transportation and handling costs are based on 0800732. The average transportation and handling cost is $391.47 per container for waste generated at the 200 West or 200 East Areas. The costs shown in the estimate are based on the number of containers. For planning purposes, the capacity of an ERDF container is 13 yd^3 of contaminated waste.

8. After completion of the excavation and sampling processes, the site will be backfilled or regraded, depending on the depth of the excavation. For sites that are excavated less than 4 ft deep, the site will

be regraded. Sites excavated deeper than 4 ft will be backfilled. In either case, any stockpiled overburden will be returned to the excavated area. The moving of the stockpiled overburden back to the excavation site will require a crew using 1.25-yd^3 loader backhoe. The production rate for one crew is 100 yd^3/hr.

9. Regrading a waste site involves the spreading of overburden material and re-contouring of the site after the excavation and sampling work has been completed. The area to be regraded will have 25 ft added to each side to help blend the disturbed area with the existing ground. One 1.25-yd^3 loader backhoe will be the only piece of equipment used to perform the regrading. A highway truck with a 3,000-gal water tank is used to control dust during this activity. The production rate for one crew is 200 yd^2/hr.

10. Backfilling is performed by two different operations. The moving of the stockpiled overburden back to the excavation site will be conducted as described in Number 8. The moving of borrow material to the excavation site typically is performed by one crew hauling from an on-site pit source. The equipment used by a crew is one 4-yd^3 loader, four 16-yd^3 highway dump trucks, and one water truck. The production rate for one crew is 120 yd^3/hr. Spreading and compaction of the backfill at the site is performed by one crew. The equipment used per crew is one dozer and one 3,000-gal water truck. The production costs for one crew is based on the time required to move stockpiled and borrow material to the site.

11. Revegetation of the waste sites outside the Core Area (as designated in DOE/RL-2008-44), will include two different processes depending on the size of the site. For sites larger than 0.5 a, the process will be the same as described in Section 3.4.2, Number 11. For sites less than 0.5 a, three laborers will prepare and reseed the site using hand tools. The production rate is planned as 300 yd^2/hr. All disturbed areas (e.g., around the waste site, stockpile, staging areas, and access roads) will be replanted.

12. The FH project management team is the same as described in Section 3.4.2, Number 12.

13. The FP contractor field supervisory team is the same as described in Section 3.4.2, Number 13.

14. Demobilization is the same as described in Section 3.4.2, Number 14. The demobilization costs will be prorated over the 20 sites using the same assumptions as mobilization.

3.4.4 General Assumptions for Surface Site Removal, Treatment, and Disposal Process

The surface site RTD process includes the following assumptions.

1. Fieldwork (e.g., mobilization/demobilization, excavation, backfill, revegetation, and some of the post construction work) will be contracted to an FP contractor. The project management, RCT support, sampling, and safety oversight will be performed by FH. The waste disposal work involved with hauling from the site to the ERDF and ERDF dumping cost/fees will be performed by the environmental restoration contractor responsible for the ERDF.

2. Mobilization and startup is the same as described in Section 3.4.2, Number 2. The assumption for 200-MG-1 is that 10 wastes sites will be remediated per FP contract. The mobilization costs will be prorated over the 10 sites.

3. The sides of the excavation will not be sloped for these sites because the excavation depth will not be below 4 ft.

4. At waste sites with stabilization cover or other backfill, the overburden will be removed with a 4-yd^3 loader, a part-time, medium sized crawler dozer, and two 16-yd^3 end dump trucks. The soil will be stockpiled near the waste site. A highway truck with a 4,000-gal water tank is used to control dust during this activity. The production rate for one crew is 160 yd^3/hr. For most sites that require the full suite of sample analysis and where there is less than 600 yd^3 planned overburden removal, the soil is considered contaminated. For most sites that require only the radiological suite of sample analysis and where there is less than 250 yd^3 planned overburden removal, the soil is considered contaminated.

5. Contaminated waste will be excavated using a 4-yd^3 loader and a part-time, medium sized crawler dozer. A highway truck with a 4,000-gal water tank is used to control dust during this activity. The production rate for one crew is 65 yd^3/hr. The contaminated soil will be directly placed into lined ERDF containers and hauled from the excavation site. An FH RCT supports the work at 1.5 hours per excavation crew hour.

6. The sampling process is the same as described in Section 3.4.2, Number 7.

7. The ERDF container handling and loading process is the same as described in Section 3.4.2, Number 8.

8. The ERDF disposal fee, transportation, and handling costs are the same as described in Section 3.4.2, Number 9.

9. Backfilling of sites that had overburden removed will start after the acceptance of sample analysis has been completed. The moving of the stockpiled overburden back to the excavation site will require one crew. The equipment used by a crew is a 4-yd^3 loader and two haul trucks. The production rate for one crew is 275 yd^3/hr.

10. Regrading a waste site involves the spreading of any overburden material and recontouring of the site after the excavation and the acceptance of sample analysis has been completed. The area to be regraded will have 50 ft added to each side to help blend the disturbed area with the existing ground. Medium sized crawler dozer and a part-time, 4-yd^3 loader will be the equipment used for this work. A highway truck with a 4,000-gal water tank is used to control dust during this activity. The production rate for one crew is 500 yd^2/hr.

11. Revegetation of the waste site is the same as described in Section 3.4.2, Number 11.

12. The FH project management team is the same as described in Section 3.4.2, Number 12.

13. The FP contractor field supervisory team is the same as described in Section 3.4.2, Number 13.

14. Demobilization is the same as described in Section 3.4.2, Number 14.

3.4.5 General Assumptions for Rail Siding Site Removal, Treatment, and Disposal Process

The rail siding site RTD process includes the following assumptions.

1. Some of the rail siding waste sites have been combined with adjacent, overlapping, or adjoining rail sidings waste sites to form a larger, combined removal site. These combined sites are handled as one rail siding waste site for calculation and estimating purposes.

2. Contamination at several sites has been described as spotty from leaking valves during train movements. At these sites, the contaminated waste volumes have been assumed to be minor. All rail/ties are to be removed and sent to the ERDF, while 10 percent for ballast/rail bed volume is to be sent to the ERDF.

3. Fieldwork (e.g., mobilization/demobilization, excavation, backfill, revegetation, and some of the post construction work) will be performed by an FP contractor. The project management, RCT support, sampling, and safety oversight will be performed by FH. The waste disposal work involved with hauling from the site to the ERDF and ERDF dumping cost/fees will be performed by the environmental restoration contractor responsible for the ERDF.

4. Mobilization and startup are the same as described in Section 3.4.2, Number 2. The assumption for 200-MG-1 OU is that 10 waste sites will be remediated per the FP contract. The mobilization costs will be prorated over the 10 sites.

5. The sides of the excavation will be sloped at 1.5:1 to the bottom of the excavation, except for those sites that do not require the excavation to go below 4 ft.

6. The sampling process is the same as described in Section 3.4.2, Number 7.

7. The excavation of overburden is the same as described in Section 3.4.2, Number 4.

8. The excavation of contaminated soil/waste is the same as described in Section 3.4.2, Number 5.

9. All the ties and rails are removed from the siding and are considered contaminated. Four laborers using pneumatic tools remove all the bolts from the track bars and loosen or remove the anchors and spikes. All miscellaneous track fasteners are collected for disposal by the laborers. A teamster with a flatbed truck pulling a compressor supports the crew. An operator with a hydraulic excavator with a grapple or thumb/bucket follows removing rails and ties. These are sorted and stacked beside the rail bed. This work includes the removal of switches and crossovers. It is assumed that 40 feet of rail siding can be removed per hour. An FH RCT supports the work at 1.5 hours per excavation crew hour.

10. All contaminated ties and rails will be cut into manageable lengths for disposal at the ERDF. An operator with a hydraulic excavator with a shear cuts the contaminated rails and ties into 8 to 11 ft sections. Any rail or ties shorter than 8 to 11 ft are not cut. A laborer supports the cutting process. This item of work includes the cutting of switches and crossovers. Most ties are less than 9 to 10 ft in length and do not need to be cut. Rail sections are assumed to be 39 ft and will be cut in four places. All items that have been cut are restacked. An FH RCT supports the work at 1.5 hours per excavation crew hour.

11. The next step is the loading of ERDF containers with tie and rail sections. The work of preparing the ERDF containers and moving them to the loading area are covered under other items of work. An operator using a hydraulic excavator with a grapple or thumb/bucket will load the ERDF containers. A laborer supports the work. Each ERDF container is expected to hold 73 of the 8 ft rail sections or 114 ties. Two containers are required for each contaminated switch or crossover. The assumed productions rate for this work is 0.5 hour to load each ERDF container. An FH RCT supports the work at 1.5 hours per excavation crew hour.

12. The demolition of underground concrete structures or foundations is the same as described in Section 3.4.2, Number 15.

13. The ERDF container handling and loading process is the same as described in Section 3.4.2, Number 8.

14. The ERDF disposal fee, transportation, and handling costs are the same as described in Section 3.4.2, Number 9.

15. Backfilling process is the same as described in Section 3.4.2, Number 10.
16. Revegetation of the waste site is the same as described in Section 3.4.2, Number 11.
17. The FH project management team is the same as described in Section 3.4.2, Number 12.
18. The FP contractor field supervisory team is the same as described in Section 3.4.2, Number 13.
19. Demobilization is the same as described in Section 3.4.2, Number 14.

3.4.6 General Assumptions for Removal, Treatment, and Disposal Process of Waste Greater than 100 nCi/g Transuranic Radionuclides

Excavations at sites that include waste that potentially contains greater than 100 nCi/g transuranic radionuclides will require special handling and disposal at the Waste Isolation Pilot Plant (WIPP). Excavation includes mobilization/demobilization, removal of clean soil, backfilling the site, and other site work. For the cost estimate, the volume of waste requiring disposal at WIPP is based on the interior volume of the underground vaults. The potential lateral spread of contaminants is not included. Soil removal required for side slopes and access during the excavation is handled the same as a standard RTD as outlined in Section 3.4.2. The following assumptions apply.

- The contaminated waste is placed into WIPP standard waste boxes (SWB). For planning purposes, each box is expected to handle 1.15 m^3 (1.5 yd^3) of waste.
- The field crews can fill, cover, inspect, sample, radiological survey, and move two SWBs per hour. The boxes are direct-loaded with a small hydraulic excavator at the waste site.
- The filled SWBs are moved to a decontamination area, then to a field survey area before being temporarily staged at the waste-site container storage area.
- The SWB is field screen/surveyed at the site before shipment to the Central Waste Complex. Two technicians, two scientists, and one equipment operator perform the field-screening work at the site.
- Waste shippers will provide oversight of the field operation and the required waste designation reports to support shipment to the Central Waste Complex.
- After the initial field screening/survey of the waste, those SWBs determined to contain transuranic radionuclides are moved six SWBs per truckload to the Central Waste Complex.
- The Central Waste Complex will perform processing, headspaces sampling, nondestructive analysis, and temporary storage. The waste storage rate is $12,872 per SWB.
- After completion and acceptance of the waste profile study, the SWBs are shipped to WIPP for storage. Six SWBs can be loaded on a truck for shipment to WIPP. The planning cost of one truck trip to WIPP is $12,500.
- At this time, there are no handling costs or storage rates for the SWBs after arriving at WIPP.

For sites with transuranic-contaminated waste; soil samples will be taken of the overburden, from ERDF containers, and for verification at the completion of the excavation. The soil-sampling costs are based on the contaminants expected to be found at the sites and are as follows:

- Noncontaminated soil sampling
  - Maximum of six samples or one sample per cubic yard, whichever is less
  - QA sample required: One
  - Planning cost per sample: $754
  - The soil being sampled is the overburden that is uncontaminated and will not be removed from the site.
- Sampling required for waste going to ERDF
  - One sample required for every 70 containers
  - Minimum of six samples per site
  - QA samples required: a minimum of one sample or 5 percent of total ERDF samples, whichever is greater
  - Planning cost per sample: $452.
- Pre-verification process sampling
  - One sample required per 2,500 m^2 (50 by 50 m) (26,899 ft^2 [82 by 82 ft])
  - Minimum of six samples per site
  - QA samples required: a minimum of two samples or 5 percent of total the samples, whichever is greater
  - Planning cost per sample: $2,227
  - These samples are the preliminary samples needed to see if all of the required waste has been removed from a site being excavated
  - This process is expected to happen twice during the excavation process
  - If the samples show that the site has met the requirement, then the verification process will start.
- Verification process sampling
  - One sample required per 625 m^2 (25 by 25 m) (6,724 ft^2 [82 by 82 ft])
  - Minimum of six samples per site
  - QA samples required: a minimum of two or 5 percent of total the samples, whichever is greater
  - Planning cost per sample: $9,314
  - These samples are the final samples needed to see if all of the required waste has been removed from a site being excavated
  - This process happens once during the excavation process.

- Sampling crews
  - Verification sampling: 1 hour for each sample taken by a crew consisting of one RCT and a sampler technician
  - Other sampling (air, ERDF, noncontaminated): 2 hours for each sample taken by a crew consisting of one RCT and a sampler technician.

3.4.7 Site Specific Assumptions – Removal, Treatment and Disposal

3.4.7.1 200-W-22 Site

This waste site consists of abandoned concrete vaults, tanks basins, and building foundations that were decontaminated and decommissioned in 1984. The quantities calculations are based on the site decommissioning drawings for the 203-S, 204-S, and 205-S Facilities. The 203-S Basin has been backfilled with soil from the surrounding site, then covered with 9 in. of additional soil. The 204-S Basin had the upper 2 ft of the 5-ft walls removed, backfilled, and 2 ft of cover soil added. The 205-S Vault was backfilled with local soil then capped with 6 in. of concrete and covered with 2 ft of cover soil. The 205-S Building foundation has been capped with 1 ft of concrete after the building removal. The site was then covered with 2 ft of local soil. The building utility piping and steam lines are still present at the site along with Tank Farm transfer lines. The rail siding to this site was removed in 1984.

The RTD of this site includes removal of all foundations, vaults, and basins along with removing the upper 2 ft of soil from the entire waste site surface. The limits of contaminated soil around the foundations, vaults, and basins are 1 ft outside and below the concrete structure. Steam lines, other utilities, and tank farm transfer lines are not included in the work since these will be removed during other remediation work.

3.4.7.2 216-A-40 Retention Basin

This site is a rubber lined retention basin that is 400 by 20 ft with sloping walls. The volume of pipeline debris has been calculated based on construction drawings. The excavation limit of contaminated soil removal is 8 ft below the structure. The basin is currently backfilled with local soil and has a sign posted. At completion, the excavated site will be backfilled to current site ground level.

3.4.7.3 216-A-42 Retention Basin

This site is a covered, concrete-lined retention basin that is 402 by 78 ft. The waste site was widened to 422 by 114 ft to include foundation/retaining walls that support the roof over the retention basin. The volume of concrete walls, floors, and weirs has been calculated based on design drawings. The precast concrete roof sections are based on a suppliers catalog cut sheet for a similar design roof section. The excavation limit of contaminated soil removal is 10 ft below the structure. The basin has not been backfilled and is currently empty. The empty volume has been calculated at 9,060 yd^3. The roof is planned to be demolished in place by using an impact hammer and a crusher/pulverizer mounted on an excavator. At completion, the excavated site will be backfilled to current site ground level.

3.4.7.4 207-B Retention Basin

The design of the retention basin has an overall dimension of 249 by 125 ft with a center divider/weir that splits the basin into two equal parts. The basin is concrete lined with sloping walls 1 ft thick. The excavation limit of contaminated soil removal is 1 ft outside the concrete structure. The basin has not been backfilled and is currently empty. The empty volume has been calculated at 5,730 yd^3. The volume of concrete walls, floors, and weirs has been calculated based on design drawings. At completion, the excavated site will be backfilled to current site ground level.

3.4.7.5 207-SL Retention Basin

The design of the retention basin has an overall dimension of 53 by 48 ft with a center divider/weir that splits the basin into two equal parts. The basin is concrete lined with tapered vertical walls 12 to 16 in. thick. The excavation limit of contaminated soil removal is 1 ft outside the concrete structure. The basin has not been backfilled and is currently empty. The empty volume has been calculated at 1,141 yd^3. The volume of concrete walls, floors, and weirs has been calculated based on design drawings. At completion, the excavated site will be backfilled to current site ground level.

3.4.7.6 216-A-59B Retention Basin

This site is a covered concrete lined retention basin that is 303 by 50 ft with corrugated steel pump station. The original site was the 216-A-59 Trench, which later had the retention basin built at the same site. The total dimensions for both waste sites are 457 ft long, 70 ft wide, and 12 ft deep, which includes foundation/retaining walls that support the roof over the retention basin. The pump station is 10 ft in diameter and 18 ft deep. There are two existing berms on each side of the 216-A-59 Trench site that are excavated material left over from building the trench. Part of the northern berm will need to be removed during the excavation of the pump station. The volume of concrete walls, floors, and weirs has been calculated based on design drawings. The precast concrete roof sections are based on a suppliers catalog cut sheet for a similar design roof section. The excavation limit of contaminated soil removal is 10 ft below the structure. The basin has not been backfilled and is currently empty. The empty volume has been calculated at 2,410 yd^3. The roof is planned to be demolished in place by using an impact hammer and a crusher/pulverizer mounted on an excavator. The pump station also will be removed at the same time as the basin. At completion, the excavated site will be backfilled to current site ground level.

3.4.7.7 Old Central Shop Area Site

This site is a 130-acre area of old building foundations. There are 70 known foundation sites, of which 34 sites are potentially contaminated and will need to be removed. Construction drawings for these sites are not available for the foundations. The following three foundation types are assumed: 8 in. thick slab used for 8-ft-tall single-story buildings, 6 in. slab with 12-in.-wide footing used for 12-ft-tall single-story buildings, and the 6 in. slab with 24-in.-wide footing used for 15-ft-tall two-story buildings. At the completion of the foundation removal, the excavated sites will be backfilled to current site ground level.

3.4.7.8 200-E-101 Site

This site is an abandoned experimental lysimeter site composed of two 10-ft diameter caissons that are 60 ft deep and an underground instrument room. The caissons have been filled with native soil with several pressure tubes, thermocouples, and associated cables at various depths and locations. A vertical neutron tube has been installed in the center of each caisson. Polyurethane insulation has been sprayed on the inside of the caissons. It is assumed that the caissons are structurally sound. The soil and waste material will be removed from the caissons by hand digging and truck-mounted vacuum equipment. All material removed by the vacuum equipment will be spread out so that a radiological survey can be performed before being moved to a stockpile area. All insulation, pressure tubes, thermocouples wiring, and neutron tubing will be removed during the excavation process. The bottom 2 ft of the caisson soil will be assumed to be contaminated with lead and will be sent to the ERDF for disposal. No radiological contamination is expected at the site. The top 4 ft of both caissons will be removed at the completion of the excavation process. The caissons will be backfilled with the previously removed clean soil and local soil to bring the fill level with the surrounding area.

3.4.7.9 200-W-21 Site

This rail siding removal site includes two pump stations that are to be demolished and removed. The steel super structures of the pump stations were previously removed. Currently, the foundations and under track portion of the pump stations remain. The demolition process will be the same as other belowground structures. The removal rails and ties will follow the process outlined in Section 3.4.5, Numbers 9 through 11.

3.4.7.10 200-E-58 Site

This site is an underground tank that is one quarter filled with limestone. All other liquids have been removed. The tank is a 12- ft-diameter and 12- ft high stainless steel tank on a 1.5-ft-thick concrete pad that is 1 ft wider than the tank. The empty volume of the tank has been calculated at 18 yd^3.

3.4.7.11 Septic Systems

Septic systems in general were assumed to consist of at least one septic tank (including related structures) and drain field. The size and depth of the tank was determined from construction drawings when available or from Waste Information Data System database descriptions. However, if septic system specific dimensions were not found, waste site dimensions were applied based on information from other similar septic sites.

3.4.7.12 218-E-7 Vaults

This site is made up of three underground disposal vaults that contain mixed contamination and transuranic-contaminated solid lab waste. One vault is a concrete and the other two are timber. The waste will be retrieved from the vaults by removing an existing concrete slab, then excavating the cover soil and then removing the top of the vault. The waste inside the vault will be removed using the process described in Section 3.4.6. It is expected that the contamination has not spread from the interior of the vaults. The backfilling process will be the same as other sites.

3.4.7.13 218-W-7 and 218-W-8 Vaults

These two sites are underground disposal vaults that contain mixed contamination. The mixed waste can be retrieved and sent to ERDF the same as typical sites for this OU. The process used will be the same as a standard RTD. It is assumed that the contamination has not spread from the interior of the vaults. The backfilling process will be the same as other sites.

3.4.7.14 218-W-9 Burial Ground

This waste site consists of a burial ground for scrap metal. An underground pipeline that has leaked in the past borders the site but is not in the zone to be excavated. The scrap metal is assumed to be in small pieces and therefore will not cause problems with excavation. A standard RTD process is to be used for this site.

3.4.7.15 231-W-51 Vault w/tanks and UPR-200-W-130

This waste site consists of an underground concrete vault with two tanks and associated piping. An unplanned release cause by a minor pipe leak is located outside the vault. The larger tank contains about 1,500 gal of slightly radioactive water that can be removed and sent to an onsite water treatment facility. The larger tank will then be removed in one piece from the vault and sent to ERDF for disposal. Prior to burial, the tank will be backfilled with grout, controlled density fill, or concrete. The smaller tank contains about 500 gal of slightly radioactive water and 12 gal of transuranic-contaminated sludge. It is assumed that 400 gal of the cover water can be removed and sent to an onsite water treatment facility. The remaining water and sludge is to be solidified in the tank. The tank will then be removed in one piece and

placed in a special shipping container. The container is field screen/surveyed at the site before shipment to the Central Waste Complex. Two technicians, two scientists, and one equipment operator perform the field-screening work at the site. The Central Waste Complex will perform processing, headspaces sampling, nondestructive analysis, and temporary storage. After completion and acceptance of the waste profile study, the container will be moved to WIPP for storage. The container will be loaded on a truck for shipment to WIPP. The planning cost of one truck trip to WIPP is $12,500. The vault and the unplanned release are assumed to be slightly contaminated and will demolished/excavated using the standard RTD processes.

3.5 Cost Reporting

A summary of the present-worth costs for all alternatives (presented in Table A-10) are included in DOE/RL-2008-44, Chapter 5.

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Appendix A

Cost Estimate Tables

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Introduction

This appendix presents the cost estimates tables for the 200-MG-1 Operable Unit engineering evaluation/cost analysis removal action.

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Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
200 CP	Pit/Dumping Area	210	210	0	0.0	0.0	1.02	Surface RTD	All	210	210	1	0	1,633	0	1,633	0	0	1,633	8
200-E-1	Dumping Area	9	9	0	1.5	1.5	0.01	RTD	All	27	27	6	0	16	2	90	0	72	18	9
200-E-2	Unplanned Release	85	85	0	1.5	1.5	0.17	RTD	All	103	103	6	0	1,341	0	1,982	265	376	1,606	13
200-E-6	Septic Tank	31	11	0	1.5	1.5	0.01	RTD	All	73	53	14	0	178	56	1,091	0	858	234	9
200-E-7	Septic Tank	16	8	0	1.5	1.5	0.01	RTD	All	37	29	7	0	40	13	156	12	120	65	9
200-E-7	Septic Tank Drain Field	65	50	2	1.5	1.5	0.08	RTD	All	74	59	3	1	241	0	423	0	182	241	8
200-E-13	Dumping Area	210	210	0	0.0	0.0	1.02	Surface RTD	All	210	210	1	0	1,633	0	1,633	0	0	0	8
200-E-26	Unplanned Release	79	20	2	1.5	1.5	0.04	RTD	All	130	71	17	2	878	0	3,403	0	2,525	878	14
200-E-29	Unplanned Release	292	185	1	0.0	0.0	1.25	Surface RTD	Rad only	292	185	2	1	2,001	0	4,001	0	2,001	0	11
200-E-46	Dumping Area	210	210	0	0.0	0.0	1.02	RTD	All	210	210	1	0	1,623	10	1,633	0	0	1,633	14
200-E-53	Unplanned Release	120	120	0	0.0	0.0	0.34	Surface RTD	Rad only	120	120	1	0	533	0	533	0	0	0	7
200-E-58	Neutralization Tank	13	13	3	1.5	1.5	0.01	RTD	All	73	73	20	3	78	14	2,036	18	1,927	110	13
200-E-101	Experiment[a]	10 x 2	10 x 2	0	0.0	0.0	0.01	RTD	All	10 x 2	10 x 2	60	0	12	0	350	0	338	12	25
200-E-103	Unplanned Release	400	400	2	0.0	0.0	3.68	Surface RTD	All	400	400	3	2	5,926	0	17,778	0	11,852	5,926	27
200-E-107	Unplanned Release	376	114	2	0.0	0.0	0.99	Surface RTD	Rad only	376	114	3	2	1,588	0	4,763	0	3,175	0	12
200-E-109	Unplanned Release	249	62	1	0.0	0.0	0.36	Surface RTD	Rad only	249	62	2	1	572	0	1,144	0	572	0	8
200-E-110	Dumping Area	87	58	0	0.0	0.0	0.12	Very Small RTD	Rad only	87	58	1	0	187	0	187	0	0	187	7
200-E-115	Unplanned Release	40	33	1	0.0	0.0	0.04	Very Small RTD	Rad only	40	33	2	1	98	0	98	0	0	0	6
200-E-117	Unplanned Release	10	10	0	0.0	0.0	0.01	Very Small RTD	Rad only	10	10	1	0	4	0	4	0	0	0	4
200-E-121	Unplanned Release	656	61	0	0.0	0.0	0.92	Surface RTD	Rad only	656	61	1	0	1,482	0	1,482	0	0	0	8
200-E-123	Unplanned Release	23	15	2	1.5	1.5	0.01	Very Small RTD	Rad only	38	30	5	2	138	0	138	0	0	138	6
200-E-125	Unplanned Release	22	15	0	0.0	0.0	0.01	Very Small RTD	Rad only	22	15	1	0	12	0	12	0	0	0	5

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
200-E-128	Unplanned Release	9	9	0	1.5	1.5	0.01	Very Small RTD	Rad only	30	30	7	0	127	0	127	0	0	127	5
200-E-129	Unplanned Release	18	25	1	0.0	0.0	0.02	Very Small RTD	Rad only	18	25	2	1	33	0	33	0	0	0	5
200-E-139	Unplanned Release	410	98	0	0.0	0.0	0.93	Surface RTD	Rad only	410	98	1	0	1,488	0	1,488	0	0	0	8
200-E BP	Burn Pit	300	180	0	0.0	0.0	1.24	RTD	All	300	180	1	0	1,960	40	2,000	a	0	2,000	15
200-E PD	Ditch	366	50	8	1.5	1.5	0.43	RTD	All	396	80	10	8	1,356	0	9,256	0	7,900	1,356	26
200-W-1	Mud Pit	100	50	0	0.0	0.0	0.12	Surface RTD	All	100	50	3	0	556	0	556	0	0	0	6
200-W-2	Spoils Pile/Berm	52	52	9	1.5	1.5	0.07	RTD	All	97	97	15	9	601	0	3,365	0	2,764	601	14
200-W-3	Dumping Area	212	212	0	0.0	0.0	1.04	Surface RTD	All	212	212	1	0	1,665	0	1,665	0	0	0	8
200-W-6	Dumping Area	54	54	0	1.5	1.5	0.07	RTD	All	99	99	15	0	1,566	54	3,533	0	1,913	1,620	17
200-W-11	Dumping Area	157	157	0	0.0	0.0	0.57	RTD	All	157	157	1	0	896	17	913	0	0	913	10
200-W-12	Dumping Area	12	6	0	1.5	1.5	0.01	Very Small RTD	All	27	21	5	0	59	0	59	0	0	59	5
200-W-14	Dumping Area	40	30	0	1.5	1.5	0.03	RTD	All	64	54	8	0	356	0	690	0	334	356	9
200-W-22	Foundations/ Unplanned Release	195	158	0	1.5	1.5	0.71	RTD	All	201	164	2	0	3,614	798	10,316	0	5,904	4,412	42
200-W-33	Dumping Area	412	412	0	0.0	0.0	3.90	Surface RTD	All	412	412	1	0	6,287	0	6,287	0	0	0	14
200-W-51	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	169	6	175	0	0	175	9
200-W-51	Septic Tank Drain Field	59	57	0	0.0	0.0	0.08	RTD	All	59	57	4	0.0	494	0	494	0	0	494	8
200-W-53	Unplanned Release	220	220	1	0.0	0.0	1.12	Surface RTD	Rad only	220	220	2	1	1,793	0	3,585	0	1,793	0	11
200-W-54	Unplanned Release	510	430	0	0.0	0.0	5.04	Surface RTD	Rad only	510	430	1	0	8,122	0	8,122	0	0	0	15
200-W-55	Dumping Area	9	9	0	0.0	0.0	0.01	RTD	All	9	9	1	0	3	8	3	0	0	11	8
200-W-63	Unplanned Release	105	45	0	0.0	0.0	0.11	Surface RTD	Rad only	105	45	2	0	350	0	350	0	0	0	6
200-W-64	Foundation	138	105	0	1.5	1.5	0.34	RTD	Rad only	147	114	3	0	1,328	408	1,736	0	0	1,736	17
200-W-67	Unplanned Release	33	59	2	0.0	0.0	0.05	Surface RTD	Rad only	33	59	3	2	108	0	216	0	108	108	7

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

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		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
200-W-75	Experiment/Test Site	8	8	0	1.5	1.5	0.01	RTD	Rad only	32	32	8	0	16	3	119	0	100	19	9
200-W-80	Spoils Pile/Berm	49	46	1	0.0	0.0	0.06	Surface RTD	Rad only	49	46	2	1	167	0	167	0	0	0	6
200-W-82	Pump Station/Product Piping	40	20	0	1.5	1.5	0.02	RTD	All	58	38	6	0	176	2	334	0	156	178	9
200-W-86	Unplanned Release	10	10	2	0.0	0.0	0.01	Very Small RTD	Rad only	10	10	3	2	11	0	11	0	0	11	4
200-W-90	Unplanned Release	20	10	0	0.0	0.0	0.01	Very Small RTD	Rad only	20	10	1	0	7	0	7	0	0	0	4
200-W-92	Dumping Area	80	30	0	1.5	1.5	0.06	RTD	All	110	60	10	0	889	0	1,667	0	778	889	11
200-W-101	Dumping Area	40	20	0	0.0	0.0	0.02	Surface RTD	Rad only	40	20	1	0	30	0	30	0	0	0	6
200-W-106	Unplanned Release	67	53	0	0.0	0.0	0.09	Surface RTD	Rad only	67	53	1	0	132	0	132	0	0	0	6
200-W ADB	Coal Ash Pit	210	210	0	0.0	0.0	1.02	Surface RTD	All	210	210	1	0	1,633	0	1,633	0	0	1,633	8
200-W BP	Burn Pit	200	200	0	0.0	0.0	0.92	Surface RTD	All	200	200	1	0	1,481	0	1,481	0	0	1,481	8
207-B	Retention Basin	249	125	0	1.5	1.5	0.72	RTD	All	276	152	9	0	3,484	1,161	12,180	5,730	1,805	10,375	43
207-SL	Retention Basin	58	61	0	1.5	1.5	0.09	RTD	All	103	106	15	0	376	373	2,643	1,141	1,894	1,890	12
209-E-WS-3	Valve Pit	11	6	0	1.5	1.5	0.01	RTD	Rad only	38	33	9	0	5	6	220	11	209	22	9
216-A-1	Crib	64	64	11	1.5	1.5	0.10	RTD	All	130	130	22	11	1,669	0	8,554	0	6,885	1,669	25
216-A-3	Crib	53	53	6	1.5	1.5	0.07	RTD	All	113	113	20	6	1,457	0	5,770	0	4,313	1,457	20
216-A-9	Crib	442	42	10	1.5	1.5	0.43	RTD	All	523	123	27	10	11,688	0	41,447	0	29,758	11,688	105
216-A-18	Trench	80	80	17	1.5	1.5	0.15	RTD	All	146	146	22	17	1,185	0	11,292	0	10,107	1,185	29
216-A-20	Trench	25	25	17	1.5	1.5	0.02	RTD	All	106	106	27	17	231	0	5,931	0	5,699	231	17
216-A-28	Crib	9	9	0	1.5	1.5	0.01	RTD	All	54	54	15	0	45	0	833	0	788	45	8
216-A-34	Ditch	280	30	6	1.5	1.5	0.20	RTD	All	325	75	15	6	2,791	9	9,104	0	6,304	2,800	30
216-A-40	Retention Basin	400	20	12	1.5	1.5	0.19	RTD	All	460	80	20	12	2,370	0	16,593	0	14,222	2,370	44
216-A-42	Retention Basin	342	34	0	2.0	2.0	0.27	RTD	All	422	114	20	0	11,335	2,320	22,124	9,057	0	22,124	86
216-B-2-1	Ditch	3,500	6	8	1.5	1.5	0.49	RTD	All	3,536	42	12	8	3,111	0	37,669	0	34,558	3,111	81

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
216-B-2-2	Ditch	3,500	6	8	1.5	1.5	0.49	RTD	All	3,536	42	12	8	3,111	0	37,669	0	34,558	3,111	81
216-B-2-3	Ditch	4,000	6	8	1.5	1.5	0.56	RTD	All	4,036	42	12	8	3,556	0	43,003	0	39,447	3,556	92
216-B-3-1	Ditch	3,200	6	6	1.5	1.5	0.45	RTD	All	3,230	36	10	6	2,844	0	25,089	0	22,244	2,844	58
216-B-3-2	Ditch	3,700	7	6	1.5	1.5	0.60	RTD	All	3,730	37	10	6	3,837	0	30,354	0	26,517	3,837	71
216-B-3-3	Ditch	3,700	3	6	1.5	1.5	0.26	RTD	All	3,730	33	10	6	1,644	0	24,850	0	23,206	1,644	57
216-B-59/59B	Trench/Retention Basin	409	136	0	2.0	2.0	1.28	RTD	All	457	187	12	0	4,927	609	8,182	2,409	3,216	7,945	43
216-C-3	Crib	57	17	8	1.5	1.5	0.03	RTD	All	105	65	16	8	287	0	2,309	0	2,022	287	11
216-C-5	Crib	32	22	11	1.5	1.5	0.02	RTD	All	95	85	21	11	261	0	3,414	0	3,153	261	11
216-C-6	Crib	32	22	10	1.5	1.5	0.02	RTD	All	92	82	20	10	261	0	3,055	0	2,794	261	12
216-C-7	Crib	31	31	5	1.5	1.5	0.03	RTD	All	76	76	15	5	356	0	1,871	0	1,515	356	11
216-C-9	Pond	1,257	230	8	1.5	1.5	6.64	RTD	All	1,290	263	11	8	32,123	0	128,003	0	95,880	32,123	326
216-C-10	Crib	44	17	5	1.5	1.5	0.02	RTD	All	95	68	17	5	332	0	2,269	0	1,937	332	12
216-S-4	French Drain	5	5	22	1.5	1.5	0.01	RTD	All	101	101	32	22	9	0	6,060	0	6,051	9	17
216-S-8	Trench	100	60	27	1.5	1.5	0.14	RTD	All	196	156	32	27	1,111	0	21,675	0	20,564	1,111	47
216-S-22	Crib	112	16	6	1.5	1.5	0.05	RTD	All	157	61	15	6	597	0	3,158	0	2,561	597	13
216-S-16D	Ditch	1,700	4	5	1.5	1.5	0.16	RTD	All	1,724	28	8	5	756	0	8,159	0	7,403	7,56	24
216-S-19	Pond	390	390	2	1.5	1.5	3.50	RTD	All	405	405	5	2	16,900	0	29,271	0	12,371	16,900	97
216-S-26	Crib	425	15	10	1.5	1.5	0.15	RTD	All	470	60	15	10	1,181	0	9,604	0	8,424	1,181	26
216-T-4A	Pond	460	460	2	1.5	1.5	4.86	RTD	All	475	475	5	2	23,511	0	40,484	0	16,973	23,511	134
216-T-20	Trench/Minor Debris	10	10	4	1.5	1.5	0.01	Very Small RTD	All	28	28	6	4	98	0	98	0	0	98	6
216-Z-4	Trench	10	10	17	1.5	1.5	0.01	RTD	All	76	76	22	17	19	0	2,394	0	2,375	19	11
216-Z-6	Crib	56	13	8	1.5	1.5	0.02	RTD	All	107	64	17	8	243	0	2,385	0	2,142	243	11
270-E-1	Neutralization Tank	12	12	0	1.5	1.5	0.01	RTD	All	72	72	20	0	70	22	1,973	15	1,867	107	13
291-C-1	Burial Ground	204	24	2	1.5	1.5	0.12	RTD	Rad only	231	51	9	2	918	351	2,780	0	1,510	1,269	16

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
600-36	Burn Pit	60	300	0	0.0	0.0	0.42	Surface RTD	All	60	300	1	0	667	0	667	0	0	0	7
600-37	French Drain/Tanks	20	20	20	1.5	1.5	0.01	RTD	All	80	80	20	20	35	8	3,910	0	3,867	43	21
600-38	Dumping Area	250	250	0	0.0	0.0	1.44	Surface RTD	All	250	250	1	0	2,315	0	2,315	0	0	0	9
600-40	Dumping Area	51	51	0	0.0	0.0	0.06	Very Small RTD	All	51	51	1	0	96	0	96	0	0	96	6
600-51	Dumping Area	3	5	0	0.0	0.0	0.01	Very Small RTD	All	3	5	1	0	1	0	1	0	0	1	4
600-65	Dumping Area	10	10	0	0.0	0.0	0.01	Very Small RTD	All	10	10	3	0	11	0	11	0	0	11	4
600-66	Dumping Area	5	5	0	0.0	0.0	0.01	Very Small RTD	All	5	5	3	0	3	0	3	0	0	3	4
600-70	Dumping Area	210	210	0	1.5	1.5	1.02	RTD	All	219	219	3	0	4,900	0	5,115	0	215	4,900	26
600-71	Burn Pit	100	80	1	0.0	0.0	0.19	Surface RTD	All	100	80	2	1	296	0	593	0	296	0	7
600-218	Dumping Area	243	67	0	0.0	0.0	0.38	Surface RTD	All	243	67	3	0	1,809	0	1,809	0	0	0	7
600-220	Dumping Area	220	220	0	0.0	0.0	1.12	Surface RTD	All	220	220	2	0	3,585	0	3,585	0	0	0	8
600-222	Military Compound	300	300	0	0.0	0.0	2.07	Surface RTD	All	300	300	1	0	3,333	0	3,333	0	0	0	10
600-226	Dumping Area	9	9	0	0.0	0.0	0.01	Very Small RTD	All	9	9	1	0	3	0	3	0	0	3	4
600-228	Dumping Area	40	40	0	0.0	0.0	0.04	Surface RTD	All	40	40	2	0	119	0	119	0	0	0	6
600-262	Crib	2	2	2	1.5	1.5	0.01	RTD	All	47	47	15	2	2	0	615	0	613	2	8
600-275	Foundation-Removed	175	175	0	1.5	1.5	0.71	Surface RTD	All	178	178	1	0	1,134	0	1,154	0	20	0	11
600-281	Dumping Area	36	36	0	1.5	1.5	0.03	RTD	All	51	51	5	0	236	0	356	0	120	236	8
600 OCL	Sanitary Landfill	300	50	3	1.5	1.5	0.35	RTD	All	345	95	15	3	6,667	0	13,271	0	6,604	6,667	45
2607-E1	Septic Tank	26	13	0	1.5	1.5	0.01	RTD	All	68	55	14	0	148	54	1,117	0	915	202	10
2607-E1	Septic Tank Drain Fields-Two	439	164	3	1.5	1.5	1.66	RTD	All	459	184	6.5	3	3,170	0	7,163	0	3,993	3,170	30
2607-E3	Septic Tank	31	11	0	1.5	1.5	0.01	RTD	All	73	53	14	0	178	56	1,091	0	858	234	9

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
2607-E3	Septic Tank Drain Field	260	216	0	1.5	1.5	1.29	RTD	All	278	234	6	0.0	12,480	0	13,468	0	988	12,480	59
2607-E4	Septic Tank	4	2	0	1.5	1.5	0.01	RTD	All	31	29	9	0	5	3	151	0	144	8	9
2607-E4	Septic Tank Drain Field	59	57	0	0.0	0.0	0.08	RTD	All	59	57	4	0.0	498	0	498	0	0	498	8
2607-E5	Septic Tank	31	11	0	1.5	1.5	0.01	RTD	All	73	53	14	0	178	56	1,091	0	858	234	9
2607-E5	Septic Tank Drain Field	60	50	1	1.5	1.5	0.07	RTD	All	81	71	7	1.0	667	0	1,134	0	468	667	11
2607-E6	Septic Tank	29	10	0	1.5	1.5	0.01	RTD	All	71	52	14	0	152	50	1,032	0	830	202	9
2607-E6	Septic Tank Drain Field	230	250	0	0.0	0.0	1.33	RTD	All	230	250	4	0.0	8,519	0	8,519	0	0	8,519	40
2607-E7A	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	169	5	175	1	0	175	9
2607-E7B	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	169	5	175	1	0	175	9
2607-E9	Septic Tank	8	7	0	0.0	0.0	0.01	RTD	All	8	7	3	0	5	1	6	0	0	6	8
2607-E9	Septic Tank Drain Field	60	40	0	1.5	1.5	0.06	RTD	All	75	55	5	0.0	444	0	604	0	160	444	8
2607-E12	Septic Tanks/Pipeline[b]	500	100	0	1.5	1.5	1.15	RTD	All	545	145	15	0.0	186	32	4,260	84	4,042	302	21
2607-E12	Drain Fields-Two	401	216	0	1.5	1.5	1.99	RTD	All	422	237	7	0.0	4,405	3	7,847	17	3,439	4,425	35
2607-EA	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	168	5	175	2	0	175	9
2607-EA	Septic Tank Drain Field	8	8	0	1.5	1.5	0.01	RTD	All	35	35	9	0.0	21	0	215	0	194	21	7
2607-EE	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	168	5	175	2	0	175	9
2607-EE	Septic Tank Drain Field	59	57	0	0.0	0.0	0.08	RTD	All	59	57	4	0.0	498	0	498	0	0	498	8
2607-W1	Septic Tank[c]	25	20	0	1.5	1.5	0.02	RTD	All	61	56	12	0.0	288	45	2,126	46	1,793	379	16
2607-W1	Septic Tank Drain Field	1,049	411	2	1.5	1.5	9.90	RTD	All	1,069	431	7	2.0	16,381	32	29,300	39	12,887	16,452	100
2607-W3	Septic Tank	31	11	0	1.5	1.5	0.01	RTD	All	73	53	14	0	178	56	1,091	0	858	234	9

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
2607-W3	Septic Tank Drain Field	230	85	0	1.5	1.5	0.45	RTD	All	248	103	6	0.0	4,344	0	5,010	0	666	4,344	25
2607-W4	Septic Tank	5	2	0	1.5	1.5	0.01	RTD	All	32	29	9	0	6	3	156	0	147	9	8
2607-W4	Septic Tank Drain Field	30	10	0	0.0	0.0	0.01	RTD	All	30	10	3	0.0	33	0	33	0	0	33	7
2607-W6	Septic Tanks/Pipeline[d]	131	150	0	1.5	1.5	0.46	RTD	All	176	195	15	0.0	140	65	1,085	99	880	304	11
2607-W6	Septic Tank Drain Field	320	240	3	1.5	1.5	1.77	RTD	All	340	260	7	3.0	7,966	0	16,790	0	8,824	7,966	54
2607-W8	Septic Tank	20	6	0	1.5	1.5	0.01	RTD	All	56	42	12	0	46	25	549	9	470	79	9
2607-W8	Septic Tank Drain Field	100	100	0	0.0	0.0	0.23	RTD	All	100	100	4	0.0	1,481	0	1,481	0	0	1,481	12
2607-W9	Septic Tank	20	6	0	1.5	1.5	0.01	RTD	All	56	42	12	0	56	25	549	0	468	81	9
2607-W9	Septic Tank Drain Field	100	100	0	0.0	0.0	0.23	RTD	All	100	100	4	0.0	1,481	0	1,481	0	0	1,481	12
2607-WC	Septic Tank	70	20	0	1.5	1.5	0.04	RTD	All	97	47	9	0.0	107	22	587	19	458	148	9
2607-WC	Septic Tank Drain Field	45	57	1	0.0	0.0	0.06	RTD	All	45	57	2	1.0	95	0	190	0	95	95	8
2607-WL	Septic Tank	60	40	0	1.5	1.5	0.06	RTD	All	102	82	14	0	1,200	237	2,791	0	1,353	1,437	16
2607-WL	Septic Tank Drain Field	100	100	0	0.0	0.0	0.23	RTD	All	100	100	4	0.0	1,481	0	1,481	0	0	1,481	12
2607-WZ	Septic Tank	6	4	0	1.5	1.5	0.01	RTD	All	33	31	9	0	168	5	175	2	0	175	9
2607-WZ	Septic Tank Drain Field	59	57	0	0.0	0.0	0.08	RTD	All	59	57	4	0.0	498	0	498	0	0	498	8
2607-Z	Septic Tank	39	14	0	1.5	1.5	0.02	RTD	All	96	71	19	0	384	95	2,590	0	2,111	479	14
2607-Z	Septic Tank Drain Field	150	280	0	0.0	0.0	0.97	RTD	All	150	280	4	0.0	6,222	0	6,222	0	0	6,222	31
2607-Z1	Septic Tank	9	5	0	1.5	1.5	0.01	RTD	All	27	23	6	0	67	7	74	0	0	74	9
2607-Z1	Septic Tank Drain Field	100	15	0	1.5	1.5	0.04	RTD	All	115	30	5	0.0	278	0	458	0	181	278	8

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
CTFN 2703-E	Drain Field	155	155	6	1.5	1.5	0.56	RTD	All	185	185	10	6	838	0	10,787	2,721	7,228	3,559	25
OCSA	Foundations	1,587	3,590	0	0.0	0.0	6.39	RTD	All	1,587	3,590	2	0	12,709	5,783	18,492	0	0	18,492	125
UPR-200-E-2	Unplanned Release	177	177	0	0.0	0.0	0.72	Surface RTD	Rad only	177	177	1	0	1,160	0	1,160	0	0	0	7
UPR-200-E-28	Unplanned Release	9	9	0	0.0	0.0	0.01	Very Small RTD	All	9	9	1	0	3	0	3	0	0	3	4
UPR-200-E-35	Unplanned Release	46	40	8	1.5	1.5	0.05	RTD	All	76	70	10	8	136	0	1,326	0	1,190	136	9
UPR-200-E-37	Unplanned Release	515	343	0	0.0	0.0	4.06	Surface RTD	Rad only	515	343	1	0	6,542	0	6,542	0	0	0	14
UPR-200-E-39	Unplanned Release	26	26	2	0.0	0.0	0.02	Very Small RTD	All	26	26	5	2	125	0	125	0	0	0	6
UPR-200-E-43	Unplanned Release	9	9	0	1.5	1.5	0.01	Very Small RTD	Rad only	30	30	7	0	127	0	127	0	0	127	6
UPR-200-E-50	Unplanned Release	450	75	0	0.0	0.0	0.78	Surface RTD	Rad only	450	75	1	0	1,250	0	1,250	0	0	0	8
UPR-200-E-52	Unplanned Release	50	10	0	0.0	0.0	0.02	Very Small RTD	All	50	10	3	0	56	0	56	0	0	56	5
UPR-200-E-54	Unplanned Release	9	9	0	0.0	0.0	0.01	RTD	All	9	9	1	0	3	3	3	0	0	0	7
UPR-200-E-55	Unplanned Release	50	50	0	0.0	0.0	0.06	Very Small RTD	Rad only	50	50	1	0	93	0	93	0	0	0	6
UPR-200-E-62	Unplanned Release	9	9	0	0.0	0.0	0.01	Very Small RTD	Rad only	9	9	1	0	3	0	3	0	0	0	4
UPR-200-E-64	Unplanned Release	210	210	2	0.0	0.0	1.02	Surface RTD	All	210	210	3	2	1,633	0	4,900	0	3,267	0	12
UPR-200-E-66	Unplanned Release	209	209	2	0.0	0.0	1.00	Surface RTD	Rad only	209	209	3	2	1,613	0	4,840	0	3,227	0	12
UPR-200-E-89	Unplanned Release	145	145	2	0.0	0.0	0.49	Surface RTD	All	145	145	3	2	779	0	2,336	0	1,557	0	9
UPR-200-E-98	Unplanned Release	9	9	2	0.0	0.0	0.01	Very Small RTD	Rad only	9	9	3	2	9	0	9	0	0	9	4
UPR-200-E-101	Unplanned Release	84	40	1	0.0	0.0	0.08	Surface RTD	Rad only	84	40	2	1	124	0	249	0	124	0	7
UPR-200-E-143	Unplanned Release	224	224	0	0.0	0.0	1.16	Surface RTD	Rad only	224	224	1	0	1,858	0	1,858	0	0	0	8
UPR-200-W-23	Unplanned Release	17	17	1	0.0	0.0	0.01	Very Small RTD	Rad only	17	17	2	1	21	0	21	0	0	0	4
UPR-200-W-39	Unplanned Release	50	10	3	1.5	1.5	0.02	RTD	All	77	37	9	3	111	0	558	0	447	111	8

Table A-1. 200-MG-1 Operable Unit Alternatives – Site Information

		MESC/IC/MNA and CS/NFA						RTD												
		Site Dimensions								Excavation Dimensions										
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contaminated Soil Volume (yd^3)	Contaminated Debris (yd^3)	Excavation Volume (yd^3)	Void Volume (yd^3)	Overburden Soil Volume (yd^3)	Backfill (yd^3)	Duration (days)
UPR-200-W-43	Unplanned Release	35	35	0	0.0	0.0	0.03	Very Small RTD	Rad only	35	35	1	0	45	0	45	0	0	0	5
UPR-200-W-51	Unplanned Release	210	210	0	0.0	0.0	1.02	Surface RTD	Rad only	210	210	1	0	1,633	0	1,633	0	0	0	8
UPR-200-W-56	Unplanned Release	9	9	0	1.5	1.5	0.01	Very Small RTD	All	27	27	6	0	90	0	90	0	0	90	6
UPR-200-W-57	Unplanned Release	9	9	0	0.0	0.0	0.01	Very Small RTD	All	9	9	1	0	3	0	3	0	0	3	4
UPR-200-W-61	Unplanned Release	14	14	0	1.5	1.5	0.01	RTD	All	59	59	15	0	1,026	0	1,026	0	0	0	10
UPR-200-W-63	Unplanned Release	500	24	1	0.0	0.0	0.28	Surface RTD	Rad only	500	24	2	1	444	0	889	0	444	0	8
UPR-200-W-67	Unplanned Release	24	3	0	0.0	0.0	0.01	Very Small RTD	Rad only	24	3	1	0	3	0	3	0	0	0	5
UPR-200-W-70	Unplanned Release	12	22	3	0.0	0.0	0.01	Very Small RTD	All	12	22	4	3	39	0	39	0	0	39	4
UPR-200-W-71	Unplanned Release	4,203	10	0	0.0	0.0	0.97	Surface RTD	All	4,203	10	1	0	1,557	0	1,557	0	0	0	17
UPR-200-W-96	Unplanned Release	37	37	2	1.5	1.5	0.04	RTD	Rad only	61	61	8	2	304	0	754	0	450	304	8
UPR-200-W-101	Unplanned Release	90	65	2	1.5	1.5	0.14	RTD	All	105	80	5	2	650	0	1,320	0	669	0	11
UPR-200-W-116	Unplanned Release	205	205	2	0.0	0.0	0.97	Surface RTD	Rad only	205	205	3	2	1,556	0	4,669	0	3,113	0	12
UPR-200-W-165	Unplanned Release	210	210	0	0.0	0.0	1.02	Surface RTD	Rad only	210	210	1	0	1,633	0	1,633	0	0	0	8
UPR-600-12	Unplanned Release	10	14	0	1.5	1.5	0.01	Very Small RTD	All	31	35	7	0	159	0	159	0	0	159	6
UPR-600-21	Unplanned Release	9	9	0	0.0	0.0	0.01	Very Small RTD	Rad only	9	9	1	0	3	0	3	0	0	3	4

a. Two 10-ft diameter caissons
b. Pipeline Length: 1,038 ft of <12-in. pipe
c. Pipeline Length: 869 ft of <12-in. pipe
d. Pipeline Length: 212 ft of <12-in. pipe

bgs = below ground surface
CS/NFA = confirmatory sampling/no further action
CTFN = Chemical Tile Field North
MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation
OCSA = Old Central Shop Area
Rad = radiological
RTD = removal, treatment, and disposal

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Table A-2. 200-MG-1 Operable Unit Railroad Sites – Site Information

		MESC/IC/MNA and CS/NFA						RTD														
		Site Dimensions								Excavation Dimensions												
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	% of Contam. Rail bed	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contam. Soil Volume (yd^3)	Contam. Debris (yd^3)	Excav. Vol. (yd^3)	Overburden Soil Vol. (yd^3)	No. Ties (Ea)	Removed Rail (LF)	Removed Switches	Backfill (yd^3)	Duration (days)
200 West Sites																						
UPR-200-W-3; -4; -65; -73	Rail Siding 100% cont	375	16	100	0.0	0.0	0.14	Rail RTD	All	375	16	2	0	444	278	444	0	165	550	1	722	NA
UPR-200-W-3; -4; -65; -73	Rail Siding 10% cont	3,870	16	10	0.0	0.0	1.43	Rail RTD	All	3,870	16	2	0	459	0	4,587	4,128	2,322	7,740	0	459	NA
	Calculation Totals	4,245	16	--	--	--	1.57	--	--	4,245	16	2	--	903	278	5,031	4,128	2,487	8,290	1	1,181	66
200-W-83; UPR-200-W-41; -44; -46	Rail Siding 100% cont	300	16	100	0.0	0.0	0.12	Rail RTD	All	300	16	2	0	356	0	356	0	180	600	0	356	NA
200-W-83; UPR-200-W-41; -44; -46	Rail Siding 10% cont	6,020	16	10	0.0	0.0	2.22	Rail RTD	All	6,020	16	2	0	713	0	7,135	6,421	3,612	12,040	0	713	NA
	Calculation Totals	6,320	16	--	--	--	2.34	--	--	6,320	16	2	--	1,069	0	7,490	6,421	3,792	12,640	0	1,069	84
200-W-21	Rail Siding	87	16	100	0.0	0.0	0.04	Rail RTD	All	87	16	2	0	103	0	103	0	52	174	0	103	NA
	Pump Stations[a]	52	16	100	1.5	1.5	0.01	Rail RTD	All	88	34	6	0	152	32	424	240	0	0	0	184	NA
	Calculation Totals	87	16	--	--	--	0.04	--	--	87	34	6	--	256	32	528	240	52	174	0	288	12
200-W-81; UPR-200-W-58	Rail Siding	4,431	16	10	0.0	0.0	1.63	Rail RTD	All	4,431	16	2	0	525	0	5,252	4,726	2,659	8,862	0	525	62
200 East Sites																						
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	11,530	16	10	0.0	0.0	4.24	Rail RTD	All	11,530	16	2	0	1,367	0	13,665	12,299	6,918	23,060	0	1,367	161
UPR-200-E-69	Rail Siding	951	16	10	0.0	0.0	0.35	Rail RTD	All	951	16	2	0	113	0	1,127	1,014	571	1,902	0	113	18
200-E-43; UPR-200-E-88	Rail Siding	951	16	100	0.0	0.0	0.35	Rail RTD	All	951	16	2	0	1,127	0	1,127	0	571	1,902	0	1,127	20
UPR-200-E-95	Rail Siding	820	16	100	0.0	0.0	0.31	Rail RTD	All	820	16	2	0	972	0	972	0	492	1,640	0	972	18
UPR-200-E-112[b]	Rail Siding	2,505	20	100	0.0	0.0	1.16	Rail RTD	All	2,505	20	2	0	3,711	0	3,711	0	1,867	6,224	4	3,711	64
200-E-124	Rail Siding	216	21	100	0.0	0.0	0.11	Rail RTD	All	216	21	2	0	336	0	336	0	130	432	0	336	11
200-E-130	Rail Siding	65	16	10	0.0	0.0	0.03	Rail RTD	All	65	16	2	0	77	0	77	0	39	130	0	77	9

Table A-2. 200-MG-1 Operable Unit Railroad Sites – Site Information

		MESC/IC/MNA and CS/NFA						RTD													
		Site Dimensions							Excavation Dimensions												
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	% of Contam. Rail bed	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contam. Soil Volume (yd^3)	Contam. Debris (yd^3)	Excav. Vol. (yd^3)	Overburden Soil Vol. (yd^3)	No. Ties (Ea)	Removed Rail (LF)	Removed Switches	Backfill (yd^3)	Duration (days)

Calculation Totals are values used to calculate cost estimate for the waste sites. Sites without a calculation total are assumed to use the values given.

a. Values were included for in the total length of site; only used to calculate total contaminated debris

b. Includes two short siding tracks and width is averaged over total length of the site

-- Value not needed for total volume calculations.

Contam	=	contamination	MESC/IC/MNA	=	maintain existing soil cover/institutional controls/monitored natural attenuation
CS/NFA	=	confirmatory sampling/no further action	NA	=	not calculated individually, calculated for entire project
Excav.	=	excavation	RTD	=	removal, treatment, and disposal

Table A-3. 200-MG-1 Operable Unit Special Case – Site Information

		MESC/IC/MNA and CS/NFA						RTD															
		Site Dimensions								Excavation Dimensions													
Waste Site	Site Description	Length (Bottom) (ft)	Width (Bottom) (ft)	Clean Soil Depth (ft bgs)	Side Slope (assumed)	End Slope (assumed)	Surface Area (acre)	Template	Sampling	Length (Top) (ft)	Width (Top) (ft)	Excavation Depth (ft)	Clean Overburden Depth (ft)	Contam. Soil Volume (yd^3)	Contam. Debris (yd^3)	TRU Waste (yd^3)	Mixed Waste (yd^3)	Liquid Waste (gal)	Excav. Vol. (yd^3)	Void Volume (yd^3)	Overburden Soil Vol. (yd^3)	Backfill (yd^3)	Duration (days)
218-E-7	Vault	59	15	3.25	1.5	1.5	0.03	RTD	All	146	102	29	29	136	136	131	0	0	8,473	0	8,070	403	32
218-W-7	Vault	12	12	5	1.5	1.5	0.01	RTD	All	88.5	88.5	25.5	25.5	22	31.2	0	71	0	3,767	0	3,642	124	15
218-W-8	Vault	60	35	3.25	1.5	1.5	0.05	RTD	All	147	122	29	29	136	73	0	68	0	10,759	63	10,419	340	26
218-W-9	Burial Ground	70	50	2	1.5	1.5	0.09	RTD	All	121	101	17	2	1,844	100	0	0	0	4,949	0	3,005	1,944	21
231-W-151	Vault w/tanks	24	19	0	1.5	1.5	0.02	RTD	All	84	79	20	0	263	60	0.4	0	2,385	2,627	30	2,304	353	32

Calculation Totals are values used to calculate cost estimate for the waste sites. Sites without a calculation total are assumed to use the values given.

-- Value not needed for total volume calculations

Contam = contamination
CS/NFA = confirmatory sampling/no further action
Excav. = excavation
MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation
NA = not calculated individually, calculated for entire project
RTD = removal, treatment, and disposal
TRU = transuranic

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Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-E-2	Unplanned Release	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-E-6	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
200-E-7	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-E-7	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-13	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-26	Unplanned Release	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
200-E-29	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-46	Dumping Area	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-53	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-58	Neutralization Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
200-E-101	Experiment	Very Small RTD/Special	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
200-E-103	Unplanned Release	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-107	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-109	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-110	Dumping Area	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-115	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-117	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-121	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-123	Unplanned Release	Very Small RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
200-E-125	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-128	Unplanned Release	Very Small RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
200-E-129	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E-139	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-E BP	Burn Pit	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E PD	Ditch	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-1	Mud Pit	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-2	Spoils Pile/Berm	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
200-W-3	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-6	Dumping Area	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-W-11	Dumping Area	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-12	Dumping Area	Very Small RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-14	Dumping Area	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-22	Foundations/Unplanned Release	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-33	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-51	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-51	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-53	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-54	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-55	Dumping Area	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-63	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-64	Foundation	RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-67	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-75	Experiment/Test Site	RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
200-W-80	Spoils Pile/Berm	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-82	Pump Station/Product Piping	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-86	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-90	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-92	Dumping Area	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-101	Dumping Area	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-106	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
200-W-ADB	Coal Ash Pit	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-BP	Burn Pit	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
207-B	Retention Basin	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
207-SL	Retention Basin	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
209-E-WS-3	Valve Pit	RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
216-A-1	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-3	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-9	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
216-A-18	Trench	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-20	Trench	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-28	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-34	Ditch	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-40	Retention Basin	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-A-42	Retention Basin	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-B-2-1	Ditch	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-B-2-2	Ditch	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-B-2-3	Ditch	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-B-3-1	Ditch	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-B-3-2	Ditch	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-B-3-3	Ditch	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-B-59/59B	Trench/Retention Basin	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-3	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-5	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-6	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-7	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-9	Pond	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-C-10	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-S-4	French Drain	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-S-8	Trench	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-S-16D	Ditch	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-S-19	Pond	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-S-22	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-S-26	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-T-4A	Pond	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-T-20	Trench/Minor Debris	Very Small RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
216-Z-4	Trench	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
216-Z-6	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
218-E-7	Vault	<0.5Acre; depth >10ft;	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
218-W-7	Vault	<0.5Acre; depth >10ft;	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
218-W-8	Vault	<0.5Acre; depth >10ft;	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
218-W-9	Burial Ground	<0.5Acre; depth >10ft;	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
231-W-151	Vault w/tank	<0.5Acre; depth >10ft;	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
270-E-1	Neutralization Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
291-C-1	Burial Ground	RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
600-36	Burn Pit	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-37	French Drain/Tanks	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
600-38	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-40	Dumping Area	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-51	Dumping Area	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-65	Dumping Area	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-66	Dumping Area	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-70	Dumping Area	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-71	Burn Pit	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-218	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-220	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-222	Military Compound	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-226	Dumping Area	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-228	Dumping Area	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-262	Crib	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
600-275	Foundation-Removed	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
600-281	Dumping Area	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
600-OCL	Sanitary Landfill	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E1	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E1	Septic Tank Drain Fields-Two	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E3	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E3	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
2607-E4	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E4	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-E5	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E5	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E6	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E6	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-E7A	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E7B	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E9	Septic Tank	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-E9	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-E12	Septic Tank/Pipelines	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-E12	Septic Tank Drain Fields-two	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-EA	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-EA	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-EE	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-EE	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-W1	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-W1	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-W3	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-W3	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-W4	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-W4	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-W6	Septic Tank/Pipelines	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-W6	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-W8	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-W8	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-W9	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-W9	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-WC	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
2607-WC	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-WL	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-WL	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-WZ	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-WZ	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-Z	Septic Tank	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
2607-Z	Septic Tank Drain Field	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
2607-Z1	Septic Tank	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
2607-Z1	Septic Tank Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
CTFN 2703-E	Drain Field	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
OCSA	Foundations	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-2	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-28	Unplanned Release	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-35	Unplanned Release	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-200-E-37	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-39	Unplanned Release	Very Small RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-200-E-43	Unplanned Release	Very Small RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
UPR-200-E-50	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-52	Unplanned Release	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-54	Unplanned Release	RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-55	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-62	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-64	Unplanned Release	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-66	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-89	Unplanned Release	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-98	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-101	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-E-143	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-23	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
UPR-200-W-39	Unplanned Release	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-200-W-43	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-51	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-56	Unplanned Release	Very Small RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-200-W-57	Unplanned Release	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-W-61	Unplanned Release	RTD	All	$20,000	$77,788	$1,200	$15,392	$114,380	$28,595	$5,900	$148,875
UPR-200-W-63	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-67	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-70	Unplanned Release	Very Small RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-W-71	Unplanned Release	Surface RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-W-96	Unplanned Release	RTD	Rad only	$20,000	$36,489	$1,200	$15,392	$73,081	$18,270	$5,900	$97,251
UPR-200-W-101	Unplanned Release	RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-200-W-116	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-200-W-165	Unplanned Release	Surface RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
UPR-600-12	Unplanned Release	Very Small RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
UPR-600-21	Unplanned Release	Very Small RTD	Rad only	$20,000	$19,684	$1,200	$15,392	$56,276	$14,069	$5,900	$76,245
Railroad Siding Sites											
200-E-43; UPR-200-E-88	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-124	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-E-130	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-69	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-95	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-E-112	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
200-W-21	Rail Siding	Rail RTD	All	$20,000	$74,080	$1,200	$15,392	$110,672	$27,668	$5,900	$144,240
200-W-81; UPR-200-W-58	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739

Table A-4. MESC/IC/MNA – Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Institutional Controls	Monitoring & Sampling	Subcontract Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739
UPR-200-W-3; -4; -65; -73	Rail Siding	Rail RTD	All	$20,000	$38,479	$1,200	$15,392	$75,071	$18,768	$5,900	$99,739

CTFN = Chemical Tile Field North
MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation
OCSA = Old Central Shop Area
Rad = radiological
RTD = removal, treatment, and disposal

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200 CP	Pit/Dumping Area	$99,739	$2,687,628	$2,787,367	$727,949
200-E-1	Dumping Area	$144,240	$1,478,152	$1,622,392	$489,056
200-E-2	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
200-E-6	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
200-E-7	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
200-E-7	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
200-E-13	Dumping Area	$99,739	$2,687,628	$2,787,367	$727,949
200-E-26	Unplanned Release	$148,875	$1,478,152	$1,627,027	$493,691
200-E-29	Unplanned Release	$76,245	$3,173,495	$3,249,740	$818,299
200-E-46	Dumping Area	$99,739	$2,687,628	$2,787,367	$727,949
200-E-53	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-58	Neutralization Tank	$148,875	$1,478,152	$1,627,027	$493,691
200-E-101	Experiment	$148,875	$1,478,152	$1,627,027	$493,691
200-E-103	Unplanned Release	$99,739	$8,575,562	$8,675,300	$2,107,558
200-E-107	Unplanned Release	$76,245	$2,627,033	$2,703,278	$690,257
200-E-109	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-110	Dumping Area	$76,245	$1,478,152	$1,554,397	$421,061
200-E-115	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-117	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-121	Unplanned Release	$76,245	$2,507,546	$2,583,791	$678,344
200-E-123	Unplanned Release	$97,251	$1,478,152	$1,575,403	$442,067
200-E-125	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-128	Unplanned Release	$97,251	$1,478,152	$1,575,403	$442,067
200-E-129	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-E-139	Unplanned Release	$76,245	$2,507,185	$2,583,430	$662,175
200-E BP	Burn Pit	$99,739	$3,154,192	$3,253,931	$837,270
200-E PD	Ditch	$144,240	$1,478,152	$1,622,392	$489,056
200-W-1	Mud Pit	$99,739	$1,478,152	$1,577,890	$444,555
200-W-2	Spoils Pile/Berm	$148,875	$1,478,152	$1,627,027	$493,691
200-W-3	Dumping Area	$99,739	$2,727,577	$2,827,316	$737,309

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200-W-6	Dumping Area	$148,875	$1,478,152	$1,627,027	$493,691
200-W-11	Dumping Area	$99,739	$1,641,741	$1,741,479	$482,885
200-W-12	Dumping Area	$144,240	$1,478,152	$1,622,392	$489,056
200-W-14	Dumping Area	$144,240	$1,478,152	$1,622,392	$489,056
200-W-22	Foundations/ Unplanned Release	$99,739	$1,924,070	$2,023,809	$549,038
200-W-33	Dumping Area	$99,739	$9,042,126	$9,141,864	$2,216,879
200-W-51	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
200-W-51	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
200-W-53	Unplanned Release	$76,245	$2,911,812	$2,988,057	$756,984
200-W-54	Unplanned Release	$76,245	$11,662,166	$11,738,411	$2,807,291
200-W-55	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
200-W-63	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-W-64	Foundation	$76,245	$1,478,152	$1,554,397	$421,061
200-W-67	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-W-75	Experiment/Test Site	$97,251	$1,478,152	$1,575,403	$442,067
200-W-80	Spoils Pile/Berm	$76,245	$1,478,152	$1,554,397	$421,061
200-W-82	Pump Station/Product Piping	$144,240	$1,478,152	$1,622,392	$489,056
200-W-86	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-W-90	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-W-92	Dumping Area	$144,240	$1,478,152	$1,622,392	$489,056
200-W-101	Dumping Area	$76,245	$1,478,152	$1,554,397	$421,061
200-W-106	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
200-W ADB	Coal Ash Pit	$99,739	$2,687,628	$2,787,367	$727,949
200-W BP	Burn Pit	$99,739	$2,486,540	$2,586,278	$680,831
207-B	Retention Basin	$144,240	$1,944,716	$2,088,956	$598,377
207-SL	Retention Basin	$148,875	$1,478,152	$1,627,027	$493,691
209-E-WS-3	Valve Pit	$97,251	$1,478,152	$1,575,403	$442,067
216-A-1	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-A-3	Crib	$148,875	$1,478,152	$1,627,027	$493,691

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
216-A-9	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-A-18	Trench	$148,875	$1,478,152	$1,627,027	$493,691
216-A-20	Trench	$148,875	$1,478,152	$1,627,027	$493,691
216-A-28	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-A-34	Ditch	$148,875	$1,478,152	$1,627,027	$493,691
216-A-40	Retention Basin	$148,875	$1,478,152	$1,627,027	$493,691
216-A-42	Retention Basin	$148,875	$1,478,152	$1,627,027	$493,691
216-B-2-1	Ditch	$148,875	$1,478,152	$1,627,027	$493,691
216-B-2-2	Ditch	$148,875	$1,478,152	$1,627,027	$493,691
216-B-2-3	Ditch	$148,875	$1,622,437	$1,771,312	$527,499
216-B-3-1	Ditch	$144,240	$1,478,152	$1,622,392	$489,056
216-B-3-2	Ditch	$144,240	$1,702,336	$1,846,576	$541,585
216-B-3-3	Ditch	$144,240	$1,478,152	$1,622,392	$489,056
216-B-59/59B	Trench/Retention Basin	$148,875	$3,234,090	$3,382,965	$905,127
216-C-3	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-C-5	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-C-6	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-C-7	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-C-9	Pond	$148,875	$15,710,846	$15,859,721	$3,822,445
216-C-10	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-S-4	French Drain	$148,875	$1,478,152	$1,627,027	$493,691
216-S-8	Trench	$148,875	$1,478,152	$1,627,027	$493,691
216-S-16D	Ditch	$144,240	$1,478,152	$1,622,392	$489,056
216-S-19	Pond	$144,240	$8,213,334	$8,357,574	$2,067,186
216-S-22	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-S-26	Crib	$148,875	$1,478,152	$1,627,027	$493,691
216-T-4A	Pond	$144,240	$11,299,939	$11,444,179	$2,790,412
216-T-20	Trench/Minor Debris	$144,240	$1,478,152	$1,622,392	$489,056
216-Z-4	Trench	$148,875	$1,478,152	$1,627,027	$493,691
216-Z-6	Crib	$148,875	$1,478,152	$1,627,027	$493,691

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
218-E-7	Vault	$144,240	$1,478,152	$1,622,392	$489,056
218-W-7	Vault	$144,240	$1,478,152	$1,622,392	$489,056
218-W-8	Vault	$144,240	$1,478,152	$1,622,392	$489,056
218-W-9	Burial Ground	$144,240	$1,478,152	$1,622,392	$489,056
231-W-151	Vault w/tank	$144,240	$1,478,152	$1,622,392	$489,056
270-E-1	Neutralization Tank	$148,875	$1,478,152	$1,627,027	$493,691
291-C-1	Burial Ground	$97,251	$1,478,152	$1,575,403	$442,067
600-36	Burn Pit	$99,739	$1,478,152	$1,577,890	$444,555
600-37	French Drain/Tanks	$148,875	$1,478,152	$1,627,027	$493,691
600-38	Dumping Area	$99,739	$3,556,368	$3,656,107	$931,504
600-40	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-51	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-65	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-66	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-70	Dumping Area	$99,739	$2,687,628	$2,787,367	$727,949
600-71	Burn Pit	$99,739	$1,478,152	$1,577,890	$444,555
600-218	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-220	Dumping Area	$99,739	$2,911,812	$3,011,551	$780,478
600-222	Military Compound	$99,739	$4,986,236	$5,085,975	$1,266,539
600-226	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-228	Dumping Area	$99,739	$1,478,152	$1,577,890	$444,555
600-262	Crib	$148,875	$1,478,152	$1,627,027	$493,691
600-275	Foundation-Removed	$99,739	$1,924,070	$2,023,809	$549,038
600-281	Dumping Area	$144,240	$1,478,152	$1,622,392	$489,056
600 OCL	Sanitary Landfill	$148,875	$1,478,152	$1,627,027	$493,691
2607-E1	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-E1	Septic Tank Drain Fields-Two	$144,240	$4,161,237	$4,305,477	$973,495
2607-E3	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-E3	Septic Tank Drain Field	$144,240	$3,254,736	$3,398,976	$905,330
2607-E4	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-E4	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-E5	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-E5	Septic Tank Drain Field	$144,240	$1,478,152	$1,622,392	$489,056
2607-E6	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-E6	Septic Tank Drain Field	$99,739	$3,334,634	$3,434,373	$879,550
2607-E7A	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-E7B	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-E9	Septic Tank	$99,739	$1,478,152	$1,577,890	$444,555
2607-E9	Septic Tank Drain Field	$144,240	$1,478,152	$1,622,392	$489,056
2607-E12	Septic Tanks/Pipeline	$148,875	$2,972,407	$3,121,282	$843,812
2607-E12	Drain Fields-Two	$144,240	$4,826,440	$4,970,680	$1,273,598
2607-EA	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-EA	Septic Tank Drain Field	$144,240	$1,478,152	$1,622,392	$489,056
2607-EE	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-EE	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-W1	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-W1	Septic Tank Drain Field	$144,240	$22,489,395	$22,633,635	$5,412,228
2607-W3	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-W3	Septic Tank Drain Field	$144,240	$1,478,152	$1,622,392	$489,056
2607-W4	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-W4	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-W6	Septic Tanks/Pipeline	$148,875	$1,478,152	$1,627,027	$493,691
2607-W6	Septic Tank Drain Field	$144,240	$4,382,971	$4,527,211	$1,169,688
2607-W8	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-W8	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-W9	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-W9	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-WC	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-WC	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-WL	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-WL	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-WZ	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-WZ	Septic Tank Drain Field	$99,739	$1,478,152	$1,577,890	$444,555
2607-Z	Septic Tank	$148,875	$1,478,152	$1,627,027	$493,691
2607-Z	Septic Tank Drain Field	$99,739	$2,587,084	$2,686,822	$704,390
2607-Z1	Septic Tank	$144,240	$1,478,152	$1,622,392	$489,056
2607-Z1	Septic Tank Drain Field	$144,240	$1,478,152	$1,622,392	$489,056
CTFN 2703-E	Drain Field	$144,240	$1,478,152	$1,766,677	$522,864
OCSA	Foundations	$99,739	$14,564,040	$14,663,778	$3,510,727
UPR-200-E-2	Unplanned Release	$76,245	$1,944,716	$2,020,961	$530,382
UPR-200-E-28	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-35	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-200-E-37	Unplanned Release	$76,245	$9,504,051	$9,580,296	$2,301,620
UPR-200-E-39	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-200-E-43	Unplanned Release	$97,251	$1,478,152	$1,575,403	$442,067
UPR-200-E-50	Unplanned Release	$76,245	$2,064,563	$2,140,808	$558,464
UPR-200-E-52	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-54	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-55	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-E-62	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-E-64	Unplanned Release	$99,739	$2,687,628	$2,787,367	$727,949
UPR-200-E-66	Unplanned Release	$76,245	$2,647,679	$2,723,924	$695,094
UPR-200-E-89	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-98	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-E-101	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-E-143	Unplanned Release	$76,245	$2,993,053	$3,069,298	$776,019
UPR-200-W-23	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-W-39	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-200-W-43	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-W-51	Unplanned Release	$76,245	$2,687,628	$2,763,873	$704,455

Table A-5. Maintain Existing Soil Cover/Institutional Controls/Monitored Natural Attenuation Alternative - Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-W-56	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-200-W-57	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-W-61	Unplanned Release	$148,875	$1,478,152	$1,627,027	$493,691
UPR-200-W-63	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-W-67	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
UPR-200-W-70	Unplanned Release	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-W-71	Unplanned Release	$99,739	$2,587,084	$2,686,822	$704,390
UPR-200-W-96	Unplanned Release	$97,251	$1,478,152	$1,575,403	$442,067
UPR-200-W-101	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-200-W-116	Unplanned Release	$76,245	$2,587,084	$2,663,329	$680,896
UPR-200-W-165	Unplanned Release	$76,245	$2,687,628	$2,763,873	$704,455
UPR-600-12	Unplanned Release	$144,240	$1,478,152	$1,622,392	$489,056
UPR-600-21	Unplanned Release	$76,245	$1,478,152	$1,554,397	$421,061
Railroad Siding Sites					
200-E-43; UPR-200-E-88	Rail Siding	$99,739	$1,478,152	$1,577,890	$444,555
200-E-124	Rail Siding	$99,739	$1,478,152	$1,577,890	$444,555
200-E-130	Rail Siding	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	$99,739	$9,405,968	$9,505,707	$2,202,397
UPR-200-E-69	Rail Siding	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-95	Rail Siding	$99,739	$1,478,152	$1,577,890	$444,555
UPR-200-E-112	Rail Siding	$99,739	$2,829,871	$2,929,610	$661,543
200-W-21	Rail Siding	$144,240	$1,478,152	$1,622,392	$489,056
200-W-81; UPR-200-W-58	Rail Siding	$99,739	$4,100,642	$4,200,381	$1,059,034
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	$99,739	$5,553,344	$5,653,083	$1,399,419
UPR-200-W-3; -4; -65; -73	Rail Siding	$99,739	$3,818,052	$3,917,791	$992,820

CTFN = Chemical Tile Field North.
OCSA = Old Central Shop Area

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Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-E-2	Unplanned Release	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-E-6	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-E-7	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-E-7	Septic Tank Drain Field	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
200-E-13	Dumping Area	Surface RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
200-E-26	Unplanned Release	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-E-29	Unplanned Release	Surface RTD	Rad only	$105,675	$16,954	$122,629	$30,657	$120,000	$273,286
200-E-46	Dumping Area	RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
200-E-53	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-E-58	Neutralization Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-E-101	Experiment	Very Small RTD/Special	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-E-103	Unplanned Release	Surface RTD	All	$248,785	$17,837	$266,622	$66,656	$150,000	$483,278
200-E-107	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
200-E-109	Unplanned Release	Surface RTD	Rad only	$48,203	$14,532	$62,735	$15,684	$45,000	$123,419
200-E-110	Dumping Area	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-E-115	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-E-117	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-E-121	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
200-E-123	Unplanned Release	Very Small RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
200-E-125	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-E-128	Unplanned Release	Very Small RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
200-E-129	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-E-139	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
200-E BP	Burn Pit	RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
200-E PD	Ditch	RTD	All	$195,600	$16,513	$212,113	$53,028	$45,000	$310,141
200-W-1	Mud Pit	Surface RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
200-W-2	Spoils Pile/Berm	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-W-3	Dumping Area	Surface RTD	All	$171,454	$16,954	$188,408	$47,102	$120,000	$355,510
200-W-6	Dumping Area	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
200-W-11	Dumping Area	RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
200-W-12	Dumping Area	Very Small RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-14	Dumping Area	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-22	Foundations/ Unplanned	RTD	All	$132,788	$14,532	$147,320	$36,830	$80,000	$264,150

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
	Release								
200-W-33	Dumping Area	Surface RTD	All	$248,785	$17,837	$266,622	$66,656	$150,000	$483,278
200-W-51	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-51	Septic Tank Drain Field	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
200-W-53	Unplanned Release	Surface RTD	Rad only	$105,675	$16,954	$122,629	$30,657	$120,000	$273,286
200-W-54	Unplanned Release	Surface RTD	Rad only	$147,553	$18,720	$166,273	$41,568	$150,000	$357,841
200-W-55	Dumping Area	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
200-W-63	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-64	Foundation	RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-67	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-75	Experiment/ Test Site	RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
200-W-80	Spoils Pile/Berm	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-82	Pump Station/ Product Piping	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-86	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-90	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-92	Dumping Area	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-101	Dumping Area	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-W-106	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
200-W-ADB	Coal Ash Pit	Surface RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
200-W-BP	Burn Pit	Surface RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
207-B	Retention Basin	RTD	All	$268,519	$16,513	$285,032	$71,258	$80,000	$436,290
207-SL	Retention Basin	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
209-E-WS-3	Valve Pit	RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
216-A-1	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-3	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-9	Crib	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
216-A-18	Trench	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-20	Trench	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-28	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-34	Ditch	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-40	Retention Basin	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-A-42	Retention Basin	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-B-2-1	Ditch	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
216-B-2-2	Ditch	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
216-B-2-3	Ditch	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
216-B-3-1	Ditch	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
216-B-3-2	Ditch	RTD	All	$268,519	$16,513	$285,032	$71,258	$80,000	$436,290
216-B-3-3	Ditch	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
216-B-59/59B	Trench/Retention Basin	RTD	All	$434,091	$16,954	$451,045	$112,761	$120,000	$683,806
216-C-3	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-C-5	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-C-6	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-C-7	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-C-9	Pond	RTD	All	$614,155	$21,142	$635,297	$158,824	$150,000	$944,121
216-C-10	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-S-4	French Drain	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-S-8	Trench	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-S-16D	Ditch	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
216-S-19	Pond	RTD	All	$481,420	$17,837	$499,257	$124,814	$150,000	$774,071
216-S-22	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-S-26	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-T-4A	Pond	RTD	All	$557,324	$18,278	$575,602	$143,901	$150,000	$869,503
216-T-20	Trench/Minor Debris	Very Small RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
216-Z-4	Trench	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
216-Z-6	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
218-E-7	Vault	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
218-W-7	Vault	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
218-W-8	Vault	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
218-W-9	Burial Ground	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
231-W-151	Vault w/tank	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
270-E-1	Neutralization Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
291-C-1	Burial Ground	RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
600-36	Burn Pit	Surface RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
600-37	French Drain/Tanks	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
600-38	Dumping Area	Surface RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
600-40	Dumping Area	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-51	Dumping Area	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-65	Dumping Area	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-66	Dumping Area	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-70	Dumping Area	RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
600-71	Burn Pit	Surface RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-218	Dumping Area	Surface RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
600-220	Dumping Area	Surface RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
600-222	Military Compound	Surface RTD	All	$210,119	$17,396	$227,515	$56,879	$120,000	$404,394
600-226	Dumping Area	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-228	Dumping Area	Surface RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
600-262	Crib	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
600-275	Foundation-	Surface RTD	All	$244,417	$14,532	$258,949	$64,737	$80,000	$403,686

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
	Removed								
600-281	Dumping Area	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
600-OCL	Sanitary Landfill	RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
2607-E1	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-E1	Septic Tank Drain Fields-Two	RTD	All	$395,157	$16,954	$412,111	$103,028	$120,000	$635,139
2607-E3	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-E3	Septic Tank Drain Field	RTD	All	$395,157	$16,954	$412,111	$103,028	$120,000	$635,139
2607-E4	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E4	Septic Tank Drain Field	RTD	All	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
2607-E5	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-E5	Septic Tank Drain Field	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E6	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-E6	Septic Tank Drain Field	RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
2607-E7A	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E7B	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E9	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E9	Septic Tank Drain Field	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-E12	Septic Tank/Pipelines	RTD	All	$434,091	$16,954	$451,045	$112,761	$120,000	$683,806

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
2607-E12	Septic Tank Drain Fields-Two	RTD	All	$395,157	$16,954	$412,111	$103,028	$120,000	$635,139
2607-EA	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-EA	Septic Tank Drain Field	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-EE	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-EE	Septic Tank Drain Field	RTD	All	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
2607-W1	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-W1	Septic Tank Drain Field	RTD	All	$562,670	$22,466	$585,136	$146,284	$150,000	$881,420
2607-W3	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-W3	Septic Tank Drain Field	RTD	All	$195,600	$16,513	$212,113	$53,028	$45,000	$310,141
2607-W4	Septic Tank	RTD	All	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
2607-W4	Septic Tank Drain Field	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
2607-W6	Septic Tank/Pipelines	RTD	All	$186,267	$16,513	$202,780	$50,695	$45,000	$298,475
2607-W6	Septic Tank Drain Field	RTD	All	$395,157	$16,954	$412,111	$103,028	$120,000	$635,139
2607-W8	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-W8	Septic Tank Drain Field	RTD	All	$244,417	$14,532	$258,949	$64,737	$80,000	$403,686
2607-W9	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-W9	Septic Tank Drain	RTD	All	$244,417	$14,532	$258,949	$64,737	$80,000	$403,686

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
	Field								
2607-WC	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-WC	Septic Tank Drain Field	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
2607-WL	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-WL	Septic Tank Drain Field	RTD	All	$244,417	$14,532	$258,949	$64,737	$80,000	$403,686
2607-WZ	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-WZ	Septic Tank Drain Field	RTD	All	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
2607-Z	Septic Tank	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
2607-Z	Septic Tank Drain Field	RTD	All	$350,770	$16,513	$367,283	$91,821	$80,000	$539,104
2607-Z1	Septic Tank	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
2607-Z1	Septic Tank Drain Field	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
CTFN 2703-E	Drain Field	RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
OCSA	Foundations	RTD	All	$289,588	$19,161	$308,749	$77,187	$150,000	$535,936
UPR-200-E-2	Unplanned Release	Surface RTD	Rad only	$67,004	$14,532	$81,536	$20,384	$80,000	$181,920
UPR-200-E-28	Unplanned Release	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-E-35	Unplanned Release	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-200-E-37	Unplanned Release	Surface RTD	Rad only	$127,683	$18,278	$145,961	$36,490	$150,000	$332,451

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
UPR-200-E-39	Unplanned Release	Very Small RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-200-E-43	Unplanned Release	Very Small RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
UPR-200-E-50	Unplanned Release	Surface RTD	Rad only	$67,004	$14,532	$81,536	$20,384	$80,000	$181,920
UPR-200-E-52	Unplanned Release	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-E-54	Unplanned Release	RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-E-55	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-E-62	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-E-64	Unplanned Release	Surface RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
UPR-200-E-66	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
UPR-200-E-89	Unplanned Release	Surface RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
UPR-200-E-98	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-E-101	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-E-143	Unplanned Release	Surface RTD	Rad only	$105,675	$16,954	$122,629	$30,657	$120,000	$273,286
UPR-200-W-23	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
UPR-200-W-39	Unplanned Release	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-200-W-43	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-W-51	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
UPR-200-W-56	Unplanned Release	Very Small RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-200-W-57	Unplanned Release	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-W-61	Unplanned Release	RTD	All	$104,015	$14,532	$118,547	$29,637	$18,000	$166,184
UPR-200-W-63	Unplanned Release	Surface RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-W-67	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
UPR-200-W-70	Unplanned Release	Very Small RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-W-71	Unplanned Release	Surface RTD	All	$170,385	$16,513	$186,898	$46,725	$80,000	$313,623
UPR-200-W-96	Unplanned Release	RTD	Rad only	$47,757	$14,532	$62,289	$15,572	$18,000	$95,861
UPR-200-W-101	Unplanned Release	RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-200-W-116	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898
UPR-200-W-165	Unplanned Release	Surface RTD	Rad only	$85,805	$16,513	$102,318	$25,580	$80,000	$207,898

Table A-6. Confirmatory Sampling/No Further Action Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Monitoring & Sampling	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
UPR-600-12	Unplanned Release	Very Small RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
UPR-600-21	Unplanned Release	Very Small RTD	Rad only	$29,402	$14,532	$43,934	$10,984	$18,000	$72,918
Railroad Siding Sites									
200-E-43; UPR-200-E-88	Rail Siding	Rail RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
200-E-124	Rail Siding	Rail RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
200-E-130	Rail Siding	Rail RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	Rail RTD	All	$249,854	$18,278	$268,132	$67,033	$150,000	$485,165
UPR-200-E-69	Rail Siding	Rail RTD	All	$95,192	$14,532	$109,724	$27,431	$45,000	$182,155
UPR-200-E-95	Rail Siding	Rail RTD	All	$57,595	$14,532	$72,127	$18,032	$18,000	$108,159
UPR-200-E-112	Rail Siding	Rail RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
200-W-21	Rail Siding	Rail RTD	All	$94,745	$14,532	$109,277	$27,319	$18,000	$154,596
200-W-81; UPR-200-W-58	Rail Siding	Rail RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505
200-W-83; UPR-200-W-41; 44; 46	Rail Siding	Rail RTD	All	$228,785	$17,396	$246,181	$61,545	$150,000	$457,726
UPR-200-W-3; -4; -65; -73	Rail Siding	Rail RTD	All	$209,050	$16,954	$226,004	$56,501	$120,000	$402,505

CTFN = Chemical Tile Field North
OCSA = Old Central Shop Area
Rad = radiological
RTD = removal, treatment, and disposal

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200 CP	Pit/Dumping Area	$313,623	$34,584	$348,206	$346,807
200-E-1	Dumping Area	$154,596	$13,934	$168,530	$167,966
200-E-2	Unplanned Release	$154,596	$13,934	$168,530	$167,966
200-E-6	Septic Tank	$166,184	$13,934	$180,118	$179,554
200-E-7	Septic Tank	$154,596	$13,934	$168,530	$167,966
200-E-7	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
200-E-13	Dumping Area	$313,623	$34,584	$348,206	$346,807
200-E-26	Unplanned Release	$166,184	$13,934	$180,118	$179,554
200-E-29	Unplanned Release	$273,286	$40,713	$314,000	$312,353
200-E-46	Dumping Area	$313,623	$34,584	$348,206	$346,807
200-E-53	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-E-58	Neutralization Tank	$166,184	$13,934	$180,118	$179,554
200-E-101	Experiment	$166,184	$13,934	$180,118	$179,554
200-E-103	Unplanned Release	$483,278	$131,291	$614,568	$609,258
200-E-107	Unplanned Release	$207,898	$34,584	$242,481	$241,082
200-E-109	Unplanned Release	$123,419	$20,402	$143,820	$142,995
200-E-110	Dumping Area	$72,918	$13,934	$86,851	$86,288
200-E-115	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-E-117	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-E-121	Unplanned Release	$207,898	$34,584	$242,481	$241,082
200-E-123	Unplanned Release	$95,861	$13,934	$109,795	$109,231

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200-E-125	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-E-128	Unplanned Release	$95,861	$13,934	$109,795	$109,231
200-E-129	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-E-139	Unplanned Release	$207,898	$34,584	$242,481	$241,082
200-E BP	Burn Pit	$402,505	$58,455	$460,960	$458,596
200-E PD	Ditch	$310,141	$20,402	$330,543	$329,718
200-W-1	Mud Pit	$108,159	$13,934	$122,093	$121,529
200-W-2	Spoils Pile/Berm	$166,184	$13,934	$180,118	$179,554
200-W-3	Dumping Area	$355,510	$34,768	$390,278	$388,871
200-W-6	Dumping Area	$166,184	$13,934	$180,118	$179,554
200-W-11	Dumping Area	$182,155	$20,402	$202,557	$201,731
200-W-12	Dumping Area	$154,596	$13,934	$168,530	$167,966
200-W-14	Dumping Area	$154,596	$13,934	$168,530	$167,966
200-W-22	Foundations/Unplanned Release	$264,150	$26,478	$290,628	$289,557
200-W-33	Dumping Area	$483,278	$118,962	$602,239	$597,427
200-W-51	Septic Tank	$154,596	$13,934	$168,530	$167,966
200-W-51	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
200-W-53	Unplanned Release	$273,286	$37,224	$310,510	$309,005
200-W-54	Unplanned Release	$357,841	$153,896	$511,737	$505,512
200-W-55	Dumping Area	$108,159	$13,934	$122,093	$121,529
200-W-63	Unplanned Release	$72,918	$13,934	$86,851	$86,288

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200-W-64	Foundation	$72,918	$13,934	$86,851	$86,288
200-W-67	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-W-75	Experiment/Test Site	$95,861	$13,934	$109,795	$109,231
200-W-80	Spoils Pile/Berm	$72,918	$13,934	$86,851	$86,288
200-W-82	Pump Station/Product Piping	$154,596	$13,934	$168,530	$167,966
200-W-86	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-W-90	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-W-92	Dumping Area	$154,596	$13,934	$168,530	$167,966
200-W-101	Dumping Area	$72,918	$13,934	$86,851	$86,288
200-W-106	Unplanned Release	$72,918	$13,934	$86,851	$86,288
200-W ADB	Coal Ash Pit	$313,623	$34,584	$348,206	$346,807
200-W BP	Burn Pit	$313,623	$34,584	$348,206	$346,807
207-B	Retention Basin	$403,686	$26,586	$430,272	$429,196
207-SL	Retention Basin	$166,184	$13,934	$180,118	$179,554
209-E-WS-3	Valve Pit	$95,861	$13,934	$109,795	$109,231
216-A-1	Crib	$166,184	$13,934	$180,118	$179,554
216-A-3	Crib	$166,184	$13,934	$180,118	$179,554
216-A-9	Crib	$298,475	$20,402	$318,877	$318,051
216-A-18	Trench	$166,184	$13,934	$180,118	$179,554
216-A-20	Trench	$166,184	$13,934	$180,118	$179,554
216-A-28	Crib	$166,184	$13,934	$180,118	$179,554

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
216-A-34	Ditch	$166,184	$13,934	$180,118	$179,554
216-A-40	Retention Basin	$166,184	$13,934	$180,118	$179,554
216-A-42	Retention Basin	$166,184	$13,934	$180,118	$179,554
216-B-2-1	Ditch	$298,475	$20,402	$318,877	$318,051
216-B-2-2	Ditch	$298,475	$20,402	$318,877	$318,051
216-B-2-3	Ditch	$298,475	$20,402	$318,877	$318,051
216-B-3-1	Ditch	$310,141	$20,402	$330,543	$329,718
216-B-3-2	Ditch	$403,686	$26,586	$430,272	$429,196
216-B-3-3	Ditch	$154,596	$13,934	$168,530	$167,966
216-B-59/59B	Trench/Retention Basin	$683,806	$41,521	$725,327	$723,648
216-C-3	Crib	$166,184	$13,934	$180,118	$179,554
216-C-5	Crib	$166,184	$13,934	$180,118	$179,554
216-C-6	Crib	$166,184	$13,934	$180,118	$179,554
216-C-7	Crib	$166,184	$13,934	$180,118	$179,554
216-C-9	Pond	$944,121	$201,478	$1,145,599	$1,137,449
216-C-10	Crib	$166,184	$13,934	$180,118	$179,554
216-S-4	French Drain	$166,184	$13,934	$180,118	$179,554
216-S-8	Trench	$166,184	$13,934	$180,118	$179,554
216-S-16D	Ditch	$154,596	$13,934	$168,530	$167,966
216-S-19	Pond	$774,071	$107,911	$881,982	$877,617
216-S-22	Crib	$166,184	$13,934	$180,118	$179,554

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
216-S-26	Crib	$166,184	$13,934	$180,118	$179,554
216-T-4A	Pond	$869,503	$537,855	$1,407,358	$1,385,602
216-T-20	Trench/Minor Debris	$154,596	$13,934	$168,530	$167,966
216-Z-4	Trench	$166,184	$13,934	$180,118	$179,554
216-Z-6	Crib	$166,184	$13,934	$180,118	$179,554
218-E-7	Vault	$298,475	$20,402	$318,877	$318,051
218-W-7	Vault	$298,475	$20,402	$318,877	$318,051
218-W-8	Vault	$298,475	$20,402	$318,877	$318,051
218-W-9	Burial Ground	$298,475	$20,402	$318,877	$318,051
231-W-151	Vault w/tanks	$298,475	$20,402	$318,877	$318,051
270-E-1	Neutralization Tank	$166,184	$13,934	$180,118	$179,554
291-C-1	Burial Ground	$95,861	$13,934	$109,795	$109,231
600-36	Burn Pit	$182,155	$20,402	$202,557	$201,731
600-37	French Drain/Tanks	$166,184	$13,934	$180,118	$179,554
600-38	Dumping Area	$402,505	$45,818	$448,323	$446,470
600-40	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-51	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-65	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-66	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-70	Dumping Area	$313,623	$34,584	$348,206	$346,807
600-71	Burn Pit	$108,159	$13,934	$122,093	$121,529

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
600-218	Dumping Area	$182,155	$20,402	$202,557	$201,731
600-220	Dumping Area	$402,505	$245,296	$647,801	$637,879
600-222	Military Compound	$404,394	$133,747	$538,141	$532,731
600-226	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-228	Dumping Area	$108,159	$13,934	$122,093	$121,529
600-262	Crib	$166,184	$13,934	$180,118	$179,554
600-275	Foundation-Removed	$264,150	$26,478	$290,628	$289,557
600-281	Dumping Area	$154,596	$13,934	$168,530	$167,966
600 OCL	Sanitary Landfill	$298,475	$20,402	$318,877	$318,051
2607-E1	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-E1	Septic Tank Drain Fields-Two	$635,139	$53,693	$688,832	$686,660
2607-E3	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-E3	Septic Tank Drain Field	$635,139	$41,796	$676,935	$675,245
2607-E4	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-E4	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-E5	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-E5	Septic Tank Drain Field	$154,596	$13,934	$168,530	$167,966
2607-E6	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-E6	Septic Tank Drain Field	$402,505	$42,862	$445,367	$443,633
2607-E7A	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-E7B	Septic Tank	$154,596	$13,934	$168,530	$167,966

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-E9	Septic Tank	$108,159	$13,934	$122,093	$121,529
2607-E9	Septic Tank Drain Field	$154,596	$13,934	$168,530	$167,966
2607-E12	Septic Tanks/Pipeline	$683,806	$37,980	$721,787	$720,250
2607-E12	Drain Fields-Two	$635,139	$62,697	$697,836	$695,300
2607-EA	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-EA	Septic Tank Drain Field	$154,596	$13,934	$168,530	$167,966
2607-EE	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-EE	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-W1	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-W1	Septic Tank Drain Field	$881,420	$298,183	$1,179,603	$1,167,541
2607-W3	Septic Tank	$310,141	$20,402	$330,543	$329,718
2607-W3	Septic Tank Drain Field	$166,184	$13,934	$180,118	$179,554
2607-W4	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-W4	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-W6	Septic Tanks/Pipeline	$298,475	$20,402	$318,877	$318,051
2607-W6	Septic Tank Drain Field	$635,139	$56,656	$691,795	$689,503
2607-W8	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-W8	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-W9	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-W9	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-WC	Septic Tank	$154,596	$13,934	$168,530	$167,966

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-WC	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-WL	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-WL	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-WZ	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-WZ	Septic Tank Drain Field	$108,159	$13,934	$122,093	$121,529
2607-Z	Septic Tank	$166,184	$13,934	$180,118	$179,554
2607-Z	Septic Tank Drain Field	$313,623	$34,584	$348,206	$346,807
2607-Z1	Septic Tank	$154,596	$13,934	$168,530	$167,966
2607-Z1	Septic Tank Drain Field	$154,596	$13,934	$168,530	$167,966
CTFN 2703-E	Drain Field	$310,141	$20,402	$330,543	$329,718
OCSA	Foundations	$535,936	$192,587	$728,523	$720,733
UPR-200-E-2	Unplanned Release	$181,920	$26,562	$208,482	$207,407
UPR-200-E-28	Unplanned Release	$108,159	$13,934	$122,093	$121,529
UPR-200-E-35	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-200-E-37	Unplanned Release	$332,451	$124,988	$457,439	$452,384
UPR-200-E-39	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-200-E-43	Unplanned Release	$95,861	$13,934	$109,795	$109,231
UPR-200-E-50	Unplanned Release	$181,920	$26,562	$208,482	$207,407
UPR-200-E-52	Unplanned Release	$108,159	$13,934	$122,093	$121,529
UPR-200-E-54	Unplanned Release	$108,159	$13,934	$122,093	$121,529
UPR-200-E-55	Unplanned Release	$72,918	$13,934	$86,851	$86,288

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-E-62	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-E-64	Unplanned Release	$313,623	$34,584	$348,206	$346,807
UPR-200-E-66	Unplanned Release	$207,898	$34,584	$242,481	$241,082
UPR-200-E-89	Unplanned Release	$182,155	$20,402	$202,557	$201,731
UPR-200-E-98	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-E-101	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-E-143	Unplanned Release	$273,286	$38,307	$311,594	$310,044
UPR-200-W-23	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-W-39	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-200-W-43	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-W-51	Unplanned Release	$207,898	$34,584	$242,481	$241,082
UPR-200-W-56	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-200-W-57	Unplanned Release	$108,159	$13,934	$122,093	$121,529
UPR-200-W-61	Unplanned Release	$166,184	$13,934	$180,118	$179,554
UPR-200-W-63	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-W-67	Unplanned Release	$72,918	$13,934	$86,851	$86,288
UPR-200-W-70	Unplanned Release	$108,159	$13,934	$122,093	$121,529
UPR-200-W-71	Unplanned Release	$313,623	$34,584	$348,206	$346,807
UPR-200-W-96	Unplanned Release	$95,861	$13,934	$109,795	$109,231
UPR-200-W-101	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-200-W-116	Unplanned Release	$207,898	$34,584	$242,481	$241,082

Table A-7. Confirmatory Sampling/No Further Action Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-W-165	Unplanned Release	$207,898	$34,584	$242,481	$241,082
UPR-600-12	Unplanned Release	$154,596	$13,934	$168,530	$167,966
UPR-600-21	Unplanned Release	$72,918	$13,934	$86,851	$86,288
		Railroad Siding Sites			
200-E-43; UPR-200-E-88	Rail Siding	$182,155	$20,402	$202,557	$201,731
200-E-124	Rail Siding	$108,159	$13,934	$122,093	$121,529
200-E-130	Rail Siding	$108,159	$13,934	$122,093	$121,529
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	$485,165	$129,950	$615,115	$609,859
UPR-200-E-69	Rail Siding	$182,155	$20,402	$202,557	$201,731
UPR-200-E-95	Rail Siding	$108,159	$13,934	$122,093	$121,529
UPR-200-E-112	Rail Siding	$402,505	$38,307	$440,812	$439,263
200-W-21	Rail Siding	$154,596	$13,934	$168,530	$167,966
200-W-81; UPR-200-W-58	Rail Siding	$402,505	$53,075	$455,580	$453,433
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	$457,726	$72,445	$530,171	$527,240
UPR-200-W-3; -4; -65; -73	Rail Siding	$402,505	$49,307	$451,812	$449,818

CTFN = Chemical Tile Field North
OCSA = Old Central Shop Area

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200 CP	Pit/Dumping Area	Surface RTD	All	$58,497	$87,284	$46,607	$253,448	$39,100	$19,676	$504,612	$126,153	$75,692	$706,457
200-E-1	Dumping Area	RTD	All	$57,958	$97,924	$38,893	$21,259	$42,652	$20,774	$279,460	$69,865	$52,399	$401,724
200-E-2	Unplanned Release	RTD	All	$58,868	$97,924	$57,663	$239,237	$56,857	$28,698	$539,247	$134,812	$80,887	$754,946
200-E-6	Septic Tank	RTD	All	$57,851	$99,055	$43,301	$58,337	$42,652	$20,774	$321,970	$80,493	$60,369	$462,832
200-E-7	Septic Tank	RTD	All	$57,492	$98,463	$39,267	$26,973	$42,652	$20,774	$285,621	$71,405	$53,554	$410,580
200-E-7	Septic Tank Drain Field	RTD	All	$57,785	$98,463	$40,481	$54,152	$39,100	$18,793	$308,774	$77,194	$57,895	$443,863
200-E-13	Dumping Area	Surface RTD	All	$58,497	$87,284	$46,607	$253,448	$39,100	$19,676	$504,612	$126,153	$75,692	$706,457
200-E-26	Unplanned Release	RTD	All	$58,838	$97,924	$64,255	$170,497	$60,408	$30,679	$482,601	$120,650	$72,390	$675,641
200-E-29	Unplanned Release	Surface RTD	Rad only	$59,019	$70,497	$62,799	$323,653	$49,754	$25,619	$591,341	$147,835	$88,701	$827,877
200-E-46	Dumping Area	RTD	All	$61,377	$98,163	$65,789	$289,528	$60,408	$31,562	$606,827	$151,707	$91,024	$849,558
200-E-53	Unplanned Release	Surface RTD	Rad only	$55,967	$25,717	$33,940	$90,753	$35,549	$17,254	$259,180	$64,795	$48,596	$372,571
200-E-58	Neutralization Tank	RTD	All	$58,509	$97,924	$48,076	$43,697	$56,857	$28,698	$333,761	$83,440	$62,580	$479,781
200-E-101	Experiment	Very Small RTD/Special	All	$26,504	$73,845	$4,456	$208,319	$89,853	$51,468	$454,445	$113,611	$68,167	$636,223
200-E-103	Unplanned Release	Surface RTD	All	$69,842	$169,236	$129,776	$979,981	$106,576	$58,640	$1,514,051	$378,513	$283,885	$2,176,448
200-E-107	Unplanned Release	Surface RTD	Rad only	$59,138	$70,497	$56,474	$270,922	$53,306	$27,600	$537,937	$134,484	$80,691	$753,112
200-E-109	Unplanned Release	Surface RTD	Rad only	$56,616	$49,702	$44,582	$99,881	$39,100	$19,235	$309,116	$77,279	$57,959	$444,354
200-E-110	Dumping Area	Very Small RTD	Rad only	$13,500	$23,275	$8,380	$26,727	$25,928	$15,810	$113,620	$28,405	$21,304	$163,329
200-E-115	Unplanned Release	Very Small RTD	Rad only	$13,027	$23,275	$7,821	$15,229	$22,377	$13,829	$95,558	$23,890	$17,917	$137,365
200-E-117	Unplanned Release	Very Small RTD	Rad only	$12,676	$23,275	$3,618	$5,575	$15,274	$9,867	$70,285	$17,571	$17,571	$105,428
200-E-121	Unplanned Release	Surface RTD	Rad only	$61,215	$49,852	$55,820	$232,743	$39,100	$19,676	$458,406	$114,602	$68,761	$641,768
200-E-123	Unplanned Release	Very Small RTD	Rad only	$12,994	$23,275	$8,773	$24,770	$22,377	$13,829	$106,018	$26,505	$19,878	$152,401
200-E-125	Unplanned Release	Very Small RTD	Rad only	$12,791	$23,275	$3,859	$6,102	$18,826	$11,848	$76,701	$19,175	$19,175	$115,052
200-E-128	Unplanned Release	Very Small RTD	Rad only	$12,942	$23,275	$7,556	$6,027	$18,826	$11,848	$80,474	$20,119	$15,089	$115,681
200-E-129	Unplanned Release	Very Small RTD	Rad only	$12,830	$23,275	$3,951	$8,396	$18,826	$11,848	$79,126	$19,782	$19,782	$118,689
200-E-139	Unplanned Release	Surface RTD	Rad only	$59,303	$49,702	$46,783	$232,803	$39,100	$19,676	$447,367	$111,842	$67,105	$626,314
200-E BP	Burn Pit	RTD	All	$61,736	$98,163	$67,412	$322,050	$63,960	$33,543	$646,864	$161,716	$97,030	$905,610
200-E PD	Ditch	RTD	All	$66,929	$126,186	$101,756	$279,817	$103,025	$55,334	$733,047	$183,262	$109,957	$1,026,266
200-W-1	Mud Pit	Surface RTD	All	$54,260	$46,884	$32,031	$93,923	$31,997	$14,831	$273,926	$68,482	$51,361	$393,769
200-W-2	Spoils Pile/Berm	RTD	All	$58,796	$97,924	$64,021	$126,975	$60,408	$30,679	$438,803	$109,701	$65,820	$614,324
200-W-3	Dumping Area	Surface RTD	All	$58,534	$97,985	$46,747	$258,182	$39,100	$19,676	$520,224	$130,056	$78,034	$728,314

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
200-W-6	Dumping Area	RTD	All	$58,820	$97,924	$3,591	$299,963	$71,062	$36,622	$567,982	$141,996	$85,197	$795,175
200-W-11	Dumping Area	RTD	All	$60,398	$124,900	$52,887	$168,012	$46,203	$23,197	$475,597	$118,899	$71,340	$665,836
200-W-12	Dumping Area	Very Small RTD	All	$12,863	$44,442	$4,370	$11,096	$18,826	$11,848	$103,445	$25,861	$19,396	$148,702
200-W-14	Dumping Area	RTD	All	$58,341	$97,924	$41,741	$75,068	$42,652	$20,774	$336,500	$84,125	$63,094	$483,719
200-W-22	Foundations/Unplanned Release	RTD	All	$65,309	$101,961	$97,879	$809,813	$159,846	$86,589	$1,321,397	$330,349	$198,210	$1,849,956
200-W-33	Dumping Area	Surface RTD	All	$65,729	$115,215	$96,157	$945,025	$60,408	$33,328	$1,315,862	$328,966	$197,379	$1,842,207
200-W-51	Septic Tank	RTD	All	$57,480	$44,847	$39,292	$41,171	$39,100	$18,793	$240,683	$60,171	$45,128	$345,982
200-W-51	Septic Tank Drain Field	RTD	All	$58,329	$43,903	$40,881	$87,471	$39,100	$18,793	$288,477	$72,119	$54,089	$414,686
200-W-53	Unplanned Release	Surface RTD	Rad only	$58,680	$70,497	$52,865	$289,190	$49,754	$25,619	$546,605	$136,651	$81,991	$765,247
200-W-54	Unplanned Release	Surface RTD	Rad only	$67,674	$83,730	$110,891	$1,216,700	$63,960	$35,750	$1,578,705	$394,676	$236,806	$2,210,187
200-W-55	Dumping Area	RTD	All	$57,743	$43,903	$38,484	$17,708	$39,100	$18,793	$215,731	$53,933	$40,450	$310,113
200-W-63	Unplanned Release	Surface RTD	Rad only	$54,260	$25,717	$32,884	$60,979	$31,997	$14,831	$220,668	$55,167	$41,375	$317,210
200-W-64	Foundation	RTD	Rad only	$59,651	$30,624	$64,162	$359,490	$71,062	$37,064	$622,053	$155,513	$93,308	$870,874
200-W-67	Unplanned Release	Surface RTD	Rad only	$53,729	$38,122	$31,601	$23,607	$35,549	$16,812	$199,420	$49,855	$37,391	$286,666
200-W-75	Experiment/Test Site	RTD	Rad only	$57,696	$50,940	$39,537	$37,630	$42,652	$20,774	$249,229	$62,307	$46,730	$358,267
200-W-80	Spoils Pile/Berm	Surface RTD	Rad only	$53,756	$25,717	$32,139	$35,532	$31,997	$14,831	$193,972	$48,493	$36,370	$278,835
200-W-82	Pump Station/Product Piping	RTD	All	$58,210	$97,924	$40,045	$46,235	$42,652	$20,774	$305,840	$76,460	$45,876	$428,176
200-W-86	Unplanned Release	Very Small RTD	Rad only	$12,679	$23,275	$3,618	$5,982	$15,274	$9,867	$70,695	$17,674	$17,674	$106,043
200-W-90	Unplanned Release	Very Small RTD	Rad only	$12,745	$23,275	$3,752	$5,741	$15,274	$9,867	$70,654	$17,664	$17,664	$105,981
200-W-92	Dumping Area	RTD	All	$58,652	$97,924	$46,371	$163,031	$49,754	$24,736	$440,468	$110,117	$82,588	$633,173
200-W-101	Dumping Area	Surface RTD	Rad only	$53,436	$23,275	$30,791	$17,347	$31,997	$14,390	$171,236	$42,809	$32,107	$246,152
200-W-106	Unplanned Release	Surface RTD	Rad only	$53,985	$23,275	$32,501	$30,747	$31,997	$14,831	$187,336	$46,834	$35,126	$269,296
200-W-ADB	Coal Ash Pit	Surface RTD	All	$58,497	$87,284	$46,607	$253,448	$39,100	$19,676	$504,612	$126,153	$75,692	$706,457
200-W-BP	Burn Pit	Surface RTD	All	$58,314	$86,745	$46,368	$232,735	$39,100	$19,676	$482,938	$120,735	$72,441	$676,113
207-B	Retention Basin	RTD	All	$72,074	$143,422	$171,133	$1,230,019	$163,398	$89,012	$1,869,058	$467,265	$186,906	$2,523,228
207-SL	Retention Basin	RTD	All	$58,326	$98,961	$58,908	$196,828	$53,306	$26,717	$493,046	$123,262	$73,957	$690,264
209-E-WS-3	Valve Pit	RTD	Rad only	$58,060	$45,006	$39,463	$19,974	$42,652	$20,774	$225,929	$56,482	$33,889	$316,301
216-A-1	Crib	RTD	All	$64,969	$111,192	$115,398	$306,828	$99,473	$52,912	$750,772	$187,693	$112,616	$1,051,081
216-A-3	Crib	RTD	All	$59,871	$97,924	$75,559	$262,234	$81,717	$43,007	$620,312	$155,078	$93,047	$868,437
216-A-9	Crib	RTD	All	$84,696	$170,859	$412,219	$1,976,518	$383,582	$212,276	$3,240,150	$810,038	$324,015	$4,374,203

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
216-A-18	Trench	RTD	All	$65,160	$109,253	$131,937	$253,611	$113,679	$60,836	$734,476	$183,619	$110,171	$1,028,266
216-A-20	Trench	RTD	All	$58,581	$98,552	$90,181	$82,189	$71,062	$36,622	$437,187	$109,297	$65,578	$612,062
216-A-28	Crib	RTD	All	$57,959	$98,552	$44,382	$23,244	$39,100	$18,793	$282,030	$70,508	$52,881	$405,418
216-A-34	Ditch	RTD	All	$65,590	$123,833	$91,696	$523,207	$117,230	$62,817	$984,373	$246,093	$147,656	$1,378,122
216-A-40	Retention Basin	RTD	All	$72,744	$134,534	$184,278	$485,583	$166,949	$90,993	$1,135,081	$283,770	$170,262	$1,589,113
216-A-42	Retention Basin	RTD	All	$82,914	$113,267	$310,844	$2,391,882	$316,106	$174,195	$3,389,208	$847,302	$338,921	$4,575,431
216-B-2-1	Ditch	RTD	All	$104,090	$163,683	$429,829	$673,749	$298,349	$168,263	$1,837,963	$459,491	$183,796	$2,481,250
216-B-2-2	Ditch	RTD	All	$104,090	$163,683	$429,829	$673,749	$298,349	$168,263	$1,837,963	$459,491	$183,796	$2,481,250
216-B-2-3	Ditch	RTD	All	$113,989	$165,623	$439,920	$821,309	$337,414	$190,936	$2,069,191	$517,298	$206,919	$2,793,408
216-B-3-1	Ditch	RTD	All	$96,123	$159,905	$322,237	$572,456	$216,668	$122,258	$1,489,647	$372,412	$223,447	$2,085,506
216-B-3-2	Ditch	RTD	All	$106,104	$166,934	$383,000	$746,135	$262,836	$148,894	$1,813,903	$453,476	$181,390	$2,448,769
216-B-3-3	Ditch	RTD	All	$99,904	$155,880	$302,680	$413,736	$213,117	$120,718	$1,306,035	$326,509	$195,905	$1,828,449
216-B-59/59B	Trench/Retention Basin	RTD	All	$74,232	$156,690	$179,636	$964,053	$163,398	$89,453	$1,627,462	$406,866	$244,119	$2,278,447
216-C-3	Crib	RTD	All	$58,652	$97,924	$49,458	$65,479	$49,754	$24,736	$346,003	$86,501	$64,876	$497,379
216-C-5	Crib	RTD	All	$58,712	$97,924	$64,184	$64,184	$56,857	$28,698	$370,559	$92,640	$69,480	$532,679
216-C-6	Crib	RTD	All	$58,676	$97,924	$52,901	$70,642	$53,306	$26,717	$360,166	$90,042	$67,531	$517,739
216-C-7	Crib	RTD	All	$58,545	$97,924	$47,432	$80,762	$49,754	$24,736	$359,153	$89,788	$67,341	$516,282
216-C-9	Pond	RTD	All	$702,751	$482,627	$1,186,415	$5,974,790	$813,296	$455,509	$9,615,388	$2,403,847	$721,154	$12,740,389
216-C-10	Crib	RTD	All	$58,611	$97,924	$49,278	$75,094	$53,306	$26,717	$360,930	$90,233	$67,674	$518,837
216-S-4	French Drain	RTD	All	$58,844	$97,924	$76,603	$46,260	$71,062	$36,322	$387,015	$96,754	$72,565	$556,334
216-S-8	Trench	RTD	All	$71,058	$130,027	$150,498	$289,807	$177,603	$96,494	$915,487	$228,872	$137,323	$1,281,682
216-S-16D	Ditch	RTD	All	$77,214	$115,347	$125,174	$166,017	$95,922	$52,697	$632,371	$158,093	$94,856	$885,319
216-S-19	Pond	RTD	All	$127,483	$271,931	$383,369	$2,960,039	$355,171	$197,310	$4,295,303	$1,073,826	$429,530	$5,798,659
216-S-22	Crib	RTD	All	$58,940	$97,924	$63,066	$123,029	$56,857	$28,698	$428,514	$107,129	$64,277	$599,920
216-S-26	Crib	RTD	All	$67,790	$119,326	$103,337	$253,158	$103,025	$55,334	$701,970	$175,493	$105,296	$982,758
216-T-4A	Pond	RTD	All	$100,483	$345,766	$503,709	$4,098,380	$486,571	$271,490	$5,806,399	$1,451,600	$580,640	$7,838,639
216-T-20	Trench/Minor Debris	Very Small RTD	All	$12,915	$44,442	$4,830	$15,229	$22,377	$13,829	$113,622	$28,406	$21,304	$163,332
216-Z-4	Trench	RTD	All	$58,545	$97,924	$49,788	$29,360	$49,754	$25,619	$310,990	$77,748	$58,311	$447,048
216-Z-6	Crib	RTD	All	$58,658	$97,924	$49,798	$63,326	$49,754	$24,736	$344,196	$86,049	$64,537	$494,782
218-E-7	Vault	RTD w/TRU	All	$152,025	$238,145	$70,951	$2,864,687	$119,528	$66,762	$3,512,098	$878,025	$351,210	$4,741,332

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
218-W-7	Vault	RTD	All	$58,354	$98,552	$65,359	$56,892	$63,960	$33,102	$376,219	$94,055	$70,541	$540,815
218-W-8	Vault	RTD	All	$62,600	$109,253	$123,183	$118,537	$103,025	$54,893	$571,491	$142,873	$85,724	$800,087
218-W-9	Burial Ground	RTD	All	$59,525	$100,491	$90,967	$341,547	$85,268	$44,988	$722,786	$180,697	$108,418	$1,011,900
231-W-151	Vault w/tanks	RTD w/TRU	All	$153,944	$285,702	$28,567	$580,138	$126,361	$70,282	$1,244,994	$311,249	$186,749	$1,742,992
270-E-1	Neutralization Tank	RTD	All	$58,497	$97,924	$47,749	$45,658	$56,857	$28,698	$335,383	$83,846	$62,884	$482,113
291-C-1	Burial Ground	RTD	Rad only	$59,884	$51,563	$73,246	$220,872	$67,511	$35,083	$508,159	$127,040	$95,280	$730,479
600-36	Burn Pit	Surface RTD	All	$57,065	$61,464	$43,219	$109,800	$35,549	$17,254	$324,351	$81,088	$60,816	$466,255
600-37	French Drain/Tanks	RTD	All	$60,434	$119,326	$66,858	$48,348	$85,268	$44,988	$425,222	$106,306	$63,783	$595,311
600-38	Dumping Area	Surface RTD	All	$59,229	$97,985	$57,042	$354,497	$42,652	$21,657	$633,062	$158,266	$94,959	$886,287
600-40	Dumping Area	Very Small RTD	All	$13,218	$44,442	$8,024	$15,184	$22,377	$13,829	$117,074	$29,269	$21,951	$168,294
600-51	Dumping Area	Very Small RTD	All	$12,600	$44,442	$3,461	$5,380	$15,274	$9,867	$91,024	$22,756	$17,067	$130,847
600-65	Dumping Area	Very Small RTD	All	$12,679	$44,442	$3,618	$6,027	$15,274	$9,867	$91,907	$22,977	$17,233	$132,116
600-66	Dumping Area	Very Small RTD	All	$12,613	$44,442	$3,489	$5,500	$15,274	$9,867	$91,185	$22,796	$17,097	$131,078
600-70	Dumping Area	RTD	All	$66,810	$100,102	$116,203	$844,457	$103,025	$55,334	$1,285,931	$321,483	$192,890	$1,800,303
600-71	Burn Pit	Surface RTD	All	$54,534	$91,777	$33,941	$56,835	$35,549	$17,254	$289,890	$72,473	$54,354	$416,717
600-218	Dumping Area	Surface RTD	All	$56,607	$61,464	$42,165	$278,819	$35,549	$17,254	$491,858	$122,965	$73,779	$688,601
600-220	Dumping Area	Surface RTD	All	$58,680	$97,985	$47,317	$542,520	$39,100	$19,676	$805,278	$201,320	$120,792	$1,127,389
600-222	Military Compound	Surface RTD	All	$61,028	$98,523	$68,805	$506,049	$46,203	$24,080	$804,688	$201,172	$120,703	$1,126,563
600-226	Dumping Area	Very Small RTD	All	$12,666	$44,442	$3,591	$5,500	$15,274	$9,867	$91,340	$22,835	$17,126	$131,301
600-228	Dumping Area	Surface RTD	All	$53,619	$44,442	$31,049	$29,140	$31,997	$14,831	$205,078	$51,270	$38,452	$294,800
600-262	Crib	RTD	All	$58,198	$97,924	$41,317	$17,816	$39,100	$18,793	$273,148	$68,287	$51,215	$392,650
600-275	Foundation-Removed	Surface RTD	All	$56,973	$76,044	$44,326	$190,496	$35,549	$17,254	$420,642	$105,161	$63,096	$588,899
600-281	Dumping Area	RTD	All	$58,246	$97,550	$40,425	$53,102	$39,100	$19,235	$307,658	$76,915	$57,686	$442,258
600-OCL	Sanitary Landfill	RTD	All	$71,046	$146,673	$122,144	$1,162,542	$170,500	$92,532	$1,765,437	$441,359	$176,544	$2,383,340
2607-E1	Septic Tank	RTD	All	$57,833	$99,055	$43,424	$56,724	$46,203	$22,755	$325,994	$81,499	$61,124	$468,616
2607-E1	Septic Tank Drain Fields-Two	RTD	All	$82,979	$226,269	$130,688	$518,186	$117,230	$63,258	$1,138,610	$284,653	$113,861	$1,537,124
2607-E3	Septic Tank	RTD	All	$57,851	$99,055	$43,301	$58,337	$42,652	$20,774	$321,970	$80,493	$60,369	$462,832
2607-E3	Septic Tank Drain Field	RTD	All	$72,577	$171,577	$223,024	$1,948,776	$220,219	$120,708	$2,756,881	$689,220	$275,688	$3,721,789
2607-E4	Septic Tank	RTD	All	$57,456	$44,847	$39,191	$37,994	$39,100	$18,793	$237,381	$59,345	$44,509	$341,235
2607-E4	Septic Tank Drain Field	RTD	All	$58,329	$43,903	$40,881	$87,471	$39,100	$18,793	$288,477	$72,119	$54,089	$414,686

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
2607-E5	Septic Tank	RTD	All	$57,851	$99,055	$43,301	$58,337	$42,652	$20,774	$321,970	$80,493	$60,369	$462,832
2607-E5	Septic Tank Drain Field	RTD	All	$57,438	$44,531	$43,962	$183,685	$49,754	$24,736	$404,106	$101,027	$60,616	$565,748
2607-E6	Septic Tank	RTD	All	$57,833	$99,055	$43,051	$54,728	$42,652	$20,774	$318,093	$79,523	$59,642	$457,259
2607-E6	Septic Tank Drain Field	RTD	All	$66,601	$107,860	$159,190	$1,334,381	$152,744	$83,068	$1,903,844	$475,961	$190,384	$2,570,189
2607-E7A	Septic Tank	RTD	All	$57,480	$44,847	$39,292	$41,171	$39,100	$18,793	$240,683	$60,171	$45,128	$345,982
2607-E7B	Septic Tank	RTD	All	$57,480	$44,847	$39,292	$41,171	$39,100	$18,793	$240,683	$60,171	$45,128	$345,982
2607-E9	Septic Tank	RTD	All	$57,186	$44,847	$38,493	$18,150	$39,100	$18,793	$216,569	$54,142	$40,607	$311,318
2607-E9	Septic Tank Drain Field	RTD	All	$57,874	$44,531	$41,393	$101,818	$39,100	$18,793	$303,509	$75,877	$56,908	$436,294
2607-E12	Septic Tank/Pipelines	RTD	All	$63,876	$153,345	$87,981	$99,899	$85,268	$44,546	$534,915	$133,729	$80,237	$748,881
2607-E12	Septic Tank Drain Fields-two	RTD	All	$89,163	$241,036	$144,013	$705,676	$134,987	$73,605	$1,388,480	$347,120	$208,272	$1,943,872
2607-EA	Septic Tank	RTD	All	$57,480	$44,847	$3,591	$41,171	$39,100	$18,793	$204,982	$51,246	$30,747	$286,975
2607-EA	Septic Tank Drain Field	RTD	All	$57,516	$44,531	$39,510	$44,143	$35,549	$16,812	$238,061	$59,515	$44,636	$342,213
2607-EE	Septic Tank	RTD	All	$57,480	$44,847	$39,292	$41,171	$39,100	$18,793	$240,683	$60,171	$45,128	$345,982
2607-EE	Septic Tank Drain Field	RTD	All	$58,329	$43,903	$40,881	$87,471	$39,100	$18,793	$288,477	$72,119	$54,089	$414,686
2607-W1	Septic Tank	RTD	All	$57,797	$98,961	$48,822	$106,342	$67,511	$34,641	$414,074	$103,519	$62,111	$579,704
2607-W1	Septic Tank Drain Field	RTD	All	$90,613	$270,174	$249,014	$2,827,916	$358,722	$199,733	$3,996,172	$999,043	$399,617	$5,394,832
2607-W3	Septic Tank	RTD	All	$57,851	$99,055	$43,301	$58,337	$42,652	$20,774	$321,970	$80,493	$60,369	$462,832
2607-W3	Septic Tank Drain Field	RTD	All	$65,437	$130,154	$93,513	$682,793	$99,473	$52,912	$1,124,282	$281,071	$168,642	$1,573,995
2607-W4	Septic Tank	RTD	All	$57,462	$44,847	$39,210	$38,028	$39,100	$18,793	$237,440	$59,360	$44,520	$341,320
2607-W4	Septic Tank Drain Field	RTD	All	$57,875	$43,903	$38,636	$19,517	$35,549	$16,812	$212,292	$53,073	$31,844	$297,209
2607-W6	Septic Tank/Pipelines	RTD	All	$60,200	$138,040	$63,101	$63,898	$49,754	$25,178	$400,171	$100,043	$60,026	$560,239
2607-W6	Septic Tank Drain Field	RTD	All	$73,783	$199,875	$148,780	$1,269,056	$202,463	$111,244	$2,005,201	$501,300	$200,520	$2,707,021
2607-W8	Septic Tank	RTD	All	$57,683	$44,847	$40,999	$97,399	$42,652	$20,774	$304,354	$76,089	$57,066	$437,509
2607-W8	Septic Tank Drain Field	RTD	All	$58,293	$44,531	$55,487	$236,512	$53,306	$26,717	$474,846	$118,712	$89,034	$682,591
2607-W9	Septic Tank	RTD	All	$57,683	$99,055	$40,914	$32,687	$42,652	$20,774	$293,765	$73,441	$55,081	$422,287
2607-W9	Septic Tank Drain Field	RTD	All	$58,293	$44,531	$55,487	$236,512	$53,306	$26,717	$474,846	$118,712	$89,034	$682,591
2607-WC	Septic Tank	RTD	All	$57,958	$98,961	$41,190	$40,872	$42,652	$20,774	$302,407	$75,602	$56,701	$434,710
2607-WC	Septic Tank Drain Field	RTD	All	$57,707	$98,961	$39,373	$30,126	$39,100	$18,793	$284,060	$71,015	$53,261	$408,336
2607-WL	Septic Tank	RTD	All	$58,198	$99,055	$60,624	$267,198	$67,511	$34,641	$587,227	$146,807	$88,084	$822,118
2607-WL	Septic Tank Drain Field	RTD	All	$58,293	$44,531	$55,487	$236,512	$53,306	$26,717	$474,846	$118,712	$89,034	$682,591

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
2607-WZ	Septic Tank	RTD	All	$57,480	$44,847	$39,292	$41,171	$39,100	$18,793	$240,683	$60,171	$45,128	$345,982
2607-WZ	Septic Tank Drain Field	RTD	All	$58,329	$43,903	$40,881	$87,471	$39,100	$18,793	$288,477	$72,119	$54,089	$414,686
2607-Z	Septic Tank	RTD	All	$58,096	$99,055	$50,335	$108,764	$60,408	$30,679	$407,337	$101,834	$61,101	$570,272
2607-Z	Septic Tank Drain Field	RTD	All	$66,870	$102,042	$131,986	$997,697	$120,781	$65,239	$1,484,615	$371,154	$222,692	$2,078,461
2607-Z1	Septic Tank	RTD	All	$57,396	$44,847	$38,795	$25,388	$39,100	$18,793	$224,319	$56,080	$42,060	$322,459
2607-Z1	Septic Tank Drain Field	RTD	All	$57,964	$44,531	$40,688	$81,161	$39,100	$18,793	$282,237	$70,559	$52,919	$405,716
CTFN 2703-E	Drain Field	RTD	All	$65,411	$136,976	$107,355	$190,950	$99,473	$52,912	$653,077	$163,269	$97,962	$914,308
OCSA	Foundations	RTD	All	$135,039	$178,943	$289,327	$3,543,909	$454,609	$256,310	$4,858,137	$1,214,534	$485,814	$6,558,485
UPR-200-E-2	Unplanned Release	Surface RTD	Rad only	$57,010	$44,293	$44,448	$183,880	$35,549	$17,254	$382,434	$95,609	$71,706	$549,749
UPR-200-E-28	Unplanned Release	Very Small RTD	All	$12,666	$44,442	$3,591	$6,770	$15,274	$9,867	$92,610	$23,153	$17,364	$133,127
UPR-200-E-35	Unplanned Release	RTD	All	$58,509	$97,924	$44,637	$42,527	$42,652	$20,774	$307,023	$76,756	$57,567	$441,346
UPR-200-E-37	Unplanned Release	Surface RTD	Rad only	$66,040	$70,067	$97,310	$980,060	$60,408	$33,328	$1,307,213	$326,803	$196,082	$1,830,098
UPR-200-E-39	Unplanned Release	Very Small RTD	All	$12,676	$44,442	$3,618	$9,135	$15,274	$9,867	$95,012	$23,753	$17,815	$136,580
UPR-200-E-43	Unplanned Release	Very Small RTD	Rad only	$12,942	$23,275	$8,666	$18,639	$22,377	$13,829	$99,728	$24,932	$18,699	$143,359
UPR-200-E-50	Unplanned Release	Surface RTD	Rad only	$59,458	$44,293	$46,974	$196,578	$39,100	$19,676	$406,079	$101,520	$60,912	$568,511
UPR-200-E-52	Unplanned Release	Very Small RTD	All	$12,942	$44,442	$4,159	$10,855	$18,826	$11,848	$103,072	$25,768	$19,326	$148,166
UPR-200-E-54	Unplanned Release	RTD	All	$57,743	$43,903	$38,484	$14,125	$35,549	$16,812	$206,616	$51,654	$38,741	$297,011
UPR-200-E-55	Unplanned Release	Very Small RTD	Rad only	$13,204	$23,275	$6,072	$14,717	$22,377	$13,829	$93,474	$23,369	$17,526	$134,369
UPR-200-E-62	Unplanned Release	Very Small RTD	Rad only	$12,666	$23,275	$3,591	$5,500	$15,274	$9,867	$70,173	$17,543	$17,543	$105,260
UPR-200-E-64	Unplanned Release	Surface RTD	All	$58,497	$133,999	$56,352	$277,897	$53,306	$27,600	$607,651	$151,913	$91,148	$850,711
UPR-200-E-66	Unplanned Release	Surface RTD	Rad only	$58,479	$70,497	$57,083	$276,048	$53,306	$27,600	$543,013	$135,753	$81,452	$760,218
UPR-200-E-89	Unplanned Release	Surface RTD	All	$56,424	$97,478	$47,501	$138,748	$42,652	$21,216	$404,019	$101,005	$60,603	$565,627
UPR-200-E-98	Unplanned Release	Very Small RTD	Rad only	$12,666	$23,275	$3,591	$5,861	$15,274	$9,867	$70,534	$17,634	$17,634	$105,801
UPR-200-E-101	Unplanned Release	Surface RTD	Rad only	$54,022	$25,717	$3,591	$31,616	$35,549	$16,812	$167,307	$41,827	$31,370	$240,504
UPR-200-E-143	Unplanned Release	Surface RTD	Rad only	$58,754	$55,650	$55,938	$288,049	$39,100	$19,676	$517,167	$129,292	$77,575	$724,034
UPR-200-W-23	Unplanned Release	Very Small RTD	Rad only	$12,771	$23,275	$3,816	$7,113	$15,274	$9,867	$72,116	$18,029	$18,029	$108,174
UPR-200-W-39	Unplanned Release	RTD	All	$57,779	$98,961	$41,082	$33,174	$39,100	$18,793	$288,889	$72,222	$54,167	$415,278
UPR-200-W-43	Unplanned Release	Very Small RTD	Rad only	$13,007	$23,275	$7,804	$9,648	$18,826	$11,848	$84,408	$21,102	$15,827	$121,337
UPR-200-W-51	Unplanned Release	Surface RTD	Rad only	$58,497	$50,241	$46,607	$253,448	$39,100	$19,676	$467,569	$116,892	$70,135	$654,597
UPR-200-W-56	Unplanned Release	Very Small RTD	All	$12,902	$44,442	$4,730	$13,992	$22,377	$13,829	$112,272	$28,068	$21,051	$161,391
UPR-200-W-57	Unplanned Release	Very Small RTD	All	$12,666	$44,442	$3,591	$5,500	$15,274	$9,867	$91,340	$22,835	$17,126	$131,301

Table A-8. RTD Alternative – Capital Cost Summary

Waste Site	Site Description	Template	Sampling	Mobilization/ Demobilization	Monitoring & Sampling	Site Work	Soil Excavation	Construction Staff	Project Management	Sub Total	Contingency (25%)	Remedial Design	Total Project
UPR-200-W-61	Unplanned Release	RTD	All	$58,341	$43,903	$43,557	$183,435	$46,203	$22,755	$398,194	$99,549	$74,661	$572,404
UPR-200-W-63	Unplanned Release	Surface RTD	Rad only	$58,561	$40,564	$44,537	$81,424	$39,100	$19,235	$283,421	$70,855	$53,141	$407,418
UPR-200-W-67	Unplanned Release	Very Small RTD	Rad only	$12,725	$23,275	$3,797	$5,500	$18,826	$11,848	$75,971	$18,993	$18,993	$113,957
UPR-200-W-70	Unplanned Release	Very Small RTD	All	$12,752	$44,442	$4,099	$8,757	$15,274	$9,867	$95,191	$23,798	$17,848	$136,837
UPR-200-W-71	Unplanned Release	Surface RTD	All	$100,272	$97,985	$121,242	$242,339	$71,062	$41,036	$673,936	$168,484	$101,090	$943,510
UPR-200-W-96	Unplanned Release	RTD	Rad only	$58,365	$44,009	$42,028	$63,152	$39,100	$18,793	$265,447	$66,362	$49,771	$381,580
UPR-200-W-101	Unplanned Release	RTD	All	$58,742	$97,924	$54,566	$125,627	$49,754	$24,736	$411,349	$102,837	$61,702	$575,889
UPR-200-W-116	Unplanned Release	Surface RTD	Rad only	$58,406	$65,088	$55,566	$265,654	$53,306	$27,600	$525,620	$131,405	$78,843	$735,868
UPR-200-W-165	Unplanned Release	Surface RTD	Rad only	$58,497	$50,241	$46,607	$253,448	$39,100	$19,676	$467,569	$116,892	$70,135	$654,597
UPR-600-12	Unplanned Release	Very Small RTD	All	$12,981	$44,442	$8,976	$23,167	$22,377	$13,829	$125,772	$31,443	$23,582	$180,797
UPR-600-21	Unplanned Release	Very Small RTD	Rad only	$12,676	$23,275	$3,591	$5,500	$15,274	$9,867	$70,183	$17,546	$13,159	$100,888
Railroad Siding Sites													
200-E-43; UPR-200-E-88	Rail Siding	Rail RTD	All	$105,929	$61,553	$59,773	$295,266	$78,549	$43,448	$644,518	$161,130	$96,678	$902,325
200-E-124	Rail Siding	Rail RTD	All	$97,482	$44,531	$41,917	$94,948	$47,791	$24,736	$351,405	$87,851	$65,888	$505,145
200-E-130	Rail Siding	Rail RTD	All	$96,055	$44,531	$30,723	$38,236	$40,956	$20,774	$271,275	$67,819	$50,864	$389,958
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	Rail RTD	All	$554,577	$279,275	$360,442	$1,593,208	$560,417	$335,130	$3,683,049	$920,762	$368,305	$4,972,116
UPR-200-E-69	Rail Siding	Rail RTD	All	$105,929	$122,135	$52,625	$147,699	$71,714	$39,486	$539,588	$134,897	$80,938	$755,423
UPR-200-E-95	Rail Siding	Rail RTD	All	$104,730	$55,232	$57,799	$257,753	$71,714	$39,486	$586,714	$146,679	$88,007	$821,400
UPR-200-E-112	Rail Siding	Rail RTD	All	$140,252	$99,384	$133,392	$1,075,438	$228,919	$132,820	$1,810,205	$452,551	$181,021	$2,443,777
200-W-21	Rail Siding	Rail RTD	All	$132,580	$107,555	$34,884	$84,077	$51,209	$26,717	$437,022	$109,256	$65,553	$611,831
200-W-81; UPR-200-W-58	Rail Siding	Rail RTD	All	$193,364	$161,815	$157,064	$623,431	$222,084	$131,065	$1,488,823	$372,206	$223,323	$2,084,352
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	Rail RTD	All	$220,282	$218,754	$212,421	$930,303	$297,269	$176,854	$2,055,883	$513,971	$205,588	$2,775,442
UPR-200-W-3; -4; -65; -73	Rail Siding	Rail RTD	All	$195,995	$207,426	$151,451	$754,900	$235,754	$138,547	$1,684,073	$421,018	$168,407	$2,273,499

CTFN = Chemical Tile Field North
OCSA = Old Central Shop Area
Rad = radiological
RTD = removal, treatment, and disposal

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Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200 CP	Pit/Dumping Area	$706,457	$0	$706,457	$706,457
200-E-1	Dumping Area	$401,724	$0	$401,724	$401,724
200-E-2	Unplanned Release	$754,946	$0	$754,946	$754,946
200-E-6	Septic Tank	$462,832	$0	$462,832	$462,832
200-E-7	Septic Tank	$410,580	$0	$410,580	$410,580
200-E-7	Septic Tank Drain Field	$443,863	$0	$443,863	$443,863
200-E-13	Dumping Area	$706,457	$0	$706,457	$706,457
200-E-26	Unplanned Release	$675,641	$0	$675,641	$675,641
200-E-29	Unplanned Release	$827,877	$0	$827,877	$827,877
200-E-46	Dumping Area	$849,558	$0	$849,558	$849,558
200-E-53	Unplanned Release	$372,571	$0	$372,571	$372,571
200-E-58	Neutralization Tank	$479,781	$0	$479,781	$479,781
200-E-101	Experiment	$636,223	$0	$636,223	$636,223
200-E-103	Unplanned Release	$2,176,448	$0	$2,176,448	$2,176,448
200-E-107	Unplanned Release	$753,112	$0	$753,112	$753,112
200-E-109	Unplanned Release	$444,354	$0	$444,354	$444,354
200-E-110	Dumping Area	$163,329	$0	$163,329	$163,329
200-E-115	Unplanned Release	$137,365	$0	$137,365	$137,365
200-E-117	Unplanned Release	$105,428	$0	$105,428	$105,428
200-E-121	Unplanned Release	$641,768	$0	$641,768	$641,768
200-E-123	Unplanned Release	$152,401	$0	$152,401	$152,401

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200-E-125	Unplanned Release	$115,052	$0	$115,052	$115,052
200-E-128	Unplanned Release	$115,681	$0	$115,681	$115,681
200-E-129	Unplanned Release	$118,689	$0	$118,689	$118,689
200-E-139	Unplanned Release	$626,314	$0	$626,314	$626,314
200-E BP	Burn Pit	$905,610	$0	$905,610	$905,610
200-E PD	Ditch	$1,026,266	$0	$1,026,266	$1,026,266
200-W-1	Mud Pit	$393,769	$0	$393,769	$393,769
200-W-2	Spoils Pile/Berm	$614,324	$0	$614,324	$614,324
200-W-3	Dumping Area	$728,314	$0	$728,314	$728,314
200-W-6	Dumping Area	$795,175	$0	$795,175	$795,175
200-W-11	Dumping Area	$665,836	$0	$665,836	$665,836
200-W-12	Dumping Area	$148,702	$0	$148,702	$148,702
200-W-14	Dumping Area	$483,719	$0	$483,719	$483,719
200-W-22	Foundations/Unplanned Release	$1,849,956	$0	$1,849,956	$1,849,956
200-W-33	Dumping Area	$1,842,207	$0	$1,842,207	$1,842,207
200-W-51	Septic Tank	$345,982	$0	$345,982	$345,982
200-W-51	Septic Tank Drain Field	$414,686	$0	$414,686	$414,686
200-W-53	Unplanned Release	$765,247	$0	$765,247	$765,247
200-W-54	Unplanned Release	$2,210,187	$0	$2,210,187	$2,210,187
200-W-55	Dumping Area	$310,113	$0	$310,113	$310,113
200-W-63	Unplanned Release	$317,210	$0	$317,210	$317,210

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
200-W-64	Foundation	$870,874	$0	$870,874	$870,874
200-W-67	Unplanned Release	$286,666	$0	$286,666	$286,666
200-W-75	Experiment/Test Site	$358,267	$0	$358,267	$358,267
200-W-80	Spoils Pile/Berm	$278,835	$0	$278,835	$278,835
200-W-82	Pump Station/Product Piping	$428,176	$0	$428,176	$428,176
200-W-86	Unplanned Release	$106,043	$0	$106,043	$106,043
200-W-90	Unplanned Release	$105,981	$0	$105,981	$105,981
200-W-92	Dumping Area	$633,173	$0	$633,173	$633,173
200-W-101	Dumping Area	$246,152	$0	$246,152	$246,152
200-W-106	Unplanned Release	$269,296	$0	$269,296	$269,296
200-W ADB	Coal Ash Pit	$706,457	$0	$706,457	$706,457
200-W BP	Burn Pit	$676,113	$0	$676,113	$676,113
207-B	Retention Basin	$2,523,228	$0	$2,523,228	$2,523,228
207-SL	Retention Basin	$690,264	$0	$690,264	$690,264
209-E-WS-3	Valve Pit	$316,301	$0	$316,301	$316,301
216-A-1	Crib	$1,051,081	$0	$1,051,081	$1,051,081
216-A-3	Crib	$868,437	$0	$868,437	$868,437
216-A-9	Crib	$4,374,203	$0	$4,374,203	$4,374,203
216-A-18	Trench	$1,028,266	$0	$1,028,266	$1,028,266
216-A-20	Trench	$612,062	$0	$612,062	$612,062
216-A-28	Crib	$405,418	$0	$405,418	$405,418

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
216-A-34	Ditch	$1,378,122	$0	$1,378,122	$1,378,122
216-A-40	Retention Basin	$1,589,113	$0	$1,589,113	$1,589,113
216-A-42	Retention Basin	$4,575,431	$0	$4,575,431	$4,575,431
216-B-2-1	Ditch	$2,481,250	$0	$2,481,250	$2,481,250
216-B-2-2	Ditch	$2,481,250	$0	$2,481,250	$2,481,250
216-B-2-3	Ditch	$2,793,408	$0	$2,793,408	$2,793,408
216-B-3-1	Ditch	$2,085,506	$0	$2,085,506	$2,085,506
216-B-3-2	Ditch	$2,448,769	$0	$2,448,769	$2,448,769
216-B-3-3	Ditch	$1,828,449	$0	$1,828,449	$1,828,449
216-B-59/59B	Trench/Retention Basin	$2,278,447	$0	$2,278,447	$2,278,447
216-C-3	Crib	$497,379	$0	$497,379	$497,379
216-C-5	Crib	$532,679	$0	$532,679	$532,679
216-C-6	Crib	$517,739	$0	$517,739	$517,739
216-C-7	Crib	$516,282	$0	$516,282	$516,282
216-C-9	Pond	$12,740,389	$0	$12,740,389	$12,740,389
216-C-10	Crib	$518,837	$0	$518,837	$518,837
216-S-4	French Drain	$556,334	$0	$556,334	$556,334
216-S-8	Trench	$1,281,682	$0	$1,281,682	$1,281,682
216-S-16D	Ditch	$885,319	$0	$885,319	$885,319
216-S-19	Pond	$5,798,659	$0	$5,798,659	$5,798,659
216-S-22	Crib	$599,920	$0	$599,920	$599,920

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
216-S-26	Crib	$982,758	$0	$982,758	$982,758
216-T-4A	Pond	$7,838,639	$0	$7,838,639	$7,838,639
216-T-20	Trench/Minor Debris	$163,332	$0	$163,332	$163,332
216-Z-4	Trench	$447,048	$0	$447,048	$447,048
216-Z-6	Crib	$494,782	$0	$494,782	$494,782
218-E-7	Vault	$4,741,332	$0	$4,741,332	$4,741,332
218-W-7	Vault	$540,815	$0	$540,815	$540,815
218-W-8	Vault	$800,087	$0	$800,087	$800,087
218-W-9	Burial Ground	$1,011,900	$0	$1,011,900	$1,011,900
231-W-151	Vault w/tanks	$1,742,992	$0	$1,742,992	$1,742,992
270-E-1	Neutralization Tank	$482,113	$0	$482,113	$482,113
291-C-1	Burial Ground	$730,479	$0	$730,479	$730,479
600-36	Burn Pit	$466,255	$0	$466,255	$466,255
600-37	French Drain/Tanks	$595,311	$0	$595,311	$595,311
600-38	Dumping Area	$886,287	$0	$886,287	$886,287
600-40	Dumping Area	$168,294	$0	$168,294	$168,294
600-51	Dumping Area	$130,847	$0	$130,847	$130,847
600-65	Dumping Area	$132,116	$0	$132,116	$132,116
600-66	Dumping Area	$131,078	$0	$131,078	$131,078
600-70	Dumping Area	$1,800,303	$0	$1,800,303	$1,800,303
600-71	Burn Pit	$416,717	$0	$416,717	$416,717

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
600-218	Dumping Area	$688,601	$0	$688,601	$688,601
600-220	Dumping Area	$1,127,389	$0	$1,127,389	$1,127,389
600-222	Military Compound	$1,126,563	$0	$1,126,563	$1,126,563
600-226	Dumping Area	$131,301	$0	$131,301	$131,301
600-228	Dumping Area	$294,800	$0	$294,800	$294,800
600-262	Crib	$392,650	$0	$392,650	$392,650
600-275	Foundation-Removed	$588,899	$0	$588,899	$588,899
600-281	Dumping Area	$442,258	$0	$442,258	$442,258
600 OCL	Sanitary Landfill	$2,383,340	$0	$2,383,340	$2,383,340
2607-E1	Septic Tank	$468,616	$0	$468,616	$468,616
2607-E1	Septic Tank Drain Fields-Two	$1,537,124	$0	$1,537,124	$1,537,124
2607-E3	Septic Tank	$462,832	$0	$462,832	$462,832
2607-E3	Septic Tank Drain Field	$3,721,789	$0	$3,721,789	$3,721,789
2607-E4	Septic Tank	$341,235	$0	$341,235	$341,235
2607-E4	Septic Tank Drain Field	$414,686	$0	$414,686	$414,686
2607-E5	Septic Tank	$462,832	$0	$462,832	$462,832
2607-E5	Septic Tank Drain Field	$565,748	$0	$565,748	$565,748
2607-E6	Septic Tank	$457,259	$0	$457,259	$457,259
2607-E6	Septic Tank Drain Field	$2,570,189	$0	$2,570,189	$2,570,189
2607-E7A	Septic Tank	$345,982	$0	$345,982	$345,982
2607-E7B	Septic Tank	$345,982	$0	$345,982	$345,982

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-E9	Septic Tank	$311,318	$0	$311,318	$311,318
2607-E9	Septic Tank Drain Field	$436,294	$0	$436,294	$436,294
2607-E12	Septic Tanks/Pipeline	$748,881	$0	$748,881	$748,881
2607-E12	Drain Fields-Two	$1,943,872	$0	$1,943,872	$1,943,872
2607-EA	Septic Tank	$286,975	$0	$286,975	$286,975
2607-EA	Septic Tank Drain Field	$342,213	$0	$342,213	$342,213
2607-EE	Septic Tank	$345,982	$0	$345,982	$345,982
2607-EE	Septic Tank Drain Field	$414,686	$0	$414,686	$414,686
2607-W1	Septic Tank	$579,704	$0	$579,704	$579,704
2607-W1	Septic Tank Drain Field	$5,394,832	$0	$5,394,832	$5,394,832
2607-W3	Septic Tank	$462,832	$0	$462,832	$462,832
2607-W3	Septic Tank Drain Field	$1,573,995	$0	$1,573,995	$1,573,995
2607-W4	Septic Tank	$341,320	$0	$341,320	$341,320
2607-W4	Septic Tank Drain Field	$297,209	$0	$297,209	$297,209
2607-W6	Septic Tanks/Pipeline	$560,239	$0	$560,239	$560,239
2607-W6	Septic Tank Drain Field	$2,707,021	$0	$2,707,021	$2,707,021
2607-W8	Septic Tank	$437,509	$0	$437,509	$437,509
2607-W8	Septic Tank Drain Field	$682,591	$0	$682,591	$682,591
2607-W9	Septic Tank	$422,287	$0	$422,287	$422,287
2607-W9	Septic Tank Drain Field	$682,591	$0	$682,591	$682,591
2607-WC	Septic Tank	$434,710	$0	$434,710	$434,710

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
2607-WC	Septic Tank Drain Field	$408,336	$0	$408,336	$408,336
2607-WL	Septic Tank	$822,118	$0	$822,118	$822,118
2607-WL	Septic Tank Drain Field	$682,591	$0	$682,591	$682,591
2607-WZ	Septic Tank	$345,982	$0	$345,982	$345,982
2607-WZ	Septic Tank Drain Field	$414,686	$0	$414,686	$414,686
2607-Z	Septic Tank	$570,272	$0	$570,272	$570,272
2607-Z	Septic Tank Drain Field	$2,078,461	$0	$2,078,461	$2,078,461
2607-Z1	Septic Tank	$322,459	$0	$322,459	$322,459
2607-Z1	Septic Tank Drain Field	$405,716	$0	$405,716	$405,716
CTFN 2703-E	Drain Field	$914,308	$0	$914,308	$914,308
OCSA	Foundations	$6,558,485	$0	$6,558,485	$6,558,485
UPR-200-E-2	Unplanned Release	$549,749	$0	$549,749	$549,749
UPR-200-E-28	Unplanned Release	$133,127	$0	$133,127	$133,127
UPR-200-E-35	Unplanned Release	$441,346	$0	$441,346	$441,346
UPR-200-E-37	Unplanned Release	$1,830,098	$0	$1,830,098	$1,830,098
UPR-200-E-39	Unplanned Release	$136,580	$0	$136,580	$136,580
UPR-200-E-43	Unplanned Release	$143,359	$0	$143,359	$143,359
UPR-200-E-50	Unplanned Release	$568,511	$0	$568,511	$568,511
UPR-200-E-52	Unplanned Release	$148,166	$0	$148,166	$148,166
UPR-200-E-54	Unplanned Release	$297,011	$0	$297,011	$297,011
UPR-200-E-55	Unplanned Release	$134,369	$0	$134,369	$134,369

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-E-62	Unplanned Release	$105,260	$0	$105,260	$105,260
UPR-200-E-64	Unplanned Release	$850,711	$0	$850,711	$850,711
UPR-200-E-66	Unplanned Release	$760,218	$0	$760,218	$760,218
UPR-200-E-89	Unplanned Release	$565,627	$0	$565,627	$565,627
UPR-200-E-98	Unplanned Release	$105,801	$0	$105,801	$105,801
UPR-200-E-101	Unplanned Release	$240,504	$0	$240,504	$240,504
UPR-200-E-143	Unplanned Release	$724,034	$0	$724,034	$724,034
UPR-200-W-23	Unplanned Release	$108,174	$0	$108,174	$108,174
UPR-200-W-39	Unplanned Release	$415,278	$0	$415,278	$415,278
UPR-200-W-43	Unplanned Release	$121,337	$0	$121,337	$121,337
UPR-200-W-51	Unplanned Release	$654,597	$0	$654,597	$654,597
UPR-200-W-56	Unplanned Release	$161,391	$0	$161,391	$161,391
UPR-200-W-57	Unplanned Release	$131,301	$0	$131,301	$131,301
UPR-200-W-61	Unplanned Release	$572,404	$0	$572,404	$572,404
UPR-200-W-63	Unplanned Release	$407,418	$0	$407,418	$407,418
UPR-200-W-67	Unplanned Release	$113,957	$0	$113,957	$113,957
UPR-200-W-70	Unplanned Release	$136,837	$0	$136,837	$136,837
UPR-200-W-71	Unplanned Release	$943,510	$0	$943,510	$943,510
UPR-200-W-96	Unplanned Release	$381,580	$0	$381,580	$381,580
UPR-200-W-101	Unplanned Release	$575,889	$0	$575,889	$575,889
UPR-200-W-116	Unplanned Release	$735,868	$0	$735,868	$735,868

Table A-9. RTD Alternative – Cost Summary

Site	Site Description	Total Capital Cost	Non-Discounted Annual & Periodic Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-W-165	Unplanned Release	$654,597	$0	$654,597	$654,597
UPR-600-12	Unplanned Release	$180,797	$0	$180,797	$180,797
UPR-600-21	Unplanned Release	$100,888	$0	$100,888	$100,888
		Railroad Siding Sites			
200-E-43; UPR-200-E-88	Rail Siding	$902,325	$0	$902,325	$902,325
200-E-124	Rail Siding	$505,145	$0	$505,145	$505,145
200-E-130	Rail Siding	$389,958	$0	$389,958	$389,958
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	$4,972,116	$0	$4,972,116	$4,972,116
UPR-200-E-69	Rail Siding	$755,423	$0	$755,423	$755,423
UPR-200-E-95	Rail Siding	$821,400	$0	$821,400	$821,400
UPR-200-E-112	Rail Siding	$2,443,777	$0	$2,443,777	$2,443,777
200-W-21	Rail Siding	$611,831	$0	$611,831	$611,831
200-W-81; UPR-200-W-58	Rail Siding	$2,084,352	$0	$2,084,352	$2,084,352
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	$2,775,442	$0	$2,775,442	$2,775,442
UPR-200-W-3; -4; -65; -73	Rail Siding	$2,273,499	$0	$2,273,499	$2,273,499

CTFN = Chemical Tile Field North
OCSA = Old Central Shop Area
RTD = removal, treatment, and disposal

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
200 CP	Pit/Dumping Area	$0	$2,787,367	$727,949	$706,457	$706,457	$348,206	$346,807
200-E-1	Dumping Area	$0	$1,622,392	$489,056	$401,724	$401,724	$168,530	$167,966
200-E-2	Unplanned Release	$0	$1,622,392	$489,056	$754,946	$754,946	$168,530	$167,966
200-E-6	Septic Tank	$0	$1,627,027	$493,691	$462,832	$462,832	$180,118	$179,554
200-E-7	Septic Tank	$0	$1,622,392	$489,056	$410,580	$410,580	$168,530	$167,966
200-E-7	Septic Tank Drain Field	$0	$1,577,890	$444,555	$443,863	$443,863	$122,093	$121,529
200-E-13	Dumping Area	$0	$2,787,367	$727,949	$706,457	$706,457	$348,206	$346,807
200-E-26	Unplanned Release	$0	$1,627,027	$493,691	$675,641	$675,641	$180,118	$179,554
200-E-29	Unplanned Release	$0	$3,249,740	$818,299	$827,877	$827,877	$314,000	$312,353
200-E-46	Dumping Area	$0	$2,787,367	$727,949	$849,558	$849,558	$348,206	$346,807
200-E-53	Unplanned Release	$0	$1,554,397	$421,061	$372,571	$372,571	$86,851	$86,288
200-E-58	Neutralization Tank	$0	$1,627,027	$493,691	$479,781	$479,781	$180,118	$179,554
200-E-101	Experiment	$0	$1,627,027	$493,691	$636,223	$636,223	$180,118	$179,554
200-E-103	Unplanned Release	$0	$8,675,300	$2,107,558	$2,176,448	$2,176,448	$614,568	$609,258
200-E-107	Unplanned Release	$0	$2,703,278	$690,257	$753,112	$753,112	$242,481	$241,082
200-E-109	Unplanned Release	$0	$1,554,397	$421,061	$444,354	$444,354	$143,820	$142,995
200-E-110	Dumping Area	$0	$1,554,397	$421,061	$163,329	$163,329	$86,851	$86,288
200-E-115	Unplanned Release	$0	$1,554,397	$421,061	$137,365	$137,365	$86,851	$86,288
200-E-117	Unplanned Release	$0	$1,554,397	$421,061	$105,428	$105,428	$86,851	$86,288

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
200-E-121	Unplanned Release	$0	$2,583,791	$678,344	$641,768	$641,768	$242,481	$241,082
200-E-123	Unplanned Release	$0	$1,575,403	$442,067	$152,401	$152,401	$109,795	$109,231
200-E-125	Unplanned Release	$0	$1,554,397	$421,061	$115,052	$115,052	$86,851	$86,288
200-E-128	Unplanned Release	$0	$1,575,403	$442,067	$115,681	$115,681	$109,795	$109,231
200-E-129	Unplanned Release	$0	$1,554,397	$421,061	$118,689	$118,689	$86,851	$86,288
200-E-139	Unplanned Release	$0	$2,583,430	$662,175	$626,314	$626,314	$242,481	$241,082
200-E BP	Burn Pit	$0	$3,253,931	$837,270	$905,610	$905,610	$460,960	$458,596
200-E PD	Ditch	$0	$1,622,392	$489,056	$1,026,266	$1,026,266	$330,543	$329,718
200-W-1	Mud Pit	$0	$1,577,890	$444,555	$393,769	$393,769	$122,093	$121,529
200-W-2	Spoils Pile/Berm	$0	$1,627,027	$493,691	$614,324	$614,324	$180,118	$179,554
200-W-3	Dumping Area	$0	$2,827,316	$737,309	$728,314	$728,314	$390,278	$388,871
200-W-6	Dumping Area	$0	$1,627,027	$493,691	$795,175	$795,175	$180,118	$179,554
200-W-11	Dumping Area	$0	$1,741,479	$482,885	$665,836	$665,836	$202,557	$201,731
200-W-12	Dumping Area	$0	$1,622,392	$489,056	$148,702	$148,702	$168,530	$167,966
200-W-14	Dumping Area	$0	$1,622,392	$489,056	$483,719	$483,719	$168,530	$167,966
200-W-22	Foundations/Unplanned Release	$0	$2,023,809	$549,038	$1,849,956	$1,849,956	$290,628	$289,557
200-W-33	Dumping Area	$0	$9,141,864	$2,216,879	$1,842,207	$1,842,207	$602,239	$597,427
200-W-51	Septic Tank	$0	$1,622,392	$489,056	$345,982	$345,982	$168,530	$167,966
200-W-51	Septic Tank Drain Field	$0	$1,577,890	$444,555	$414,686	$414,686	$122,093	$121,529
200-W-53	Unplanned Release	$0	$2,988,057	$756,984	$765,247	$765,247	$310,510	$309,005

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
200-W-54	Unplanned Release	$0	$11,738,411	$2,807,291	$2,210,187	$2,210,187	$511,737	$505,512
200-W-55	Dumping Area	$0	$1,577,890	$444,555	$310,113	$310,113	$122,093	$121,529
200-W-63	Unplanned Release	$0	$1,554,397	$421,061	$317,210	$317,210	$86,851	$86,288
200-W-64	Foundation	$0	$1,554,397	$421,061	$870,874	$870,874	$86,851	$86,288
200-W-67	Unplanned Release	$0	$1,554,397	$421,061	$286,666	$286,666	$86,851	$86,288
200-W-75	Experiment/Test Site	$0	$1,575,403	$442,067	$358,267	$358,267	$109,795	$109,231
200-W-80	Spoils Pile/Berm	$0	$1,554,397	$421,061	$278,835	$278,835	$86,851	$86,288
200-W-82	Pump Station/Product Piping	$0	$1,622,392	$489,056	$428,176	$428,176	$168,530	$167,966
200-W-86	Unplanned Release	$0	$1,554,397	$421,061	$106,043	$106,043	$86,851	$86,288
200-W-90	Unplanned Release	$0	$1,554,397	$421,061	$105,981	$105,981	$86,851	$86,288
200-W-92	Dumping Area	$0	$1,622,392	$489,056	$633,173	$633,173	$168,530	$167,966
200-W-101	Dumping Area	$0	$1,554,397	$421,061	$246,152	$246,152	$86,851	$86,288
200-W-106	Unplanned Release	$0	$1,554,397	$421,061	$269,296	$269,296	$86,851	$86,288
200-W ADB	Coal Ash Pit	$0	$2,787,367	$727,949	$706,457	$706,457	$348,206	$346,807
200-W BP	Burn Pit	$0	$2,586,278	$680,831	$676,113	$676,113	$348,206	$346,807
207-B	Retention Basin	$0	$2,088,956	$598,377	$2,523,228	$2,523,228	$462,876	$461,800
207-SL	Retention Basin	$0	$1,627,027	$493,691	$690,264	$690,264	$180,118	$179,554
209-E-WS-3	Valve Pit	$0	$1,575,403	$442,067	$316,301	$316,301	$109,795	$109,231
216-A-1	Crib	$0	$1,627,027	$493,691	$1,051,081	$1,051,081	$180,118	$179,554
216-A-3	Crib	$0	$1,627,027	$493,691	$868,437	$868,437	$180,118	$179,554

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
216-A-9	Crib	$0	$1,627,027	$493,691	$4,374,203	$4,374,203	$318,877	$318,051
216-A-18	Trench	$0	$1,627,027	$493,691	$1,028,266	$1,028,266	$180,118	$179,554
216-A-20	Trench	$0	$1,627,027	$493,691	$612,062	$612,062	$180,118	$179,554
216-A-28	Crib	$0	$1,627,027	$493,691	$405,418	$405,418	$180,118	$179,554
216-A-34	Ditch	$0	$1,627,027	$493,691	$1,378,122	$1,378,122	$180,118	$179,554
216-A-40	Retention Basin	$0	$1,627,027	$493,691	$1,589,113	$1,589,113	$180,118	$179,554
216-A-42	Retention Basin	$0	$1,627,027	$493,691	$4,575,431	$4,575,431	$180,118	$179,554
216-B-2-1	Ditch	$0	$1,627,027	$493,691	$2,481,250	$2,481,250	$318,877	$318,051
216-B-2-2	Ditch	$0	$1,627,027	$493,691	$2,481,250	$2,481,250	$318,877	$318,051
216-B-2-3	Ditch	$0	$1,771,312	$527,499	$2,793,408	$2,793,408	$318,877	$318,051
216-B-3-1	Ditch	$0	$1,622,392	$489,056	$2,085,506	$2,085,506	$318,877	$318,051
216-B-3-2	Ditch	$0	$1,846,576	$541,585	$2,448,769	$2,448,769	$462,876	$461,800
216-B-3-3	Ditch	$0	$1,622,392	$489,056	$1,828,449	$1,828,449	$180,118	$179,554
216-B-59/59B	Trench/Retention Basin	$0	$3,382,965	$905,127	$2,278,447	$2,278,447	$725,327	$723,648
216-C-3	Crib	$0	$1,627,027	$493,691	$497,379	$497,379	$180,118	$179,554
216-C-5	Crib	$0	$1,627,027	$493,691	$532,679	$532,679	$180,118	$179,554
216-C-6	Crib	$0	$1,627,027	$493,691	$517,739	$517,739	$180,118	$179,554
216-C-7	Crib	$0	$1,627,027	$493,691	$516,282	$516,282	$180,118	$179,554
216-C-9	Pond	$0	$15,859,721	$3,822,445	$12,740,389	$12,740,389	$1,145,599	$1,137,449
216-C-10	Crib	$0	$1,627,027	$493,691	$518,837	$518,837	$180,118	$179,554

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
216-S-4	French Drain	$0	$1,627,027	$493,691	$556,334	$556,334	$180,118	$179,554
216-S-8	Trench	$0	$1,627,027	$493,691	$1,281,682	$1,281,682	$180,118	$179,554
216-S 16D	Ditch	$0	$1,622,392	$489,056	$885,319	$885,319	$168,530	$167,966
216-S-19	Pond	$0	$8,357,574	$2,067,186	$5,798,659	$5,798,659	$881,982	$877,617
216-S-22	Crib	$0	$1,627,027	$493,691	$599,920	$599,920	$180,118	$179,554
216-S-26	Crib	$0	$1,627,027	$493,691	$982,758	$982,758	$180,118	$179,554
216-T-4A	Pond	$0	$11,444,179	$2,790,412	$7,838,639	$7,838,639	$1,407,358	$1,385,602
216-T-20	Trench/Minor Debris	$0	$1,622,392	$489,056	$163,332	$163,332	$168,530	$167,966
216-Z-4	Trench	$0	$1,627,027	$493,691	$447,048	$447,048	$180,118	$179,554
216-Z-6	Crib	$0	$1,627,027	$493,691	$494,782	$494,782	$180,118	$179,554
218-E-7	Vault	$0	$1,622,392	$489,056	$4,741,332	$4,741,332	$318,877	$318,051
218-W-7	Vault	$0	$1,622,392	$489,056	$540,815	$540,815	$318,877	$318,051
218-W-8	Vault	$0	$1,622,392	$489,056	$800,087	$800,087	$318,877	$318,051
218-W-9	Burial Ground	$0	$1,622,392	$489,056	$1,011,900	$1,011,900	$318,877	$318,051
231-W-151	Vault w/tanks	$0	$1,622,392	$489,056	$1,742,992	$1,742,992	$318,877	$318,051
270-E-1	Neutralization Tank	$0	$1,627,027	$493,691	$482,113	$482,113	$180,118	$179,554
291-C-1	Burial Ground	$0	$1,575,403	$442,067	$730,479	$730,479	$109,795	$109,231
600-36	Burn Pit	$0	$1,577,890	$444,555	$466,255	$466,255	$202,557	$201,731
600-37	French Drain/Tanks	$0	$1,627,027	$493,691	$595,311	$595,311	$180,118	$179,554
600-38	Dumping Area	$0	$3,656,107	$931,504	$886,287	$886,287	$448,323	$446,470

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
600-40	Dumping Area	$0	$1,577,890	$444,555	$168,294	$168,294	$122,093	$121,529
600-51	Dumping Area	$0	$1,577,890	$444,555	$130,847	$130,847	$122,093	$121,529
600-65	Dumping Area	$0	$1,577,890	$444,555	$132,116	$132,116	$122,093	$121,529
600-66	Dumping Area	$0	$1,577,890	$444,555	$131,078	$131,078	$122,093	$121,529
600-70	Dumping Area	$0	$2,787,367	$727,949	$1,800,303	$1,800,303	$348,206	$346,807
600-71	Burn Pit	$0	$1,577,890	$444,555	$416,717	$416,717	$122,093	$121,529
600-218	Dumping Area	$0	$1,577,890	$444,555	$688,601	$688,601	$202,557	$201,731
600-220	Dumping Area	$0	$3,011,551	$780,478	$1,127,389	$1,127,389	$647,801	$637,879
600-222	Military Compound	$0	$5,085,975	$1,266,539	$1,126,563	$1,126,563	$538,141	$532,731
600-226	Dumping Area	$0	$1,577,890	$444,555	$131,301	$131,301	$122,093	$121,529
600-228	Dumping Area	$0	$1,577,890	$444,555	$294,800	$294,800	$122,093	$121,529
600-262	Crib	$0	$1,627,027	$493,691	$392,650	$392,650	$430,272	$429,196
600-275	Foundation-Removed	$0	$2,023,809	$549,038	$588,899	$588,899	$168,530	$167,966
600-281	Dumping Area	$0	$1,622,392	$489,056	$442,258	$442,258	$202,557	$201,731
600 OCL	Sanitary Landfill	$0	$1,627,027	$493,691	$2,383,340	$2,383,340	$180,118	$179,554
2607-E1	Septic Tank	$0	$1,627,027	$493,691	$468,616	$468,616	$688,832	$686,660
2607-E1	Septic Tank Drain Fields-Two	$0	$4,305,477	$973,495	$1,537,124	$1,537,124	$180,118	$179,554
2607-E3	Septic Tank	$0	$1,627,027	$493,691	$462,832	$462,832	$676,935	$675,245
2607-E3	Septic Tank Drain Field	$0	$3,398,976	$905,330	$3,721,789	$3,721,789	$168,530	$167,966
2607-E4	Septic Tank	$0	$1,622,392	$489,056	$341,235	$341,235	$109,795	$109,231

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
2607-E4	Septic Tank Drain Field	$0	$1,577,890	$444,555	$414,686	$414,686	$180,118	$179,554
2607-E5	Septic Tank	$0	$1,627,027	$493,691	$462,832	$462,832	$168,530	$167,966
2607-E5	Septic Tank Drain Field	$0	$1,622,392	$489,056	$565,748	$565,748	$180,118	$179,554
2607-E6	Septic Tank	$0	$1,627,027	$493,691	$457,259	$457,259	$445,367	$443,633
2607-E6	Septic Tank Drain Field	$0	$3,434,373	$879,550	$2,570,189	$2,570,189	$168,530	$167,966
2607-E7A	Septic Tank	$0	$1,622,392	$489,056	$345,982	$345,982	$168,530	$167,966
2607-E7B	Septic Tank	$0	$1,622,392	$489,056	$345,982	$345,982	$168,530	$167,966
2607-E9	Septic Tank	$0	$1,577,890	$444,555	$311,318	$311,318	$168,530	$167,966
2607-E9	Septic Tank Drain Field	$0	$1,622,392	$489,056	$436,294	$436,294	$721,787	$720,250
2607-E12	Septic Tanks/Pipeline	$0	$3,121,282	$843,812	$748,881	$748,881	$697,836	$695,300
2607-E12	Drain Fields-Two	$0	$4,970,680	$1,273,598	$1,943,872	$1,943,872	$168,530	$167,966
2607-EA	Septic Tank	$0	$1,622,392	$489,056	$286,975	$286,975	$168,530	$167,966
2607-EA	Septic Tank Drain Field	$0	$1,622,392	$489,056	$342,213	$342,213	$109,795	$109,231
2607-EE	Septic Tank	$0	$1,622,392	$489,056	$345,982	$345,982	$122,093	$121,529
2607-EE	Septic Tank Drain Field	$0	$1,577,890	$444,555	$414,686	$414,686	$180,118	$179,554
2607-W1	Septic Tank	$0	$1,627,027	$493,691	$579,704	$579,704	$1,179,603	$1,167,541
2607-W1	Septic Tank Drain Field	$0	$22,633,635	$5,412,228	$5,394,832	$5,394,832	$180,118	$179,554
2607-W3	Septic Tank	$0	$1,627,027	$493,691	$462,832	$462,832	$330,543	$329,718
2607-W3	Septic Tank Drain Field	$0	$1,622,392	$489,056	$1,573,995	$1,573,995	$109,795	$109,231
2607-W4	Septic Tank	$0	$1,622,392	$489,056	$341,320	$341,320	$122,093	$121,529

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
2607-W4	Septic Tank Drain Field	$0	$1,577,890	$444,555	$297,209	$297,209	$318,877	$318,051
2607-W6	Septic Tanks/Pipeline	$0	$1,627,027	$493,691	$560,239	$560,239	$691,795	$689,503
2607-W6	Septic Tank Drain Field	$0	$4,527,211	$1,169,688	$2,707,021	$2,707,021	$180,118	$179,554
2607-W8	Septic Tank	$0	$1,627,027	$493,691	$437,509	$437,509	$430,272	$429,196
2607-W8	Septic Tank Drain Field	$0	$1,577,890	$444,555	$682,591	$682,591	$180,118	$179,554
2607-W9	Septic Tank	$0	$1,627,027	$493,691	$422,287	$422,287	$430,272	$429,196
2607-W9	Septic Tank Drain Field	$0	$1,577,890	$444,555	$682,591	$682,591	$168,530	$167,966
2607-WC	Septic Tank	$0	$1,622,392	$489,056	$434,710	$434,710	$122,093	$121,529
2607-WC	Septic Tank Drain Field	$0	$1,577,890	$444,555	$408,336	$408,336	$180,118	$179,554
2607-WL	Septic Tank	$0	$1,627,027	$493,691	$822,118	$822,118	$430,272	$429,196
2607-WL	Septic Tank Drain Field	$0	$1,577,890	$444,555	$682,591	$682,591	$109,795	$109,231
2607-WZ	Septic Tank	$0	$1,622,392	$489,056	$345,982	$345,982	$122,093	$121,529
2607-WZ	Septic Tank Drain Field	$0	$1,577,890	$444,555	$414,686	$414,686	$180,118	$179,554
2607-Z	Septic Tank	$0	$1,627,027	$493,691	$570,272	$570,272	$573,687	$572,288
2607-Z	Septic Tank Drain Field	$0	$2,686,822	$704,390	$2,078,461	$2,078,461	$168,530	$167,966
2607-Z1	Septic Tank	$0	$1,622,392	$489,056	$322,459	$322,459	$168,530	$167,966
2607-Z1	Septic Tank Drain Field	$0	$1,622,392	$489,056	$405,716	$405,716	$202,557	$201,731
CTFN 2703-E	Drain Field	$0	$1,766,677	$522,864	$914,308	$914,308	$728,523	$720,733
OCSA	Foundations	$0	$14,663,778	$3,510,727	$6,558,485	$6,558,485	$208,482	$207,407
UPR-200-E-2	Unplanned Release	$0	$2,020,961	$530,382	$549,749	$549,749	$122,093	$121,529

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-E-28	Unplanned Release	$0	$1,577,890	$444,555	$133,127	$133,127	$168,530	$167,966
UPR-200-E-35	Unplanned Release	$0	$1,622,392	$489,056	$441,346	$441,346	$457,439	$452,384
UPR-200-E-37	Unplanned Release	$0	$9,580,296	$2,301,620	$1,830,098	$1,830,098	$168,530	$167,966
UPR-200-E-39	Unplanned Release	$0	$1,622,392	$489,056	$136,580	$136,580	$109,795	$109,231
UPR-200-E-43	Unplanned Release	$0	$1,575,403	$442,067	$143,359	$143,359	$208,482	$207,407
UPR-200-E-50	Unplanned Release	$0	$2,140,808	$558,464	$568,511	$568,511	$122,093	$121,529
UPR-200-E-52	Unplanned Release	$0	$1,577,890	$444,555	$148,166	$148,166	$122,093	$121,529
UPR-200-E-54	Unplanned Release	$0	$1,577,890	$444,555	$297,011	$297,011	$86,851	$86,288
UPR-200-E-55	Unplanned Release	$0	$1,554,397	$421,061	$134,369	$134,369	$86,851	$86,288
UPR-200-E-62	Unplanned Release	$0	$1,554,397	$421,061	$105,260	$105,260	$348,206	$346,807
UPR-200-E-64	Unplanned Release	$0	$2,787,367	$727,949	$850,711	$850,711	$242,481	$241,082
UPR-200-E-66	Unplanned Release	$0	$2,723,924	$695,094	$760,218	$760,218	$202,557	$201,731
UPR-200-E-89	Unplanned Release	$0	$1,577,890	$444,555	$565,627	$565,627	$86,851	$86,288
UPR-200-E-98	Unplanned Release	$0	$1,554,397	$421,061	$105,801	$105,801	$86,851	$86,288
UPR-200-E-101	Unplanned Release	$0	$1,554,397	$421,061	$240,504	$240,504	$311,594	$310,044
UPR-200-E-143	Unplanned Release	$0	$3,069,298	$776,019	$724,034	$724,034	$86,851	$86,288
UPR-200-W-23	Unplanned Release	$0	$1,554,397	$421,061	$108,174	$108,174	$168,530	$167,966
UPR-200-W-39	Unplanned Release	$0	$1,622,392	$489,056	$415,278	$415,278	$86,851	$86,288
UPR-200-W-43	Unplanned Release	$0	$1,554,397	$421,061	$121,337	$121,337	$242,481	$241,082
UPR-200-W-51	Unplanned Release	$0	$2,763,873	$704,455	$654,597	$654,597	$168,530	$167,966

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-W-56	Unplanned Release	$0	$1,622,392	$489,056	$161,391	$161,391	$122,093	$121,529
UPR-200-W-57	Unplanned Release	$0	$1,577,890	$444,555	$131,301	$131,301	$180,118	$179,554
UPR-200-W-61	Unplanned Release	$0	$1,627,027	$493,691	$572,404	$572,404	$86,851	$86,288
UPR-200-W-63	Unplanned Release	$0	$1,554,397	$421,061	$407,418	$407,418	$86,851	$86,288
UPR-200-W-67	Unplanned Release	$0	$1,554,397	$421,061	$113,957	$113,957	$122,093	$121,529
UPR-200-W-70	Unplanned Release	$0	$1,577,890	$444,555	$136,837	$136,837	$348,206	$346,807
UPR-200-W-71	Unplanned Release	$0	$2,686,822	$704,390	$943,510	$943,510	$109,795	$109,231
UPR-200-W-96	Unplanned Release	$0	$1,575,403	$442,067	$381,580	$381,580	$168,530	$167,966
UPR-200-W-101	Unplanned Release	$0	$1,622,392	$489,056	$575,889	$575,889	$242,481	$241,082
UPR-200-W-116	Unplanned Release	$0	$2,663,329	$680,896	$735,868	$735,868	$242,481	$241,082
UPR-200-W-165	Unplanned Release	$0	$2,763,873	$704,455	$654,597	$654,597	$168,530	$167,966
UPR-600-12	Unplanned Release	$0	$1,622,392	$489,056	$180,797	$180,797	$86,851	$86,288
UPR-600-21	Unplanned Release	$0	$1,554,397	$421,061	$100,888	$100,888	$430,272	$429,196
			Railroad Siding Sites					
200-E-43; UPR-200-E-88	Rail Siding	$0	$1,577,890	$444,555	$902,325	$902,325	$202,557	$201,731
200-E-124	Rail Siding	$0	$1,577,890	$444,555	$505,145	$505,145	$122,093	$121,529
200-E-130	Rail Siding	$0	$1,577,890	$444,555	$389,958	$389,958	$122,093	$121,529
UPR-200-E-10; -11; -12; -20; -33	Rail Siding	$0	$9,505,707	$2,202,397	$4,972,116	$4,972,116	$615,115	$609,859
UPR-200-E-69	Rail Siding	$0	$1,577,890	$444,555	$755,423	$755,423	$202,557	$201,731

Table A-10. Present Worth Cost Summary

Waste Site/Group	Site Description	No Action	MESC/IC/MNA with sampling		RTD		CS/NA	
			Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost	Non-Discounted Cost	Total Present Worth Cost
UPR-200-E-95	Rail Siding	$0	$1,577,890	$444,555	$821,400	$821,400	$122,093	$121,529
UPR-200-E-112	Rail Siding	$0	$2,929,610	$661,543	$2,443,777	$2,443,777	$440,812	$439,263
200-W-21	Rail Siding	$0	$1,622,392	$489,056	$611,831	$611,831	$168,530	$167,966
200-W-81; UPR-200-W-58	Rail Siding	$0	$4,200,381	$1,059,034	$2,084,352	$2,084,352	$455,580	$453,433
200-W-83; UPR-200-W-41; -44; -46	Rail Siding	$0	$5,653,083	$1,399,419	$2,775,442	$2,775,442	$530,171	$527,240
UPR-200-W-3; -4; -65; -73	Rail Siding	$0	$3,917,791	$992,820	$2,273,499	$2,273,499	$451,812	$449,818

CS/NFA = confirmatory sampling/no further action
CTFN = Chemical Tile Field North
MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation
OCSA = Old Central Shop Area
Rad = radiological
RTD = removal, treatment, and disposal

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