

**FLUOR FERNALD CLOSURE PLAN
BASIS OF ESTIMATE**

**PBS-06
SOILS EXCAVATION**

SEPTEMBER 2001

**20300-PL-0005
REVISION 1**

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 - 2.2)1 Plan/Scope
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 - 2.3)2 Quantification
 - 2.4) Subtask # 4 – Invasive Species Control
 - 2.4)1 Plan/Scope
 - 2.4)2 Quantification
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 - 2.5)1 Plan/Scope
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 - 3.1)1 Plan/Scope
 - 3.1)2 Quantification

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 - 3.2)2 Quantification
- 3.3) Subtask #3 – Project Management
 - 3.3)1 Plan/Scope
 - 3.3)2 Quantification
- 3.4) Subtask #4 – Invasive Species Control
 - 3.4)1 Plan/Scope
 - 3.4)2 Quantification
- 3.5) Subtask #5 – Restoration Field Implementation
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 - 3.5)2 Quantification
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 - 3.6)1 Plan/Scope
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- 1.5.6 Paddys Run Corridor Restoration
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 - 1.2) Quantification
 - 2) Task #2 – Restoration Design
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Project Management
 - 3.1) Plan/Scope
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 - 4) Task #4 – Invasive Species Control
 - 4.1) Plan/Scope
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 - 5) Task #5 - Restoration Field Implementation
 - 5.1) Plan/Scope
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 - 6.1) Plan/Scope
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 - 7.1) Plan/Scope
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 - 1) Task #1 – Predesign Investigation
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 - 1.2) Quantification

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- 2) Task #2 – Restoration Design
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Project Management
 - 3.1) Plan/Scope
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 - 4) Task #4 – Invasive Species Control
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 - 5) Task #5 – Restoration Field Implementation
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 - 5.2) Quantification
 - 6) Task #6 – Demobilization/Project Closeout
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 - 6.2) Quantification
 - 7) Task #7 – Restoration Monitoring
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- 1.5.8 Silos Area Restoration
- 1) Task #1 – Restoration Design
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Project Management
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Invasive Species Control
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Restoration Field Implementation
 - 4.1) Plan/Scope
 - 4.2) Quantification
 - 5) Task #5 – Demobilizaion/Project Closeout
 - 5.1) Plan/Scope
 - 5.2) Quantification
 - 6) Task #6 – Restoration Monitoring
 - 6.1) Plan/Scope
 - 6.2) Quantification
- 1.5.9 GNRR9 - Production/Waste Pits Area Restoration
- 1) Task #1 – Predesign Investigation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Restoration Design
 - 2.1) Plan/Scope
 - 2.2) Quantification

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- 3) Task #3 – Project Management
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 4) Task #4 – Restoration Field Implementation
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 5) Task #5 – Demobilization/Project Closeout
 - 5.1) Plan/Scope
 - 5.2) Quantification
- 6) Task #6 – Restoration Monitoring
 - 6.1) Plan/Scope
 - 6.2) Quantification

2.0 Schedule

3.0 Manpower Plans

- 3.1 Demonstration Forest Project
- 3.2 Certified/Restored Area Maintenance
- 3.3 SWU Restoration
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4.0 Estimate

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 - 1.2.2 Exclusions
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 - 1.2.5 Applicable Technical Guidance
 - 1.2.6 Disposal, Treatment, Containers, Utilities
 - 1.3 Drivers
 - 1.3.1 External Events that Impact the Schedule
 - 1.4 Project Physical Description
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 GCU23 - Area 1 Phase II Interim Restoration
 - 1) Task #1 – Re-seeding Portion of the Remediated STP Footprint
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 1.5.2 GCJ12 - Area 1 Phase II Certification
 - 1) Task #1 – Certification
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 1.5.3 GC131 - Area 1 Phase III Certification
 - 1) Task #1 – Certification
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 1.5.4 GC132 - Area 1 Phase III Paddys Run Stabilization/Debris Removal
 - 1) Task #1 – Stabilization and Debris Removal
 - 1.1) Plan/Scope
 - 1.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 1 Phase III Certification
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 - 3.3 Area 1 Phase II Certification
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- 4.0 Estimate

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1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government-Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.4 Project Physical Description

1.4.1 Scope of Work

1.4.2 Purpose/Objective

1.4.3 Project Boundaries

1.4.4 End State Condition

1.5 Project Plan/Technical Scope and Quantification

1.5.1 G2115 – Predesign Characterization

1) Task # 1 – Area 2 Phase II Predesign Characterization – FY2001

1.1) Subtask #1 – Prepare Project Specific Plan (PSP)

1.1)1 Plan/Scope

1.1)2 Quantification

1.2) Subtask #2 – Field and Analytical Work

1.2)1 Plan/Scope

1.2)2 Quantification

1.3) Subtask #3 – Data Reduction and Interpretation

1.3)1 Plan/Scope

1.3)2 Quantification

2) Task #2 – Area 2 Phase II Predesign Characterization

2.1) Subtask #1 – Prepare Project Specific Plan

2.1)1 Plan/Scope

2.1)2 Quantification

2.2) Subtask #2 – Field and Analytical Work

2.2)1 Plan/Scope

2.2)2 Quantification

2.3) Subtask #3 – Data Reduction and Interpretation

2.3)1 Plan/Scope

2.3)2 Quantification

1.5.2 G2114 - Area 2 Title I/II Design

1) Task #1 – Project Planning

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Title I Design

2.1) Plan/Scope

2.2) Quantification

Section 4: G211 – Area 2 Soils Remediation

- 3) Task #3 - Title II Design
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.3 G2111 - Area 2 Title III Design
 - 1) Task #1 – Area 2 Phase I Title III Design
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Area 2 Phase I and Area 2 Phase II Title III Design
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 1.5.4 G2113 – Site Preparation/Excavation/Interim Restoration
 - 1) Task #1 – Southern Waste Units Excavation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Area 2 Phase I Excavation – Perimeter FY2001
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Area 2 Phase I Excavation – Perimeter (Remaining)
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Area 2 Phase II Site Preparation/Excavation
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 1.5.5 G2112 – Excavation Control/Certification
 - 1) Task #1 – Excavation Control
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Precertification
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Certification
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 2 Phase I Title III
 - 3.2 Area 2 Excavation Control/Certification
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Section 5: G331 – Area 3A/LSP Soils Remediation and Area 4A Design

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 - 1.2.2 Exclusion
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 - 1.2.4 Applicable Requirements
 - 1.2.5 Applicable Technical Guidance
 - 1.2.6 Disposal, Treatment, Containers, Utilities
 - 1.3 Drivers
 - 1.4 Project Physical Description
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 G3A13 - Title III Design
 - 1) Task #1 – Excavation Support
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Prepare Final Documents
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 1.5.2 G3A14 - Site Preparation/Excavation
 - 1) Task #1 – Site Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Excavation
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Control and Management
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Interim Restoration
 - 4.1) Plan/Scope
 - 4.2) Quantification
 - 1.5.3 G3A17 - Excavation Control/Certification
 - 1) Task #1 – Excavation Monitoring
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Precertification
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Certification
 - 3.1) Plan/Scope
 - 3.2) Quantification

Section 5: G331 – Area 3A/LSP Soils Remediation and Area 4A Design

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 - 1) Task #1 - Container Receipt and Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Load Containers
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.5 G3A19 - On-Site Treatment
 - 1) Task #1 – Procurement
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Prepare Plans
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Site Preparation
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Treatment
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 3A/LSP Title III
 - 3.2 Area 3A/LSP Site Preparation/Excavation
 - 3.3 Area 3A/LSP Off-Site Waste Disposition
 - 3.4 Area 3A/LSP On-Site Waste Disposition
 - 3.5 Area 3A/4A Predesign FY01
 - 3.6 Area 3A/4A Design FY01
 - 3.7 Lime Sludge Ponds Design FY01
 - 3.8 Production Area Waste Disposition Field Support FY01
- 4.0 Estimate
- 5.0 Risk Plan

Section 6: G4A1 – Area 4A Soils Remediation

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1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.4 Project Physical Description

1.5 Project Plan/Tasks

1.5.1 G4A13 - Title III Design

1) Task # 1- Excavation Support

1.1) Plan/Scope

1.2) Quantification

2) Task # 2 – Prepare Final Documents

2.1) Plan/Scope

2.2) Quantification

1.5.2 G4A14 - Site Preparation/Excavation

1) Task #1 – Site Preparation

1.3) Plan/Scope

1.3) Quantification

2) Task #2 – Excavation

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Control and Management

3.1) Plan/Scope

3.2) Quantification

4) Task #4 – Interim Restoration

4.1) Plan/Scope

4.2) Quantification

1.5.3 G4A17 - Excavation Monitoring/Certification

1) Task #1 – Excavation Monitoring

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Precertification

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Certification

3.1) Plan/Scope

3.2) Quantification

Section 6: G4A1 – Area 4A Soils Remediation

- 1.5.4 G4A18 - Off-Site Waste Disposition
 - 1) Task #1 – Container Receipt and Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Load Containers
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.5 G4A19 - On-Site Treatment
 - 1) Task #1 – Excavation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Prepare Plans
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Site Preparation
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Treatment
 - 4.1) Plan/Scope
 - 4.2) Quantification

2.0 Schedule

3.0 Manpower Plans

3.1 Area 4A Title III (Include Subcontractor Staff/Craft)

3.2 Area 4A Site Preparation/Excavation

3.3 Area 4A Excavation Control/Certification

3.4 Area 4A Off-Site Waste Disposition

3.5 Area 4A On-Site Waste Treatment

4.0 Estimate

5.0 Risk Plan

Section 7: G3B1 – Area 3B Soils Remediation

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 - 1.2 Assumptions/Exclusions
 - 1.2.1 Assumptions
 - 1.2.2 Exclusions
 - 1.2.3 Government Furnished Equipment/Services
 - 1.2.4 Applicable Requirements
 - 1.2.5 Applicable Technical Guidance
 - 1.2.6 Disposal, Treatment, Containers, Utilities
 - 1.3 Drivers
 - 1.4 Project Physical Description
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 G3B11 - Predesign Characterization for Area 3B/4B/5
 - 1) Task #1 – Prepare Project Specific Plans
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Field and Analytical Work
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Data Reduction and Interpretation
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 1.5.2 G3B12 - Title I/II Design for Areas 3B/4B/5
 - 1) Task #1 - Project Planning
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 - Title I Design
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 - Title II Design
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 1.5.3 G3B13 - Title III Design for Area 3B
 - 1) Task #1 - Excavation Support
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Prepare Final Documents
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 1.5.4 G3B14 - Site Preparation/Excavation
 - 1) Task #1 – Site Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification

Section 7: G3B1 – Area 3B Soils Remediation

- 2) Task #2 – Excavation
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 3) Task #3 – Control and Management
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 4) Task #4 – Interim Restoration
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 1.5.5 G3B17 - Excavation Monitoring/Certification
 - 1) Task #1 – Excavation Monitoring
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Precertification
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Certification
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.6 G3B18 - Off-Site Waste Disposition
 - 1) Task #1 – Container Receipt and Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Load Containers
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 3B/4B/5 Predesign
 - 3.2 Area 3B/4B/5 Title I/II Design
 - 3.3 Area 3B Title III (Includes Subcontractor Staff/Craft)
 - 3.4 Area 3B Site Preparation/Excavation
 - 3.5 Area 3B Excavation Control/Certification
 - 3.6 Area 3B Off-Site Waste Disposition
- 4.0 Estimate
- 5.0 Risk Plan

Section 8: G4B1 – Area 4B Soils Remediation

1.0 Narrative

1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government-Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.4 Project Physical Description

1.5 Project Plan/Technical Scope and Quantification

1.5.1 G4B13 - Title III Design

1) Task #1 – Excavation Support

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Prepare Final Documents

2.1) Plan/Scope

2.2) Quantification

1.5.2 G4A14 - Site Preparation/Excavation

1) Task #1 – Site Preparation

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Excavation

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Control and Management

3.1) Plan/Scope

3.2) Quantification

4) Task #4 – Interim Restoration

4.1) Plan/Scope

4.2) Quantification

1.5.3 G4A17 - Excavation Monitoring/Certification

1) Task #1 – Excavation Monitoring

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Precertification

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Certification

3.1) Plan/Scope

3.2) Quantification

Section 8: G4B1 – Area 4B Soils Remediation

- 1.5.4 G4B18 - Off-Site Waste Disposition
 - 1) Task #1 – Container Receipt and Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Load Containers
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.5 G4A19 - On-Site Waste Treatment
 - 1) Task #1 – Procurement
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Prepare Plans
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Site Preparation
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Treatment
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 4B Title III (Includes Subcontractor Staff/Craft)
 - 3.2 Area 4B Site Preparation/Excavation
 - 3.3 Area 4B Excavation Control/Certification
 - 3.4 Area 4B Off-Site Waste Disposition
 - 3.5 Area 4B On-Site Waste Treatment
- 4.0 Estimate
- 5.0 Risk Plan

Section 9: G511 – Area 5 Soils Remediation

1.0 Narrative

1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.4 Project Physical Description

1.5 Project Plan/Technical Scope and Quantification

1.5.1 G5113 - Title III Design

1) Task #1 – Excavation Support

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Prepare Final Documents

2.1) Plan/Scope

2.2) Quantification

1.5.2 G5114 - Site Preparation/Excavation

1) Task #1 – Site Preparation

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Excavation

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Control and Management

3.1) Plan/Scope

3.2) Quantification

4) Task #4 – Interim Restoration

4.1) Plan/Scope

4.2) Quantification

1.5.3 G5117 - Excavation Monitoring/Certification

1) Task #1 – Excavation Monitoring

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Precertification

2.1) Plan/Scope

2.2) Quantification

3) Task #3 - Certification

3.1) Plan/Scope

3.2) Quantification

Section 9: G511 – Area 5 Soils Remediation

- 1.5.4 G5118 - Off-Site Waste Disposition
 - 1) Task #1 – Container Receipt and Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Load Containers
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 5 Title III (Includes Subcontractor Staff/Craft
 - 3.2 Area 5 Site Preparation/Excavation
 - 3.3 Area 5 Excavation Control/Certification
 - 3.4 Area 5 Offsite Waste Disposition
- 4.0 Estimate
- 5.0 Risk Plan

Section 10: G611 – Area 6 Soils Remediation

1.0 Narrative

1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government-Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.4 Project Physical Description

1.4.1 Scope of Work

1.4.2 Purpose/Objective

1.4.3 Project Boundaries

1.4.4 End State Condition

1.5 Project Plan/Technical Scope and Quantification

1.5.1 G6111 - Predesign Characterization

1) Task #1 – General Area Predesign Characterization

1.1) Subtask #1 - Prepare Project Specific Plan

1.1)1 Plan/Scope

1.1)2 Quantification

1.2) Subtask #2 – Field and Analytical Work

1.2)1 Plan/Scope

1.2)2 Quantification

1.3) Subtask #3 – Data Reduction and Interpretation

1.3)1 Plan/Scope

1.3)2 Quantification

2) Task #2 – Former Production Area Predesign Characterization

2.1) Subtask #1 – Prepare Project Specific Plan

2.1)1 Plan/Scope

2.1)2 Quantification

2.2) Subtask #2 – Field and Analytical Work

2.2)1 Plan/Scope

2.2)2 Quantification

2.3) Subtask #3 – Data Reduction and Interpretation

2.3)1 Plan/Scope

2.3)2 Quantification

1.5.2 G6112 - Title I/II Design

1) Task #1 – Solid Waste Landfill (SWL) Title I/II Design

1.1) Subtask #1 – SWL Project Planning

1.1)1 Plan/Scope

1.1)2 Quantification

Section 10: G611 – Area 6 Soils Remediation

- 1.2) Subtask #2 – SWL Title I Design
 - 1.2)1 Plan/Scope
 - 1.2)2 Quantification
- 1.3) Subtask #3 – SWL Title II Design
 - 1.3)1 Plan/Scope
 - 1.3)2 Quantification
- 2) Task #2 – Former Waste Pit Area Title I/II Design
- 3) Task #3 – General Area Title I/II Design
- 4) Task #4 – Former Production Area Title I/II Design
- 1.5.3 G6113 - Title III Design
 - 1) Task #1 – Solid Waste Landfill Title III Design
 - 1.1) Subtask #1 – SWL Excavation Support
 - 1.1)1 Plan/Scope
 - 1.1)2 Quantification
 - 1.2) Subtask #2 – SWL As-Builts/Closure
 - 1.2)1 Plan/Scope
 - 1.2)2 Quantification
 - 2) Task #2 - Former Waste Pit Area Title III Design
 - 2.1) Subtask #1 – Excavation Support
 - 2.1)1 Plan/Scope
 - 2.1)2 Quantification
 - 2.2) Subtask #2 – As-Builts/Closure
 - 2.2)1 Plan/Scope
 - 2.2)2 Quantification
 - 3) Task #3 - General Area Title III Design
 - 3.1) Subtask #1 – Excavation Support
 - 3.1)1 Plan/Scope
 - 3.1)2 Quantification
 - 3.2) Subtask #2 – As-Builts/Closure
 - 3.2)1 Plan/Scope
 - 3.2)2 Quantification
 - 4) Task #4 - Former Production Area
 - 4.1) Subtask #1 – Excavation Support
 - 4.1)1 Plan/Scope
 - 4.1)2 Quantification
 - 4.2) Subtask #2 – As-Builts/Closure
 - 4.2)1 Plan/Scope
 - 4.2)2 Quantification
- 1.5.4 G6114 - Site Preparation/Excavation/Interim Restoration
 - 1) Task #1 – Solid Waste Landfill
 - 1.1) Subtask #1 – Site Preparation
 - 1.1)1 Plan/Scope
 - 1.1)2 Quantification

Section 10: G611 – Area 6 Soils Remediation

- 1.2) Subtask #2 – Excavation
 - 1.2)1 Plan/Scope
 - 1.2)2 Quantification
- 1.3) Subtask #3 – Interim Restoration
 - 1.3)1 Plan/Scope
 - 1.3)2 Quantification
- 1.4) Subtask #4 – Control and Management
 - 1.4)1 Plan/Scope
 - 1.4)2 Quantification
- 2) Task #2 – Former Waste Pit Area
 - 2.1) Subtask #1 – Site Preparation
 - 2.1)1 Plan/Scope
 - 2.1)2 Quantification
 - 2.2) Subtask #2 – Excavation
 - 2.2)1 Plan/Scope
 - 2.2)2 Quantification
 - 2.3) Subtask #3 – Control and Management
 - 2.3)1 Plan/Scope
 - 2.3)2 Quantification
 - 2.4) Subtask #4 – Interim Restoration
 - 2.4)1 Plan/Scope
 - 2.4)2 Quantification
- 3) Task #3 – General Area
 - 3.1) Subtask #1 – Site Preparation
 - 3.1)1 Plan/Scope
 - 3.1)2 Quantification
 - 3.2) Subtask #2 – Excavation
 - 3.2)1 Plan/Scope
 - 3.2)2 Quantification
 - 3.3) Subtask #3 – Control and Management
 - 3.3)1 Plan/Scope
 - 3.3)2 Quantification
 - 3.4) Subtask #4 – Interim Restoration
 - 3.4)1 Plan/Scope
 - 3.4)2 Quantification
- 4) Task #4 – Former Production Area
 - 4.1) Subtask #1 – Site Preparation
 - 4.1)1 Plan/Scope
 - 4.1)2 Quantification
 - 4.2) Subtask #2 – Excavation
 - 4.2)1 Plan/Scope
 - 4.2)2 Quantification

Section 10: G611 – Area 6 Soils Remediation

- 4.3) Subtask #3 – Control and Management
 - 4.3)1 Plan/Scope
 - 4.3)2 Quantification
- 4.4) Subtask #4 – Interim Restoration
 - 4.4)1 Plan/Scope
 - 4.4)2 Quantification
- 1.5.5 G6117 - Excavation Control/Certification
 - 1) Task #1 – Excavation Control
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Precertification
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Certification
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.6 G6118 - Off-Site Waste Disposition
 - 1) Task #1 – Procurement
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Container Receipt, Preparation, Loading
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 6 Predesign
 - 3.2 Area 6 Title I/II Design
 - 3.3 Area 6 Title III (Includes Subcontractor Staff/Craft)
 - 3.4 Area 6 Site Preparation/Excavation
 - 3.5 Area 6 Excavation Control/Certification
 - 3.6 Area 6 Off-Site Waste Disposition
- 4.0 Estimate
- 5.0 Risk Plan

Section 11: G711 – Area 7 Soils Remediation

- 1.0 Narrative
 - 1.1 Overview
 - 1.2 Assumptions/Exclusions
 - 1.2.1 General Assumptions
 - 1.2.2 Exclusions
 - 1.2.3 Government Furnished Services/Equipment
 - 1.2.4 Applicable Requirements
 - 1.2.5 Applicable Technical Guidance
 - 1.2.6 Disposal, Treatment, Containers, Utilities
 - 1.3 Drivers
 - 1.4 Project Physical Description
 - 1.4.1 Scope of Work
 - 1.4.2 Purpose/Objective
 - 1.4.3 Project Boundaries
 - 1.4.4 End of State Condition
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 G7111 - Predesign Characterization
 - 1) Task #1 – Silo/RCRA/Trench Predesign Characterization
 - 1.1) Subtask #1 – Prepare Project Specific Plan
 - 1.1)1 Plan/Scope
 - 1.1)2 Quantification
 - 1.2) Subtask #2 – Field and Analytical Work
 - 1.2)1 Plan/Scope
 - 1.2)2 Quantification
 - 1.3) Subtask #3 – Data Reduction and Interpretation
 - 1.3)1 Plan/Scope
 - 1.3)2 Quantification
 - 2) Task #2 – General Area Predesign Characterization
 - 2.1) Subtask #1 – Prepare Project Specific Plan
 - 1.2)1 Plan/Scope
 - 1.2)2 Quantification
 - 2.2) Subtask #2 – Field Analytical Work
 - 2.2)1 Plan/Scope
 - 2.2)2 Quantification
 - 2.3) Subtask #3 – Data Reduction and Interpretation
 - 2.3)1 Plan/Scope
 - 2.3)2 Quantification
 - 1.5.2 G7112 - Title I/II Design
 - 1) Task #1 – Project Planning
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Title I Design
 - 2.1) Plan/Scope
 - 2.2) Quantification

Section 11: G711 – Area 7 Soils Remediation

- 3) Task #3 – Title II Design
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.3 G7113 - Title III Design
 - 1) Task #1 – Excavation Support
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – As-Builts/Closure
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 1.5.4 G7114 - Site Preparation/Excavation/Interim Restoration
 - 1) Task #1 – Site Preparation
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Excavation
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Control and Management
 - 3.1) Plan/Scope
 - 3.2) Quantification
 - 4) Task #4 – Interim Restoration
 - 4.1) Plan/Scope
 - 4.2) Quantification
- 1.5.5 G7117 - Excavation Control/Certification
 - 1) Task #1 – Excavation Control
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Precertification
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Certification
 - 3.1) Plan/Scope
 - 3.2) Quantification
- 1.5.6 G7118 – Off-Site Waste Disposition
 - 1) Task #1 - Procurement
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 - Container Receipt, Preparation, Loading
 - 2.1) Plan/Scope
 - 2.2) Quantification
 - 3) Task #3 – Shipping and Disposal
 - 3.1) Plan/Scope
 - 3.2) Quantification

Section 11: G711 – Area 7 Soils Remediation

- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 7 Predesign
 - 3.2 Area 7 Title I/II Design
 - 3.3 Area 7 Title III (Includes Subcontractor Staff/Craft)
 - 3.4 Area 7 Site Preparation/Excavation
 - 3.5 Area 7 Excavation Control/Certification
 - 3.6 Area 7 Off-Site Waste Disposition
- 4.0 Estimate
- 5.0 Risk Plan

Section 12: G811 – Area 8 Soils Remediation

- 1.0 Narrative
 - 1.1 Overview
 - 1.2 Assumptions/Exclusions
 - 1.2.1 Assumptions
 - 1.2.2 Exclusions
 - 1.2.3 Government-Furnished Equipment/Services
 - 1.2.4 Applicable Requirements
 - 1.2.5 Applicable Technical Guidance
 - 1.2.6 Disposal, Treatment, Containers, Utilities
 - 1.3 Drivers
 - 1.3.1 External Events that Impact the Schedule
 - 1.4 Project Physical Description
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 G8117 – Area 8 Phase III North Certification
 - 1) Task # 1 – Precertification
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task # 2 – Certification
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 8 Phase III North Remediation Certification
- 4.0 Estimate
- 5.0 Risk Plan

Section 13: G911 – Area 9 Soils Remediation

- 1.0 Narrative
 - 1.1 Overview
 - 1.2 Assumptions/Exclusions
 - 1.3 Drivers
 - 1.4 Project Physical Description
 - 1.5 Project Plan/Technical Scope and Quantification
 - 1.5.1 G9116 - Area 9 Phase I Certification
 - 1) Task #1 – Certification
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 1.5.2 G9117 - Area 9 Phase II Certification
 - 1) Task #1 – Precertification
 - 1.1) Plan/Scope
 - 1.2) Quantification
 - 2) Task #2 – Certification
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Area 9 Phase I Certification
 - 3.2 Area 9 Phase II Certification
- 4.0 Estimate
- 5.0 Risk Plan

Section 14: GPR1 – Stream Corridors Remediation

1.0 Narrative

1.1 Overview

1.2 Assumptions/Exclusions

1.2.1 Assumptions

1.2.2 Exclusions

1.2.3 Government-Furnished Equipment/Services

1.2.4 Applicable Requirements

1.2.5 Applicable Technical Guidance

1.2.6 Disposal, Treatment, Containers, Utilities

1.3 Drivers

1.3.1 External Events that Impact the Schedule

1.4 Project Physical Description

1.5 Project Plan/Technical Scope and Quantification

1.5.1 GPR11 – Predesign Characterization

1) Task #1 – Prepare Project Specific Plans

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Field and Analytical Work

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Data Reduction and Interpretation

3.1) Plan/Scope

3.2) Quantification

1.5.2 GPR12 – Title I/II Design

1) Task #1 – Project Planning

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Title I Design

2.1) Plan/Scope

2.2) Quantification

3) Task #3 – Title II Design

3.1) Plan/Scope

3.2) Quantification

1.5.3 GPR13 – Title III Design

1) Task #1 – Excavation Support

1.1) Plan/Scope

1.2) Quantification

2) Task #2 – Prepare Final Documents

2.1) Plan/Scope

2.2) Quantification

1.5.4 GPR14 - Site Preparation/Excavation/Interim Restoration

1) Task #1 – Site Preparation

1.1) Plan/Scope

1.2) Quantification

Section 14: GPR1 – Stream Corridors Remediation

- 2) Task #2 – Excavation
 - 2.1) Plan/Scope
 - 2.2) Quantification
- 1.5.5 GPR17 - Excavation Monitoring/Certification
 - 1) Task #1 – Excavation Monitoring
 - 1.1) Plan/Scope
 - 1.2) Quantification
- 2.0 Schedule
- 3.0 Manpower Plans
 - 3.1 Stream Corridors Predesign
 - 3.2 Stream Corridors Title I/II Design
 - 3.3 Stream Corridors Title III (Includes Subcontractor Staff/Craft)
 - 3.4 Stream Corridors Site Preparation/Excavation
 - 3.5 Stream Corridors Excavation Control/Certification
- 4.0 Estimate
- 5.0 Risk Plan

**ACRONYM
LIST**

R1-D-
409

LIST OF ACRONYMS AND ABBREVIATIONS

A1PI	Area 1 Phase I
ALARA	as low as reasonably achievable
ARAR	applicable or relevant and appropriate requirement
ASCOC	area-specific contaminant of concern
ASL	analytical support level
ASR	auditable safety record
AWAC	Above WAC
AWWT	Advanced Wastewater Treatment
BOA	basic ordering agreement
BTV	benchmark toxicity value
BZ	breathing zone
CADD	computer aided design/drafting
CAM	cost account manager
CDL	Certification Design Letter
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFC	certified for construction
CIS	Characterization Investigation Study
COC	contaminant of concern
CPF	construction project file
CPVC	corrugated polyvinyl chloride
CR	certification report
CRB	Contract Review Board
CU	certification unit
D&D	decontamination and dismantlement
DCE	dichloroethene
DCN	Design Change Notice
DOE	US Department of Energy
DQO	data quality objective
ECDC	Engineering/Construction Document Control
EDR	event discovery report
EM	Environmental Management (DOE)
EMS	excavation monitoring system
ENSREP	environmental science representative
EPA	US Environmental Protection Agency
ESCP	Erosion and Sediment Control Plan
ESH&Q	Environmental Safety, Health and Quality
FACTS	Fernald Analytical Computerized Tracking System
FDR	functional design requirement
FEMP	Fernald Environmental Management Project
FER	final event report
FRL	final remediation level
FTE	full-time equivalent
FY	fiscal year
GIS	geographical information system
H&S	health and safety

HDPE	high-density polyethylene
HPGE	high-purity germanium detector
HWMU	hazardous waste management unit
IP	implementation plan
IRDP	integrated remedial design package
JSA	job safety analysis
LCS	leachate collection system
LSP	Lime Sludge Ponds
MEF	Material Evaluation Form
NaI	sodium iodide
NCR	Non-Conformance Report
NE	northeast
NLO	National Lead of Ohio Inc.
NRRDP	Natural Resource Restoration Design Plan
NRRP	Natural Resource Restoration Plan
ODC	other direct charges
OEPA	State of Ohio Environmental Protection Agency
OMTA	OSDF material transfer area
ORA	operational readiness assessment
ORR	operational readiness review
OSDF	On-Site Disposal Facility
OU	operable unit
P&ID	pipng and instrument drawing
PAH	polyaromatic hydrocarbons
PCB	polychlorinated biphenyls
PCE	perchloroethylene
PEAPR	Preliminary environmental assessment project review
PEP	project execution plan
PFD	process flow diagram
PG	performance grade
PID	photoionization detector
PPE	personal protective equipment
PSP	project specific plan
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RCI	request for clarification of information
RCRA	Resource Conservation and Recovery Act
RFP	Request For Proposal
RMS	radiation monitoring system
ROD	Record Of Decision
RSS	radiation scanning system
RTC	response to comment
RTIMP	Real-Time Instrumentation Measuring Program
RTRAK	radiation tracking system
RWP	Radiation Work Permit
SBDR	Safety Basis Document Review
S/CMP	Systems/Control Management Plan

SCQ	Sitewide CERCLA Quality Assurance Project Plan
SDFP	Soils and Disposal Facility Project
SED	Sitewide Environmental Database
SMTA	Special Material Transfer Area
SOW	Statement of Work
SP	soil pile
SSC	structure, system and component
SSR	Standard Start-up Review
STP	Sewage Treatment Plant
SVOC	semi-volatile organic compound
SW	solid waste
SWECP	Stormwater Erosion Control Plan
SWMP	Stormwater Management Plan
SWRB	stormwater retention basin
SWU	Southern Waste Unit
TBC	to be considered
TCE	trichloroethene
TCLP	toxicity characteristic leachate procedure
TRB	Technical review board
ug/L	milligrams per liter
UST	underground storage tank
V&V	verification and validation
VCP	vitrified clay pipe
V/FCN	Variance/Field Change Notice
VOC	volatile organic compound
WAC	waste acceptance criteria
WAO	Waste Acceptance Organization
WBS	Work Breakdown Structure
WGS	Waste Generator Services
yd ³	cubic yard

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000
3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 46
5. WBS ELEMENT CODE 1.1.G	6. WBS ELEMENT TITLE PBS 06 SOILS
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2000
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060
11. ELEMENT TASK DESCRIPTION <p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts Other Direct costs (ODCs)</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This WBS element covers the Remedial Design and Remedial Excavation and Restoration activities associated with at- and below-grade impacted materials sitewide. This includes soil within the Operable Unit 1 boundaries, the five Operable Unit (OU) 2 Waste Units, at- and below-grade Operable Unit 3 debris, soil within the Operable Unit 4 boundaries (except the silo berms), and soil in Operable Unit 5.</p> <p>Specifically, the following work scope is covered site-wide for at- and below-grade excavation:</p> <ul style="list-style-type: none"> -Title I & II Design -Title III Services -Implementation Plans -Geotechnical investigations -Characterization support and transport to the (On-Site Disposal Facility) OSDF of below WAC soils under the OUI waste pits -Bid & award of all subcontracts required for design and excavation of impacted material -Precertification and certification that excavated areas achieve FRLs, and excavation control sampling for the above work. -Excavation of impacted material, including at- and below-grade D&D of utilities and structures -Transportation of above WAC soil and below-grade debris to a queue area designated by the WPRAP project -Treatment and transportation of RCRA materials which cannot be handled through ARASA to an approved off-site storage facility 	

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9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION <p>-Transportation of all above FRL but below WAC soils and below-grade debris to the On-Site Disposal Facility or to a designated queue area</p> <p>-Final grading and seeding</p> <p>-Limited local air and radon monitoring</p> <p>-Certified and Restored area monitoring and maintenance</p> <p>-Natural resources restoration, management and research</p> <p>-Project close out report documentation</p> <p>-Fugitive dust-control</p> <p>-Soils characterization and excavation management</p> <p>-Waste disposition field support for FY01 only</p> <p>-Characterization/treatment/disposition of all RCRA and "discovered materials"</p> <p>-Characterization and excavation of Area 7 (Sectors 1 and 4 only)</p> <p><u>c. SCOPE OF WORK:</u></p> <p>This scope of work is further defined in the following subordinate elements:</p> <p>1.1.G.A Soils Management & Oversight</p> <p>1.1.G.B Natural Resources Restoration</p> <p>1.1.G.C Area 1 Soils Remediation</p> <p>1.1.G.D Area 2 Soils Remediation</p> <p>1.1.G.E Area 3A Soils Remediation</p> <p>1.1.G.F Area 4A Soils Remediation</p> <p>1.1.G.G Area 3B Soils Remediation</p> <p>1.1.G.H Area 4B Soils Remediation</p> <p>1.1.G.J Area 5 Soils Remediation</p> <p>1.1.G.K Area 6 Soils Remediation</p> <p>1.1.G.M Area 7 Soils Remediation</p> <p>1.1.G.N Area 8 Soils Remediation</p> <p>1.1.G.P Area 9 Soils Remediation</p> <p>1.1.G.Q Stream Corridors Remediation</p> <p>Scope specifically excluded is as follows:</p> <p>-Placement of below WAC soils and below-grade debris in the On-Site Disposal Facility</p> <p>-Excavation of OUI Waste Pits material</p>			

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5. WBS ELEMENT CODE 1.1.G	6. WBS ELEMENT TITLE PBS 06 SOILS		
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00			8. DATE OF CHANGES 09/05/2000
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060		
11. ELEMENT TASK DESCRIPTION <ul style="list-style-type: none"> -Excavation of OU4 berm soils -Handling and transportation of sludge material from the sewage treatment plant(s), biosurge lagoon, stormwater retention basin or any other on-site process operations. -Implementation of site-wide air and radon monitoring program -External charges in support of SSRs, safety assessments, readiness assessment, and as-builts (self performed designs only) -On-site treatment of above-WAC material and debris performed by others during the shutdown period -Design and remediation of the soils corridors not included in the Closure Contract (Area 10, Area 7 Sectors 2/3) -All centralized services 			

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3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 47
5. WBS ELEMENT CODE 1.1.G.A	6. WBS ELEMENT TITLE MANAGEMENT
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060

11. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
 Materials
 ODCs
 Subcontracts

b. TECHNICAL CONTENT:

This WBS element contains the project staff assigned to manage the work of PBS-06 (SOILS). Project staff assigned to manage the work of PBS-06 consists of all project management, administration, clerical support, engineering, surveying, Real Time Instrumentation Measurement Program (RTIMP), characterization, natural resources management, construction, certain discipline leads (i.e., Safety and Health Rad Engineering, Project Controls and Procurement), and other as needed/matrixed general discipline support staff (e.g., QC schedulers and cost analysts). In general, this is a level of effort account. To the extent necessary, a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills and sufficient project support. Due to reduced workloads, a lower level of staff will be maintained before FY2005 and after FY2009 through project completion.

c. SCOPE OF WORK:

Staff labor covers Fluor Fernald, teaming partner and staff augmentation (BOA) personnel. The baseline includes one subcontract professional during FY01 to support data management. The baseline for FY04 through FY10 assumes all staff will be covered under labor. It may be necessary, however, to hire subcontract personnel with specific skills for some tasks. When this occurs, a budget transfer will be made to shift budget from labor to subcontract.

The following scope and/or costs are not included in this control account:

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5. WBS ELEMENT CODE 1.1.G.A	6. WBS ELEMENT TITLE MANAGEMENT	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION <ul style="list-style-type: none"> - matrixed labor required to support specific area remediation and natural resources restoration tasks; -training of matrixed labor; -engineering and construction subcontractor costs; -costs for travel, equipment, materials, PPE, trailers, utilities, shipping/transportation, computer hardware and software directly associated with specific area remediation and natrual resource restoration tasks; and -all centralized services and standard materials provided by other PBSs. 		

**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GPM1	13. TASK DESCRIPTION (ONE LINE) SOILS MANAGEMENT AND OVERSIGHT		
14. ELEMENT TASK DESCRIPTION			

a. ELEMENTS OF COST:

Labor
Materials
ODCs
Subcontracts

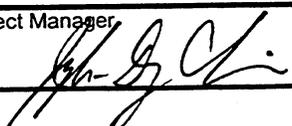
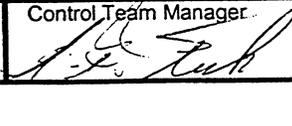
b. TECHNICAL CONTENT:

This control account contains the project staff assigned to manage the work of PBS06 (Soils). This consists of all project management, project controls, projectized engineers and surveying staff, construction management, characterization staff, discipline leads and clerical support assigned to the project. It also includes all cost for the Real Time Systems program, including labor, purchase of equipment and training/procedures development. It also includes the purchase of all office supplies and project specific office equipment, training expenses (training labor is charged to the person's normal labor account), travel associated with this training or which is not specific to a project work scope, fees and licenses and relocation expenses.

c. SCOPE OF WORK:

The scope of this control account is further defined in the following charge numbers:

- GPM11 - Soils Management and Oversight
- GPM12 - Engineering Staff
- GPM13 - Construction Management
- GPM14 - Characterization Staff
- GPM15 - Real Time Systems

Project Manager 	Control Account Manager 	Control Team Manager 
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**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GPM1	13. TASK DESCRIPTION (ONE LINE) SOILS MANAGEMENT AND OVERSIGHT		

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

OSDF management and staff

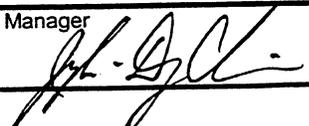
Matrixed labor charged directly to the area remediation accounts

Soils staff labor charged to the area remediation accounts during FY01

Travel cost directly associated with area remediation accounts

All centralized services

WORK SCOPE DEFINITION
(Work Package)

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GPM11	13. TASK DESCRIPTION (ONE LINE) SOILS MANAGEMENT AND OVERSIGHT		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This work package covers the staff and expenses required to manage the soils project. This is a level of effort account. To the extent necessary, a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills an sufficient project support. Lower levels of staffing will be maintained before and after this period consistent with the ramp up and ramp down of the project. Please refer to the work scope definition below for specific types of resources covered in this account.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Includes charges to be cross walked from the following charge numbers for work performed during the period December 1, 2000 through the end of FY01.</p> <ul style="list-style-type: none"> * GCSC2 - Natural Resources Mgmt & Oversight * GCSC3 - Natural Resources Designs <p>Covers the following staff resources</p> <ul style="list-style-type: none"> * Project Management (including area managers) * Project Controls * Procurement * Administrative support 			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	

12. TASK IDENTIFICATION (WORK PACKAGE) GPM11	13. TASK DESCRIPTION (ONE LINE) SOILS MANAGEMENT AND OVERSIGHT
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14. ELEMENT TASK DESCRIPTION

- * Discipline leads, other than engineering, construction & characterization (includes Health & Safety, QA/QC)
- * Surveying & CADD staff
- * Natural Resources staff

Office supplies & expenses for the entire soils project including:

- * Specialized CADD equipment
- * Professional dues & licenses
- * Relocation expenses

Travel and training expenses for those project staff charging this account.

Subcontract cost for one data management professional during FY01 and for Natural Resources Designs performed during FY01.

d. WORK SPECIFICALLY EXCLUDED:

Matrixed labor and training/relocation of matrixed labor

Soils staff charging other charge numbers in control account GPM1 (engineering, construction characterization and RTEMP)

Cost for travel, equipment, materials, trailers, utilities, shipping/transportation directly associated with specific area remediation or natural resources restorations accounts.

All centralized services provided by other PBSs.

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 1/03 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GPM12	13. TASK DESCRIPTION (ONE LINE) ENGINEERING STAFF		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor

b. TECHNICAL CONTENT:

This work package covers the engineering staff and expenses required for the soils project. This is a level of effort account. To the extent necessary, a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills an sufficient project support. Lower levels of staffing will be maintained before and after this period consistent with the ramp up and ramp down of the project. Please refer to the work scope definition below for specific types of resources covered in this account.

c. SCOPE OF WORK:

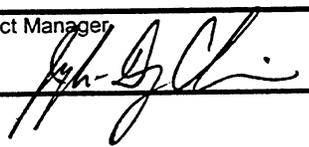
Covers the following staff resources
 * Engineering Manager,
 * Project engineers
 * Other engineering staff necessary

Travel and training expenses for those project staff charging this account.

d. WORK SPECIFICALLY EXCLUDED:

Matrixed labor and training/relocation of matrixed labor

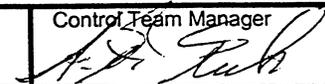
Project Manager



Control Account Manager



Control Team Manager



WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 1/03 - 12/09	

12. TASK IDENTIFICATION (WORK PACKAGE) GPM12	13. TASK DESCRIPTION (ONE LINE) ENGINEERING STAFF
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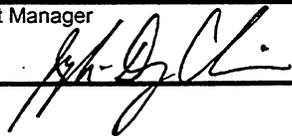
14. ELEMENT TASK DESCRIPTION

Soils staff charging other charge numbers in control account GPM1 (Mgmt & Oversight, construction characterization and RTEMP)

Cost for travel, equipment, materials, trailers, utilities, shipping/transportation directly associated with specific area remediation or natural resources restorations accounts.

All centralized services provided by other PBSs.

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE		2. DATE	Page 1
FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.A	MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU (3726)	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		12/00 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
GPM13	CONSTRUCTION STAFF		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This work package covers the construction management staff and expenses required for the soils project. This is a level of effort account. To the extent necessary, a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills an sufficient project support. Lower levels of staffing will be maintained before and after this period consistent with the ramp up and ramp down of the project. Please refer to the work scope definition below for specific types of resources covered in this account.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Includes charges cross walked from charge number GCU39 for CM support performed during FY01 after December 1, 2000.</p> <p>Covers the following staff resources</p> <ul style="list-style-type: none"> * Construction Manager, * Construction Contracts Managers * Construction Engineers * Construction Coordinators * Other projectized construction staff as necessary to complete the area remediation projects. 			
Project Manager	Control Account Manager	Control Team Manager	
			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GPM13	13. TASK DESCRIPTION (ONE LINE) CONSTRUCTION STAFF		

14. ELEMENT TASK DESCRIPTION

Fluor furnished construction materials not specific to an area remediation project.

Travel and training expenses for those project staff charging this account.

d. WORK SPECIFICALLY EXCLUDED:

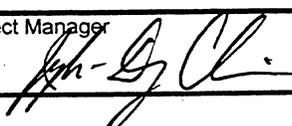
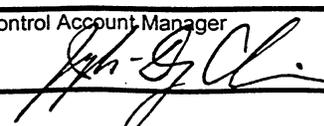
Matrixed labor and training/relocation of matrixed labor

Soils staff charging other charge numbers in control account GPM1 (Mgmt & Oversight, engineering characterization and RTEMP)

Cost for travel, equipment, materials, trailers, utilities, shipping/transportation directly associated with specific area remediation or natural resources restorations accounts.

All centralized services provided by other PBSs.

WORK SCOPE DEFINITION
(Work Package)

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP #FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GPM14	13. TASK DESCRIPTION (ONE LINE) CHARACTERIZATION STAFF		
14. ELEMENT TASK DESCRIPTION a. <u>ELEMENTS OF COST:</u> Labor ODCs b. <u>TECHNICAL CONTENT:</u> This work package covers the characterization staff and expenses required for the soils project. This is a level of effort account. To the extent necessary, a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills an sufficient project support. Lower levels of staffing will be maintained before and after this period consistent with the ramp up and ramp down of the project. Please refer to the work scope definition below for specific types of resources covered in this account. c. <u>SCOPE OF WORK:</u> Covers the following staff resources * Characterization Manager, * Characterization leads * Other characterization staff necessary to perform the area remediation projects. Travel and training expenses for those project staff charging this account. d. <u>WORK SPECIFICALLY EXCLUDED:</u>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP #FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 12/09	

12. TASK IDENTIFICATION (WORK PACKAGE) GPM14	13. TASK DESCRIPTION (ONE LINE) CHARACTERIZATION STAFF
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14. ELEMENT TASK DESCRIPTION

Matrixed labor and training/relocation of matrixed labor

Soils staff charging other charge numbers in control account GPM1 (Mgmt & Oversight, construction engineering and RTEMP)

Cost for travel, equipment, materials, trailers, utilities, shipping/transportation directly associated with specific area remediation or natural resources restorations accounts.

All centralized services provided by other PBSs.

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GPM16	13. TASK DESCRIPTION (ONE LINE) REAL TIME SYSTEMS
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Subcontracts
Materials
Other Direct Costs

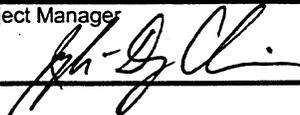
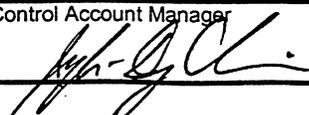
b. TECHNICAL CONTENT:

The RTIMP utilizes real time detection equipment in support of the SDFP soils remediation. Work authorization is provided through PSPs generated in charge number GPM14.

The RTIMP performs real-time radiological, metals and organic contaminant identification in soils.

The real time radiological detection equipment consists of the tripod-mounted HPGe, HPGe Core Counter, and NaI based systems on various platforms including the RTRAK, Gator, RSS and EMS. These radiation detection systems are used to characterize large areas of surface soil for pre-design, excavation support and pre-certification activities. Implementation of these detection systems requires periodic characterization, energy calibrations, control charting, support equipment hardware and software procurement, maintenance, supplies and upgrading. GPS and laser surveying systems are integrally tied to the radiation detection systems. These surveying systems and traditional total station surveying systems are also used for soil volume determinations prior to, during, and after soil excavation activities. Implementation of these surveying systems requires periodic hardware and software procurement, maintenance, supplies and upgrading.

Additional real time equipment includes in XRF and gas chromatograph for metals and organic analyses. Implementation of these systems requires periodic

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GPM16	13. TASK DESCRIPTION (ONE LINE) REAL TIME SYSTEMS		

14. ELEMENT TASK DESCRIPTION

hardware and software procurement, maintenance, supplies and upgrading.

A program infrastructure is maintained to ensure a quality program, including procedure development, modification, training and retraining.

Specific material costs can be found in GPM1, Management and Oversight Narrative Section 1.5.5

c. SCOPE OF WORK:

Scope of work under this charge number includes work scope cross-walked from charge numbers GCSK1, GCSK2 and GCSK3 performed during FY01 for the SDFP.

Work scope includes:

Performing predesign scans for input into excavation design planning documents for OSDF AWAC soil identification and above-FRL identification areas.

Perform excavation control scans during excavation on freshly exposed soil lifts for OSDF WAC.

Perform Pre-certification FRL scans at the base of excavations to ensure FRL attainments during subsequent certification sampling.

Perform Core Counter analysis of geoprobe cores for AWAC identification and potential above-FRL identification.

Map real time data in the field for immediate field decisions and for final reports to the regulatory agencies.

Maintain a quality program infrastructure, including detector characterization, calibration, control charting and MDC calculations.

Maintain a compliant program, including the generation and modification of operating procedures, training plans, lesson plans and technical evaluation

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE		2. DATE	Page 3
FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.A	MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		12/00 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
GPM16	REAL TIME SYSTEMS		
14. ELEMENT TASK DESCRIPTION			
<p>standards.</p> <p>Maintain all real time, surveying equipment and support equipment in good repair and operating order. Procure spare parts, replacement parts, replacement equipment, vendor training and safety equipment as needed. this account covers the purchase and repair of Fluor Fernald equipment. Equipment budgeted for and purchased by the DOE with EM50 funding, such as the EMS and its excavator, will not be bought under this account; however, the DOE EM50 purchased equipment will be repaired and components replaced by this account.</p> <p>Equipment costs for the development, purchase, testing, calibration, maintenance, repair, upgrade for all RTIMP hardware, including HPGe systems, NaI systems, moisture meters, gas chromatographs, XRF analyzers</p> <p>Equipment repair and replacement costs for DOE EM50 purchased EMS components and EMS excavator</p> <p>Equipment costs for the development, purchasem testing, maintenance, repair, upgrade for all SDFP surveying equipment, including GPS, Vulcan systems, Total Station systems, Ethernet systems and web-based camera</p> <p>Miscellaneous field support equipment, such as cables, batteries, electronic boards, field computers, field printers, tripods, generators</p> <p>Purchase of new software, software upgrades, licenses and satellite subscriptions for all RTIMP and Surveying software</p> <p>Contracts for gasses to operate field equipment, including liquid niotrogen and span gas; also covers the purchase of these gasses during the shutdown period in order to maintain equipment in cold standby condition</p> <p>Vehicle costs for the procurement, replacement, repair, preventive maintenance and fueling of all RTIMP and Surveying field vehicles, including the mapping vans, field 4-wheel drive vehicles, pickups, RTRAK, Gator, EMS excavator (track hoe)</p> <p>RTIMP-specific non-standard safety equipment (e.g., safety vests, glasses, hard</p>			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 4
3. WBS ELEMENT CODE 1.1.G.A	4. WBS ELEMENT TITLE/NAME MANAGEMENT		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 12/09	

12. TASK IDENTIFICATION (WORK PACKAGE) GPM16	13. TASK DESCRIPTION (ONE LINE) REAL TIME SYSTEMS
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14. ELEMENT TASK DESCRIPTION

hats, bug sprays, leather palm gloves, ear plugs, extra tall field boots, water-resistant field boots, Carharts, hats, wool/cotton gloves, sweat bandannas, rain gear)

Hand tools for instant field equipment repairs

Travel for technical meetings or seminars specific to the RTIMP scope between FY2005 through FY2009 (two domestic trips per year for up to three days each, icncludign seminar fees, car rental, airfare and lodging)

Allowance for one projectized person annually between FY2005 through FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)

Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010.

d. WORK SPECIFICALLY EXCLUDED:

Excavation planning and field work

Characterization planning

Physical sampling

SECTION 1

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.A.	5. WBS ELEMENT TITLE: MANAGEMENT AND OVERSIGHT	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: GPM1	

SECTION 1: GPM1 - MANAGEMENT AND OVERSIGHT

1.0 NARRATIVE

1.1 OVERVIEW

Soils Management and Oversight covers all the projectized technical staff, projectized/matrixed project support staff, and associated direct management costs necessary to plan, conduct, support and complete all the impacted soil and at-/below-grade structure remediation and natural resource restoration. This control account also includes the purchase of all office supplies and project specific office equipment, software, mail, fees and licenses and relocation expenses for projectized staff. Travel and training costs for projectized personnel will be covered in this account. Work scope-related travel by matrixed personnel will be covered in the appropriate area work scope account.

The levels of FTEs and other direct costs are consistent with the scheduled workloads and activities as specified in the other 13 control accounts in PBS-06. The estimated numbers of on-site subcontractor employees are also identified in this control account but only for the training and medical services planning purposes. These services are to be budgeted by centralized organizations. All the other centralized services to be provided by other PBSs are not included in this or any other control accounts of PBS-06.

Finally, under the construction management section, this account also covers the purchase of miscellaneous construction supplies not charged to a specific area construction account.

1.2 ASSUMPTIONS/EXCLUSIONS

Refer to individual project assumptions.

1.3 DRIVERS

Refer to individual project drivers.

1.4 PROJECT PHYSICAL DESCRIPTION

Refer to individual project descriptions.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

Project staff assigned to manage the work of PBS-06 consists of all project management, administration, clerical support, engineering, surveying, Real Time Instrumentation Measurement Program (RTIMP), characterization, natural resources management, construction, certain discipline leads (i.e., Safety and Health, Rad Engineering, Project Controls, and Procurement), and other as needed/matrixed general discipline support staff (e.g., QC, schedulers and cost analysts). In general this is a level of effort account. To the extent necessary a constant level of staff will be maintained between FY2005 through FY2009 to ensure availability of critical skills and sufficient project support. Due to reduced workloads, a lower level of staff will be maintained before FY2005 and after FY2009 through project completion.

Staff labor covers Fluor Fernald, teaming partner and staff augmentation (BOA) personnel. The baseline includes one subcontract professional during FY2001 to support data management. The baseline for FY2004 through FY2010 assumes all staff will be covered under labor. It may be necessary, however, to hire subcontract personnel with specific skills for some tasks. When this occurs, a budget transfer will be made to shift budget from labor to subcontract.

The following scope and/or costs are not included in this control account:

- Matrixed labor required to support specific area remediation and natural resource restoration tasks
- Training or relocation of matrixed labor
- Engineering and construction subcontractor costs
- Costs for travel, equipment, materials, trailers, utilities, shipping/transportation, computer hardware and software directly associated with specific area remediation and natural resource restoration tasks
- All centralized services and standard materials provided by other PBSs.

Specific scope of the Soils Management and Oversight is further defined in the following five charge numbers.

1.5.1 GPM11 - Soils Management and Support

Staff

- Project director, administrative and clerical staff, project compliance staff, natural resource restoration staff, discipline leads (i.e., Safety and Health, Rad Engineering, QC, Project Controls, and Procurement), other as needed project controls staff, and projectized surveying and CADD staff necessary to manage and support the overall Soils Project. See attached Manpower Sheet 1GA06 for details.

Materials

- Routine office supplies and equipment (Fluor Fernald "stores" and vendor supplied)
- Specialized computer equipment (CADD) including hardware, software (two replacement CADD computer systems and software licenses upgrades in FY2006)
- Annual renewal of professional licenses for six people during the period FY2004 through FY2010
- Special paper and cartridges
- Surveying equipment is budgeted and funded under GPM16
- Materials purchased in FY2001 related to the management of natural resources projects and the design of the Northern Pines and the Southern Waste Units restoration projects.

ODCs

- Domestic travel not specific to an area or natural resource work scope to occur in FY2004 through FY2010 (one trip annually (two people) to visit USEPA)
- Minor costs expended in FY2001 for management of the Natural Resources Restoration Project
- The following ODC allowances cover only costs incurred by project staff charging this account:
 - Relocation expenses for one professional staff in FY2004 and one additional person in FY2005 to support the remobilization of the project following the shutdown.

- Allowance for two projectized people annually between FY2005 and FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)
- Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010
- One annual trip for one person to attend the DOE Natural Resource Committee meeting (FY2004-2009).

Subcontractors

- Costs expended in FY2001 for one data management professional
- Subcontract cost expended in FY2001 for the design of the Northern Pines Plantation Project (note: the balance of cost beyond FY2001 for natural resources designs are included in control account GNRR).

1.5.2 GPM12 - Engineering Staff

Staff

Engineering Manager, Project Engineers, and other engineering staff necessary to manage and/or conduct all the soils engineering tasks as defined in the Area Remediation Control Accounts. See attached Manpower Sheet 1GA07 for details.

Materials

None.

ODCs

The following ODC allowances cover only costs incurred by project staff charging this account:

- Allowance for one projectized engineering person annually between FY2005 through FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)
- Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010
- Assume no work-scope specific travel will be required.

1.5.3 GPM13 - Construction Management Staff

Staff

Construction Manager, Construction Contract Managers, Construction Engineers, Construction Coordinators and other projectized construction support staff necessary to manage and self perform all the soils construction tasks as defined in the Area Remediation and Natural Resource Restoration Control Accounts. See attached Manpower Sheet 1GA08 for details.

Materials

- Miscellaneous maintenance materials, hand tools, and supplies
- Project-specific vehicle procurement, replacement, repair, preventive maintenance
- Gasoline, garage materials and expense
- Fencing, rad rope, field signs, and postings not specific to an area project
- Project-specific PPE (e.g., hard hats, anti-Cs, respirator cartridges, gloves/with liners, ear plugs, duct tape)
- Other non-standard PPE and field clothes (e.g., safety classes, safety vests, rain gear, sweat bandanas, Carharts, hats, wool/cotton gloves, extra tall field boots, water-resistant field boots, bug sprays, flush lights)
- Safety monitoring equipment (e.g. BZ monitors, PID).

ODCs

The following ODC allowances cover only costs incurred by project staff charging this account:

- Allowance for one projectized construction personnel annually between FY2005 through FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)
- Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010
- Assume no work scope-specific travel will be required.

1.5.4 GPM14 - Characterization Staff

Staff

Characterization Manager, characterization leads, and other characterization support staff necessary to manage and conduct all the predesign, excavation control, certification, and waste management tasks as defined in the Area Remediation Control Accounts. See attached Manpower Sheet 1GA09 for details.

Materials

Materials are not expected to be charged to this account.

ODCs

The following ODC allowances cover only costs incurred by project staff charging this account:

- Allowance for one projectized characterization person annually between FY2005 and FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)
- Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010
- Assume no work-scope specific travel will be required.

1.5.5 GPM16 - Real Time Instrumentation Measurement Program (RTIMP)

Staff

Program manager, scientists, technicians and other technical staff necessary to maintain/enhance the RTIMP capability and efficiently implement the field applications to support the area remediation work scopes including predesign investigation, excavation control, and precertification for all soil areas. Specific standby operations that will be performed include maintenance, calibration and testing of equipment. Provide procedure training for RTIMP and surveying personnel. See attached Manpower Sheet 1GA10 for details.

R1-
D-387

Materials

This account covers the purchase and repair of Fluor Fernald equipment. Equipment budgeted and purchased by the DOE with EM50 funding, such as the Excavator Monitoring System (EMS) and its excavator, will not be bought under this account

however the DOE EM50 purchased equipment will be repaired and components replaced by this account.

- Equipment costs for the development, purchase, testing, calibration, maintenance, repair, upgrade for all RTIMP hardware including HPGe systems, NaI systems, moisture meters, Gas Chromatographs, X-ray fluorescence analyzers
- Equipment repair and replacement costs for DOE EM50 purchased EMS (Excavator Mounted System) components and EMS excavator
- Equipment costs for the development, purchase, testing, maintenance, repair, upgrade for all SDFP Surveying equipment including GPS systems, Vulcan systems, Total Station systems, Ethernet systems, and web-based camera
- Miscellaneous field support equipment such as cables, batteries, electronic boards, field computers, field printers, tripods, generators
- Purchase of new software, software upgrades, licenses, and satellite subscriptions for all RTIMP and Surveying software
- R1-
D-
388 Contracts for gasses to operate field equipment including liquid nitrogen and ~~span~~ high-purity nitrogen gas; also covers purchase of these gasses during the shutdown period in order to maintain equipment in cold standby condition
- R1-
D-
835 Vehicle costs for the procurement, replacement, repair, preventive maintenance and fueling of all RTIMP and Surveying field vehicles, including the mapping vans, field 4-wheel drive vehicles, pickups, RTRAK, Gator, ~~EMS excavator (track hoe)~~
- RTIMP-specific non-standard safety equipment (e.g., safety vests, glasses, hard hats, bug sprays, leather palm gloves, ear plugs, extra tall field boots, water-resistant field boots, Carharts, hats, wool/cotton gloves, sweat bandanas, rain gear)
- Hand tools for instant field equipment repairs.

ODCs

Travel for technical meetings or seminars specific to the RTIMP scope between FY2005 through FY2009 (two domestic trips per year for up to 3 days each including seminar fees, car rental, airfare, and lodging).

The following ODC allowances cover only costs incurred by project staff charging this account:

- Allowance for one projectized person annually between FY2005 through FY2009 to travel for professional development and/or training, including fees, car rental, airfare, and lodging up to three days each)
- Routine local mileage for use of personal vehicles to conduct business in the general area of the FEMP in FY2001 and FY2004 through FY2010.

SECTION 1

2.0 SCHEDULE

SECTION 1

3.0 MANPOWER PLANS

2.0 MANPOWER PLANS

2.1 SOILS MANAGEMENT AND SUPPORT

The Soils management and support manpower requirements included in this account are decreased in this baseline to reflect the incorporation of centralized services to be provided and budgeted by other PBSs. Most of the necessary matrixed support personnel (i.e., project control, QA/QC, Safety and Health, procurement) are also budgeted for less than full time in this and other accounts under PBS-06 to allow more efficient utilization of manpower site wide. In keeping with the site safety culture, all personnel are responsible for the health and safety of themselves as well as their fellow workers. Therefore, safety is not compromised by a reduction in FTEs for safety and health programmatic issues. See attached Manpower Sheet ~~GPM11~~ 1GA06 for details.

R1-
D-630

R1-
D-389

Several actions have been taken to optimize FTE levels for PBS-06. To that end, the man power plan fully reflects the impacts of centralized services which lowers the FTEs across the project. Predesign Investigation sampling and analysis activities for FRL bounding were reduced to rely more heavily on existing RI/FS data, real time scanning, and existing design plans for several of the areas where excavation extent will be primarily driven by building foundations. This in turn significantly reduced the matrixed FTEs associated with these activities.

It was also anticipated that the Rad-Con requirements would be reduced and/or simplified to maximize efficiency and utilization of personnel. This would include the cross-training of project personnel to satisfy the minor rad-con requirements that would relieve the need for dedicated rad personnel. In addition, where applicable, rad personnel would cover several smaller projects that are occurring in the same vicinity, including projects at different stages of completion (i.e. access control, sampling, and excavation).

PBS-06 and PBS-03 construction groups will be integrated into one group. This combined group results in lowered SDFP FTE levels. In the off-season some of the construction personnel will also provide service to other projects.

Title I/II/III Design activities will be self-performed. The Engineering requirements will be simplified to avoid unnecessary designs based on project experience.

In general, while maintaining safety and quality of work, other actions are anticipated that will streamline not only SDFP work processes but the site as a whole as well. These include the simplification or the elimination of time-consuming, non-technical, and low value-added requirements and practices such as PEPs, DQOs, Project Reviews, TRB, CRB, and SSRs. Cost/Schedule Impact Evaluations would be conducted on any new requirements or procedures prior to implementation. It is expected that the construction subcontractors will be required and given incentive to perform many of the functions that we currently perform for them. This would include safe work plans, travelers, penetration permits, lock and tag, QA/QC, and placement planning/coordination/tracking. As identified

above, rad-con tasks as well as limited S&H and IH tasks will be performed by cross-trained and qualified project personnel.

A major improvement in CAM responsibility is planned for. The CAM is expected to have full control on the number, type, and frequency of matrix charges. This is in effort to have the service organizations justify the requirements for the task(s) that they are providing. This will reduce the ad-hoc and non-required tasks being performed and charged to project accounts.

The results of these actions are realized throughout the duration of the project. The effects are applicable and proportional to each of the control accounts within PBS-06.

2.2 ENGINEERING STAFF

The Engineering manpower projection included in this account is generally consistent with the historical levels required to conduct all the engineering design and oversight tasks for PBS-06. However, the Engineering will also support self-performing soil remedial design work and all construction works for PBS-06 under this baseline, which will significantly increase the in-house engineering workloads. See attached Manpower Sheet GPM12 1GA07 for details.

R1-
D-389

2.3 CONSTRUCTION MANAGEMENT

The Construction Management manpower projection included in this account is generally less than the historical levels required to conduct all the construction oversight tasks for PBS-06. However, higher manpower needs are projected for the increased production rates with double shifts in FY2006 and FY2007. See attached Manpower Sheet GPM13 1GA08 for details.

R1-
D-389

2.3 CHARACTERIZATION STAFF

The Characterization manpower projection included in this account is generally consistent with the historical levels required to conduct all the characterization works for PBS-06. However, the workloads will increase significantly under this baseline due to the shortened schedule. A centralized characterization group within the SDFP is formed to allow for more efficient support of multiple area projects with less characterization staff. See attached Manpower Sheet 1GA09 for details.

2.4 REAL TIME SYSTEMS

The RTIMP manpower projection included in this account is generally less than the historical levels required to support all the soil remediation works. However, the workloads will increase significantly under this baseline due to the shortened schedule. See attached Manpower Sheet 1GA10 for details.

Manpower Planning Sheet (CR2)

MPS # 1GA08 CONSTRUCTION MGMT

DRIVERS	START DATE	END DATE	FY 2007			FY 2008			FY 2009			FY 2010			FY 2011		
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
602 Area 3B Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx										
604 Area 4A: Excavation	04/01/2004	09/30/2005															
606 Area 4B Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx										
611 Area 6: Excavation	10/02/2006	09/28/2007	xxx	xxx	xxx	xxx											
613 Area 3A Predesign/Design	10/02/2000	07/27/2001															
614 Area 4A Predesign/Design	10/02/2000	07/27/2001															
615 Area 3B/4B/5 Predesign/Design	10/01/2003	09/28/2005															
616 Area 7, Sector 1 and 4 Excavation	01/02/2008	09/30/2008					xxx	xxx	xxx								
626 Lime Sludge Pond Excavation	04/01/2004	09/30/2004															
629 Area 3A: Excavation	04/01/2004	06/30/2005															
632 Area 5: Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx										
638 Natural Resources Restoration	10/01/2003	12/31/2009	xxx	xxx	xxx												
Construction	Construction Mgr.		1.2	1	1.2	1.2	1	1.2	1.2	1	1	1	1	0	0	0	0
Construction	Construction Engineer		3	2	3	3	2	3	3	2	1	0.5	0.5	0	0	0	0
Administration	Clerks		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0	0	0	0
Industrial Relations	Industrial Relations Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Rad Tech		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Administration	Clerks		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Safety Engineer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Safety Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction	Construction Coordinator		2	1	2	2	1	1.5	1.5	1	1	1	1	0	0	0	0
Sheet Totals:			6.70	4.50	6.70	6.70	4.50	6.20	6.20	4.70	3.10	2.60	2.60	0.00	0.00	0.00	0.00

SECTION 1

4.0 ESTIMATE

GPM11

SOILS MANAGEMENT AND OVERSIGHT

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO F06-038

Resource:	Res Dept:	COST ANALYST	F04	Class:	EOC:		LABOR							
					Overline:	SAL	Overline:	SAL						
					Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
					Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:					0.0	0.0	0.0	524.1	524.1	873.5	698.8	435.8	0.0	0.0
Cum Hours:					0.0	0.0	0.0	524.1	1,048.2	1,921.7	2,795.2	3,494.0	3,929.8	3,929.8
Yr Total Cost:					0	0	0	24,070	25,497	45,401	49,218	41,501	28,762	0
Cum Total Cost:					0	0	0	24,070	49,567	94,968	144,186	185,688	214,450	214,450

Resource:	Res Dept:	DRFCAD	F01	Class:	EOC:		LABOR							
					Overline:	SAL	Overline:	SAL						
					Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
					Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:					515.0	0.0	0.0	614.3	873.5	873.5	873.5	1,747.0	873.5	210.5
Cum Hours:					515.0	515.0	515.0	1,129.3	2,002.8	2,876.3	3,749.8	5,496.8	6,370.3	6,580.8
Yr Total Cost:					16,063	0	0	22,621	34,072	36,403	39,463	83,189	46,223	11,482
Cum Total Cost:					16,063	16,063	16,063	38,684	72,756	109,159	148,622	231,811	278,034	289,517

Resource:	Res Dept:	ENGINEER	F01	Class:	EOC:		LABOR							
					Overline:	SAL	Overline:	SAL						
					Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
					Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:					2,674.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:					2,674.0	2,674.0	2,674.0	2,674.0	2,674.0	2,674.0	2,674.0	2,674.0	2,674.0	2,674.0
Yr Total Cost:					183,864	0	0	0	0	0	0	0	0	0
Cum Total Cost:					183,864	183,864	183,864	183,864	183,864	183,864	183,864	183,864	183,864	183,864

Resource:	Res Dept:	ENPREP	F01	Class:	EOC:		LABOR							
					Overline:	SAL	Overline:	SAL						
					Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
					Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:					684.0	0.0	0.0	0.0	873.5	1,747.0	1,747.0	1,747.0	1,747.0	210.5
Cum Hours:					684.0	684.0	684.0	684.0	1,557.5	3,304.5	5,051.5	6,798.5	8,545.5	8,756.0
Yr Total Cost:					33,065	0	0	0	52,807	112,837	122,325	128,931	143,279	17,796
Cum Total Cost:					33,065	33,065	33,065	33,065	85,872	198,709	321,034	449,965	593,244	611,040

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO:F06-038

Resource:	ENVR SCIENCE REP	Class:	EOC:		LABOR	
			OverTime:	F01	SAL	
Res Dept:	949					
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	2,444.0 0.0	2,444.0 0.0	2,444.0 0.0	2,444.0 0.0	2,444.0 0.0	2,444.0 0.0
Yr Total Cost:	102,550 0	102,550 0	102,550 0	102,550 0	102,550 0	102,550 0
Cum Total Cost:	102,550	102,550	102,550	102,550	102,550	102,550

Resource:	GLMNT	Class:	EOC:		LABOR	
			OverTime:	F01	HOU	
Res Dept:	949					
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	12.0 12.0	0.0 12.0	0.0 12.0	0.0 12.0	0.0 12.0	0.0 12.0
Yr Total Cost:	293 0	293 0	293 0	293 0	293 0	293 0
Cum Total Cost:	293	293	293	293	293	293

Resource:	MAT200	Class:	EOC:		MATERIAL	
			OverTime:	F10	MAT	
Res Dept:	949					
Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Units:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0	0 0	0 0
Cum Total Cost:	0	0	0	0	0	0

Resource:	MAT300	Class:	EOC:		MATERIAL	
			OverTime:	F04	MAT	
Res Dept:	949					
Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Units:	9,106.0 9,106.0	0.0 9,106.0	9,106.0 0	79,151.0 75,947	120,631.0 46,234	162,111.0 47,575
Yr Total Cost:	9,106 9,106	0 9,106	9,106 9,106	85,053 131,288	178,863 178,863	203,591.0 48,955
Cum Total Cost:	9,106	9,106	9,106	227,818	278,192	276,878.0

Resource:	MAT300	Class:	EOC:		MATERIAL	
			OverTime:	F04	MAT	
Res Dept:	949					
Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Units:	9,106.0 9,106.0	0.0 9,106.0	9,106.0 0	79,151.0 75,947	120,631.0 46,234	162,111.0 47,575
Yr Total Cost:	9,106 9,106	0 9,106	9,106 9,106	85,053 131,288	178,863 178,863	203,591.0 48,955
Cum Total Cost:	9,106	9,106	9,106	227,818	278,192	276,878.0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO F06-038

Resource: ODC600 ODC 600 EOC: ODC
Res Dept: 949 Overtime: F01 Class: ODC

Yr Units:	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
1,630.0	1,630.0	0.0	0.0	3,646.0	3,646.0	0.0	3,646.0	3,646.0	3,646.0	3,646.0	12,568.0	16,214.0	19,860.0	23,506.0	24,275.0	27,116	27,116	27,116	27,116	27,116
1,630	1,630	0	0	3,953	4,064	0	4,182	4,303	4,428	4,556	4,684	4,812	4,940	5,068	5,196	5,324	5,452	5,580	5,708	5,836
Cum Total Cost:	1,630	1,630	1,630	5,583	9,647	1,630	5,583	9,647	13,829	18,132	22,560	27,116	31,666	36,212	40,758	45,304	49,850	54,396	58,942	63,488

Resource: ODC700 ODC 700 EOC: ODC
Res Dept: 949 Overtime: F04 Class: ODC

Yr Units:	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
0.0	0.0	0.0	0.0	62,583.0	62,583.0	0.0	62,583.0	62,583.0	125,166.0	127,749.0	127,749.0	130,332.0	132,915.0	135,498.0	138,081.0	140,664.0	143,247.0	145,830.0	148,413.0	150,996.0
0	0	0	0	67,856	69,756	0	67,856	69,756	137,613	140,575	143,537	146,499	149,461	152,423	155,385	158,347	161,309	164,271	167,233	170,195
Cum Total Cost:	0	0	0	67,856	137,613	0	67,856	137,613	275,226	415,799	556,372	696,945	837,518	978,091	1118,664	1259,237	1400,810	1541,383	1681,956	1822,529

Resource: ODC700 ODC 700 EOC: ODC
Res Dept: 949 Overtime: F01 Class: ODC

Yr Units:	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
2,889.0	2,889.0	0.0	0.0	2,889.0	2,889.0	0.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0	2,889.0
2,889	2,889	0	0	2,889	2,889	0	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889	2,889
Cum Total Cost:	2,889	2,889	2,889	5,778	8,667	2,889	5,778	8,667	11,556	14,445	17,334	20,223	23,112	26,001	28,890	31,779	34,668	37,557	40,446	43,335

Resource: PARSONS PARSONS ODC: SUB
Res Dept: 949 Overtime: F01 Class: SUB

Yr Units:	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
83,508.0	83,508.0	0.0	0.0	83,508.0	83,508.0	0.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0	83,508.0
83,508	83,508	0	0	83,508	83,508	0	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508	83,508
Cum Total Cost:	83,508	83,508	83,508	167,016	250,524	83,508	334,032	417,540	501,048	584,556	668,064	751,572	835,080	918,588	1,002,096	1,085,604	1,169,112	1,252,620	1,336,128	1,419,636

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO F06-038

Resource: Res Dept:	PHOGRA 949	PHOTO/GRAPHICS REP F01	Class:	LABOR																		
				EOC: SAL	Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
Yr Hours:					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:					7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Yr Total Cost:					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:					195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195

Resource: Res Dept:	PJCEST 949	ESTIMATOR F01	Class:	LABOR																		
				EOC: SAL	Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
Yr Hours:					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:					558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0	558.0
Yr Total Cost:					30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975
Cum Total Cost:					30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975	30,975

Resource: Res Dept:	PJCMGR 949	PROJECT CONTROLS MGR F01	Class:	LABOR																		
				EOC: SAL	Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
Yr Hours:					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:					788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0	788.0
Yr Total Cost:					51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559
Cum Total Cost:					51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559	51,559

Resource: Res Dept:	PJCSCH 949	SCHEDULERS F01	Class:	LABOR																		
				EOC: SAL	Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
Yr Hours:					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:					3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0	3,209.0
Yr Total Cost:					169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692
Cum Total Cost:					169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692	169,692

Fluor Fernald, Inc.

PBS: OHFN06
 WBS: 1.1.G.A
 CTRL ACCT: GPM1
 CHARGE NO: GPM11
 COMMENT NO F06-038

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
 PROJECT MGR J. D. Chiou
 CAM: J. D. Chiou
 PREPARED BY: W. F. Fick
 FISCAL YEAR: 2001 & 2004-2010

Resource: PRJMGR	PROJECT MANAGER	LABOR											
Res Dept: 949	Over: F01	Class:											
	EOC:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
	SAL	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10		
Yr Hours:		789.0	0.0	0.0	1,747.0	2,209.5	5,241.0	5,241.0	3,494.0	1,747.0	421.0		
Cum Hours:		789.0	789.0	789.0	2,536.0	4,745.5	9,986.5	15,227.5	18,721.5	20,468.5	20,889.5		
Yr Total Cost:		70,347	0	0	183,897	246,370	624,363	676,860	475,611	264,269	65,647		
Cum Total Cost:		70,347	70,347	70,347	254,245	500,614	1,124,978	1,801,838	2,277,449	2,541,718	2,607,365		

Resource: PROMGR	PROGRAM MGR	LABOR											
Res Dept: 949	Over: F04	Class:											
	EOC:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
	SAL	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10		
Yr Hours:		0.0	0.0	0.0	873.5	873.5	873.5	873.5	873.5	873.5	210.5		
Cum Hours:		0.0	0.0	0.0	873.5	1,747.0	2,620.5	3,494.0	4,367.5	5,241.0	5,451.5		
Yr Total Cost:		0	0	0	96,950	102,698	109,721	118,946	125,371	139,322	34,609		
Cum Total Cost:		0	0	0	96,950	199,648	309,369	428,316	553,686	693,008	727,618		

Resource: PURMGR	PROC & CONTRACT MGR	LABOR											
Res Dept: 949	Over: F04	Class:											
	EOC:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
	SAL	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10		
Yr Hours:		0.0	0.0	0.0	482.0	524.1	873.5	873.5	349.4	172.8	0.0		
Cum Hours:		0.0	0.0	0.0	482.0	1,006.1	1,879.6	2,753.1	3,102.5	3,275.3	3,275.3		
Yr Total Cost:		0	0	0	36,022	41,490	73,879	80,091	33,766	18,558	0		
Cum Total Cost:		0	0	0	36,022	77,511	151,390	231,481	265,247	283,805	283,805		

Resource: QACENG	QA ENGINEER	LABOR											
Res Dept: 949	Over: F01	Class:											
	EOC:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
	SAL	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10		
Yr Hours:		455.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		455.0	455.0	455.0	455.0	455.0	455.0	455.0	455.0	455.0	455.0		
Yr Total Cost:		20,912	0	0	0	0	0	0	0	0	0		
Cum Total Cost:		20,912	20,912	20,912	20,912	20,912	20,912	20,912	20,912	20,912	20,912		

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO F06-038

Resource:	QA/QC TECH	EOC:	LABOR											
Res Dept:	949	SAL												
Yr Hours:	7.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Cum Hours:	7.0	0.0	0.0	0.0	0.0	174.7	349.4	349.4	174.7	88.3	0.0			
Yr Total Cost:	216	0	0	0	0	181.7	531.1	880.5	1,055.2	1,143.5	1,143.5			
Cum Total Cost:	216	216	216	216	216	6,963	21,379	37,008	45,244	49,870	49,870			

Resource:	RAD ENGINEER	EOC:	LABOR											
Res Dept:	949	SAL												
Yr Hours:	0.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Cum Hours:	0.0	0.0	0.0	0.0	395.6	524.1	873.5	873.5	174.7	0.0	0.0			
Yr Total Cost:	0	0	0	0	919.7	1,793.2	2,666.7	3,540.2	3,714.9	13,980	13,980			
Cum Total Cost:	0	0	0	0	22,045	52,982	167,790	230,736	244,726	244,726	244,726			

Resource:	SAFETY ENGINEER	EOC:	LABOR											
Res Dept:	949	SAL												
Yr Hours:	1,291.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Cum Hours:	1,291.0	0.0	0.0	0.0	0.0	1,291.0	1,291.0	1,291.0	0.0	0.0	0.0			
Yr Total Cost:	64,176	0	0	0	0	64,176	64,176	64,176	0	0	0			
Cum Total Cost:	64,176	64,176	64,176	64,176	64,176	128,352	192,528	256,704	256,704	256,704	256,704			

Resource:	SAFETY & HEALTH MGR	EOC:	LABOR											
Res Dept:	949	SAL												
Yr Hours:	0.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Cum Hours:	0.0	0.0	0.0	0.0	307.3	873.5	873.5	873.5	174.7	0.0	0.0			
Yr Total Cost:	0	0	0	0	1,180.8	2,054.3	2,927.8	3,801.3	3,976.0	16,429	16,429			
Cum Total Cost:	0	0	0	0	20,110	80,663	215,489	289,410	305,840	305,840	305,840			

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM11
COMMENT NO F06-038

Resource: WSTENG
Res Dept: 949
WASTE ENGINEER
OverTime: F01

Class: LABOR
EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-		
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Hours:	1,040.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0	1,040.0
Yr Total Cost:	53,071	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071	53,071
GRAND TOTALS:																					
Yr Hours:	21,012.0	0.0	0.0	11,715.0	15,312.0	23,584.5	23,584.5	21,837.5	13,972.2	13,972.2	21,837.5	21,837.5	117,045.5	131,017.7	131,017.7	117,045.5	131,017.7	131,017.7	133,164.8	244,244	244,244
Cum Hours:	21,012.0	21,012.0	21,012.0	32,727.0	48,039.0	71,623.5	95,208.0	117,045.5	131,017.7	144,936.7	168,521.2	192,105.7	203,940.2	225,777.7	247,615.2	269,452.7	291,290.2	313,127.7	334,965.2	356,802.7	378,640.2
Yr Total Cost:	1,192,230	0	0	931,247	1,162,439	1,879,367	2,034,276	1,877,222	1,303,435	1,303,435	2,034,276	2,034,276	9,076,782	10,380,217	10,380,217	9,076,782	10,380,217	10,380,217	10,624,461	244,244	244,244
Cum Total Cost:	1,192,230	1,192,230	1,192,230	2,123,477	3,285,917	5,165,284	7,199,560	9,076,782	10,380,217	11,683,654	13,562,940	15,597,216	17,673,998	19,708,215	21,742,432	23,776,649	25,810,866	27,845,083	29,879,300	31,913,517	33,947,734

[Signature]
CONTROL TEAM

CAM

GPM12

ENGINEERING STAFF

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2003-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM12
COMMENT NO N/A

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-		
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20	
Yr Hours:	0.0	0.0	928.2	3,503.5	4,367.5	6,988.0	6,988.0	5,663.0	6,988.0	2,620.5	6,988.0	22,775.2	28,438.2	31,058.7	31,058.7	28,438.2	31,058.7	294.7	31,353.4	30,139	2,454,238
Cum Hours:	0.0	0.0	928.2	4,431.7	8,799.2	15,787.2	22,775.2	28,438.2	35,426.7	44,414.2	51,402.2	74,177.4	102,615.6	134,074.3	165,133.0	193,571.2	225,009.9	253,448.6	284,802.0	316,155.4	346,619.4
Yr Total Cost:	0	0	57,877	230,523	305,549	523,073	566,906	487,450	566,906	252,721	487,450	1,683,928	2,171,378	2,424,099	2,424,099	2,171,378	2,424,099	252,721	2,454,238	30,139	2,454,238
Cum Total Cost:	0	0	57,877	288,400	593,949	1,117,023	1,683,928	2,171,378	2,738,306	3,294,227	3,817,277	5,501,205	7,672,583	10,096,682	12,520,781	14,692,159	17,116,258	19,540,357	21,964,456	24,388,555	26,812,654

[Signature]
CONTROL TEAM

[Signature]
CAM

GPM13

CONSTRUCTION MANAGEMENT

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
 PROJECT MGR: J. D. Chiou
 CAM: J. D. Chiou
 PREPARED BY: W. F. Fick
 FISCAL YEAR: 2001 & 2004-2010

PBS: OHFN06
 WBS: 1.1.G.A
 CTRL ACCT: GPM1
 CHARGE NO: GPM13
 COMMENT NO: N/A

Resource: Res Dept:	S&HENG 949	SAFETY ENGINEER Overtime: F01	Class:	LABOR																	
				EOC: SAL	Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:		7.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Yr Total Cost:		348		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		348		348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348	348

Resource: Res Dept:	S&HTEC 949	SAFETY TECH Overtime: F01	Class:	LABOR																	
				EOC: SAL	Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:		3.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Yr Total Cost:		87		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		87		87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87

GRAND TOTALS:

Resource: Res Dept:	CAM	SAFETY TECH Overtime: F01	Class:	LABOR																	
				EOC: SAL	Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:		642.6		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		642.6		642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6	642.6
Yr Total Cost:		33,102		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		33,102		33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102	33,102

[Signature]
 CONTROL TEAM

GPM14

CHARACTERIZATION STAFF

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Flick
FISCAL YEAR: 2004-2010

PBS: OHFN06
WBS: 1.1.G.A
CTRL ACCT: GPM1
CHARGE NO: GPM14
COMMENT NO N/A

Resource:	ENSMGR	ENVR SCIENTIST MGR	Class:	EOC:	LABOR	EOC:	LABOR
Res Dept:	949	F04		SAL		SAL	
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	ENSMGR	ENVR SCIENCE REP	Class:	EOC:	LABOR	EOC:	LABOR
Res Dept:	949	F04		SAL		SAL	
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	ODC800	ODC 800	Class:	EOC:	ODC	EOC:	ODC
Res Dept:	949	F05		ODC		ODC	
Yr Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	ODC700	ODC 700	Class:	EOC:	ODC	EOC:	ODC
Res Dept:	949	F05		ODC		ODC	
Yr Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

GRAND TOTALS:

Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

CAM:  CONTROL TEAM: 

GPM16

REAL TIME SYSTEMS

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiu
CAM: J. D. Chiu
PREPARED BY: W. F. Flick
FISCAL YEAR: 2001-2010

PBS: OHFN06
WBS: 1.1.GA
CTRL ACCT: GPM1
CHARGE NO: GPM16
COMMENT NO F06-038

Resource:	CLERKS	CLERKS	EOC:		LABOR	
Res Dept:	949	F01	Class:	SAL	SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	44.3	0.0	0.0	44.3	44.3	44.3
Yr Total Cost:	1,058	0	0	1,058	1,058	0
Cum Total Cost:	1,058	1,058	1,058	1,058	1,058	1,058

Resource:	ENGINEER	ENGINEER	EOC:		LABOR	
Res Dept:	949	F01	Class:	SAL	SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	12.6	0.0	0.0	12.6	12.6	12.6
Yr Total Cost:	866	0	0	866	866	0
Cum Total Cost:	866	866	866	866	866	866

Resource:	ENSMGR	ENVR SCIENTIST MGR	EOC:		LABOR	
Res Dept:	949	F04	Class:	SAL	SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	0.0	0.0	0.0	1,315.0	1,747.0	1,747.0
Yr Total Cost:	0	0	0	1,315.0	3,062.0	4,809.0
Cum Total Cost:	0	0	0	81,880	115,228	123,108

Resource:	ENSREP	ENVR SCIENCE REP	EOC:		LABOR	
Res Dept:	949	F01	Class:	SAL	SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	3,083.6	0.0	0.0	3,513.0	4,806.0	7,077.0
Yr Total Cost:	129,388	0	0	6,596.6	11,402.6	18,479.6
Cum Total Cost:	129,388	129,388	129,388	174,031	252,199	396,769

Resource:	GLMNT	GEN LABOR MAINT	EOC:		LABOR	
Res Dept:	949	F01	Class:	HOU	HOU	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:	101.1	0.0	0.0	101.1	101.1	101.1
Yr Total Cost:	2,471	0	0	2,471	2,471	0
Cum Total Cost:	2,471	2,471	2,471	2,471	2,471	2,471

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001-2010

Resource: HAZWAT
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	HAZWAT		F01		Class:		EOC:		HOU		LABOR	
					Over:	Overtime:	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
Oct 00-																
Sep 01	44.3	44.3	1,275	1,275												
Sep 02	0.0	44.3	0	1,275												
Sep 03	0.0	44.3	0	1,275												
Sep 04	0.0	44.3	0	1,275												
Sep 05	0.0	44.3	0	1,275												
Sep 06	0.0	44.3	0	1,275												
Sep 07	0.0	44.3	0	1,275												
Sep 08	0.0	44.3	0	1,275												
Sep 09	0.0	44.3	0	1,275												
Sep 10	0.0	44.3	0	1,275												
Oct 09-																

Resource: IRREP
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	INDUSTRIAL REL REP		F01		Class:		EOC:		SAL		LABOR	
					Over:	Overtime:	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
Oct 00-																
Sep 01	44.3	44.3	1,810	1,810												
Sep 02	0.0	44.3	0	1,810												
Sep 03	0.0	44.3	0	1,810												
Sep 04	0.0	44.3	0	1,810												
Sep 05	0.0	44.3	0	1,810												
Sep 06	0.0	44.3	0	1,810												
Sep 07	0.0	44.3	0	1,810												
Sep 08	0.0	44.3	0	1,810												
Sep 09	0.0	44.3	0	1,810												
Sep 10	0.0	44.3	0	1,810												
Oct 09-																

Resource: LABCHEM
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	CHEMIST		F01		Class:		EOC:		SAL		LABOR	
					Over:	Overtime:	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
Oct 00-																
Sep 01	555.7	555.7	21,539	21,539												
Sep 02	0.0	555.7	0	21,539												
Sep 03	0.0	555.7	0	21,539												
Sep 04	0.0	555.7	0	21,539												
Sep 05	0.0	555.7	0	21,539												
Sep 06	0.0	555.7	0	21,539												
Sep 07	0.0	555.7	0	21,539												
Sep 08	0.0	555.7	0	21,539												
Sep 09	0.0	555.7	0	21,539												
Sep 10	0.0	555.7	0	21,539												
Oct 09-																

Resource: LABTEC
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	LAB TECH		F01		Class:		EOC:		SAL		LABOR	
					Over:	Overtime:	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
Oct 00-																
Sep 01	398.4	398.4	11,072	11,072												
Sep 02	0.0	398.4	0	11,072												
Sep 03	0.0	398.4	0	11,072												
Sep 04	0.0	398.4	0	11,072												
Sep 05	0.0	398.4	0	11,072												
Sep 06	0.0	398.4	0	11,072												
Sep 07	0.0	398.4	0	11,072												
Sep 08	0.0	398.4	0	11,072												
Sep 09	0.0	398.4	0	11,072												
Sep 10	0.0	398.4	0	11,072												
Oct 09-																

Resource: MAT300
Res Dept: 949

Yr	Units	Cum Units	Yr Total Cost	Cum Total Cost	MATERIAL OBJCLASS300		F01		Class:		EOC:		MAT		MATERIAL	
					Over:	Overtime:	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
Oct 00-																
Sep 01	76,486.0	76,486.0	76,486	76,486												
Sep 02	8,633.0	85,119.0	9,316	85,119												
Sep 03	8,633.0	93,752.0	9,316	93,752												
Sep 04	296,270.0	390,022.0	378,181	390,022												
Sep 05	651,712.0	1,041,734.0	708,409	1,041,734												
Sep 06	913,002.0	1,954,736.0	1,008,094	1,954,736												
Sep 07	253,870.0	2,208,606.0	1,307,713	2,208,606												
Sep 08	244,330.0	2,452,936.0	1,604,436	2,452,936												
Sep 09	44,891.0	2,500,000.0	1,660,534	2,500,000												
Sep 10	10,786.0	2,510,786.0	1,674,403	2,510,786												
Oct 09-																

Fluor Fernald, Inc.

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001-2010

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
WBS: 1.1.GA
CTRL ACCT: GPM1
CHARGE NO: GPM16
COMMENT NO F06-038

Resource:	Res Dept:	MNTMGR	949	MAINTENANCE MGR		LABOR		EOC:				
				F01	F01	Class:	Class:	SAL	SAL			
Yr Hours:		Oct 00-		Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:		Sep 01		Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		44.3		44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Cum Total Cost:		1,975		1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975	1,975

Resource:	Res Dept:	ODC600	949	ODC		EOC:						
				F04	F04	Class:	Class:	ODC	ODC			
Yr Units:		Oct 00-		Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Units:		Sep 01		Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		0.0		0.0	0.0	1,109.0	1,109.0	1,109.0	1,109.0	5,545.0	6,654.0	90.0
Cum Total Cost:		0		0	0	1,202	1,236	1,272	1,309	1,347	1,386	116

Resource:	Res Dept:	ODC700	949	ODC		EOC:						
				F04	F04	Class:	Class:	ODC	ODC			
Yr Units:		Oct 00-		Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Units:		Sep 01		Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		0.0		0.0	0.0	1,225.0	1,225.0	1,225.0	1,225.0	6,125.0	7,350.0	0.0
Cum Total Cost:		0		0	0	1,328	1,365	1,405	1,446	1,488	1,531	0

Resource:	Res Dept:	QA/QC TECH	949	LABOR		EOC:						
				F01	F01	Class:	Class:	SAL	SAL			
Yr Hours:		Oct 00-		Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:		Sep 01		Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		12.6		12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Cum Total Cost:		389		389	389	389	389	389	389	389	389	389

Resource:	Res Dept:	RADTECH	949	LABOR		EOC:						
				F01	F01	Class:	Class:	SAL	SAL			
Yr Hours:		Oct 00-		Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:		Sep 01		Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		455.6		455.6	455.6	455.6	455.6	455.6	455.6	455.6	455.6	455.6
Cum Total Cost:		15,527		15,527	15,527	15,527	15,527	15,527	15,527	15,527	15,527	15,527

SECTION 1

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Solis Mgmt & Oversight		WBS Number: 06		Total Baseline Dollars (Minimum Case): \$25,269,393					
Evaluator: J.D. Chiou / F. Miller		Date: 4/11/01		Control Account Number: GPM1					
CAM: JD Chiou		Date: 4/11/01		Risk and/or Opportunity					
Project Task	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Soils Management and Support	Other Project (ie D&D, Silos, WGS, etc.) delays causing SDFP to be delayed by 1 year.	Internal	\$720,000	2	25	2	\$180,000	2	Accept Risk
Engineering Staff	Other Project (ie D&D, Silos, WGS, etc.) delays causing SDFP to be delayed by 1 year.	Internal	\$200,000	2	25	2	\$50,000	2	Accept Risk
Construction Management	Other Project (ie D&D, Silos, WGS, etc.) delays causing SDFP to be delayed by 1 year.	Internal	\$320,000	2	25	2	\$80,000	2	Accept Risk
Characterization Staff	Other Project (ie D&D, Silos, WGS, etc.) delays causing SDFP to be delayed by 1 year.	Internal	\$240,000	2	25	2	\$60,000	2	Accept Risk
Real Time Systems	Other Project (ie D&D, Silos, WGS, etc.) delays causing SDFP to be delayed by 1 year.	Internal	\$320,000	2	25	2	\$80,000	2	Accept Risk

Total:	\$1,800,000	Total:	\$450,000
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**Natural Resources
Restoration**

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

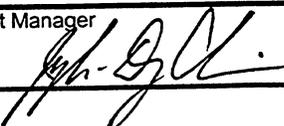
U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115			4. INDEX LINE NO. 48
5. WBS ELEMENT CODE 1.1.G.B		6. WBS ELEMENT TITLE NATURAL RESOURCES RESTORATION MGMT.	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00			8. DATE OF CHANGES 12/01/2000
9. SYSTEM DESIGN DESCRIPTION CERCLA/ACA		10. BUDGET AND REPORTING NUMBER EWO5H3060	
11. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material ODCs Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The Natural Resource Restoration (Restoration) Program is the final step in the Fluor Fernald's Closure Contract and is implemented to establish the selected final land use for the FEMP, the Undeveloped Park. The approach taken to Restoration is designed to begin the establishment of native vegetation and habitat on both remediated and non-remediated portions of the FEMP that are certified clean. Restoration will occur over 864 acres of the FEMP in all areas outside the OSDF and the 23 acres designated for potential economic development. Restoration will be carried out in phases from 2004 through 2009. Restoration design will be planned as part of each individual restoration project and will include subcontractor support on several projects. Restoration will also allow DOE to meet requirements of the Clean Water Act for wetland mitigation, settle natural resource injury liabilities and carry out commitments contained in the Records of Decision regarding habitat loss. Restoration work covered in the WBS element will also include Restoration Research to support restoration decisions and maintenance, monitoring and storm water management of certified and restored areas.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Specific Natural Resource Restoration Projects include:</p> <ul style="list-style-type: none"> - Southern Waste Units - Northern Woodlots - Paddys Run Corridor 			

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115		4. INDEX LINE NO. 48	
5. WBS ELEMENT CODE 1.1.G.B		6. WBS ELEMENT TITLE NATURAL RESOURCES RESTORATION MGMT.	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 12/01/2000	
9. SYSTEM DESIGN DESCRIPTION CERCLA/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION <ul style="list-style-type: none"> - OSDF Borrow Area - Silos Area - Production and Waste Pits Area <p>The scope of these projects, along with the maintenance and research activities is specifically defined in contract account GNRR.</p> <p>Work Specifically Excluded:</p> <ul style="list-style-type: none"> - Certification activities - Natural Resource Planning and Management covered in control account GPM1 - Stewardship planning - Interim restoration - Remediation - Area 10 (Soil Corridors) - All centralized services 			

**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCU9	13. TASK DESCRIPTION (ONE LINE) NATURAL RESOURCES CONSTRUCTION FY01		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Matrixed Labor Material ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This charge number includes the completion of restoration work in Area 8, Phase II. Area 8, Phase II restoration was initiated in FY 00 and was approximately 98% complete at the end of FY 00. Work to be performed in the closure baseline includes only the installation of shrubs to complete the project.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for activities to be carried out under GCU93 includes the following key elements:</p> <p>The Demonstration Forest Project will be completed in Area 8, Phase II in the April 2001. Native Tree Seedlings (500 Beech and 150 Basswood) will be planted to complete all activities planned in the NRRDP for the project. Planting will take approximately one week to complete.</p> <p>Matrixed labor and transportation support will be used to complete this work. Project oversight will be covered by the Natural Resources Management account.</p> <p>Each seedling will be mulched and watered at the time of planting.</p> <p>Deer repellent will be applied to all seedlings in Area 8, Phase II in the Spring of 2001.</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE

FEMP (DEFENSE)

2. DATE

09/05/2001

Page 2

3. WBS ELEMENT CODE

1.1.G.B

4. WBS ELEMENT TITLE/NAME

NATURAL RESOURCES RESTORATION MGMT.

5. PERFORMING DIV/DEPARTMENT CODE

49

6. ORIGINATOR NAME/PHONE

JD CHIOU/648-3726

7. WBS ELEMENT MANAGER

JD CHIOU

8. BUDGET AND REPORTING NUMBER

EW05H3060

9. BUDGET TITLE

SOILS

10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?

CHANGE PER CP# FY01-0015-0006-00

11. ESTIMATED START / COMPLETION DATE

12/00 - 4/01

12. TASK IDENTIFICATION (CONTROL ACCOUNT)

GCU9

13. TASK DESCRIPTION (ONE LINE)

NATURAL RESOURCES CONSTRUCTION FY01

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Construction management

Post-remediation monitoring and maintenance

Work performed on the Forest Demonstration Project prior to December 2000

WORK SCOPE DEFINITION
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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 4/03
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12. TASK IDENTIFICATION (WORK PACKAGE) GCU93	13. TASK DESCRIPTION (ONE LINE) DEMONSTRATION FOREST PROJECT - FY01
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Material

b. TECHNICAL CONTENT:

This charge number includes the completion of restoration work in Area 8, Phase II. Area 8, Phase II restoration was initiated in FY 00 and was approximately 98% complete at the end of FY 00. Work to be performed this year includes only the installation of shrubs to complete the project.

c. SCOPE OF WORK:

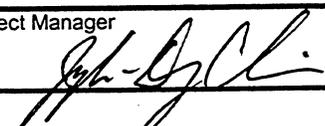
The scope of work for activities to be carried out under GCU93 includes the following key elements:

The Demonstration Forest Project will be completed in Area 8, Phase II in the April 2001. Native Tree Seedlings (500 Beech and 150 Basswood) will be planted to complete all activities planned in the NRRDP for the project. Planting will take approximately one week to complete.

Matrixed labor and transportation support will be used to complete this work. Project oversight will be covered by the Natural Resources Management account.

Each seedling will be mulched and watered at the time of planting.

Deer repellent will be applied to all seedlings in Area 8, Phase II in the Spring of 2001.

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/03	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU93	13. TASK DESCRIPTION (ONE LINE) DEMONSTRATION FOREST PROJECT - FY01		

14. ELEMENT TASK DESCRIPTION

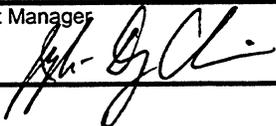
d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Construction management

Post-remediation monitoring and maintenance.

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(Control Account)**

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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 11/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GNRR	13. TASK DESCRIPTION (ONE LINE) NATURAL RESOURCES RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The Natural Resource Restoration (Restoration) Program is the final step in the Fluor Fernald's Closure Contract and is implemented to establish the selected final land use for the FEMP, the Undeveloped Park. The approach taken to Restoration is designed to begin the establishment of native vegetation and habitat on both remediated and non-remediated portions of the FEMP that are certified clean. Restoration will occur over 864 acres of the FEMP in all areas outside the OSDF and the 23 acres designated for potential economic development. Restoration will be carried out in phases from 2004 through 2009. Restoration design will be planned as part of each individual restoration project and will include subcontractor support on several projects. Restoration will also allow DOE to meet requirements of the Clean Water Act for wetland mitigation, settle natural resource injury liabilities and carry out commitments contained in the Records of Decision regarding habitat loss. Restoration work covered in the WBS element will also include Restoration Research to support restoration decisions and maintenance and monitoring of restored areas.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope for this control account is further defined in the following charge numbers:</p> <p>GNRR1 - Certified/Restored Area Maintenance</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 11/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GNRR	13. TASK DESCRIPTION (ONE LINE) NATURAL RESOURCES RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p>GNRR2 - Restoration Research GNRR4 - Southern Waste Units GNRR5 - Northern Woodlots Restoration GNRR6 - Paddys Run Corridor Restoration GNRR7 - OSDF Borrow Area Restoration GNRR8 - Silos Area GNRR9 - Production and Waste Pits Area Restoration</p> <p>Maintenance of both certified and restored areas will be ongoing through the end of the Closure Contract.</p> <p>Ecological research will also be required to investigate specific problems related to restoration of the site and the vegetative cover of the OSDF.</p> <p>The Southern Waste Unit Restoration Project will be carried out in 2006. At the end of remediation, the final grading of the SWU will allow floodwater from Paddys Run to overflow into the SWU creating a true riparian habitat. Restoration Design will include the engineering necessary to open the SWU area to Paddys Run and the planting plans necessary to establish desired native vegetation. The restoration project will involve the conversion of the existing sediment basins to wetland/shallow pond habitats; installing tree seedlings in upland areas bordering created wetlands, ponds and created floodplain; and seeding wet prairie grasses in areas within the floodplain.</p> <p>The North Woodlot is currently a combination of various types of woodlands with a centrally located, forested wetland and interspersed open fields. The restoration of the North Woodlot will occur over a three-year period from 2005 through 2007. Restoration Design in the North Woodlot will include a grading plan to create wetland basins in Area 6, a chipping plan for select thinning and chipping of the Northern Pines and a planting plan for the entire northern woodlot. Restoration of the North Woodlot will center around the expansion of the Northern Forested Wetland by creating a series of basins in a 10 acre portion of Area 6, immediately south of Area 1, Phase III. The newly created wetland will be vegetated with a combination of saplings, shrubs and grasses and forbs. Some portions of the Area 1, Phase III woodlot will be planted to native tree seedlings and remaining areas will be left unplanted and seeded with native prairie grasses. The North Pine Plantation in Area 1, Phase I will be restored</p>			

**WORK SCOPE DEFINITION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 11/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GNRR	13. TASK DESCRIPTION (ONE LINE) NATURAL RESOURCES RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p>by select clearing of a portion of diseased and dead pine trees, creation of vernal pools in areas prone to poor drainage, and the installation of native tree seedlings.</p> <p>The Paddys Run Corridor Restoration will focus on the expansion of stream floodplain and the expansion of the existing wooded, riparian corridor along the stream. The restoration of the Paddys Run will occur in 2006 and 2007. Restoration Design will include a grading plan to open for the former stream channel of Paddys Run to flood waters and a planting plan for the entire riparian corridor. Remediation activities in the Southern Waste Units and adjacent to the Waste Pit Area will provide the opportunity to establish more floodplain for Paddys Run. Additional floodplain can also be created in the oxbow area immediately north of Area 8, Phase I by partially opening the former stream channel to flood waters from Paddys Run. The expansion of floodplain is important because two past projects on Paddys Run have restricted floodplain to prevent erosion of the Waste Pit Area and Paddys Run Road. The wooded corridor along the stream will be expanded by planting disturbed and pasture areas with native tree seedlings.</p> <p>The restoration of the Borrow Area will be completed in six separate phases from 2004 through 2009. One phase per year will be completed as borrow activities are completed in each sub-area. The plans for final grading and seeding in the borrow area has been presented in the OSDF Borrow Area Strategy Report. The Restoration Design to install additional vegetation in the Borrow Area will be developed in a separate design plan. Restoration will include the creation of shallow wetlands and ponds at the conclusion of borrow activities in each sub-area and seeding excavated areas with native prairie grasses. The restored condition of the Borrow Area will be a combination of wet prairie and upland prairie with interspersed wetland and pond features.</p> <p>The restoration of the perimeter of the OSDF will be carried out in 2008 and 2009. Restoration Design will include a planting plan for native trees around the OSDF. The goal of restoration will be to establish native prairie grass in the buffer zone of the OSDF and to selectively plant saplings to eventually provide some future, visual screening of the OSDF.</p> <p>The Silos Area Restoration will be completed in 2008 and 2009. Restoration</p>			

**WORK SCOPE DEFINITION
(Control Account)**

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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 11/09	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GNRR	13. TASK DESCRIPTION (ONE LINE) NATURAL RESOURCES RESTORATION		

14. ELEMENT TASK DESCRIPTION

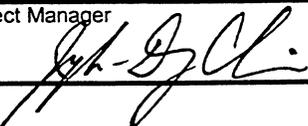
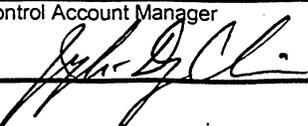
Design will include a planting plan to establish vegetation around the remediated silos project and expanded the wooded corridor along the Pilot Plant Drainage Ditch. Restoration of the Silos Area will include the establishment of a wetland/pond habitat in excavated areas by grading to encourage water retention. The Pilot Plant Drainage Ditch and riparian corridor along Paddys Run will be planted with tree seedlings. Remaining areas within the project will be seeded with native prairie grasses and forbs that will be contiguous with prairie areas in the former Production and Waste Pit Areas.

The Production/Waste Pit Area Restoration Project will be carried out from 2006 through 2009. The Restoration Design will include any needed drainage/seeding enhancements to the Production/Waste Pit Areas and a planting plan for the Riparian Corridor along Paddys Run. Deep excavations in the former Production and Waste Pit Area will be graded to retain water and establish stable side slopes (minimum of 5:1) and seeded to establish native prairie vegetation. Wetland features will be established in shallow depressions around the deep excavations to the degree possible. Expansion of floodplain on the western side of the Waste Pit Area will occur to the degree possible. Native prairie grasses and forbs will be established in both wet and upland portions of the project area.

d. WORK SPECIFICALLY EXCLUDED:

Completion of Demonstration Forest Project
Certification Activities
Natural Resource Planning and Management covered in control account GPM1
Stewardship Planning
Interim Restoration
Remediation
Area 10 (Soil Corridors)
All centralized services

WORK SCOPE DEFINITION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR1	13. TASK DESCRIPTION (ONE LINE) CERTIFIED/RESTORED AREA MAINTENANCE		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Matrixed Labor Material Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Certified/Restored Area Maintenance includes the management and replacement of vegetation (e.g., grass, trees) installed as part of restoration work, maintaining drainage features to prevent excessive erosion, maintaining gravel roads and access points and maintaining all postings, ropes and fences. This account will be utilized to ensure that certified and restored areas are maintained in their intended condition and are not allowed to degrade to a point that would compromise either their certified status or threaten any restoration work that has been completed.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>This charge number includes work cross-walked from charge numbers GCSM1 and GCSM3.</p> <p>The scope of work for activities to be carried out under GNRR1 includes the following key elements:</p> <p>Replacing a maximum of 400 trees/shrubs per year in restored areas.</p> <p>Reseeding a maximum of 50 acres per year</p> <p>Conducting spot removal of invasive weeds from restored areas as needed to avoid</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR1	13. TASK DESCRIPTION (ONE LINE) CERTIFIED/RESTORED AREA MAINTENANCE		

14. ELEMENT TASK DESCRIPTION

impact to restored vegetation

Management and maintenance of prairies (e.g., burning, mowing).

Spraying herbicide to control invasive and nuisance plants as needed.

Periodically inspect and repair bioengineering features as needed.

Implement Erosion control as needed

Maintain water control devices (e.g., headwall structures, standpipes).

Replacement of gravel in access points for restored/certified areas.

Replacement of signs/ropes around certified areas and certified area stockpiles.

Repair of mulch trails and other public use amenities as needed.

Repair of fencing around restored areas.

Mowing a maximum of 200 acres 12 times a year.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for oversight and planning.

Certification Activities

Restoration Project Implementation

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1.1.G.B	NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU (3726)	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-006-00		12/00 - 9/09	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
GNRR2	RESTORATION RESEARCH		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Natural Resource Restoration Research will be required to investigate specific problems related to restoration of the site and the vegetative cover of the OSDF. A number of ongoing research projects will be continued under this charge number and new research projects are required in the future as new issues and challenges arise.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>This charge number includes work cross-walked from the GCSC4 Charge Number.</p> <p>The scope of work for activities to be carried out under GNRR2 includes the following key elements:</p> <p>There will be no manpower charged to this account. The work described in this account will be subcontract support and centralized procurement support.</p> <p>Continue management and oversight of the following ongoing ecological research projects:</p> <ul style="list-style-type: none"> - Area 1, Phase I Prairie Restoration Research Project - Area 1, Phase 3 Invasive Species Control Research Project - Area 8, Phase I American Chestnut Tree Project <p>The fourth ongoing ecological research project, Area 8, Phase I Revegetation Test Plots will be cancelled at the end of Calendar Year 2000. Funding</p>			
Project Manager	Control Account Manager	Control Team Manager	

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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 9/09	

12. TASK IDENTIFICATION (WORK PACKAGE) GNRR2	13. TASK DESCRIPTION (ONE LINE) RESTORATION RESEARCH
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14. ELEMENT TASK DESCRIPTION

currently committed to that project will be used for two additional efforts during 2001.

The contract for the Area 1, Phase I Prairie Restoration Project will be expanded to include a research project investigating the impact of prairie grass roots on the geo-membrane liners of the OSDF cover. This project will be completed in 2001.

A contract will be established with the University of Cincinnati to provide recommendations for preventing the establishment of burrowing mammals on the OSDF cover and monitoring the OSDF cover for burrowing animals.

Research will need to be carried out with local universities to evaluate specific ecological issues related to natural resource restoration and the OSDF cover.

Research Task Orders will result in final reports that will be utilized to make decisions regarding restoration work and restoration management.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Restoration project implementation

Matrixed and Projectized labor

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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 9/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR2	13. TASK DESCRIPTION (ONE LINE) RESTORATION RESEARCH		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Natural Resource Restoration Research will be required to investigate specific problems related to restoration of the site and the vegetative cover of the OSDf. A number of ongoing research projects will be continued under this charge number and new research projects are required in the future as new issues and challenges arise.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>This charge number includes work cross-walked from the GCSC4 Charge Number.</p> <p>The scope of work for activities to be carried out under GNRR2 includes the following key elements:</p> <p>There will be no manpower charged to this account. The work described in this account will be subcontract support and centralized procurement support.</p> <p>Continue management and oversight of the following ongoing ecological research projects:</p> <ul style="list-style-type: none"> - Area 1, Phase I Prairie Restoration Research Project - Area 1, Phase 3 Invasive Species Control Research Project - Area 8, Phase I American Chestnut Tree Project <p>The fourth ongoing ecological research project, Area 8, Phase I Revegetation Test Plots will be cancelled at the end of Calendar Year 2000. Funding</p>			
Project Manager	Control Account Manager	Control Team Manager	

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(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 2
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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 9/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GNRR2	13. TASK DESCRIPTION (ONE LINE) RESTORATION RESEARCH
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14. ELEMENT TASK DESCRIPTION

currently committed to that project will be used for two additional efforts during 2001.

The contract for the Area 1, Phase I Prairie Restoration Project will be expanded to include a research project investigating the impact of prairie grass roots on the geo-membrane liners of the OSDF cover. This project will be completed in 2001.

A contract will be established with the University of Cincinnati to provide recommendations for preventing the establishment of burrowing mammals on the OSDF cover and monitoring the OSDF cover for burrowing animals.

Research will need to be carried out with local universities to evaluate specific ecological issues related to natural resource restoration and the OSDF cover.

Research Task Orders will result in final reports that will be utilized to make decisions regarding restoration work and restoration management.

d. WORK SPECIFICALLY EXCLUDED:

- Staff labor charged to Control Account GPM11 for project oversight and planning.
- Restoration project implementation
- Matrixed and Projectized labor

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3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP3 FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 10/05	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR4	13. TASK DESCRIPTION (ONE LINE) SOUTHERN WASTE UNIT RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The Southern Waste Unit Restoration Project includes conducting a predesign investigation to evaluate floodplain and soil conditions in the project area, design of the project, the completion of restoration work including the installation of plant material and seeding, and the monitoring of the area to ensure project goals are achieved.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for activities to be carried out under GNRR4 includes the following key elements:</p> <p>Predesign Investigation</p> <p>Determine appropriate floodplain elevations for incorporation into restoration grade</p> <p>Establish reference conditions for Paddys Run expected through an equilibrium between sediment aggradation and degradation, constant bank full width, and width to depth ratios</p> <p>Model flood elevations based on sitewide conceptual restoration grade contours</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

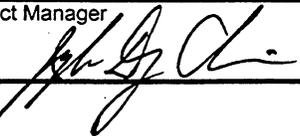
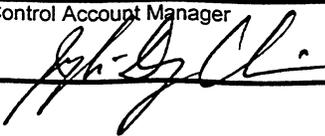
WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP3 FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 10/05	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR4	13. TASK DESCRIPTION (ONE LINE) SOUTHERN WASTE UNIT RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p>Establish five Paddys Run stream monitoring stations</p> <p>Characterize surface soil quality</p> <p>Design Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.</p> <p>Subcontract design support will be required for hydrologic engineering in the SWU Restoration Design to ensure the most stable design for allowing water to enter the SWU area.</p> <p>Subcontract support will be approximately six months in duration and will provide only the information needed to complete the Fluor Fernald Restoration Design Plan. The planting approach to be applied to the design package will be based on the installation of 160 saplings, 90 shrubs, and 400 seedlings per acre.</p> <p>The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.</p> <p>Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.</p> <p>Implementation The installation and mulching of 2,805 saplings, 1,564 shrubs, 6,800 seedlings, and the seeding of all disturbed areas will constitute completion of the SWU Restoration Project. As outlined in the current schedule, completion of all restoration work should occur by October 31, 2005.</p> <p>All plant material will be mulched and watered at the time of installation.</p> <p>Any minor adjustments in drainage patterns will also be implemented to create wetland and vernal pool features.</p>			

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP3 FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 10/05	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR4	13. TASK DESCRIPTION (ONE LINE) SOUTHERN WASTE UNIT RESTORATION		
14. ELEMENT TASK DESCRIPTION Monitoring Conduct restoration project monitoring for two growing seasons following plant installation. Monitoring requirements will be defined in the Restoration Design Plans. d. WORK SPECIFICALLY EXCLUDED: Staff labor charged to Control Account GPM11 for project oversight and planning. Remediation and soil certification work. Post-restoration maintenance.			

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 10/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR5	13. TASK DESCRIPTION (ONE LINE) NORTHERN WOODLOTS RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Matrixed Labor Subcontracts Material</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The Northern Woodlots Restoration Project includes conducting a predesign investigation to evaluate soil conditions in the project area, design of the project and the completion of restoration work including the installation of plant material and seeding. Restoration of the Northern Woodlots will be carried out in three distinct steps: 1. Selective thinning of the Northern Pines; 2. Implementation of the wetland mitigation project in the northern portion of Area 6; and 3. The installation of the seedlings in the Northern Pines and Woodlot will occur in 2007 and 2008.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Predesign Investigation Drainage patterns and soil conditions will be investigated to identify suitable locations for vernal pool/wetland features and support wetland design.</p> <p>Soil conditions will also be assessed to identify soil amendment needs, establish herbicide needs and determine woodchip volumes and stockpile area needs.</p> <p>Design Design Plans will include all details necessary to carry the restoration</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 10/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR5	13. TASK DESCRIPTION (ONE LINE) NORTHERN WOODLOTS RESTORATION		

14. ELEMENT TASK DESCRIPTION

projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.

Subcontract design support will be required for wetland design in the northern portion of Area 6 the maximize the amount of wetland area that can be created.

The planting approach to be applied to the design package will be based on the installation of 160 saplings, 90 shrubs, and 400 seedlings per acre.

The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.

Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

Implementation
 Selectively thin approximately 40% of area of pines from Northern Pine Plantation. Trees being removed will be comprised primarily of Austrian Pines.

Any minor adjustments in drainage patterns will also be implemented to create wetland and vernal pool features in the Northern Pines and the Northern Woodlot.

The installation and mulching of 4,125 saplings, 2,300 shrubs, 7,200 seedlings, and the seeding of all disturbed areas will occur in the Northern Pines and Northern Woodlot.

A wetland will be created on approximately ten (10) acres of land located on the south end of the Northern Woodlot.

The Wetland mitigation project will include the installation of 1,155 sapling trees and 644 shrubs.

All plant material will be mulched and watered at the time of installation.

Monitoring

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 10/03 - 10/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GNRR5	13. TASK DESCRIPTION (ONE LINE) NORTHERN WOODLOTS RESTORATION
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14. ELEMENT TASK DESCRIPTION

Conduct restoration project monitoring for two growing seasons following plant installation.

Monitoring requirements will be defined in the Restoration Design Plans.

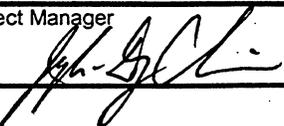
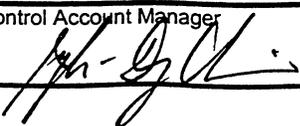
d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Remediation and soil certification activities

Post-restoration maintenance.

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 4/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR6	13. TASK DESCRIPTION (ONE LINE) PADDYS RUN CORRIDOR RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Matrixed Labor Subcontracts Material ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The Paddys Run Corridor Restoration will focus on the expansion of stream floodplain and the expansion of the existing wooded, riparian corridor along the stream. Restoration Design will include a grading plan to open for the former stream channel of Paddys Run to flood waters and a planting plan for the entire riparian corridor. Remediation activities in the Southern Waste Units and adjacent to the Waste Pit Area will provide the opportunity to establish more floodplain for Paddys Run. Additional floodplain can also be created in the oxbow area immediately north of Area 8, Phase I by partially opening the former stream channel to flood waters from Paddys Run. The expansion of floodplain is important because two past projects on Paddys Run have restricted floodplain to prevent erosion of the Waste Pit Area and Paddys Run Road. The wooded corridor along the stream will be expanded by planting disturbed and pasture areas with native tree seedlings.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Predesign Investigation Drainage patterns will be documented to identify suitable locations for vernal pool/wetland features.</p> <p>Soils in leased pastures will be analyzed to determine adequacy to support tree.</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 4/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR6	13. TASK DESCRIPTION (ONE LINE) PADDYS RUN CORRIDOR RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p>seedlings.</p> <p>The pre-design investigation will also focus on the need to control invasives and bank stabilization along Paddys Run.</p> <p>Design Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.</p> <p>The Design Plan will also include a plan for the selective clearing of the Pines and management of wood chips generated.</p> <p>Subcontract engineering support to determine the appropriate size and configuration of expanded floodplain.</p> <p>The planting approach to be applied to the design package will be based on the installation of 160 saplings, 90 shrubs, and 400 seedlings per acre.</p> <p>The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.</p> <p>Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.</p> <p>Implementation Selectively thin approximately 40% of area of pines from Southern Pine Plantation. Trees being removed will be comprised primarily of Austrian Pines.</p> <p>Any minor adjustments in drainage patterns will also be implemented to create wetland and vernal pool features.</p> <p>Excavation of approximately 200 feet of soil berm and staged adjacent to target area. Top soil will be scraped back first and kept separate. Old stream channel will be opened and graded to final elevations.</p>			

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/03 - 4/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR6	13. TASK DESCRIPTION (ONE LINE) PADDYS RUN CORRIDOR RESTORATION		

14. ELEMENT TASK DESCRIPTION

The installation and mulching of 6,534 saplings, 3,524 shrubs, 15,200 seedlings, and the seeding of all disturbed areas will occur.

All plant material will be mulched and watered at the time of installation.

Monitoring

Conduct restoration project monitoring for two growing seasons following plant installation.

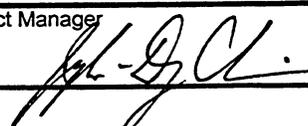
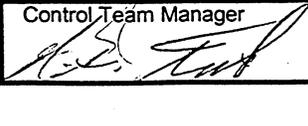
Monitoring requirements will be defined in the Restoration Design Plans.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Post-restoration maintenance.

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49	JD CHIOU (3726)	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
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12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
GNRR7	OSDF/BORROW AREA RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts</p>			
<p><u>b. TECHNICAL CONTENT:</u></p> <p>The goal of restoration will be to establish native prairie grass in the buffer zone of the OSDF and to selectively plant saplings to eventually provide some future, visual screening of the OSDF. The restoration of the Borrow Area will be completed in six separate phases from 2004 through 2009. One phase per year will be completed as borrow activities are completed in each sub-area. The plans for final grading and seeding in the borrow area has been presented in the OSDF Borrow Area Strategy Report. The Restoration Design to install additional vegetation in the Borrow Area will be developed in a separate design plan. Restoration will include the creation of shallow wetlands and ponds at the conclusion of borrow activities in each sub-area and seeding excavated areas with native prairie grasses. The restored condition of the Borrow Area will be a combination of wet prairie and upland prairie with interspersed wetland and pond features.</p>			
<p><u>c. SCOPE OF WORK:</u></p> <p>Predesign Investigation Soil samples will be collected in the OSDF perimeter area to determine suitability for the installation of saplings.</p> <p>Design Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading</p>			
Project Manager	Control Account Manager	Control Team Manager	
			

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 10/03 - 9/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GNRR7	13. TASK DESCRIPTION (ONE LINE) OSDF/BORROW AREA RESTORATION
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14. ELEMENT TASK DESCRIPTION

plans, planting and seeding procedures, monitoring and maintenance requirements.

The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.

Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

Implementation
Restoration of the Borrow Area will be complete when the final phase is graded and seeded with native prairie grass, and 165 saplings and 1,656 shrubs have been planted and mulched.

Restoration of the OSDF Perimeter will be complete when all disturbed areas have been seeded with native prairie grass and 825 saplings and 586 shrubs have been planted and mulched.

All restoration work on the OSDF perimeter and borrow area will be complete by September 30, 2009.

Monitoring
Monitoring requirements will be defined in the Restoration Design Plans.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Remediation and soil certification work

Post-restoration maintenance.

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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/07 - 12/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GNRR8	13. TASK DESCRIPTION (ONE LINE) SILOS AREA RESTORATION
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Subcontracts

b. TECHNICAL CONTENT:

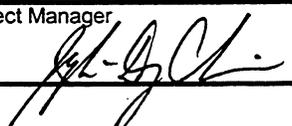
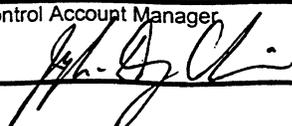
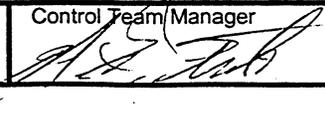
The Silos Area Restoration will be completed in 2008 and 2009. Restoration Design will include a planting plan to establish vegetation around the remediated silos project and expanded the wooded corridor along the Pilot Plant Drainage Ditch. Restoration of the Silos Area will include the establishment of a wetland/pond habitat in excavated areas by grading to encourage water retention. The Pilot Plant Drainage Ditch and riparian corridor along Paddys Run will be planted with tree seedlings. Remaining areas within the project will be seeded with native prairie grasses and forbs that will be contiguous with prairie areas in the former Production and Waste Pit Areas.

c. SCOPE OF WORK:

Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.

The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.

Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

Project Manager 	Control Account Manager 	Control Team Manager 
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/07 - 12/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR8	13. TASK DESCRIPTION (ONE LINE) SILOS AREA RESTORATION		

14. ELEMENT TASK DESCRIPTION

Restoration of the Silos area will be complete when grading is complete, all disturbed areas have been seeded with native prairie grass and 825 saplings, 450 shrubs, and 2,000 seedlings have been planted and mulched along Paddys Run and the Pilot Plant Drainage Ditch.

Monitoring requirements will be defined in the Restoration Design Plans.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Remediation and soil certification activities

Post-restoration maintenance.

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 4/06 - 11/09
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12. TASK IDENTIFICATION (WORK PACKAGE) GNRR9	13. TASK DESCRIPTION (ONE LINE) PRODUCTION/WASTE PIT AREA RESTORATION
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Subcontracts

b. TECHNICAL CONTENT:

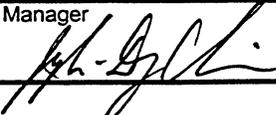
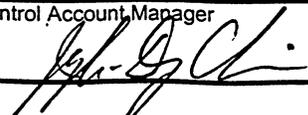
The Production/Waste Pit Area Restoration Project will be carried out from 2006 through 2009. The Restoration Design will include any needed drainage/seeding enhancements to the Production/Waste Pit Areas and a planting plan for the Riparian Corridor along Paddys Run. Deep excavations in the former Production and Waste Pit Area will be graded to retain water and establish stable side slopes (minimum of 5:1) and seeded to establish native prairie vegetation. Wetland features will be established in shallow depressions around the deep excavations to the degree possible. Expansion of floodplain on the western side of the Waste Pit Area will occur to the degree possible. Native prairie grasses and forbs will be established in both wet and upland portions of the project area.

c. SCOPE OF WORK:

Approximately 120 surface soil samples will be collected and analyzed for soil quality to support the predesign investigation.

Approximately 50 soil proctor tests will be conducted to support the predesign investigation.

Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.B	4. WBS ELEMENT TITLE/NAME NATURAL RESOURCES RESTORATION MGMT.		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU (3726)	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/06 - 11/09	
12. TASK IDENTIFICATION (WORK PACKAGE) GNRR9	13. TASK DESCRIPTION (ONE LINE) PRODUCTION/WASTE PIT AREA RESTORATION		

14. ELEMENT TASK DESCRIPTION

The design will also include planning for the installation of wildlife structures and the identification of any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.

Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

Restoration of the Former Production Area will be complete when fine grading and seeding is complete over 180 acres and 1,631 shrubs have been planted and mulched. Restoration of the Waste Pit Area will be complete when 825 saplings, 450 shrubs, and 2,000 seedlings have been installed along the Paddys Run Corridor.

Monitoring requirements will be defined in the Restoration Design Plans.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM11 for project oversight and planning.

Remediation and soil certification activities

Post-restoration maintenance.

SECTION 2

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.B.	5. WBS ELEMENT TITLE: NATURAL RESOURCES RESTORATION	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: GNRR	

SECTION 2: GNRR – NATURAL RESOURCES RESTORATION

1.0 NARRATIVE PLAN

1.1 OVERVIEW

The Natural Resource Restoration (Restoration) Program is the final step in the Fluor Fernald's Closure Contract and is implemented to establish the selected final land use for the FEMP, the Undeveloped Park. The approach taken to Restoration is designed to begin the establishment of native vegetation and habitat on both remediated and non-remediated portions of the FEMP that are certified clean. Restoration will occur over 864 acres of the FEMP in all areas outside the OSDF and the 23 acres designated for potential economic development. Restoration will be carried out in phases from 2004 through 2009. Restoration design will be planned as part of each individual restoration project. Restoration will also allow DOE to meet requirements of the Clean Water Act for wetland mitigation, settle natural resource injury liabilities and carry out commitments contained in the Records of Decision regarding habitat loss.

1.2 ASSUMPTIONS/EXCLUSIONS

1.2.1 Assumptions

- The manpower required to implement the scope of work outlined in this plan and charged to GNRR would be matrixed resources only, oversight personnel would be covered in the SDFP Management Account (GPM11).
- The topography required to support restoration will be established during interim restoration at the end of remediation and no significant earthwork is required when restoration starts.
- DOE implements supports steps to reduce the deer population to the desired ecological carrying capacity of 15 per square mile or other control measures on the site during ~~prior to the initiation~~ of restoration to avoid significant, adverse impacts to tree seedlings.
- ~~No gradient controls will be required in Paddys Run to restore the streambed.~~

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D-815,
D-817,
D-836

R1-
D-688
D-815
818

R1-
D-395,
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D-815,
D-819

- Monitoring and maintenance of restored areas will be part of PBS12 until FY04 and transition back to PBS06 at that time. ~~occur until 2003 as needed~~ to ensure the health of restored areas does not decline from factors such as disease and drought thus requiring replanting if survival numbers drop below the goal of ~~50%~~ 80%.
- No restored areas completed in 2009 will be monitored and maintained in subsequent growing seasons.

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D-820

- The Natural Resource Trustees reach settlement and move forward with implementation of the ~~1998~~ Final Natural Resource Restoration Plan and do not choose another course of action to resolve natural resource injury liability at the FEMP.
- Commitments to provide all required plant material can be secured through no-cost Memorandums of Understanding with qualified vendors for delivery between 2004 and 2009.

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D-815

- Plant material required for ~~six~~ restoration work in ~~remediated areas~~ projects will be installed by experienced, landscape subcontractors working in parallel and will not require continuous field direction and supervision.
- There will be construction support to help with contractor oversight during the implementation of restoration projects.

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D-815

- Assume a 4-person team ~~people~~ can install 40 saplings, 80 shrubs, and 800 seedlings per day. ~~or 3,200 per week.~~
- Any rip rap in Paddys Run corridor will be left in place and will not require removal.

R1-
D-391

- ~~Support for 2006 CERCLA 5-year review is excluded from the scope of current Closure Contract.~~
- DOE will require FDF to continue to keep perimeter of FEMP mowed at request of adjacent landowner.

1.2.2 Exclusions

R1-
D-391

- ~~Support for 2006 CERCLA 5-year review is excluded from the scope of current Closure Contract.~~
- Maintenance activities in uncertified areas (e.g., remediation areas, controlled areas).

R1-
D-392,
D-688,
D-815

- Collection of Baseline and Reference Site ecological data to track the progress of restored areas to justify the endpoint for the NRRP (this scope is addressed in PBS-12 and will be included as part of the final NRRP).

R1-
D-391
D-688
D-815

- Design work associated with public use amenities (e.g., overlooks, trails, facilities).
- Implementation of gradient controls in Paddys Run Stream is not considered necessary based on recent NRT negotiations and discussions with DOE.

1.2.3 Government-Furnished Services/Equipment

- Site equipment to be used for maintenance activities (e.g., backhoe, dozer, tractors, mowers).
- Four wheel drive vehicle to transport staff and equipment to and from remote locations on the FEMP.

1.3 DRIVERS

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The implementation of restoration work at the FEMP will be planned around remediation activities. Restoration of remediated areas will dictate the restoration schedule for the site. Remediated areas will be restored immediately following the certification of the remediated area to the extent possible. Areas that are not remediated will be restored in a phased approach following their certification and as schedule permits.

The restoration of the Northern Woodlot is not affected by any external activities. Certification is scheduled to occur in 2001 and restoration can occur anytime after that. Several parts of the Paddys Run corridor are currently available for restoration. Certification of the Area 8, Phase III North, Area 2, Phase II, portions of Area 6 will need to be completed before restoration of the Paddys Run corridor can be completed. Restoration of the Southern Waste Units, Production/Waste Pit Area, and Silos Area will only be completed when remediation and certification activities are complete. Restoration of the Borrow Area will be carried out in phases as borrow activities are completed. The perimeter of the OSDF will be restored once the OSDF is complete.

1.4 PROJECT PHYSICAL DESCRIPTION

Restoration of the FEMP will cover a total of 864 acres. Six projects will be implemented from 2004 through 2009, in a phased approach, resulting in the final restoration of the FEMP. All areas outside of the OSDF and the 23 acre potential economic development area in Area 2, Phase III will undergo restoration. A description of each of the six projects is provided below. Area designations are consistent with soil excavation/certification area designations (see attached map).

- Southern Waste Unit Restoration will cover approximately 30 acres encompassing all of Area 2, Phase I. The SWU Restoration area covers the Inactive Fly Ash Pile, the former running track, the Active Fly Ash Pile, and perimeter areas.
- The North Woodlot Restoration will include 196 acres and will encompass all of Area 1, Phase III, a portion of Area 6 and the Northern Pine portion of Area 1,

Phase I. The North Woodlot Restoration Area is bordered by the railroad tracks and rail yard to the South, Paddys Run Stream to the West, The North Access Road to the East, and the FEMP property boundary to the North.

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D-393

- The Paddys Run Corridor Restoration covers approximately ~~240~~ 248 acres, including ~~80~~ 118 acres of the Paddys Run Corridor Expansion East (Area 2, Phase II) and 130 acres of the Paddys Run Corridor Expansion West (Area 8, Phase III):

- Area 8, Phase III (West of Paddys Run Stream to Paddys Run Road)
- All of Area 2, Phase II (South of the Silos, West of Haul Road, East of Paddys Run Stream, and North of the SWU)
- A portion of Area 2, Phase III (Along the Storm Sewer Outfall Ditch, West of the 23 acre economic development area).

- The OSDF/Borrow Area Restoration Project will cover 190 acres, encompassing all of Area 1, Phase II (Southeast portion of the FEMP) and all of the perimeter of the OSDF in Area 1, Phase I.

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D-393

- The Silos Area Restoration Project will cover ~~20~~ 10 acres and will encompass all areas impacted by the Silos Project (Area 7).

- The Production Area/Waste Pit Area Restoration Project will cover ~~480~~ 190 acres and will encompass all of Area 3, 4, 5, and 6 (the former Production Area and Waste Pit Area).

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

1.5.1 GCU93 - Demonstration Forest Project FY2001

1.1)1 Scope/Plan

- The Demonstration Forest Project will be completed in Area 8, Phase II in the April 2001. Native Tree Seedlings (500 Beech and 150 Basswood) will be planted to complete all activities planned in the NRRDP for the project. Planting will take approximately one week to complete.
- Matrixed labor and transportation support will be used to complete this work. Project oversight will be covered by the Natural Resources Management account.
- Each seedling will be mulched and watered at the time of planting.
- Deer repellent will be applied to all seedlings in Area 8, Phase II in the Spring of 2001.

1.1)2 Quantification

R1-
D-394

- Plant 650 native tree seedlings by ~~June 1~~, April 30, 2001.

1.5.2 GNRR1 - Certified/Restored Area Maintenance

1.2)1 Scope/Plan

Maintenance of restored and certified areas will be required through the end of Fluor Fernald's Closure Contract. Maintenance activities will begin in this account in the 1st Quarter of FY 04. Mixed labor, transportation support, and Safety and Quality Assurance support will be required to perform the maintenance activities outlined below. The scope of maintenance activities will be as follows:

- Replacing a maximum of 400 trees/shrubs per year in restored areas.
- Reseeding a maximum of 50 acres per year.
- Conducting spot removal of invasive weeds from restored areas as needed to avoid impact to restored vegetation.
- Management and maintenance of prairies (e.g., burning, mowing). In order to establish and sustain a healthy prairie ecosystem, management will be required. Management will involve the removal of weedy plants to the degree possible and the elimination of thatch build up every two to three years. Burning is the optimal method for the management of prairies, but mowing and thatch removal can also be used as an effective management tool. The Management of prairie ecosystems is described in *The Tallgrass Restoration Handbook* by S. Packard.
- Spraying herbicide to control invasive and nuisance plants as needed.
- Periodically inspect and repair bioengineering features as needed.
- Implement erosion control as needed.
- Maintain water control devices (e.g., headwall structures, standpipes).
- Replacement of gravel in access points for restored/certified areas.
- Replacement of signs/ropes around certified areas and certified area stockpiles.
- Repair of mulch trails and other public use amenities as needed.
- Repair of fencing around restored areas.

- Mowing a maximum of 200 acres 12 times a year.

1.2)2 Quantification

- Replacing a maximum of 400 trees/shrubs per year in restored areas. The replacment of trees and shrubs will only be carried out if the survival rate in the wetland mitigation project, ecological restoration park or Area 8, Phase II drops below 80% during the required monitoring period.
- Reseeding a maximum of 50 acres per year. Based on past experience, the amount of seeding required in a given year should not exceed 50 acres per year. Application method will be primarily the Truax Seed Drill with hand application in areas that are not accessible with the seed drill.
- Mowing or burning approximately 25 acres of prairie per year. The initial phases of prairie ecosystems have been established in numerous parts of the FEMP.
- Application of herbicide by injection or spraying to control invasive and nuisance plants will be carried out at a rate of no more than 10 acres per year.
- Mowing a maximum of 200 acres 12 times a year. Mowing will be required on the southern perimeter of the FEMP and around access areas to maintain a safe condition around adjacent roadways.
- Repair and installation of bioengineering and erosion control features will not exceed 5,000 square feet of erosion control matting in a single year.
- Implement erosion control as needed.
- Maintain water control devices (e.g., headwall structures, standpipes) will not exceed repair of four outfall/pipe structures in a given year.
- Replacement of gravel in access points for restored/certified areas will not exceed 6,000 square feet at six inches deep in a given year.
- Replacement of signs/ropes around certified areas and certified area stockpiles.
- Repair of mulch trails will not exceed 500 feet repaired in a single year.
- Repair of fencing around restored areas will not exceed 500 feet of woven wire fencing in a single year.

1.5.3 GNRR2 - Natural Resource Restoration Research

1.3)1 Scope/Plan

- There will be no manpower charged to this account. The work described in this account will be subcontract support and centralized procurement support.
- Continue management and oversight of the following ongoing ecological research projects:
 - Area 1, Phase I Prairie Restoration Research Project
 - Area 1, Phase 3 Invasive Species Control Research Project
 - Area 8, Phase I American Chestnut Tree Project.
- The fourth ongoing ecological research project, Area 8, Phase I Revegetation Test Plots will be cancelled at the end of Calendar Year 2000. Funding currently committed to that project will be used for two additional efforts during 2001.
- The contract for the Area 1, Phase I Prairie Restoration Project will be expanded to include a research project investigating the impact of prairie grass roots on the geomembrane liners of the OSDF cover. This project will be completed in 2001.
- A contract will be established with the University of Cincinnati to provide recommendations for preventing the establishment of burrowing mammals on the OSDF cover and monitoring the OSDF cover for burrowing animals.
- The research projects outlined above, including a Deer Management Consultant and Paddys Run Floodplain Analysis, will be transferred to Stewardship Management until the Soils Project starts up in 2003.
- Research will need to be carried out with local universities to evaluate specific ecological issues related to natural resource restoration and the OSDF cover.
- Research task orders will be limited to one per year through the end of the contract and will be limited to six months and \$30,000 each.
- Research task orders will result in final reports that will be utilized to make decisions regarding restoration work and restoration management.

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1.3)2 Quantification

- Complete ecological research project and Prairie Grass establishment on the OSDF Cap with University of Dayton and receive final report in FY 01.

- Research task orders will be limited to one per year through the end of the contract and will be limited to six months and \$30,000 each.
- Research task orders will result in final reports that will be utilized to make decisions regarding restoration work and restoration management.
- One the final report has been received and approved from the university conducting the research, the specific task order will be considered complete.

1.5.4 GNRR4 - Southern Waste Units Restoration

1) Task #1 - Predesign Investigation

1.1) Scope/Plan

- Matrixed support will be charged to this account for sample collection and analysis.
- Determine appropriate floodplain elevations for incorporation into restoration grade.
- Establish reference conditions for Paddys Run expected through an equilibrium between sediment aggradation and degradation, constant bank full width, and width to depth ratios.
- Model flood elevations based on sitewide conceptual restoration grade contours.
- Establish five Paddys Run stream monitoring stations.
- Characterize surface soil quality:
 - Take one composite soil sample per acre
 - Sample surface soil (0-6 inches) only
 - Analyze composite samples for nutrient composition, pH, % organic matter, and particle size analysis
 - Delineate extent of restoration seeding required.

1.2) Quantification

- Collect 30 surface soil samples and complete soil quality analysis.

2) Task #2 - Restoration Design

2.1) Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning.
- Subcontract design support will be required for hydrologic engineering in the SWU Restoration Design to ensure the most stable design for allowing water to enter the SWU area. Subcontract design support will be acquired when design on the project is initiated. The Ohio Department of Natural Resource will continue to be involved with restoration planning at the FEMP as it pertains to Paddys Run Stream.
- Subcontract support will be approximately six months in duration and will provide only the information needed to complete the Fluor Fernald Restoration Design Plan.
- The planting approach to be applied to the design package will include the following:
 - Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for 1,000 seedlings/acre, 160 saplings, 90 shrubs, and 400 seedlings (anticipating 50% mortality) per acre, and prairie grass seeding over 30 acres of project area
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
- Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

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2.2) Quantification

- The Natural Resource Restoration Design Plan will be developed and approved by the Natural Resource Trustees and Regulatory Agencies by March 31, 2005. Design work and a portion of final restoration will be accelerated if funding permits.

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3) Task #3 - Project Management

3.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed.

- Construction support in the form of a Project Support Manager
- Obtain Davis Bacon determination
- Prepare detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

3.2) Quantification

N/A

4) Task #4 - Invasive Species Control

4.1) Scope/Plan

- Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support
- Remove invasive shrubs from understory
- Inject Roundup herbicide into ~~each stem of~~ invasive shrubs/vines via an EZ-Ject lance as practicable
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

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4.2) Quantification

N/A

5) Task #5 - Restoration Field Implementation

5.1) Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projected and charged to the SDFP Management account.

- Site prep/mobilization

- Establish project boundaries
- Establish break and heat/cold stress facilities
- Deliver trailer
- Hook up utilities
- Deliver portolet(s), handwash stations
- Establish laydown/plant staging area
- Deliver tool shed
- Deliver dumpster
- Deliver gravel/stone
- Deliver mulch
- Establish water supply
- Designate area as "Restored Area."

- Plant installation

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D-815

- Lay out vegetation type patches
- Receive seedlings plant material and plant ASAP
- Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
- Remove bare root seedlings from packaging material
- Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
- Stage patch-specific species and quantities
- Plant 4,000 2,805 saplings, 1,564 shrubs, and 6,800 seedlings seedlings per acre over 25 17 acres within designated patches
- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs~~

- ~~Clear 3-foot diameter circle of sod and other vegetation~~
 - ~~Place 1-foot ring of mulch 4 inches thick around seedling~~
 - ~~Water seedlings immediately after planting.~~
 - Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
 - Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
 - Backfill hole around plant with available soil, water, and mulch.
- Seeding/Stabilization Approach
 - Make minor modifications to drainage patterns with dozer to stabilize areas as needed and create wetland/vernal pool features where possible.
 - Apply organic amendment (biosolids) as needed with small dozer or bobcat
 - Till soil to a minimal depth of 6" or deeper depending on soil type
 - Broadcast biological inoculant
 - Till biological inoculant to a depth of 3"
 - Establish seed mix based on soil conditions and hydrologic regime
 - Apply seed with a seed drill to a depth of 0.25"- 0.5" using a 50 HP tractor
 - Broadcast seed when the use a seed drill is not practical
 - Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate
 - Install dormant willow cuttings in matting adjacent to stream channels.
 - Establish access to groundwater remediation structures, remaining utilities, and stream monitoring stations.
 - Enhance perched water seeps by placing field stones immediately down gradient.
 - Project will be complete when all seedlings have been planted and all seeding is done.

5.2) Quantification

- The installation and mulching of 2,805 saplings, 1,564 shrubs, and 6,800 seedlings ~~25,000 native seedling trees~~ and the seeding of all disturbed areas will constitute completion of the SWU Restoration Project. As outlined in the current schedule, completion of all restoration work should occur by May 15, 2006 ~~October 31, 2005~~.
- The number of ~~seedling trees~~ and shrubs proposed is based on an installation rate of 650 ~~1,000~~ per acre over a 17 ~~25~~ acre area. The installation of 650 trees and shrubs per acre includes 160 saplings, 90 shrubs, and 400 seedlings per acre ~~and 1,000 native tree seedlings is comprised of 800 overstory and 200 understory species and~~ assuming a mortality rate of 50%. At a 50% mortality rate, the result

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should be 450 ~~500~~ trees and shrubs per acre which is ~~exceeds~~ the rate commonly used in restoration work.

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D-815

- As stated in the Assumptions Section, a team of four should be able to install approximately 40 saplings, 80 shrubs, and or 800 seedlings in a standard 40-hour ~~workweek~~ per day.

- The Area 8, Phase II Natural Resource Restoration Design Plan (DOE 2000) and draft Natural Resource Restoration Plan (DOE 1998) provides a basis for the restoration approach being used at the FEMP in terms of type of tree species, number of plants per acre and overall goals of restoration.

6) Task #6 - Demobilization/Project Closeout

6.1) Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

6.2) Quantification

N/A

7) Task #7 - Restoration Monitoring

7.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Conduct restoration project monitoring for two growing seasons following plant installation
- Monitoring requirements will be defined in the Restoration Design Plans
- Tabulate the number of live woody plants per patch in June of first year after installation

- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation
- Observe and record wildlife use of the area
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation
- Submit a Monitoring Report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

7.2) Quantification

- Project specific monitoring reports will be generated for two years following completion of the project.
- Monitoring reports will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

1.5.5 GNRR5 - Northern Woodlots Restoration

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Restoration of the Northern Woodlots will be carried out in three distinct steps. Selective removal of the northern pines will occur in 2004, implementation of the wetland mitigation project in the northern portion of Area 6 will start in 2005, and installation of trees and shrubs ~~the seedlings~~ in the Northern Pines and Woodlot will begin in 2005 and will be completed in 2007. ~~eeer in 2007 and 2008.~~

1) Task #1 - Northern Pine Plantation

1.1) Subtask #1 - Predesign Investigation

1.1)1 Scope/Plan

- To complete this subtask, matrixed support will be charged to this account for sample collection and analysis.
- Drainage patterns will be documented to identify suitable locations for vernal pool/wetland features.
- Soil conditions will also be assessed to identify soil amendment needs, establish herbicide needs and determine woodchip volumes and stockpile area needs.
 - Collect one composite soil sample per acre
 - Composite contains soil from 12 sub-samples within each acre
 - Sample surface soil to depth of six (6) inches only

- Analyze composite samples for nutrient composition, pH, % organic matter, and particle size.

1.1)2 Quantification

- Collect 75 surface soil samples and analyze for soil quality.

1.2) Subtask #2 - Restoration Design

1.2)1 Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- The Design Plan will also include a plan for the selective clearing of the Pines and management of wood chips generated.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning.
- The planting approach to be applied to the design package will include the following:
 - Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for 160 saplings, 90 shrubs, and 400 seedlings (assuming 50% mortality) per acre and prairie grass seeding over 50 acres of the North Pines. ~~1,000 seedlings/acre, anticipating 50% mortality~~ Total project area is 70 acres including the existing deciduous woodlot.
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Design for two open areas within Pines to support excavation of vernal pools and installation of prairie grass
 -
 - Collect predesign investigation samples to determine need for soil amendment

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D-828

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D-828

- Install wildlife structures (e.g., bird boxes, wildlife use boxes)
 -
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
 - Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

1.2)2 Quantification

The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies by March 31, 2005.

1.3) Subtask #3 - Project Management

1.3)1 Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

1.3)2 Quantification

N/A

1.4) Subtask #4 - Invasive Species Control

1.4)1 Scope/Plan

Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.

- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

1.4)2 Quantification

N/A

1.5) Subtask #5 - Restoration Field Implementation

1.5)1 Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projectized and charged to the SDFP Management account

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed
 - Deliver dumpster
 - Deliver gravel/stone
 - Deliver mulch
 - Establish water supply
 - Designate area as "Restored Area."
- Chipping Operation
 - Establish on the ground and mark boundaries of pines to be cut. Area will contain approximately 40% of area of pines from Northern Pine Plantation. Trees being removed will be comprised primarily of Austrian Pines.

- Clear pines within marked boundaries during winter 2004 and 2005. Boles and limbs of trees will be chipped and stockpiled.
- Mulch to be utilized on the North Pines Project will be stockpiled in suitable locations.
- All remaining mulch will be transported for use on other projects.
- Stumps will be uprooted and pushed together to create brush piles for wildlife.

- Seeding/Stabilization Approach

- Make minor modifications to drainage patterns with dozer to stabilize areas as needed and create wetland/vernal pool features where possible
- Apply organic amendment (biosolids) as needed with small dozer or Bobcat
- Till soil to a minimal depth of 6" or deeper depending on soil type
- Broadcast biological inoculant
- Till biological inoculant to a depth of 3"
- Establish seed mix based on soil conditions and hydrologic regime
- Apply seed with a seed drill to a depth of 0.25"- 0.5" using a 50 HP tractor
- Broadcast seed when the use a seed drill is not practical
- Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate
- Install dormant willow cuttings in matting adjacent to stream channels and in swales collecting flood water from Paddys Run Stream

R1-
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D-830

R1-
D-688
D-815

- ~~Seedling Installation~~

- ~~— Lay out vegetation type patches~~
- ~~— Receive seedlings and plant ASAP~~
- ~~— Heal in containerized seedlings (keep in container), if not immediately planted~~
- ~~— Remove bare root seedlings from packaging material~~
- ~~— Keep bare root seedlings moist by healing in with mulch or storing in buckets of water~~
- ~~— Stage patch specific species and quantities~~
- ~~— Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings.~~
- ~~— Plant 1,000 seedlings per acre over 25 acres within designated patch~~
- ~~— Clear 3 foot diameter circle of sod and other vegetation~~
- ~~— Install seedling within cleared area by hand with dibble bar or shovel~~
- ~~— Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~— Water seedlings immediately after planting.~~

R1-
D-688
D-815

- Plant installation

- Lay out vegetation type patches
- Receive seedlings plant material and plant ASAP
- Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
- Remove bare root seedlings from packaging material

- Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
- Stage patch-specific species and quantities
- Plant 2,970 saplings, 1,656 shrubs and 7,200 seedlings over 25 acres within designated patches
- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- Area targeted for planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted with trees and shrubs
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available soil, water, and mulch.

1.5)2 Quantification

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D-688,
D-815,
D-831

The completion of selective thinning of the Northern Pine Plantation ~~Woodlot~~, seeding of disturbed areas and the installation and mulching of 2,970 saplings, 1,656 shrubs, and 7,200 seedlings ~~25,000 native tree seedling~~ will constitute completion of the Northern Pine Plantation Restoration work.

1.6) Subtask #6 - Demobilization/Project CloseOut

1.6)1 Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

1.6)2 Quantification

N/A

1.7) Subtask #7 - Restoration Monitoring

1.7)1 Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Conduct restoration project monitoring for two growing seasons following plant installation
- Monitoring requirements will be defined in the Restoration Design Plans
- Tabulate the number of live woody plants per patch in June of first year after installation
- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation
- Observe and record wildlife use of the area
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation
- Submit a Monitoring Report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

1.7)2 Quantification

- Project specific monitoring reports will be generated for two years following completion of the project
- Monitoring reports will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

2) Task #2 - Northern Woodlot Restoration

2.1) Subtask #1 - Predesign Investigation

2.1)1 Scope/Plan

- To complete this subtask, Matrixed support will be charged to this account for sample collection and analysis.
- Drainage patterns will be documented to identify suitable locations for vernal pool/wetland features.

- Soil conditions will also be assessed to identify soil amendment needs, establish herbicide needs and determine woodchip volumes and stockpile area needs.
 - Collect one composite soil sample per acre
 - Composite soil contains soil from 12 sub-samples within each acre
 - Sample surface soil to depth of six (6) inches only.
- Composite samples will be analyzed for nutrient composition, pH, % organic matter, and particle size.

2.1)2 Quantification

- Collect approximately 25 surface soil samples and analyze for soil quality.

2.2) Subtask #2 - Restoration Design

2.2)1 Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning.
- The planting approach to be applied to the design package will include the following:

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- ~~_____ Determine the species and number of seedlings required in order to procure in advance of field implementation~~
- Prepare 30 acres of former pasture for seeding by mowing and selective herbicide. Total project area in the Northern Woodlot covers 116 acres
- Seed 30 acres of North Woodlot with native prairie grasses and forbs
- ~~_____ Design for 1,000 seedlings/acre, anticipating 50% mortality~~

~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~

~~Collect predesign investigation samples to determine need for soil amendment~~

- Install wildlife structures
- Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.

- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.

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D-688
D-815
D-832

- Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including ~~as many as~~ at least two meetings to review and resolve issues.

2.2)2 Quantification

- The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies by March 31, 2005.

2.3 Subtask #3 - Project Management

2.3)1 Scope/Plan

R1-
D-688
D-815

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed labor ~~Construction support. in the form of a Project Support Manager.~~

R1-
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- ~~• Obtain Davis Bacon determination~~
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- ~~• Develop JSA/Traveler package, as appropriate~~
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

2.3)2 Quantification

N/A

2.4) Subtask #4 - Invasive Species Control

2.4)1 Scope/Plan

- Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.
- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand, (as appropriate).

R1-
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D-815

2.4)2 Quantification

- Approximately 30 acres of the Northern Woodlot will be bush-hogged after vegetation has died from herbicide application to prepare the area for seeding.

2.5) Subtask #5 - Restoration Field Implementation

2.5)1 Scope/Plan

~~Subcontract~~ Matrixed labor will be used to seed designated area. ~~install plant material.~~ Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projected and charged to the SDFP Management account

R1-
D-688
D-815

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities as needed
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - ~~Deliver tool shed~~
 - ~~Deliver dumpster~~
 - Deliver gravel/stone as needed
 - ~~Deliver mulch~~
 - ~~Establish water supply~~
 - Designate area as "Restored Area."
- Seeding

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D-688
D-815

R1-
D-688
D-815

- Areas will be seeded in early Fall of 2006 to prairie using upland and wetland mixes to match soil conditions
- Apply seed with a seed drill to a depth of 0.25" - 0.5" using a 50 HP tractor
- Broadcast seed when the use a seed drill is not practical
- Approximately 30 acres of the Northern woodlot will be seeded with native grass seeds and forbs.
- ~~Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate~~
- ~~Install dormant willow cuttings in matting adjacent to stream channels.~~

R1-
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D-815

Seedling Installation

- ~~Seedlings will be planted to augment tree densities in sparsely wooded areas on approximately 25 acres~~
- ~~Lay out vegetation type patches~~
- ~~Receive seedlings and plant ASAP~~
- ~~Heal in containerized seedlings (keep in container), if not immediately planted~~
- ~~Remove bare root seedlings from packaging material~~
- ~~Keep bare root seedlings moist by healing in with mulch or storing in buckets of water~~
- ~~Stage patch specific species and quantities~~
- ~~Inoculate bare root seedlings with a miccorrhizae root dip or obtain pre-inoculated seedlings~~
- ~~Plant 1,000 seedlings per acre over 25 acres within designated patch~~
- ~~Clear 3-foot diameter circle of sod and other vegetation~~
- ~~Install seedling within cleared area by hand with dibble bar or shovel~~
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~

2.5)2 Quantification

R1-
D-688
D-815

- The completion of seeding over 30 acres of the northern woodlot ~~and the installation of 25,000 tree seedlings over 25 acres~~ will constitute completion of Northern Woodlot Restoration.

2.6) Subtask #6 - Demobilization/Project Close-out

2.6)1 Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster

- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

2.6)2 Quantification

N/A

2.7) Subtask #7 - Restoration Monitoring

2.7)1 Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Conduct restoration project monitoring for two growing seasons following plant installation.
- Monitoring requirements will be defined in the Restoration Design Plans.

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~~• Tabulate the number of live woody plants per patch in June of first year after installation~~

- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation
- Observe and record wildlife use of the area
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation
- Submit a Monitoring Report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

2.7)2 Quantification

- Project specific monitoring reports will be generated for two years following completion of the project.
- Monitoring reports will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

3) Task #3 - Wetland Mitigation Phase II

3.1) Subtask #1 - Predesign Investigation

3.1)1 Scope/Plan

- A predesign investigation will be conducted to determine:
 - Subsurface soil conditions
 - Clay content of soil
 - Perched water
 - Surface Water Hydrology
 - Invasive Species
 - Current site elevations.
- Collect borings to a depth of 6 feet to identify clay content in the subsurface soil.
- Collect one surface soil sample per acre
- Sample surface soil to depth of six (6) inches only.

3.1)2 Quantification

- Ten surface soil samples will be collected and analyzed for soil quality.

3.2) Subtask #2 - Restoration Design

3.2)1 Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- Subcontract design support will be required for wetland design to ensure proper wetland hydrology is created.
- Subcontract support will be approximately six months in duration and will provide only the information needed to complete the Fluor Fernald Restoration Design Plan.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning with input from subcontract support.

- The planting approach to be applied to the design package will include the following:
 - Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for 160 saplings, 90 shrubs, 400 seedlings (assuming 50% mortality (assuming 50% mortality) and prairie grass seeding over 10 acres of project area ~~1,000 seedlings/acre, anticipating 50% mortality~~
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
- Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

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3.2)2 Quantification

- The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies.
- Review and ~~The~~ approval of the NRRDP is expected by March 31, 2005.

R1-
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3.3) Subtask #3 – Project Management

3.3)1 Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrized Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation

- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

3.3)2 Quantification

N/A

3.4) Subtask #4 - Invasive Species Control

3.4)1 Scope/Plan

Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.

- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

3.4)2 Quantification

- Herbicide will be sprayed in Fall of 2005 after woody plants have gone dormant. Care must be exercised not to kill red cedars

3.5) Subtask #5 - Restoration Field Implementation

3.5)1 Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projected and charged to the SDFP Management account.

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed

- Deliver dumpster
- Deliver gravel/stone
- Deliver mulch
- Establish water supply
- Designate area as "Restored Area."

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- A four basin wetland will be created on approximately ten (10) acres of land located on the south end of the Northern Woodlot.
- Develop design package for Northern Woodlot Project beginning in Summer of 2005 that directs the creation of basins and the restoration of this area. Wetland design will take advantage of current water flow to broaden and create water retention areas.

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- Complete acquisition of 1,155 ~~800~~ sapling trees and 644 ~~4500~~ shrubs.
- Topsoil will be removed and stockpiled from eight (8) acres of proposed wetland site.
- Approximately eight (8) acres will be graded early Spring of 2006 to create wetland environment. Grading will create a system of shallow depressions (2 to 6 feet deep) separated by berms with established outfalls.
- Water control structures will be installed within outfall openings. Structures will be weirs consisting of natural materials or pre-formed man-made structures.
- A preformed weir structure will be placed at the discharge point to control water flow.
- A two-foot thick clay liner will be installed in bottom of depressions. Clay will be compacted using sheep's foot machine. Liner clay will be tested for linear compaction to meet >85% modified proctor test.
- Topsoil will be spread over clay liners and berms to elevations established as final grade.
- If sufficient top soil is not available to cover area, soils in place will be amended.
- Biosolids and mulch will be tilled into soil to a depth of 3 inches.
- Coir or jutte matting will be placed in areas of expected water flow to secure soil, provide cover, and control erosion.
- Biological inoculant will be applied to areas requiring seeding as needed.

- Large rock aggregate will be placed at base of water control structures for water dispersion and erosion control and in locations identified in design to create wildlife habitat.
- Water will be pumped from trucks into waterways to fill and determine normal water level extent.
- Wetland grass and forb plugs will be planted around perimeter of normal water level.
- Water collection areas and swales will be inoculated with pond muck from healthy ponds.
- ~~Eight hundred (800)~~ One-thousand, one hundred and fifty-five (1,155) saplings and 644 ~~1500~~ shrubs will be planted in small patches on approximately five (5) acres surrounding wetland areas.
- ~~Any saplings that will be received and not planted immediately will be healed in with mulch.~~
- ~~Wood chip mulch will be applied to a depth of 4 inches within a 4 foot circle around the base of trees.~~
- ~~Mulch will be applied to a depth of 4 inches across the full area of shrub patches. Saplings will have tree tubes applied to exposed length of tree trunk.~~
- ~~Restored areas will be maintained through the summer by watering plants and conducting invasive species control.~~

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- Plant installation
 - Lay out vegetation type patches
 - Receive seedlings plant material and plant ASAP
 - Heal in containerized plant material and seedlings ~~seedlings (keep in container)~~, if not immediately planted
 - Remove bare root seedlings from packaging material
 - Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
 - Stage patch-specific species and quantities
 - Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
 - Plant 1,155 saplings and 644 shrubs ~~seedlings per acre~~ over 5 acres within surrounding wetland areas
 - Area targeted for ~~seedlings~~ my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted ~~in seedlings~~ with trees and shrubs

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- ~~Clear 3 foot diameter circle of sod and other vegetation~~
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available, soil, water, and mulch.

3.5)2 Quantification

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- The completion of grading work and the installation of 1,155 800 saplings and 644 4500 shrubs will constitute completion of Wetland Mitigation Phase II in Area 1, Phase III Part 3.
- All restoration work in the northern woodlot will be complete by October 31, 2006.

3.6 Subtask #6 - Demobilization/Project Close-out

3.6)1 Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

3.6)2 Quantification

N/A

3.7 Subtask #7 - Restoration Monitoring

3.7)1 Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

The work scope will include the following activities:

- Tabulate the number of live woody plants per patch in June of first year after installation
- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation
- Observe and record wildlife use of the area
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation
- Submit a Monitoring Report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

Monitoring Requirements

- Monitoring requirements will be more stringent for this portion of the project because it is a wetland mitigation project.
- Monitoring requirements will be defined in the Design Plan.
- Monitoring requirements will extend for at least three years.

3.7)2 Quantification

- A monitoring report will be issued annually for the first three years after project completion.
- The monitoring report will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

1.5.6 GNRR6 - Paddys Run Corridor Restoration

1) Task #1 - Predesign Investigation

1.1) Scope/Plan

- To complete this subtask, matrixed support will be charged to this account for sample collection and analysis.
- Drainage patterns will be documented to identify suitable locations for vernal pool/wetland features.

- Soils in leased pastures will be analyzed to determine adequacy to support tree seedlings.
- The predesign investigation will also focus on the need to control invasives and bank stabilization along Paddys Run.
- Soil conditions will also be assessed to identify soil amendment needs, establish herbicide needs and determine woodchip volumes and stockpile area needs.
 - Collect one composite soil sample per acre in leased pastures
 - Composite contains soil from 12 sub-samples within each acre
 - Sample surface soil to depth of six (6) inches only.
- Analyze composite samples for nutrient composition, pH, % organic matter, and particle size.

1.2) Quantification

- Collect approximately 100 surface soil samples and analyze for soil quality.

2) Task #2 - Restoration Design

2.1) Plan/Scope

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- The Design Plan will also include a plan for the selective clearing of the Pines and management of wood chips generated.
- Subcontract engineering support to determine the appropriate size and configuration of expanded floodplain, appropriate stabilization of erosion areas and determining the need for additional controls will be obtained.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning with input from subcontract support.
- The planting approach to be applied to the design package will include the following:

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- Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for 160 saplings, 90 shrubs, and 400 seedlings ~~1,000 seedlings/acre~~, (anticipating 50% mortality) per acre and seeding prairie grasses over 248 acres of project area
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25-acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
 - Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

2.1) Quantification

N/A

3) Task #3 - Project Management

3.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies

- Dedicate appropriate vehicle transportation.

3.2) Quantification

N/A

4) Task #4 - Invasive Species Control

4.1) Scope/Plan

Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.

- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

4.2) Quantification

N/A

5) Task #5 - Restoration Field Implementation

5.1) Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projectized and charged to the SDFP Management account

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed
 - Deliver dumpster
 - Deliver gravel/stone
 - Deliver mulch
 - Establish water supply
 - Designate area as "Restored Area."
- Chipping in Southern Pines

- Establish on the ground and mark boundaries of pines to be cut. Area will contain approximately 40% of area of pines from Southern Pine Plantation. Trees being removed will be comprised primarily of Austrian Pines.
 - Clear pines within marked boundaries during winter 2005. Boles and limbs of trees will be chipped and stockpiled.
 - Mulch to be utilized on the Southern Pines Project will be stockpiled in suitable locations.
 - All remaining mulch will be transported for use on other projects.
 - Stumps will be uprooted and pushed together to create brush piles for wildlife.
- Floodplain Expansion in Paddys Run West
 - Extent of soil removal from berm will be surveyed and flagged in Winter of 2006.
 - Excavation of approximately 200 feet of soil berm will begin in Spring of 2006 and staged adjacent to target area. Top soil will be scraped back first and kept separate. Old stream channel will be opened and graded to final elevations.
 - Stream banks of cleared area will be stabilized using Coir matting and aggregate.
 - Stream bank of old stream bed adjacent to Paddys Run road will be reinforced with aggregate and bioengineering materials.
 - Stockpiled soil will be placed into current streambed of Paddys Run. One-foot lifts will be compacted to a depth two feet below stream bank level. Liner clay will be tested for linear compaction to meet >85% modified proctor test.
 - Top soil will be placed on fill area up to grade level.
 - Stream bank will be stabilized utilizing aggregate and bioengineering methods.
 - Wetland plugs will be planted along stream bank.
 - Top surface of fill area will be seeded with a native prairie grass seed mixture and seedlings planted at 1000 seedlings per acre.

- Seeding

- Cleared areas in Southern Pine Plantation will be graded and the soils amended and tilled prior to seeding or planting.
- Make minor modifications to drainage patterns with dozer to stabilize areas as needed and create wetland/vernal pool features where possible.
- Cleared areas and areas along the edge of wooded areas will be seeded to prairie beginning in late Spring of 2006.
- Pasture areas in Paddys Run West will be treated with herbicide to eliminate existing grasses.
- Remediated areas will require addition of biosolids and innoculant prior to seeding.
- Non-remediated areas will only require extirpation of existing grasses.
- Apply organic amendment (biosolids) as needed.
- Till soil to a minimal depth of 6" or deeper depending on soil type.
- Broadcast biological innoculant.
- Till biological innoculant to a depth of 3 inches.
- Seed Drill will be used to seed all targeted areas East and West of Paddys Run.
- Apply seed with a seed drill to a depth of 0.25 to 0.5 inches using a 50 HP tractor.
- Broadcast seed by hand on prepared soil surfaces when use of seed drill is not practical.
- Application rate for prairie seed is approximately @ 10 lbs/acre at a cost of \$1500/acre.
- Cover crops of Regreen or Canada Wild Rye Oats (dependent on time of seeding) will be seeded to open areas using seed drill pulled behind tractor and running perpendicular to other seed rows.
- Areas not accessible to the Seed Drill will be hand seeded.
- Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate

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- Install dormant willow cuttings in matting adjacent to stream channels
- Existing riprap in the Paddys Run corridor will be left in place covered with sand/gravel where practicable to create a medium for seeding and installation of willow cutting.

- Plant installation

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- Lay out vegetation type patches
- Receive seedlings plant material and plant ASAP
- Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
- Remove bare root seedlings from packaging material
- Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
- Stage patch-specific species and quantities
- Plant 1,000 2,240 saplings, 1,260 shrubs, and 5,600 seedlings and seed native prairie grass seedlings per acre over 25 80 acres of forest east of Paddys Run within designated patches
- Plant 2,710 saplings, 1,436 shrubs, and 6,000 seedlings and seed native prairie grass over 130 acres of Savanna
- Plant 1,581 saplings, 828 shrubs, and 3,600 seedlings and seed native prairie grass over 38 acres of the riparian corridor expansion
- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs~~
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available soil, water, and mulch.

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- Plant installation

- ~~Lay out vegetation type patches~~
- ~~Receive seedlings plant material and plant ASAP~~
- ~~Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted~~

- ~~Remove bare root seedlings from packaging material~~
- ~~Keep bare root seedlings moist by healing in with mulch or storing in buckets of water~~
- ~~Stage patch specific species and quantities~~
- ~~Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings~~
- ~~Plant 1,000 2,805 saplings, 1,564 shrubs, and 6,800 seedlings seedlings per acre over 25 17 acres within designated patches~~
- ~~Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs.~~

5.2) Quantification

- The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies.
- The approval of the NRRDP is expected by October 31, 2005.
- The restoration of the Paddys Run Corridor will include the selective thinning of approximately 18 acres (40%) of the southern pines.
- The expansion of floodplain will occur by removing approximately 200 feet of berm along Paddys Run in 2006.
- Restoration of the Paddys Run corridor will be complete when 6,534 saplings, 3,524 shrubs, and 15,200 seedlings, and prairie grasses are seeded 100,000 seedlings are installed over 248 100 acres of the Paddys Run Corridor.
- All restoration work will be complete in the Paddys Run Corridor by April 30, 2009.

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6) Task #6 - Demobilization/Project Close-out

6.1) Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet

- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

6.2) Quantification

N/A

7) Task #7 - Restoration Monitoring

7.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Conduct restoration project monitoring for two growing seasons following plant installation.
- Monitoring requirements will be defined in the Restoration Design Plans.
- Tabulate the number of live woody plants per patch in June of first year after installation.
- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation.
- Observe and record wildlife use of the area.
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation.
- Submit a Monitoring Report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

7.2) Quantification

- Project specific monitoring reports will be generated for two years following completion of the project.
- Monitoring reports will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

1.5.7 GNRR7 - OSDF Perimeter/Borrow Area Restoration

1) Task #1 - Predesign Investigation

1.1) Scope/Plan

- To complete this subtask, Matrixed support will be charged to this account for sample collection and analysis.
- Soil samples will be collected in the OSDF perimeter area to determine suitability for the installation of saplings.
- Timing will not allow for soil quality samples to be collected in the OSDF Borrow Area before seeding is necessary, so it is excluded from this predesign investigation.

1.2) Quantification

- Eighty surface soil samples will be collected and analyzed for soil quality analysis.

2) Task #2 - Restoration Design

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- The Design Plan will also include a plan for the selective clearing of the Pines and management of wood chips generated.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning.
- The planting approach to be applied to the design package will include the following:
 - Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Installation of trees and shrubs in select areas and prairie grass seeding over 190 acres of project area ~~1,000 seedlings/acre, (anticipating 50% mortality) per acre~~

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~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~

- Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
 - Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

3) Task #3 - Project Management

3.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

3.2 Quantification

N/A

4) Task #4 - Invasive Species Control

4.1) Scope/Plan

Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.

- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

4.2) Quantification

N/A

5) Task #5 - Restoration Field Implementation

5.1) Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projectized and charged to the SDFP Management account

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed
 - Deliver dumpster
 - Deliver gravel/stone
 - Deliver mulch
 - Establish water supply
 - Designate area as "Restored Area."
- Vegetation of Wetlands Features in the Borrow Area
 - Placement of pond muck in open water areas
 - Establishment of wetland and wet prairie vegetation along the waters edge and swales.
- Seeding
 - Disturbed areas around the OSDF and in the Borrow Area will require soil amendment and tilling prior to seeding or planting.
 - Make minor modifications to drainage patterns with dozer to stabilize areas as needed.
 - Apply organic amendment (biosolids).
 - Till soil to a minimal depth of 6" or deeper depending on soil type.

- Broadcast biological inoculant.
- Till biological inoculant to a depth of 3 inches.
- Apply seed with a seed drill to a depth of 0.25 to 0.5 inches using a 50 HP tractor.
- Broadcast seed on hand prepared soil surfaces when use of seed drill is not practical.
- Application rate for prairie seed is @ 10 lbs/acre at a cost of \$1500/acre.
- Cover crops of Regreen or Oats (dependent on time of seeding) will be seeded to open areas using seed drill pulled behind tractor and running perpendicular to other seed rows.
- Areas not accessible to the Seed Drill will be hand-seeded.
- Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate
- Install dormant willow cuttings in matting adjacent to stream channels.

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• Plant installation

- Lay out vegetation type patches
- Receive seedlings plant material and plant ASAP
- Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
- Remove bare root seedlings from packaging material
- Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
- Stage patch-specific species and quantities
- Plant 1,000 165 saplings and 1,656 shrubs seedlings per acre over 25 190 acres the borrow area
- Plant 825 saplings, 586 shrubs, and 2,400 seedlings on the OSDF perimeter
- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs~~
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available soil, water, and mulch.

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• Sapling Installation around OSDF

- ~~Planting of 400 balled and burlapped saplings~~
- ~~Lay out vegetation type patches~~

- ~~Receive saplings and install ASAP~~
- ~~Heal in any saplings that will not be planted immediately~~
- ~~Water each sapling immediately upon planting~~
- ~~Mulch each sapling with 4 foot ring of mulch four inches thick.~~

5.2) Quantification

- Restoration of the Borrow Area will be complete when the final phase is graded and seeded with native prairie grass.
- Restoration of the OSDF Perimeter will be complete when all disturbed areas have been seeded with native prairie grass and 400 saplings have been planted and mulched.
- All restoration work on the OSDF perimeter and borrow area will be complete by September 30, 2009.

6) Task #6 - Demobilization/Project Close-Out

6.1) Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

6.2) Quantification

N/A

7) Task #7 - Restoration Monitoring

7.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Conduct restoration project monitoring for two growing seasons following plant installation.

- Monitoring requirements will be defined in the Restoration Design Plans.
- Tabulate the number of live woody plants per patch in June of first year after installation.
- Estimate vegetative cover per patch for seeded herbaceous areas in June of first year after installation.
- Observe and record wildlife use of the area.
- Establish photographic reference points across the project area and record progress at least twice a year in first two years after installation.
- Submit a monitoring report to the agencies and natural resource trustees for two years following installation that presents monitoring data, observations, and photographs.

7.2) Quantification

- Project specific monitoring reports will be generated for two years following completion of the project.
- Monitoring reports will be submitted to DOE by the end of the calendar year in which the monitoring was conducted.

1.5.8 GNRR8 - Silos Area Restoration

1) Task #1 - Restoration Design

1.1) Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.
- Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning.
- The planting approach to be applied to the design package will include the following:

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- Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for 825 saplings, 450 shrubs, and 2,000 seedlings ~~1,000 seedlings/acre~~ (anticipating 50% mortality) over 5 acres, and the remaining 5 acres would be seeded with prairie grass
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25-acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
 - Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

1.2) Quantification

- The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies.
- The approval of the NRRDP is expected by December 30, 2008.

2) Task #2 - Project Management

2.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)

- Obtain/schedule QA/QC and Safety oversight for field implementation.
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation

2.2) Quantification

N/A

3) Task #3 - Invasive Species Control

3.1) Scope/Plan

Clearing of invasive species described under this subtask will be completed by matrixed labor and transportation support.

- Remove invasive shrubs from understory
- Inject Roundup herbicide into each stem of shrub/vine via an EZ-Ject lance
- Remove invasive weeds from seeded areas through to application of herbicide or mowing
- Pull up individual weeds mechanically or by hand.

3.2) Quantification

N/A

4) Task #4 - Restoration Field Implementation

4.1) Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projectized and charged to the SDFP Management account

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed
 - Deliver dumpster
 - Deliver gravel/stone
 - Deliver mulch

- Establish water supply
- Designate area as "Restored Area."
- Vegetation of Wetlands Features in the Silos Area
 - Placement of pond muck in wetlands and open water areas
 - Make minor modifications to drainage patterns with dozer to stabilize areas as needed.
 - Establishment of wetland and wet prairie vegetation along the waters edge and swales.

- Seeding

- Disturbed areas around the Silos Area will require soil amendment and tilling prior to seeding or planting.
- Apply organic amendment (biosolids).
- Till soil to a minimal depth of 6" or deeper depending on soil type.
- Broadcast biological inoculant.
- Till biological inoculant to a depth of 3 inches.
- Apply seed with a seed drill to a depth of 0.25 to 0.5 inches using a 50 HP tractor.
- Broadcast seed on hand prepared soil surfaces when use of seed drill is not practical.
- Application rate for prairie seed is approximately @ 10 lbs/acre at a cost of \$1500/acre.
- Cover crops of Regreen or Canada Wild Rye Oats (dependent on time of seeding) will be seeded to open areas using seed drill pulled behind tractor and running perpendicular to other seed rows.
- Areas not accessible to the Seed Drill will be hand-seeded.
- Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate.
- Install dormant willow cuttings in matting adjacent to stream channels.

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- Plant installation

- Lay out vegetation type patches
- Receive seedlings plant material and plant ASAP
- Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
- Remove bare root seedlings from packaging material
- Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
- Stage patch-specific species and quantities
- Plant 1,000 825 saplings, 450 shrubs, and 2,000 seedlings and seed prairie grass over seedlings per acre over 25 10 acres within the Silos Area
- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings

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- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~— Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs~~
- ~~— Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~— Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available soil, water, and mulch.

● ~~—~~ Seedling Installation

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- ~~— Lay out vegetation type patches.~~
- ~~— Receive seedlings and plant ASAP.~~
- ~~— Heal in containerized seedlings (keep in container), if not immediately planted.~~
- ~~— Remove bare root seedlings from packaging material.~~
- ~~— Keep bare root seedlings moist by healing in with mulch or storing in buckets of water.~~
- ~~— Stage patch specific species and quantities.~~
- ~~— Inoculate bare root seedlings with a miccorrhizae root dip or obtain pre-inoculated seedlings.~~
- ~~— Plant 1,000 seedlings per acre over 5 acres within designated patch.~~
- ~~— Clear 3 foot diameter circle of sod and other vegetation.~~
- ~~— Install seedling within cleared area by hand with dibble bar or shovel.~~
- ~~— Place 1 foot ring of mulch 4 inches thick around seedling.~~
- Water seedlings immediately after planting.

4.2 Quantification

- Restoration of the borrow area will be complete when grading is complete, all disturbed areas have been seeded with native prairie grass and 5,000 seedlings have been planted along Paddys Run and the Pilot Plant Drainage Ditch.
- All restoration activities will be complete by December 1, 2009.

5) Task #5 - Demobilization/Project Closeout

5.1) Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet
- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

5.2) Quantification

N/A

6) Task #6 - Restoration Monitoring

6.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Monitoring requirements will be defined in the Restoration Design Plans.
- Estimate vegetative cover as appropriate.
- Observe and record wildlife use of the area.
- Establish photographic reference points as appropriate.
- Results of monitoring will be reported as schedule permits under the closure contract.

6.2) Quantification

N/A

1.5.9 GNRR9 - Former Production/Waste Pit Area Restoration

Restoration of the former Production Area will involve seeding the areas around open water with native prairie grasses. Native prairie grasses will also be seeded in the former majority of the Waste Pit Area; however seedling trees will be planted in and around the expanded floodplain.

1) Task #1 - Predesign Investigation

1.1) Scope/Plan

- To complete this subtask, matrixed support will be charged to this account for sample collection and analysis.
- Soils samples will be collected in the production and waste pit area to support design.
- Soil conditions will also be assessed to identify soil amendment needs, establish herbicide needs and determine woodchip volumes and stockpile area needs.
 - Collect one composite soil sample per acre.
 - Composite contains soil from 12 sub-samples within each acre
 - Sample surface soil to depth of six (6) inches only.
- Analyze composite samples for nutrient composition, pH, % organic matter, and particle size.
- Compaction at bottom of excavations will be tested for water retention.

1.2) Quantification

- Approximately 120 surface soil samples will be collected and analyzed for soil quality to support the predesign investigation.
- Approximately 50 soil proctor tests will be conducted to support the predesign investigation.

2) Task #2 - Restoration Design

2.1) Scope/Plan

The scope described under this subtask will be completed by centralized support, oversight personnel charged to the SDFP Management Account and subcontract manpower. No matrixed labor will be charged to this account.

- Design Plans will include all details necessary to carry the restoration projects in the field including material lists, planting approach, fine grading plans, planting and seeding procedures, monitoring and maintenance requirements.

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- ~~The Design Plan will also include a plan for the selective clearing of the Pines and management of wood chips generated.~~

- Subcontract Engineering support will be required during the design to ensure that drainage patterns are properly configured, side slopes are stable and safe, clay liners are properly planned and drainage control structures are properly designed.
- Subcontract Engineering support will also be required to ensure expanded floodplain in waste pit area is properly configured.
 - Development of design packages will be completed internally using Fluor Fernald support for graphics, document preparation, surveying and mapping and construction planning with input from subcontract support.
- The planting approach to be applied to the design package will include the following:
 - Determine the species and number of seedlings required in order to procure in advance of field implementation
 - Design for shrubs to surround open water and wetland features in 130 acres of Production Area ~~1,000 seedlings/acre, anticipating 50% mortality~~
 - Design for 160 saplings, 90 shrubs, and 400 seedlings (assuming 50% mortality) in 5 acres of waste pit area with remaining 25 acres seeded in prairie grass
 - ~~Design 800 overstory trees and 200 understory trees and shrubs per acre. For a 0.25 acre patch, this equates to 200 overstory trees and 50 understory trees and shrubs~~
 - Collect predesign investigation samples to determine need for soil amendment
 - Install wildlife structures
 - Identify any opportunities to adjust drainage patterns to support the creation of wetlands and vernal pools.
- Each Restoration Design Package will have appropriate review and input by Construction, QA/QC and Safety.
- Each Restoration Design Package will require review and concurrence by the Regulatory Agencies and the Natural Resource Trustees including as many as two meetings to review and resolve issues.

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2.2) Quantification

- The Natural Resource Restoration Design Plan (NRRDP) will be developed and approved by the Natural Resource Trustees and Regulatory Agencies by April 30, 2007.

3) Task #3 - Project Management

3.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account working with matrixed Construction support in the form of a Project Support Manager.

- Obtain Davis Bacon determination
- Prepared detailed work schedule
- Obtain Safety Analysis documentation
- Obtain work permit and associated other permits (penetration permit, chem/haz permit, etc.)
- Obtain/schedule QA/QC and Safety oversight for field implementation
- Develop JSA/Traveler package, as appropriate
- Procure tools, materials, equipment, and supplies
- Dedicate appropriate vehicle transportation.

3.2) Quantification

N/A

4) Task #4 - Restoration Field Implementation

4.1) Scope/Plan

Subcontract labor will be used to install plant material. Matrixed support charged to Natural Resource Restoration Project accounts will include QA, Safety, and Construction. Oversight personnel will be projectized and charged to the SDFP Management account

- Site prep/mobilization
 - Establish project boundaries
 - Establish break and heat/cold stress facilities
 - Deliver trailer
 - Hook up utilities
 - Deliver portolet(s), handwash stations
 - Establish laydown/plant staging area
 - Deliver tool shed
 - Deliver dumpster

- Deliver gravel/stone
 - Deliver mulch
 - Establish water supply
 - Designate area as "Restored Area."
- Vegetation of Open Water Ponds/Wetlands
 - Placement of pond muck in open water areas
 - Establishment of wetland and wet prairie vegetation along the waters edge and swales.
- Seeding
 - Remediated areas around the former Production Area and Waste Pit Area will require soil amendments and tilling prior to seeding or planting.
 - Minor modifications to drainage will be made as needed.
 - Apply organic amendment (biosolids).
 - Till soil to a minimal depth of 6" or deeper depending on soil type.
 - Broadcast biological inoculant.
 - Till biological inoculant to a depth of 3 inches.
 - Apply seed with a seed drill to a depth of 0.25 to 0.5 inches using a 50 HP tractor.
 - Broadcast seed on hand prepared soil surfaces when use of seed drill is not practical.
 - Application rate for prairie seed is approximately @ 10 lbs/acre at a cost of \$1500/acre.
 - Cover crops of Regreen or Canada Wild Rye Oats (dependent on time of seeding) will be seeded to open areas using seed drill pulled behind tractor and running perpendicular to other seed rows.
 - Areas not accessible to the Seed Drill will be hand seeded.
 - A total of 180 acres will be seeded in the Production and Waste Pit Areas.
 - Install coir matting or jute matting down gradient of drainage features and in areas prone to erosion as appropriate.
 - Install dormant willow cuttings in matting adjacent to stream channels.
- Plant installation
 - Lay out vegetation type patches
 - Receive seedlings plant material and plant ASAP
 - Heal in containerized plant material and seedlings seedlings (keep in container), if not immediately planted
 - Remove bare root seedlings from packaging material
 - Keep bare root seedlings moist by healing in with mulch or storing in buckets of water
 - Stage patch-specific species and quantities
 - Plant 825 saplings, 2,081 shrubs, and 2,000 seedlings seedlings per acre over 160 acres within designated patches

R1-
D-688
D-815

R1-
D-688
D-815

- Inoculate bare root seedlings with a miccorhizae root dip or obtain pre-inoculated seedlings
- Install seedling within cleared area by hand with dibble bar or shovel, water and mulch
- ~~Area targeted for seedlings my planting may decrease slightly depending on outcome of predesign investigation. Sandy areas may be seeded instead of planted in seedlings with trees and shrubs~~
- ~~Place 1 foot ring of mulch 4 inches thick around seedling~~
- ~~Water seedlings immediately after planting.~~
- Excavate hole for shrub and sapling so top 1-2 inches of plant is above soil line, the hole is 9 inches wider than plant on all sides, and the plant is set vertically with no more than 10% lean
- Slow release fertilizer tablet or packet should be placed in excavation per manufacturers recommendations prior to backfilling
- Backfill hole around plant with available soil, water, and mulch.

● ~~Seedling Installation~~

R1-
D-688
D-815

- ~~Seedlings will be planted to augment tree densities in sparsely wooded areas on approximately 25 acres.~~
- ~~Seedlings will be planted by hand with dibble bar or shovel.~~
- ~~Seedlings will be planted at a density of 1,000 per acre over a total of 15 acres in the riparian corridor (i.e., expanded floodplain) of Paddys Run.~~
- ~~Seedlings will be mulched. Wood chip mulch will be applied to a depth of 4 inches within a 1 foot circle around the seedling.~~

4.2) Quantification

- Restoration of the Former Production/Waste Pit Area will be complete when fine grading and seeding is complete over 180 acres and 15,000 native tree seedlings are installed along the Paddys Run Corridor.
- Restoration activities will be complete by October 29, 2009.

5) Task #5 - Demobilization/Project Close-out

5.1) Scope/Plan

The scope described under this subtask will be carried out by oversight personnel projectized to the SDFP Management Account working with Matrixed Construction support in the form of a Project Support Manager.

- Remove all containers, excess materials, etc. from field
- Unhook utilities
- Clean out and return break trailer
- Return dumpster
- Return portolet

- Develop an as-built plan view drawing showing restoration contours, engineering features, and vegetation types.

5.2) Quantification

N/A

6) Task #6 - Restoration Monitoring

6.1) Scope/Plan

The scope described below for this subtask will be completed by oversight personnel projectized in the SDFP Management Account.

- Monitoring requirements will be defined in the Restoration Design Plans
- Estimate vegetative cover as appropriate
- Observe and record wildlife use of the area
- Establish photographic reference points as appropriate
- Results of monitoring will be reported as schedule permits under the closure contract.

6.2) Quantification

N/A

SECTION 2

2.0 SCHEDULE

G PBS 06 - SOILS

1.1.G.B NATURAL RESOURCES RESTORATION MGMT

GCU93 DEMONSTRATION FOREST PROJECT FY01

GGCU930100	Demonstration Forest Project - FY01	01DEC00	26APR01	90
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GNRR4 SWU RESTORATION

GGNRR40110	SWU Predesign Investigation	01OCT03	31MAR04	111
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GGNRR40120	SWU Restoration Design	01APR04	31MAR05	223
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GGNRR40130	SWU Planting	01APR05	15MAY06	252
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GNRR5 NORTHERN WOODLOTS RESTORATION

GGNRR50110	Northern Woodlots Predesign Investigation	01OCT03	31MAR04	111
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GGNRR50120	Northern Woodlots Design	01APR04	31MAR05	223
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GGNRR50140	Chipping in Northern Pine	08DEC04*	26JAN05	30
------------	---------------------------	----------	---------	----

GGNRR50160	Wetland Mitigation Phase II	01JUN05*	31MAR06	187
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GGNRR50130	Northern Woodlots Seeding	03OCT05*	31OCT06	243
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GGNRR50150	Northern Pines Planting	03OCT06*	07DEC07	264
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GNRR6 PADDYS RUN CORRIDOR RESTORATION

GGNRR60110	Paddy's Run Predesign Investigation	01OCT04*	31MAR05	109
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GGNRR60150	Chip Southern Pines	03JAN05*	28FEB05	36
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GGNRR60120	Paddy's Run Design	01APR05	31OCT05	134
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GGNRR60160	Floodplane Expansion	01NOV05	06JAN06	38
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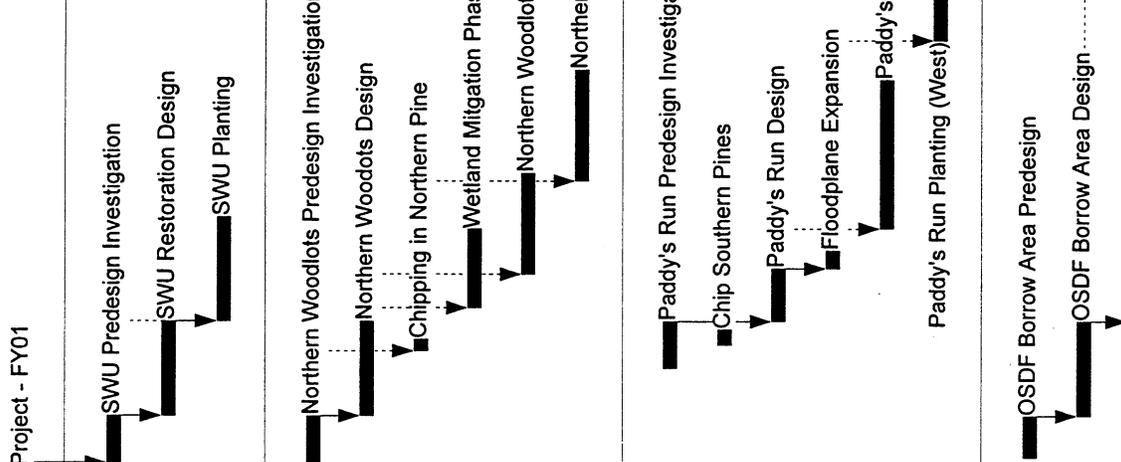
GGNRR60130	Paddy's Run Planting (East)	03APR06*	31OCT07	357
------------	-----------------------------	----------	---------	-----

GGNRR60140	Paddy's Run Planting (West)	02APR08*	14MAY09	252
------------	-----------------------------	----------	---------	-----

GNRR7 OSDF / BORROW AREA RESTORATION

GGNRR70130	OSDF Borrow Area Predesign	20OCT03	31MAR04	99
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GGNRR70140	OSDF Borrow Area Design	01APR04	31MAR05	223
------------	-------------------------	---------	---------	-----



Sheet 1 of 2

SOILS PROJECT

1.1.G.B NATURAL RESOURCES RESTORATION MANAGEMENT

Start Date: 01DEC00
 Finish Date: 27DEC09
 Data Date: 01DEC00
 Run Date: 10SEP01 16:03

BLCF - GG01

Legend:
 ■ Early Bar
 ■ Progress Bar
 ■ Critical Activity

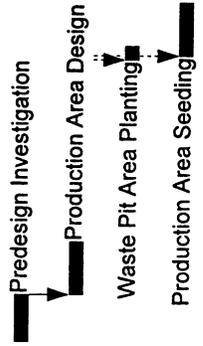
Revision: F06-049

Checked/Approved

FLUOR FERNALD

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Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	Fiscal Year										
					FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
GNRR7 OSDF / BORROW AREA RESTORATION															
GGNRR70110	OSDF Borrow Area Seeding	01APR05	30SEP09	1,010											
GGNRR70120	OSDF Perimeter Planting Saplings	02MAR09*	14MAY09	48											
GNRR8 SILOS AREA RESTORATION															
GGNRR80110	Silo Area Design	03DEC07*	30DEC08	241											
GGNRR80120	Planting Silo Area	27APR09	27DEC09	150											
GNRR9 PRODUCTION / WASTE PIT AREA RESTORATION															
GGNRR90110	Pre-design Investigation	03APR06*	02OCT06	114											
GGNRR90120	Production Area Design	03OCT06	30APR07	127											
GGNRR90140	Waste Pit Area Planting	02APR09*	28MAY09	35											
GGNRR90130	Production Area Seeding	20APR09*	16NOV09	132											



Sheet 2 of 2

SOILS PROJECT

1.1.G.B NATURAL RESOURCES RESTORATION MANAGEMENT

01DEC00 | BLCF - GG01

Start Date
Finish Date
Data Date
Run Date

27DEC09
01DEC00
10SEP01 16:03

FLUOR FERNALD

SECTION 2

3.0 MANPOWER PLANS

3.0 MANPOWER PLANNING

R1-D-
395

- A total of 2.5 FTEs will be required in SDFP to support Natural Resource Restoration starting in the first quarter of Fiscal Year 2004. The 2.5 FTEs will be covered in the SDFP Management account and will not be charged to natural resource accounts. Maintenance activities will require approximately 0.5 FTE for matrix labor and transportation support and will be covered in the Natural Resource accounts until the end of the contract. Two primary areas of work will be initiated in the first quarter of 2004: 1. Restoration Design for upcoming restoration projects will begin in the first quarter of 2004; and 2. The maintenance of certified and restored areas. All certified and restored area maintenance activities carried out in Stewardship Management account (PBS12) from 2001 through FY 2003, and will be transferred back to SDFP starting in FY 04.
- In 2005, two restoration projects are carried out in parallel requiring the addition of one FTE or a total of 3.5 FTEs. The additional FTE will also be covered in the SDFP Management account, but will support Natural Resources full time. Starting in 2005, one FTE will be required to monitor restored areas and coordinate maintenance as necessary. Two additional FTEs will be required to plan restoration projects and perform oversight during field implementation and the remaining 0.5 FTE will be required to finalize designs, manage research work, conduct restoration planning and coordinate monitoring and maintenance. Matrixed labor will be required during all restoration projects to support QA and Safety oversight during project implementation.
- The 3.5 FTEs will be utilized from 2005 until 2008. From 2006 to 2008, four restoration projects will run in parallel each year. The 3.5 FTEs should be adequate to provide oversight of field implementation as design work should be completed leaving more resources available for field oversight.
- Three projects will occur in parallel in 2009 and all design work will be complete; therefore, Restoration staff can be reduced by one FTE for a total of 2.5.

Manpower Planning Sheet (CR2)

MPS # 1GB05 CERTIFIED/RESTORED MAINTENANCE

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
General Labor			0.4	0.1	0.4	0.2	0.4	0.1	0.4	0.2	0.4	0.1	0.4	0	0	0	0	0	0	0	0	0
Transportation Labor			0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0	0	0	0	0	0	0	0	0
Environmental Safety & Health			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0
QA/QC			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0
Procurement			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lab			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sheet Totals: 0.80 0.40 0.80 0.50 0.80 0.40 0.80 0.50 0.80 0.40 0.80 0.50 0.80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Manpower Planning Sheet (CR2)

MPS # 1GB09 PADDYS RUN CORRIDOR RESTORATION

DRIVERS	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Environmental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lab	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Procurement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Safety Engineer																				
Environmental Safety & Health	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Safety Tech.																				
General Labor	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
General Laborer																				
Maintenance	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Project Support Manager																				
Transportation Labor	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Operator																				
QA/QC	0.1	0.1	0.1	0.1	0	0	0.1	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
QA Engineer																				
Transportation Labor	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Equipment Operator																				

Sheet Totals: 0.60 0.60 0.60 0.70 0.00 0.00 0.60 0.00 0.60 0.60 0.60 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Manpower Planning Sheet (CR2)

MPS # 1GB10 OSDF/BORROW AREA RESTORATION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006							
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Environmental			1.40	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0
Environmental Scientist Rep.																															
Lab			1.40	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0
Lab Tech.																															
Environmental			1.40	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0
Environmental Scientist Mgr.																															
Procurement			1.40	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0
Buyer/Contracts Administrator																															
Environmental Safety & H			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Safety Engineer																															
Environmental Safety & H			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Safety Tech.																															
General Labor			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Laborer																															
Maintenance			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Support Manager																															
Transportation Labor			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motor Vehicle Operator																															
QA/QC			0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA Engineer																															

Sheet Totals: 6.80 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.40 0.40 0.00 0.00 0.40 0.40 0.00 0.00 0.40 0.40 0.00 0.00 0.40 0.40 0.00 0.00 0.40 0.40 0.00 0.00 0.40 0.40 0.00 0.00

Manpower Planning Sheet (CR2)

MPS # 1GB10 OSDF/BORROW AREA RESTORATION

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Environmental			0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Lab			0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Environmental			0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Procurement			0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Labor			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC			0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sheet Totals: 0.40 0.40 0.00 0.00 0.40 0.40 1.00 0.60 0.00 0.40 0.40 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

Manpower Planning Sheet (CR2)

MPS # 1GB12 PRODUCTION/WASTE PIT AREA RESTORATION

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4																
602 Area 3B Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx												
604 Area 4A: Excavation	04/01/2004	09/30/2005																				
606 Area 4B Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx												
608 Area 3A Precent/Certification	10/03/2005	09/29/2006																				
609 Area 3B Precent/Certification	04/02/2008	02/09/2009					xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx								
611 Area 6: Excavation	10/02/2006	09/28/2007	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx												
629 Area 3A: Excavation	04/01/2004	06/30/2005																				
632 Area 5: Excavation	10/03/2005	03/31/2008	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx												
634 Area 4A Precent/Certification	10/03/2005	09/29/2006																				
636 Area 6: Precent/Cert	07/02/2007	06/30/2008	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx												
Environmental	Environmental Scientist Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lab	Lab Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental	Environmental Scientist Mgr.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Procurement	Buyer/Contracts Administrator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Safety Engineer		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
Environmental Safety & Health	Safety Tech.		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
General Labor	General Laborer		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
Maintenance	Project Support Manager		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
Transportation Labor	Motor Vehicle Operator		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
QA/QC	QA Engineer		0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0
Sheet Totals:			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SECTION 2

4.0 ESTIMATE

GCU93

DEMONSTRATION FOREST PROJECT FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J. D. Chiou
CAM: J. D. Chiou
PREPARED BY: W. F. Fick
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GCU9
CHARGE NO: GCU93
COMMENT NO N/A

Resource: Res Dept:	MNTREP 949	MAINTENANCE REP Overtime:	Class:		EOC: SAL		LABOR					
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Yr Hours:		3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Yr Total Cost:		129	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		129	129	129	129	129	129	129	129	129	129	129

Resource: Res Dept:	MVOOPR 949	MOTOR VEHICLE OPER Overtime:	Class:		EOC: HOU		LABOR					
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Yr Hours:		2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Yr Total Cost:		58	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		58	58	58	58	58	58	58	58	58	58	58

GRAND TOTALS:

Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Class:		EOC: SAL		LABOR				
				Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
7,717	7,717	241.0	241.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717	7,717

CAM:  CONTROL TEAM: 

GNRR1

CERTIFIED/RESTORED AREA MAINTENANCE

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR1
COMMENT NO D-688

Resource:	BUYCON	BUYER/CONTRACTS ADMIN	Class:		EOC:	LABOR	
Res Dept:	949	F01			SAL		
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:		221.5 0.0	221.5 0.0	221.5 0.0	221.5 0.0	221.5 0.0	221.5 0.0
Yr Total Cost:		9,281 0	9,281 0	9,281 0	9,281 0	9,281 0	9,281 0
Cum Total Cost:		9,281	9,281	9,281	9,281	9,281	9,281

Resource:	CNSENG	CONSTRUCTION ENG	Class:		EOC:	LABOR	
Res Dept:	949	F01			SAL		
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:		44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3
Yr Total Cost:		2,414 0	2,414 0	2,414 0	2,414 0	2,414 0	2,414 0
Cum Total Cost:		2,414	2,414	2,414	2,414	2,414	2,414

Resource:	ENSREP	ENVR SCIENCE REP	Class:		EOC:	LABOR	
Res Dept:	949	F01			SAL		
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:		44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3	44.3 44.3
Yr Total Cost:		1,859 0	1,859 0	1,859 0	1,859 0	1,859 0	1,859 0
Cum Total Cost:		1,859	1,859	1,859	1,859	1,859	1,859

Resource:	FIELD SUB	FIELD SUBS	Class:		EOC:	SUBCONTRACTORS	
Res Dept:	949	F04			SUB		
Yr Units:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Units:		0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:		0 0	0 0	0 0	0 0	0 0	0 0
Cum Total Cost:		0	0	0	0	0	0

Resource:	GLMNT	GEN LABOR MAINT	Class:		EOC:	LABOR	
Res Dept:	949	F01			HOU		
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
Cum Hours:		454.7 454.7	454.7 454.7	454.7 454.7	454.7 454.7	454.7 454.7	454.7 454.7
Yr Total Cost:		11,113 0	11,113 0	11,113 0	11,113 0	11,113 0	11,113 0
Cum Total Cost:		11,113	11,113	11,113	11,113	11,113	11,113

Yr Hours:		Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
Cum Hours:		479.8 479.8	389.5 389.5	2,451.0 2,451.0	2,451.0 2,451.0	2,451.0 2,451.0	2,451.0 2,451.0
Yr Total Cost:		16,151 0	16,151 0	66,588 0	66,588 0	66,588 0	66,588 0
Cum Total Cost:		16,151	16,151	82,739	82,739	82,739	82,739

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR1
COMMENT NO D-688

Resource:	Res Dept:	HAZWAT	Overtime:	F01	Class:		EOC:		LABOR											
					Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-							
Yr Hours:																				
Cum Hours:																				
Yr Total Cost:																				
Cum Total Cost:																				

Resource:	Res Dept:	LABTEC	Overtime:	F01	Class:		EOC:		LABOR											
					Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-							
Yr Hours:																				
Cum Hours:																				
Yr Total Cost:																				
Cum Total Cost:																				

Resource:	Res Dept:	MAT300	Overtime:	F01	Class:		EOC:		MATERIAL											
					Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-							
Yr Units:																				
Cum Units:																				
Yr Total Cost:																				
Cum Total Cost:																				

Resource:	Res Dept:	MVOOPR	Overtime:	F04	Class:		EOC:		LABOR											
					Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-							
Yr Hours:																				
Cum Hours:																				
Yr Total Cost:																				
Cum Total Cost:																				

Resource:	Res Dept:	QA ENGINEER	Overtime:	F06	Class:		EOC:		LABOR											
					Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-							
Yr Hours:																				
Cum Hours:																				
Yr Total Cost:																				
Cum Total Cost:																				

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR1
COMMENT NO D-688

SAFETY ENGINEER		LABOR											
Resource:	S&HENG	EOC:											
Res Dept:	949	SAL											
Yr Hours:	0.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	174.7	174.7	174.7	130.6	0.0		
Yr Total Cost:	0	0	0	0	0	0	524.1	524.1	654.7	11,015	0		
Cum Total Cost:	0	0	0	0	0	0	11,604	12,579	13,259	48,456	48,456		

Resource: SERVSUB
Res Dept: 949

EOC: SUB

SUBS
OverTime: F01E

SUBS
OverTime: F06

SUBS		SUBCONTRACTORS											
Resource:	S&HENG	EOC:											
Res Dept:	949	SAL											
Yr Units:	776.0	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Units:	776.0	0.0	0.0	0.0	0.0	0.0	776.0	776.0	776.0	776.0	776.0		
Yr Total Cost:	776	0	0	0	0	0	776.0	776.0	776.0	776.0	776.0		
Cum Total Cost:	776	0	0	0	0	0	776	776	776	776	776		

GRAND TOTALS:

SUBS		SUBCONTRACTORS											
Resource:	S&HENG	EOC:											
Res Dept:	949	SAL											
Yr Hours:	853.4	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:	853.4	0.0	0.0	0.0	176.6	185.0	1,080.8	1,080.8	1,090.9	867.6	0.0		
Yr Total Cost:	30,024	0	853.4	853.4	508,188	522,871	579,430	598,864	617,925	627,270	5,335.1		
Cum Total Cost:	30,024	0	30,024	30,024	538,212	1,061,083	1,640,513	2,239,376	2,857,301	3,484,571	3,484,571		

W. Fick

John G. Chiu

CONTROL TEAM

CAM

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

June 12, 2001

PROJECT DESCRIPTION: Natural Resource Restoration

WBS NUMBER: 1.1.C

PROJECT ENGINEER: Eric Woods

ESTIMATOR: Tom Wagner / Bob Smolin

ESTIMATE NUMBER: C2010304R1

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input checked="" type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	Estimate	<input checked="" type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input checked="" type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Project	Acres	# Saplings	# Shrubs	# Seedlings
SWUs	30	2,805	1,564	6,800
Northern Pines	70	2,970	1,656	7,200
A1P3/Wetland	126	1,155	644	0
Southern Pines	50	2,970	1,656	7,200
Paddys Run Corridor	160	1,980	1,116	4,800
OSDF/Borrow Area	228	2,574	2,944	5,600
Silos	10	825	455	2,000
Production Area/Waste Pits	190	825	2,131	2,000
Totals =	864	16,104	12,166	35,600

Northern Woodlots Resoration GNRR5: Plant 20,000 wet land plugs.

OSDF Perimeter/Borrow Area Restoration GNRR7: Plant 800 willow cutting.

Silos Area Restoration GNRR8: Apply herbicide, place pond muck, seeding, plant 800 willow cutting.

Former Production/Waste Pit Area Restoration GNRR9: Apply herbicide, place pond muck, establish wetland vegetation at water edge 4800 each.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

June 12, 2001

PROJECT DESCRIPTION: Natural Resource Restoration

WBS NUMBER: 1.1.C

PROJECT ENGINEER: Eric Woods

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ESTIMATE NUMBER: C2010304R1

Former Production/Waste Pit Area Restoration GNRR9: Modify drainage, till 180 acres, seed with prairie grass, plant willow cutting 800 each.
Former Production/Waste Pit Area Restoration GNRR9: Clear vegetation
Restored/Certified Area Maintenance (FY04 – FY09): Replace trees/shrubs, reseed, mow areas, apply herbicide, erosion control, replace gravel, signs, ropes, and repair mulch trails, fencing.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

June 12, 2001

PROJECT DESCRIPTION: Natural Resource Restoration
WBS NUMBER: 1.1.C
PROJECT ENGINEER: Eric Woods
ESTIMATOR: Tom Wagner / Bob Smolin
ESTIMATE NUMBER: C2010304R1

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 40-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A
- Waste Program Management dollars provided by the Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

June 12, 2001

PROJECT DESCRIPTION: Natural Resource Restoration

WBS NUMBER: 1.1.C

PROJECT ENGINEER: Eric Woods

ESTIMATOR: Tom Wagner / Bob Smolin

ESTIMATE NUMBER: C2010304R1

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and or any other published estimating source. See attachment APPENDIX "A" and APPENDIX "B".

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and or other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX "C".

RISK BUDGET:

N/A

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

June 12, 2001

PROJECT DESCRIPTION: Natural Resource Restoration

WBS NUMBER: 1.1.C

PROJECT ENGINEER: Eric Woods

ESTIMATOR: Tom Wagner / Bob Smolin

ESTIMATE NUMBER: C2010304R1

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Premobilization & Mobilization.
- Demobilization.
- Labor hours.
- Material dollars.
- Equipment dollars.

EXCLUSIONS:

- Fire protection
- Dust control
- Premium time.
- Permits and fees.
- FF G & A (Home Office Expense).
- Construction Management.
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.

ESTIMATE SUMMARY SHEET

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS #: 1.1.C

Fluor Fernald, Inc.

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

ITEM DESCRIPTION	M/H	RATE	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	TOTAL \$
outhern Waste Units Planting	7,161		\$154,000	\$3,800	\$268,200	\$47,600	\$473,600
hipping in Northern Pines	3,344		\$71,860		\$2,090	\$81,630	\$155,580
orthern Pines Planting	7,260		\$156,020		\$296,170	\$41,020	\$493,210
orthern Woodlots Planting	823		\$17,700		\$55,100	\$22,300	\$95,100
etland Mitigation Phase II	6,329		\$136,000	\$1,900	\$131,700	\$173,700	\$443,300
hipping in Southern Pines	2,885		\$61,990		\$1,210	\$75,200	\$138,400
addys Run Planting (EAST)	7,220		\$155,160		\$268,650	\$35,930	\$459,740
addys Rund Floodplain Expansion	30,562		\$656,680		\$2,470	\$3,240	\$662,390
addys Run Planting (WEST)	8,370		\$179,860		\$333,310	\$48,830	\$562,000
SDF Borrow Area Seeding	3,382		\$72,700		\$334,100	\$75,500	\$482,300
SDF Perimeter Planting	3,592		\$77,200		\$99,200	\$18,300	\$194,700
ilos Area Planting	3,089		\$66,360		\$113,370	\$34,150	\$213,880
roduction Area Seeding	5,069		\$108,910		\$510,450	\$97,920	\$717,280
aste Pit Area Planting	2,061		\$44,300		\$64,400	\$6,400	\$115,100
estored/Certified Area Maintenance (FY04)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
estored/Certified Area Maintenance (FY05)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
estored/Certified Area Maintenance (FY06)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
estored/Certified Area Maintenance (FY07)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
estored/Certified Area Maintenance (FY08)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
estored/Certified Area Maintenance (FY09)	4,679		\$100,500		\$149,400	\$10,300	\$260,200
DIRECT FIELD COSTS TOTAL	119,219	\$21.49	\$2,561,740	\$5,700	\$3,376,820	\$823,520	\$6,767,780
SUPERVISION - CONTRACTOR	22,885		\$713,700				\$713,700
SMALL TOOLS & CONSUMABLES	-	-	-		\$153,700		\$153,700
MISC. EQUIP. RENTAL	-	-	-				
TEMPORARY FACILITIES							
TEMPORARY UTILITY HOOK-UP							
JOB CLEAN-UP	2,682		\$57,600		\$19,200		\$76,800
PER DIEM / SUBSISTANCE	-	-	-				
HEALTH PHYSICS S/C	177		\$3,800				\$3,800
CERCLA - TRAINING							
GET/SITE ACCESS & JOB SPECIFIC TRAINING	180		\$3,900				\$3,900
PAYROLL BURDENS & BENEFITS	-	-	\$1,904,200				\$1,904,200
OVERHEAD & PROFIT	-	-	-	\$1,924,800			\$1,924,800
BOND	-	-	-	\$150,100			\$150,100
SALES TAX	-	-	-		\$213,000	\$49,400	\$262,400
INDIRECT FIELD COSTS TOTAL	25,924		\$2,683,200	\$2,074,900	\$385,900	\$49,400	\$5,193,400
DIRECT & INDIRECT FIELD COSTS TOTAL	145,143	\$36.14	\$5,244,940	\$2,080,600	\$3,762,720	\$872,920	\$11,951,180
TARGET ESTIMATE (FY 01 DOLLARS)							\$11,951,180
ESTIMATE PERFORMED BY ESTIMATING SERVICES							

ESTIMATE SUMMARY SHEET

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

FACTORS

FIXED PRICE \$	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
DFC DOLLARS	\$2,561,740	\$5,700	\$3,376,820	\$823,520		\$6,767,780
IFC COST FACTOR	2.0474	-	1.0512	1.0000	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2099	1.2099	1.2099	1.2099	1.2099	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.4771	1.2099	1.3481	1.2825	1.2825	
BASE ESTIMATE \$'s	\$6,345,731	\$6,896	\$4,552,407	\$1,056,139		\$11,961,173
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.4771	1.2099	1.3481	1.2825	1.2825	
FPS TARGET ESTIMATE (FY00 \$)	\$6,345,731	\$6,896	\$4,552,407	\$1,056,139		\$11,961,173

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G65.

ESTIMATE SUMMARY SHEET

PROJECT: Natural Resource Restoration

DATE: 12-Jun-01

ESTIMATE NO.: C2010304_Rev1

**Direct Field Cost
w/FACTORS**

ESTIMATOR: RIS/TCW

CLIENT: DOE

LOCATION: Fernald

WBS NO.: 1.1.C

TASK NO.: GPM11

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$	
		(ASSIGN OR PRORATE PPE MAT'L \$'s)-->						
	Southern Waste Units Planting	154000 \$381,480	3800 \$4,600	268200 \$361,570	47600 \$61,050		\$808,700	
	Chipping in Northern Pines	71860 \$178,010		2090 \$2,820	81630 \$104,690		\$285,520	
	Northern Pines Planting	156020 \$386,480		296170 \$399,280	41020 \$52,610		\$838,370	
	Northern Woodlots Planting	17700 \$43,840		55100 \$74,280	22300 \$28,600		\$146,720	
	Wetland Mitigation Phase II	136000 \$336,890	1900 \$2,300	131700 \$177,550	173700 \$222,760		\$739,500	
	Chipping in Southern Pines	61990 \$153,560		1210 \$1,630	75200 \$96,440		\$251,630	
	addys Run Planting (EAST)	155160 \$384,350		268650 \$362,180	35930 \$46,080		\$792,610	
	addys Rund Floodplain Expansion	656680 \$1,626,670		2470 \$3,330	3240 \$4,160		\$1,634,160	
	Paddys Run Planting (WEST)	179860 \$445,530		333310 \$449,350	48830 \$62,620		\$957,500	
	OSDF Borrow Area Seeding	72700 \$180,090		334100 \$450,410	75500 \$96,830		\$727,330	
	OSDF Perimeter Planting	77200 \$191,230		99200 \$133,730	18300 \$23,470		\$348,430	
	Silos Area Planting	66360 \$164,380		113370 \$152,840	34150 \$43,800		\$361,020	
	Production Area Seeding	108910 \$269,780		510450 \$688,160	97920 \$125,580		\$1,083,520	
	Waste Pit Area Planting	44300 \$109,740		64400 \$86,820	6400 \$8,210		\$204,770	
	Restored/Certified Area Maintenance (FY04)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
	Restored/Certified Area Maintenance (FY05)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
	Restored/Certified Area Maintenance (FY06)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
	Restored/Certified Area Maintenance (FY07)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
	Restored/Certified Area Maintenance (FY08)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
	Restored/Certified Area Maintenance (FY09)	100500 \$248,950		149400 \$201,410	10300 \$13,210		\$463,570	
TOTAL DIRECT FIELD COSTS w/FACTORS		(FY01 DOLLARS)						\$11,961,200

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

ITEM NO.	SUMMARY	QTY	UNIT	MAN-HOURS			COST / UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C	Mail					
	Southern Waste Units Planting			7,161					\$154,000	\$3,800	\$266,200	\$47,800	\$473,800	
	Chipping in Northern Pines			3,344					\$71,860		\$2,090	\$81,630	\$155,500	
	Northern Pines Planting			7,260					\$156,020		\$296,170	\$41,020	\$493,210	
	Northern Woodlots Planting			823					\$17,700		\$55,100	\$22,300	\$95,100	
	Wetland Mitigation Phase II			6,329					\$138,000	\$1,900	\$131,700	\$173,700	\$443,300	
	Chipping in Southern Pines			2,885					\$61,890		\$1,210	\$75,200	\$138,400	
	Paddys Run Planting (EAST)			7,220					\$155,160		\$2,470	\$35,930	\$468,740	
	Paddys Rund Floodplain Expansion			30,562					\$656,680		\$333,310	\$48,830	\$682,380	
	Paddys Run Planting (WEST)			8,370					\$179,860		\$334,100	\$75,500	\$582,000	
	OSDF Borrow Area Seeding			3,382					\$77,200		\$89,200	\$18,300	\$482,300	
	OSDF Perimeter Planting			3,592					\$88,360		\$113,370	\$34,150	\$213,880	
	Silos Area Planting			3,089					\$108,910		\$510,450	\$97,920	\$717,280	
	Production Area Seeding			5,069					\$44,300		\$64,400	\$8,400	\$115,100	
	Waste Pile Area Planting			2,051					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY04)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY05)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY06)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY07)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY08)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
	Restored/Certified Area Maintenance (FY09)			4,679					\$100,500		\$149,400	\$10,300	\$260,200	
									\$2,166,174	\$570	\$5,576,820	\$823,620	\$6,767,800	

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

Fluor Fernald, Inc.

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

ITEM NO.	DESCRIPTION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Labor	SIC	Mat'l					
	Northern Woodlots Restoration GNRR5 FY05												
	Northern Pine Plantation 1.5.9.1												
D	Remove weeds, allow 90% of 48 acres	43	ac	7.3	373	21.49						\$8,020	\$8,020
D	Apply herbicide, allow 90% of 48 acres	43	ac	4.8	248	21.49	48.40					\$5,340	\$13,700
D	Modify drainage	2	ac	19.4	46	21.49						\$990	\$990
D	Clear trees & chip, allow 40% of 48 acres	19	ac	68.6	1,564	21.49						\$33,610	\$62,410
D	Grub stumps & pile	19	ac	24.0	547	21.49						\$25,180	\$36,940
D	Load mulch into trucks, 3cy end loader	9,600	cy	0.011	125	21.49	0.35					\$3,360	\$6,060
D	Haul mulch, 500 CY/ac, 1mi RT, 19 ac (-500)	9,100	cy	0.029	314	21.49	1.98					\$6,740	\$24,760
D	Spiller	1	ea	125.5	125	21.49						\$2,700	\$2,700
	Chipping in Northern Pines				3344							\$71,860	\$71,860
D	Seed wise seed drill	43	ac	1.5	77	21.49						\$1,650	\$67,530
D	Plant saplings	2970	ea	1.0	2970	21.49	32.12					\$63,820	\$242,020
D	Plant seedling trees by hand (potted)	7,200	ea	0.02	128	21.49						\$2,760	\$24,360
D	Plant shrubs by hand (3 gal)	1,656	ea	0.50	828	21.49						\$21,140	\$45,980
D	Mulch for saplings, 4ft diam x 4" hand spread	4147	sy	0.08	394	21.49						\$8,470	\$8,470
D	Mulch for shrubs, 4ft diam x 4" hand spread	2312	sy	0.08	220	21.49						\$4,720	\$4,720
D	Use on-site mulch											\$5,940	\$5,940
D	Tree tubing, allow 5 min/ea	2,970	ea	0.08	294	21.49						\$6,320	\$12,260
D	Dingo compact utility loader w/ auger	988	hr	1.0	988	21.49						\$21,240	\$38,520
D	Penal \$1500/mo plus \$480/mo for auger											\$12,640	\$12,640
D	Water tank, engine driven discharge, 5000 gallon	6	mo									\$7,980	\$7,980
D	Flat bed truck 3 ton	6	mo									\$17,280	\$17,280
D	Water / fertilize 2x's for 2 minutes each plant	23,652	ea	0.040	1124	21.49						\$24,150	\$24,620
D	Mobilization	7	ea	3.0	25	21.49						\$540	\$960
D	Contractor equipment	1	ea	4	4	21.49						\$90	\$190
D	Cooldown shelter	6	mo	8	8	21.49						\$170	\$690
D	Portalet & wash station	1	ea									\$520	\$520
D	Trailor & Dumpster shared w/ SWU											\$420	\$420
D	Demobilization	7	ea	3.0	25	21.49						\$540	\$960
D	Loadout contractor equipment	1	ls	16.0	19	21.49						\$410	\$410
D	Complete Punch List items.											\$296,170	\$296,170
	Northern Pines Planting				7260							\$156,020	\$156,020

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

ITEM NO.	Silo Area Restoration GNRR8 FY08	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Apply herbicide	15	ac	4.8	86	21.49						\$2,180	\$4,760
D	Place pond muck	2000	cy	0.07	167	21.49		48.40				\$5,600	\$9,190
D	Establish wetland vegetation at waters edge allow 2 acres, 1,200/ac	2400	sy	0.12	342	21.49		1.50					\$7,350
D	Seeding	838	ac	19.4	46	21.49						\$610	\$1,600
D	Modify drainage patterns w/dozer	2	ac	0.02	5	21.49						\$90	\$200
D	Till, acres	218	msf	0.023	6	21.49		3.06				\$230	\$1,030
D	Broadcast innoculant	218	msf	1.5	27	21.49		1.500.00				\$480	\$23,550
D	Seed native prairie grass wiseed drill	10	ac	13.1	233	21.49		1,110.76				\$4,770	\$26,430
D	Cover crops	10	ac	0.01	29	21.49		3.35				\$190	\$8,920
D	Coir malling allow 1/2 acres	2,420	sy	0.08	76	21.49		0.60				\$40	\$2,150
D	Plant willow cutting, allow 400/acre	800	ea										
D	Water tank, engine driven discharge, 5000 gallon	2	mo									\$4,200	\$4,200
D	Flat bed truck 3 ton	2	mo									\$2,650	\$2,650
D	Operator & laborer 16 hrs / wk allowance to water	9	wk	16.00	165	21.49						\$3,540	\$3,540
D	Mobilization	6	ea	3.0	21	21.49						\$360	\$820
D	Contractor equipment	1	ea	4	4	21.49		100.00				\$750	\$1,900
D	Cooldown shelter	5	mo									\$360	\$1,750
D	Portalet & wash station	6	ea	3.0	21	21.49						\$360	\$820
D	Demobilization	1	ls	16.0	19	21.49						\$410	\$410
D	Loadout contractor equipment												
D	Complete Punch List Items.												
<p style="text-align: center;">Silo Area Planting Continued on Next Page</p>													

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rov1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

ITEM NO.	Description	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP.	TOTAL
				Unit	Total		Labor	S/C	Mat'l					
D	Apply herbicide	15	ac	4.8	86	21.49				\$1,850		\$730	\$2,180	\$4,760
D	Place pond muck	2000	cy	0.07	167	21.49				\$3,590			\$5,600	\$9,190
D	Establish wetland vegetation at waters edge allow 4 acres, 1,200/ac	4800	ea	0.008	46	21.49				\$980		\$7,200		\$8,180
<p>Production Area Seeding Continued on Next Page</p>														

DETAIL ESTIMATE WORKSHEETS

DATE: 12-Jun-01
 ESTIMATOR: RISTCW
 LOCATION: Fernald
 TASK NO.: GPM11

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

Fluor Fernald, Inc.

ITEM NO.	Description	QTY	UNIT	MAN-HOURS			COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C	Mail					
D	Seeding	10	ac	96.8	1150	21.49	per National Constructor	512.58	\$24,710			\$15,130	\$39,840	
D	Modify drainage patterns w/dozer	7841	msf	0.02	186	21.49	per National Constructor	0.43	\$4,000			\$3,370	\$7,370	
D	Till, 180 acres	7841	msf	0.023	214	21.49	per National Constructor	1.07	\$4,600			\$8,390	\$36,980	
D	Broadcast inoculant	180	ac	1.5	321	21.49	per National Constructor	3.06	\$6,890			\$5,780	\$282,670	
D	Seed native prairie grass w/seed drill	180	ac	13.1	2794	21.49	per National Constructor	1,500.00	\$60,040			\$57,240	\$317,220	
D	Cover crops	2,420	sy	0.01	29	21.49	per National Constructor	1,110.78	\$620			\$190	\$8,920	
D	Cof malling allow 1/2 acres	800	ea	0.08	76	21.49	per National Constructor	3.35	\$1,630			\$40	\$2,150	
D	Plant willow cutting, allow 400/acro						Per L Whitaker est # C2990105	0.60						
					136069	\$2149			\$108910		\$510450	\$307920	\$574720	

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

ITEM NO.	Description	UNIT	QTY	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Seedlings												
D	Clear 3 ft diam of vegetation	ac	0.5	32.0	20	21.49	259.00	\$430		\$140		\$570	
D	Plant saplings	ea	825	1.0	825	21.49	60.00	\$17,730		\$49,500		\$67,230	
D	Plant seedling trees by hand (potted)	ea	2,000	0.02	36	21.49	3.00	\$770		\$6,000		\$6,770	
D	Plant shrubs by hand (3 gal)	ea	455	0.50	270	21.49	15.00	\$5,810		\$6,830		\$12,640	
D	Mulch for saplings, 4ft diam x 4" hand spread	sy	1152	0.08	109	21.49		\$2,350				\$2,350	
D	Mulch for shrubs, 4ft diam x 4" hand spread	sy	635	0.08	60	21.49		\$1,300				\$1,300	
	Use on-site mulch												
D	Tree tubing, allow 5 min/ea	ea	825	0.08	82	21.49	2.00	\$1,750		\$1,650		\$3,400	
D	Dingo compact/utility loader w/ auger	hr	274	1.0	274	21.49		\$5,880		\$130	\$4,790	\$10,070	
D	Water/fertilize 3's for 2 minutes each plant	ea	6,560	0.040	312	21.49	0.02	\$6,700				\$6,830	
	Summed hours of planting saplings & shrubs then divided by 4 representing 4-man crew with dingo operating 100% of the time.												
D	Mobilization	ea	7	3.0	25	21.49		\$540		\$100	\$420	\$960	
D	Contractor equipment	ea	1	4	4	21.49	100.00	\$90				\$190	
D	Cool-down shelter	ea	5					\$750				\$750	
D	Portable & wash station	mo	5										
D	Demobilization	ea	7	3.0	25	21.49		\$540			\$420	\$960	
D	Loadout contractor equipment	ls	1	16.0	19	21.49		\$410				\$410	
D	Complete Punch List Items.												
				22061	32149			\$44,900		\$64,400		\$109,300	

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RISTCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

ITEM NO.	Restore/Certified Area Maintenance (FY04)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unlt	Total	Rate	Rate	Mat'l					
D	Replace Trees/Shrubs	400	ea	1.0	475	21.487							\$36,010
D	Ressed W/Seed Drill	50	ac	1.5	89	21.487	60.00		\$10,210		\$24,000	\$1,800	\$78,710
D	Mow Prolife	25	ac	1.7	50	21.487	1,500.00		\$1,910		\$75,000	\$1,800	\$1,080
D	Mow Certified Areas	2400	ac	0.40	1140	21.487			\$24,510				\$24,510
D	Apply Herbicide	10	ac	5.0	59	21.487	50.00		\$1,280	\$500		\$500	\$2,280
D	Repair Bioengineering Features	500	lf	0.16	95	21.487	1.00		\$2,040	\$500		\$70	\$2,610
D	Install Erosion Control Matting	2	ac	320.0	760	21.487	2,800.00		\$16,340	\$5,600		\$70	\$22,010
D	Maintain Headwalls, Standpipes	5	ea	40.0	238	21.487	750.00		\$5,110	\$3,750		\$1,800	\$10,660
D	Replace Gravel At Access Points	3000	ton	0.025	89	21.487	13.00		\$1,910	\$39,000		\$3,800	\$44,710
D	Replace Signs/Ropes	1	lot	1.0	250	21.487			\$5,370			\$50	\$5,420
D	Repair Mulch Trails	1	lot	1.0	250	21.487			\$5,370				\$5,370
D	Repair Fencing	1000	lf	0.16	190	21.487	1.05		\$4,080	\$1,050		\$50	\$5,180
D	Water Restored Areas	1	lot	800.0	950	21.487			\$20,420			\$100	\$20,520
D	Leadout Rental Equipment	5	ea	3.0	18	21.487			\$380			\$300	\$680
D	Complete Punch List Items	1	lot	20.0	24	21.487			\$510				\$510
												\$19,400	
												\$100,500	
												\$2,500	
												\$2,500	

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

Fluor Fernald, Inc.

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

ITEM NO.	Restored/Certified Area Maintenance (FY05)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Replace Trees/Shrubs	400	ea	1.0	475	21,487			\$10,210		\$24,000	\$1,800	\$36,010
D	Reseed W/Seed Drill	50	ac	1.5	89	21,487	60.00		\$1,910		\$75,000	\$1,800	\$78,710
D	Mow Prairie	25	ac	1.7	50	21,487	1,500.00		\$1,080				\$1,080
D	Mow Certified Areas	2400	ac	0.40	1140	21,487			\$24,510				\$24,510
D	Apply Herbicide	10	ac	5.0	59	21,487	50.00		\$1,280		\$500	\$500	\$2,280
D	Repair Bioengineering Features	500	lf	0.16	95	21,487	1.00		\$2,040		\$500	\$70	\$2,610
D	Install Erosion Control Matting	2	ac	320.0	760	21,487	2,800.00		\$16,340		\$5,600	\$70	\$22,010
D	Maintain Headwalls, Standpipes	5	ea	40.0	238	21,487	750.00		\$5,110		\$3,750	\$1,800	\$10,660
D	Replace Gravel At Access Points	3000	ton	0.025	89	21,487	13.00		\$1,910		\$39,000	\$3,800	\$44,710
D	Replace Signs/Ropes	1	lot	1.0	250	21,487			\$5,370			\$50	\$5,420
D	Repair Mulch Trails	1	lot	1.0	250	21,487			\$5,370		\$1,050	\$50	\$5,180
D	Repair Fencing	1000	lf	0.16	190	21,487	1.05		\$4,080			\$100	\$20,520
D	Water Restored Areas	1	lot	800.0	950	21,487			\$20,420			\$300	\$680
D	Loadout Rental Equipment	5	ea	3.0	18	21,487			\$380				\$380
D	Complete Punch List Items	1	lot	20.0	24	21,487			\$510				\$510
					1879	\$2,148			\$100,500		\$19,400	\$10,800	\$130,700

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

ITEM NO.	Restored/Certified Area Maintenance (FY06)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Replace Trees/Shrubs	400	ea	1.0	475	21.487			\$10,210		\$24,000	\$1,800	\$36,010
D	Reseed W/Seed Drill	50	ac	1.5	89	21.487	60.00		\$1,910		\$75,000	\$1,800	\$78,710
D	Mow Prolife	25	ac	1.7	50	21.487	1,500.00		\$1,080				\$1,080
D	Mow Certified Areas	2400	ac	0.40	1140	21.487			\$24,510				\$24,510
D	Apply Herbicide	10	ac	5.0	59	21.487	50.00		\$1,280	\$500		\$500	\$2,280
D	Repair Bioengineering Features	500	lf	0.16	95	21.487	1.00		\$2,040	\$500		\$70	\$2,610
D	Install Erdson Control Matting	2	ac	320.0	760	21.487	2,000.00		\$16,340	\$5,600		\$70	\$22,010
D	Maintain Headwalls, Standpipes	5	ea	40.0	238	21.487	750.00		\$5,110	\$3,750		\$1,800	\$10,660
D	Replace Gravel At Access Points	3000	ton	0.025	89	21.487	13.00		\$1,910	\$39,000		\$3,800	\$44,710
D	Replace Signs/Ropes	1	lot	1.0	250	21.487			\$5,370			\$50	\$5,420
D	Repair Mutch Trails	1	lot	1.0	250	21.487			\$5,370	\$1,050		\$50	\$5,370
D	Repair Fencing	1000	lf	0.16	190	21.487	1.05		\$4,080			\$50	\$5,180
D	Water Restored Areas	1	lot	800.0	950	21.487			\$20,420			\$100	\$20,520
D	Loadout Rental Equipment	5	ea	3.0	18	21.487			\$380			\$300	\$680
D	Complete Punch List Items	1	lot	20.0	24	21.487			\$510				\$510
									100,500		78,400	10,900	226,200

DETAIL ESTIMATE WORKSHEETS

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

ITEM NO.	Restored/Certified Area Maintenance (FY07)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Replace Trees/Shrubs	400	ea	1.0	475	21.487							\$38,010
D	Reseed W/Seed Drill	50	ac	1.5	89	21.487	60.00		\$10,210		\$24,000	\$1,800	\$78,710
D	Mow Prairie	25	ac	1.7	50	21.487	1,500.00		\$1,910		\$75,000	\$1,800	\$1,080
D	Mow Certified Areas	2400	ac	0.40	1140	21.487			\$24,510			\$500	\$24,510
D	Apply Herbicide	10	ac	5.0	59	21.487	50.00		\$1,280		\$500	\$500	\$2,280
D	Repair Bioengineering Features	500	lf	0.16	95	21.487	1.00		\$2,040		\$500	\$70	\$2,610
D	Install Erosion Control Matting	2	ac	320.0	760	21.487	2,800.00		\$16,340		\$5,600	\$70	\$22,010
D	Maintain Headwalls, Standpipes	5	ea	40.0	238	21.487	750.00		\$5,110		\$3,750	\$1,800	\$10,660
D	Replace Gravel At Access Points	3000	ton	0.025	89	21.487	13.00		\$1,910		\$39,000	\$3,800	\$44,710
D	Replace Signs/Ropes	1	lot	1.0	250	21.487	50.00		\$5,370			\$50	\$5,420
D	Repair Mulch Trails	1	lot	1.0	250	21.487			\$5,370		\$1,050	\$50	\$5,370
D	Repair Fencing	1000	lf	0.16	190	21.487	1.05		\$4,080			\$50	\$5,180
D	Water Restored Areas	1	lot	800.0	950	21.487	100.00		\$20,420			\$100	\$20,520
D	Loadout Rental Equipment	5	ea	3.0	18	21.487	60.00		\$380			\$300	\$680
D	Complete Punch List Items	1	lot	20.0	24	21.487			\$510				\$510
									\$2100.500		\$149.400	\$10300	\$260200

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/RCW
 LOCATION: Fernald
 TASK NO.: GPM11

ITEM NO.	Restored/Certified Area Maintenance (FY09)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	Replace Trees/Shrubs	400	ea	1.0	475	21,487		60.00			\$24,000	\$1,800	\$36,010
D	Reseed W/Seed Drill	50	ac	1.5	89	21,487		1,500.00			\$75,000	\$1,800	\$78,710
D	Mow Praline	25	ac	1.7	50	21,487							\$1,080
D	Mow Certified Areas	2400	ac	0.40	1140	21,487					\$500	\$500	\$24,510
D	Apply Herbicide	10	ac	5.0	59	21,487		50.00			\$500	\$70	\$2,280
D	Repair Blooming/earring Features	500	lf	0.16	95	21,487		1.00			\$500	\$70	\$2,610
D	Install Erosion Control Matting	2	ac	320.0	760	21,487		2,800.00			\$5,600	\$70	\$22,010
D	Maintain Headwalls, Standpipes	5	ea	40.0	238	21,487		750.00			\$3,750	\$1,800	\$10,660
D	Replace Gravel At Access Points	3000	ton	0.025	89	21,487		13.00			\$39,000	\$50	\$44,710
D	Replace Signs/Ropes allowance	1	lot	1.0	250	21,487		50.00			\$1,050	\$50	\$5,420
D	Repair Mutch Trails allowance	1	lot	1.0	250	21,487		1.05				\$50	\$5,180
D	Repair Fencing	1000	lf	0.16	190	21,487		100.00				\$100	\$20,520
D	Water Restored Areas	1	lot	800.0	950	21,487		80.00				\$300	\$680
D	Loadout Rental Equipment	5	ea	3.0	18	21,487							\$510
D	Complete Punch List Items	1	lot	20.0	24	21,487							\$510
									1,678	\$21,487	149,400	10,300	260,207

APPENDIX "A"

PROJECT: Natural Resource Restoration
 ESTIMATE NOC2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

SITE SPECIFIC
 EFFICIENCY / MULTIPLIER ANALYSIS

DATE: 12-Jun-01
 ESTIMATOR: RISTCW
 LOCATION: Fernald
 TASK NO.: GPM11

	PERCENT OF INFLUENCE ON CHART MANHOURS										WTD VALUE	PROD. RESULT		
	40%	50%	60%	70%	80%	90%	100%	105%	110%	% OF INFLUENCE				
CRAFT SKILL (NOTE 1)	POOR			FAIR			STD				V.GOOD		12.0%	0.12
CRAFT AVAIL.(NOTE 1)		POOR		FAIR			STD						8.0%	0.08
CLIMATE (NOTE 2)	SEVERE	ICE/SNOW			RAIN		+40 TO +85						20.0%	0.16
PLANT ELEVATION		OVER 10,000FT			5,000' TO 10,000 FT		UNDER 5,000 FT						5.0%	0.05
WORK SPACE		MULTIPLE SHIFTS-		200 SF	250 SF	300 SF	350 SF						10.0%	0.1
WORK WEEK				OVER 7 WEEKS	3 TO 7 WEEKS	UP TO 3 WEEKS	4-10s / 5-8s						15.0%	0.15
60 HOUR WORK WEEK				OVER 7 WEEKS	3 TO 7 WEEKS	UP TO 3 WEEKS							0.0%	0
60 HOUR WORK WEEK				OVER 7 WEEKS	3 TO 7 WEEKS	UP TO 3 WEEKS							0.0%	0
SHIFTWORK 2ND SHIFT 3RD SHIFT				3RD SHIFT		2ND SHIFT	OR ONE SHIFT ONLY						3.0%	0.03
PROJECT SIZE					400M MH AND UP	300M TO 400M MH	200M TO 300M MH				200M MH OR LESS		4.0%	0.042
PLANT TYPE				REVAMP ONLY	REVAMP & NEW	NEW IN EXIST PLT	GRASS ROOTS						8.0%	0.068
AREA/JUNION INFLUENCE	STRONG		MILD	SOME			NONE						10.0%	0.06
NOTES.....											100.0%	91.0%		
1. TURNOVER HAS BEEN CONSIDERED												91.0%		
2. FOR EXTERIOR WORK ONLY												91.0%		
												1.10		

EFFICIENCY (AS A % OFF CHART MANHOURS)

MULTIPLIER - (TO BE APPLIED TO CHART M.H.'S TO OBTAIN SITE M.H.'S)

EFFICIENCY FACTORS

PROJECT: Natural Resource Restoration
 ESTIMATE NO. C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

EXAMPLE:

STANDARD CHART MANHOURS = NET 100
 EFFICIENCY FACTORS:
 * SITE SPECIFIC (SEE APPENDIX A) 10.0
 S/T = BASE UNIT MANHOURS 110

OVERTIME PRODUCTIVITY FACTOR 0.00% 0
 (SEE DETAIL WORKSHEET BACK-UP) 110

* TASK SPECIFIC (confined space, high elevation, congestion, etc.) 0.0% 0
 110

* PPE SPECIFIC (Based on current data and estimating knowledge)

	PPE LEVEL									
	D		Mod. 'D'		Mod. "C"		C		C+	
PRODUCTIVITY HOURS (AS A %) / ADD MH's	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER
(AS A MULTIPLIER) / TOTAL HR\$	8.00%	9	33.00%	36	71.00%	78	79.00%	87	105.00%	116
TOTAL MULTIPLIER w/SITE PROD.	1.188		1.463		1.881		1.969		2.255	

NOTE : Use the Default Productivity Factor of 'mC' for working in a contaminated area if the Safety Level cannot be determined.

(SEE FD FERNALD ESTIMATING SERVICES REFERENCE MANUAL IM-6006 8.10)

Total hours worked in a specific PPE level divided by 10 hour working days = (PPE) ManDays to determine material cost of PPE's.
 (SEE APPENDIX C - HEALTH PHYSICS)

12.0	Man Days	15.0	Man Days	19.0	Man Days	20.0	Man Days	23.0	Man Days
------	----------	------	----------	------	----------	------	----------	------	----------

THESE EFFICIENCY FACTORS WERE APPLIED INDIVIDUALLY THROUGHOUT THE ESTIMATE AT A TASK SPECIFIC LEVEL, TO OBTAIN A MORE ACCURATE ACCOUNT OF OVERALL EFFICIENCY IMPACT DUE TO PPE REQUIREMENTS IN HANDLING CONTAMINATED AND HAZARDOUS WASTE.

APPENDIX "B"

EFFICIENCY FACTORS

PROJECT: Natural Resource Restoration
 ESTIMATE NO. C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

PPE MULTIPLIER DEVELOPEMENT

	D	mD	mC	C	C+
CREW SIZE & MAKE-UP					
STANDARD	7	7	7	7	7
WORKER-BUDDY	0	0	0	0	0
SUPPORT TEAM	0	0	0	0	0
TOTAL CREW	7	7	7	7	7
CREW SIZE RATIO	1.00	1.00	1.00	1.00	1.00
AVAILABLE WORK TIME FACTOR	0.93	0.75	0.68	0.68	0.65
PPE LABOR PRODUCTIVITY FACTOR	1	1	0.86	0.82	0.75
NET PRODUCTIVITY RATIO	0.93	0.75	0.585	0.558	0.488
NET PRODUCTIVITY MULTIPLIER	1.08	1.33	1.71	1.79	2.05

These factors were based on Tables 6.1 and 6.2, Moderate Work Efforts, 66F to 85F temperature of 'Hazardous Waste Cost Control' by R.A.Selg. Modifications were made to reflect a 10 hour work day and no buddy system or support team for levels D, mC and C. The worker-buddy and support team members, if required, may be covered under Construction Mgmt. (Rad Techs).

AVAILABLE WORK TIME FACTOR		D	mD	mC	C	C+
TOTAL WORK MINUTES per D 4 - 10's		600	600	600	600	600
ADDIT'L SITE SAFETY MEETINGS NOT INCLD. IN BA	QUANTITY	1	1	1	1	1
	MINUTES	25	25	25	25	25
TOTAL		25	25	25	25	25
PPE DON & DOFFING (ADJUST LEVEL D per WORK PLAN)	QUANTITY	0	0	3	3	3
	MINUTES	0	0	15	15	20
TOTAL			0	45	45	60
WORK BREAKS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	2	2	2	2
	MINUTES	N/A	15	15	15	15
TOTAL			30	30	30	30
MOBILIZATION - ROUND TRIPS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			60	60	60	60
COOLDOWNS PER DAY ** (4 OUT OF 7 MONTHS)	QUANTITY	2	4	4	4	4
	MINUTES	15	15	15	15	15
TOTAL		17	34	34	34	34
AIR TANK REPLACEMENT	QUANTITY	N/A	N/A	N/A	N/A	N/A
	MINUTES	N/A	N/A	N/A	N/A	N/A
TOTAL						
AVAILABLE WORK TIME		558	451	406	406	391
AVAILABLE WORK TIME FACTOR		0.93	0.75	0.68	0.68	0.65

NOTE: Adjust 'Work Minutes per Day' basis to: 5 - 8's, or leave as 4 - 10's. Any other circumstances, over-ride the minutes per day.

** Assumption based on work performed in May, June, July & August, pro-rating cost over one year. Adjust % to individual circumstances.

APPENDIX "C"

HEALTH PHYSICS

PROJECT: Natural Resource Restoration
 ESTIMATE NO. C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

Fluor Fernald, Inc.

PPE's - PERSONAL PROTECTIVE EQUIPMENT

DESCRIPTION	UNIT	UNIT COST	* NO. OF CHANGE OUTS PER WORKER PER DAY				
			Man Days (TOTAL HOURS worked in PPE's Div. by WORK HOURS / DAY)				
PPE LEVEL	C / C+ / B	F / HF MASK w/RESP.&CART.	MAN DAYS	MATL.'s	PPE LEVEL	(DOUBLE PPE)	
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0		C / C+
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0		C / C+
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0		C / C+
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0		C / C+
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0		C / C+
APR CARTRIDGES - DISPOSABLE	PR	\$6.98	3	0	\$0		C / C+
SUB-TOTAL		\$17.42	3		\$0		

\$/MD = \$0.00

PPE LEVEL	mC	FULL DRESS w/ FACE SHIELD	MAN DAYS	MATL.'s	PPE LEVEL
LT.WT. DISPOSABLE COVERALLS w/HOOD & BOOTIES	PR	\$4.46	3	0	\$0 mC
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0 mC
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0 mC
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0 mC
SUB-TOTAL		\$5.98	3		\$0

\$/MD = \$0.00

SUBCONTRACTOR REQUIRED PURCHASES	UNIT	QTY. PER WKR.	NO. OF WORKERS	MATL.'s	PPE LEVEL
APR w/HALF FACE MASK - (1) PER WORKER	EA	\$22.30	6	0	\$0 C
APR w/FULL FACE MASK - (1) PER WORKER	EA	\$174.00	6	0	\$0 C
SCBA	EA	\$1,894.00	2	0	\$0 B
COOL VESTS	EA	\$137.50	6	0	\$0 C/B
THERMO STRIPS	EA	\$50.00	6	0	\$0 C/B
SUB-TOTAL					\$0

TOTAL PPE's = MATL.'s
\$0

(FORWARD TO PAGE 2 OF 2)

OTHER PPE's SUCH AS HARD HAT, SAFETY GLASSES/GOGGLES, STEEL TOED SAFETY SHOES, HEARING PROTECTION, ARE CONSIDERED THE SUBCONTRACTORS RESPONSIBILITY AND ARE COVERED IN HIS OVERHEAD EXPENSE. COSTS OF FD FERNALD SUPPLIED PPE's, SUCH AS COTTON COVERALLS, EXCHANGE OF RUBBER BOOT COVERS AND RESPIRATORS FOR CHANGEOUTS AND CLEANING OF SAME IS INCURRED BY FD FERNALD AND COSTS ARE NOT INCLUDED AS PART OF PROJECT COSTS AT THIS TIME.

APPENDIX "C"

HEALTH PHYSICS

PROJECT: Natural Resource Restoration
 ESTIMATE NO. C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

--MEDICAL MONITORING --

MEDICAL - PHYSICAL and IN-VIVO MONITORING - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
PHYSICAL (3hrs), IN-VIVO (1hr)						
BASELINE PHYSICALS	1	4	0	0	\$21.49	\$0
ANNUAL PHYSICALS	9	4	0	0	\$21.49	\$0
EXIT (TERMINATION) PHYSICALS (IN-VIVO)	1	1	0	0	\$21.49	\$0
SUB-TOTAL						\$0

RADIATION IN-VITRO SURVEILLANCE - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BI-MONTHLY BIOASSAY	54	1	0	0	\$21.49	\$0
SUB-TOTAL						\$0

RANDOM DRUG TESTING

	TESTS	HRS	TOTAL HOURS	AVG. RATE	LABOR \$'s	
	79	2	158	\$21.49	\$3,400	
NO. OF WKRS. TESTED	TESTING DAYS PER YR.	AVG. NO. OF TESTS PER DAY	CHANCE/ DAY FOR TEST	NO. OF WKRS. FOR THIS ESTIMATE	CHANCES /DAY FOR TEST FOR PROJECT	CONSTR WORKING DAYS
2340	226	10	0.0042735	9	0.0385	2048

				LABOR \$'s THRU SAFETY	LABOR \$'s
WORK DELAYS CAUSED BY MONITORING	0.0%			\$3,295,640	\$0
					LABOR \$'s
WORK DELAYS CAUSED BY RAD CHECKING	0.0%			\$3,295,640	\$0

	TOTAL LABOR	TOTAL MAT'L	GRAND TOTAL
TOTAL HEALTH PHYSICS	\$3,400	\$0	\$3,400

(FORWARD TO ESTIMATE SUMMARY SHEET)

ACTIVITY DURATIONS

Fluor Fernald, Inc.

PROJECT: Natural Resource Restoration
 ESTIMATE NO.: C2010304_Rev1
 CLIENT: DOE
 WBS NO.: 1.1.C

DATE: 12-Jun-01
 ESTIMATOR: RIS/TCW
 LOCATION: Fernald
 TASK NO.: GPM11

CONSTRUCTION: ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY DURATION
Southern Waste Units Planting	01-May-01	01-Apr-05	01-Jul-05	30-Sep-05	6.0 MONTHS
Chipping in Northern Pines	01-May-01	01-Mar-05	31-May-05	31-Aug-05	6.0 MONTHS
Northern Pines Planting	01-May-01	01-Mar-06	15-May-06	30-Jul-06	5.0 MONTHS
Northern Woodlots Planting	01-May-01	01-Mar-07	15-May-07	30-Jul-07	5.0 MONTHS
Wetland Mitigation Phase II	01-May-01	01-Mar-06	15-May-06	30-Jul-06	5.0 MONTHS
Chipping in Southern Pines	01-May-01	01-Mar-07	15-May-07	30-Jul-07	5.0 MONTHS
Paddy's Run Planting (EAST)	01-May-01	01-Mar-08	15-May-08	30-Jul-08	5.0 MONTHS
Paddy's Run Floodplain Expansion	01-May-01	01-Mar-09	15-May-09	30-Jul-09	5.0 MONTHS
Paddy's Run Planting (WEST)	01-May-01	01-Mar-09	15-May-09	30-Jul-09	5.0 MONTHS
OSDF Borrow Area Seeding	01-May-01	01-Mar-07	15-May-07	30-Jul-07	5.0 MONTHS
OSDF Perimeter Planting	01-May-01	01-Mar-08	15-May-08	30-Jul-08	5.0 MONTHS
Silos Area Planting	01-May-01	01-Mar-09	15-May-09	30-Jul-09	5.0 MONTHS
Production Area Seeding	01-May-01	01-Mar-09	15-May-09	30-Jul-09	5.0 MONTHS
Waste Pit Area Planting	01-May-01	01-Mar-04	15-Jun-04	30-Sep-04	7.0 MONTHS
Restored/Certified Area Maintenance (FY04)	01-May-01	01-Mar-05	15-Jun-05	30-Sep-05	7.0 MONTHS
Restored/Certified Area Maintenance (FY05)	01-May-01	01-Mar-06	15-Jun-06	30-Sep-06	7.0 MONTHS
Restored/Certified Area Maintenance (FY06)	01-May-01	01-Mar-07	15-Jun-07	30-Sep-07	7.0 MONTHS
Restored/Certified Area Maintenance (FY07)	01-May-01	01-Mar-08	15-Jun-08	30-Sep-08	7.0 MONTHS
Restored/Certified Area Maintenance (FY08)	01-May-01	01-Mar-09	15-Jun-09	30-Sep-09	7.0 MONTHS
TOTAL					108.7 MONTHS

ACTIVITY DURATION IS USED IN DETERMINING NUMBER of WORKERS for CERCLA/SAT TRAINING HOURS and HEALTH PHYSICS COSTS.

GNRR2

RESTORATION RESEARCH

GNRR4

SWU RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2006

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR4
COMMENT NO F06-032, D-688

Resource:	BUYCON												
Res Dept:	949												
	BUYER/CONTRACTS ADMIN	LABOR											
	Overtime:	EOC: SAL											
		Class:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Hours:			0.0	0.0	0.0	0.0	39.4	47.0	0.0	0.0	0.0	0.0	
Cum Hours:			0.0	0.0	0.0	0.0	39.4	86.4	86.4	86.4	86.4	86.4	
Yr Total Cost:			0	0	0	0	2,062	2,633	0	0	0	0	
Cum Total Cost:			0	0	0	0	2,062	4,695	4,695	4,695	4,695	4,695	

Resource:	ENPREP												
Res Dept:	949												
	ENVIR PROTECTION REP	LABOR											
	Overtime:	EOC: SAL											
		Class:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Hours:			0.0	0.0	0.0	0.0	39.4	86.4	86.4	86.4	86.4	86.4	
Cum Hours:			0.0	0.0	0.0	0.0	39.4	86.4	86.4	86.4	86.4	86.4	
Yr Total Cost:			0	0	0	0	2,379	3,038	0	0	0	0	
Cum Total Cost:			0	0	0	0	2,379	5,417	5,417	5,417	5,417	5,417	

Resource:	ENSMGR												
Res Dept:	949												
	ENVIR SCIENTIST MGR	LABOR											
	Overtime:	EOC: SAL											
		Class:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Hours:			0.0	0.0	0.0	86.4	0.0	0.0	0.0	0.0	0.0	0.0	
Cum Hours:			0.0	0.0	0.0	86.4	86.4	86.4	86.4	86.4	86.4	86.4	
Yr Total Cost:			0	0	0	5,380	0	0	0	0	0	0	
Cum Total Cost:			0	0	0	5,380	5,380	5,380	5,380	5,380	5,380	5,380	

Resource:	ENSTEC												
Res Dept:	949												
	ENVIR SCIENTIST TECH	LABOR											
	Overtime:	EOC: SAL											
		Class:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Hours:			0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cum Hours:			0.0	0.0	0.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	
Yr Total Cost:			0	0	0	2,005	0	0	0	0	0	0	
Cum Total Cost:			0	0	0	2,005	2,005	2,005	2,005	2,005	2,005	2,005	

Resource:	FIELD SUB												
Res Dept:	949												
	FIELD SUBS	SUBCONTRACTORS											
	Overtime:	EOC: SUB											
		Class:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
Yr Units:			0.0	0.0	0.0	0.0	368,375.8	440,324.2	0.0	0.0	0.0	0.0	
Cum Units:			0.0	0.0	0.0	0.0	368,375.8	808,700.0	808,700.0	808,700.0	808,700.0	808,700.0	
Yr Total Cost:			0	0	0	0	410,599	505,028	0	0	0	0	
Cum Total Cost:			0	0	0	0	410,599	915,627	915,627	915,627	915,627	915,627	

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2006

WBS: OHFN06
1.1.G-B
CTRL ACCT: GNRR
CHARGE NO: GNRR4
COMMENT NO F06-032, D-688

Resource:	Res Dept:	Class:	EOC:		LABOR		
			Over:	HOU	Over:	HOU	
GEN LABOR MAINT							
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	Res Dept:	Class:	EOC:		LABOR		
			Over:	SAL	Over:	SAL	
LAB TECH							
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	Res Dept:	Class:	EOC:		LABOR		
			Over:	HOU	Over:	HOU	
MOTOR VEHICLE OPER							
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	Res Dept:	Class:	EOC:		LABOR		
			Over:	SAL	Over:	SAL	
PROJECT SUPPORT MGR							
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource:	Res Dept:	Class:	EOC:		LABOR		
			Over:	SAL	Over:	SAL	
QA ENGINEER							
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: W. FICK
 FISCAL YEAR: 2004-2006

PBS: OHFN06
 WBS: 1.1.G.B
 CTRL ACCT: GNRR
 CHARGE NO: GNRR4
 COMMENT NO F06-032, D-688
 Resource: S&HENG
 Res Dept: 949

SAFETY ENGINEER		LABOR		EOC:	
Overtime:		Class:		SAL	
Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	60.1 60.1	71.8 131.9
0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	60.1 3,736	4,771 8,507
Yr Total Cost: Cum Total Cost:	0 0	0 0	0 0	3,736 3,736	4,771 8,507

SAFETY TECH		LABOR		EOC:	
Overtime:		Class:		SAL	
Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	60.1 60.1	71.8 131.9
0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	60.1 2,173	2,775 4,947
Yr Total Cost: Cum Total Cost:	0 0	0 0	0 0	2,173 2,173	4,947 4,947

SERV/SUB		SUBCONTRACTORS		EOC:	
Overtime:		Class:		SUB	
Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
0.0 0.0	0.0 0.0	0.0 0.0	14,521.2 15,745	13,718.9 15,291	0.0 0.0
0.0 0.0	0.0 0.0	0.0 0.0	14,521.2 15,745	28,240.1 31,036	28,240.1 31,036
Yr Total Cost: Cum Total Cost:	0 0	0 0	15,745 15,745	15,291 31,036	0 31,036

GRAND TOTALS:		EOC:	
Yr Hours:	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0
Yr Total Cost:	0.0	0.0	0.0
Cum Total Cost:	0.0	0.0	0.0

SAFETY ENGINEER		LABOR		EOC:	
Overtime:		Class:		SAL	
Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06
0.0 0.0	0.0 0.0	0.0 0.0	172.8 172.8	499.3 672.1	596.9 1,269.0
0.0 0.0	0.0 0.0	0.0 0.0	172.8 23,996	448,972 472,969	534,504 1,007,472
Yr Total Cost: Cum Total Cost:	0 0	0 0	23,996 23,996	448,972 472,969	534,504 1,007,472

CONTROL TEAM 



CAM

GNRR5

NORTHERN WOODLOTS RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2008

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR5
COMMENT NO D-688

Resource:	BUYCON	BUYER/CONTRACTS ADMIN	Class:		EOC:		LABOR				
Res Dept:	949	Overtime:			SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	28.8	42.8	12.8	2.1	0.0	0.0
Yr Total Cost:		0.0	0.0	0.0	0.0	28.8	71.6	86.4	86.4	0	86.4
Cum Total Cost:		0	0	0	0	1,508	2,397	775	132	0	4,811
		0	0	0	0	1,508	3,905	4,679	4,811	4,811	4,811

Resource:	ENSMGR	ENVR SCIENTIST MGR	Class:		EOC:		LABOR				
Res Dept:	949	Overtime:			SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	47.2	47.2	47.2	47.2	47.2	47.2	47.2
Cum Total Cost:		0	0	0	2,939	0	0	0	0	0	2,939
		0	0	0	2,939	2,939	2,939	2,939	2,939	2,939	2,939

Resource:	ENSTEC	ENVR SCIENTIST TECH	Class:		EOC:		LABOR				
Res Dept:	949	Overtime:			SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	220.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	220.0	220.0	220.0	220.0	220.0	220.0	220.0
Cum Total Cost:		0	0	0	7,355	0	0	0	0	0	7,355
		0	0	0	7,355	7,355	7,355	7,355	7,355	7,355	7,355

Resource:	FIELD SUB	FIELD SUBS	Class:		EOC:		SUBCONTRACTORS				
Res Dept:	949	Overtime:			SUB						
Yr Units:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:		0.0	0.0	0.0	0.0	589,811.9	570,017.3	716,710.0	133,570.8	0.0	0.0
Yr Total Cost:		0	0	0	0	589,811.9	1,159,829.1	1,876,539.1	2,010,109.9	2,010,109.9	2,010,109.9
Cum Total Cost:		0	0	0	0	657,417	653,778	845,866	162,213	0	0
		0	0	0	0	657,417	1,311,195	2,157,060	2,319,273	2,319,273	2,319,273

Resource:	GLMNT	GEN LABOR MAINT	Class:		EOC:		LABOR				
Res Dept:	949	Overtime:			HOU						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Yr Total Cost:		0	0	0	0	84.2	209.4	246.9	252.9	252.9	252.9
Cum Total Cost:		0	0	0	0	2,573	4,091	1,325	225	0	0
		0	0	0	0	2,573	6,664	7,988	8,214	8,214	8,214

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2008

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR5
COMMENT NO D-688

Resource: HEOOPR Res Dept: 949		HEAVY EQUIP OPERATOR		Class:		EOC:		LABOR			
Overtime:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:		0	0	0	0	3,312	5,266	1,705	290	0	0
Cum Total Cost:		0	0	0	0	3,312	8,578	10,283	10,573	10,573	10,573

Resource: MVOOPR Res Dept: 949		MOTOR VEHICLE OPER		Class:		EOC:		LABOR			
Overtime:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:		0	0	0	0	3,038	4,830	1,564	266	0	0
Cum Total Cost:		0	0	0	0	3,038	7,869	9,433	9,699	9,699	9,699

Resource: PJSMGR Res Dept: 949		PROJECT SUPPORT MGR		Class:		EOC:		LABOR			
Overtime:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:		0	0	0	0	4,813	7,652	2,478	422	0	0
Cum Total Cost:		0	0	0	0	4,813	12,466	14,944	15,366	15,366	15,366

Resource: QACENG Res Dept: 949		QA ENGINEER		Class:		EOC:		LABOR			
Overtime:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:		0	0	0	0	4,838	7,693	2,491	424	0	0
Cum Total Cost:		0	0	0	0	4,838	12,531	15,022	15,446	15,446	15,446

Resource: S&HENG Res Dept: 949		SAFETY ENGINEER		Class:		EOC:		LABOR			
Overtime:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:		0	0	0	0	5,233	8,320	2,695	459	0	0
Cum Total Cost:		0	0	0	0	5,233	13,553	16,248	16,707	16,707	16,707

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2008

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR5
COMMENT NO D-688
Resource: S&HTEC
Res Dept: 949

LABOR

	SAFETY TECH		CLASS		EOC: SAL		LABOR		EOC: SAL	
	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	84.2	125.3	37.4	6.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	84.2	209.4	246.9	252.9	252.9	252.9
Yr Total Cost:	0	0	0	0	3,043	4,839	1,567	267	0	0
Cum Total Cost:	0	0	0	0	3,043	7,882	9,449	9,716	9,716	9,716

SUBCONTRACTORS

	SUBS		DES		EOC: SUB		LABOR		EOC: SUB	
	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:	0.0	0.0	0.0	0.0	13,718.9	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	13,718.9	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	28,880.1	28,880.1	28,880.1	28,880.1	28,880.1	28,880.1
Cum Total Cost:	0	0	0	0	15,291	31,730	31,730	31,730	31,730	31,730

GRAND TOTALS:

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	267.2	618.0	919.7	274.7	44.4	0.0	0.0
Cum Hours:	0.0	0.0	0.0	267.2	885.2	1,804.9	2,079.6	2,124.0	2,124.0	2,124.0
Yr Total Cost:	0	0	0	26,733	701,067	698,866	860,466	164,697	0	0
Cum Total Cost:	0	0	0	26,733	727,800	1,426,666	2,287,132	2,451,829	2,451,829	2,451,829

W. Fick

CONTROL TEAM

CAM

GNRR6

PADDYS RUN CORRIDOR RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2005-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR6
COMMENT NO F06-032, D-688

Resource: BUYCON	Class: BUYER/CONTRACTS ADMIN	EOC: LABOR
Res Dept: 949	Overetime:	SAL
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02
Cum Hours:	0.0 0.0	0.0 0.0
Yr Total Cost:	0.0 0.0	0.0 0.0
Cum Total Cost:	0.0 0.0	0.0 0.0

Resource: ENSMGR	Class: ENVR SCIENTIST MGR	EOC: LABOR
Res Dept: 949	Overetime:	SAL
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02
Cum Hours:	0.0 0.0	0.0 0.0
Yr Total Cost:	0.0 0.0	0.0 0.0
Cum Total Cost:	0.0 0.0	0.0 0.0

Resource: ENSTEC	Class: ENVR SCIENTIST TECH	EOC: LABOR
Res Dept: 949	Overetime:	SAL
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02
Cum Hours:	0.0 0.0	0.0 0.0
Yr Total Cost:	0.0 0.0	0.0 0.0
Cum Total Cost:	0.0 0.0	0.0 0.0

Resource: FIELDSUB	Class: FIELD SUBS	EOC: SUB
Res Dept: 949	Overetime:	SUB
Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02
Cum Units:	0.0 0.0	0.0 0.0
Yr Total Cost:	0.0 0.0	0.0 0.0
Cum Total Cost:	0.0 0.0	0.0 0.0

Resource: GLMNT	Class: GEN LABOR MAINT	EOC: HOU
Res Dept: 949	Overetime:	HOU
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02
Cum Hours:	0.0 0.0	0.0 0.0
Yr Total Cost:	0.0 0.0	0.0 0.0
Cum Total Cost:	0.0 0.0	0.0 0.0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2005-2009

PBS: OHFN06

WBS: 1.1.G.B

CTRL ACCT: GNRR

CHARGE NO: GNRR6

COMMENT NO F06-032, D-688

Resource: HE00PR		Class:		EOC:		LABOR	
Res Dept:	949			HOU			
HEAVY EQUIP OPERATOR							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0
MOTOR VEHICLE OPER							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: MVOOPR		Class:		EOC:		LABOR	
Res Dept:	949			HOU			
PROJECT SUPPORT MGR							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: QACENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
QA ENGINEER							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: S&HENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
SAFETY ENGINEER							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: S&HENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
HEAVY EQUIP OPERATOR							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: S&HENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
PROJECT SUPPORT MGR							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: QACENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
QA ENGINEER							
Overtime:							
Yr Hours:	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

GNRR7

OSDF/BORROW/AREA RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR7
COMMENT NO D-688

Resource: Res Dept:	BUYCON 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	ENSMGR 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	ENSRP 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	ENSTECH 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	FIELD SUB 949	Class:	EOC: SUB	SUBCONTRACTORS
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	BUYCON 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

Resource: Res Dept:	ENSMGR 949	Class:	EOC: SAL	LABOR
OverTime:				
Yr Hours:	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0
Cum Total Cost:	0	0	0	0

INCLUDES ESCALATION COSTS

Fluor Fernald, Inc.

PBS: OHFN06
 WBS: 1.1.G.B
 CTRL ACCT: GNRR
 CHARGE NO: GNRR7
 COMMENT NO D-688

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: W. FICK
 FISCAL YEAR: 2004-2009

Resource: Res Dept:	GLMINT 949	GEN LABOR MAINT		LABOR		EOC:		HOU	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource: Res Dept:	HEOOPR 949	HEAVY EQUIP OPERATOR		LABOR		EOC:		HOU	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource: Res Dept:	LABTEC 949	LAB TECH		LABOR		EOC:		SAL	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource: Res Dept:	MVOOPR 949	MOTOR VEHICLE OPER		LABOR		EOC:		HOU	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource: Res Dept:	PJMGR 949	PROJECT SUPPORT MGR		LABOR		EOC:		SAL	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource: Res Dept:	GLMINT 949	GEN LABOR MAINT		LABOR		EOC:		HOU	
		Overtime:	Class:						
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2009

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR7
COMMENT NO D-688

Resource: Res Dept:	QA ENGINEER 949	Overtime:	LABOR																		
			Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0
Yr Total Cost:	0	0	0	0	0	0	0	0	58	58	121	131	140	140	140	140	140	140	140	140	140
Cum Total Cost:	0	0	0	0	0	0	0	0	58	116	180	311	451	591	731	871	1011	1151	1291	1431	1571

Resource: Res Dept:	S&HTEC 949	Overtime:	LABOR																		
			Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0
Yr Total Cost:	0	0	0	0	0	0	0	0	63	63	131	142	151	151	151	151	151	151	151	151	151
Cum Total Cost:	0	0	0	0	0	0	0	0	63	126	194	337	488	639	790	941	1092	1243	1394	1545	1696

Resource: Res Dept:	S&HTEC 949	Overtime:	LABOR																		
			Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	23.0
Yr Total Cost:	0	0	0	0	0	0	0	0	37	37	76	83	88	88	88	88	88	88	88	88	88
Cum Total Cost:	0	0	0	0	0	0	0	0	37	74	111	194	282	370	458	546	634	722	810	898	986

Resource: Res Dept:	SERVSUB LAB 949	Overtime:	SUBS																		
			Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	867	867	867	867	867	867	867	867	867	867	867	867	867
Cum Total Cost:	0	0	0	0	0	0	0	0	867	1734	2601	3468	4335	5202	6069	6936	7803	8670	9537	10404	11271

Resource: Res Dept:	SERVSUB LAB 949	Overtime:	SUBS																		
			Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126.8	126.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126.8	253.6	500.4	747.2	994.0	1240.8	1487.6	1734.4	1981.2	2228.0	2474.8	2721.6	2968.4
Yr Total Cost:	0	0	0	0	0	0	0	0	97,379	97,379	194,758	292,137	389,516	486,895	584,274	681,653	779,032	876,411	973,790	1,071,169	1,168,548
Cum Total Cost:	0	0	0	0	0	0	0	0	97,379	194,758	292,137	389,516	486,895	584,274	681,653	779,032	876,411	973,790	1,071,169	1,168,548	1,265,927

GRAND TOTALS:

Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126.8	126.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8	246.8
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	126.8	253.6	500.4	747.2	994.0	1240.8	1487.6	1734.4	1981.2	2228.0	2474.8	2721.6	2968.4
Yr Total Cost:	0	0	0	0	0	0	0	0	97,379	97,379	194,758	292,137	389,516	486,895	584,274	681,653	779,032	876,411	973,790	1,071,169	1,168,548
Cum Total Cost:	0	0	0	0	0	0	0	0	97,379	194,758	292,137	389,516	486,895	584,274	681,653	779,032	876,411	973,790	1,071,169	1,168,548	1,265,927

CONTROL TEAM 



GNRR8

SILOS AREA RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2008-2010

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR8
COMMENT NO D-688

Resource:	BUYCON												
Res Dept:	949												
	OverTime:	Class: EOC: SAL											
		BUYER/CONTRACTS ADMIN LABOR											
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.4	31.3		
Yr Total Cost:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.4	91.8		
Cum Total Cost:		0	0	0	0	0	0	0	0	4,297	2,295		
										4,297	6,592		

Resource:	ENSMGR												
Res Dept:	949												
	OverTime:	Class: EOC: SAL											
		ENVR SCIENTIST MGR LABOR											
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5	5.3	0.0		
Yr Total Cost:		0	0	0	0	0	0	0	18.5	23.8	23.8		
Cum Total Cost:		0	0	0	0	0	0	0	1,488	475	0		
									1,488	1,963	1,963		

Resource:	ENSREP												
Res Dept:	949												
	OverTime:	Class: EOC: SAL											
		ENVR SCIENCE REP LABOR											
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	71.3	20.5	0.0		
Yr Total Cost:		0	0	0	0	0	0	0	71.3	91.8	91.8		
Cum Total Cost:		0	0	0	0	0	0	0	4,567	1,457	0		
									4,567	6,024	6,024		

Resource:	ENSTEC												
Res Dept:	949												
	OverTime:	Class: EOC: SAL											
		ENVR SCIENTIST TECH LABOR											
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.3	35.7	0.0		
Yr Total Cost:		0	0	0	0	0	0	0	124.3	160.0	160.0		
Cum Total Cost:		0	0	0	0	0	0	0	5,376	1,715	0		
									5,376	7,090	7,090		

Resource:	FIELD SUB												
Res Dept:	949												
	OverTime:	Class: EOC: SUB											
		FIELD SUBS SUBCONTRACTORS											
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	237,797.6	123,222.4		
Yr Total Cost:		0	0	0	0	0	0	0	0	237,797.6	361,020.0		
Cum Total Cost:		0	0	0	0	0	0	0	0	297,164	158,451		
										297,164	455,614		

GNRR9

PRODUCTION/WASTE PIT AREA RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006, 2007, 2009 & 2010

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR9
COMMENT NO F06-032, D-688

Resource: Res Dept:	BUYCON 949	BUYER/CONTRACTS ADMIN	Class:	EOC: SAL	LABOR
Overtime:					
Yr Hours:	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0

Resource: Res Dept:	ENSMGR 949	ENVR SCIENTIST MGR	Class:	EOC: SAL	LABOR
Overtime:					
Yr Hours:	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0

Resource: Res Dept:	ENSTEC 949	ENVR SCIENTIST TECH	Class:	EOC: SAL	LABOR
Overtime:					
Yr Hours:	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0

Resource: Res Dept:	FIELD SUB 949	FIELD SUBS	Class:	EOC: SUB	SUBCONTRACTORS
Overtime:					
Yr Units:	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0

Resource: Res Dept:	GLMNT 949	GEN LABOR MAINT	Class:	EOC: HOU	LABOR
Overtime:					
Yr Hours:	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006, 2007, 2009 & 2010

PBS: OHFN06
WBS: 1.1.G.B
CTRL ACCT: GNRR
CHARGE NO: GNRR9
COMMENT NO F06-032, D-688
Resource: MVOOPR
Res Dept: 949

MOTOR VEHICLE OPER **LABOR**

Over: EOC: HOU

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROJECT SUPPORT MGR **LABOR**

Over: EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

QA ENGINEER **LABOR**

Over: EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SAFETY ENGINEER **LABOR**

Over: EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SAFETY TECH **LABOR**

Over: EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SECTION 2

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Natural Resources Construction FY01		Date: 4/11/01		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$7,717				
Evaluator: E. Woods / F. Miller		Date: 4/11/01		WBS Number: 1.1.G.B						
CAM: JD Chioi		Date: 4/11/01		Control Account Number: GCU9						
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
NONE										
Total:				\$0					\$0	

Risk/Opportunity Identification and Analysis Form

Project: Restoration Evaluator: E. Woods / F. Miller CAM: JD Chiou		Date: 4/11/01		Date: 4/11/01		PBS Number: 06		WBS Number: 1.1.G.B.		Total Baseline Dollars (Minimum Case): \$15,393,868	
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy	
Certified/Restored Area Maintenance	Maintenance requirements exceed planned levels due to weather conditions.	Increased Maintenance Activities	Internal	\$50,000	2	30	2	\$15,000	2	Accept Risk	
SWU Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
Northern Woodlots Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
Paddy's Run Corridor Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
OSDF/Borrow Area Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
Silos Area Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
Production/Waste Pit Area Restoration	Loss of Plant material needed for restoration due to drought/disease impacting vendor's ability to supply material.	Need to find a vendor and secure a contract for replacement material. Project delay > 6 mon.	Internal	\$50,000	2	10	2	\$5,000	2	Accept Risk	
Total:				\$350,000					\$45,000		

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000
3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 49
5. WBS ELEMENT CODE 1.1.G.C	6. WBS ELEMENT TITLE AREA 1 SOIL REMEDIATION
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060
11. ELEMENT TASK DESCRIPTION <p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontractors Other Direct Costs (ODCs)</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 1 encompasses most of the eastern and northern portion of the FEMP outside of the production area. Predesign characterization and remediation were conducted and certification to final remediation levels (FRLs) has been attained for Area 1 Phase I (A1P1) and A1P2. Precertification and certification sampling and analysis are mostly complete in A1P3. Interim restoration of the majority of Area 1 is also complete. Interim restoration of the majority of Area 1 is also complete. The remaining scope of work includes the removal of buried and surface debris from A1P3 (GC132) and the completion of certification of the soil to FRLs (GC131). In addition, the scope of work includes final edits to the A1P2 certification report (GCJ12) and the seeding of portions of A1P2 around the deep excavations (GCU23).</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is specifically defined in the following control accounts:</p> <p>GC13 Area 1 Phase III Certification and Paddys Run Bank Stabilization/Debris Removal for FY01</p> <p>GCJ1 Area 1 Phase II Certification for FY01</p> <p>GCU2 Area 1 Phase II CM Support and Minor Interim Restoration at Sewage Treatment Plant Excavation for FY01</p>	

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115		4. INDEX LINE NO. 49	
5. WBS ELEMENT CODE 1.1.G.C		6. WBS ELEMENT TITLE AREA 1 SOIL REMEDIATION	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001	
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION <p>Work Specifically Excluded:</p> <ul style="list-style-type: none"> - Soil Remediation (design, excavation, restoration) and characterization (predesign, precertification and certification) for A1P1, A1P2 or A1P3 conducted prior to December 2000 - SDFP staff charging to control account GPM1 - Removal and excavation of the following uncertified areas and facilities will be performed by OSDF and included in the baseline within the OSDF control accounts: <ul style="list-style-type: none"> - Existing OSDF Equipment and Wheel Wash Facility - Existing access control facility - New Equipment Wash Facility - Access road to existing access control facility - OSDF Impacted Material haul road - Existing north entrance road within the OSDF footprint area - Temporary LCS - Phase I and II - Interim LCS - Natural Resource Restoration - Post-certification monitoring and maintenance - Area 10 (Soil Corridors) - Exclude all centralized services - Certification of the soil footprints associated with the following facilities <ul style="list-style-type: none"> -Existing access control equipment and decontamination area -Interim LCS corridor -Dissolved oxygen facility 			

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/05/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 7/01
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12. TASK IDENTIFICATION (CONTROL ACCOUNT) GC13	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE III REMEDIATION FY01
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

Area 1, Phase III is located in the northern portion of the FEMP, bounded on the north by State Route 126, on the west by Paddys Run, on the South by Area 6 and the rail yard, and on the east by Area 1, Phase I. The closure baseline covers the completion of the A1, PIII certification activities, along with the removal of buried and surface debris along Paddys Run, as well as other specific locations throughout the area.

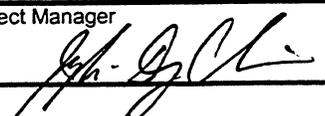
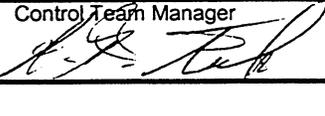
c. SCOPE OF WORK:

The entire scope of this control account encompasses the completion of work performed during FY01 from December 1, 2000. The scope of this control account is further defined in the following two charge numbers:

GC131 - Area 1, Phase III Certification FY01

GC132 - Area 1, PIIII/Paddys Run Band Stab/Debris Removal FY01.

d. WORK SPECIFICALLY EXCLUDED:

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 7/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GC13	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE III REMEDIATION FY01		

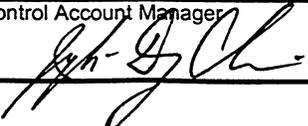
14. ELEMENT TASK DESCRIPTION

Area 1, Phase III Remediation performed prior to December 1, 2000.

The Dissolved Oxygen Building D&D and soils remediation, including certification of the footprint.

Removal and excavation of the specific list of facilities performed by the OSDF and included in the referenced closure plan narrative.

WORK SCOPE DEFINITION
(Work Package)

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 7/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GC131	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE III CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to the soil characterization program at the FEMP specific to area characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 1 Phase III. It is a summary for area-specific characterization efforts that will be conducted in areas that will require monitoring, sampling, and analytical testing. The characterization efforts are intended to provide information that will result in compliance with the Final Remediation Levels (FRLs) published in the OU5 ROD. The Area 1 Phase III physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>This scope of this document covers the characterization support for excavation control, precertification, and certification of Area 1 Phase III. Characterization work performed in Area 1 Phase III under this scope will provide sound field and analytical data that prove remedial activities were sufficient. During certification of Area 1 Phase III, radiological field surveying, physical soil sampling, and analysis will be required. After</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 2
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3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 7/01
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12. TASK IDENTIFICATION (WORK PACKAGE) GC131	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE III CERTIFICATION
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14. ELEMENT TASK DESCRIPTION

excavation is determined to be complete, the remaining soil will be tested for all area specific contaminants of concern (COCs) to demonstrate FRL attainment. The actual radiological field-survey measurements, physical soil sampling and analytical activities covered under this account include the following tasks:

Review existing data and engineering drawings

Develop and write applicable data quality objectives and projects-specific-plans, as necessary

Develop Certification Design Letters

Define and delineate Certification Units

Prep the area for field measurements which includes clearing of brush

Installation of certification fencing and signs

Physical sampling

Assess real-time data generated during excavation

Perform assessment of radiological field survey results

Perform data management functions within SDFP

Develop final reports or certification reports

Perform analysis

Data management and validation

Perform statistical evaluation of analytical data

d. WORK SPECIFICALLY EXCLUDED:

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 7/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GC131	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE III CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

Pre-design work

Excavation Control Monitoring

Waste Tracking and disposition

Waste Treatment activities

Construction or remediation

Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

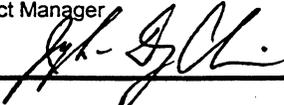
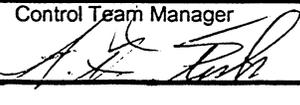
Characterization personnel covered under GPM14

Centralized services and/or equipment

All other PBS elements

All other PBS-06 control accounts

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GC132	13. TASK DESCRIPTION (ONE LINE) AREA 1 PH III/PADDYS RUN BANK STAB/DEBRIS REMOVAL FY01		
14. ELEMENT TASK DESCRIPTION a. ELEMENTS OF COST: Labor Materials Subcontracts b. TECHNICAL CONTENT: Perform remedial construction activities for Area 1, Phase III and Paddy's Run Bank Stabilization/debris removal. The project boundaries are as follows: North by FEMP Northern Property Line East by Old Access Road South by the north Production Area fence line West by Paddy's Run c. SCOPE OF WORK: Excavate, load, haul, concrete, transite, metal debris found along and within Paddy's Run and within Area 1, Phase III. Material to be placed in OMTA in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows: Erosion and sediment control during construction			
Project Manager 	Control Account Manager 	Control Team Manager 	

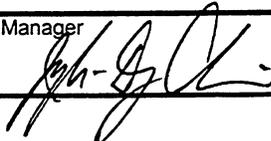
WORK SCOPE DEFINITION
(Work Package)

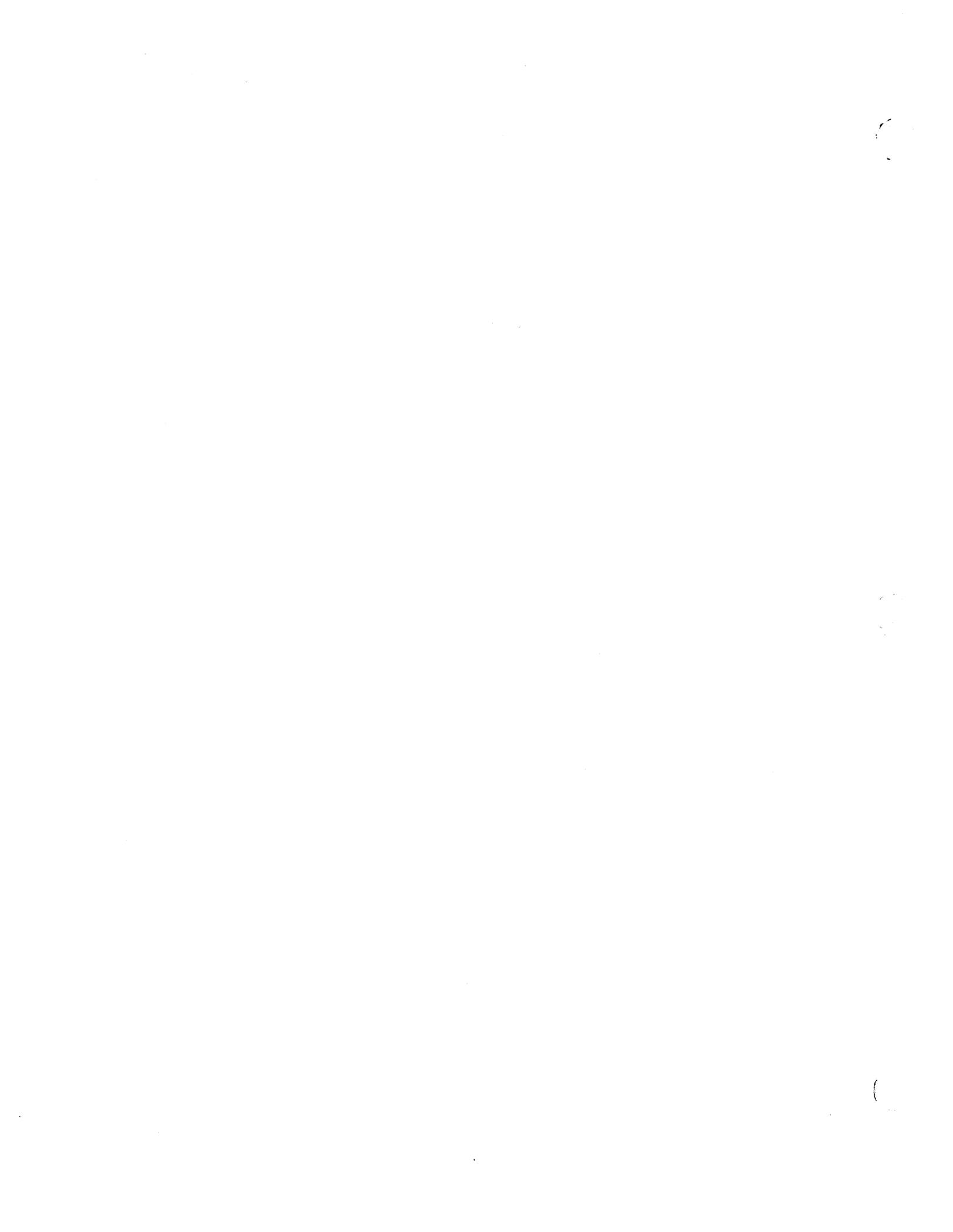
1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GC132	13. TASK DESCRIPTION (ONE LINE) AREA 1 PH III/PADDYS RUN BANK STAB/DEBRIS REMOVAL FY01		
14. ELEMENT TASK DESCRIPTION			
<p>Installation and/or relocation of fencing during construction</p> <p>Equipment, material and support facilities rented/procured for project use</p> <p>Dewatering as necessary during construction</p> <p>Dust Control within designated work area.</p> <p>Decontamination of equipment</p> <p>Matrixed and subcontracted labor directly associated with construction</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Placement in OSDF</p> <p>Seeding / Vegetation beyond interim restoration</p> <p>Road construction</p> <p>Title I/II design services</p> <p>Performing and/or managing Title III services</p> <p>Sampling and testing of waste materials during remediation</p> <p>Monitoring and maintenance of the remediated area after remediation</p> <p>Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal</p> <p>Treatment of lead containing soil</p> <p>Centralized Personnel, Radiological controls, and Safety management during</p>			

WORK SCOPE DEFINITION
(Work Package)

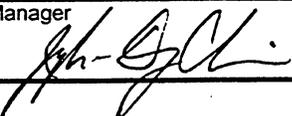
1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GC132	13. TASK DESCRIPTION (ONE LINE) AREA 1 PH III/PADDYS RUN BANK STAB/DEBRIS REMOVAL FY01		
14. ELEMENT TASK DESCRIPTION remedial construction All Excavation activities prior to December 2000 All other PBS elements All other PBS-06 control accounts			

WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCJ1	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II CHARACTERIZATION		
14. ELEMENT TASK DESCRIPTION a. ELEMENTS OF COST: Labor b. TECHNICAL CONTENT: This control account covers only the labor spent during FY01 after December 1, 2000, to complete the Area 1, Phase II Certification Report. c. SCOPE OF WORK: The scope of this control account is contained in one charge number, GCJ12. Comment resolution and completion of the Area 1, Phase II certification report. d. WORK SPECIFICALLY EXCLUDED: All Area 1, Phase II characterization performed prior to December 1, 2000.			
Project Manager 	Control Account Manager 	Control Team Manager 	



WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 2/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCJ12	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II CERTIFICATION FY01		
14. ELEMENT TASK DESCRIPTION a. ELEMENTS OF COST: Labor b. TECHNICAL CONTENT: This charge number covers only the labor spent during FY01 after December 1, 2000, to complete the Area 1, Phase II Certification Report. c. SCOPE OF WORK: Comment resolution and completion of the Area 1, Phase II certification report. d. WORK SPECIFICALLY EXCLUDED: All Area 1, Phase II characterization performed prior to December 1, 2000. All other PBS elements All other PBS-06 control accounts.			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/05/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-6327	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 3/01 - 5/01
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12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCU2	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II EXCAVATION FY01
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

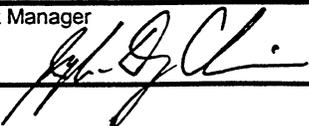
This control account covers only the completion of interim restoration, seeding of portions of the area around the deep excavation at the former Sewage Treatment Plant. This work will be performed entirely within the FY01 time frame.

c. SCOPE OF WORK:

This scope of this work is contained in the following two charge numbers/
GCU21 Area 1, Phase II CM Support FY01
GCU23 Area 1, Phase II Interim Restoration FY01

d. WORK SPECIFICALLY EXCLUDED:

All remediation work performed in Area 1, Phase II prior to December 1, 2000
Natural Resources Restoration in Area 1.
The Dissolved Oxygen Building D&D and soils remediation, including certification

Project Manager 	Control Account Manager 	Control Team Manager 
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**WORK SCOPE DEFINITION
(Control Account)**

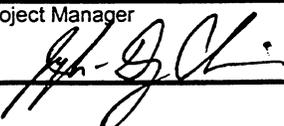
1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-6327	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 5/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCU2	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II EXCAVATION FY01		

14. ELEMENT TASK DESCRIPTION

of the footprint.

Removal and excavation of the specific list of facilities performed by the OSDF and included in the referenced closure plan narrative.

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU21	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II CM SUPPORT FY01		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Provide labor, materials, and subcontract support for the management and oversight of all Area 1 Phase II maintenance and interim restoration.</p> <p>The project boundaries are as follows:</p> <p>North by the south boundary of the sediment basin in Area 1 Phase I (This boundary has shifted due to the North access road and the cell construction).</p> <p>East by FEMP Fenced Property Line</p> <p>South by Willey Road</p> <p>West by Main Access Road</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Provide management and oversight of the Area 1 Phase II work and closeout or contract files. Additional related activities and services within this scope of work are as follows:</p> <p>Purchase of miscellaneous materials necessary to maintain Area 1, Phase II.</p> <p>Provide for FDF expenses associated with Area 1, Phase II.</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU21	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II CM SUPPORT FY01		

14. ELEMENT TASK DESCRIPTION

Specific work to be addressed includes:

Oversight for any repairs necessary within Area 1, Phase II.

Oversight for the interim restoration within Area 1, Phase II.

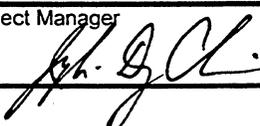
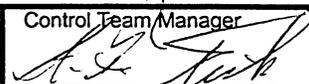
d. WORK SPECIFICALLY EXCLUDED:

All Oversight activities associated with Area 1, Phase II prior to December 2000.

Title I/II design services

Performing and/or managing Title III services

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU23	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II INTERIM RESTORATION FY01		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Provide remedial construction activities for Area 1, Phase II interim restoration.</p> <p>The project boundaries are as follows:</p> <p>North by the south boundary of the sediment basin in Area 1 Phase I (This boundary has shifted due to the North access road and the cell construction).</p> <p>East by FEMP Fenced Property Line</p> <p>South by Willey Road</p> <p>West by Main Access Road</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Provide maintenance and interim restoration of Area 1, Phase II in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows:</p> <p>Erosion and sediment control</p> <p>Equipment, material and support facilities rented/procured for project use</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU23	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II INTERIM RESTORATION FY01		

14. ELEMENT TASK DESCRIPTION

Dewatering as necessary

Dust Control within designated work area.

Decontamination of equipment

Matrixed and subcontracted labor directly associated with construction

Specific work to be addressed includes:

Seeding of specified areas within Area 1, Phase II.

d. WORK SPECIFICALLY EXCLUDED:

Placement in OSDF

Seeding / Vegetation beyond interim restoration

Road construction

Title I/II design services

Performing and/or managing Title III services

Sampling and testing of waste materials during remediation

Monitoring and maintenance of the remediated area after remediation

Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal

Treatment of lead containing soil

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.C	4. WBS ELEMENT TITLE/NAME AREA 1 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCU23	13. TASK DESCRIPTION (ONE LINE) AREA 1 PHASE II INTERIM RESTORATION FY01		
14. ELEMENT TASK DESCRIPTION <p>Centralized Personnel, Radiological controls, and Safety management during remedial construction</p> <p>All Excavation activities prior to December 2000</p> <p>The Dissolved Oxygen Building D&D and soils remediation, including certification of the footprint.</p> <p>Removal and excavation of the specific list of facilities performed by the OSDF and included in the referenced closure plan narrative</p> <p>All other PBS elements</p> <p>All other PBS-06 control accounts.</p>			

SECTION 3

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.C.	5. WBS ELEMENT TITLE: AREA 1 SOILS REMEDIATION	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: GC13/GCJ1/GCU2	

SECTION 3: GC13/GCJ1/GCU2 – AREA 1 SOILS REMEDIATION

1.0 NARRATIVE

1.1 OVERVIEW

This Closure Plan defines the scope of work required to plan, develop, execute, manage and administer the Area 1 remedial activities under PBS-06 (WBS 1.1.G.C control account GC13, GCU2, and GCJ1). Area 1 encompasses most of the eastern and northern portion of the FEMP outside of the production area. Predesign characterization and remediation were conducted and certification to final remediation levels (FRLs) has been attained for Area 1 Phase I (A1P1) and A1P2. Precertification and certification sampling and analysis are mostly complete in A1P3. Interim restoration of the majority of Area 1 is also complete. Interim restoration of the majority of Area 1 is also complete. The remaining scope of work includes the removal of buried and surface debris from A1P3 (GC132) and the completion of certification of the soil to FRLs (GC131). In addition, the scope of work includes final edits to the A1P2 certification report (GCJ12) and the seeding of portions of A1P2 around the deep excavations (GCU23).

1.2 ASSUMPTIONS/EXCLUSIONS

1.2.1 Assumptions

- EPA/OEPA review of a PSP is performed in two months.
- EPA/OEPA review of CDL/Cert Report is performed in two months.
- EPA review/comment on significant PSP Variance/Field Change Notices (V/FCNs) 7 days for precertification PSPs and 15 days for certification PSPs.
- A dedicated sampling crew will be available to collect soil samples.
- Gamma spectroscopy is the assumed analytical method for the primary radionuclides analysis.
- Level D data packages are submitted by the analytical laboratories and 10 percent of the packages undergo verification and validation.

- Statistical tests conducted on the analytical results will follow the pass/fail guidance in the SEP.
- DOE maintains full baseline funding levels.
- Sampling, laboratory, and data management personnel to support Certification.

1.2.2 Exclusions

- All other PBS elements.
- All other PBS-06 control accounts.
- Final restoration activities.
- The Dissolved Oxygen Building D&D and soil remediation, including certification of the soil footprint (not included in the scope of the Fluor Fernald closure contract).
- Soil remediation and characterization work for A1P1, A1P2 and A1P3 conducted prior to FY2001.
- Removal and excavation of the following uncertified areas and facilities will be performed by OSDF and included in the baseline within the OSDF control accounts:
 - Existing OSDF Equipment and Wheel Wash Facility
 - Existing access control facility
 - New Equipment Wash Facility
 - Access road to existing access control facility
 - OSDF Impacted Material haul road
 - Existing north entrance road within the OSDF footprint area
 - Temporary LCS - Phase I and II
 - Interim LCS.

1.2.3 Government-Furnished Equipment/Services

None.

1.2.4 Applicable Requirements

- OU5 ROD
- IRDP and CR reviewed and approved by EPA/OEPA
- Informal agreement with EPA for review time of V/FCNs
- Debris removal and segregation based on agreement in Certification Design Letter

1.2.5 Applicable Technical Guidance

- Sitewide Excavation Plan (SEP) for precertification/certification
- Real time in situ gamma scanning parameters established in the Real Time Users Guide
- Sampling and analytical parameters established in the SCQ.

1.2.6 Disposal, Treatment, Containers, Utilities

Disposal of debris from A1P3 will be dispositioned at Soil Pile 1. Soil segregated from debris will be re-graded into existing landscape.

1.3 DRIVERS

- ~~Timeframe of the legal access agreements to perform work.~~
- Agency approval of the IRDP, V/FCN and Certification Report within the allotted review time.
- Normal weather conditions to implement the field schedule (no excessive rain or snow due to moisture requirements for real time gamma measurements).
- Availability of sampling team and lab turnaround to complete the certification.

1.3.1 External Events that Impact the Schedule

- Congressional funding of DOE EM Projects.
- EPA/OEPA review cycles.
- DOE review cycles.
- Agency approval of the precertification IRDP, V/FCN and certification report.
- Normal weather conditions to implement the field schedule (no excessive rain or snow due to moisture requirements for real-time gamma measurements).
- Availability of sampling team and lab turnaround.

1.4 PROJECT PHYSICAL DESCRIPTION

Area 1 encompasses the northern and eastern portion of the FEMP. The northern leg of Area 1 (A1PI and A1PIII) is bounded to the north by State Route 126, to the west by Paddys Run, and to the south by Area 6 and the railyard. The eastern leg (A1PI and

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A1P11) is bounded to the west by off-property farmlands, to the south by Willey Road, and to the west by Area 5/6 and the north and south access roads. In the northern leg, two habitats dominate the landscape: pine and deciduous woodlots. Features contained within Area 1 are the OSDF footprint to the north and clay borrow area to the south. The remediated Sewage Treatment Plant (STP) footprint and associated deep excavations are the major physical features in the central portion. The purpose of the work is to remove man-made, impacted materials and certify that the soil in A1P11 meets final remediation levels. The seeding in A1P11 will minimize any erosion within the remediated portions and complete a contract requirement. The end condition for Area 1 will be certified soil to final remediation levels.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

1.5.1 GCU23 – Area 1 Phase II Interim Restoration

The exact amount of acres to be re-seeded is unknown until Spring 2001 since the excavated footprints were seeded in Fall 2000.

Project staff will complete the remaining task activities and deliverables primarily from the management, characterization, surveying, and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account GCU23. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for GCU23 will be closed when the seeding is complete.

1) Task #1 - Re-seeding Portion of the Remediated STP Footprint

1.1) Plan/Scope

The A1P2 remediated footprints have been seeded. Some areas need another re-seeding effort to help erosion control measures. The specific activity and deliverable is:

- Re-seed with a seed-driller.

All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will re-seed the area. Subcontract costs will be charged to GCU23.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to modify the construction contract, if needed. Environmental, Safety, Health and Quality Integration, Quality Control

Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number GC132.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 1 summarizes the quantities and/or deliverables anticipated for Task 1. This quantity is based on visual observation

TABLE 1
Quantities for Task 1: Re-seeding portion of the remediated STP footprint

ITEM	QUANTITY
Acres to be re-seeded	2

1.5.2 GCJ12 – Area 1 Phase II Certification

Project staff will complete the remaining task activity and deliverable from the management, characterization, surveying, and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account GCJ12. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for GCJ12 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Certification

1.1) Plan/Scope

All of the A1PII certification scope is complete as of December 2000 except for final approval of the certification report. The remaining task is any editing and final reproduction of the certification report based on Agency comments.

- Incorporate comment responses into each EPA/OEPA draft CR and deliver final CR to project personnel, functional-area personnel, DOE, EPA and OEPA.

- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The CR and RTCs will be delivered to DOE, EPA/OEPA and the project. All documents and records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Project Controls will provide cost and schedule support. Personnel from these organizations are the only individuals who will use charge number GCJ12.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, characterization, survey will complete work, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Certification activities already began with the preparation of the CDL/PSP and previous field and analytical work. Once the CR is approved by EPA/OEPA, the final CR will be released and the area will be certified as fully remediated.

1.2) Quantification

Table 2 summarizes the quantities and/or deliverables anticipated for Task 1.

TABLE 2
 Quantities for Task 1: A1P2 Certification

ITEM	QUANTITY
Response-to-Comments Packages for EPA/OEPA	1
Final Certification Reports	1

1.5.3 GC131 – Area 1 Phase III Certification

Since A1P111 is a perimeter area, no excavation was anticipated [Approach E from the Sitewide Excavation Plan (SEP)]. As a result, certification design and sampling was

initiated in A1PIII Part 1 with no predesign sampling. Per the EPA-approved CDL, supplemental real time scanning was conducted in accessible, less-vegetated portions of A1PIII Part 1. Based on visual observation of partially buried debris, geophysical surveying (electromagnetic, ground penetrating radar and magnetometer surveying) was conducted in the NE and SW corners of A1PIII Part 1.

Project staff will complete the remaining task activities and deliverables primarily from the management, characterization, surveying, and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account GC131. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for GC131 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Certification

1.1) Plan/Scope

Certification activities began with the preparation of the Certification Design Letter (CDL) and Certification PSP. Most of the certification sampling, analysis and report generation was completed prior to December 2000. Certification is complete when the Certification Report is approved by the EPA and OEPA. Specific activities and deliverables include:

- Perform walk downs of field area to assess site conditions for safety and health hazards and equipment access.
- Conduct work-scope briefings with field crews.
- Collect real time, gamma scan field measurements accompanied with surveying.
- Mobilize the sampling crew to obtain the soil samples and collect surface and at-depth samples
- Develop variance/field change notices (V/FCN).
- Deliver the samples to the on-site laboratory and create the sample analysis log for on-site and off-site analysis, as needed.
- Perform the required analytical work and generate laboratory reports to QA/QC Level D.
- Perform 100% data validation (10% QA/QC level D, 90% QA/QC level B) of the laboratory reports.
- Enter data into the SED and perform queries.
- Reduce and interpret data (statistical evaluations) to develop final CR tables.

- Develop tables, maps and text for CRs and deliver CRs to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CR.
- Incorporate comment responses into each DOE draft CR and deliver EPA/OEPA draft CR to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CR.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CR and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CR and deliver final CR to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The V/FCN, CR and RTCs will be delivered to DOE, EPA/OEPA and the project. All documents and records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Environmental Monitoring and Analytical Services will complete most of the work under Task 1. Environmental Monitoring will be used to complete soil borings, collect soil samples and deliver the samples to the on-site laboratory. Analytical Laboratory Services will log samples into the system, complete analytical measurements, issue data packages and ship any samples requiring analysis for COCs to off-site labs. Analytical measurements will be performed and Level D data packages will be delivered to the project. Project Controls will provide cost and schedule support. Personnel from these organizations are the only individuals who will use charge number GC131.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, and the statistical reduction of data to evaluate the certification criteria for pass/fail. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, characterization, survey will complete work, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Certification activities already began with the preparation of the CDL/PSP and previous field and analytical work. Additional real time scanning and sample collection will commence after debris removal is complete and the V/FCN is approved. Samples will be sent to the appropriate laboratory for analysis and Level D data packages will be submitted to the project. One hundred percent of the data packages will undergo verification and data validation, and if problems are found additional packages will be selected for review. The data for each CU will be evaluated with statistical tests identified in the Sitewide Excavation Plan (DOE, June 1998) and a pass/fail decision for each CU will be based on these tests. CUs that fail certification or background levels will be resampled, and possibly subjected to additional excavation, until they pass the certification criteria. The draft CR will be prepared and submitted to EPA/OEPA after all CUs have passed. Once the CR is approved by EPA/OEPA, the final CR will be released and the area will be certified as fully remediated.

1.2) Quantification

Table 3 summarizes the quantities and/or deliverables anticipated for Task 1. The SEP dictates that there are 12 sample locations per CU plus one duplicate. Two additional excavation samples are added per the V/FCN. These criteria result in an estimate of 13 certification samples. Samples will be analyzed for the primary radiological COCs. The number of laboratory reports that will be generated is based on project history of one lab report per 12 samples (CU) and, per the SEP, 10 percent of these will be validated to Level D (90% to Level B).

TABLE 3
 Quantities for Task 1: A1P3 Certification

ITEM	QUANTITY
Variance/Field Change Notice (V/FCN)	1
HPGe measurements	20
Soil Samples	45 13
Uranium, Thorium and Radium Analyses	45 13
Lab Reports for Radiological COCs	1
Radiological Lab Reports to Verify and Validate	1
Draft Certification Reports for DOE	1
Draft Certification Reports EPA/OEPA	1
Response-to-Comments Packages for EPA/OEPA	1
Final Certification Reports	1

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1.5.4 GC132 – Area 1 Phase III Paddys Run Stabilization/Debris Removal

The activities and deliverables for this charge number include stabilization and debris removal.

SDFP personnel began the design work (November 2000) and expect approval in February 2001. SDFP construction personnel have initiated the permit and traveler package development and arranged for the heavy equipment. Cultural resource surveying of the potential haul routes were initiated in December 2000 and will conclude prior to the start of debris removal in February.

SDFP will manage the debris removal subcontractor. Surface and at-depth debris removal will be conducted using the excavator to segregate the soil and debris at the anomaly locations identified during geophysical surveying and previous walkdowns of the area. The debris will be hauled to SP-1 and the segregated soil will be regraded into the existing landscape.

The activities and deliverables discussed below will be completed primarily by project staff from the management, construction, surveying, engineering, waste disposition and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use the charge account GC132. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for GC132 will be closed out when construction personnel complete the interim-restoration grading.

1) Task #1 - Stabilization and Debris Removal

1.1) Plan/Scope

- Design of the remediation work including the development of drawings and an integrated remedial design package (IRDP).
- Attainment of the necessary permits (work, radiological, penetration, etc), training, equipment, and tools to complete the work. The main equipment to be used is a chainsaw, excavator (CAT 325), backhoe (580 CASE), bulldozer (D5) and articulating truck (25 ton).
- Identify/layout all existing utilities (namely wells in A1P3), cultural resource sites, and habitat/vegetation to be protected.
- Establish work limits (with fencing and posting), excavation limits, and ingress and egress controls. The debris removal areas are identified in the attached figures. Clear the area of the unnecessary vegetation and install erosion controls.
- Conduct surface and at depth debris removal and soil segregation in portions of the A1P3 footprint and within the streambank of Paddys Run.

- Conduct bank stabilization to the section of the Paddys Run bank that is disturbed during debris removal. This includes using riprap and natural streambed stone from the west streambed, seeding and planting willow cuttings in coir matting.
- Regrade the segregated soil into the existing landscape to drain to Paddys Run.

The construction travelers, work permits and submittal log will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will conduct surface and at depth debris removal and soil segregation in portions of the A1Pill footprint and within the streambank of Paddys Run. The subcontractor will conduct bank stabilization including using riprap and natural streambed stone from the west streambed, seeding and planting willow cuttings in coir matting. Subcontract costs will be charged to GC132.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to modify the construction contract, if needed. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number GC132.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in modifying the construction subcontract, if needed. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 4 summarizes the quantities and/or deliverables anticipated for Task 1. Based on visual observation of partially buried debris and geophysical surveying conducted in the NE and SW corners of A1Pill Part 1, the following debris and soil is expected:

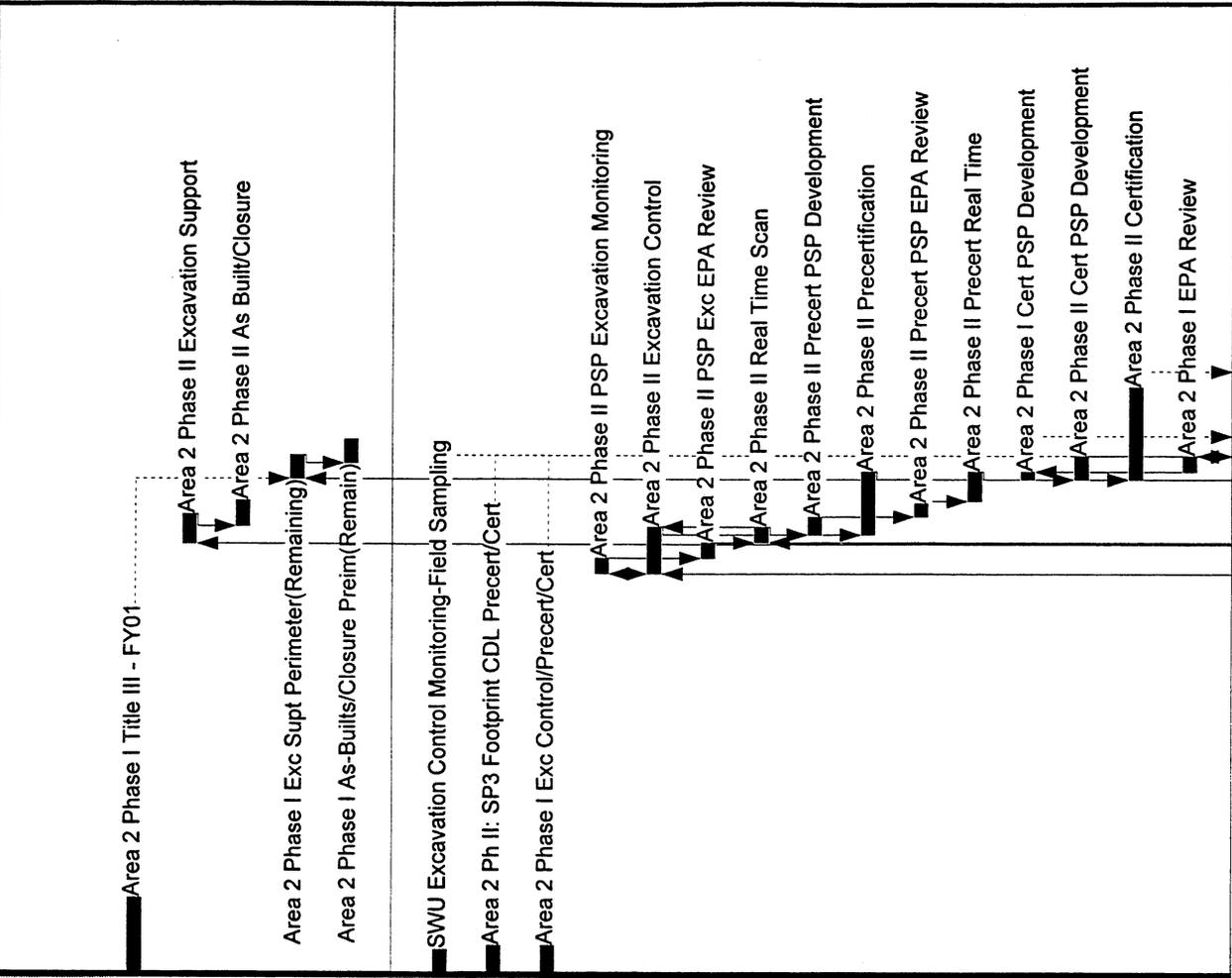
- 900 yd3 of surface and at-depth debris from SW fill area
- 50 yd3 of surface debris from Paddys Run streambed
- 50 yd3 of surface debris from NW fill area and miscellaneous debris piles located throughout footprint. All debris is expected to meet the OSDF WAC or can be modified to be suitable. The permits and traveler are based on previous submittals by construction contractors. The quantities for fencing, signage, trailers, containers, water coolers, and portolets are based on previous construction work carried out at the site.

TABLE 4
 Quantities for Task 1: Stabilization and Debris Removal

ITEM	QUANTITY
Radiation Work Permit	1
Penetration Permit	1
Traveler Package	1
Debris, cubic yards	1000
Silt Fence, linear feet	200
Radiological or Construction Signs	3
Water Coolers	1
Portolets	1

SECTION 3

2.0 SCHEDULE



Start Date	Finish Date	Run Date	Early Bar	Progress Bar	Critical Activity
01DEC00	27DEC09	01DEC00	█	█	█
01DEC00	10SEP01	16:06	█	█	█

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur
GG21110100	Area 2 Phase I Title III - FY01	01DEC00	27SEP01	186
GG21110140	Area 2 Phase II Excavation Support	18JUL05	15NOV05	77
GG21110150	Area 2 Phase II As Builts/Closure	28SEP05	05JAN06	59
GG21110250	Area 2 Phase I Exc Supt Perimeter(Remaining)	03APR06	29JUN06	56
GG21110260	Area 2 Phase I As-Builts/Closure Prelim(Remain)	01JUN06	31AUG06	58
G2112 AREA 2, EXCAVATION CONTROL / CERTIFICATION				
GG21120100	SWU Excavation Control Monitoring-Field Sampling	01DEC00	08MAR01	59
GG21120230	Area 2 Ph II: SP3 Footprint CDL Precent/Cert	01DEC00	23MAR01	69
GG21120190	Area 2 Phase I Exc Control/Precent/Cert	01DEC00	29MAR01	73
GG21120200	Area 2 Phase II PSP Excavation Monitoring	31MAR05	31MAY05	39
GG21120160	Area 2 Phase II Excavation Control	31MAR05	30SEP05	116
GG21120210	Area 2 Phase II PSP Exc EPA Review	01JUN05	30JUL05	60
GG21120220	Area 2 Phase II Real Time Scan	01AUG05	30SEP05	40
GG21120240	Area 2 Phase II Precert PSP Development	01SEP05	02NOV05	40
GG21120170	Area 2 Phase II Precertification	01SEP05	02MAY06	148
GG21120250	Area 2 Phase II Precert PSP EPA Review	03NOV05	01JAN06	60
GG21120260	Area 2 Phase II Precert Real Time	03JAN06	02MAY06	76
GG21120310	Area 2 Phase I Cert PSP Development	03APR06	03MAY06	20
GG21120270	Area 2 Phase II Cert PSP Development	03APR06	29JUN06	56
GG21120180	Area 2 Phase II Certification	03APR06	30MAR07	223
GG21120320	Area 2 Phase I EPA Review	04MAY06	02JUL06	60

Sheet 1 of 3

SOILS PROJECT

1.1.G.C AREA 2 SOIL REMEDIATION

01DEC00 BLCF - GG01

27DEC09

01DEC00

10SEP01 16:06

FLUOR FERNALD

© Primavera Systems, Inc.

SECTION 3

3.0 MANPOWER PLANS

SECTION 3

4.0 ESTIMATE

GC131

AREA 1 PHASE III CERTIFICATION FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. OBRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GC13
CHARGE NO: GC131
COMMENT NO:

	Sep 01		Sep 02		Sep 03		Sep 04		Sep 05		Sep 06		Sep 07		Sep 08		Sep 09		Sep 10	
	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
	88.4	88.4	0	3,426	0.0	88.4	0	3,426	0.0	88.4	0	3,426	0.0	88.4	0	3,426	0.0	88.4	0	3,426
LAB TECH																				
LABOR																				
Yr Hours:	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426
Cum Hours:	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426	88.4	88.4	0	3,426
Yr Total Cost:	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426
Cum Total Cost:	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426	2,457	2,457	0	3,426

Resource: LABTEC LAB TECH
Res Dept: 949 Overtime: Class: EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
	88.4	88.4	0	2,457	0.0	88.4	0	2,457	0.0	88.4	0	2,457	0.0	88.4	0	2,457	0.0	88.4	0	2,457
Yr Hours:	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457
Cum Hours:	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457	88.4	88.4	0	2,457
Yr Total Cost:	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457
Cum Total Cost:	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457	2,457	2,457	0	2,457

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
	846.5	846.5	0	31,153	0.0	846.5	0	31,153	0.0	846.5	0	31,153	0.0	846.5	0	31,153	0.0	846.5	0	31,153
Yr Hours:	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153
Cum Hours:	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153	846.5	846.5	0	31,153
Yr Total Cost:	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153
Cum Total Cost:	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153	31,153	31,153	0	31,153

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CAM CONTROL TEAM

GC132

AREA 1 PHASE III/PADDYS RUN BANK STAB/DE

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GC13
CHARGE NO: GC132
COMMENT NO:

Resource: CHMOPR	EOC:													LABOR
Res Dept: 949	Class:													HOU
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10			Sep 10	
	412.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Cum Hours:	412.5	412.5	412.5	412.5	412.5	412.5	412.5	412.5	412.5	412.5			412.5	
Yr Total Cost:	12,870	0	0	0	0	0	0	0	0	0			0	
Cum Total Cost:	12,870	12,870	12,870	12,870	12,870	12,870	12,870	12,870	12,870	12,870			12,870	

Resource: CNSCOD	EOC:													LABOR
Res Dept: 949	Class:													SAL
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10			Sep 10	
	95.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Cum Hours:	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0			95.0	
Yr Total Cost:	3,016	0	0	0	0	0	0	0	0	0			0	
Cum Total Cost:	3,016	3,016	3,016	3,016	3,016	3,016	3,016	3,016	3,016	3,016			3,016	

Resource: CNSENG	EOC:													LABOR
Res Dept: 949	Class:													SAL
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10			Sep 10	
	154.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Cum Hours:	154.0	154.0	154.0	154.0	154.0	154.0	154.0	154.0	154.0	154.0			154.0	
Yr Total Cost:	8,394	0	0	0	0	0	0	0	0	0			0	
Cum Total Cost:	8,394	8,394	8,394	8,394	8,394	8,394	8,394	8,394	8,394	8,394			8,394	

Resource: DRFCAD	EOC:													LABOR
Res Dept: 949	Class:													SAL
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10			Sep 10	
	83.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Cum Hours:	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0	83.0			83.0	
Yr Total Cost:	2,588	0	0	0	0	0	0	0	0	0			0	
Cum Total Cost:	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588	2,588			2,588	

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G-C
CTRL ACCT: GC13
CHARGE NO: GC132
COMMENT NO:

Resource:	ENSREP	ENVIR SCIENCE REP	EOC:		LABOR						
			Overtime:	SAL	Overtime:	SAL					
Res Dept:	949		Class:		Class:						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		31.0 31.0	0.0 31.0								
Yr Total Cost:		1,300	0	0	0	0	0	0	0	0	0
Cum Total Cost:		1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300

Resource:	MAT300	EOC:		MATERIAL							
		Overtime:	MAT	Overtime:	MAT						
Res Dept:	949	Class:		Class:							
Yr Units:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:		3,367.0 3,367.0	0.0 3,367.0								
Yr Total Cost:		3,367	0	0	0	0	0	0	0	0	0
Cum Total Cost:		3,367	3,367	3,367	3,367	3,367	3,367	3,367	3,367	3,367	3,367

Resource:	PJCSC	EOC:		LABOR							
		Overtime:	SAL	Overtime:	SAL						
Res Dept:	949	Class:		Class:							
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		4.0 4.0	0.0 4.0								
Yr Total Cost:		213	0	0	0	0	0	0	0	0	0
Cum Total Cost:		213	213	213	213	213	213	213	213	213	213

Resource:	RADTEC	EOC:		LABOR							
		Overtime:	SAL	Overtime:	SAL						
Res Dept:	949	Class:		Class:							
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		73.0 73.0	0.0 73.0								
Yr Total Cost:		2,488	0	0	0	0	0	0	0	0	0
Cum Total Cost:		2,488	2,488	2,488	2,488	2,488	2,488	2,488	2,488	2,488	2,488

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GC13
CHARGE NO: GC132
COMMENT NO:

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

Resource:	WSTENG	WASTE ENGINEER	Class:	EOC:		LABOR					
				OverTime:	SAL						
Res Dept:	949										
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		331.5 331.5	0.0 331.5								
Yr Total Cost:		16,916	0	0	0	0	0	0	0	0	0
Cum Total Cost:		16,916	16,916	16,916	16,916	16,916	16,916	16,916	16,916	16,916	16,916

GRAND TOTALS:

Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		1,307.0 1,307.0	0.0 1,307.0								
Yr Total Cost:		165,180	0	0	0	0	0	0	0	0	0
Cum Total Cost:		165,180	165,180	165,180	165,180	165,180	165,180	165,180	165,180	165,180	165,180

CAM



CONTROL TEAM



GCJ12

AREA 1 PHASE II CERTIFICATION FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GCJ1
CHARGE NO: GCJ12
COMMENT NO:

Resource: DRFCAD DRAFTER/CAD OPERATOR EOC: LABOR
Res Dept: Overtime: FY01 Class: SAL

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	44.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Yr Total Cost:	1,382	0	0	0	0	0	0	0	0	0
Cum Total Cost:	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382	1,382

Resource: ENSREP ENVIR SCIENCE REP EOC: LABOR
Res Dept: Overtime: FY01 Class: SAL

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	119.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9	119.9
Yr Total Cost:	5,031	0	0	0	0	0	0	0	0	0
Cum Total Cost:	5,031	5,031	5,031	5,031	5,031	5,031	5,031	5,031	5,031	5,031

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	164.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	164.2	164.2	164.2	164.2	164.2	164.2	164.2	164.2	164.2	164.2
Yr Total Cost:	6,413	0	0	0	0	0	0	0	0	0
Cum Total Cost:	6,413	6,413	6,413	6,413	6,413	6,413	6,413	6,413	6,413	6,413

CAM

CONTROL TEAM

GCU21

AREA 1 PHASE II CM SUPPORT FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GCU2
CHARGE NO: GCU21
COMMENT NO:

Resource:	Res Dept:	CNSENG	CONSTRUCTION ENG		EOC:		LABOR											
			Overtime:	Class:	SAL	SAL	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
		949																
Yr Hours:			120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
Yr Total Cost:			6,540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540	6,540

Resource:	Res Dept:	MAT300	MATERIAL OBJCLASS300		EOC:		MATERIAL											
			Overtime:	Class:	MAT	MAT	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
		949																
Yr Units:			186.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:			186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0	186.0
Yr Total Cost:			186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186

Resource:	Res Dept:	RADTEC	RAD TECH		EOC:		LABOR											
			Overtime:	Class:	SAL	SAL	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
		949																
Yr Hours:			49.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8	49.8
Yr Total Cost:			1,697	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697	1,697

GRAND TOTALS:

Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
169.8	169.8	8,423	8,423	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8
169.8	169.8	8,423	8,423	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8	169.8
8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423	8,423

[Handwritten Signature]

CONTROL TEAM

CAM

GCU23

AREA 1 PHASE II STP EXCAVATION FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.C
CTRL ACCT: GCU2
CHARGE NO: GCU23
COMMENT NO:

Resource:	WISE Res Dept: 949	WISE CONSTRUCTION		Class:		EOC:		SUBCONTRACTORS			
		Overtime:				SUB					
Yr Units:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:		7,450.0	7,450.0	7,450.0	7,450.0	7,450.0	7,450.0	7,450.0	7,450.0	7,450.0	7,450.0
Yr Total Cost:		7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450
Cum Total Cost:		7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450

GRAND TOTALS:

Yr Total Cost:		7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450
Cum Total Cost:		7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450	7,450

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CAM

CONTROL TEAM

SECTION 3

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Area 1 Phase III Remediation FY01		PBS Number: 06		Total Baseline Dollars (Minimum Case):		\$196,332				
Evaluator: M. Rolles / F. Miller		WBS Number: 1.1.G.C								
CAM: JD Chiou		Control Account Number: GC13								
Date: 4/11/01		Date: 4/11/01								
Risk and/or Opportunity		Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
NONE										
					Total: \$0				Total: \$0	

Risk/Opportunity Identification and Analysis Form

Project: Area 1 Phase II Characterization FY01		PBS Number: 06		Total Baseline Dollars (Minimum Case):		\$6,413				
Evaluator: M. Rolles / F. Miller		Date: 4/11/01		WBS Number: 1.1.G.C						
CAM: JD Chiou		Date: 4/11/01		Control Account Number: GCJ1						
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
NONE										
					\$0				\$0	
					Total:				Total:	\$0

Risk/Opportunity Identification and Analysis Form

Project: Area 1 Phase II Excavation FY01		PBS Number: 06		Total Baseline Dollars (Minimum Case):		\$15,873				
Evaluator: M. Rolfe / F. Miller		WBS Number: 1.1.G.C								
CAM: JD Chiou		Control Account Number: GCU2								
Date: 4/11/01										
Date: 4/11/01										
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
NONE										
Total:				\$0				Total:	\$0	

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

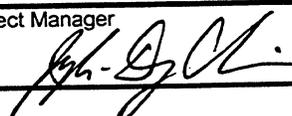
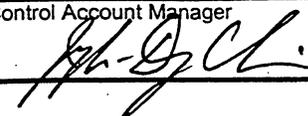
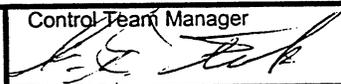
U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000
3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 50
5. WBS ELEMENT CODE 1.1.G.D	6. WBS ELEMENT TITLE AREA 2 SOIL REMEDIATION
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060
11. ELEMENT TASK DESCRIPTION <p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The remediation area encompasses the perimeter of the southern waste units (former locations of the inactive flyash pile, southfield, active flyash pile) within Area 2 Phase I, including the SWU trailer complex area and equipment wheel wash. The remediation area also includes Area 2 Phase II located east of Paddys Run.</p> <p>Please refer to the Remediation Area 2 Closure Plan Narrative for further information.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is specifically defined in Control Account G211 (Area 2 Soils Remediation). Key elements included in this control account are:</p> <ul style="list-style-type: none"> - Predesign characterization - Title I/II engineering design - Title III engineering design - Site preparation/excavation/interim restoration - Excavation control/certification - Off-site waste disposition <p>Work specifically excluded from this account are as follows:</p>	

U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115			4. INDEX LINE NO. 50
5. WBS ELEMENT CODE 1.1.G.D		6. WBS ELEMENT TITLE AREA 2 SOIL REMEDIATION	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00			8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION <ul style="list-style-type: none"> - Staff Labor charged to Control Account GPM1 - Area 2 remediation work completed prior to December 2000 - Scope of work as defined in other Remediation Area Control Accounts - Post-remediation monitoring and maintenance - Post-Closure documentation - Natural Resources restoration - Aquifer Restoration well installation, operation, monitoring, removal and utilities required to operated well systems - Area 10 (Soil Corridor) - Excludes all centralized services 			

**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G211	13. TASK DESCRIPTION (ONE LINE) AREA 2 SOILS REMEDIATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This control account provides for the performance of Title III engineering services during the remediation excavation and removal of at- and below-grade impacted material from Remediation Area 2. Title III engineering services begins after the plans and specifications are certified for construction (CFC). The remediation area for excavation encompasses the perimeter of the southern waste units (former locations of the inactive flyash pile, southfield, and active flyash pile) within Area 2 Phase I. The remediation area also includes Area 2 Phase II located east of Paddys Run and south of the Pilot Plant Drainage Ditch.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is defined in the following charge numbers:</p> <p>G2111 - Area 2 Title III G2112 - Area 2 Excavation Control/Certification G2113 - Area 2 Excavation/interim restoration G2114 - Area 2 Title I/II G2115 - Area 2 Predesign</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G211	13. TASK DESCRIPTION (ONE LINE) AREA 2 SOILS REMEDIATION		

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charged to Control Account GPM1

Area 2 remediation work completed prior to December 2000

Scope of work as defined in other Remediation Area Control Accounts.

Post-remediation monitoring and maintenance

Post-closure documentation

Natural Resources restoration

Aquifer Restoration well installation, operation, monitoring, removal and utilities required to operate well systems

Area 10 (Soil Corridor)

Centralized services

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07
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12. TASK IDENTIFICATION (WORK PACKAGE) G2111	13. TASK DESCRIPTION (ONE LINE) AREA 2 TITLE III
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Subcontracts

b. TECHNICAL CONTENT:

This charge number will provide the performance of Title III engineering services during the remediation excavation and removal of at- and below-grade impacted material from Remediation Area 2. Title III engineering services begins after the plans and specifications are certified for construction (CFC). The remediation area for excavation encompasses the perimeter of the southern waste units (former locations of the inactive flyash pile, southfield, and active flyash pile) within Area 2 Phase I. The remediation area also includes Area 2 Phase II located east of Paddys Run and south of the Pilot Plant Drainage Ditch.

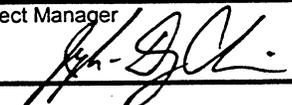
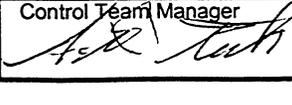
c. SCOPE OF WORK:

The scope of work for these activities is defined in Control Account G211 (Area 2 Soils Remediation). Key elements included in the charge number are:

Assist in procurement of the excavation subcontractor after CFC.

Review and approve engineering document family submittals from the subcontractor to ensure conformity to the Implementation Plan, drawings, and specifications.

Review construction, health and safety, or other subcontractor submittals when requested.

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G2111	13. TASK DESCRIPTION (ONE LINE) AREA 2 TITLE III		
14. ELEMENT TASK DESCRIPTION			
<p>Prepare, respond, and approve Request for Clarification (RCIs) and Design Change Notices (DCNs).</p> <p>Facilitate RCI/DCN review and approval through the project, DOE, and the regulatory agencies.</p> <p>Prepare Safety Basis Document Reviews (SBDs) based on DCNs.</p> <p>Develop as-built drawings and specifications and provide an excavation summary report.</p> <p>Key elements apply to both Area 2 Phase I Perimeter Remaining (also referred to as Area 2 Phase II Part 2) and Area 2 Phase II.</p> <p>Includes work scope cross walked from charge number GCWR6 performed during FY01.</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Staff labor charge to Control Account GPM1</p> <p>Area 2 Phase I Part 1 Title III engineering completed in FY01.</p> <p>Scope of work as defined in other Remediation Area 2 Charge Accounts.</p> <p>Scope of work as defined in other Remediation Area Control Accounts.</p> <p>Title III engineering associated with the On-Site Disposal Facility (OSDF).</p> <p>Construction management</p> <p>Post-remediation monitoring and maintenance.</p>			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07
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12. TASK IDENTIFICATION (WORK PACKAGE) G2112	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXC CONTROL/CERTIFICATION
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

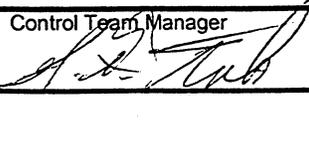
b. TECHNICAL CONTENT:

The content of this document applies to the soil characterization program at the FEMP specific to area characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 2. It is a summary for area-specific characterization efforts that will be conducted in defined areas of excavation and lesser environmentally impacted areas that may not be excavated, but will require monitoring, sampling, and analytical testing. The characterization efforts are intended to provide information that may be required to supplement the remedial design and to support the remedial action that will result in compliance with the Final Remediation Levels (FRLs) published in the OU2 and OU5 RODs. The Area 2 physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Records of Decision (RODs) for OU2 and OU5.

c. SCOPE OF WORK:

This scope of this document covers the characterization support for excavation control, precertification, and certification of Area 2. Characterization work performed in Area 2 under this scope will assist in determining soil

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G2112	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXC CONTROL/CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			
<p>disposition, extent of excavation, and provide sound field and analytical data that prove remedial activities were sufficient. During excavation of Area 2, radiological field surveying, physical soil sampling, and analysis will be required. This testing will be performed during the excavation process as necessary to determine disposition of excavated material. After excavation is determined to be complete, the remaining soil will be tested for all area specific contaminants of concern (COCs) to demonstrate FRL attainment. The actual radiological field-survey measurements, physical soil sampling and analytical activities covered under this account include the following tasks:</p> <p>Review existing data and engineering drawings</p> <p>Develop and write applicable data quality objectives and projects-specific-plans, as necessary</p> <p>Develop Certification Design Letters and text for the Area Implementation Plan</p> <p>Define and delineate excavation monitoring boundaries in the field</p> <p>Define and delineate Certification Units</p> <p>Prep the area for field measurements which includes clearing of brush</p> <p>Installation of certification fencing and signs</p> <p>Physical sampling</p> <p>Assess real-time data generated during excavation</p> <p>Perform assessment of radiological field survey results</p> <p>Perform data management functions within SDFP</p> <p>Develop final reports or certification reports</p> <p>Perform analysis</p>			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G2112	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXC CONTROL/CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

If needed, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning

Includes work scope cross walked from charge numbers GFM14, GFM15, and GFM18 performed during FY01 for excavation control, precertification, and/or certification activities.

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Waste Tracking and disposition

Waste Treatment activities

Construction or remediation

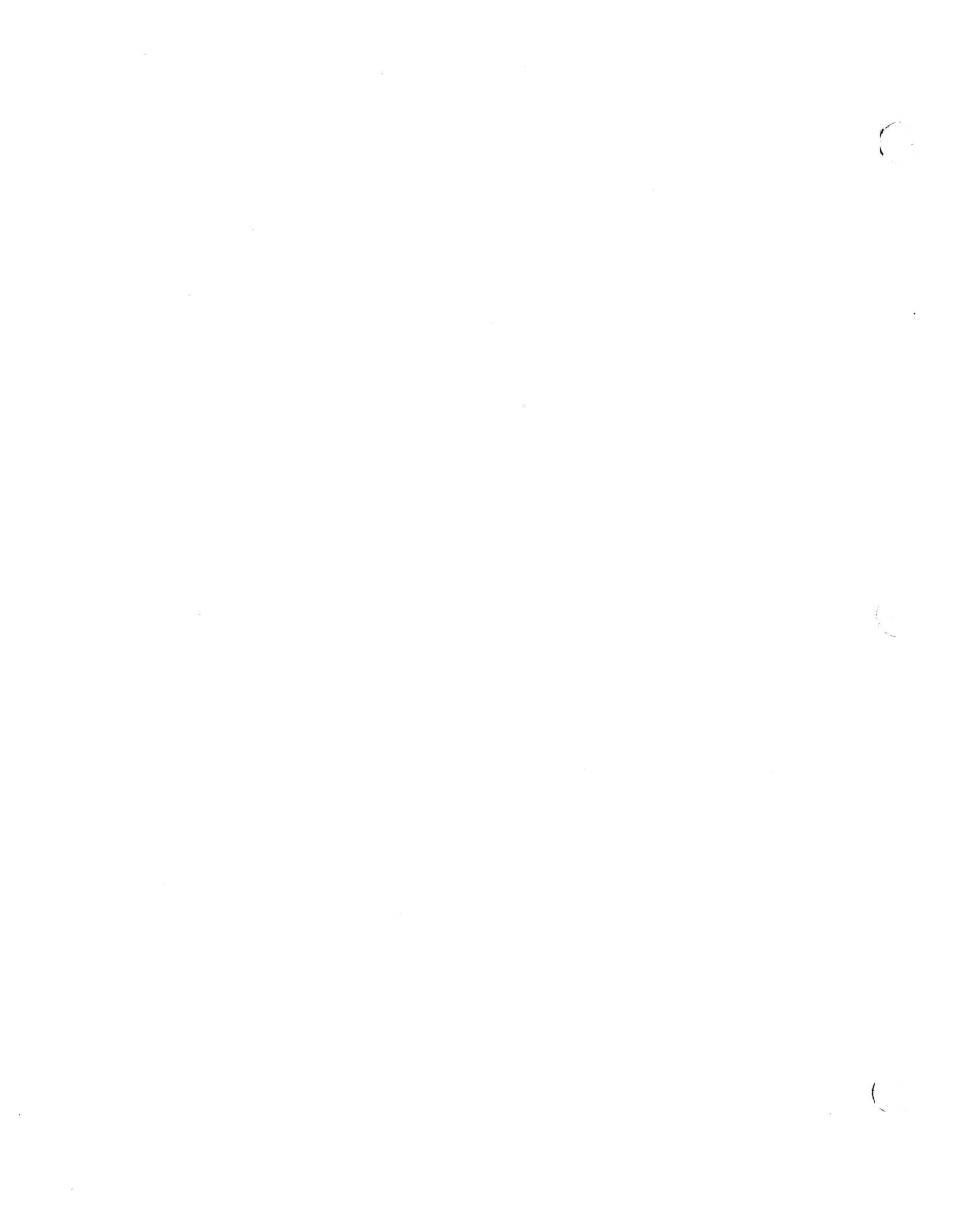
Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

Centralized services and/or equipment



WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G2113	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXCAVATION/INTERIM RESTORATION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

Perform remedial construction activities for Area 2.

The project boundaries are as follows:

North by Area 7 including the Pilot Plant Drainage Ditch

East by Area 1

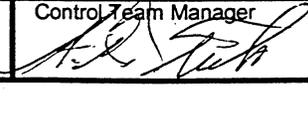
South by Willey Road

West by Paddy's Run

c. SCOPE OF WORK:

Provide excavation and removal of all above FRL soil and at or below grade concrete and utilities from Area 2 and transportation to the On-site Disposal Facility, SP7 or other designated staging area in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows:

Erosion and sediment control during construction

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G2113	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXCAVATION/INTERIM RESTORATION		
14. ELEMENT TASK DESCRIPTION			
<p>Installation and/or relocation of fencing during construction</p> <p>Equipment, material and support facilities rented/procured for project use</p> <p>Dewatering as necessary during construction</p> <p>Dust Control within designated work area.</p> <p>Decontamination of equipment</p> <p>Matrixed and subcontracted labor directly associated with construction</p> <p>Specific work to be addressed includes:</p> <p>Size reduce, excavate, load and haul at and below grade concrete, utilities, and debris associated with the Impacted Material Haul Road to OSDF as Category 2.</p> <p>Excavate, load and haul impacted soils to the OSDF as Category 1.</p> <p>Removal of misc. debris at the former construction staging area south of Silo 1.</p> <p>Stockpile removal HRD-012.</p> <p>Scope of work includes work performed under Charge Numbers GCWC2 (Southern Waste Units Excavation) and GCWC4 (Area 2 Interim Restoration) from 01 December 2000 to 30 September 2001.</p> <p>Work performed under GCWC2 (Southern Waste Units Excavation) and GCWC4 (Area 2 Interim Restoration) includes:</p> <p>Segregate, size reduce, excavate, load and haul impacted material from MTL-SWU-30 to the OSDF.</p> <p>Segregate, size reduce, excavate, load and haul impacted material from MTL-SWU-40 to the OSDF.</p>			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G2113	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXCAVATION/INTERIM RESTORATION		

14. ELEMENT TASK DESCRIPTION

Excavate, load and haul impacted soils from various locations within the SWU to meet FRL requirements.

Removal of geomembrane liner, riser pipe and associated piping and associated ditches/berms from the retention basin #1.

Removal/relocation of well house #14 with associated pipe and electrical utilities.

Removal of west seepage station manhole, sediment, and associated piping.

Removal of non-impacted material stockpile #1 geomembrane liner, geotextile, sediment and check dams.

d. WORK SPECIFICALLY EXCLUDED:

Placement in OSDF

Seeding / Vegetation beyond interim restoration

Road construction

Title I/II design services

Performing and/or managing Title III services

Sampling and testing of waste materials during remediation

Monitoring and maintenance of the remediated area after remediation

Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal

Treatment of lead containing soil

WORK SCOPE DEFINITION
(Work Package)

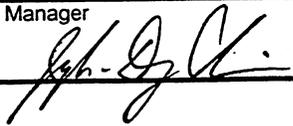
1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 4.
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 6/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G2113	13. TASK DESCRIPTION (ONE LINE) AREA 2 EXCAVATION/INTERIM RESTORATION		

14. ELEMENT TASK DESCRIPTION

Centralized Personnel, Radiological controls, and Safety management during remedial construction

All Excavation activities prior to December 2000

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G2114	13. TASK DESCRIPTION (ONE LINE) AREA 2 TITLE I/II DESIGN		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Matrixed Labor Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This charge number will provide the performance of Title I and Title II engineering services for the remediation excavation and removal of at- and below-grade impacted material from Area 2 Phase II of Remediation Area 2. Area 2 Phase II located east of Paddys Run and south of the Pilot Plant Drainage Ditch.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is defined in Control Account G211 (Area 2 Soils Remediation). Key elements included in the charge number are:</p> <p>Development of the Integrated Remedial Design Package (IRDP) per the Site-Wide Excavation Plan and requirements of the Operable Unit 5 Record of Decision (ROD) consisting of three components for review and approval by DOE and the regulatory agencies: Implementation Plan, Construction Drawings, and Technical Specifications.</p> <p>Development of supporting documentation appended to the Implementation Plan consisting of the Design Criteria Package (DCP), Applicable or Relevant and Appropriate Requirements/To Be Considered (ARARs/TBCs) Table for the DCP, Surface Water Management/Erosion Control Plan, and Earthwork Calculations.</p> <p>Preparation of engineering documentation: Technical Reference drawing package,</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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12. TASK IDENTIFICATION (WORK PACKAGE) G2114	13. TASK DESCRIPTION (ONE LINE) AREA 2 TITLE I/II DESIGN		

14. ELEMENT TASK DESCRIPTION

safety planning documentation through the request for safety assessment, Project Execution Plan (PEP), project alignments, Occupational and Environmental ALARAs, design and constructability reviews, independent design reviews, resolution of comments (including project, DOE, and regulatory comments), design calculations (including hydrologic modeling, slope stability), quantity take-offs, cost-estimating support.

Generating Construction Drawings and Technical Specifications Certified for Construction.

d. WORK SPECIFICALLY EXCLUDED:

Staff labor charge to Control Account GPM1

Predesign Data Summary to be appended to the Implementation Plan

Area 2 Phase I Perimeter (referred to as Part 1) and Perimeter Remaining (referred to as Part 2) engineering completed in FY01.

Scope of work as defined in other Remediation Area 2 Charge Accounts including Title III engineering services.

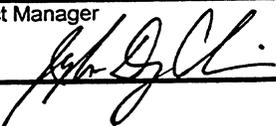
Scope of work as defined in other Remediation Area Control Accounts.

Title III engineering associated with the On-Site Disposal Facility (OSDF).

Construction management.

Post-remediation monitoring and maintenance.

WORK SCOPE DEFINITION (Work Package)

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G2115	13. TASK DESCRIPTION (ONE LINE) AREA 2 PREDESIGN		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials</p>			
<p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to the soil characterization program at the FEMP specific to area pre-design characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 2. It is a summary for area-specific characterization efforts that will be conducted to delineate areas of above Final Remediation Level (FRL) contamination as well as contamination that is above the On-Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC). The data generated from these characterization activities will support remedial design. The Area 2 physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Records of Decision (RODs) for OU5 and OU2.</p>			
<p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this document covers the characterization support for pre-design of Area 2 Phase II. Pre-design Investigations include the collection of additional data collected to support the engineering design, which will be included in the Integrated Remedial Design Plan (IRDP). The work scope of the pre-design characterization includes characterization planning, field survey work, real-time data collection and reduction, field sampling, laboratory analysis,</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
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12. TASK IDENTIFICATION (WORK PACKAGE) G2115	13. TASK DESCRIPTION (ONE LINE) AREA 2 PREDESIGN		

14. ELEMENT TASK DESCRIPTION

and data management activities.

The predesign characterization effort includes the following tasks:

Review and evaluation of existing sampling data, real-time data and geophysical data

Review HWMUs, USTs, and potentially RCRA characteristic area

Develop contamination models based on existing data

Develop and write applicable data quality objectives and Project Specific Plans, as necessary

Prep the area for field measurements which includes clearing or brush

Physical sampling

Assess real-time data generated during predesign

Perform assessment of radiological field survey results

Perform data management functions within SDFP

Laboratory sample analysis

Sample shipping for off-site analysis

If necessary, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning

Includes work scope cross walked from charge numbers GFM16 performed during FY01 for predesign activities.

d. WORK SPECIFICALLY EXCLUDED:

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.D	4. WBS ELEMENT TITLE/NAME AREA 2 SOIL REMEDIATION		
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 4/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G2115	13. TASK DESCRIPTION (ONE LINE) AREA 2 PREDESIGN		
14. ELEMENT TASK DESCRIPTION			
<p>Area 2 Phase II predesign performed before December 1, 2000</p> <p>Characterization tasks in other areas</p> <p>Construction or remediation</p> <p>Waste tracking or disposition</p> <p>Area pre-certification or certification activities</p> <p>Waste Tracking and disposition</p> <p>Waste Treatment activities</p> <p>Development of Engineering plans, drawings, or specifications</p> <p>Land Surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p>			

SECTION 4

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.D.	5. WBS ELEMENT TITLE: AREA 2 SOILS REMEDIATION	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: G211	

SECTION 4: G211 – AREA 2 SOILS REMEDIATION

1.0 NARRATIVE

1.1 OVERVIEW

Remedial activities under this scope of work are to support the identification, removal, and certification of those removals of impacted material comprised of at- and below-grade debris and soils above the Final Remediation Levels (FRLs) for the contaminants of concern. The scope of work for Area 2 Soils Remediation (Control Account G211) consists of the following activities:

Predesign Characterization	(Charge No. G2115)
Title I/II Design	(Charge No. G2114)
Title III Design	(Charge No. G2111)
Site Preparation/Excavation/Interim Restoration	(Charge No. G2113)
Excavation Control/Certification	(Charge No. G2112)

1.2 GENERAL ASSUMPTIONS/EXCLUSIONS

(Note: Charge number-specific assumptions may be found within the Technical Scope and Quantification)

1.2.1 Assumptions

- The scope and schedule for this Control Account is based on Execution Scenario 6 as specified by Closure Project Management.
- OEPA and USEPA to review and provide comments to the following documents within the following review periods. The DOE ~~will establish a written agreement and Fluor Fernald will work with OEPA and USEPA to reflect meet~~ these review periods:

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Integrated Remedial Design Package (IRDP)	30 60 calendar days
Predesign Characterization PSP	30 calendar days
Stockpile PSP, (if needed)	30 calendar days
Excavation Monitoring PSP	30 calendar days
Treatment Verification PSP, (if needed)	30 calendar days
Precertification Real Time Scan PSP	30 calendar days

Cert. Design Letter (CDL) and Cert. PSP 30 calendar days
Certification Report (CR) 30 calendar days

- DOE will review and comment on the above documents in parallel to the Fluor Fernald internal draft reviews.
- OEPA and USEPA to review and provide comments to all PSP variances (V/FCN)) within 7 days of receipt from fax except for PSP variances to the certification PSP in which 15 days is established.
- OEPA and USEPA will review and approve Design Change Notices (DCNs) within 7 days of receipt from fax.
- DOE maintains full baseline funding levels as defined in the contract.
- DOE, OEPA, and USEPA project management does not change.
- Other PBSs providing matrixed and centralized support to the Control Account will provide competent personnel with the necessary training to perform specific work tasks during the required time periods.
- All engineering and construction procedures and requirements (Project Execution Plans, ALARA documentation, Compliance Documentation, Safety Basis Documentation, Technical Review Board and IRSC reviews) are in place, but at minimum, are simplified and/or combined with other Remediation Area documentation.

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- Construction Subcontractors are required to ~~facilitate their own~~ perform logistics associated with penetration permits, lock and tag, ~~quality assurance/quality control~~, excavation planning, safe workplan and other planning documentation, per the terms of the subcontract. ~~that Fluor Fernald Construction Management facilitates.~~ will perform QA/QC oversight on these activities.

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- Radiological ~~Control~~ safety, industrial hygiene and security ~~access requirements are reduced~~ will be evaluated to allow simplification of the procedures in accordance with the work scope.
- Technical staff are cross-trained to perform many job functions (health and safety, radiological control, etc).
- Sampling, analytical laboratory, data reporting and validation, statistical analysis, data entry into the SED is maintained.
- Utility disconnects are budgeted by PBS-06, but executed by PBS-01.
- Site integration services from Closure Project Management will no longer be necessary with the completion of PBS Closure Plans.

- There are no prohibited items or above-WAC soil or debris within Area 2 requiring off-site waste disposition.
- Personnel assumptions are listed within charge-number specific assumptions.
- Maintenance and Infrastructure Support (PBS-01) or any other PBS constructs new facilities within the Remediation Area footprint.
- No above-WAC or RCRA hazardous areas are identified during predesign characterization.
- Excavation approach for underground utility trenches is the same as in Area 3A/4A.
- There are no inorganic, organic, or metals constituents as listed in the SEP requiring treatment.
- There are no additional radiological, inorganic, or organic constituents as listed in the SEP that would be included as a constituent of concern for predesign characterization or excavation.
- Tie-points into existing electric, potable and non-potable water, sanitary sewer, storm sewer, telephone, and communications are identified by Infrastructure support and budgeted and installed by SDFP.

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1.2.2 Exclusions

- Staff labor charged to control account GPM1.
- Scope of work as defined within other PBS-06 Soils Remediation control accounts including Remediation Area 10 (corridors).
- Excavation for removal of transfer pipeline ST-6"-B4-7000 located from SWRB to Southern Waste Units; other pipelines, utilities, and structures associated with Aquifer Restoration (PBS-04) extraction well and injection well operations; utilities associated with site water, gas, and electric; and other utilities and pipelines located adjacent to the above listed structures and utilities that may compromise their operation or worker safety.
- Post-remediation monitoring and maintenance.
- Post-closure documentation.
- Natural Resources restoration.
- D&D and costs associated with removal of above-grade structures.

- Aquifer Restoration (PBS-04) well installation, operation, monitoring, removal, and utilities required to operate PBS-04 systems.
- Aquifer Restoration (PBS-04) budgets, operates, and maintains any sump pump and drainage structures after they are installed during control and management.
- Aquifer Restoration (PBS-04) removes and dispositions 1000, 2000, 3000, 4000, or any other monitoring series well or lysimeter casing, screens, concrete pad. SDFP removes and dispositions 1000-series wells that are within excavation footprints.
- Placement and dust control of impacted material in the OSDF (PBS-03).
- Construction of the OSDF (PBS-03).
- Placement and dust control of impacted material within the OMTA (PBS-03) during its operation.
- Loading and hauling of impacted material from the OMTA to the OSDF (PBS-03).
- Treatment and discharge of stormwater, perched water, or other captured water that is placed at the AWWT headworks as defined by Aquifer Restoration (PBS-04) from excavations or dewatering activities.
- Removal of Met Tower foundation and guy wire tie-downs, removal of salt storage facility (TS-8) foundations.
- Waste Generator Services (PBS-11) or matrixed personnel from the WGS function establishes contracts for containers for SDFP to package.
- No requirements will be imposed to the project pertaining to Start-up Reviews (SSRs, ORAs, ORRs, or equivalent).
- Geophysical surveying techniques, such as ground penetrating radar and electromagnetic terrain conductivity profiling.
- All centralized services.
- Labor involved with and the disposal of samples collected during predesign characterization, excavation control, precertification, or certification is not part of the contract.

1.2.3 Government-Furnished Equipment/Services

There are no government-furnished equipment/services associated with this scope of work.

1.2.4 Applicable Requirements

- IRDP reviewed and approved by DOE, OEPA, USEPA.
- PSPs, CDLs, CRs reviewed and approved by DOE, OEPA, USEPA.
- Informal agreement guidance with DOE, OEPA, USEPA for review time of V/FCNs.
- Dust control measures are implemented during excavation and hauling and during off-hours.
- Real time lift scan for 3' +/- 1' lifts in below-WAC, above-FRL excavations.
- Dewater excavations from 24-hour/10-year storm event within 72 hours after rain event.
- Perform 5H:1V minimum grading for interim restoration after certification.
- ~~No above WAC or RCRA hazardous areas are identified during predesign characterization.~~
- ~~Excavation approach for underground utility trenches is the same as in Area 3A/4A.~~

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1.2.5 Applicable Technical Guidance

- Reserved
- OU2 Record of Decision
- OU3 Record of Decision
- OU5 Record of Decision
- Sitewide Excavation Plan, Revision 0
- Certification Units area no larger than 250 feet by 250 feet, or 800 linear feet for a utility trench below the excavation grade.
- Waste Acceptance Criteria Attainment Plan for the On-Site Disposal Facility
- Impacted Materials Placement Plan – On-Site Disposal Facility
- Letter: DOE-0678-98, "Management of Wastewater Streams Containing F-Listed Constituents," J. Reising to J. Saric and T. Schneider, April 15, 1998.
- Sitewide CERCLA Quality Assurance Plan.

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1.2.6 Disposal, Treatment, Containers, Utilities

- ~~There are no inorganic, organic, or metals constituents as listed in the SEP requiring treatment.~~
- ~~There are no additional radiological, inorganic, or organic constituents as listed in the SEP that would be included as a constituent of concern for predesign characterization or excavation.~~
- ~~Tie points into existing electric, potable and non-potable water, sanitary sewer, storm sewer, telephone, and communications are identified by Infrastructure support and budgeted and installed by SDFP.~~

3.1 DRIVERS

(Note: Charge number-specific drivers may be found within the Technical Scope and Quantification)

- Congressional funding of DOE EM Projects
- DOE funding of this PBS or any predecessor PBS activity.
- DOE, OEPA or USEPA review cycle.

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~~Excessive If the number of rain, high wind, severe weather, hot, or cold days. This will not exceeds the information listed in Table 1 from the FEMP site meteorological system, and will constitute an a schedule and/or cost impact to any field activities (i.e. construction-related, predesign characterization, excavation control, precertification, certification, interim restoration) may occur.~~

TABLE 1
 Rainfall Amounts

Month	Rainfall Days	Monthly Amount (in)
Jan.	11	2.59
Feb.	11	2.60
Mar.	13	4.24
Apr.	12	3.75
May.	11	4.28
June	10	3.84
July	10	4.24
Aug.	9	3.35
Sep.	8	2.88
Oct.	8	2.86
Nov.	11	3.46
Dec.	13	3.15

- Availability of real time team or physical sampling team for predesign characterization, excavation monitoring, precertification, or certification and lab turnaround due to other PBSs or Remediation Area activities.

1.4 PROJECT PHYSICAL DESCRIPTION

1.4.1 Scope of Work

Remedial activities under this scope of work are to support the identification, removal, and certification of those removals of impacted material comprised of at- and below-grade debris and soils above the FRLs for the contaminants of concern. Excavation activities commenced in Area 2 in 1997 with the site preparation of Area 2 Phase I followed by remedial excavations within the Southern Waste Units (SWU). Completion of SWU excavations is planned in 2001. However, completion of Area 2 Phase I excavations in the perimeter areas surrounding the SWU was interrupted due to funding constraints. During that time much of Area 2 Phase I was remediated including the Southern Waste Units and a portion of the Perimeter area known as the Carolina Area. Within Area 2 Phase I, the Active Flyash Pile was certified. All of Area 2 Phase III was certified. In Area 2 Phase II, predesign characterization was concluding and the footprint of Soil Pile No. 3 was certified.

Remedial activities are to be accomplished in a safe and cost-effective manner to protect human health and the environment. Excavations for impacted material removals are to be executed efficiently ensuring proper ratio of soil to debris for placement in the OSDF while minimizing the quantity of material that does not meet the OSDF WAC. Once the DOE, OEPA, and USEPA agree that the area has been remediated and meets the soil FRLs by the process of certification as documented by the Certification Report, the area will be released for final land use. The scope of work is described by the tasks contained in the following charge numbers:

- Predesign Characterization (Charge No. G2115) includes the plan preparation of project specific sampling plans, field implementation of real time and physical sampling, analysis, validation, and modeling of results to define soil excavations and disposition of those soils.
- Title I/II Design (Charge No. G2114) includes project planning, title I design, and title II design activities necessary to prepare an Integrated Remedial Design Package (IRDP). The IRDP consists of an Implementation Plan and Certified for Construction Drawings and Technical Specifications along with supporting documentation and determination of final quantities of at- and below-grade structures and soil excavations.
- Title III Design (Charge No. G2111) includes excavation support, procurement support, and design changes along with preparation of as-built drawings and specifications and close-out reports.

- Site Preparation/Excavation/Interim Restoration (Charge No. G2113) includes plan preparation addressing means, methods, techniques, and execution of the excavation scope; site preparation necessary prior to excavation; excavating, loading, and hauling of impacted material for final disposition; control and management of excavations through dewatering and excavated slope maintenance; and interim restoration of excavations after certification but prior to final restoration consisting of seeding and regrading.
- Excavation Control/Certification (Charge No. G2112) includes the plan preparation of project specific sampling plans, field implementation of real time and physical sampling, analysis, and validation for excavation, precertification, and certification. Also included is the development of the Certification Design Letter and the Certification Report.

1.4.2 Purpose/Objective

The purpose/objective is the excavation and disposition of impacted material either in the OSDF, stage material in bulk for off-site shipment to a disposal facility (material that does not meet the OSDF WAC), or containerize material that does not meet either OSDF WAC or off-site disposal facility WAC for on-site or off-site treatment and disposal. The Records of Decision established the FRLs that were determined to present an unacceptable risk to human health and the environment. Impacted material includes at- and below-grade debris. For SDFP, at- and below-grade debris includes man-made objects such as building foundations, floors, pads, curbs, underground utilities. Impacted material can include perched groundwater if contaminated and includes soil with radiological, organic, or inorganic contaminants above their respective FRL.

1.4.3 Project Boundaries

Figure 1 shows geographic features and project boundaries within Remediation Area 2. It is bounded to the north by Area 7 including the Pilot Plant Drainage Ditch, to the east by Area 1, to the south by Willey Rd., and to the west by Paddys Run.

1.4.4 End State Condition

Excavations will be stabilized with vegetation ready for final restoration. Excavations will reflect much of pre-site topography.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

1.5.1 G2115 - Predesign Characterization

In many instances, existing characterization information from the RI/FS is insufficient to use as a basis for excavation design and excavation. The information obtained will confirm RI/FS results concerning above-WAC and above-FRL locations for excavation design and fill in data gaps. Predesign characterization includes the identification and quantification of area-specific contaminants of concern and the evaluation of historical

information for the development and implementation of Project Specific Plans (PSPs). The scope of predesign characterization is therefore described in the predesign characterization PSP that is reviewed and approved by OEPA and USEPA.

Two methodologies are employed during the field implementation for predesign characterization. The first considers radiological surface scanning and real time measurements. These measurements are conducted using sodium iodide (NaI) via real time radiation tracking system (RTRAK), Gator scanning system (Gator), radiation scanning system (RSS) or excavation monitoring system (EMS); high purity germanium (HPGe) shots known as podding; or other non-intrusive static and mobile field instruments. These instruments record radiological emanations in form of total activity counts and from uranium, thorium, and radium contamination at the surface or near-surface sources. Also these instruments are employed only in non-concrete and non-gravelled areas. The results from total counts, uranium, thorium, and radium recordings are documented in the form of maps. The second considers physical soil sampling and analytical testing to collect physical data and to record concentrations of organic, inorganic, and radiological (e.g. technetium-99) that real time measurements cannot quantify.

Area 2 Predesign characterization includes two tasks to be detailed subsequently below:

- Task 1: Area 2 Phase II Predesign FY2001
- Task 2: Area 2 Phase II Predesign

The activities for each task can be further subdivided into the following subtasks:

- Subtask 1: Prepare Project Specific Plan
- Subtask 2: Field and Analytical Work
- Subtask 3: Data Reduction and Interpretation

Major technical risks associated with the execution and completion of these tasks include: using off-site laboratory services for analysis of organic contaminants of concern (COCs), insufficient access to areas during predesign due to other scheduled activities and the OEPA and USEPA review cycle of the PSPs. Contingencies that can mitigate these risks include: develop on-site laboratory services for organic COCs, extending predesign characterization into title I/II design, and negotiate shorter review cycles with OEPA and USEPA.

Specific charge number assumptions include:

- For general assumptions and exclusions, see Section 1.2.
- Earned Value method for this charge number will be based on the quantities developed within the Quantification Sections.
- No further predesign characterization is needed in FY2001 or in future for Area 2 Phase I.

- Two FRL excavations are necessary in Area 2 Phase II. One is a radium FRL driven excavation in which data as of 4/01 is sufficient to bound the excavation. The second is an arsenic FRL driven excavation in which data as of 4/01 suggests that it is unbounded.
- Real time scanning during predesign characterization will be limited to accessible acres or acres with minimal need for clearing.
- Real time scanning will not be performed on surfaces with gravel, concrete, asphalt, or debris.
- Internal review and comment of PSPs is performed in one week.
- DOE review and comment of PSPs will occur in parallel to the internal review.
- Internal comment responses are conducted informally through meetings, telephone, email, or written responses on the reviewers commented document.
- No geotechnical investigations or geotechnical testing to support excavation design or OSDF placement.
- A dedicated geoprobe and physical sampling crew will be available to collect soil and perched water samples.
- The number of borings for physical sampling is based on existing data within the Sitewide Environmental Database (SED), concentration of a particular ASCOC, above-WAC data, density of sampling from past sampling events, and process knowledge.
- Gamma Spectroscopy is the analytical method for uranium, thorium, and radium analysis.
- All samples will be analyzed for uranium.
- A single sample will be collected for the analysis of metals and radiological contaminants (uranium, thorium, radium, technetium-99, and if needed, cesium-137) ~~will be combined into one container and analyzed~~ by the on site laboratory.
- A separate sample will be collected for the analysis of Volatile Organic Compounds (VOCs) ~~will always be collected in a separate sample container and analyzed~~ by the off site laboratory.
- A single sample will be collected for the analysis of other Organics (PCBs, pesticides, PAHs, herbicides, semi-volatile organic compounds (SVOCs), and dioxins) ~~will be collected in one container and analyzed~~ by the off site laboratory.

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- A separate sample will be collected for the analysis of exotic radiological contaminants (e.g., strontium-90) ~~will be collected in a separate container and analyzed~~ by the off site laboratory.
- Organic compounds and strontium-90 will be analyzed at off-site laboratories with 14-day turnaround time.
- For Quality Control (QC) water samples, organic samples will be containerized separately for each analysis. Metals and radiological contaminant water samples will also be containerized separately.
- Equipment rinsates will be collected for 1 in 20 borings greater than or equal to one (1) foot in depth.
- Rinsates and container blanks will be analyzed for the same parameters as the soil samples, except for PAHs.
- There will be twenty (20) variances per predesign PSP.
- One alpha beta screen sample will be taken per boring if there are off-site analyses requested.
- Each predesign data release or lab report will consist of an average of twelve (12) samples group with following analytical data: uranium, thorium, and radium; technetium-99; metals; organics.
- Ten percent (10%) of predesign data releases will receive ASL B data validation. The other ninety percent (90%) of the release will receive field validation only.
- 3-D modeling hardware, software, and personnel used for 3A/4A are retained for predesign characterization, excavation control, precertification, and certification.

1) Task #1 – Area 2 Phase II Predesign Characterization – FY2001

1.1) Subtask # 1 – Prepare Project Specific Plan (PSP)

1.1)1 Plan/Scope

Completed prior to FY2001.

1.1)2 Quantification

Not applicable.

1.2) Subtask # 2 – Field and Analytical Work

1.2)1 Plan/Scope

After the PSP is approved by OEPA/USEPA, field work will commence after field briefings and walkdowns. Grassy areas and wooded areas that can be accessible may need to be mowed and undergrowth cleared by general labors to ensure worker safety for equipment movement (i.e. surveying, real time equipment handling). Accessible areas to real time instruments will be scanned to assess surface levels of uranium, thorium, radium, and total activity counts .

For physical sampling, a survey team will locate the boring locations and the sampling team will mobilize to place the borings using the Geoprobe[®]. The sampling team will collect samples as specified in the PSP and record daily activities on the Field Activity Log, along with specified information and identifiers in the Sample Collection Log, Chain of Custody/Request for Analysis Form, and Borehole Abandonment Log, as required. The sampling team will review all field data for completeness and accuracy and then forward the data package to Remediation Data Quality. The sampling team will submit the samples to the on-site laboratory where they are received and logged.

For analytical work, samples are received at the sample processing lab along with the chain of custodies. Samples are processed and entered into the laboratory FACTS database tracking system and work cards are generated dependent on the type of analysis requested. Samples then are prepped and analyzed per the requirements set forth in the predesign PSP. Samples identified as requiring analysis for organic constituents will be sent to contracted off-site laboratories, with a request for 14-day turn-around time.

Specific activities for this scope of work includes (capital letters are tied to Table 2):

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- A. Perform walkdowns of field area to assess site conditions for safety and health hazards, and equipment access and support of generation of work permits, RWPs, penetration permits.
- B. Generation of work permits, RWPs, penetration permits.
- C. Coordinating labor support for clearing, cutting, mowing, debris moving.
- D. Conduct PSP work scope briefings field crews, both Real time and Physical Sampling.
- E. Develop Variance/Field Change Notices (V/FCN), as needed with applicable OEPA/USEPA approval.
- F. Real time scans using RTRAK, Gator, EMS, HPGe, or RSS.
- G. Real time scan progress maps.

- H. Evaluate real time data and perform QC prior to data transfer to the Sitewide Environmental Database (SED).
- I. Survey boring locations, record coordinates, and flag locations for the sampling crew.
- J. Mobilize physical sampling crew to place borings.
- K. Obtain soil samples.
- L. Obtain groundwater samples.
- M. Complete the soil boring logs, chain of custody, sampling log, field daily logs.
- N. Deliver the physical samples and chain of custody to the on-site sample processing laboratory.
- O. Receipt of physical samples, entering samples into FACTS database system, and producing work cards. Ship samples for analysis of organic contaminants of concern (COCs) to off-site laboratory.
- P. Calibrations, quality control, completing chain of custodies, completing laboratory logs, analytical work, and data releases both from on-site and off-site laboratories.
- Q. Perform management oversight and coordination functions.

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The scope of work will be managed by projectized staff covered in Control Account GPM1. The scope of work will be performed using subcontract, matrixed, centralized, and projectized personnel.

Subcontract Personnel

Off-site laboratory will be utilized for the analysis of organic COCs (VOCs, PCBs, pesticides, PAHs, herbicides, semi-volatile organic compounds (SVOCs), and dioxins).

Matrixed Personnel

Infrastructure Services will support and clearing, cutting, mowing and the operation of the RTRAK and EMS. Environmental Monitoring (PBS-04) will complete most of the work under this subtask to support physical sampling. Environmental Monitoring will be used to generate work permits, facilitate RWPs and penetration permits, complete soil borings, collect soil and groundwater samples and deliver the samples to the on-site laboratory. Analytical Services (PBS-04) will log samples into the FACTS database system, complete the analytical measurements, issue data releases, and ship samples requiring analysis for organic COCs to the off-site laboratory. Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted

on an as-needed basis if RCRA issues become relevant to the work scope. Environment, Safety, Health, and Quality will review work permits and generate RWPs. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work completed by project staff from the management, characterization, survey, real time, project control and administrative disciplines will be charged to PBS-06 control account GPM1. Management and characterization staff will perform field and safety walk downs, oversee and monitor progress of the field, provide cost and schedule information to project control staff and deliver all records to Document Control/Procedure Management. The real time staff will scan grassy areas for surface levels of radium, thorium and uranium. Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. A survey team will locate the boring sites and flag the locations for the physical sampling crew. Project control staff will track cost and schedule using information provided by the project manager.

Table 2 summarizes the key projectized and centralized personnel performing the scope of work. Additionally, the matrixed and subcontract personnel that will be using the charge number to perform the scope of work is shown:

TABLE 2
 Manpower Requirements for Task 1, Subtask 2 –
 Area 2 Phase II FY2001 Field and Analytical Work

Activities:

Code	Personnel P,C,M,S	A	B-D	E	F-H	I	J-N	O-P	Q
ENSMGR	P	X		X					X
ENSREP	P	X		X	X	X	X	X	X
CLERKS	P			X					
DRFCAD	P			X		X			
ENSMGR	M	X	X				X		X
ENSREP	M	X	X				X		
S&HENG	M	X					X		
RADTEC	M	X					X		
ENSTEC	M	X	X				X		
LABMGR	M							X	
LABCHM	M							X	
LABTEC	M							X	
PJSMGR	M				X				
MVOOPR	M				X				
Subs	S							X	

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

1.2)2 Quantification

Table 3 summarizes the quantities and/or deliverables anticipated for this subtask. The assumed condition is that the on-site laboratory is operating with the normalcy experienced at present.

TABLE 3
 Quantities for Task 1, Subtask 2 –
 Area 2 Phase II FY2001 Field and Analytical Work

Activities:

Item	Quantity
Total Acreage of Area 2 to be real time	12 acres
Real Time Maps for Uranium	1 each
Real Time Maps for Thorium	1 each
Real Time Maps for Radium	1 each
Real Time Maps for Total Counts	1 each
Survey and Flag Boring Locations	36 each
Total Geoprobe Borings	0 each
Total Soil Samples	36 each
Total Groundwater Samples (i.e. Perched Water)	0 each
Total Surface Water Samples	0 each
Variance/Field Change Notice	5 each
Samples entered into Database	36 each
Uranium Analysis	36 each
Thorium and Radium Analysis	36 each
Technetium-99 Analysis	0 each
Strontium-90 Analysis	0 each
Metal Analysis	0 each
Volatile Organic Compound Analysis	0 each
Semi-Volatile Organic Compound Analysis	0 each
Pesticide Analysis	0 each
PCBs Analysis	0 each
PAH Analysis	0 each
Dioxin Analysis	0 each
Data Releases	3 each

A summary of the quantification approach is provided:

Acreages were determined by using in-house GIS techniques and information at the time of this writing.

The real time maps represent the final product of the scanning results. The quantity does not include progress coverage maps that are produced along with the final coverage maps as part of the projectized effort under control account GPM1 of PBS-06.

For RTRAK and Gator, with radon monitor set-up to correct for radon influences if necessary, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes the matrixed driver (MVOOPR @ 1 FTE), the matrixed

driver's supervisor (PGSMGR @ 0.25 FTE), projectized environmental scientists (ENSREP @ 2 FTEs), and projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For RSS, with radon monitor set-up to correct for radon influences if necessary, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For HPGe, with radon monitor set-up to correct for radon influences if necessary, experience dictates a range based on topography and vegetation. 12 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with adverse topographic and vegetative conditions. 20 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with moderate topographic and vegetative conditions. Approximately 28 shots are necessary to cover 1 acre. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

The number of borings and depths for surveying and physical sampling were determined by using in-house GIS techniques along with an evaluation of the present data available from the SED. Manpower is estimated using the pre-characterization database based on four (4) years of field and analytical work requested by PBS-06. Specific assumptions bounding the pre-characterization database are listed above in the charge-number specific assumptions

1.3) Subtask #3 – Data Reduction and Interpretation

1.3)1 Plan/Scope

Plan/Scope is not applicable to Subtask 3. Data is to be interpreted with Task 2.

1.3)2 Quantification

Quantification is not applicable to Subtask 3. Data is to be interpreted with Task 2.

2) Task #2 – Area 2 Phase II Predesign Characterization

2.1) Subtask #1 – Prepare Project Specific Plan (PSP)

2.1)1 Plan/Scope

Not applicable, all activities completed.

2.1)2 Quantification

Not applicable, all activities completed.

2.2) Subtask #2 – Field and Analytical Work

2.2)1 Plan/Scope

The PSP has been previously approved by OEPA/USEPA. Field work will conclude after field briefings and walkdowns. Grassy areas may need to be mowed and undergrowth cleared by general labors to ensure worker safety for equipment movement (i.e. surveying, real time equipment handling). Accessible areas to real time instruments will be scanned to assess surface levels of uranium, thorium, radium, and total activity counts.

For physical sampling, a survey team will locate the boring locations and the sampling team will mobilize to place the borings using the Geoprobe[®]. The sampling team will collect samples as specified in the PSP and record daily activities on the Field Activity Log, along with specified information and identifiers in the Sample Collection Log, Chain of Custody/Request for Analysis Form, and Borehole Abandonment Log, as required. The sampling team will review all field data for completeness and accuracy and then forward the data package to Remediation Data Quality. The sampling team will submit the samples to the on-site laboratory where they are received and logged.

For analytical work, samples are received at the sample processing lab along with the chain of custodies. Samples are processed and entered into the laboratory FACTS database tracking system and work cards are generated dependent on the type of analysis requested. Samples then are prepped and analyzed per the requirements set forth in the predesign PSP. Samples identified as requiring analysis for organic constituents will be sent to contracted off-site laboratories, with a request for 14-day turn-around time.

Specific activities for this scope of work includes (capital letters are tied to Table 4):

- A. Perform walkdowns of field area to assess site conditions for safety and health hazards, and equipment access and support of generation of work permits, RWPs, penetration permits.
- B. Generation of work permits, RWPs, penetration permits.
- C. Coordinating labor support for clearing, cutting, mowing, debris moving.
- D. Conduct PSP work scope briefings field crews, both Real time and Physical Sampling.
- E. Develop Variance/Field Change Notices (V/FCN), as needed with applicable OEPA/USEPA approval.
- F. Real time scans using RTRAK, Gator, EMS, HPGe, or RSS.
- G. Real time scan progress maps.

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- H. Evaluate real time data and perform QC prior to data transfer to the Sitewide Environmental Database (SED).
- I. Survey boring locations, record coordinates, and flag locations for the sampling crew.
- J. Mobilize physical sampling crew to place borings.
- K. Obtain soil samples.
- L. Obtain groundwater samples.
- M. Complete the soil boring logs, chain of custody, sampling log, field daily logs.
- N. Deliver the physical samples and chain of custody to the on-site sample processing laboratory.
- O. Receipt of physical samples, entering samples into FACTS database system, and producing work cards. Ship samples for analysis of organic contaminants of concern (COCs) to off-site laboratory.
- P. Calibrations, quality control, completing chain of custodies, completing laboratory logs, analytical work, and data releases both from on-site and off-site laboratories.
- Q. Perform management oversight and coordination functions.

The scope of work will be managed by projectized staff and covered under Control Account GPM1. The scope of work will be performed using subcontract, matrixed, centralized, and projectized personnel.

Matrixed Personnel

Infrastructure Services will support and clearing, cutting, mowing and the operation of the RTRAK and EMS. Environmental Monitoring (PBS-04) will complete most of the work under this subtask to support physical sampling. Environmental Monitoring will be used to generate work permits, facilitate RWPs and penetration permits, complete soil borings, collect soil and groundwater samples and deliver the samples to the on-site laboratory. Analytical Services (PBS-04) will log samples into the FACTS database system, complete the analytical measurements, and issue data releases. Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. Environment, Safety, Health, and Quality will review work permits and generate RWPs. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work completed by project staff from the management, characterization, survey, real time, project control and administrative disciplines will be charged to PBS-06 control account GPM1. Management and characterization staff will perform field and safety walk downs, oversee and monitor progress of the field, provide cost and schedule information to project control staff and deliver all records to Document Control/Procedure Management. The real time staff will scan grassy areas for surface levels of radium, thorium and uranium. Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. A survey team will locate the boring sites and flag the locations for the physical sampling crew. Project control staff will track cost and schedule using information provided by the project manager.

Table 4 summarizes the key projectized and centralized personnel performing the scope of work. Additionally, the matrixed and subcontract personnel that will be using the charge number to perform the scope of work is shown:

TABLE 4
Manpower Requirements for Task 2, Subtask 2 –
Area 2 Phase II Field and Analytical Work

Activities:

MPM Code	Personnel P,C,M,S	A	B-D	E	F-H	I	J-N	O-P	Q
ENSMGR	P	X		X					X
ENSREP	P	X		X	X	X	X	X	X
CLERKS	P			X					
DRFCAD	P			X		X			
ENSMGR	M	X	X				X		X
ENSREP	M	X	X				X		
S&HENG	M	X					X		
RADTEC	M	X					X		
ENSTEC	M	X	X				X		
LABMGR	M							X	
LABCHM	M							X	
LABTEC	M							X	
PJSMGR	M				X				
MVOOPR	M				X				

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

2.2)2 Quantification

Table 5 summarizes the quantities and/or deliverables anticipated for this subtask. Only the arsenic area remains unbounded within Area 2 Phase II. The assumed condition is that the on-site laboratory is operating with the normalcy experienced at present and that no other FRL driven excavation is present.

Real time scans will be limited due to existing concrete slabs and gravel. Real time scans will produce summary maps for uranium, thorium, radium, and total counts.

The number of boring locations and depths for surveying and physical sampling are based considerations from the original Area 2 Phase II predesign planning.

TABLE 5
Quantities for Task 2, Subtask 2 –
Area 2 Phase II Area Field and Analytical Work

Activities:

Item	Quantity
Total Acreage of Area 2 to be Real Time Scanned	25 acres
Real Time Maps for Uranium	1 each
Real Time Maps for Thorium	1 each
Real Time Maps for Radium	1 each
Real Time Maps for Total Counts	1 each
Survey and Flag Boring Locations	23 each
Total Geoprobe Borings	23 each
Total Soil Samples	23 each
Total Groundwater Samples (i.e. Perched Water)	0 each
Total Surface Water Samples	0 each
Variance/Field Change Notice	4 each
Samples entered into Database	23 each
Uranium Analysis	0 each
Thorium and Radium Analysis	0 each
Technetium-99 Analysis	0 each
Strontium-90 Analysis	0 each
Metal Analysis	23 each
Volatile Organic Compound Analysis	0 each
Semi-Volatile Organic Compound Analysis	0 each
Pesticide Analysis	0 each
PCBs Analysis	0 each
PAH Analysis	0 each
Dioxin Analysis	0 each
Data Releases	2 each

A summary of the quantification approach is provided:

Acreages were determined by using in-house GIS techniques and information at the time of this writing. The distinction between areas of lower uranium FRL (20 ppm U) due to high leachable areas and areas of higher uranium FRL (82 ppm U) due to low leachable areas is presented in Figure 2-3 of the SEP.

The real time maps represent the final product of the scanning results. The quantity does not include progress coverage maps that are produced along with the final coverage maps as part of the projectized effort under control account GPM1 of PBS-06.

For RTRAK and Gator, with radon monitor set-up to correct for radon influences if necessary, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes the matrixed driver (MVOOPR @ 1 FTE), the matrixed driver's supervisor (PGSMGR @ 0.25 FTE), projectized environmental scientists (ENSREP @ 2 FTEs), and projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For RSS, with radon monitor set-up to correct for radon influences if necessary, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For HPGe, with radon monitor set-up to correct for radon influences if necessary, experience dictates a range based on topography and vegetation. 12 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with adverse topographic and vegetative conditions. Twenty shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with moderate topographic and vegetative conditions. Approximately 28 shots are necessary to cover 1 acre. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

The number of borings and depths for surveying and physical sampling were determined by using in-house GIS techniques along with an evaluation of the present data available from the SED. Manpower is estimated using the pre-characterization database based on four (4) years of field and analytical work requested by PBS-06. Specific assumptions bounding the pre-characterization database are listed above in the charge-number specific assumptions

2.3 Subtask #3 – Data Reduction and Interpretation

2.3)1 Plan/Scope

Data reduction and interpretation is a key link between predesign characterization and Title I/II design activities. After data verification and validation is completed, all data must be entered into the SED to allow characterization, engineering, and managerial staff to access the information.

Results from the real time measurements will be delivered as maps that illustrate the estimated concentration or activity of uranium, radium, and thorium as described earlier. All electronically recorded data will have the RMS (i.e. RTRAK or RSS) or HPGe data validation checklist, as required by the User's Guidelines for in situ gamma spectrometry at the FEMP, will be completed after each data collection event. Field documentation, such as the Nuclear Field Density/Moisture Worksheet, will undergo an internal review by real time personnel. Electronically recorded data from the GPS, RMS, and HPGe systems will

be downloaded to onto the local area network after an evaluation comparing the electronic data, hard copy maps, and summary reports for accuracy and completeness is conducted. The evaluation package is forwarded to data validation for final review and is subsequently entered into the SED.

For physical sampling, field technicians and the filed sampling data coordinator will review all field data for completeness and accuracy and then forward the data package to the Data Validation Contact for final review. The field data package will then be filed.

The characterization team will review laboratory reports and 10 percent of the reports will undergo verification and validation. The analytical results will be used to define the horizontal and vertical extent of all contamination. Uranium results will be used to develop a 3-D model of the uranium concentration, and all other COCs will be compared to this model to evaluate the capture of all COCs by the modeled uranium contamination. COCs that fall outside of the modeled uranium contamination will be noted to allow their capture during Title I/II design activities. Any above-WAC, RCRA, HWMU, UST, or high leachable areas will be identified during predesign characterization to the Title I/II design team.

The characterization staff will work with engineering to interpret the data and develop the needed tables, figures and data-summary appendix for the Title I/II design. Uranium data placed in the SED will be compiled and entered into the draft 3-D model of uranium contamination to prepare the final 3-D model. The final 3-D model of uranium contamination will be delivered to the Title I/II team to develop the extent of excavation. Specific activities and deliverables anticipated for this work include (capital letters are tied to Table 6):

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- A. Perform verification and validation of data.
- B. Variance/Field Change Notice, as needed with applicable OEPA/USEPA approval.
- C. Enter data into the SED and perform queries.
- D. Reduce and interpret data to develop the extent of contamination and final list of COCs.
- E. Develop tables, figures, and data summary appendix for Title I/II design.
- F. Prepare the final 3-D model for uranium contamination.
- G. Perform project management and control activities.
- H. Submit characterization records to Procedure and Document Distribution Service.

The verification and validation packages and the final 3-D model of the uranium contamination area delivered to the project. These deliverables and other project records are sent to Procedure and Document Distribution Service.

The scope of work will be managed by projectized staff and covered under Control Account GPM1 from PBS-06. The scope of work will be performed using projectized, matrixed, and centralized personnel.

Matrixed Personnel

Remediation Systems will develop the final 3-D model for uranium contamination. Quality Control Operations will review and approve any remaining V/FCNs. Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Sample Data Management will perform verification and validation, enter data, conduct database queries, and provide the query results to the characterization group. Procedure and Document Distribution Services will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, characterization, engineering, and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will review laboratory and data reports in parallel with V&V work and use the database queries to define the horizontal and vertical extent of all contamination. All non-uranium COCs will be compared to the final 3-D model of uranium contamination to evaluate the capture of all COCs by the uranium contamination zones. COCs that fall outside the modeled uranium contamination will be noted to allow their capture during Title I/II design activities. Tables and figures will be developed by the characterization staff to summarize the distribution of sample locations and data results. Of special interest will be the above-WAC, RCRA, HWMU/UST areas and the scatter plots that depict the depth of each COC relative to the excavation depth. All tables and figures will be delivered to the Title I/II design team. A data-summary appendix will be prepared to record all samples analyzed during the predesign work. Project Controls will provide cost and schedule support based on the information supplied by the project manager.

Table 6 summarizes the projectized and matrixed personnel performing the scope of work:

TABLE 6
 Manpower Requirements for Task 2, Subtask 3 –
 Area 2 Phase II Data Reporting and Interpretation

Activities:

MPM Code	Personnel P,C,M,S	A	B	C	D	E	F	G	H
ENGMGR	P							X	
ENSREP	P	X	X		X	X	X	X	X
DRFCAD	P				X				
ENSREP	M						X		
LABTEC	M	X		X					

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

2.3)2 Quantification

Table 7 summarizes the quantities and/or deliverables anticipated for this subtask per the SEP, ten percent of the laboratory data packages will be verified and validated. Based on information used in the Area 3A/4A IRDP, it is anticipated that 10 tables, 20 figures and a data-summary appendix will be prepared for the Area 2 Phase II IRDP. The final 3-D model of uranium contamination is needed by the Title I/II design team to capture the extent of excavation.

TABLE 7
 Quantities for Task 2, Subtask 3 –
 Area 2 Phase II Data Reduction and Interpretation

Activities:

Item	Quantity
Radiological Lab Reports to Verify and Validate	0 each
Technetium-99 Lab Reports to Verify and Validate	0 each
Metal Lab Reports to Verify and Validate	2 each
Organic Lab Reports to Verify and Validate	0 each
Data Tables	10 each
Figures	20 each
Data-Summary Appendix	1 each
Final 3-D Model of Uranium Contamination	1 each

1.5.2 G2114 - Area 2 Title I/II Design

Title I/II Design includes development of the Integrated Remedial Design Package (IRDP) comprised of an Implementation Plan, Technical Specifications, and Excavation Drawings, along with other support plans necessary for agency review and approval prior to remediation. There will be a total of one IRDP produced.

Title I/II design activities are guided by the use of the Engineering Functional Area procedures and the Project Execution Plan, along with requirements outlined in the Sitewide Excavation Plan and established design criteria.

The activities for the Title I/II design will be grouped into three fundamental tasks:

- Task 1: Project Planning
- Task 2: Title I Design
- Task 3: Title II Design.

Major technical risks identified for this scope of work include:

- Redefinition of Remediation Area.
- Implementing a portion of the design.
- Separation of design into smaller packages (i.e. site preparation, excavation, interim restoration).
- Extended review length and approval or excessive number of review comments by DOE or OEPA/USPEA.
- Inadequate engineering discipline.
- Inadequate CADD or drafting experience.
- Inadequate bounding of contaminants above the FRL.

Contingencies for the above technical risks, in order of appearance, include:

- No redefining of Remediation Area after the issuance of this narrative.
- Reevaluate surface water drainage, traffic routes, excavation boundaries.
- Plan for construction drawings and technical specifications in terms of site preparation, excavation, interim restoration so that aspects of the design can be executed.
- ~~Active participation by~~ Involve DOE reviewers during the design development and ~~by request DOE to curb review times and comments by OEPA/USEPA.~~
- Teaming Partners or subcontractor expertise.
- Teaming Partners or subcontractor expertise.
- DCN excavations after CFC.

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Major charge number assumptions include:

- Only one Integrated Remedial Design Package (IRDP) as required by the SEP will be produced describing Area 2 Phase II remediation.
- Engineering is self-performed by Fluor Fernald, Inc. Any additional engineering and CADD services will be obtained through teaming partners.
- The IRDP will consider and include site preparation, excavation, control and management, and interim restoration. These four construction activities will not be separated in part or entirely as was experience in Area 1 Phase II and Area 2 Phase I IRDPs.
- Consideration to "sector" boundaries was given but not strictly adhered to. Consideration to geographical locations, present and past operations, and contamination data was given priority.
- Remediation area is well-defined and utility isolation trenching is not warranted.
- When applicable by the task, three-dimensional modeling of at-and below-grade structures is completed prior to the beginning of Title II Design.
- When applicable by the task, three-dimensional modeling of the contamination is completed prior to the beginning of Title II Design.
- When applicable by the task, fly-over, photogrammetry, and digitizing to support surveying services will be subcontracted.
- Cultural Resource surveys have been completed or are not warranted within the Remediation area.
- Reproduction of work plans, construction drawings, technical specifications, and other support documents and deliverables will be accomplished on site.
- Project Planning task deliverables are completed prior to Title I design.
- No significant scope changes result from the Title design review.
- No OEPA or USEPA review or approvals of Project Planning or Title I design deliverables or documents. ~~DOE review will occur in parallel with internal reviews.~~
- Field verification of topography, utilities, structures, drainage is necessary to ensure the state of existing conditions prior to Title I design.
- Ninety percent (90%) and CFC construction drawings and technical specifications are organized similiarly as in Area 3A/4A.

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- Occasionally, DOE review of the 90% IRDP will may occur in parallel with the project internal review to recapture the schedule.
- DOE transmits any agency correspondence, including review comments, to the SDFP project manager within twenty-four (24) hours of receipt.
- OEPA and USEPA review only the 90% IRDP submittal.

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- ~~One hundred percent (100%)~~ The final IRDP review internally and by will be conducted in meeting format with DOE occur via design review meeting and is limited to concur that ensure 90% comments have been incorporated into the design package.

1) Task #1 – Project Planning

1.1) Plan/Scope

Project planning is the critical initial step in developing the Title I/II design for excavating soil and at- and below-grade structures. Guidance documents must be prepared by both projectized and matrixed personnel and an extensive review of the site reference drawings must be conducted to compile the needed information on at- and below-grade structures and utilities. The compiled drawing packages will be used to prepare the 3-D computer models of at- and below-grade structures, which are needed to design the extent of excavation. Prior to initiating Title I design work, an alignment meeting will be held with all project and matrixed personnel to ensure that assignments are understood and integration channels have been established.

Specific activities for this scope of work includes reviewing the following existing Area 2 Phase I documentation for applicability to Area 2 Phase II (capital letters are tied to Table 8):

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- A. Technical Reference Drawing compilation and indexing.
- B. Technical Reference Drawing package.
- C. NLO Construction Project Files (CPF) review and report.
- D. Request for Engineering Services for matrix support.
- E. Walkdown of Remediation Area.
- F. Auditable Safety Record (ASR) preparation.
- G. Functional Design Requirements (FDR) preparation.
- H. ARARs/TBC table preparation.

- I. Project Execution Plan (PEP) preparation.
- J. Project Alignment meetings.
- K. Occupational and Environmental ALARAs (including PEAPR).
- L. Engineering administration including self-assessments; responding to surveillances or non-conformance reports; meetings with project staff, DOE, regulatory agencies; tracking of budget vs actual costs; tracking of schedules; safety workgroup and walkdowns; submission of records to Procedure and Document Distribution Service.

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This scope of work will be self-performed by Fluor Fernald, Inc. It will be managed and performed mainly by projectized staff covered in Control Account GPM1. Matrixed and centralized personnel will also be utilized.

Matrixed Personnel

Engineering Services will be used to retrieve any drawing that could serve as the input information for the 3-D CADD models. Environmental, Safety, Health and Quality Integration, Radiological Protection Operations, and Quality Control Operations will perform reviews on the Auditable Safety Record (ASR), Functional Design Requirements (FDR), and Project Execution Plan (PEP), and they will participate in the project alignment meetings. Project Controls will provide cost and schedule support. Personnel from these organizations will use this charge number with the exception of the SDFP matrix support (ESH&Q rep., QC rep, Rad rep) which will be budgeted under PBS-06 control account GPM1

Centralized Personnel

Environmental Compliance will assist in developing the PEAPR, ARARs/TBC table and Environmental ALARA, ensure the above documents are consistent with their deliverables and participate in the alignment meetings. . Environmental, Safety, Health and Quality Integration, will perform the safety assessment and prepare the Auditable Safety Record (ASR) for the project team to review. Procedure and Document Distribution Services will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the PEP and participate in the alignment meeting. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering and administrative disciplines will provide oversight and support services and prepare most of the text needed for the ASR, FDR and PEP. These personnel will charge their labor hours to PBS-06 control account GPM1. Management will be responsible for integrating all the needed functional areas, including Construction, into the ASR, FDR and PEP documents. Engineering will take the lead role in compiling the archived drawings needed to produce any of the 3-D CADD drawings and for research into the NLO CPFs. Engineering will also take the lead in initializing and overseeing the work accomplished concerning the ARAR/TBC table, Occupational ALARA,

Environmental ALARA, and PEAPR reviews to ensure all personnel involved are working consistently on the same scope of work. Prior to initiating the Title I design activities, an alignment meeting will be held to discuss schedule and technical details with all principal project team members and functional area groups that support the design effort. Project Controls will provide cost and schedule support based on the information supplied by the project manager.

Table 8 summarizes the projectized personnel managing and the projectized, matrixed, and some centralized personnel performing the scope of work:

TABLE 8
 Manpower Requirements for Task 1 –
 Project Planning

Activities:

MPM Code	Personnel P,C,M,S	A-C	D	E	F	G	H	I	J	K	L
ENGMGR	P		X	X	X	X		X	X	X	X
ENGCVL	P	X		X	X	X	X	X	X	X	X
ENGCVL	M	X		X	X	X	X		X		
PRJMGR	P			X					X		
CNSMRG	P			X				X	X		
CNSENG	P	X		X		X	X		X		
WSTENG	C			X		X	X	X	X	X	
QACENG	P			X		X	X	X	X	X	
INDHYG	P			X		X	X	X	X	X	
RADENG	P			X		X	X	X	X	X	
TPSREP	P							X			
DRFCAD	P							X			
DRFCAD	M							X			
ENPREP	C			X		X	X		X	X	
TPSREP	C			X	X				X		
ENSREP	P										
CLERKS	P,C				X	X	X	X	X	X	X

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

1.2) Quantification

Table 9 summarizes the quantities and/or deliverables anticipated for this subtask. Per site procedures, project management and engineering will prepare or revise existing ASR, FDR, and PEP and facilitate alignments.

TABLE 9
 Quantities for Task 1 –
 Project Planning

Activities:

Item	Quantity
Technical Reference Drawings and Index	1 each
Prelim. Qty. Take-off of At- and Below-Grade Structures	1 each
3-D Models of At- and Below-Grade Structures	1 each
NLO CPFs Review summary memo	1 each
Request for Engineering Services	1 each
Auditable Safety Record (ASR)	1 each
Functional Design Requirements (FDR)	1 each
ARARs/TBCs Table	1 each
Project Execution Plan (PEP)	1 each
Alignment Meetings	1 each
Occupational ALARA	1 each
Environmental ALARA	1 each
PEAPR	1 each

Historically, project planning is crucial to the safety and success of projects at the FEMP taking from 3 to 5 months utilizing 2 to 5 FTEs of projectized and matrixed labor. Because self-performing and streamlining engineering, the schedule in Section 2.0 and manpower sheets in Section 3.0 reflect the lower end of the ranges.

2) Task #2 – Title I Design

2.1) Plan/Scope

Title I design includes activities that are necessary to satisfy requirements for the Integrated Remedial Design Package (i.e. Implementation Plan, Construction Drawings, Technical Specifications, and support documents – Design Criteria Package, Storm Water Management Plan, Erosion and Sediment Control Plan, Earthwork Calculations) for agency approval at 90% (Prefinal) completion and to satisfy DOE requirements.

The purpose of Title I design activities is to develop a preliminary or 30% design that will serve as the framework for Title II design and the subsequent issuance of the 90% IRDP to the agencies. Title I design activities, described in detail below, include the development or the revision of existing documents and includes:

- Design Criteria Package
- Preliminary or 30% Design Package
- Surveying Support
- Engineering Administration.

Design Criteria Package:

As part of developing the technical baseline, the preparation and completion of the Design Criteria Package (DCP) based on the Functional Design Requirements (FDR) is important. Design Criteria will be developed and are the controlling criteria for design and therefore execution of the scope. The ARAR/TBC tables will be finalized. Design Criteria will be developed for the following technical areas including:

- Site Preparation
- Storm Water Management
- Subsurface Water Management
- Erosion and Sediment Control
- Support Facilities and Utilities
- Excavation
- Hauling
- Dust Control
- Interim Restoration
- Systems/Control and Management.

Preliminary or 30% Design Package:

As the Design Criteria Package is developed and the project team members are aligned with the requirements, the preliminary or 30% design package can commence which includes Construction Drawings, Technical Specifications, Engineering Design and Analysis Package, Preliminary Quantity Takeoffs, Workplans, and DOE Review.

Construction Drawings:

- List of Drawings: A list of anticipated Civil, Mechanical, Electrical drawings.
- Site Plan/Utility Plan/Existing Conditions showing existing pads, roads, buildings, fencing, poles, overhead utilities, surface features. In addition, it shows site preparation activities such as the location of radiological control and construction support areas, staging areas, laydown areas, special material transfer areas, air monitoring locations and any utility necessary to be installed to support excavation remediation.
- Surface Water Management and Erosion and Sediment Control Plan drawings showing surface water management and erosion control features such as run-on diversion ditches, culverts, silt fences, sediment traps or basins, level spreaders.
- Utility Removal Plan shows which utilities are to be removed and which, if any are to remain.
- Excavation Plans/Typical Excavation Cross-section shows the general location and depth of excavations based on the three-dimensional modeling and in particular in relation to site preparation information.

- Development of excavation approaches which will illustrate the coordination of excavation monitoring (real time or physical sampling), surveying, and excavation with any defined hold points for any:
 - Process piping removal above design excavation grade
 - Process piping removal below design excavation grade
 - Excavation of Above-WAC, RCRA, or special excavation areas
 - Excavation of Above-FRL soil to design excavation grade.
- P&IDs/PFDs (if any) showing piping and instrumentation diagrams.
- Traffic Plan showing haul routes and traffic routes.
- Sequencing Plan (For Information Only) used to assist in planning the work that sequences site preparation, excavation, certification, interim restoration activities.
- Material Tracking Plan used to assist WAO in developing the PWID.
- Precertification Plan shows excavated area available for precertification/ certification with surface water run-on control features to control run-off from uncertified areas. Other items to be shown include access control fencing, site preparation features installed that can be removed.
- Interim Restoration Plan shows any additional planned features and surface water drainage prior to Restoration Planning.

Technical Specifications:

Review of existing specifications for outline and format to develop the technical specification outline including scope. Outline may include such items as surveying, site preparation (i.e. fencing, clearing and grubbing) earthwork, backfilling, unsuitable fill, impacted material excavation, stormwater management and erosion control, presumed asbestos containing material, traffic control, aggregate surface, seeding, mechanical and electrical division specifications.

Engineering Design and Analysis Package:

- Preliminary Excavation Design
- Slope Stability Analysis, examples include if deep excavations exist near the railroad tracks or OSDF
- Subsurface water evaluation
- Storm water management/hydrologic evaluation, examples include surface water or ditch flow, pumping systems, Paddys Run

- Preliminary support facility design
- P&IDs/PFD.

Preliminary Quantity Takeoffs:

- Excavation of above-FRL soil
- Civil, mechanical, electrical components

Work Plans:

- Preliminary Implementation Plan
- Preliminary Storm Water Management Plan
- Preliminary Erosion and Sediment Control Plan
- Preliminary Systems/Control Management Plan

Internal Review and Response to Comments:

Internal review includes the review of the design criteria package, technical specifications, construction drawings, implementation plan, storm water management plan, systems/control management plan and response to comments.

DOE Review and Response to Comments:

DOE review includes the review of the design criteria package, technical specifications, construction drawings, implementation plan, storm water management plan, systems/control management plan and response to comments.

Surveying Support:

Surveying support includes collecting or verifying site existing conditions information including topographic information to be used for Title II design. This can include a flyover with digitizing support; field surveying and verification of existing drainage structures (i.e. basins, ditches, trenches, culverts, headwalls), utility structures (i.e. manholes, catch basins, sumps); affected section and upstream portion of Paddys Run for hydrologic evaluation in Title II, verification of final Silos Area excavation grades.

Engineering Administration:

Engineering Administration which includes self-assessments; responding to surveillances or non-conformances reports; meetings with project staff, DOE, regulatory agencies, or other project personnel for integration; tracking of budget versus actual costs; tracking schedule; integration with project controls, safety workgroup and walkdown participation, maintenance of project planning deliverables.

Specific activities for this scope of work includes (capital letters are tied to Table 10):

- | | |
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| R1-
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|------------------|---|

This scope of work will be self-performed by Fluor Fernald, Inc. The scope of work will be managed and performed mainly by projectized staff covered in Control Account GPM1. Matrixed and centralized personnel will also be utilized.

Subcontract Personnel

Dedicated CADD support is required to generate drawings identified under this task. Specialized civil engineering is required to generate the Engineering Design and Analysis Package.

Matrixed Personnel

Engineering Services will be used to develop the mechanical and electrical portions of the DCP and the preliminary design package including the Systems/Control Management Plan. The lead civil engineer will be responsible for integrating all the needed functional areas into the drawings, technical specifications, and plans. The lead civil engineer will take the lead role in developing the technical specifications, drawings and SWECP. CADD services will assist in producing drawings for the preliminary design package. Environmental, Safety, Health and Quality Integration, Radiological Protection Operations, and Quality Control Operations will perform design reviews. Project Controls will provide cost and schedule support. Personnel from these organizations will use this charge number with the exception of the SDFP matrix support (ESH&Q rep., QC rep, Rad rep) which will be budgeted under PBS-06 control account GPM1

Centralized Personnel

Environmental Compliance will assist in developing the preliminary design and ensure compliance with the PEAPR, ARARs/TBC table and Environmental ALARA. Procedure and Document Distribution Services will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware

and software needs. Waste Acceptance Organization will provide design reviews and assist in any waste disposition issues. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, surveying, and administrative disciplines will provide oversight and support services and prepare most of the text needed for the DCP, technical specifications (civil), Implementation Plan (IP), Storm Water Management Plan, and Erosion and Sediment Control. These personnel will charge their labor hours to PBS-06 control account GPM1. The project engineer will prepare most of the IP and be responsible for integrating all the needed functional areas into the DCP, drawings, technical specifications, and plans. The project engineer will take the lead role in developing the DCP. The area project manager will ensure overall integration and provide status to the SDFP project manager. Prior to initiating Title II design activities, a final Title I meeting will be held to discuss schedule and technical details with all principal project team members and functional area groups that support the design effort.

Table 10 summarizes the projectized personnel managing and the projectized, matrixed, and some centralized personnel performing the scope of work:

TABLE 10
 Manpower Requirements for Task 2 – Title I Design

Activities:

MPM Code	Personnel P,C,M,S	A	B	C-F	G	H,I	J	K	L	M	N	O
ENGMGR	P	X	X	X	X	X	X	X	X	X	X	X
ENGCVL	P	X	X	X	X	X	X	X	X	X	X	X
ENGCVL	M,S	X	X	X		X	X	X	X	X		X
ENGINR	M	X		X			X	X	X	X		X
ENGELE	M	X		X			X	X	X	X		X
DRFCAD	M,S			X		X		X	X			
PRJMGR	P							X				
CNSMRG	P							X				
CNSENG	P	X	X	X	X	X	X	X				
WSTENG	C	X		X	X	X		X				
QACENG	P	X		X	X	X		X				
INDHYG	P	X		X	X	X		X				
RADENG	P	X		X	X	X		X				
TPSREP	P	X	X		X	X		X				
DRFCAD	P			X	X	X	X					
ENPREP	C	X	X	X	X	X		X			X	
TPSREP	C	X		X	X			X				
ENSREP	P	X			X			X		X		
CLERKS	P,C	X	X	X	X	X	X	X	X	X	X	X

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

2.2) Quantification

Table 11 summarizes the quantities and/or deliverables anticipated for this subtask. The basis for the estimated number of documents and drawings is the site engineering procedures and previous design work experienced in Area 1 and Area 2. Efforts were made to consider and to utilize established documents, plans, and technical specifications along with streamlining designs that were undertaken in the FY2000 in Area 2 Phase I (i.e. Radium Hot Spot IRDP and Carolina IRDP).

TABLE 11
 Quantities for Task 2 – Title I Design

Activities:

Item	Quantity
Design Criteria Package (DCP)	1 each
Final ARAR/TBC Table	1 each
Preliminary Construction Drawings	10 each
Preliminary Technical Specifications	10 each
Preliminary Engineering Design and Analysis Package	1 each
Preliminary Quantity Takeoffs	1 each
Preliminary Implementation Plan	1 each
Preliminary Storm Water Management Plan	1 each
Preliminary Erosion and Sediment Control Plan	1 each
Preliminary Systems/Control Mgmt Plan	1 each
Internal Review and Response to Comments	1 each
DOE Review and Response to Comments	1 each

Historically, project planning is crucial to the safety and success of projects at the FEMP taking from 3 to 5 months utilizing 2 to 5 FTEs of projectized and matrixed labor. Because self-performing and streamlining engineering, the schedule in Section 2.0 and manpower sheets in Section 3.0 reflect the lower end of the ranges.

3) Task #3 – Title II Design

3.1) Plan/Scope

Title II design includes activities that are necessary to satisfy requirements for the Integrated Remedial Design Package (i.e. Implementation Plan, Construction Drawings, Technical Specifications, and support documents – Design Criteria Package, Storm Water Management Plan, Erosion and Sediment Control Plan, Earthwork Calculations) for agency approval at 90% (Prefinal) completion and to satisfy DOE requirements.

The purpose of Title II design activities is to develop the technical baseline from the Title I design into Certified for Construction (CFC) drawings and specifications after the subsequent issuance of the Prefinal or 90% IRDP to the agencies for their review and approval.

Specific activities for this scope of work includes (capital letters are tied to Table 11):

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- A. 90% (Prefinal), 100% (Draft Final), and CFC Construction Drawings
- B. 90% (Prefinal), 100% (Draft Final), and CFC Technical Specifications
- C. 90% (Prefinal), 100% (Draft Final), and Final Implementation Plan
- D. 90% (Prefinal) and 100% (Final) Engineering Design and Analysis Package
- E. 90% (Prefinal) and 100% (Final) Quantity Take-offs of at- and below-grade debris and impacted soil
- F. 90% (Prefinal) and 100% (Final) Cost Estimates
- G. 90% (Prefinal) and 100% (Final) Storm Water Management Plan
- H. 90% (Prefinal) and 100% (Final) Erosion and Sediment Control Plan
- I. 90% (Prefinal) and 100% (Final) Systems/Control Management Plan
- J. Internal Review of Items A-I and response to any comments
- K. DOE Review of Items A-I and response to any comments
- L. OEPA/USEPA Review of Items A-I and response to Agency comments to the IRDP
- M. System, Structures, and Components List with associated Performance Grades
- N. Concurrence Letter from TRB accepting SSCs, and PGs
- O. Labor Standards Review request
- P. Surveying information
- Q. Maintenance of any Project Planning Deliverables
- R. Engineering Administration, i.e. meeting minutes, reports, presentation material, status updates, submission of records to Procedure and Document Distribution Service.

This scope of work will be self-performed by Fluor Fernald, Inc. The scope of work will be managed and performed mainly by projectized staff covered in Control Account GPM1. Subcontracted, matrixed, centralized personnel will also be utilized.

Subcontract Personnel

Dedicated CADD support is required to generate drawings identified under this task. Specialized civil engineering will be necessary to complete design analysis of slope stability, hydrologic modeling, etc.

Matrixed Personnel

Engineering Services will be used to develop the mechanical and electrical portions of the Title II design. The lead civil engineer will be responsible for integrating all the needed functional areas into the drawings, technical specifications, and plans. The lead civil engineer will take the lead role in developing the technical specifications, drawings and SWECP. CADD services will assist in producing drawings for the preliminary design package. Environmental, Safety, Health and Quality Integration, Radiological Protection Operations, and Quality Control Operations will perform design reviews. Project Controls will provide cost and schedule support. Personnel from these organizations will use this charge number with the exception of the SDFP matrix support (ESH&Q rep., QC rep, Rad rep) which are budgeted under PBS-06 control account GPM1.

Centralized Personnel

Environmental Compliance will be consulted as necessary to ensure compliance with the PEAPR, ARARs/TBC table and Environmental ALARA. Procedure and Document Distribution Services will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. The Waste Acceptance Organization will provide design reviews and assist in any waste disposition issues. Industrial Relations will participate in the Labor Standards Review of the scope of work. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, surveying, and administrative disciplines will provide oversight and support services and prepare most of the Title II design package based on the Title I design including the technical specifications (civil), Implementation Plan (IP), Storm Water Management Plan, and Erosion and Sediment Control. These personnel will charge their labor hours to PBS-06 control account GPM1. The project engineer will prepare most of the IP and ensure compliance with the engineering functional area procedures including coordinating the performance grades for systems, structures, and components. Surveying support includes additional collecting and verification of site existing conditions that was unable to be retrieved during Title I design due to other project interferences. It also includes collecting of data after Title I review and conditions have been finalized. The area project manager will ensure overall integration and provide status to the SDFP project manager.

Table 11 summarizes the projectized personnel managing and the projectized, matrixed, and some centralized personnel performing the scope of work:

TABLE 11
 Manpower Requirements for Task 3 – Title II Design

Activities:

MPM Code	Personnel P,C,M,S	A-E	F	G-H	I	J-L	M	N	O	P	Q	R
ENGMGR	P	X	X	X	X	X	X	X	X	X	X	X
ENGCVL	P	X	X	X	X	X	X	X	X	X	X	X
ENGCVL	M,S	X	X	X	X	X	X			X		X
ENGINR	M	X				X	X			X		X
ENGELE	M	X				X	X			X		X
DRFCAD	M,S	X		X	X	X						
PRJMGR	P	X	X						X			
CNSMRG	P	X	X			X			X			
CNSENG	P	X		X	X	X			X			
WSTENG	C	X		X	X	X						
QACENG	P	X		X	X	X						
INDHYG	P	X		X	X	X						
RADENG	P	X		X	X	X						
TPSREP	P	X		X	X	X						
DRFCAD	P	X		X	X	X						
ENPREP	C	X		X	X	X		X			X	
TPSREP	C	X			X			X				
ENSREP	P	X			X			X		X		
CLERKS	P,C	X	X	X	X	X	X	X	X	X	X	X

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

3.2) Quantification

Table 12 summarizes the quantities and/or deliverables anticipated for this subtask. The basis for the estimated number of documents and drawings is the site engineering procedures and previous design work experienced in Area 1, Area 2, and Area 3A/4A IRDPs. Efforts were made to consider and to utilize established documents, plans, and technical specifications.

TABLE 12
 Quantities for Task 3 – Title II Design

Activities:

Item	Quantity
SSC List with Performance Grading	1 each
Presentation to the Technical Review Board	1 each
Labor Standard Review request	1 each
90% Construction Drawings	12 each
90% Technical Specifications	16 each
90% Implementation Plan	1 each
90% Engineering Design and Analysis Pkge.	1 each
90% Quantity Takeoffs	1 each
90% Cost Estimate	1 each
90% Storm Water Management Plan (SWMP)	1 each
90% Erosion and Sediment Control Plan (ESCP)	1 each
90% Systems/Control Mgmt Plan (S/CMP)	1 each
90% Internal and DOE Response to Comments	1 each
OEPA/USEPA 90% Construction Drawings	12 each
OEPA/USEPA 90% Technical Specifications	16 each
OEPA/USEPA 90% Implementation Plan	1 each
OEPA/USEPA 90% SWMP, ESCP, S/CMP	1 each
OEPA/USEPA 90% Response to Comments	1 each
100% Construction Drawings	12 each
100% Technical Specifications	16 each
100% Implementation Plan	1 each
100% Engineering Design and Analysis Pkge.	1 each
100% Quantity Takeoffs	1 each
100% Cost Estimate	1 each
100% Storm Water Management Plan (SWMP)	1 each
100% Erosion and Sediment Control Plan (ESCP)	1 each
100% Systems/Control Mgmt Plan (S/CMP)	1 each
100% Internal and DOE Response to Comments	1 each
CFC Construction Drawings	12 each
CFC Technical Specifications	16 each
Final Implementation Plan	1 each
Final Cost Estimate	1 each
Final Storm Water Management Plan	1 each
Final Erosion and Sediment Control Plan	1 each
Final Systems/Control Mgmt Plan	1 each

Historically, project planning is crucial to the safety and success of projects at the FEMP taking from 3 to 5 months utilizing 2 to 5 FTEs of projectized and matrixed labor.

The following details the quantities for each construction drawing listed above. Construction drawings will contain detailed information, coordinates, grading contours, general and keyed notes and include the following:

(1 Total) Title Sheet, Drawing Index, Legend and General Notes and Existing Conditions
1" = 200'

Description: Shows construction limits, dust control limits, lists existing foundations, pads, stockpiles, etc., by number and description. Shows existing radiological boundaries, monitoring wells, roads.

(2 Total) Site Preparation 1" = 60'

Description: Shows Construction/Radiological boundary fencing locations; radiological and excavation loadout buffer areas, monitoring wells to be protected, limits of clearing and grubbing activities, special material transfer areas, radiological trailer and construction trailer, air monitoring locations, utility construction (telephone, electric, fire system, computer) for trailers, construction laydown areas, sea-land storage areas, additional material storage areas, worker and visitor parking areas, yard lighting (if necessary), pole and transformer locations, equipment refueling areas, interim stockpile locations.

(2 Total) Surface Water Management and Erosion Control Plan 1" = 30'

Description: Shows additional drainage features, culverts, silt fence, sediment traps or basins or other stormwater structures that are needed for surface water mgmt and erosion and sediment control to be installed after site preparation, but prior to excavation, including AWAC, RCRA, special excavations and Below-WAC excavations. Delineates extent of excavation for priority excavations (AWAC, RCRA, special excavations).

(2 Total) Grading Plan

Description: Shows design excavation elevations for below-WAC excavations.

(1 Total) Cross Sections 1" = 30' Horizontal, 1" = 5' Vertical

Description: Shows cross sections delineated in Grading Plans for final design excavation. Cross sections show pre-excavation topography, excavation design elevation, GMA surface, underground utilities, foundations, locations for GMA protection, sand lenses, perched water, coarse-grain unit, and soil stratigraphy.

(1 Total) Civil Details

Reserved for details as in:

- Typical Construction Entrance Detail
- Special Materials Transfer Area (SMTA) Detail
- Silt Fence Detail
- Temporary Diversion Detail
- Erosion Blanket Lined Ditch Detail
- Dumped Rock Fill Lined Ditch Detail
- Typical Haul Road Detail
- General and Keyed Notes.

(1 Total) Material Tracking and Traffic Plan 1" = 100'

Description: Illustrates the Material Tracking Locations (MTL) for WAO and Tabelizes the MTL, Waste Type, Disposition, and comments each MTL.

(1 Total) Sequencing Plan (For Information Only)

Description: Assists in planning the work that sequences site preparation, location-specific excavations, underground utility removals, certification and interim restoration activities. It considers soil to debris ratios within the Remediation Area itself and from other active Remediation Areas. It also considers the criteria to excavate from upgradient areas to downgradient areas with respect to surface water flow and perched groundwater, controlling haul routes through contaminated areas to minimize cross-contamination of areas ready for certification, and certification sequencing.

(1 Total) Utility Removal Methods

Description: Shows methods of excavation, real time scanning, physical sampling, and backfilling of Below-WAC excavations during underground utility removals below the design excavation surface. Methods may include removals of both process piping and non-process piping. Detail may be greater should utilities also be located in AWAC, RCRA, or other special excavation areas.

The following details the quantities for each technical specification listed above. Technical Specifications describes the scope, submittals, products, and execution of the following:

Review of the existing OSDF specifications for applicability including:

Surveying (Section 02050)

Specification establishes survey benchmarks; set limits of construction activities; verifies existing conditions; establishes notekeeping and redlines/as-builts.

Site Preparation (Section 02100)

Specification describes installation/relocation of construction and radiological fencing; protection of existing monitoring wells and survey benchmarks; clearing, grubbing, woodchipping, and stockpiling.

Earthwork (Section 02206)

Specification applies to non-remediation excavation for topsoil excavation and stockpiling, general excavation and stockpiling; trenching, backfilling, compacting for support utilities.

Dust Control (Section 02210, 02205, 02206)

Description of the requirements for dust control to meet site requirements.

Aggregate Surface (Section 02506)

Specification describes the requirements for aggregate or reuse of existing site materials for roads.

Storm Drain Piping/Utility (Section 02668)

Specification describes the requirements for installation of culverts, telephone, electric, water, sewer, fire system, computer to support areas etc.

Seeding (Section 02900)

Specification describes the Natural Resource requirements for seed mix, seed be preparation, and application rates over disturbed areas.

Review of the existing or development of excavation specifications including:

Traffic Control (Section 02150)

Specification describes hauling of material from source excavation areas to destination areas, i.e. OSDF, SP7, special material transfer area, stockpiles or other location.

Impacted Material Excavation (Section 02205)

Specification describes excavating; size reduction of structures, utilities, pads, foundations; segregation of debris, development and maintenance of stockpiles; loading, hauling, and unloading impacted material. Also includes supplemental excavations beyond the design surface; tracking of known and unknown utility removals; maintenance and fueling of equipment, dewatering excavations; protection of the Great Miami Aquifer during impacted material removal.

Presumed Asbestos Containing Materials (Section 02210)

Specification describes the handling, packaging, loading, hauling, and unloading of friable and non-friable asbestos containing material. Also includes the handling, packaging, loading, hauling, and unloading of specific asbestos containing materials such as:

- Pipes coated with thermal system insulation
- Electrical Cable insulated with ACM
- Fireproofing Tape in Electric Manholes
- Piping containing gasket material
- Pipe coated with mastic
- ACM embedded in concrete
- Buried ACM not associated with underground utilities.

Erosion and Sediment Control (Section 02770)

Specification describes the installation, maintenance, and removal of temporary erosion controls; placement of dumped rock fill, erosion control blankets, geotextiles, for ditches and erosion control areas; management of erosion and sediment control measures; control of surface water and mgmt of ponded water.

Mechanical and Electrical Division

Specifications for mechanical and electrical details, such as utility pole plan and installation, transformers, wiring diagrams, pump and control panel locations, etc., three specifications per division.

Preparation and completion of the Engineering Design and Analysis Package including the following:

- Excavation Design
- Slope Stability Analysis
- Subsurface Water evaluation
- Storm water management/hydrologic evaluation including potential impacts to Paddys Run
- Support Facility Design.

1.5.3 G2111 - Area 2 Title III Design

Title III Design includes activities to monitor the quality of the technical baseline and design criteria as established in the IRDP. This monitoring is accomplished by the review and approval of construction plans and submittals prior to field activities. Additionally, the development and/or response to Requests for Clarification of Information (RCI) and Design Change Notices (DCNs) as field activities commence also ensures the technical baseline and design criteria are maintained or when necessary revised.

Area 2 Title III Design includes two fundamental tasks:

Task 1 – Area 2 Phase I Title III Design – FY2001

Task 2 – Area 2 Phase I and II Title III Design.

Title III Design activities are guided by the use of the Engineering Functional Area procedures, Integrated Remedial Design Package, Project Execution Plan, along with any requirement outlined in the Sitewide Excavation Plan and established design criteria.

Major technical risks identified for this scope of work include extended review length and approval for DCNs or excessive number of review comments by DOE or OEPA/USEPA and extension of excavation schedule carries the extension of Title III Design FTEs.

Contingencies for the above technical risks, in order of appearance include a reduction in the number of DCNs by better Title I Designs and a shorter review and approval cycle for DCNs and also excavation schedules are to be maintained.

The task activities and deliverables will be completed primarily by project staff from the management, engineering, surveying, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified in below, will use this charge account. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account will be closed out when the interim restoration of Area 2 is completed.

Major charge number assumptions include:

- See major charge number assumptions listed in Title I/II Design.

1) Task #1 – Area 2 Phase I Title III Design

1.1) Plan/Scope

Scope of work includes completing summary of Carolina area excavation summary, generate an IRDP on a portion of the A2PI perimeter excavation, and complete as-builts for the A2PI SWU excavation.

Specific activities for this scope of work includes:

- Prepare, respond, and approve RCIs and DCNs.
- Facilitate RCI/DCN review and approval through the project and DOE and OEPA/DOE.
- Prepare Safety Basis Document Reviews (SBDRs) based on DCNs.
- Assist Construction in plan preparation.
- Review and approve material submittals and plans.
- Complete excavation summary.
- Generate IRDP for a portion of A2PI perimeter excavation.
- Complete A2PI SWU excavation as-builts.
- Respond to and close out non-conformance reports (NCRs) or Event Discovery and Final Event Reports.
- Attend Construction progress meetings.
- Develop draft Excavation Summary Report.
- Engineering Administration including self-assessments; responding to surveillances; meetings with project staff, DOE, regulatory agencies; tracking of budget vs actual costs; tracking of schedule; safety workgroup and walkdowns; submission of records to Procedure and Document Distribution Service.

This scope of work will be self-performed by Fluor Fernald, Inc. with the exception of the A2PI SWU excavation as-builts which will be subcontracted and completed by the engineer of record, Parsons. Title III will be managed and performed mainly by projectized

staff covered in Control Account GPM1. Matrixed and centralized personnel will also be utilized.

Matrixed Personnel

The mechanical and electrical engineering disciplines from Engineering Services will be used to respond to or develop any RCI/DCN affecting their area of expertise. The lead civil will be used likewise in the event that civil issues cannot be answered by projectized staff and for changes that impact the design. Environmental, Safety, Health, and Quality Integration, Radiological Protection Operations, and Quality Control Operations will perform plan and DCN reviews as needed. Project Controls will provide cost and schedule support. Personnel from these organizations will use this charge number with the exception of the SDFP matrix support (ESH&Q rep., QC rep., Rad rep.) which are budgeted under PBS-06 control account GPM1.

Centralized Personnel

Environmental Compliance and Waste Acceptance Organization will be consulted as necessary to ensure compliance with the PEAPR, ARARs/TBC table and Environmental ALARA should a plan or RCI/DCN warrant such consultation. Procedure and Document Distribution Services will assign document numbers, RCI/DCN numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from management, engineering, surveying, and administrative disciplines will provide oversight and support services for the Title III design. Project staff from construction will provide oversight and management for all field activities and execution. These personnel will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering, characterization, and construction, along with support services are working together and to provide any enhancements in the work process. The project engineer will ensure timely review and approval of plans and RCIs/DCNs by all support organizations. The project engineer will also develop the draft Excavation Summary Report.

1.2) Quantification

Table 13 summarizes the quantities and/or deliverables anticipated for this subtask. Per the direction of senior management, three safety walkthroughs will be performed each month. The number of DCNs, RCIs, NCRs, and EDR/FERs are based on previous Title III Design in Area 1 and Area 2. Further, based on their complexity of scope, RCIs have been subdivided as simple and average, and DCNs have been subdivided as simple, average, and complex.

TABLE 13
 Quantities for Task 1 – Excavation Support

Activities:

Item	Quantity
A2PI SWU As-builts	1 each
A2PI Perimeter IRDP	1 each
Draft Excavation Summary Report	1 each

The number of FTEs of projectized and matrixed labor are based upon Area 1 and Area 2 Title III Designs and substituting Fluor Fernald, Inc. FTEs, formally implemented by the A/E subcontract.

Typically, safety walkthroughs may take up to 3 hours to conduct and write-up, a simple RCI up to 4 hours to process, an average RCI up to 7 hours to process, a simple DCN up to 14 hours to process, an average DCN up to 36 hours to process, and a complex DCN involving many disciplines up to 114 hours to process. NCRs, EDRs/FERs can take up to 40 hours of project time from onset through corrective action planning. Material submittal review and approval can range from 0.5 to 2 hours to review. Plan review can range from 2 to 8 hours to review per reviewer. Monthly excavation progress survey and cross-sections can take up to 20 hours to survey in the field, 4 hours to reduce the data and transfer to CADD, and up to 12 hours for CADD to produce, review, and revise. The draft Excavation Summary Report can take up to 100 hours to develop including supporting information from all the supporting functional areas.

2) Task #2 – Area 2 Phase I and Area 2 Phase II Title III Design

2.1) Plan/Scope

Area 2 Phase I Title III is concerned with the remaining portion of the SWU perimeter area that was not excavated in FY2001. Area 2 Phase II Title III is concerned with Area 2 Phase II. Both Title III activities will use the same charge number. Both include both excavation support activities and as-built/closeout as described below. Excavation support will refer to RCIs/DCNs and submittal reviews.

After the completion of excavation activities, as-built drawings will be prepared based on redline information and surveys and a final excavation summary developed which will include project close-out information. Oversight and monitoring will continue for dust control, surface water management, sediment and erosion controls, and interim restoration as a Title III activity should RCIs/DCNs be necessary while Area 2 awaits certification. The actual implementation and maintenance for these items is budgeted in this charge account.

Specific activities for this scope of work include (capital letters are tied to Table 14):

R1-
D-
410

- A. Complete RCIs/DCNs, submittal review and approval, and as-built drawings and specifications.

R1-
D-
410

- B. Prepare the final Excavation Summary Report.
- C. Control and Management of dust, surface water management, sediment and erosion controls.
- D. Interim restoration.
- E. Engineering Administration including self-assessments; responding to surveillances; meetings with project staff, DOE, regulatory agencies; tracking of budget vs actual costs; tracking of schedule; safety workgroup and walkdowns; submission of records to Procedure and Document Distribution Service.

This scope of work will be self-performed by Fluor Fernald, Inc. It will be managed and performed mainly by projectized staff covered in Control Account GPM1. Matrixed and centralized personnel will also be utilized.

Matrixed Personnel

The mechanical and electrical engineering disciplines from Engineering Services will as-built drawings and specifications in their area of expertise. The lead civil will be used likewise do the same. Environmental, Safety, Health, and Quality Integration, Radiological Protection Operations, and Quality Control Operations will assist in collecting data for the Excavation Summary Report and perform reviews as needed. Project Controls will provide cost and schedule support. Personnel from these organizations will use this charge number with the exception of the SDFP matrix support (ESH&Q rep., QC rep., Rad rep.) which are budgeted under PBS-06 control account GPM1.

Centralized Personnel

Environmental Compliance and Waste Acceptance Organization will assist in compiling the data for the Excavation Summary Report and perform reviews as needed. Procedure and Document Distribution Services will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from management, engineering, surveying, and administrative disciplines will provide oversight and support services for the Title III design. These personnel will charge their labor hours to PBS-06 control account GPM1. The project engineer will ensure timely review and approval of the as-builts and the Excavation Summary Report by all support organizations.

Table 14 summarizes the projectized personnel managing and the projectized, matrixed, and some centralized personnel performing the scope of work:

TABLE 14
 Manpower Requirements for Task 2

MPM Code	Personnel P,C,M,S	A	B	C	D	E
ENGMGR	P	X	X	X	X	X
ENGCVL	P	X	X	X	X	X
ENGCVL	M	X	X			
ENGINR	M	X				
ENGELE	M	X				
DRFCAD	M	X				
PRJMGR	P					
CNSMRG	P		X			
CNSENG	P	X	X			
WSTENG	C	X	X			
QACENG	P	X	X			
INDHYG	P		X			
RADENG	P		X			
TPSREP	P	X				
DRFCAD	P		X			X
ENPREP	C		X			
TPSREP	C		X			
ENSREP	P		X			X
CLERKS	P,C	X	X			X

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

2.2) Quantification

Table 15 summarizes the quantities and/or deliverables anticipated for this subtask:

TABLE 15
 Quantities for Task 2

Item	Quantity
As-Built Construction Drawings (A2PI Perimeter and A2PII)	1 each
As-Built Technical Specifications (A2PI Perimeter and A2PII)	1 each
Excavation Summary Report	1 each

The number of as-built drawings and technical specifications were based on the number presented in the Title I/II Design task. Historically, as-builts and the Excavation Summary Report can take 2 to 3 months to develop and is usually dependent on the turnaround in receiving information from other project functional areas. During this timeframe, as-builts can take up to 1 to 2 FTEs while the Excavation Summary Report can take up to 0.5 FTEs.

1.5.4 G2113 - Site Preparation/Excavation/Interim Restoration

Work in FY2001 within the SWU and the southern portion of the A2PI perimeter will be excavated by Wise and hauled by a subcontractor. Scope of work beyond FY2001, i.e. A2PI remaining perimeter and A2PII will be described as separate options in a Remediation Area/OSDF contract. This option is based on the sequence of excavation defined by Scenario 6 and activities are grouped into the following tasks:

- Task 1: Southern Waste Units (SWU) Excavation
- Task 2: A2PI Excavation – Perimeter FY2001
- Task 3: A2PI Excavation – Perimeter (Remaining)
- Task 4: A2PII Site Prep/Excavation.

The site preparation/excavation/interim restoration activities are guided by the Construction Functional Area procedures along with the Certified for Construction Drawings and Technical Specifications and approved subcontractor work plan submittals.

Major technical risks include the discovery of large volumes of perched water during the excavation where a well-point dewatering system is necessary or additional flyash and/or debris.

The activities and deliverables discussed below will be completed primarily by project staff from the management, construction, surveying, engineering, waste disposition and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use this charge account. Details on manpower needed to execute this scope of work are provided in Section 3.0. The charge account will be closed out with the completion of interim restoration.

Specific charge number assumptions include:

- For general assumptions and exclusions, see Section 1.2.
- Earned Value method for this charge number will be based on the quantities developed within the Quantification Sections.
- All site preparation, excavation, control and management, and interim restoration work will be subcontracted. For this Remediation Area, site preparation, excavation, control and management, and interim restoration work will be presented as an Option in the contract that includes the soil and debris placement in the OSDF and the OSDF construction presented in PBS-03.
- Interim restoration can occur concurrently with excavation.

- Two shifts work daily (5 days/week, 10 hours/day) beginning in May and ending in September between 3rd Quarter of FY2006 and 1st Quarter of FY2008 including October in FY2008 to correspond to OSDF (PBS-03) placement schedule.
- No excavation work is scheduled during OSDF winter shutdown, i.e. the months of January, February, and March.
- Isolation trenching for underground utilities around the Remediation Area Perimeter is not warranted.
- Blasting or explosives is not permitted.
- Excavations shall generally progress upgradient to downgradient, remove above-WAC and RCRA-hazardous areas prior to Below-WAC excavations, prevent surface water drainage into areas excavated to design grade or supplement excavations from Below-WAC excavations.
- Prior to loading any soil, material must not contain free liquid per EPA SW 846 Method 9095.
- Slope Stability requirements shall be performed per OSHA 29 CFR 1926.650 Subpart P.
- Water hazard requirements shall be performed per OSHA 29 CFR 1926.106.
- Temporary Excavation slopes with depths greater than 20' shall be no steeper than 1.5H:1V certified by a Registered Professional Engineer per OSHA 29 CFR 1926.650 Subpart P.
- Design slopes and slopes created by supplemental excavations shall be no steeper than 2H:1V. Design slopes will be finalized during Title I/II design.
- The following pipelines will be considered as AWAC: SN - Sanitary Sewers, CE - Contaminated Effluent, FT - Filtrate or Effluent, SL - Sump Liquor.
- Vitrified Clay Pipe (VCP), PVC, and CPVC pipe can be crushed after visually inspection by WAO for determination of any residues and removed with excavated material. Pipe that is visually inspected by WAO is cut so as to not crimped as with a shear attachment.
- Pipe that is 12" or greater in diameter must be split for OSDF disposition.
- All pipe must 10' or less in length for OSDF disposition.
- AWAC pipe that is 10" or greater in diameter must be split for off-site disposition.
- All AWAC pipe must be 8' or less in length for off-site disposition.

- Bulking factor for pipe is 4 and for concrete is 1.5 per 2001 guidance by WAO.
- Stockpiles shall be constructed with maximum slopes of 3H:1V and a maximum height to base ration of 0.2.
- Equipment required to excavate, load, haul, and place above-WAC or RCRA-hazardous soil and debris are to be dedicated for that purpose until washed with pressure washers or equal to remove all visible impacted soil or debris from the exterior equipment surfaces. For haul trucks, hauling above-WAC or RCRA-hazardous soil and debris and not entering these designated areas, only the haul truck beds need to be addressed.
- Equipment involved with the excavation is to be maintained within excavation area during periods of non-work unless decontaminated and released.
- Equipment involved with the excavation is to be kept in below-WAC areas to prevent compromising areas excavated to design grade. Excavations reaching the design grade are assumed to be ready for precertification.
- Placement of clay plug material over unsaturated sands and gravels of the Great Miami Aquifer is excluded from this scope.
- Haul trucks are to use automatic covers whether haul bed is empty or full or employ other Best Available Technologies for dust control.
- Dust Control provided by existing above-ground 3" and 4" HDPE dust control water line (or necessary extensions), water trucks, water wagons, hydroseeders, portable tanks, sprinklers.
- Pressure Washers or comparable will be utilized to wash process residue or suspect process residue and soil from piping and debris to allow for placement in OSDF. Washwater is to be collected and transferred for treatment at the AWWT.
- Portable Wash Equipment will be utilized to wash vehicle tires and vehicle exteriors as necessary. Washwater is to be collected and transferred for treatment at the AWWT.
- Equipment used to excavate, load, haul, and unload impacted material shall have enclosed cabs (barrier from outside air intrusion). Heating, air conditioning, ventilating of cab from the outside air must first pass through a HEPA.
- Existing contamination area postings are posted as uranium contamination areas with uranium release limits.
- Soil volumes listed are banked cubic yards.
- Debris volumes listed are in-place cubic yards.

- No unexpected cultural resource discoveries are encountered during site preparation, excavation, control and management or interim restoration activities.
- Flyash recorded and one sample point above the FRL for radium located between the southeast corner of the former Active Flyash Pile and the Aquifer Restoration Butler building known as the 'dance hall' will not be removed due to closeness to Aquifer Restoration utility pipelines and the building.

1) Task #1 – Southern Waste Units Excavation

1.1) Plan/Scope

The scope of work will be described as a Construction Traveler using Wise Services to complete the SWU excavation initiated by Petro.

Specific activities for this scope of work include:

- Generation of Construction Traveler.
- Generation of a scope of work with cost estimate.
- Preparation or revision to work permits, radiation work permits, and penetration permits.
- Fluor Fernald, Inc. procurement and mobilization of equipment and material.
- Survey and establish site layout, work limits, excavation limits, verify existing conditions.
- Establish access controls with radiological and construction fence and signage.
- Excavate SWU Sample Points 2/7/13.
- Excavate Petro Stockpile and underlying soil.
- Excavate Carolina Stockpiles located within the SWU.
- Excavate Concrete Stockpile.
- Verify usage of dust control piping.
- Maintain electric, telephone, and communication utilities into construction support area.
- Maintain surface water management controls consisting of silt fence.

- Construction management activities including submitting project records and maintain copies in project file and project control activities.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

The subcontractor construction management will prepare the proposal, prepare the submittals, procure the material and equipment, and establish the labor required to execute the scope of work. Fencing, access controls, laydown areas, and surface-water management structures, dust control piping, will be installed and the special material transfer area will be prepared after all work plans have been approved. Subcontract costs will be charged to this charge account.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to develop RFPs and procure subcontractor services. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use this charge number.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Infrastructure Services will maintain the trailers, provide porter services, and bottled water. Security/EM Services will provide access control and emergency response. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 16 summarizes the quantities and/or deliverables anticipated for this task.

TABLE 16
 Area 2, Phase I Southern Waste Units Excavation

Item	Volume	
	Cat. 1	Cat. 2
Construction Traveler w/ permits 1 each	-	-
SWU Excavation at Points 2/13	21250 cy	-
SWU Excavation at Point 7	1200 cy	-
Petro Stockpile and Underlying Soil	2500 cy	1000 cy
Carolina Area Stockpiles	3400 cy	860 cy
Concrete Stockpile	-	35 cy
Seed and mulch, 25 acres	-	-

2) Task #2 – Area 2 Phase I Excavation – Perimeter FY2001

2.1) Plan/Scope

Excavation activities will result in the removal of all flyash extending south from the former Inactive Flyash Pile, Basin 1 removal, Ditch 2 removal, and general excavations and utility removals in and around Non-Impacted Stockpile No. 1 footprint. Specific activities include:

- Size-reduce, excavate, load and haul at- and below-grade concrete, utilities, and debris to OSDF as Category 2.
- Excavate, load and haul impacted soil to the OSDF as Category 1.
- Excavate, load and stockpile Paddys Run riprap from the east streambank.
- Excavate, load, and place former Paddys Run riprap regraded to regraded east streambank.
- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.

- Perform post-excavation activities: remove temporary utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.
- Submit project records to ECDC and maintain copies in project file.
- Perform construction management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Excavation subcontractor will be comprised of construction management and labor. Subcontract costs will be charged to this charge account.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used monitor subcontractor services. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Personnel from these organizations will use this charge number.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Waste Acceptance Organization will review DCNs and perform waste manifestation activities. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable

functional areas. Survey crews will verify material quantities. Project Controls will provide cost and schedule support to the project manager.

2.2) Quantification

Table 17 summarizes the quantities and/or deliverables anticipated for this subtask. Based on past excavation history, the quantity of prohibited materials and above-WAC materials is estimated to 0.

TABLE 17
 Area 2, Phase I Excavation – Perimeter FY2001 Quantities

Item	Volume	
	Cat. 1	Cat. 2
Basin 1 soil/flyash/sediment	445 cy	
Basin 1 geomembrane liner - 6900 yd ²		12 cy
Basin 1 piping (24" HDPE)	40 linear feet	
Basin 1 silt fence	1040 linear feet	
Basin 1 perimeter fence	3700 linear feet	
Basin 1 perimeter boundary t-posts	200 posts	
Ditch 2 soil/flyash/sediment	700 cy	
Ditch 2 geomembrane liner - 500 yd ²		1 cy
Ditch 2 geotextile - 220 yd ²		1 cy
Ditch 2 dumped rock		110 cy
Grassy Knoll soil/flyash/sediment	425 cy	
Grassy Knoll Piping	136 linear feet of 6" HDPE 300 linear feet of 18" HDPE	
West Seepage Station Manhole	1 manhole	
West Seepage Station Piping	90 linear feet of 2"(4") HDPE 60 linear feet of 4" HDPE	
Catch Basin North of Grassy Knoll	1 catch basin	
Ditches 4 - 6 sediment	5 cy	-
NIMS #1 soil/flyash	6000 cy	-
NIMS #1 geomembrane liner - 7725 yd ²	-	13 cy
NIMS No. 1 geotextile - 7410 sq. yd.	-	39 cy
Well House 13 concrete	-	25 cy
Gravel Road surrounding NIMS No. 1	1500 cy	-
Geotextile with Gravel Roads - 1800 yd ²	-	9 cy
Culvert 3 - 12" HDPE	80 linear feet	
Soil from Culvert 3 removal	40 cy	-
Ditch 3 soil/flyash/sediment	740 cy	-
Ditch 3 geomembrane liner - 685 yd ²	-	1 cy
Ditch 7 soil/sediment	18 cy	-
Ditch 7 geomembrane liner - 490 sq. yd.	-	1 cy
Treat. and Discharge Line Pipe - 6" HDPE	1230 linear feet	
Transfer Line Piping - 6"(10") HDPE	250 linear feet	
Soil from Transfer, Treatment, and Discharge Lines removal	360 cy	-
Power Poles Removed	6 poles	
Power Lines Removed - 13.2 kV	630 feet	
Seed and mulch, 6 acres	-	-
Paddys Run Riprap remove and regrade 800 cy	-	-

Note: Volume for geomembrane liner assumes thickness of 60 mil (=0.001666667 yd); volume for geotextile assumes thickness of 3/16-inch (0.005208333 yd) – corresponds to ODOT 712.09 type D material.

3) Task #3 – Area 2 Phase I Excavation – Perimeter (Remaining)

3.1) Plan/Scope

The scope of work will be described as an option to the existing Remediation Area/OSDF contract. After evaluation of the subcontractor's proposal and award of the work, the subcontractor must prepare and submit work plans or revised existing work plans for Fluor Fernald, Inc.'s approval. These plans detail and demonstrate the subcontractor's understanding of the technical requirements prior to initiating site preparation activities by documenting the means, methods, techniques, safety, and sequencing planned for the execution of the scope. These details are beyond the scope typically addressed in the construction drawings and technical specifications and may have not been detailed in the Implementation Plan of the IRDP.

Excavation activities will result in the removal of remaining perimeter items that were not included in FY2001 work. Specific activities include:

- Technical and cost evaluation of the proposal with cost estimate.
- Award of the scope.
- Submittal, review, and approval of revisions to existing subcontractor plans.
- Preparation of work permits, radiation work permits, and penetration permits.
- Subcontractor procurement and mobilization of equipment, material, and labor.
- Survey and establish site layout, work limits, excavation limits, verify existing conditions.
- Size-reduce, excavate, load and haul at- and below-grade concrete, utilities, and debris to OSDF as Category 2.
- Excavate, load and haul impacted soil to the OSDF as Category 1.
- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.
- Perform post-excavation activities: remove temporary utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.

- Submit project records to ECDC and maintain copies in project file.
- Perform construction management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Excavation subcontractor will be comprised of construction management and labor. Subcontract costs will be charged to this charge account.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used monitor subcontractor services. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Personnel from these organizations will use this charge number.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Waste Acceptance Organization will review DCNs and perform waste manifestation activities. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable functional areas. Survey crews will verify material quantities. Project Controls will provide cost and schedule support to the project manager.

3.2 Quantification

Table 18 summarizes the quantities and/or deliverables anticipated for this subtask. Based on past excavation history, the quantity of prohibited materials and above-WAC materials is estimated to 0.

TABLE 18
 Area 2, Phase I Excavation – Perimeter (Remaining)

Item	Volume	
	Cat. 1	Cat. 2
Former A2PI Site Prep Hot Spot North of the former Active Flyash Pile	100 cy	5 cy
Construction Management Support Area	8935 cy	294 cy
Equipment Wheel Wash	1254 cy	130 cy
Basin 2, Basin 4, Ditch 8, Remaining Roads and Piping, Ditch check dams, East Seep Station	1584 cy	3724 cy
Misc. silt fence and construction fence	-	5 cy

Note: Volume for geomembrane liner assumes thickness of 60 mil (=0.001666667 yd); volume for geotextile assumes thickness of 3/16-inch (0.005208333 yd) – corresponds to ODOT 712.09 type D material.

4) Task #4 – Area 2 Phase II Site Preparation/Excavation

4.1) Plan/Scope

The scope of work will be described as an option to the existing Remediation Area/OSDF contract. After evaluation of the subcontractor’s proposal and award of the work, the subcontractor must prepare and submit work plans or revised existing work plans for Fluor Fernald, Inc.’s approval. These plans detail and demonstrate the subcontractor’s understanding of the technical requirements prior to initiating site preparation activities by documenting the means, methods, techniques, safety, and sequencing planned for the execution of the scope. These details are beyond the scope typically addressed in the construction drawings and technical specifications and may have not been detailed in the Implementation Plan of the IRDP.

Excavation activities will result in the removal of remaining perimeter items that were not included in FY2001 work. Specific activities include:

- Technical and cost evaluation of the proposal with cost estimate.
- Award of the scope.
- Submittal, review, and approval of revisions to existing subcontractor plans.
- Preparation of work permits, radiation work permits, and penetration permits.

- Subcontractor procurement and mobilization of equipment, material, and labor.
- Survey and establish site layout, work limits, excavation limits, verify existing conditions.
- Size-reduce, excavate, load and haul at- and below-grade concrete, utilities, and debris associated with the Impacted Material Haul Rd. to OSDF as Category 2.
- Excavate, load and haul impacted soil to the OSDF as Category 1.
- Investigate findings from FY2000 Geophysical surveys for debris.
- Investigate 6 locations using trenching methods for fill areas.
- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.
- Perform post-excavation activities: remove temporary utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.
- Submit project records to ECDC and maintain copies in project file.
- Perform construction management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Excavation subcontractor will be comprised of construction management and labor. Subcontract costs will be charged to this charge account.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used monitor subcontractor services. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection

Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Personnel from these organizations will use this charge number.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Waste Acceptance Organization will review DCNs and perform waste manifestation activities. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable functional areas. Survey crews will verify material quantities. Project Controls will provide cost and schedule support to the project manager.

4.2) Quantification

Table 19 summarizes the quantities and/or deliverables anticipated for this task. Based on past excavation history, the quantity of prohibited materials and above-WAC materials is estimated to 0.

TABLE 19
 Area 2, Phase II Excavation

Item	Volume	
	Cat. 1	Cat. 2
Radium Excavation	122 cy	-
Arsenic Excavation	1340 cy	-
Stockpile removal HRD-012	50 cy	200 cy
Impacted Material Haul Rd. Removal	655 cy	1374 cy
Removal of Misc debris at former Constuction Staging Area South of Silo 1	-	5 cy
Misc. Debris pickup from FY2000 geophysical investigation (6.2 acres total)	-	1 cy
Excavation of exploratory 6 trenches (4'x4'x50' per trench)	-	1 cy

1.5.5 G2112 - Excavation Control/Certification

Excavation control will occur will occur in parallel to excavation activities. Where practical, precertification and certification activities will also commence during excavation.

The scope of the excavation control is described in the Excavation Control Project Specific Plan (PSP) that is reviewed and approved by OEPA and USEPA. Generally, each excavation lift, will be monitored for radium, thorium and uranium levels to ensure soil meets the OSDF WAC for uranium. These measurements are conducted using the sodium iodide (NaI) via RTRAK, Gator, or RSS. For steeper areas, the NaI mounted EMS, the high purity germanium (HPGe), or other non-intrusive static and mobile field instruments are used to record radiological emanations from the surface or near-surface sources.

Precertification PSPs, Certification PSPS, and Certification Design Letters (CDLs) will be prepared and submitted to OEPA and USEPA for review and approval during excavation to minimize the period between the end of excavation activities and the start of certification sampling. All precertification scans and certification sampling within a location of the remediated area will be completed as close as possible to the end of excavation activities so that this information can be included with the CDL. The end result of the certification sampling, analysis, and statistical evaluation of each area-specific contaminant of concern (ASCOC) and its corresponding FRL is the Certification Report (CR), that is submitted to OEPA and USEPA for review and approval. Upon approval, the area is considered certified.

For FY2001 after December, Southfield FRL bounding is to continue near sample points 2 and 13. A total of five (5) borings were conducted resulting in forty-eight (48) samples and analysis for uranium. The effort resulted in 4 V/FCNs.

Area 2 excavation control/certification includes three additional tasks to be detailed subsequently below:

- | | |
|---------|--------------------|
| Task 1: | Excavation Control |
| Task 2: | Precertification |
| Task 3: | Certification |

Major technical risks include: using off-site laboratory services for analysis of volatile and semi-volatile organic COCs, insufficient access to the excavation area to begin precertification and certification, and OEPA/USPEA review cycles for the PSPs, CDLs and Certification Report (CR). Contingencies that can mitigate the risks include: develop on-site laboratory services for organic COCs, expedite excavation in Area 3B and negotiate shorter EPA/OEPA review cycles.

Specific charge number assumptions include:

- For General Assumptions and Exclusions, see Section 1.2.

- Earned Value method for this charge number will be based on the quantities developed within the Quantification Sections.
- Internal comment responses are conducted informally through meetings, telephone, email, or written responses on the reviewer's commented document.
- DOE review and comment on documents will occur in parallel to the internal reviews.
- No geotechnical investigations or geotechnical testing to support excavation design or OSDF placement.
- If personnel protective equipment (PPE) is required during predesign characterization, at minimum, they will be required for entry during excavation control and precertification. PPE will not be required (other than possibly orange vest, hard hat, gloves) for entry during certification.
- Gamma spectroscopy is the analytical method for uranium, thorium, and radium analysis.
- A single sample will be collected for the analysis of metals and radiological contaminants (uranium, thorium, radium, technetium-99, and if needed, cesium-137) ~~will be combined into one container and analyzed by the on site laboratory.~~
- A separate sample will be collected for the analysis of Volatile Organic Compounds (VOCs) ~~will always be collected in a separate sample container and analyzed by the off site laboratory.~~
- A single sample will be collected for the analysis of other Organics (PCBs, pesticides, PAHs, herbicides, semi-volatile organic compounds (SVOCs), and dioxins) ~~will be collected in one container and analyzed by the off site laboratory.~~
- A separate sample will be collected for the analysis of exotic radiological contaminants (e.g., strontium-90) ~~will be collected in a separate container and analyzed by the off site laboratory.~~
- Organic compounds and strontium-90 will be analyzed at off-site laboratories with a 14-day turnaround time.
- Two (2) container blanks per analytical suite will be submitted for each certification PSP. There are no container blanks needed for PAHs.
- Rinsates and container blanks will be analyzed for the same parameters as the soil samples, except for PAHs.

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- Any resampling of Certification Units (CU) due to false positives or actual contamination will be accounted for by a separate risk factor and are not accounted for in the manpower estimates.
- Locations of twelve (12) samples will be surveyed, sampled, and analyzed for each CU with the exception of any CU that contained a Hazardous Waste Management Unit (HWMU) or Underground Storage Tank (UST) (described in Tables 2-1 and 2-2 in the SEP). In these cases, sixteen (16) samples will be surveyed, sampled, and analyzed with eight (8) of the sixteen (16) sample locations within the HWMU or UST footprint.
- Per the SEP, one duplicate sample will be taken and analyzed per twelve (12) certification samples contained within a CU.
- Each non-utility trench CU is no greater than 62,500 square feet in area.
- If necessary, any CU that is sampled at depth (i.e. greater than six (6) inches from the surface), will be counted separately from the ground surface CU above it.
- Each utility trench CU (utility trenches that remain below the design excavation grade), a certification sample will be taken every fifty (50) linear feet along the utility trench.
- No archive samples are collected for a non-utility trench CU, except where noted. Four (4) archive samples are collected for a trench CU.
- No alpha-beta screen sample will be taken for certification samples.
- Each CU will constitute four (4) data releases or lab reports: uranium, thorium, radium; technetium-99; metals; and organics.
- Ten percent (10%) of the excavation control and precertification release will receive ASL B data validation. The other 90% of the release will receive field validation only.
- Ten percent (10%) of the certification releases will receive ASL D data validation. The other 90% of certification releases will receive ASL B data validation.
- There will be ten (10) variances per excavation control PSP, four (4) variances per precertification PSP (therefore fourteen (14) total should excavation control and precertification PSP be combined), and two (2) variances per certification PSP.
- Figure entitled "Area 2 CU Design For Baseline Planning Purposes" is for illustration only to conceptually determine the number of Certification Units and certification samples. Actual boundaries will be finalized in the Certification Design Letter.

- The construction road between the former Active Flyash Pile and the former Southfield will not be certified as part of Area 2, but as part of Area 10.

The task activities and deliverables will be completed primarily by project staff from the management, characterization, surveying, administrative and real time disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account will be closed when the CR is approved by OEPA and USEPA.

1) Task #1 - Excavation Control

1.1) Plan/Scope

The PSP will document the purpose of the excavation control and to summarize the monitoring approach and frequency using real time methods. If applicable, the PSP also addresses physical sampling for COCs that are not detected by real time instrumentation (e.g. technetium-99, VOCs, SVOCs, metals) but nevertheless need to be collected to confirm removal.

Excavation control is planned for Area 2 Phase I remaining perimeter areas not addressed in FY2001 and for Area 2 Phase II. The Area 2 Phase I remaining perimeter excavation control will use the existing PSP. A new one will be generated for Area 2 Phase II.

The PSP will define the scope of field, laboratory, and data reporting of the ASCOCs through the sampling target analyte list and sampling approach. For physical sampling, the PSP will document the number of borings, location of borings, depths of borings, frequency of sample intervals, sampling collection methods, sampling equipment decontamination, borehole abandonment, and disposition of wastes. For real time measurements, the PSP will document the real time radiation tracking system (RTRAK), real time Gator-mounted system (Gator), radiation scanning system (RSS), excavation monitoring system (EMS) high-purity germanium detector (HPGe), and other radiation monitoring systems (RMS) data acquisitions, surface moisture measurements recordings, and real time mapping. The tracking and managing of data collection, whether through physical sampling or real time, is described along with both field and laboratory quality assurance requirements. The process of changing the approved PSP by use of variance/field change notice (V/FCN) is described. Finally, the PSP contains health and safety requirements and data quality objectives.

After approval of the PSP by OEPA and USEPA and upon completion of an excavation lift (typically 3' +/-1'), excavation control is the scanning of soil surfaces after each excavation lift to determine if contamination hot spots exist with respect to radium, thorium and/or uranium levels. Excavation control will occur after concrete and gravel areas are removed prior to the first lift of excavation. Additionally, scanning will be performed at the bottom of utility trenches cut below the design grade using the EMS or measurements will be conducted on soil removed from the bottom of the excavation placed adjacent to the trench.

Based on experience gained through Area 1 and Area 2 excavation control, a single PSP for each Area was sufficient to support excavation control and monitoring.

If applicable, the PSP also addresses physical samples that need to be collected to confirm the removal of other COCs in above-WAC and RCRA areas. Specific activities and deliverables include (capital letters are tied to Table 20):

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- A. Identify the ASCOCs.
- B. Data queries for IIMS data group.
- C. Development of Data Quality Objectives.
- D. Development of scanning and sampling strategies.
- E. Development of analytical parameters.
- F. Initiate/coordinate task orders for off-site laboratory services (particularly for VOCs, semi-VOCs, PCBs), if necessary.
- G. Initial walkdown of area.
- H. Preparation of figures and data tables.
- I. Preparation of draft PSP.
- J. Internal draft PSP review and comment response.
- K. DOE draft PSP review and comment response.
- L. OEPA/USEPA review and comment response.
- M. Issuance of final PSP.
- N. Perform walkdowns and work scope briefings to field crews.
- O. Development of Variance/Field Change Notices (V/FCN), as needed, with applicable OEPA/USEPA approval.
- P. Real time scans using RTRAK, Gator, HPGe, EMS, or RSS between each excavation lift.
- Q. Real time scan progress maps.
- R. Evaluate real time data and perform QC prior to data transfer to the Sitewide Environmental Database (SED).

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- S. AWAC and hot-spot verification and removal verification.
- T. HPGe measurements and mapping representing soil under utility trenches below the design excavation grade.
- U. Survey, record coordinates, and flag locations for the sampling crew.
- V. Mobilize physical sampling crew; collect samples; complete soil boring logs, chain of custody, sampling log, field daily logs; deliver samples and chain of custody to on-site sample processing laboratory, if necessary.
- W. Receipt of physical samples, entering samples into FACTS database system, producing work cards, if necessary.
- X. Calibrations, quality control, analytical work, and data releases, if necessary.
- Y. Perform verification and validation of data, enter into SED, if necessary.
- Z. Reduce and interpret data to develop extent of contamination, if necessary.
- AA. Submit project records to Document Control/Procedure Management.
- BB. Perform management and project control activities.

Survey information and real time and laboratory data packages will be delivered to the project.

The scope of work identified above will be managed by projectized staff covered in Control Account GPM1. The scope of work will be performed using matrixed, centralized and projectized personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. If needed, Environmental Monitoring and Analytical Services (PBS-04) will support any physical sampling and analysis should it be required. The Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. The Waste Acceptance Organization will perform visual oversight of the monitoring and prepare waste manifestation forms, if needed. Environment, Safety, Health and Quality will review PSPs, work permits, and monitor field activities. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Excavation control will be conducted under all removed concrete and gravel surfaces, in known contamination areas after each lift, and whenever unexpected material is encountered. Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. If unexpected or special materials are encountered, physical samples will be collected as part of the monitoring activities to screen for COCs not measured by the real time instruments. A survey team will document sample locations. Project Controls will provide cost and schedule support.

Table 20 summarizes the projectized and matrixed personnel performing the scope of work:

TABLE 20
 Manpower Requirements for Task 1 –
 Excavation Control for A2PI Perimeter (Remaining) and A2PII

Activities:

MPM Code	Personnel P,C,M,S	A	B-I	J-M O	N-T	U,V	W,X	Y	Z-BB
ENSMGR	P		X	X					X
ENSREP	P	X	X	X	X	X	X	X	X
LABTEC	P								
CLERKS	P	X		X					X
DRFCAD	P		X	X					
ENSTEC	P								
ENSMGR	M					X			
ENSREP	M		X			X			X
S&HENG	M								
RADTEC	M								
ENSTEC	M					X			
LABMGR	M						X		
LABCHM	M						X		
LABTEC	M						X		
INHTEC	M								
PJSMGR	M				X				
MVOOPR	M				X				
ENSMGR	C							X	
ENSREP	C							X	
LABTEC	C							X	

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

1.2) Quantification

Table 21 summarizes the quantities and/or deliverables anticipated for this task.

The assumed condition includes that no additional visual contamination is found when gravel, gravel roads, concrete slabs and foundations, and roads are removed that would yield an above-WAC condition. Maps for each of the RTRAK, Gator, RSS, EMS, and HPGe measurements will be prepared for each lift. It is assumed that in both A2PI Perimeter (Remaining) and A2PII, one lift will remove any ASCOC to its FRL

TABLE 21
 Quantities for Task 1 –
 Excavation Control for A2PI Perimeter (Remaining) and A2PII

Item	Quantity
Draft Project Specific Plan for Internal Review, A2PII Only	1 total
Draft Project Specific Plan for DOE Review, A2PII Only	1 total
Response to Comments for DOE, A2PII Only	1 total
Draft Project Specific Plan for OEPA/USEPA Review, A2PII Only	1 total
Response to Comments for OEPA/USEPA, A2PII Only	1 total
Final Project Specific Plan, A2PII Only	1 total
Total Acres available for scanning by RTRAK, Gator, RSS, EMS, or HPGe	5 acres
Real Time Maps for Uranium, Thorium, Radium, and Total Counts/Lift	8 each/lift
Survey and Flag Hot Spots/Sample Locations	0 total
Soil Samples	0 total
HPGe Shots for both areas	30 total
Variance/Field Change Notice	10 total

A summary of the quantification approach is provided:

Acres were determined by using in-house GIS techniques and information at the time of this writing. The distinction between areas of lower uranium FRL (10 ppm U) due to the requirements set forth in the Operable Unit 2 ROD and areas of higher uranium FRL (82 ppm U) due to requirements set forth in the Operable Unit 5 ROD. Both reflected in the SEP.

The real time maps represent the final product of the lift scanning results. The quantity does not include progress coverage maps that are produced along with the final coverage maps as part of the projectized effort under control account GPM1 of PBS-06.

For RTRAK and Gator, with radon monitor set-up to correct for radon influences, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes the matrixed driver (MVOOPR @ 1 FTE), the matrixed driver's supervisor (PGSMGR @ 0.25 FTE), projectized environmental scientists (ENSREP @ 2 FTEs), and projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For RSS, with radon monitor setup to correct for radon influences, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For HPGe, with radon monitor set-up to correct for radon influences, experience dictates that 12 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with adverse topographic and vegetative conditions. Twenty shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15-minute count time assuming typical weather conditions with moderate topographic and vegetative conditions. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

The number of hot spots requiring surveying and physical sampling is 0.

2) Task #2 - Precertification

2.1) Plan/Scope

Precertification activities begin with the preparation of the precertification PSP. The purpose of precertification is to assess the readiness of an area for certification and to develop the Certification Design Letter. It is assumed that one PSP will be developed.

Precertification is planned for all of Area 2 Phase I (with the exception of the former Active Flyash Pile that was certified in FY2001) and for Area 2 Phase II (with the exception of the former Soil Pile No. 3 footprint, which was certified in FY2001). The A2PI precertification PSP will be used. A new PSP will be generated for Area 2 Phase II. However, during predesign real time scanning, the radon monitor was used and the data can be used for precertification in Area 2 Phase II.

Precertification field activities will begin as soon as funding becomes available and excavation is completed of upgradient areas. Based on field conditions and required detection levels, RTRAK, Gator, RSS, EMS, or HPGe measurements will be performed and the precertification maps will be prepared. Areas within the former SWU have a lower FRL for uranium at 10 ppm that the sodium iodide real time systems cannot detect. Specific activities and deliverables include (capital letters are tied to Table 22):

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- A. Identify the ASCOCs.
- B. Development of Data Quality Objectives.
- C. Development of scanning and sampling strategies.
- D. Development of analytical parameters.

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- E. Initiate/coordinate task orders for off-site laboratory services (particularly for VOCs, semi-VOCs, PCBs), if necessary.
- F. Initial walkdown of area.
- G. Preparation of figures and data tables.
- H. Preparation of draft PSP.
- I. Internal draft PSP review and comment response.
- J. DOE draft PSP review and comment response.
- K. OEPA/USEPA review and comment response.
- L. Issuance of final PSP.
- M. Perform walkdowns and work scope briefings to field crews.
- N. Development of Variance/Field Change Notices (V/FCN), as needed with applicable OEPA/USEPA approval.
- O. Real time scans using RTRAK, Gator, HPGe, EMS, or RSS.
- P. Real time scan progress maps.
- Q. Evaluate real time data and perform QC prior to data transfer to the Sitewide Environmental Database (SED).
- R. Survey and flag High Leachable Area CU.
- S. Survey Certification Area Boundary.
- T. Survey, record coordinates, and flag locations for the sampling crew for precertification physical sampling, if necessary.
- U. Mobilize physical sampling crew; collect samples; complete soil boring logs, chain of custody, sampling log, field daily logs; deliver samples and chain of custody to on-site sample processing laboratory, if necessary.
- V. Receipt of physical samples, entering samples into FACTS database system, producing work cards, if necessary.
- W. Calibrations, quality control, analytical work, and data releases, if necessary.
- X. Perform verification and validation of data, enter into SED, if necessary.

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- Y. Reduce and interpret data to develop extent of contamination, if necessary.
- Z. Identify hot-spot zones for excavation, if necessary, and rescan area after hot spot removal.
- AA. Submit project records to Document Control/Procedure Management.
- BB. Perform management and project control activities.

Survey information and real time and laboratory data packages will be delivered to the project.

The scope of work identified above will be managed by projectized staff covered in Control Account GPM1. The scope of work will be performed using matrixed, centralized and projectized personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. If needed, Environmental Monitoring and Analytical Services (PBS-04) will support any physical sampling and analysis should it be required. The Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environment, Safety, Health and Quality will review PSPs, work permits, and monitor field activities. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Excavation control will be conducted under all removed concrete and gravel surfaces, in known contamination areas after each lift, and whenever unexpected material is encountered. Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. If unexpected or special materials are encountered, physical samples will be collected as part of the monitoring activities to screen for COCs not measured by the real time instruments. A survey team will document sample locations. Project Controls will provide cost and schedule support.

Table 22 summarizes the projectized and matrixed personnel performing the scope of work:

TABLE 22
 Manpower Requirements for Task 2 – Precertification for A2PI and A2PII

Activities:

MPM Code	Personnel P,C,M,S	A-H	I-L	M-O	R-U	V-W	X	Y-BB
ENSMGR	P	X	X					X
ENSREP	P	X	X	X	X	X	X	X
LABTEC	P							
CLERKS	P	X	X					X
DRFCAD	P	X	X					
ENSMGR	M				X			
ENSREP	M	X			X			X
ENSTEC	M				X			
LABMGR	M					X		
LABCHM	M					X		
LABTEC	M					X		
INHTEC	M				X			
PJSMGR	M			X				X
MVOOPR	M			X				X
ENSMGR	C						X	
ENSREP	C						X	
LABTEC	C						X	

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

2.2) Quantification

Table 23 summarizes the quantities and/or deliverables anticipated for this task.

TABLE 23
 Quantities for Task 2 –
 Precertification for A2PI and A2PII

Item	Quantity
Draft Project Specific Plan for Internal Review, A2PII only	1 total
Draft Project Specific Plan for DOE Review, A2PII only	1 total
Response to Comments for DOE, A2PII only	1 total
Draft Project Specific Plan for OEPA/USEPA Review, A2PII only	1 total
Response to Comments for OEPA/USEPA, A2PII only	1 total
Final Project Specific Plan , A2PII only	1 total
Total Acres available for scanning by RTRAK, Gator, RSS, EMS, or HPGe	Approx. 35 acres
Real Time Maps for Uranium, Thorium, Radium, and Total Counts	8 each
Variance/Field Change Notice	8 total

A summary of the quantification approach is provided:

Acreages were determined by using in-house GIS techniques and information at the time of this writing. The distinction between areas of lower uranium FRL (10 ppm U) due to the requirements set forth in the Operable Unit 2 ROD and areas of higher uranium FRL (82 ppm U) due to requirements set forth in the Operable Unit 5 ROD. Both reflected in the SEP.

The real time maps represent the final product of the final lift scanning results. The quantity does not include progress coverage maps that are produced along with the final coverage maps as part of the projectized effort under control account GPM1 of PBS-06.

For RTRAK and Gator, with radon monitor set-up to correct for radon influences, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes the matrixed driver (MVOOPR @ 1 FTE), the matrixed driver's supervisor (PGSMGR @ 0.25 FTE), projectized environmental scientists (ENSREP @ 2 FTEs), and projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For RSS, with radon monitor set-up to correct for radon influences, experience dictates that 2 acres/day for a 10-hour day can be accomplished assuming typical weather. This average drops to 1 acre/day for a 10-hour day during winter months. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

For HPGe, with radon monitor set-up to correct for radon influences, experience dictates that 12 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with adverse topographic and vegetative conditions. 20 shots/day can be accomplished for a 10-hour day with the maximum coverage at a 1 meter height with a 15 minute count time assuming typical weather conditions with moderate topographic and vegetative conditions. Staff includes projectized environmental scientists (ENSREP @ 2 FTEs) and a projectized environmental scientist supervisor (ENSREP @ 1 FTE).

The number of hot spots requiring surveying and physical sampling is 0.

3) Task #3 - Certification

3.1) Plan/Scope

Certification activities begin with the preparation of the Certification PSP and Certification Design Letters (CDLs) and are completed when the Certification Reports have been approved by the OEPA and USEPA. The purpose of the CDL is to summarize the precertification activities, delineate the Certification Units, identify the ASCOCs, and to locate the certification samples within each CU. Certification field activities will begin at the completion of an excavated area but not at the end of excavation of the Remediation Area. This approach was used with great success during the A2Pill Radium Hot Spot

excavation and certification, the A2PI Active Flyash Pile excavation and certification, and the Soil Pile 3 excavation and certification. The time between excavation completion and certification sample collection was reduce from several months, as with Area 1 Phase II, to days and weeks.

Two separate PSPs and CDLs are planned, one for A2PI (except for the former Active Flyash Pile which was certified in FY2001) and one for A2PII (excluding the former Soil Pile No. 3 footprint which was certified in FY2001).

Sampling activities cannot begin until the PSP and CDL have been at least conditionally approved by OEPA/USEPA. Samples will be submitted for analysis and ASL D data packages produced. The data for each CU will be evaluated using statistical tests identified in the SEP and a pass/fail decision for each ASCOC will be determined. If a CU fails, additional excavation is required until the CU passes the certification criteria. The Certification Report (CR) documents the certification process once approved by OEPA and USEPA, the area is released for final land use. Specific activities and deliverables include (capital letters are tied to Table 24):

R1-
D-
410

- A. Identify the ASCOCs.
- B. Development of Data Quality Objectives.
- C. Development of analytical parameters.
- D. Initiate/coordinate task orders for off-site laboratory services (particularly for VOCs, semi-VOCs, PCBs), if necessary.
- E. Initial walkdown of area.
- F. Preparation of figures and data tables.
- G. Preparation of Certification Unit design and sample locations.
- H. Preparation of draft PSP and draft CDL.
- I. Internal draft PSP and draft CDL review and comment response.
- J. DOE draft PSP and draft CDL review and comment response.
- K. OEPA/USEPA review and comment response.
- L. Issuance of final PSP and CDL.
- M. Perform walkdowns and work scope briefings to field crews.
- N. Development of Variance/Field Change Notices (V/FCN) and CDL page changes, as needed with applicable OEPA/USEPA approval.

R1-
D-
410

- O. Survey and flag sampling locations.
- P. Mobilize physical sampling crew; collect samples; complete chain of custody, sampling log, field daily logs; deliver samples and chain of custody to on-site sample processing laboratory.
- Q. Receipt of physical samples, entering samples into FACTS database system, producing work cards.
- R. Calibrations, quality control, analytical work, and data releases.
- S. Reduce and interpret preliminary certification data and perform statistical evaluation for each certification unit.
- T. Identify hot-spot zones for excavation and repeat previous steps beginning with N.
- U. Perform verification and validation of data, enter into SED.
- V. Perform final statistical evaluation for each certification unit and produce summary tables.
- W. Preparation of draft Certification Report (CR) with figures, tables, statistical evaluation and SEP-related CR information (i.e. chronology of events, performance standards and construction quality control, excavation activities, summary of material and data tracking, summary of costs, etc.).
- X. Internal draft CR review and comment response.
- Y. DOE draft CR review and comment response.
- Z. OEPA/USEPA review and comment response.
- AA. Issuance of final CR.
- BB. Submit project records to Document Control/Procedure Management.
- CC. Perform management and project control activities.

Survey information and real time and laboratory data packages will be delivered to the project.

The scope of work identified above will be managed by projectized staff covered in Control Account GPM1. The scope of work will be performed using subcontract, matrixed, centralized and projectized personnel.

Subcontract Personnel

Off-site laboratory will be utilized for the analysis of organic COCs (VOCs, PCBs, pesticides, PAHs, herbicides, semi-volatile organic compounds (SVOCs), and dioxins).

Matrixed Personnel

Environmental Monitoring and Analytical Services (PBS-04) will support any physical sampling and analysis. Environmental Monitoring will be used to collect and deliver the certification samples to the on-site laboratory. Analytical Services will log samples into the system, complete analytical measurements, issue data releases, and ship samples requiring analysis for COCs to off-site laboratories. Samples contracted to off-site laboratories will require a 14-day turn-around time. Analytical measurements will be performed and ASL D data packages will be delivered to the project. The Personnel from these organizations are the only individuals who will use this charge number.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environment, Safety, Health and Quality will review PSPs, CDLs, CRs, work permits, and monitor field activities. Sample Data Management will be used for database queries, data entry, data validation, statement of work for off-site laboratories, and the statistical reduction of data to evaluate the certification criteria for each CU's ASCOC. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work to be completed by project staff from the management, characterization, survey, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will oversee the field and laboratory work. Management and characterization staff will prepare all PSPs, CDLs, and CRs, along with the response to comments to these documents. They will also prepare any Variance/Field Change Notice that may be warranted after PSPs are approved by OEPA/USEPA. A survey team will document sample locations. Project Controls will provide cost and schedule support.

Table 24 summarizes the projectized and matrixed personnel performing the scope of work:

TABLE 24
Manpower Requirements for Task 3 – Certification for A2PI and A2PII

Activities:

MPM Code	Personnel P,C,M,S	A-H	I-L	M-P	Q-S	T	U-V	W-CC
ENSMGR	P	X	X			X		X
ENSREP	P	X	X	X	X	X	X	X
LABTEC	P							
CLERKS	P	X	X					X
DRFCAD	P	X	X		X		X	
ENSMGR	M			X				
ENSREP	M	X		X				
ENSTEC	M			X				
LABMGR	M				X			
LABCHM	M				X			
LABTEC	M				X		X	
ENSMGR	C						X	
ENSREP	C				X		X	
LABTEC	C						X	
Subs	S				X			

Note: P denotes projectized, C denotes centralized, M denotes matrixed, S denotes subcontracted.

3.2) Quantification

Tables 25 and 26 summarize the quantities and/or deliverables anticipated for this task.

The assumed condition is that portions Area 2 will be available for certification with the appropriate storm water run-on controls in place during excavation to protect areas being certified.

TABLE 25
 Quantities for Task 3 – Certification for A2PI

Item	Quantity
Draft PSP and CDL for Internal Review	1 total
Draft PSP and CDL for DOE Review	1 total
Response to Comments for DOE	1 total
Draft PSP and CDL for OEPA/USEPA Review	1 total
Response to Comments for OEPA/USEPA	1 total
Final PSP and CDL	1 total
Number of Certification Units (Group 1)	30 total
Number of Certification Units (Group 2)	0 total
Soil Samples	390 total
Samples entered into Database	390 total
Uranium Analysis	390 total
Thorium and Radium Analysis	390 total
Technetium-99 Analysis	0 total
Metal Analysis	78 total
Volatile Organic Compound Analysis	0 total
Semi-Volatile Organic Compound Analysis	0 total
Pesticide Analysis	0 total
PCBs Analysis	13 total
PAH Analysis	0 total
Dioxin Analysis	0 total
Uranium, Thorium, Radium Lab Reports	30 total
Technetium-99 Lab Reports	0 total
Metal COC Lab Reports	7 total
Organic COC Lab Reports	2 total
Uranium, Thorium, Radium Lab Reports to Verify and Validate to ASL D	3 total
Technetium-99 Lab Reports to Verify and Validate to ASL D	0 total
Metal Lab Reports to Verify and Validate to ASL D	1 total
Organic Lab Reports to Verify and Validate to ASL D	1 total
Variance/Field Change Notice	2 total
Draft Certification Report for Internal Review	1 total
Draft Certification Report for DOE Review	1 total
Response to Comments for DOE	1 total
Draft Certification Report for OEPA/USEPA Review	1 total
Response to Comments for OEPA/USEPA	1 total
Final Certification Report	1 total

TABLE 26
 Quantities for Task 3 – Certification for A2P11

Item	Quantity
Draft PSP and CDL for Internal Review	1 total
Draft PSP and CDL for DOE Review	1 total
Response to Comments for DOE	1 total
Draft PSP and CDL for OEPA/USEPA Review	1 total
Response to Comments for OEPA/USEPA	1 total
Final PSP and CDL	1 total
Number of Certification Units (Group 1)	6 total
Number of Certification Units (Group 2)	22 total
Soil Samples	377 total
Samples entered into Database	377 total
Uranium Analysis	377 total
Thorium and Radium Analysis	377 total
Technetium-99 Analysis	0 total
Metal Analysis	13 total
Volatile Organic Compound Analysis	0 total
Semi-Volatile Organic Compound Analysis	0 total
Pesticide Analysis	0 total
PCBs Analysis	0 total
PAH Analysis	0 total
Dioxin Analysis	0 total
Uranium, Thorium, Radium Lab Reports	32 total
Technetium-99 Lab Reports	0 total
Metal COC Lab Reports	1 total
Organic COC Lab Reports	0 total
Uranium, Thorium, Radium Lab Reports to Verify and Validate to ASL D	3 total
Technetium-99 Lab Reports to Verify and Validate to ASL D	0 total
Metal Lab Reports to Verify and Validate to ASL D	1 total
Organic Lab Reports to Verify and Validate to ASL D	0 total
Variance/Field Change Notice	2 total
Draft Certification Report for Internal Review	1 total
Draft Certification Report for DOE Review	1 total
Response to Comments for DOE	1 total
Draft Certification Report for OEPA/USEPA Review	1 total
Response to Comments for OEPA/USEPA	1 total
Final Certification Report	1 total

A summary of the quantification approach is provided:

Manpower is estimated using the pre-characterization database based on four (4) years of field and analytical work requested by PBS-06. Specific assumptions bounding the pre-characterization database are listed above in the charge-number specific assumptions.

SECTION 4

2.0 SCHEDULE

SECTION 4

3.0 MANPOWER PLANS

Manpower Planning Sheet (CR2)

MPS # 1GD04 AREA 2 TITLE I II DESIGN

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4																
610 Area 2 Pre-design/Design	10/01/2004	06/29/2006																				
612 Area 2 Phase 2 Percent/Cert	10/04/2004	04/10/2007	xxx	xxx	x																	
628 Area 2 Phase 2 Excavation	07/03/2006	09/29/2006																				
Engineering & Design	Engineer Civil		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Engineering & Design	Drafter/CAD Operator		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Management	Tech/Program Support Rep.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SECTION 4

4.0 ESTIMATE

G2111

AREA 2 TITLE III

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. OBRIEN
FISCAL YEAR: 2001 & 2006

Resource:	Res Dept:	ENSMGR	949	ENVIR SCIENTIST MGR	Class:	EOC:		LABOR										
						Overtime:	SAL	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:						865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2	865.2
Yr Total Cost:						45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629
Cum Total Cost:						45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629	45,629

Resource:	Res Dept:	SERVSUB	949	A/E	Class:	EOC:		SUBCONTRACTORS										
						Overtime:	SUB	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Units:						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:						0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:						0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	TECWRT	949	Overtime:	Class:	EOC:		LABOR										
						Overtime:	SAL	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:						44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2
Cum Hours:						44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2
Yr Total Cost:						1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996
Cum Total Cost:						1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996	1,996

Resource:	Res Dept:	TPSREP	949	Overtime:	Class:	EOC:		LABOR										
						Overtime:	SAL	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:						44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Cum Hours:						44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Yr Total Cost:						2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303
Cum Total Cost:						2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303	2,303

Resource:	Res Dept:	WSTENG	949	Overtime:	Class:	EOC:		LABOR										
						Overtime:	SAL	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:						101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2
Cum Hours:						101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2	101.2
Yr Total Cost:						5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164
Cum Total Cost:						5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164	5,164

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006

PBS: OHFN06
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: G2111
COMMENT NO N/A

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-		
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20	
Yr Hours:	2,773.3	0.0	0.0	0.0	4.0	83.0	0.0	0.0	2,777.2	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3
Cum Hours:	2,773.3	2,773.3	2,773.3	2,773.3	2,777.2	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3	2,860.3
Yr Total Cost:	134,418	0	0	0	1,199	26,041	0	0	135,618	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659
Cum Total Cost:	134,418	134,418	134,418	134,418	135,618	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659	161,659

[Handwritten Signature]
CONTROL TEAM

CAM

G2112

AREA 2 EXC CONTROL/CERTIFICATION

Fluor Fernald, Inc.
 ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
 WBS: 1.1.G.D
 CTRL ACCT: G211
 CHARGE NO: G2112
 COMMENT NO F06-033

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001 & 2005 - 2007

Resource: CLERKS
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	233.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 02	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 03	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 04	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 05	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 06	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 07	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 08	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 09	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Sep 10	0.0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Oct 09-	0	233.0	233.0	233.0	233.0	233.0	233.0	233.0
Yr Total Cost:	5,565	5,565	5,565	5,565	5,565	5,565	5,565	5,565
Cum Total Cost:	5,565	5,565	5,565	5,565	5,565	5,565	5,565	5,565

Resource: CNSCOD
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	31	31	31	31	31	31	31	31
Sep 02	0	31	31	31	31	31	31	31
Sep 03	0	31	31	31	31	31	31	31
Sep 04	0	31	31	31	31	31	31	31
Sep 05	0	31	31	31	31	31	31	31
Sep 06	0	31	31	31	31	31	31	31
Sep 07	0	31	31	31	31	31	31	31
Sep 08	0	31	31	31	31	31	31	31
Sep 09	0	31	31	31	31	31	31	31
Sep 10	0	31	31	31	31	31	31	31
Oct 09-	0	31	31	31	31	31	31	31
Yr Total Cost:	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155
Cum Total Cost:	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155

Resource: DRFCAD
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 02	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 03	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 04	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 05	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 06	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 07	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 08	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 09	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 10	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Oct 09-	0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yr Total Cost:	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155
Cum Total Cost:	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155

Resource: ENGPCC
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 02	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 03	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 04	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 05	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 06	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 07	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 08	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 09	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 10	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Oct 09-	0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Yr Total Cost:	2,351	2,351	2,351	2,351	2,351	2,351	2,351	2,351
Cum Total Cost:	2,351	2,351	2,351	2,351	2,351	2,351	2,351	2,351

Resource: ENSMGR
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 02	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 03	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 04	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 05	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 06	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 07	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 08	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 09	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Sep 10	0.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Oct 09-	0	37.0	37.0	37.0	37.0	37.0	37.0	37.0
Yr Total Cost:	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951
Cum Total Cost:	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951

Resource: ENGPCC
Res Dept: 949

Yr	Hours	Cum Hours	Yr Total Cost	Cum Total Cost	EOC:		LABOR	
					Sal	SAL	Oct 03-	Oct 04-
Oct 00-	0	0	0	0	0	0	0	0
Sep 01	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 02	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 03	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 04	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 05	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 06	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 07	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 08	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 09	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Sep 10	0.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Oct 09-	0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Yr Total Cost:	18,533	18,533	18,533	18,533	18,533	18,533	18,533	18,533
Cum Total Cost:	18,533	18,533	18,533	18,533	18,533	18,533	18,533	18,533

INCLUDES ESCALATION COSTS

Fluor Fernald, Inc.

PBS: OHFN06
WBS: 1.1.GD
CTRL ACCT: G211
CHARGE NO: G2112
COMMENT NO F06-033

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2005 - 2007

Resource:	Res Dept:	ENSREP 949	ENVIR SCIENCE REP		LABOR		EOC:	SAL				
			Class:	Class:	Class:	Class:						
Yr Hours:			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:			1,120.0 0.0	1,120.0 0.0	1,120.0 0.0	1,120.0 0.0	1,120.0 0.0	1,373.0 0.0	1,700.0 0.0	1,700.0 0.0	1,700.0 0.0	1,700.0 0.0
Yr Total Cost:			46,994 0	46,994 0	46,994 0	46,994 0	46,994 0	14,184 0	19,875 0	81,052 0	81,052 0	81,052 0
Cum Total Cost:			46,994	46,994	46,994	46,994	46,994	61,178	81,052	81,052	81,052	81,052

Resource:	Res Dept:	ENSTEC 949	ENVIR SCIENTIST TECH		LABOR		EOC:	SAL				
			Class:	Class:	Class:	Class:						
Yr Hours:			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:			2.0 0.0	2.0 0.0	2.0 0.0	2.0 0.0	2.0 0.0	314.0 0.0	407.0 0.0	723.0 0.0	723.0 0.0	723.0 0.0
Yr Total Cost:			57 0	57 0	57 0	57 0	57 0	11,862 0	16,696 0	28,634 0	28,634 0	28,634 0
Cum Total Cost:			57	57	57	57	57	11,938	28,634	28,634	28,634	28,634

Resource:	Res Dept:	INDMEC 949	INDUSTRIAL MECHANIC		LABOR		EOC:	HOU				
			Class:	Class:	Class:	Class:						
Yr Hours:			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:			5.0 0.0	5.0 0.0	5.0 0.0	5.0 0.0	5.0 0.0	28.7 0.0	22.3 0.0	56.0 0.0	56.0 0.0	56.0 0.0
Yr Total Cost:			157 0	157 0	157 0	157 0	157 0	1,208 0	1,014 0	2,379 0	2,379 0	2,379 0
Cum Total Cost:			157	157	157	157	157	1,365	2,379	2,379	2,379	2,379

Resource:	Res Dept:	INRREP 949	INFO RECORDS REP		LABOR		EOC:	SAL				
			Class:	Class:	Class:	Class:						
Yr Hours:			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:			33.0 0.0									
Yr Total Cost:			979 0	979 0	979 0	979 0	979 0	879 0	979 0	979 0	979 0	979 0
Cum Total Cost:			979	979	979	979	979	879	979	979	979	979

Resource:	Res Dept:	LABCHM 949	CHEMIST		LABOR		EOC:	SAL				
			Class:	Class:	Class:	Class:						
Yr Hours:			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:			118.0 0.0	118.0 0.0	118.0 0.0	118.0 0.0	118.0 0.0	257.0 0.0	446.0 0.0	821.0 0.0	821.0 0.0	821.0 0.0
Yr Total Cost:			4,573 0	4,573 0	4,573 0	4,573 0	4,573 0	13,308 0	25,042 0	42,923 0	42,923 0	42,923 0
Cum Total Cost:			4,573	4,573	4,573	4,573	4,573	17,881	42,923	42,923	42,923	42,923

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001 & 2005 - 2007

PBS: OHFN06
 WBS: 1.1.G.D
 CTRL ACCT: G211
 CHARGE NO: G2112
 COMMENT NO F06-033

Resource:	Res Dept:	LAB MANAGER	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Hours:			13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
Yr Total Cost:			691	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			691	691	691	691	691	691	691	691	691	691	691	691	691	691	691	691

Resource:	Res Dept:	LAB TECH	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Hours:			233.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5	233.5
Yr Total Cost:			6,488	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488	6,488

Resource:	Res Dept:	MATERIAL	MATERIAL		MATERIAL		MATERIAL		MATERIAL		MATERIAL		MATERIAL		MATERIAL		MATERIAL	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Units:			904.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:			904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0	904.0
Yr Total Cost:			904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904

Resource:	Res Dept:	MOTOR VEHICLE OPER	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	PROJECT SUPPORT MGR	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	QA ENGINEER	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
			Over:	Overtime:	Class:	EOC:												
	949	LBMGR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yr Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.
 ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
 WBS: 1.1.G.D
 CTRL ACCT: G211
 CHARGE NO: G2112
 COMMENT NO F06.033

Resource: RADTEC
 Res Dept: 949

Project MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001 & 2005 - 2007

DATE: 05-Sep-01

Resource:	Res Dept:	RAD TECH		LABOR		EOC:		Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
		Overtime:	Class:	Overtime:	Class:	Oct 02-	Oct 03-				
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
		0.0	0.0	0.0	0.0	0.0	37.5	43.5	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	37.5	81.0	81.0	81.0	81.0
		0	0	0	0	0	1,709	2,145	0	0	0
		0	0	0	0	0	1,709	3,855	3,855	3,855	3,855

Resource:	Res Dept:	SAFETY ENGINEER		LABOR		EOC:		Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
		Overtime:	Class:	Overtime:	Class:	Oct 02-	Oct 03-				
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
		0.0	0.0	0.0	0.0	13.3	142.7	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	13.3	156.0	156.0	156.0	156.0	156.0
		0	0	0	0	827	9,479	0	0	0	0
		0	0	0	0	827	10,306	10,306	10,306	10,306	10,306

Resource:	Res Dept:	SUBS		LABOR		EOC:		Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
		Overtime:	Class:	Overtime:	Class:	Oct 02-	Oct 03-				
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
		0.0	0.0	0.0	0.0	0.0	2,114.7	609.3	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	2,114.7	2,724.0	2,724.0	2,724.0	2,724.0
		0	0	0	0	0	2,425	719	0	0	0
		0	0	0	0	0	2,425	3,145	3,145	3,145	3,145

Resource:	Res Dept:	TECHNICAL WRITER		LABOR		EOC:		Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
		Overtime:	Class:	Overtime:	Class:	Oct 02-	Oct 03-				
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		90	90	90	90	90	90	90	90	90	90
		0	0	0	0	0	0	0	0	0	0
		90	90	90	90	90	90	90	90	90	90

Resource:	Res Dept:	TECH/PROG SUPT REP		LABOR		EOC:		Yr Hours:	Cum Hours:	Yr Total Cost:	Cum Total Cost:
		Overtime:	Class:	Overtime:	Class:	Oct 02-	Oct 03-				
		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
		156	156	156	156	156	156	156	156	156	156
		0	0	0	0	0	0	0	0	0	0
		156	156	156	156	156	156	156	156	156	156

Fluor Fernald, Inc.

PBS: OHFN06
 WBS: 1.1.G.D
 CTRL ACCT: G211
 CHARGE NO: G2112
 COMMENT NO F06-033

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001 & 2005 - 2007

ESTIMATE SUPPORT WORKSHEET FOR ACTIVITY BASED ESTIMATING (1 FTE EQUALS 1747 HOURS)

Resource:	WISE Res Dept:	WISE CONSTRUCTION		SUBCONTRACTORS		WASTE ENGINEER		LABOR		EOC:	SUB
		Over:	Time:	Over:	Time:	Over:	Time:	Over:	Time:		
	949	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:		0.0	0.0	0.0	0.0	0.0	36,056.0	36,056.0	36,056.0	36,056.0	36,056.0
Yr Total Cost:		0	0	0	0	0	41,354	41,354	41,354	41,354	41,354
Cum Total Cost:		0	0	0	0	0	41,354	41,354	41,354	41,354	41,354
Resource:	WSTENG	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Res Dept:	949	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:		25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Yr Total Cost:		1,275	0	0	0	0	0	0	0	0	0
Cum Total Cost:		1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,275	1,275
GRAND TOTALS:											
Yr Hours:		1,907.9	0.0	0.0	0.0	49.1	2,115.4	1,785.5	0.0	0.0	0.0
Cum Hours:		1,907.9	1,907.9	1,907.9	1,907.9	1,957.0	4,072.4	5,857.9	5,857.9	5,857.9	5,857.9
Yr Total Cost:		73,554	0	0	0	2,886	147,328	93,986	0	0	0
Cum Total Cost:		73,554	73,554	73,554	73,554	76,440	223,768	317,753	317,753	317,753	317,753


 CONTROL TEAM

G2113

AREA 2 EXCAVATION/INTERIM RESTORATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006 - 2006

PBS: OHFN06
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: G2113
COMMENT NO F06-033

Resource: BUYCON	BUYER/CONTRACTS ADMN	EOC:	LABOR												
Res Dept: 949	Overtime:	SAL													
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12			
Yr Hours:	592.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:	592.0	592.0	592.0	592.0	592.0	592.0	592.0	592.0	592.0	592.0	592.0	592.0			
Yr Total Cost:	24,805	0	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:	24,805	24,805	24,805	24,805	24,805	24,805	24,805	24,805	24,805	24,805	24,805	24,805			

Resource: CLERKS	CLERKS	EOC:	LABOR												
Res Dept: 949	Overtime:	SAL													
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12			
Yr Hours:	855.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:	855.0	855.0	855.0	855.0	855.0	855.0	855.0	855.0	855.0	855.0	855.0	855.0			
Yr Total Cost:	20,425	0	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:	20,425	20,425	20,425	20,425	20,425	20,425	20,425	20,425	20,425	20,425	20,425	20,425			

Resource: CNSCOD	CONSTRUCTION COORD	EOC:	LABOR												
Res Dept: 949	Overtime:	SAL													
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12			
Yr Hours:	1,212.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0	1,212.0			
Yr Total Cost:	38,469	0	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:	38,469	38,469	38,469	38,469	38,469	38,469	38,469	38,469	38,469	38,469	38,469	38,469			

Resource: CNSENG	CONSTRUCTION ENG	EOC:	LABOR												
Res Dept: 949	Overtime:	SAL													
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12			
Yr Hours:	3,828.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0	3,828.0			
Yr Total Cost:	208,625	0	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:	208,625	208,625	208,625	208,625	208,625	208,625	208,625	208,625	208,625	208,625	208,625	208,625			

Resource: CNSMGR	CONSTRUCTION MGR	EOC:	LABOR												
Res Dept: 949	Overtime:	SAL													
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12			
Yr Hours:	731.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:	731.5	731.5	731.5	731.5	731.5	731.5	731.5	731.5	731.5	731.5	731.5	731.5			
Yr Total Cost:	45,360	0	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:	45,360	45,360	45,360	45,360	45,360	45,360	45,360	45,360	45,360	45,360	45,360	45,360			

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006 - 2006

PBS: OHFN06
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: G2113
COMMENT NO F06-033

Resource: FIELDSUB Res Dept: 949		FIELD SUBS		Overtime:		Class:		EOC:		SUB		SUBCONTRACTORS	
Yr	Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
1,318,553.0	0.0	1,318,553.0	0.0	0.0	0.0	866,850.0	2,293,900.0	0.0	0.0	0.0	0.0	0.0	0.0
1,318,553.0	0.0	1,318,553.0	0.0	0.0	0.0	2,216,403.0	4,509,303.0	4,509,303.0	4,509,303.0	4,509,303.0	4,509,303.0	4,509,303.0	4,509,303.0
1,318,553	0	1,318,553	0	0	0	999,648	2,630,976	0	0	0	0	0	0
1,318,553	0	1,318,553	0	0	0	2,318,201	4,949,177	4,949,177	4,949,177	4,949,177	4,949,177	4,949,177	4,949,177
Yr Total Cost:													
Cum Total Cost:													
Resource: INDHYG Res Dept: 949													
		INDUSTRIAL HYGIENIST		Overtime:		Class:		EOC:		SAL		LABOR	
Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23.0	0.0	23.0	0.0	0.0	0.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0
1,067	0	0	0	0	0	0	0	0	0	0	0	0	0
1,067	0	1,067	0	0	0	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067
Yr Total Cost:													
Cum Total Cost:													
Resource: LANDRY Res Dept: 949													
		LAUNDRY WORKER		Overtime:		Class:		EOC:		HOU		LABOR	
Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
941.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
941.0	0.0	941.0	0.0	0.0	0.0	941.0	941.0	941.0	941.0	941.0	941.0	941.0	941.0
22,999	0	0	0	0	0	0	0	0	0	0	0	0	0
22,999	0	22,999	0	0	0	22,999	22,999	22,999	22,999	22,999	22,999	22,999	22,999
Yr Total Cost:													
Cum Total Cost:													
Resource: MAT300 Res Dept: 949													
		MATERIAL OBJCLASS300		Overtime:		Class:		EOC:		MAT		MATERIAL	
Yr	Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
78,575.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78,575.0	0.0	78,575.0	0.0	0.0	0.0	78,575.0	78,575.0	78,575.0	78,575.0	78,575.0	78,575.0	78,575.0	78,575.0
22,999	0	0	0	0	0	0	0	0	0	0	0	0	0
22,999	0	22,999	0	0	0	22,999	22,999	22,999	22,999	22,999	22,999	22,999	22,999
Yr Total Cost:													
Cum Total Cost:													
Resource: MNTREP Res Dept: 949													
		MAINTENANCE REP		Overtime:		Class:		EOC:		SAL		LABOR	
Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	Oct 09- Sep 10	Oct 09- Sep 10
578.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
578.5	0.0	578.5	0.0	0.0	0.0	578.5	578.5	578.5	578.5	578.5	578.5	578.5	578.5
20,102	0	0	0	0	0	0	0	0	0	0	0	0	0
20,102	0	20,102	0	0	0	20,102	20,102	20,102	20,102	20,102	20,102	20,102	20,102
Yr Total Cost:													
Cum Total Cost:													

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006 - 2006

PBS: OHFN08
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: GZ113
COMMENT NO F06-033
Resource: MVOOPR
Res Dept: 949

		MOTOR VEHICLE OPER		LABOR											
		Overtime:		EOC:		HOU		EOC:		HOU		EOC:		HOU	
Resource:	Res Dept:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:	Class:
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Cum Hours:		650.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		18,760	0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0	650.0
Cum Total Cost:		18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760	18,760

Resource: PJCSCH
Res Dept: 949

		SCHEDULERS		LABOR											
		Overtime:		EOC:		SAL		EOC:		SAL		EOC:		SAL	
Resource:	Res Dept:	Class:													
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Cum Hours:		1,333.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		70,488	0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0	1,333.0
Cum Total Cost:		70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488	70,488

Resource: PORTER
Res Dept: 949

		PORTER		LABOR											
		Overtime:		EOC:		HOU		EOC:		HOU		EOC:		HOU	
Resource:	Res Dept:	Class:													
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Cum Hours:		868.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		21,214	0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0	868.0
Cum Total Cost:		21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214	21,214

Resource: PRJMGR
Res Dept: 949

		PROJECT MANAGER		LABOR											
		Overtime:		EOC:		SAL		EOC:		SAL		EOC:		SAL	
Resource:	Res Dept:	Class:													
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Cum Hours:		1,394.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		124,333	0	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5	1,394.5
Cum Total Cost:		124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333	124,333

Resource: QACENG
Res Dept: 949

		QA ENGINEER		LABOR											
		Overtime:		EOC:		SAL		EOC:		SAL		EOC:		SAL	
Resource:	Res Dept:	Class:													
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Cum Hours:		748.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		34,400	0	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5
Cum Total Cost:		34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400	34,400

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006 - 2006

PBS: OHFN06
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: G2113
COMMENT NO F06-033

Resource:	Res Dept:	QA/QC TECH	EOC:		LABOR		EOC:		LABOR		
			Overtime:	SAL	Class:	Class:	SAL	Class:	Class:		
	949		Oct 00- Sep 01	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			0.0	0.0	0.0	0.0	91.8	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	0.0	91.8	91.8	91.8	91.8	91.8
Yr Total Cost:			0	0	0	0	3,788	0	0	0	0
Cum Total Cost:			0	0	0	0	3,788	3,788	3,788	3,788	3,788

Resource:	Res Dept:	RAD TECH	EOC:		LABOR		EOC:		LABOR		
			Overtime:	SAL	Class:	Class:	SAL	Class:	Class:		
	949		Oct 00- Sep 01	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			3,813.5	0.0	0.0	0.0	91.8	0.0	0.0	0.0	0.0
Cum Hours:			3,813.5	3,813.5	3,813.5	3,813.5	3,905.3	3,905.3	3,905.3	3,905.3	3,905.3
Yr Total Cost:			129,964	0	0	0	4,180	0	0	0	0
Cum Total Cost:			129,964	129,964	129,964	129,964	134,144	134,144	134,144	134,144	134,144

Resource:	Res Dept:	S&HENG	EOC:		LABOR		EOC:		LABOR		
			Overtime:	SAL	Class:	Class:	SAL	Class:	Class:		
	849		Oct 00- Sep 01	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			955.0	0.0	0.0	0.0	91.8	0.0	0.0	0.0	0.0
Cum Hours:			955.0	955.0	955.0	955.0	1,046.8	1,046.8	1,046.8	1,046.8	1,046.8
Yr Total Cost:			47,474	0	0	0	6,097	0	0	0	0
Cum Total Cost:			47,474	47,474	47,474	47,474	53,571	53,571	53,571	53,571	53,571

Resource:	Res Dept:	SERVSUB	EOC:		SUBCONTRACTORS		EOC:		LABOR		
			Overtime:	SUB	Class:	Class:	SAL	Class:	Class:		
	949		Oct 00- Sep 01	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:			30,000.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:			30,000.0	30,000.0	30,000.0	30,000.0	30,000.0	30,000.0	30,000.0	30,000.0	30,000.0
Yr Total Cost:			30,000	0	0	0	0	0	0	0	0
Cum Total Cost:			30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000

Resource:	Res Dept:	WSTENG	EOC:		LABOR		EOC:		LABOR		
			Overtime:	SAL	Class:	Class:	SAL	Class:	Class:		
	949		Oct 00- Sep 01	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Yr Total Cost:			1,072	0	0	0	0	0	0	0	0
Cum Total Cost:			1,072	1,072	1,072	1,072	1,072	1,072	1,072	1,072	1,072

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2006 - 2006

PBS: OHFN06
WBS: 1.1.G.D
CTRL ACCT: G211
CHARGE NO: G2113
COMMENT NO F06-033

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-		
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20	
Yr Hours:	18,544.5	0.0	0.0	0.0	0.0	275.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	18,544.5	18,544.5	18,544.5	18,544.5	18,544.5	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9	18,819.9
Yr Total Cost:	2,256,685	0	0	0	999,648	2,645,042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	2,256,685	2,256,685	2,256,685	2,256,685	3,256,333	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375	5,901,375



CONTROL TEAM

CAM

62113

PROJECTS CONTROLS ESTIMATING SERVICES

March 29, 2001

PROJECT DESCRIPTION: AREA 2, PHASE 1 SWU

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: Fred Wilson

ESTIMATOR: JEA

ESTIMATE NUMBER: C20103002R1

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input checked="" type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input checked="" type="checkbox"/>	Soecifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	Estimate	<input type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input checked="" type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Estimate the cost for excavating, hauling, and stockpiling approximately 30,000 cyds of contaminated soil from the SWU AREA to OSDF or designated area. Excavation involves 5 different locations and depths vary from 4' to 24'. Also, estimate the cost for decon of equipment and reseedling of excavated areas as well as resizing approximately 35 cyds of concrete and haul and stockpile it also. Work will be executed by the site support contractor using rented equipment (by FF).

Revision 1 changed the project name from "Area 2, Phase 1 Non Waste Units (Perimeter Area) Excavation" to "Area 2, Phase 1 SWU".

PROJECTS CONTROLS ESTIMATING SERVICES

March 29, 2001

PROJECT DESCRIPTION: AREA 2, PHASE 1 SWU

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: Fred Wilson

ESTIMATOR: JEA

ESTIMATE NUMBER: C20103002R1

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 40-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A

**PROJECTS CONTROLS
ESTIMATING SERVICES**

March 29, 2001

PROJECT DESCRIPTION: AREA 2, PHASE 1 SWU

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: Fred Wilson

ESTIMATOR: JEA

ESTIMATE NUMBER: C20103002R1

Waste Program Management dollars provided by the Project Engineer.

PRODUCTIVITY:

Productivity of this project is based upon data from R. S. Means as well as estimator experience and adjustment of data to suit site conditions. Data was also reviewed of similar past projects.

ESCALATION:

Escalation costs are excluded from the target estimate..

UNIT RATES:

Unit man-hours, equipment and material dollars are based on R. S. Means with adjustments for site conditions and recent experiences of similar projects.

G & A (HO EXPENSE):

G & A are excluded from the target estimate..

HEALTH PHYSICS:

Default values from estimating system were used.

RISK BUDGET:

There is no risk computed for this estimate.

CONTINGENCY:

There is no contingency computed for this estimate.

**PROJECTS CONTROLS
ESTIMATING SERVICES**

March 29, 2001

PROJECT DESCRIPTION: AREA 2, PHASE 1 SWU

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: Fred Wilson

ESTIMATOR: JEA

ESTIMATE NUMBER: C20103002R1

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Premobilization & Mobilization.
- Demobilization.
- Labor hours.
- Material dollars.
- Equipment dollars.

EXCLUSIONS:

- Premium time.
- Permits and fees.
- FF G & A (Home Office Expense).
- Construction Management.
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02-R1
 CLIENT: DOE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

DATE: 29-Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO: GCWCC

DESCRIPTION	MIN	AVG. RATE	SPT. CONT. LABOR \$	FERMCO			
				SIC/OTHER	MATL \$	EQUIP \$	TOTAL \$
Mobilization & Demobilization	542		141,000			12,300	12,300
EQUIPMENT RENTAL						1235,700	1235,700
EXCAVATE, HAUL AND GRADE	8,812		1228,200			187,700	187,700
CONCRETE STOCKPILE	200		17,300			1700	1700
MATERIALS					158,200		158,200
SUPPORT CONT. FF O.P. COST TOTAL	7,354	\$37.59	\$275,500		\$158,200	\$1208,900	\$1363,200
SUPERVISION	1,297		173,200				
SMALL TOOLS & CONSUMABLES					130,200		130,200
EQUIP. RENTAL						12,400	12,400
CLEAN-UP	193		17,200				
SAFETY	193		17,200			13,900	13,900
HEALTH PHYSICS SVC	321		112,000			19,800	19,800
JOB SPECIFIC TRAINING							
SUPPORT CONT. INDIRECT FIELD COST TOTAL	2,104		\$99,500				
SUPPORT CONT. TOTAL BILLABLE COSTS	3,459	\$38.80	\$374,800				
TEMPORARY FACILITIES							
TEMPORARY UTILITY HOOK-UP							
FD FERNALD SALES TAX					18,200	118,400	124,500
FF INDIRECT FIELD COSTS TOTAL					\$52,700	\$118,400	\$71,100
FF DIRECT & INDIRECT FIELD COSTS TOTAL					\$109,000	\$325,200	\$434,200
FF and SUPT. CONT. DIRECT & INDIRECT FIELD COST TOTAL			\$374,800				\$809,300
SUB-TOTAL (BASE ESTIMATE)							\$809,300
ROUNDING							
TARGET ESTIMATE (FY 01 DOLLARS)							\$809,000

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02-R1
 CLIENT: DOE
 WBS NO.: 1.1.G.D

FACTORS

DATE: 29-Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GCWCZ

	SUPPORT CONTRACTOR		FERNALD				PROJECT TOTAL \$
	LABOR \$	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	
DFC DOLLARS	\$275,000			\$56,300	\$306,900	\$9,300	\$648,100
IFC COST FACTOR	1.2622	1.0000		1.6501	1.0600	-	
SALES TAX COST FACTOR	-	-	-	1.0600	1.0600	1.0600	
BOND - OVERHEAD & PROFIT COST FACTOR	N/A	N/A	N/A	N/A	N/A	N/A	
DIRECT FIELD COST FACTOR =	1.2622	1.0000		1.7491	1.0600	1.0600	
DIRECT BASE ESTIMATE \$'s	\$374,600			\$98,474	\$325,314	\$10,494	\$808,882
RISK BUDGET FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
DIRECT TARGET ESTIMATE FACTOR	1.2622	1.0000		1.7491	1.0600	1.0600	
DIRECT TARGET ESTIMATE (FY00 DOLLARS)	\$374,600			\$98,474	\$325,314	\$10,494	\$808,882

NOTE:

If there are no equipment rental costs in the "Directs" (0 \$'s in H20) and the default allowance of \$3.50 per MH has been used in the "Indirects", input the indirect Equip. \$'s in H62 and put a dash in H63. This will treat the Equip. \$'s as direct cost and apply the sales tax factor. On page 3 below, insert the equipment \$'s in any pay items that apply.

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02.R1
 CLIENT: DOE
 WSS NO.: 1.1.G.D

Direct Field Cost
w/FACTORS

DATE: 29-Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GCWC2

PAY ITEM NO.	DESCRIPTION	SUPPORT		SIC \$	MATL \$	EQUIP \$	PPE \$	TOTAL \$
		CONT. LABOR \$	FF LABOR \$					
	PPE						9900	
	Mobilization & Demobilization	41000 \$55,850				2,800 \$2,970	\$10,490	\$10,490
	EQUIPMENT RENTAL					235,700 \$249,840		\$249,840
	EXCAVATE, HAUL, AND GRADE	226200 \$308,130				57,700 \$71,750		\$379,880
	CONCRETE STOCKPILE	7800 \$10,530				700 \$740		\$11,370
	MATERIALS				56300 \$58,470			\$58,470
SUB-TOTAL - SUPPORT CONTRACTOR								\$374,610
SUB-TOTAL - FF								
Rounding					58,470	325,310	10,490	343,270
TOTAL DIRECT FIELD COSTS w/FACTORS								\$3120
NOTE: The above costs exclude any FD Fernald support costs that may appear on page 1 & 2, such as Waste Disposition, Engineering, Project Management, or Construction Management.								\$809,000

Fluor Fernald, Inc.

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02-R1
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 29-Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GCWC2

DIRECT COST SUMMARY	CITY	UNIT	MAN HOURS			COST / UNIT			LABOR	SIC	MATL	EQUIP	TOTAL
			Unit	Total	Rate	Labor	SIC	Mat'l					
Mobilization & Demobilization				542				\$41,000			\$2,800	\$43,800	
EQUIPMENT RENTAL				6,612				\$226,200			\$235,700	\$235,700	
EXCAVATE, HAUL, AND GRADE				200				\$7,800			\$67,700	\$293,900	
CONCRETE STOCKPILE										\$56,300		\$56,300	
MATERIALS												\$56,300	
DIRECT COST SUMMARY	1	LOT		7,354		\$37.39		\$275,000		\$56,300	\$306,900	\$630,200	

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02-R1
 CLIENT: DOE
 WBS NO.: 1.1.6.D

DATE: 29 Mar-01
 ESTIMATOR: JEA
 LOCATION: FERRALD
 TASK NO.: GCWGC2

Fluor Fernald, Inc.

P/E LEVEL	DESCRIPTION	QTY	UNIT	MAN HOURS			COST/BURR			LABOR	MATT	EQUIP	TOTAL
				Unit	Total	Rate	Labor	SIC	Matt				
D	Mobilization & Demobilization												
	Mobilization												
D	Excavator Cat 345	1	ea	4.0	4	40.90			\$160		\$340	\$500	
D	Dozer D8	2	ea	2.0	4	40.90			\$160		\$320	\$480	
D	Articulating Trucks Volvo A25	6	ea	3.0	18	35.21			\$630		\$360	\$990	
D	Water Truck	1	ea	1.0	1	35.21			\$40		\$60	\$100	
D	Excavator Cat 330 w/ shear	1	ea	4.0	4	40.90			\$160		\$340	\$500	
D	Demobilization												
D	Same as mobilization	1	Lol		31	36.60			\$1,130		\$1,420	\$2,550	
ESTIMATED EXCAVATION QUANTITIES													
	AREA	QTY (CY)											
		1											
		2,113											
		7											
	Petro	2,500											
	Carolina	5,000											
	Total	30,100											
mC	Pipefilter (water control)	1	ea	320.0	320	41.52			\$13,280			\$13,280	
mC	Electrician (air monitors & temp elec.)	1	ea	160.0	160	38.09			\$6,090			\$6,090	
	No finish grading or topsoil req'd.								\$19,370			\$19,370	
	Mobilization & Demobilization				542	\$75.65			\$41,000		\$2,840	\$43,840	

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02-III
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 29-Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GRWC2

Fluor Fernald, Inc.

TYPE	EQUIPMENT RENTAL	QTY	UNIT	MAN HOURS		COST / UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Date	Labor	SIC					
E-E1	Excavator 345 Cat	3	mth									\$28,500	\$28,500
	Bulldozer D8	6	mth									\$45,000	\$45,000
	Articulating Trucks (25 ton)	18	mth									\$135,000	\$135,000
	Water Truck	3	mth									\$10,500	\$10,500
	Hydro Seeder	1	mth										
	Trash Pump	3	mth									\$1,100	\$1,100
	Pickup Truck w/ fuel tank	3	mth									\$2,100	\$2,100
	Firehose - 1 1/2"	3	mth									\$2,250	\$2,250
	Cool Down Trailer	3	mth									\$1,200	\$1,200
	Excavator 330 Cat w/ shear	1	mth									\$10,000	\$10,000
	Equipment Operating Costs These costs are in each area of work.												
	EQUIPMENT RENTAL											\$235,700	\$235,700

PROJECT: AREA 2, PHASE 1 SWU
 ESTIMATE NO.: C2-01-03-02 RI
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 29 Mar-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GCWC2

Fluor Fernald, Inc.

P/F LEVEL	CONCRETE STOCKPILE	QTY	UNIT	MAN HOURS			COST / UNIT			LABOR	SIC	MATL	EQUIP	TOTAL			
				Unit	Total	Rate	Labo	SIC	Mat'l						Equip		
D	Size reduce concrete Excavator w/ shear	35	cy	1.50	53	40.90			\$2,150			\$350	\$2,500				
D	Load and haul	35	cy	1.50	53	40.90			\$2,150			\$350	\$2,500				
mC	Laborers	1	ea	60.00	110	31.01			\$3,500				\$3,500				
													\$7,800	\$700	\$8,500		
CONCRETE STOCKPILE													200.00	\$39.00			

G2113

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

April 9, 2001

PROJECT DESCRIPTION: A2P1 NWU 2001 SCOPE
WBS NUMBER: 1.1.G.D
PROJECT ENGINEER: J. Blankemeyer
ESTIMATOR: J. Amos
ESTIMATE NUMBER: C20103003

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input checked="" type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input checked="" type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input checked="" type="checkbox"/>
Sketches	<input checked="" type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	Estimate	<input type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input checked="" type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Estimate the cost for excavating, loading, dumping, and grading approximately 10,300 cy of soil. Dump soil at the OSDI. Also remove geotextile, and geomembranes from sediment ponds as well as HDPE piping, well house and foundation, catch basin, and electrical poles, wires, and guys.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

April 9, 2001

PROJECT DESCRIPTION: A2P1 NWU 2001 SCOPE

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: J. Blankemeyer

ESTIMATOR: J. Amos

ESTIMATE NUMBER: C20103003

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 40-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A
- Waste Program Management dollars provided by the Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

April 9, 2001

PROJECT DESCRIPTION: A2P1 NWU 2001 SCOPE
WBS NUMBER: 1.1.G.D
PROJECT ENGINEER: J. Blankemeyer
ESTIMATOR: J. Amos
ESTIMATE NUMBER: C20103003

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and recent project history. See attachment APPENDIX "A" and APPENDIX "B".

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX "C".

RISK BUDGET:

There are no risk dollars in this estimate.

CONTINGENCY:

There are no contingency dollars in this estimate.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

April 9, 2001

PROJECT DESCRIPTION: A2P1 NWU 2001 SCOPE
WBS NUMBER: 1.1.G.D
PROJECT ENGINEER: J. Blankemeyer
ESTIMATOR: J. Amos
ESTIMATE NUMBER: C20103003

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Premobilization & Mobilization.
- Demobilization.
- Labor hours.
- Material dollars.
- Equipment dollars.

EXCLUSIONS:

- Premium time.
- Permits and fees.
- FF G & A (Home Office Expense).
- Construction Management.
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: ACP1 NWU 2001 SCOPE
 ESTIMATE NO.: 02-01-03-003
 CLIENT: DOE
 WBS NO.: M.I.G.D

DATE: 09-Apr-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO: GPM11

Fluor Fernald, Inc.

DESCRIPTION	M/H	AVG. RATE	SPT. CONT. LABOR :	FERMCO			
				SIC / OTHER	MAT'L :	EQUIP :	TOTAL :
Mobilization & Demobilization	374		115,200			12,200	12,200
EQUIPMENT RENTAL						1154,200	1154,200
EXCAVATE, HAUL, AND GRADE	1,666		157,500		11,900	110,700	114,500
EXCAVATE, HAUL, AND GRADE	1,200		154,700			115,300	115,300
EXCAVATE, HAUL, AND GRADE	1,001		125,000			15,300	15,300
PIPE/ELECTRICAL	1,218		146,200		113,700	12,500	116,200
SUPPORT CONT. OFF. O. P. COST TOTAL	5,460	138.52	1248,300		117,500	1182,100	1209,600
SUPERVISION	1,357		172,500				
SMALL TOOLS & CONSUMABLES					15,000		15,000
MISC. EQUIP. RENTAL							
JOB CLEAN UP	49		11,900		1600		1600
SAFETY	53		12,200		11,700		11,700
HEALTH PHYSICS SW	233		110,500		18,900		18,900
JOB SPECIFIC TRAINING							
SUPPORT CONT. INDIRECT FIELD COST TOTAL	1,772		182,500				
SUPPORT CONT. TOTAL BILLABLE COSTS	5,231	140.99	1337,400		135,500	1203,500	1378,900
TEMPORARY FACILITIES							
TEMPORARY HOUSING BACK-UP							
TO FERNALD, MISS. TAX					12,000	111,500	110,500
DEMOLITION FIELD COSTS TOTAL					118,100	111,500	129,600
PERMITS & APPROVALS FIELD COSTS TOTAL					135,500	1203,500	1339,000
PERMITS & APPROVALS & INDIRECT FIELD COST TOTAL			1337,400		135,500	1203,500	1378,900
CONTRACTOR BASE ESTIMATE							1578,700
ROUNDING							
TARGET ESTIMATE (FY 01 DOLLARS)							1578,700

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: A2P1 NWU TDR1 SCOPE
 ESTIMATE NO.: C2-01-03-003
 CLIENT: OOR
 WBS NO.: 1.1.G.0

DATE: 09-Apr-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GPM11

FACTORS

	SUPT. CONT.		FD FERNALD				PROJECT
	LABOR \$	LABOR \$	SJC :	MATL :	ESQUIP :	PPE :	
DPC DOLLARS	\$248,800			\$17,500	\$192,100	\$8,900	\$467,000
PC COST FACTOR	1.0561	1.0000		1.4171	1.0000	-	
SALES TAX COST FACTOR	-	-	-	1.0600	1.0600	1.0600	
BOND - OVERHEAD & PROFIT COST FACTOR	N/A	N/A	N/A	N/A	N/A	N/A	
DIRECT FIELD COST FACTOR	1.0561	1.0000		1.5022	1.0600	1.0600	
DIRECT LABOR ESTIMATE \$	\$237,400			\$26,358	\$200,525	\$8,328	\$572,642
RISK BUDGET FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
DIRECT LABOR ESTIMATE FACTOR	1.0561	1.0000		1.5022	1.0600	1.0600	
DIRECT LABOR ESTIMATE (\$700 DOLLARS)	\$237,400			\$26,358	\$200,525	\$8,328	\$572,642

NOTE:
 If there are no equipment rental costs in the "Direct" L.O.'s in (20) and the default allowance of \$3.50 per MH has been used in the "Indirects",
 remove the indirect Equip. \$'s in (11) and put a zero in (16). This will treat the Equip. \$'s as direct cost and apply the sales tax factor.
 On page 2 below, insert the equipment \$'s in any pay items that apply.

SUPPORT CONTRACTOR ESTIMATE SUMMARY SHEET

PROJECT: AZP: MWU 2001 SCOPE
 ESTIMATE NO.: 02-01-03-003
 CLIENT: OGE
 WBS NO.: 1.1.G.D

Direct Field Cost
 w/FACTORS

DATE: 09-Apr-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GPM11

PAY ITEM NO.	DESCRIPTION	SUPPORT		SIC :	MATE :	EQUIP :	PPE :	PROJECT
		LABOR :	FF					
	PPE						3900 19,330	19,330
	Mobilization & Demobilization	15300 120,750				2000 12,330		120,080
	EQUIPMENT RENTAL					154,200 185,450		185,450
	EXCAVATE, HAUL, AND GRADE	57600 179,110			1,800 15,710	10,700 111,340		195,160
	EXCAVATE, HAUL, AND GRADE	34700 1128,420				16,800 117,310		1146,220
	EXCAVATE, HAUL, AND GRADE	35000 147,460				3,600 15,940		150,400
	PIPING/ELECTRICAL	46200 162,850			13,700 120,550	2500 12,760		189,390
SUB-TOTAL - SUPPORT CONTRACTOR								1307,390
SUB-TOTAL - FF								129,350
TOTAL DIRECT FIELD COSTS w/FACTORS								1578,940

NOTE: This table does not include any FF (indirect support costs) that may appear on page 1 & 2, such as Waste Characterization, Engineering, Project Management, or Construction Management.

PROJECT: AZPI MW02 001 SCOPE
 ESTIMATE NO. C2 01-03-003
 CLIENT: ODE
 WBS NO.: 1.1.G.0

Fluor Ferrel, Inc.

DATE: 09 Apr 01
 ESTIMATOR: JFA
 LOCATION: FERRAID
 TASK NO.: GP011

DIRECT COST SUMMARY	QTY	UNIT	MAN HOURS		COST / UNIT			LABOR	SIC	MATEL	EQUIP	TOTAL
			Unit	Total	Rate	Labo	SIC					
Mobilization & Demobilization				374			-\$15,300	6,640		\$2,200	-\$17,500	6,640
EQUIPMENT RENTAL				1,656			\$57,600		\$3,800	\$154,200	-\$154,200	71,320
EXCAVATE, HAUL, AND GRADE				2,200			\$94,700			\$10,700	\$72,100	
EXCAVATE, HAUL, AND GRADE				1,001			\$35,000			\$5,600	\$40,600	
EXCAVATE, HAUL, AND GRADE				1,219			\$46,200		\$13,700	\$2,600	\$62,500	
PIPING/ELECTRICAL												
DIRECT COST SUMMARY	1	LOT		6,650		\$ 33.52	\$ 66,800		\$ 17,500	\$ 192,100	\$ 450,400	

PROJECT: A2P1 HWU 2001 SCOPE
 ESTIMATE NO. C2 01 03 003
 CLIENT: DOE
 WBS NO.: 1.1.G.0

Fluor Fernald, Inc.

DATE: 09 Apr 01
 ESTIMATION: JEA
 LOCATION: FERRAID
 TASK NO.: GP/AT1

P/F UNIT	DESCRIPTION	QTY	UNIT	MAN HOURS		COST UNIT		LABOR	SIC	MATT	EQUIP	TOTAL
				Unit	Total	Labor	SIC					
	Mobilization & Demobilization											
D	Mobilization											
D	Excavator Cat 345	1	ea	4.0	4	40.90		-\$160	-		340	-\$500
D	Dozer D8	2	ea	2.0	4	40.90		\$160	-		80	-\$100
D	Articulating Trucks Volvo A25	6	ea	3.0	18	35.21		-\$630	-		120	-\$890
D	Water Truck	1	ea	1.0	1	35.21		-\$40	-		60	-\$100
D	Demobilization											
D	Same as mobilization	1	Lot		27	36.60		-\$990	-		600	-\$2,070
ESTIMATED EXCAVATION QUANTITIES												
mC	Pipefilter (water control)	1	ea	160	320	41.52		-\$6,250	6,640			-\$13,250
	No finish grading or topsoil req'd.											
	Mobilization & Demobilization				374	540.91		-\$5,300				-\$17,500

SAME EQUIPMENT AS SUBL. NO. 112. 4

46,640

PROJECT: A2P1 HWU 2001 SCOPE
 ESTIMATE NO. C2 01 03 003
 CLIENT: DOE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

DATE: 09-Apr-01
 ESTIMATOR: JEA
 LOCATION: FERNALD
 TASK NO.: GPPA11

P/E LINE	EQUIPMENT RENTAL	QTY	UNIT	MAN HOURS		Date	Labor	SIC	COST / UNIT		LADDER	SIC	MATT	EQUIP	TOTAL
				Total	Rate				Matl	Equip					
	Excavator 345 Cal	1	2	mith										\$19,000	\$19,000
	Bulldozer D8	1	4	mith										\$30,000	\$30,000
	Articulating Trucks (25 ton)	1	12	mith										\$90,000	\$90,000
	Water Truck	1	2	mith										\$7,000	\$7,000
	Hydro Seeder	1	1	mith										\$370	\$370
	Trash Pump	1	1	mith										\$700	\$700
	Pickup Truck w/ fuel tank	1	1	mith										\$750	\$750
	Firehose - 1 1/2" 500 LF	1	2	mith										\$800	\$800
	Cool Down Trailer	1	8	mith										\$4,000	\$4,000
	Generators (4 ea)	1	1	mith										\$1,600	\$1,600
	Bobcat														
	EQUIPMENT RENTAL													\$154,200	\$154,200

9,500
 7,500
 15,000
 3,500
 by FIDF
 365
 700
 750
 400
 500
 1600

71,720

PROJECT: AZP1 RWU 2001 SCOPE
 ESTIMATE NO. C2-01-03-003
 CLIENT: DOE
 WBS NO.: 1.1.G-D

DATE: 09 Apr 01
 ESTIMATOR: JEA
 LOCATION: FERRARO
 TASK NO.: GPM11

Fluor Fernald, Inc.

P/E UNIT	EXCAVATE, HAUL, AND GRADE	QTY	UNIT	MAN HOURS			COST/UNIT			LABOR	SIC	LABOR	MATERIAL	EQUIP	TOTAL
				Unit	Rate	Total	Mat'l	Equip	Equip						
BASIN 1															
D	Excavate & load Soil/flyash, snbgs	330.0	cy	0.02	40.90	8		1.00			\$330		\$330	\$660	
D	Excavate & grade w/ dozer	330.0	cy	0.02	40.90	9		0.75			\$370		\$370	\$618	
D	Haul w/ articulating trucks	330.0	cy	0.04	35.21	15		0.50			\$530		\$530	\$695	
mC	Laborers (spot & wh. Wash)	2	ea	10.00	33.90	37					\$1,250		\$1,250	\$1,250	
D	Remove silt fence (exist. & new)	2,080	lf	0.02	33.90	48		0.15			\$1,630		\$1,630	\$1,942	
D	Install new silt fence	1,040	lf	0.04	33.90	48		0.15	0.80		\$1,630	\$830	\$1,56	\$2,616	
D	Remove perimeter fence	3,700	lf	0.03	33.90	127		0.15			\$4,310		\$555	\$4,865	
D	Install new perimeter fence	2,000	lf	0.09	33.90	206		0.15	1.50		\$6,980	\$3,000	\$300	\$10,280	
mC	Remove geomembrane liner	6,900	cy	0.01	33.90	126					\$4,270		\$150	\$4,270	
mC	Remove lift station & HDPE piping	1	ea	32.00	41.52	58					\$2,410		\$150	\$2,410	
D	Rem. elect. panel (save for future)	1	ea	32.00	38.09	37					\$1,410		\$150	\$1,410	
mC	Hand excavate sediment (115cy)	3	lab	40.00	33.90	120					\$4,070		\$150	\$4,070	
mC	Bobcat	1	ea	40.00	33.90	73					\$4,070		\$150	\$4,070	
DITCH 2															
D	Excavate & load rock, sediment, etc	810	cy	0.02	40.90	19		1.00			\$780		\$810	\$1,590	
D	Excavate & grade w/ dozer	810	cy	0.02	40.90	21		0.75			\$860		\$608	\$1,468	
D	Haul w/ articulating trucks	810	cy	0.04	35.21	37		0.50			\$1,300		\$405	\$1,705	
mC	Laborers (spot & wh. Wash)	3	ea	10.00	33.90	55					\$1,060		\$75	\$1,060	
mC	Remove geomembrane	500	sy	0.06	33.90	55		0.15			\$1,060		\$33	\$1,935	
mC	Remove geotextile	220	sy	0.04	33.90	16		0.15			\$540		\$33	\$573	
GRASSY KNOLL AREA															
D	Excavate & load Soil/flyash, Sediment	425	cy	0.02	40.90	10		1.00			\$425		\$425	\$850	
D	Excavate & grade w/ dozer	425	cy	0.02	40.90	11		0.75			\$460		\$319	\$769	
D	Haul w/ articulating trucks	425	cy	0.04	35.21	19		0.50			\$670		\$213	\$883	
mC	Laborers (spot & wh. Wash)	2	ea	10.00	33.90	37					\$1,250		\$125	\$1,250	
mC	Clear trees & stumps (brush pile)	15	ea	6.00	33.90	164		125.00			\$5,560		\$1,487	\$4,977	
mC	Remove piping (6" & 2" & 4")	286	lf	0.15	41.52	84		5.20			\$3,420		\$1,930	\$5,590	
mC	Remove storm drain (10" corr. HD)	300	lf	0.20	33.90	110		6.50			\$2,410		\$130	\$2,550	
mC	Remove seepage sta., pump & hnd	1	ea	32.00	41.52	58		150.00			\$2,410		\$130	\$2,550	
mC	Rem. Seep. Sta. Elec.	1	ea	32.00	38.09	58					\$2,210		\$130	\$2,210	
mC	Remove catch basin	1	ea	15.00	33.90	29		150.00			\$890		\$150	\$1,140	
EXCAVATE, HAUL, AND GRADE															
				1535			\$37,590			\$10,760			\$4,130	\$47,480	

PROJECT: AZPT HWU 2001 SCOPE
 ESTIMATE NO. C2-01-03-003
 CLIENT: UOE
 WBS NO.: 1.1.G.D

DATE: 09 Apr 01
 ESTIMATOR: JFA
 LOCATION: FERRARD
 TASK NO.: GP011

Fluor Ferrard, Inc.

LINE	UNIT	QTY	UNIT	DESC	MAN HOURS			COST / UNIT			LABOR	SIC	MATEL	COMP	TOTAL
					Unit	Total	Rate	Labo	SIC	Matl					
EXCAVATE, HAUL, AND GRADE															
DITCHES 4-6															
D	Excavate & load Soil/flyash, Sedim	6	cy		0.02	1	40.90						\$6	\$46	
D	Excavate & grade w/ dozer	6	cy		0.02	1	40.90						\$5	\$45	
D	Haul w/ articulating trucks	6	cy		0.04	1	35.21						\$3	\$43	
mC	Laborers (spot & wh. Wash)	2	ea		2.00	7	31.81						\$1	\$220	
mC	Remove geomembrane	4	sy		1.00	7	31.81						\$1	\$221	
mC	Remove geotextile	4	sy		1.00	7	31.81						\$1	\$221	
TURNAROUND SOIL. PILE BY OTHERS (IT)															
D	Excavate & load w/ Excavator	6,000	cy		0.02	120	40.90						\$5,000	\$10,910	
D	Excavate & grade w/ dozer	6,000	cy		0.02	138	40.90						\$4,500	\$10,740	
D	Haul w/ articulating trucks	6,000	cy		0.04	275	35.21						\$3,000	\$12,580	
mC	Laborers (spot & wh. Wash)	4	ea		80.00	584	33.90						\$2,800	\$2,800	
D	Remove wellhouse	1	ea		100.00	114	33.90						\$500	\$4,250	
mC	Remove concrete base	1	ea		40.00	73	33.90						\$500	\$2,970	
mC	Remove piping	40	lf		0.15	12	41.52						\$1,150	\$2,940	
mC	Remove geomembrane	7,725	sy		0.06	845	33.90						\$1,150	\$19,450	
mC	Remove geotextile	7,410	sy		0.04	541	33.90						\$1,150	\$19,450	
EXCAVATE, HAUL, AND GRADE															
NIMS #1 AREA															
D	Excavate & load Soil/flyash, Sedim	6,000	cy		0.02	120	40.90						\$5,000	\$10,910	
D	Excavate & grade w/ dozer	6,000	cy		0.02	138	40.90						\$4,500	\$10,740	
D	Haul w/ articulating trucks	6,000	cy		0.04	275	35.21						\$3,000	\$12,580	
mC	Laborers (spot & wh. Wash)	4	ea		80.00	584	33.90						\$2,800	\$2,800	
D	Remove wellhouse	1	ea		100.00	114	33.90						\$500	\$4,250	
mC	Remove concrete base	1	ea		40.00	73	33.90						\$500	\$2,970	
mC	Remove piping	40	lf		0.15	12	41.52						\$1,150	\$2,940	
mC	Remove geomembrane	7,725	sy		0.06	845	33.90						\$1,150	\$19,450	
mC	Remove geotextile	7,410	sy		0.04	541	33.90						\$1,150	\$19,450	
EXCAVATE, HAUL, AND GRADE															
LOT															
											2,200.00	\$43.05	\$94,700	\$277,500	

PROJECT: A2P1 HWU 2001 SCOPE
 ESTIMATE NO. C2-01-03-003
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 09-Apr-01
 ESTIMATOR: JEA
 LOCATION: FERRAID
 TASK NO.: GPM11

Fluor Fernald, Inc.

LINE	DESCRIPTION	QTY	UNIT	MANHOURS			COST / UNIT			LABOR	SIC	MATEL	EQUIP	TOTAL
				Unit	Total	Rate	Labor	Matl	Equip					
EXCAVATE, HAUL, AND GRADE														
REMOVAL OF GRAVEL ROADS														
D	Excavate & load w/ Excavator	1,500	cy	0.02	30	40.90			1.00			\$1,500	\$2,730	
D	Excavate & grade w/ dozer	1,500	cy	0.02	35	40.90			0.75			\$1,130	\$2,540	
D	Haul w/ articulating trucks	1,500	cy	0.04	69	35.21			0.50			\$750	\$3,180	
mC	Laborers (spot & wh. Wash)	4	ea	30.00	219	33.90						\$2,430	\$7,420	
mC	Remove geotextile	1,800	sy	0.040	131	33.90			0.15			\$270	\$4,710	
Culvert 3														
D	Excavate & load w/ Excavator	40	cy	0.02	1	40.90			1.00			\$40	\$70	
D	Excavate & grade w/ dozer	40	cy	0.02	1	40.90			0.75			\$30	\$70	
D	Haul w/ articulating trucks	40	cy	0.04	2	35.21			0.50			\$20	\$90	
mC	Laborers (spot & wh. Wash)	2	ea	10.00	37	33.90						\$1,250	\$1,250	
mC	Remove 12" HDPE pipe	80	lf	0.16	23	41.52						\$950	\$950	
DITCH														
D	Excavate & load w/ Excavator	740	cy	0.02	15	40.90			1.00			\$740	\$1,350	
D	Excavate & grade w/ dozer	740	cy	0.02	17	40.90			0.75			\$560	\$1,260	
D	Haul w/ articulating trucks	740	cy	0.04	34	35.21			0.50			\$370	\$1,570	
mC	Laborers (spot & wh. Wash)	4	ea	15.00	110	33.90						\$1,730	\$3,730	
mC	Remove geomembrane	685	sy	0.03	75	33.90			0.15			\$100	\$2,640	
DITCH														
D	Excavate & load w/ Excavator	18	cy	0.04	1	40.90			1.00			\$20	\$30	
D	Excavate & grade w/ dozer	18	cy	0.04	1	40.90			0.75			\$10	\$30	
D	Haul w/ articulating trucks	18	cy	0.04	1	35.21			0.50			\$10	\$30	
mC	Laborers (spot & wh. Wash)	2	ea	40.00	146	33.90						\$4,950	\$7,930	
mC	Remove geomembrane	490	sy	0.03	54	33.90			0.15			\$70	\$7,930	
EXCAVATE, HAUL, AND GRADE											\$5,500	\$40,500	\$46,000	

PROJECT: A2P1 RWU 2001 SCOPE
 ESTIMATE NO. C2-01-03-003
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 09 Apr 01
 ESTIMATOR: JEA
 LOCATION: TERRALD
 TASK NO.: GP011

Fluor Fernald, Inc.

PFE Unit	DESCRIPTION	QTY	UNIT	MAN HOURS		Rate	Labor	SIC	COST / UNIT		SIC	LABOR	MATT	EQUIP	TOTAL	
				Unit	Total				Matl	Equip						
PIPING/ELECTRICAL																
PIPING																
D	Excavate & load soil from ditches	360	cy	0.04	144	40.90						\$590		\$360	\$950	
D	Excavate & grade w/ dozer	360	cy	0.02	8	40.90						\$340		\$270	\$610	
D	Haul w/ articulating trucks	360	cy	0.04	16	35.21						\$560		\$180	\$740	
mC	Laborers (spot & wh. Wash)	2	ea	10.00	37	33.90						\$1,250			\$1,250	
mC	Remove pipes (6" & 10")	1,400	lf	0.16	432	41.52						\$17,930			\$17,930	
Electrical Removal																
D	Remove Elect. Poles	6	ea	6.00	41	38.09						\$1,560			\$1,560	
D	Remove overhead lines (13.2 kV)	630	lf	0.05	36	38.09						\$1,370			\$1,370	
D	Remove guy wires	1	lot	12.00	14	38.09						\$530			\$530	
D	Install guy wire at pole #31	1	ea	14.00	16	38.09				400		\$610	\$400	\$230	\$1,240	
D	Relocate poles/truck & trailer	1	ea			38.09				200.00			\$200	\$250	\$450	
D	Auger truck	1	ea			38.09				700.00				\$700	\$700	
D	Bucket truck	1	ea			38.09				600.00				\$600	\$600	
D	Electricians	2	ea	40.00	92	38.09						\$3,500			\$3,500	
RESEED																
Seed																
D	Teamster	6	acres	20.00	137	35.21						\$4,820	\$13,050		\$13,050	
D	Laborers	6	acres	20.00	137	33.90						\$4,540			\$4,540	
DECON EQUIPMENT																
D	Operator	1	ea	40.00	46	40.90						\$1,860			\$1,860	
D	Teamster	1	ea	40.00	46	35.21						\$1,620			\$1,620	
mC	Laborer	2	ea	40.00	146	33.90						\$4,960			\$4,960	
PIPING/ELECTRICAL																
														\$2,570	\$2,570	\$52,600

G2113

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 16, 2001

PROJECT DESCRIPTION: SOILS REMEDIATION AREA 2, PH.1 (Perimeter),
AREA 2 PH. II

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: T. CRAWFORD

ESTIMATOR: J. AMOS

ESTIMATE NUMBER: C20105004

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input checked="" type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	Estimate	<input type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input checked="" type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Estimate the cost of excavation of soils, size-reducing building slabs, foundations, manholes, utility trenches and piping from trenches, loading and hauling to the OSDF facility or to the bulk storage facility for shipment off site (shipment cost not included in this estimate). Quantities used were supplied by project management. Scope is based on Scenario #6.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 16, 2001

PROJECT DESCRIPTION: SOILS REMEDIATION AREA 2, PH.1 (Perimeter),
AREA 2 PH. II

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: T. CRAWFORD

ESTIMATOR: J. AMOS

ESTIMATE NUMBER: C20105004

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 50-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 16, 2001

PROJECT DESCRIPTION: SOILS REMEDIATION AREA 2, PH.1 (Perimeter),
AREA 2 PH. II

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: T. CRAWFORD

ESTIMATOR: J. AMOS

ESTIMATE NUMBER: C20105004

WASTE PROGRAM MANAGEMENT:

N/A

Waste Program Management dollars provided by the Project Engineer.

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and or any other published estimating source. See attachment APPENDIX [A] and APPENDIX [B].

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and or other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX [C].

RISK BUDGET:

There is no risk allowance in this estimate.

CONTINGENCY:

There is no contingency allowance in this estimate.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 16, 2001

PROJECT DESCRIPTION: SOILS REMEDIATION AREA 2, PH.1 (Perimeter),
AREA 2 PH. II

WBS NUMBER: 1.1.G.D

PROJECT ENGINEER: T. CRAWFORD

ESTIMATOR: J. AMOS

ESTIMATE NUMBER: C20105004

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Premobilization & Mobilization.
- Demobilization.
- Labor hours.
- Material dollars.
- Equipment dollars.
- X Premium time
- X Excavate, load, haul and dump soil, asphalt, gravel, concrete slabs & foundations (sized Reduced), to the OSDF or other appropriate site.
- X Re-grade slopes to 5H:1V and seed, fertilize, and mulch
- X Bulking factors used are as follows:
 - 1. Soils 1.15
 - 2. Concrete 1.33
 - 3. Pipe debris 2.00
- X Installation, maintenance, and removal of silt and construction/rad control fencing

EXCLUSIONS:

- Permits and fees.
- FF G & A (Home Office Expense).
- Construction Management
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.
- Sampling, air monitoring and testing of soils
- Shipping and disposal costs of materials off site
- Shipping containers
- Delays due to unidentified contamination of materials or levels of contamination

ESTIMATE SUMMARY SHEET

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE #: C2-01-05-004
 CLIENT: DOE
 WBS #: 1.1.G.D

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

Fluor Fernald, Inc.

ITEM DESCRIPTION	M/H	RATE	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	TOTAL \$
<u>AREA 2 PHASE II</u>							
SITE PREPARATION	2,513		\$84,300	\$6,900	\$2,570	\$5,530	\$99,300
EXCAVATION	5,814		\$182,500		\$17,200	\$24,500	\$224,200
CONTROLS & MANAGEMENT							
INTERIM RESTORATION	137		\$4,050		\$21,000	\$3,000	\$28,050
<u>AREA 2 PHASE I PERIMETER (REMAINING)</u>							
SITE PREPARATION	1,147		\$34,530		\$7,560	\$2,850	\$44,940
EXCAVATION	20,705		\$658,200		\$100	\$143,900	\$802,200
CONTROLS & MANAGEMENT	37		\$1,180			\$400	\$1,580
INTERIM RESTORATION	523		\$15,970		\$21,000	\$3,160	\$40,130
DIRECT FIELD COSTS TOTAL	30,876	\$31.76	\$980,730	\$6,900	\$69,430	\$183,340	\$1,240,400
SUPERVISION - CONTRACTOR	13,031		\$385,930				\$385,930
SMALL TOOLS & CONSUMABLES	-	-	-		\$19,600		\$19,600
MISC. EQUIP. RENTAL	-	-	-			\$30,900	\$30,900
TEMPORARY FACILITIES	154		\$4,900		\$4,900		\$9,800
TEMPORARY UTILITY HOOK-UP	201		\$6,400		\$3,400		\$9,800
JOB CLEAN-UP	463		\$14,700		\$4,900		\$19,600
PER DIEM / SUBSISTANCE	-	-	-				
HEALTH PHYSICS S/C	271		\$8,600		\$43,900		\$52,500
CERCLA - TRAINING	350		\$11,100				\$11,100
GET/SITE ACCESS & JOB SPECIFIC TRAINING	450		\$14,300				\$14,300
PAYROLL BURDENS & BENEFITS	-	-	\$813,200				\$813,200
OVERHEAD & PROFIT	-	-	-	\$521,400			\$521,400
BOND	-	-	-	\$40,700			\$40,700
SALES TAX	-	-	-		\$8,800	\$12,900	\$21,700
INDIRECT FIELD COSTS TOTAL	14,920		\$1,259,130	\$562,100	\$85,500	\$43,800	\$1,950,530
DIRECT & INDIRECT FIELD COSTS TOTAL	45,796	\$48.91	\$2,239,860	\$569,000	\$154,930	\$227,140	\$3,190,930
TARGET ESTIMATE							\$3,190,930

(FY 01 DOLLARS)

ESTIMATE PERFORMED BY ESTIMATING SERVICES

ESTIMATE SUMMARY SHEET

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

FACTORS

FIXED PRICE \$	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
DFC DOLLARS	\$980,730	\$6,900	\$69,430	\$183,340	\$43,900	\$1,284,300
IFC COST FACTOR	2.2839	-	1.4724	1.1685	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2138	1.2138	1.2138	1.2138	1.2138	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.7722	1.2138	1.8945	1.5035	1.2867	
BASE ESTIMATE \$'s	\$2,718,790	\$8,375	\$131,534	\$275,652	\$56,484	\$3,190,836
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.7722	1.2138	1.8945	1.5035	1.2867	
FPS TARGET ESTIMATE (FY00 \$)	\$2,718,790	\$8,375	\$131,534	\$275,652	\$56,484	\$3,190,836

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G65.

ESTIMATE SUMMARY SHEET

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II

DATE: 16-May-01

ESTIMATE NO.: C2-01-05-004

Direct Field Cost w/FACTORS

ESTIMATOR: JEA

CLIENT: DOE

LOCATION: Fernald

WBS NO.: 1.1.G.D

TASK NO.: G2113

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$	
		(ASSIGN OR PRORATE PPE MAT'L \$'s) ->>				43900		
	AREA 2 PHASE II	84300	6900	2570	5530	118	99418	
	SITE PREPARATION	\$233,700	\$8,380	\$4,870	\$8,310	\$150	\$255,410	
	EXCAVATION	182500 \$505,930		17200 \$32,590	24500 \$36,840	8204 \$10,560	232404 \$585,920	
	CONTROLS & MANAGEMENT							
	INTERIM RESTORATION	\$4,050 \$11,230		\$21,000 \$39,780	\$3,000 \$4,510		28050 \$55,520	
	AREA 2 PHASE I PERIMETER (REMAINING)	34530		7560	2850	-	44940	
	SITE PREPARATION	\$95,720		\$14,320	\$4,280		\$114,320	
	EXCAVATION	\$658,200 1,824,670		\$100 190	\$143,900 216,350	34937 \$44,950	837137 \$2,086,160	
	CONTROLS & MANAGEMENT	1180 \$3,270			400 \$600	65 \$80	1645 \$3,950	
	INTERIM RESTORATION	\$15,970 \$44,270		\$21,000 \$39,780	\$3,160 \$4,750	523 \$670	40653 \$89,470	
TOTAL DIRECT FIELD COSTS w/FACTORS								\$3,190,750

(FY01 DOLLARS)

DETAIL ESTIMATE WORKSHEETS

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II

ESTIMATE NO.: C2-01-05-004

CLIENT: DOE

WBS NO.: 1.1.G.D

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

Fluor Fernald, Inc.

ITEM NO.	SUMMARY	QTY	UNIT	MAN-HOURS		Rate	COST / UNIT			LABOR	S/C	MATT	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Matt'l					
	AREA 2 PHASE II													
	SITE PREPARATION			2513		\$33.54			\$84,300	\$6,900	\$2,570	\$5,530	\$99,300	
	EXCAVATION			5,814		\$31.39			\$182,500		\$17,200	\$24,500	\$224,200	
	CONTROLS & MANAGEMENT													
	INTERIM RESTORATION			137		\$29.50			\$4,050		\$21,000	\$3,000	\$28,050	
	AREA 2 PHASE I PERIMETER (REMAINING)													
	SITE PREPARATION			1147		\$30.10			\$34,530		\$7,560	\$2,850	\$44,940	
	EXCAVATION			20,705		\$31.79			\$656,200		\$100	\$143,800	\$802,200	
	CONTROLS & MANAGEMENT			37		\$32.31			\$1,180			\$400	\$1,580	
	INTERIM RESTORATION			523		\$30.54			\$15,970		\$21,000	\$3,160	\$40,130	
	Subtotal Direct Cost			20,875		\$31.76			\$660,730	\$6,900	\$69,150	\$183,340	\$1,210,100	

CONTRACTOR - Stated in FY01 DOLLARS

s:\estimate01\rebas\estimate\Area 2\aree2\soils051001.xls

DETAIL ESTIMATE WORKSHEETS

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL	
				Unitt	Total		Labor	S/C	Mat'l						Equip
	PREMOBILIZATION														
	A. Insurance Certificates, List of Sub-Tier Contractors Procurement Documents, Safe Work Plans, QA/QC Plan, Project Execution Plan, Construction and Engineering Documentation, Acceptable baseline Schedules Duration 8 wks	1	LS	200	1,600	35.00			\$56,000					\$56,000	
	MOBILIZATION														
	S/C Office Trailer	13	mo			31.18	300			\$3,900	\$500	\$500		\$3,900	
	Survey and Engineering Controls	1	LS	40	40	31.18	3,000	500	\$1,200	\$3,000	\$1,000	\$500		\$4,000	
D	Install Utilities	1	LS	80	80	31.18		500	\$2,500		\$500	\$500		\$2,700	
D	Other misc. requirements as required.	1	LS	38	38	32.43		100	\$1,200			\$1,100		\$3,500	
D	Equipment	1	Ea	3	3									\$2,300	
SUBTOTAL/DIRECT COST											60,600	6,900	2,000	2,600	\$72,400

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS			COST/UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C	Matl'					
D	A2P1 PERIMETER (REMAINING)	6	Acres	60.0	412	29.52								
D	Survey	320	LF	0.040	15	29.52			\$12,160		\$360	\$1,050	\$13,570	
D	Sill fence	4300	LF	0.100	492	29.52			\$430		\$320	\$370	\$1,120	
D	Cons/Rad fence								\$14,520		\$6,080	\$430	\$21,830	
D	Disconnect, remove, & relocate SWU support complex (trailers)	1	LS	200.0	229	32.43			\$7,420		\$7,560	\$1,000	\$8,420	
					1147				\$34,530			\$2,850	\$44,940	
D	A2P1I	6	Acres	60.00	426	29.52								
D	Survey (Allowance)	2600	LF	0.050	149	36.27			\$12,560		\$370	\$1,090	\$14,020	
D	Remove 4" HDPE water line (above grd)	9	CY	1.000	10	20.78			\$5,390			\$390	\$5,780	
mC	Haul to OSDR Cat 2	6	Ea	6.000	66	32.43			\$210			\$50	\$260	
D	Investigate areas by trenching								\$2,130			\$750	\$2,880	
D	6 @ 4'X4'X60' (~178 CY)	200	LF	0.040	9	29.52			\$270		\$200	\$230	\$700	
D	Install sill fence	4200	LF	0.020	96	29.52			\$2,840			\$420	\$3,260	
D	Remove Cons/Rad fence				756				\$23,400		\$570	\$2,930	\$26,900	
					3603				\$118,860		\$18,260	\$11,560	\$143,680	

CONTRACTOR - Stated in FY01 DOLLARS

Fluor Fernald, Inc. (revised) 05/16/01

DETAIL ESTIMATE WORKSHEETS

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS			COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Subtotal	Equip					
	AZP1 PERIMETER (REMAINING)												
mC	Excavate & load AZP1 site prep area Cat 1	100	CY	0.052	9	32.43					3.80	\$310	
D	Haul AZP1 Cat 1 soil to OSDF	115	CY	0.038	5	20.78					2.30	\$100	
mC	Excavate & load AZP1 site prep area Cat 2	5	CY	0.104	1	32.43					7.60	\$30	
D	Haul AZP1 Cat 2 soil to OSDF	10	CY	0.044	1	20.78					2.68	\$10	
mC	Excavate & load Const Manag. Supp. Area	8935	CY	0.052	848	32.43					3.80	\$33,950	
D	Haul Const manag supp area Cat 1 (above)	10275	CY	0.038	447	20.78					7.60	\$23,630	
mC	Excavate & load Const Manag. Supp. Area	294	CY	0.104	56	32.43					2.30	\$2,230	
D	Haul Const manag supp area Cat 2 (above)	588	CY	0.044	30	20.78					2.68	\$1,580	
mC	Excavate & load equip wheel wash Cat 1	1254	CY	0.052	119	32.43					3.80	\$4,770	
D	Haul wheel wash Cat 1 to OSDF	1442	CY	0.038	63	20.78					2.30	\$3,320	
mC	Excavate & load equip wheel wash Cat 2	130	CY	0.104	25	32.43					7.60	\$990	
D	Haul wheel wash Cat 2 to OSDF	260	CY	0.044	13	20.78					2.68	\$700	
mC	Excavate & load Basin 2 & 4, Ditch 8, Remain roads & piping, ditch check dams, etc. (Cat 1)	1584	CY	1.900	5496	32.43					7.60	\$178,230	
D	Haul Basin 2 & 4, Ditch 8 & remaining roads & piping, ditch check dams, etc. (Cat 1)	3168	CY	0.044	159	20.78					2.68	\$8,490	
mC	Excavate & load Basin 2 & 4, Ditch 8, Remain roads & piping, ditch check dams, etc. (Cat 2)	3724	CY	1.900	12920	32.43					7.60	\$419,030	
D	Haul Basin 2 & 4, Ditch 8 & remaining roads & piping, ditch check dams, etc. (Cat 2)	7448	CY	0.044	375	20.78					2.68	\$7,790	
D	Discard misc silt & const fence Cat 2	5	CY	2.000	11	29.52					10.00	\$340	
mC	Excavate & load AFP stormwater berm	462	CY	0.090	53	29.52					0.10	\$1,550	
D	Haul AFP stormwater berm Cat 1	510	LF	0.052	44	32.43					2.30	\$1,420	
mC	Install certification fence	462	CY	0.052	44	32.43					3.80	\$660	
D	Excavate & load Berm Cat 1	531	CY	0.052	32	20.78							
D	Haul Berm Cat 1 to OSDF												
										\$100	\$143,900	\$802,200	
										\$658,200	\$143,900	\$802,200	

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

ITEM NO.	EXCAVATION (CONT.)	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
mC	A2P11 Excavate & load Redlum Cat 1	122	CY	0.052	12	32.43			\$380			\$460	\$840
D	Haul Radlum Cat 1	140	CY	0.038	6	20.78			\$130			\$320	\$450
mC	Excavate & load Arsenic Cat 1	1340	CY	0.052	127	32.43			\$4,130			\$5,090	\$9,220
D	Haul Arsenic Cat 1	1541	CY	0.038	67	20.78			\$1,390			\$3,540	\$4,930
mC	Excavate & load stockpile HRD-012 Cat 1	50	CY	0.052	5	32.43			\$150			\$150	\$340
D	Haul stockpile HRD-012 Cat 1	58	CY	0.500	33	20.78			\$680			\$1,600	\$830
mC	Excavate & load stockpile HRD-012 Cat 2, segrigt	210	CY	1.900	729	32.43			\$23,630			\$1,600	\$25,230
D	Haul stockpile HRD-012 Cat 2	279	CY	0.500	160	20.78			\$3,320			\$750	\$4,070
mC	Excavate & load Misc debris @ slag. Area, etc	7	CY	1.900	24	32.43			\$790			\$50	\$840
D	Load & haul misc debris @ slag. Area Cat 2	14	CY	0.500	8	20.78			\$170		\$1,450	\$40	\$210
D	Install certification fence	5800	LF	0.090	597	29.52	0.25		\$17,630			\$580	\$19,660
D	Remove/reinstall certification fence	1160	LF	0.140	186	29.52			\$5,480			\$120	\$5,600
mC	Excavate & load misc (fence, conc., wood, etc.)	5	CY	1.900	17	32.43			\$560			\$40	\$600
D	Haul to OSDF	7	CY	1.000	8	20.78			\$160			\$20	\$180
D	Move various HDPE pipe to AWWT	20	Ea	0.500	11	29.52			\$340			\$40	\$380
mC	Excavate, size-reduce & load Mol Tower (dn.	5	CY	1.900	17	32.43			\$560			\$40	\$600
D	Haul Mol Tower (dn to OSDF	7	CY	0.500	4	20.78			\$80			\$20	\$100
D	Seeding & Mulching	6	Acre	20.000	142	29.52	2500.00		\$4,190		\$15,500	\$3,100	\$22,790
D	Install new sill fence	200	LF	0.040	9	29.52	1.00		\$270		\$200	\$230	\$700
mC	Excavate "INVESTIGATION" areas (200 ea.)	200	Ea	10.000	3652	32.43	40.35		\$118,440			\$8,070	\$126,510
									182,900		17,200	24,600	\$224,200

DETAIL ESTIMATE WORKSHEETS

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

ITEM NO.	INTERIM RESTORATION	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Mat'l					
	A2P1 PERIMETER (REMAINING)													
D	Grading to reshape slopes to 5H:1V	69	CY	0.045	4	32.43			\$120			\$160	\$280	
D	Seeding & mulching	6	Acres	20.000	137	29.52	3500.00		\$4,050		\$21,000	\$3,000	\$28,050	
					141				\$4,170		\$21,000	\$3,160	\$28,330	
	A2P1													
D	Seeding & mulching	6	Acres	20.000	137	29.52			\$4,050		\$21,000	\$3,000	\$28,050	
	A2P1 PERIMETER (REMAINING)													
	DEMobilIZATION													
D	Complete Punch List Items.	1	LS	20.000	20	31.18			\$600				\$600	
D	Remove Trailer and Change Facilities.	1	LS	20.000	40	31.18			\$1,200				\$1,200	
D	Remove all Utilities.	1	LS	40.000	292	31.18			\$9,100				\$9,100	
mC	Decontaminate Equipment.	1	LS	###	20	31.18			\$600				\$600	
D	Loadout contractors equipment.	1	LS	20.000	10	31.18			\$300				\$300	
D	Other area requirements.	1	LS	10.000	382	31.18			\$11,800				\$11,800	

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 16-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

ITEM NO.	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
			Unit	Total		Labor	S/C	Mat'l					
Project Staffing													
1. Project Manager	0.50	Each	1086	1	54.42				\$59,100				\$59,100
2. Project Superintendent	1.00	hr	2172	1	37.85				\$82,200				\$82,200
3. Project Engineer	0.50	hr	1086	1	33.19				\$36,040				\$36,040
4. Safety Engineer	0.75	hr	1629	1	30.34				\$49,420				\$49,420
5. Industrial Hygiene Tech.	0.25	hr	543	1	28.33				\$15,380				\$15,380
6. QA/QC Engineer	0.50	hr	1086	1	28.05				\$30,460				\$30,460
7. Office Administration	1.00	hr	2172	1	19.31				\$41,940				\$41,940
8. Contract Administration/ Scheduler	1.00	hr	2172	1	25.58				\$55,560				\$55,560
9. Clerical	0.50	hr	1086	1	14.58				\$15,830				\$15,830
SUPERVISION - CONTRACTOR TOTAL									\$385,930				\$385,930

EFFICIENCY FACTORS

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Penmeter); A2, P II
 ESTIMATE NO. C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 13-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

Fluor Fernald, Inc.

EXAMPLE:

- STANDARD CHART MANHOURS = NET 100
 EFFICIENCY FACTORS:
 • SITE SPECIFIC (SEE APPENDIX A) 10% 10.0
 S/T = BASE UNIT MANHOURS 110
- OVERTIME PRODUCTIVITY FACTOR 0.00% 0
 (SEE DETAIL WORKSHEET BACK-UP) 110
- TASK SPECIFIC (confined space, high elevation, congestion, etc.) 0.0% 0
 110
- PPE SPECIFIC (Based on current data and estimating knowledge)

	PPE LEVEL										
	D		Mod. "D"		Mod. "C"		C		C+		
PRODUCTIVITY HOURS (AS A %) / ADD MH's	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's
(AS A MULTIPLIER) / TOTAL HRS	1.04	114.4	1.28	140.8	1.66	182.6	1.74	191.4	1.96	215.6	
TOTAL MULTIPLIER w/SITE PROD.	1.144		1.408		1.826		1.914		2.156		

NOTE : Use the Default Productivity Factor of "mC" for working in a contaminated area if the Safety Level cannot be determined.

(SEE FD FERNALD ESTIMATING SERVICES REFERENCE MANUAL IM-6006 R.10)

Total hours worked in a specific PPE level divided by 10 hour working days = (PPE) ManDays to determine material cost of PPE's.
 (SEE APPENDIX C - HEALTH PHYSICS)

11.0	Man Days	14.0	Man Days	18.0	Man Days	19.0	Man Days	22.0	Man Days
------	----------	------	----------	------	----------	------	----------	------	----------

THESE EFFICIENCY FACTORS WERE APPLIED INDIVIDUALLY THROUGHOUT THE ESTIMATE AT A TASK SPECIFIC LEVEL, TO OBTAIN A MORE ACCURATE ACCOUNT OF OVERALL EFFICIENCY IMPACT DUE TO PPE REQUIREMENTS IN HANDLING CONTAMINATED AND HAZARDOUS WASTE.

EFFICIENCY FACTORS

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO. C2-01-05-004
 CLIENT: DCE
 WBS NO.: 1.1.G.D

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

PPE MULTIPLIER DEVELOPEMENT

		D	mD	mC	C	C+
CREW SIZE & MAKE-UP	STANDARD	7	7	7	7	7
	WORKER-BUDDY	0	0	0	0	0
	SUPPORT TEAM	0	0	0	0	0
	TOTAL CREW	7	7	7	7	7
CREW SIZE RATIO		1.00	1.00	1.00	1.00	1.00
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68
PPE LABOR PRODUCTIVITY FACTOR		1	1	0.86	0.82	0.75
NET PRODUCTIVITY RATIO		0.96	0.78	0.602	0.574	0.51
NET PRODUCTIVITY MULTIPLIER		1.04	1.28	1.66	1.74	1.96

These factors were based on Tables 6.1 and 6.2, Moderate Wqrk Efforts, 66F to 85F temperature of 'Hazardous Waste Cost Control' by R.A.Seig. Modifications were made to reflect a 10 hour work day and no buddy system or support team for levels D, mC and C. The worker-buddy and support team members, if required, may be covered under Construction Mgmt. (Rad Techs).

AVAILABLE WORK TIME FACTOR		D	mD	mC	C	C+
TOTAL WORK MINUTES per D	4 - 10's	600	600	600	600	600
ADDITNL SITE SAFETY MEETINGS NOT INCLD. IN BASE	QUANTITY	1	1	1	1	1
	MINUTES	25	25	25	25	25
TOTAL		25	25	25	25	25
PPE DON & DOFFING (ADJUST LEVEL D per WORK PLAN)	QUANTITY	0	0	3	3	3
	MINUTES	0	0	15	15	20
TOTAL			0	45	45	60
WORK BREAKS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	2	2	2	2
	MINUTES	N/A	15	15	15	15
TOTAL			30	30	30	30
MOBILIZATION - ROUND TRIPS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			60	60	60	60
COOLDOWNS PER DAY ** (4 OUT OF 12 MONTHS)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			20	20	20	20
AIR TANK REPLACEMENT	QUANTITY	N/A	N/A	N/A	N/A	N/A
	MINUTES	N/A	N/A	N/A	N/A	N/A
TOTAL						
AVAILABLE WORK TIME		575	465	420	420	405
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68

NOTE: Adjust Work Minutes per Day basis to: 5 - 8's, or leave as 4 - 10's. Any other circumstances, over-ride the minutes per day.

** Assumption based on work performed in May, June, July & August, pro-rating cost over one year. Adjust % to individual circumstances.

HEALTH PHYSICS

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 13-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

Fluor Fernald, Inc.

PPE's - PERSONAL PROTECTIVE EQUIPMENT

DESCRIPTION	UNIT	UNIT COST	* NO. OF CHANGE OUTS PER WORKER PER DAY			
			Man Days (TOTAL HOURS worked in PPE's Div. by WORK HOURS / DAY)			
PPE LEVEL C / C+ / B : F/HF MASK w/RESP.&CART.				MAN DAYS	MAT'L'S's	PPE LEVEL
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0	C / C+
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0	C / C+
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0	C / C+
APR CARTRIDGES - DISPOSABLE	PR	\$6.98	3	0	\$0	C / C+
SUB-TOTAL		\$17.42	3		\$0	

(DOUBLE PPE)

\$/MD = \$0.00

PPE LEVEL mC : FULL DRESS w/ FACE SHIELD				MAN DAYS	MAT'L'S's	PPE LEVEL
LT.WT. DISPOSABLE COVERALLS W/HOOD & BOOTIES	PR	\$4.46	3	2450	\$32,774	mC
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	2450	\$1,764	mC
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	2450	\$1,911	mC
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	2450	\$7,495	mC
SUB-TOTAL		\$5.98	3		\$43,944	

\$/MD = \$17.94

SUBCONTRACTOR REQUIRED PURCHASES			QTY. PER WKR.	NO. OF WORKERS	MAT'L'S's	PPE LEVEL
RUBBER BOOT COVERS-(1)PR.PER WORKER	PR	\$12.70	6	0	\$0	D/C/B.
APR w/HALF FACE MASK - (1) PER WORKER	EA	\$22.30	6	0	\$0	C
APR w/FULL FACE MASK - (1) PER WORKER	EA	\$174.00	6	0	\$0	C
SCBA	EA	\$1,894.00	2	0	\$0	B
COOL VESTS	EA	\$137.50	6	0	\$0	C/B
THERMO STRIPS	EA	\$50.00	6	0	\$0	C/B
SUB-TOTAL					\$0	

TOTAL PPE's = MAT'L'S's \$43,900

(FORWARD TO PAGE 2 OF 2)

OTHER PPE's SUCH AS HARD HAT, SAFETY GLASSES/GOGGLES, STEEL TOED SAFETY SHOES, HEARING PROTECTION, ARE CONSIDERED THE SUBCONTRACTORS RESPONSIBILITY AND ARE COVERED IN HIS OVERHEAD EXPENSE. COSTS OF FD FERNALD SUPPLIED PPE's, SUCH AS COTTON COVERALLS, EXCHANGE OF RUBBER BOOT COVERS AND RESPIRATORS FOR CHANGEOUTS AND CLEANING OF SAME IS INCURRED BY FD FERNALD AND COSTS ARE NOT INCLUDED AS PART OF PROJECT COSTS AT THIS TIME.

HEALTH PHYSICS

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 13-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

Fluor Fernald, Inc.

-MEDICAL MONITORING -

MEDICAL - PHYSICAL and IN-VIVO MONITORING - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
PHYSICAL (3hrs), IN-VIVO (1hr)						
BASELINE PHYSICALS	1	4	14	56	\$31.76	\$1,780
ANNUAL PHYSICALS	1	4	14	56	\$31.76	\$1,780
EXIT (TERMINATION) PHYSICALS (IN-VIVO)	1	1	14	14	\$31.76	\$440
SUB-TOTAL						\$4,000

RADIATION IN-VITRO SURVEILLANCE - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BI-MONTHLY BIOASSAY	6	1	14	90	\$31.76	\$2,870
SUB-TOTAL						\$2,870

RANDOM DRUG TESTING

	TESTS	HRS	TOTAL HOURS	AVG. RATE	LABOR \$'s	
	26	2	52	\$31.76	\$1,700	
NO. OF WKRS. TESTED	TESTING DAYS PER YR.	AVG. NO. OF TESTS PER DAY	CHANCE/ DAY FOR TEST	NO. OF WKRS. FOR THIS ESTIMATE	CHANCES /DAY FOR TEST FOR PROJECT	CONSTR WORKING DAYS
2340	226	10	0.0042735	25	0.1068	244

		LABOR \$'s THRU SAFETY	LABOR \$'s
WORK DELAYS CAUSED BY MONITORING	0.0%	\$1,006,730	\$0
WORK DELAYS CAUSED BY RAD CHECKING	0.0%	\$1,006,730	\$0

	TOTAL LABOR	TOTAL MAT'L	GRAND TOTAL
TOTAL HEALTH PHYSICS	\$8,600	\$43,900	\$52,500

(FORWARD TO ESTIMATE SUMMARY SHEET)

ACTIVITY DURATIONS

Fluor Fernald, Inc.

PROJECT: SOILS REMEDIATION AREA 2, Ph. I (Perimeter); A2, P II
 ESTIMATE NO.: C2-01-05-004
 CLIENT: DOE
 WBS NO.: 1.1.G.D

DATE: 13-May-01
 ESTIMATOR: JEA
 LOCATION: Fernald
 TASK NO.: G2113

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
CONSTRUCTION:	11-May-01	01-Jun-05	14-Dec-05	29-Jun-06		12.9 MONTHS
						0 MONTHS
TOTAL						12.9 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
a.	55.2 MONTHS
b.	0 MONTHS

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
OPERATIONS						0 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
	0 MONTHS

ACTIVITY DURATION IS USED IN DETERMINING NUMBER of WORKERS for CERCLA/SAT TRAINING HOURS and HEALTH PHYSICS COSTS.

G2114

AREA 2 TITLE I/II DESIGN

G2115

AREA 2 PREDESIGN

Resource: ENSTEC
Res Dept: 949

ENVR SCIENTIST TECH
Overtime:

Class: EOC: SAL
LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	302.0	0.0	0.0	0.0	177.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	302.0	302.0	302.0	302.0	479.0	479.0	479.0	479.0	479.0	479.0
Yr Total Cost:	8,553	0	0	0	6,269	0	0	0	0	0
Cum Total Cost:	8,553	8,553	8,553	8,553	14,822	14,822	14,822	14,822	14,822	14,822

Resource: GLMINT
Res Dept: 949

GEN LABOR MAINT
Overtime:

Class: EOC: HOU
LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	316.3	0.0	0.0	0.0	275.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	316.3	316.3	316.3	316.3	591.3	591.3	591.3	591.3	591.3	591.3
Yr Total Cost:	7,730	0	0	0	8,406	0	0	0	0	0
Cum Total Cost:	7,730	7,730	7,730	7,730	16,136	16,136	16,136	16,136	16,136	16,136

Resource: INDMEC
Res Dept: 949

INDUSTRIAL MECHANIC
Overtime:

Class: EOC: HOU
LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	26.0	26.0	26.0	26.0	26.0	26.0
Yr Total Cost:	0	0	0	0	1,023	0	0	0	0	0
Cum Total Cost:	0	0	0	0	1,023	1,023	1,023	1,023	1,023	1,023

Resource: LABCHM
Res Dept: 949

CHEMIST
Overtime:

Class: EOC: SAL
LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	98.5	0.0	0.0	0.0	59.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	98.5	98.5	98.5	98.5	157.5	157.5	157.5	157.5	157.5	157.5
Yr Total Cost:	3,818	0	0	0	2,860	0	0	0	0	0
Cum Total Cost:	3,818	3,818	3,818	3,818	6,678	6,678	6,678	6,678	6,678	6,678

Resource: LABTEC
Res Dept: 949

LAB TECH
Overtime:

Class: EOC: SAL
LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	25.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	25.0	25.0	25.0	25.0	85.0	85.0	85.0	85.0	85.0	85.0
Yr Total Cost:	694	0	0	0	2,085	0	0	0	0	0
Cum Total Cost:	694	694	694	694	2,779	2,779	2,779	2,779	2,779	2,779

Resource: MAT300
Res Dept: 949

MATERIAL OBJCLASS300
Overtime:

Class: EOC: MAT
MATERIAL

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:	1,007.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0	1,007.0
Yr Total Cost:	1,007	0	0	0	0	0	0	0	0	0
Cum Total Cost:	1,007	1,007	1,007	1,007	1,007	1,007	1,007	1,007	1,007	1,007

Resource: PJSMGR
Res Dept: 949

PROJECT SUPPORT MGR
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	97.0	97.0	97.0	97.0	97.0	97.0
Cum Hours:	0.0	0.0	0.0	0.0	97.0	97.0	97.0	97.0	97.0	97.0
Yr Total Cost:	0	0	0	0	5,546	0	0	0	0	0
Cum Total Cost:	0	0	0	0	5,546	5,546	5,546	5,546	5,546	5,546

Resource: QACENG
Res Dept: 949

QA ENGINEER
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	55.0	55.0	55.0	55.0	55.0	55.0
Cum Hours:	0.0	0.0	0.0	0.0	55.0	55.0	55.0	55.0	55.0	55.0
Yr Total Cost:	0	0	0	0	3,161	0	0	0	0	0
Cum Total Cost:	0	0	0	0	3,161	3,161	3,161	3,161	3,161	3,161

Resource: RADTEC
Res Dept: 949

RAD TECH
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	37.0	0.0	0.0	0.0	22.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	37.0	37.0	37.0	37.0	59.0	59.0	59.0	59.0	59.0	59.0
Yr Total Cost:	1,261	0	0	0	938	0	0	0	0	0
Cum Total Cost:	1,261	1,261	1,261	1,261	2,199	2,199	2,199	2,199	2,199	2,199

Resource: S&HENG
Res Dept: 949

SAFETY ENGINEER
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	19.0	19.0	19.0	19.0	19.0	19.0
Cum Hours:	0.0	0.0	0.0	0.0	19.0	19.0	19.0	19.0	19.0	19.0
Yr Total Cost:	0	0	0	0	1,181	0	0	0	0	0
Cum Total Cost:	0	0	0	0	1,181	1,181	1,181	1,181	1,181	1,181

Resource: TECWRT
Res Dept: 949

TECHNICAL WRITER
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	9.0	0.0	0.0	0.0	9.0	9.0	9.0	9.0	9.0	9.0
Cum Hours:	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Yr Total Cost:	407	0	0	0	0	0	0	0	0	0
Cum Total Cost:	407	407	407	407	407	407	407	407	407	407

Resource: WSTENG
Res Dept: 949

WASTE ENGINEER
Overtime:

Class: EOC: SAL

LABOR

	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	159.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0	159.0
Yr Total Cost:	8,112	0	0	0	0	0	0	0	0	0
Cum Total Cost:	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	2,451.2	0.0	0.0	0.0	943.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	2,451.2	2,451.2	2,451.2	2,451.2	3,394.2	3,394.2	3,394.2	3,394.2	3,394.2	3,394.2
Yr Total Cost:	95,289	0	0	0	40,050	0	0	0	0	0
Cum Total Cost:	95,289	95,289	95,289	95,289	135,339	135,339	135,339	135,339	135,339	135,339

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CAM CONTROL TEAM

SECTION 4

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Area 2 Soils Remediation		Date: 4/11/01		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$6,565,300			
Evaluator: T. Crawford / F. Miller		Date: 4/11/01		WBS Number: 1.1.G.D					
CAM: JD Chiu		Risk and/or Opportunity		Control Account Number: G211					
Project Task		Potential Impact		Internal Or External Driver		Impact Cost \$ (Maximum Case)			
				Risk Level		Risk Probability %			
				Risk Impact Level		Risk Probability Level			
				Probable Cost \$ (Likeliest Case)		Risk Handling Strategy			
Area 2 Pre-design	Additional Samples needed to bound contamination (chasing)	Internal	\$15,000	1	30	2	\$4,500	1	Accept Risk
Area 2 Pre-design	Insufficient access to areas to acquire samples.	Internal	\$30,000	3	20	2	\$6,000	3	Accept Risk
Area 2 Excavation / Interim Restoration	Encountering additional flyash	Internal	\$30,000	1	50	3	\$15,000	1	Accept Risk
Area 2 Excavation / Interim Restoration	Remediation activities contaminate/recontaminate areas that originally did not need remediation.	Internal	\$15,000	1	30	2	\$4,500	1	Accept Risk
Area 2 Excavation / Interim Restoration	Certification Units Failure	Internal	\$108,000	2	25	2	\$27,000	2	Accept Risk
Area 2 Excavation / Interim Restoration	Extreme Weather Delays	Internal	\$40,000	1	20	2	\$8,000	1	Accept Risk
Area 2 Excavation / Interim Restoration	Encountering 10% more debris than was identified from pre-design activities.	Internal	\$25,000	1	10	2	\$2,500	1	Accept Risk
Area 2 Title III	Additional Samples needed to bound contamination (chasing)	Internal	\$8,000	1	60	4	\$4,800	2	Accept Risk
Area 2 Excavation Control / Certification	Certification Units Failure	Internal	\$30,000	2	50	3	\$15,000	2	Accept Risk
Area 2 Excavation Control / Certification	Off-site analysis for original soils	Internal	\$10,000	2	20	2	\$2,000	2	Accept Risk
Total:				\$311,000		Total:	\$89,300		

Risk/Opportunity Identification and Analysis Form

Project: Area 2 Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$6,565,300						
Evaluator: T. Crawford / F. Miller		WBS Number: 1.1.G.D								
CAM: JD Chiou		Control Account Number: G211								
Risk and/or Opportunity		Potential Impact								
Project Task	Risk and/or Opportunity	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Area 2 Pre-design	Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month. (1 FTE for that month)	External	\$10,000	1	30	2	\$3,000	1	
Area 2 Title /II	Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month. (1 FTE for that month)	External	\$10,000	1	30	2	\$3,000	1	
Area 2 Excavation Control / Certification	Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month. (1 FTE for that month)	External	\$10,000	1	30	2	\$3,000	1	

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115		4. INDEX LINE NO. 51	
5. WBS ELEMENT CODE 1.1.G.E		6. WBS ELEMENT TITLE AREA 3A SOIL REMEDIATION	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001	
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3A comprises approximately 24 acres and lies in the NE quadrant of the former Production Area. The area is bounded by the haul road to the north, E St to the east, 2nd Street to the south and B Street to the west. Area 3A also includes the Lime Sludge Ponds (LSP), approximately 2 acres lying immediately west of the former Production Area.</p> <p>This work covers predesign activities for Area 3A/4A and Title I/II services for Area 3A/4A and the LSP.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is defined in each of the following control accounts:</p> <ul style="list-style-type: none"> - GCJ3 Area 3A/4A Predesign - GCRD Area 3A/4A Design (includes the LSP) - G3A1 Area 3A Soil Remediation <p>Key subjects in control account G3A1 are Title III services, site preparation, at-and below-grade excavation, interim restoration, excavation control monitoring, certification activities, offsite at and below grade waste disposition and onsite treatment of soil contaminated with hazardous organic compounds.</p>			

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000
3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 51
5. WBS ELEMENT CODE 1.1.G.E	6. WBS ELEMENT TITLE AREA 3A SOIL REMEDIATION
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060
11. ELEMENT TASK DESCRIPTION <p>Work specifically excluded from this account is as follows:</p> <ul style="list-style-type: none"> - Staff labor charged to GPM1 - Engineering services for the design and construction of the OSDF - Post-remediation monitoring, maintenance and storm water management - Post-closure documentation - Natural Resource Restoration activities - All remedial work described in other PBS 06 control accounts - Area 10 (Soils Corridor) - All centralized services 	

**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G3A1	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SOILS REMEDIATION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

Area 3A comprises approximately 24 acres and lies in the NE quadrant of the former production area. the area is bounded by the haul road to the north, E Street to the east, 2nd street to the south and B Street to the west. Area 3A also includes the Lime Sludge Ponds, approximately 2 acres lying immediately west of the former production area.

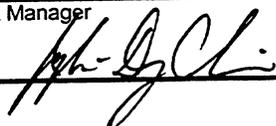
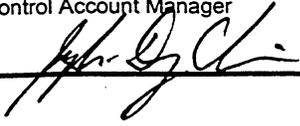
This work covers predesign activities for Area 3A/4A and title I/II services for Area 3A/4A and the LSP.

c. SCOPE OF WORK:

The technical content is defined in the Closure Plan for this cost element.

The scope of work for these activities is defined in each of the following charge numbers:

- G3A13 - Area 3A/LSP Title III
- G3A14 - Area 3A/LSP Site Prep/Excavation
- G3A17 - Area 3A/LSP Exc Control/Certification
- G3A18 - Area 3A/LSP Offsite Waste Disposition
- G3A19 - Area 3A/LSP Onsite Waste Treatment

Project Manager 	Control Account Manager 	Control Team Manager 
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**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G3A1	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SOILS REMEDIATION		

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

Work performed during FY01 in control accounts GCJ3, GCRD and GCW3

Staff labor charged to GPM1

Engineering services for the design and construction of the OSDF

Post-remediation monitoring, maintenance and stormwater management

Post-closure documentation

Natural Resource Restoration activities

All remedial work described in other PBS06 control accounts

Area 10 (Soils Corridor)

All centralized services

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A13	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP TITLE III		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontractor ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3A comprises approximately 24 acres and is enclosed by the haul road to the north, E Street to the east, 2nd Street to the south, and B Street to the west. The LSPs cover approximately 2.4 acres and lie southwest of 2nd Street, immediately west of the former Production Area.</p> <p>Title III work involves engineering oversight of the excavation work, preparation and approval of DCNs, assistance with RCIs and NCRs, completion of safety walkthroughs, preparation of the yearly completion report, as-built drawings and close-out report, and the submittal of all records to ECDC.</p> <p>Drivers that affect the cost and schedule of this work include EPA/OEPA review cycles on DCNs, an excessive number of rain days, and unexpected discovery of large areas of undocumented contamination.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Title III engineering services for Area 3A/LSP consist of two tasks: Excavation Support and Prepare Final Documents.</p> <p>Excavation Support:</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A13	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP TITLE III		
14. ELEMENT TASK DESCRIPTION Review and modify construction subcontract and work plans, as needed Prepare and approve DCNs Provide information for RCIs Respond to and close out NCRs Perform safety walkthroughs and attend safety briefings, as needed Prepare the yearly completion report Submit project records to ECDC and maintain copies in project file Perform project management and control activities Prepare Final Documents: Complete as-built drawings Prepare the close-out report Submit project records to ECDC and maintain copies in project file Perform project management and control activities <u>d. WORK SPECIFICALLY EXCLUDED:</u> All other charge numbers under control account G3A1 Excavation, certification, waste treatment & disposition All other control accounts under PBS 06 Area 1, Area 2, Area 3B, Area 4A, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors All other PBS accounts PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09, PBS 10, PBS 11, PBS 12 All activities associated with other PBS elements All activities associated with other PBS-06 control accounts.			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 7/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A14	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SITE PREP/EXCAVATION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Subcontracts

b. TECHNICAL CONTENT:

Perform remedial construction activities for Area 3A and LSP (Lime Sludge Ponds).

The project boundaries are as follows:

North by the Haul Road

East by E Street

South by 2nd Street

West by B Street

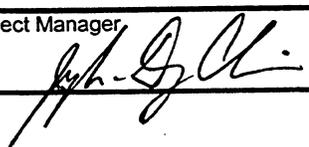
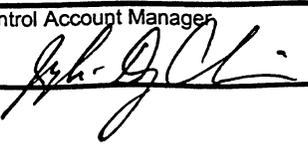
c. SCOPE OF WORK:

Provide site preparation activities prior to the start of excavation.
Activities included but not limited to are as follows:

Provide and deliver all required permits.

Establish work limits and excavation boundaries.

Establish construction support areas and work areas.

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 7/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A14	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SITE PREP/EXCAVATION		

14. ELEMENT TASK DESCRIPTION

Connect all utilities into construction support area.

Establish surface water management controls.

Provide excavation and removal of all above FRL soil and at and below grade concrete and utilities from Area #3A and transportation to the On-site Disposal Facility, SP-7 or other designated staging area in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows:

Erosion and sediment control during construction

Installation and/or relocation of fencing during construction

Equipment, material and support facilities rented/procured for project use

Dewatering as necessary during construction

Dust Control within designated work area.

Decontamination of equipment

Matrixed and subcontracted labor directly associated with construction

Scope of work includes work performed under Charge Number GCU33 (Excavate Area 3A) from 01 December 2000 to 30 September 2001. This work included the excavation, segregation, and unloading of approximately 4,500 CY of OSDF AWAC material from the northwest corner of Area 3A to the Waste Pit area or SP7.

Specific work to be addressed includes:

Size reduce, excavate, load and haul at and below grade concrete, utilities, and debris associated with the Impacted Material Haul Road to OSDF as Category 2.

Excavate, load and haul impacted soils to the OSDF as Category 1.

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(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 7/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A14	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SITE PREP/EXCAVATION		
14. ELEMENT TASK DESCRIPTION			
<p>Cut area utility isolation trenches and plug storm water and sanitary sewers.</p> <p>Interim Restoration Grading.</p> <p>Perform Post-Excavation activities.</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Placement in OSDF</p> <p>Seeding / Vegetation beyond interim restoration</p> <p>Road construction</p> <p>Title I/II design services</p> <p>Performing and/or managing Title III services</p> <p>Sampling and testing of waste materials during remediation</p> <p>Monitoring and maintenance of the remediated area after remediation</p> <p>Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal</p> <p>Treatment of lead containing soil</p> <p>Centralized Personnel, Radiological controls, and Safety management during remedial construction</p> <p>All Excavation activities prior to December 2000</p> <p>All activities associated with other PBS elements</p>			

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3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 7/07	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A14	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP SITE PREP/EXCAVATION		

14. ELEMENT TASK DESCRIPTION

All activities associated with other PBS-06 control accounts.

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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A17	13. TASK DESCRIPTION (ONE LINE) AREA 3A EXC CONTROL/CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

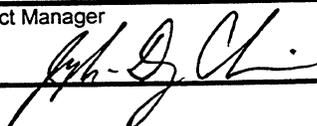
The content of this document applies to the soil characterization program at the FEMP specific to area characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 3A. It is a summary for area-specific characterization efforts that will be conducted in defined areas of excavation and lesser environmentally impacted areas that may not be excavated, but will require monitoring, sampling, and analytical testing. The characterization efforts are intended to provide information that may be required to supplement the remedial design and to support the remedial action that will result in compliance with the Final Remediation Levels (FRLs) published in the OU2 and OU5 RODs. The Area 3A physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Records of Decision (RODs) for OU2 and OU5.

c. SCOPE OF WORK:

The scope of this document covers the characterization support for excavation control, precertification, and certification of Area 3A. Characterization work performed in Area 3A under this scope will assist in determining soil

Project Manager



Control Account Manager



Control Team Manager



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(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A17	13. TASK DESCRIPTION (ONE LINE) AREA 3A EXC CONTROL/CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			
<p>disposition, extent of excavation, and provide sound field and analytical data that prove remedial activities were sufficient. During excavation of Area 3A, radiological field surveying, physical soil sampling, and analysis will be required. This testing will be performed during the excavation process as necessary to determine disposition of excavated material. After excavation is determined to be complete, the remaining soil will be tested for all area specific contaminants of concern (COCs) to demonstrate FRL attainment. The actual radiological field-survey measurements, physical soil sampling and analytical activities covered under this account include the following tasks:</p> <p>Review existing data and engineering drawings</p> <p>Develop and write applicable data quality objectives and projects-specific-plans, as necessary</p> <p>Develop Certification Design Letters and text for the Area Implementation Plan</p> <p>Define and delineate excavation monitoring boundaries in the field</p> <p>Define and delineate Certification Units</p> <p>Prep the area for field measurements which includes clearing of brush</p> <p>Installation of certification fencing and signs</p> <p>Physical sampling</p> <p>Assess real-time data generated during excavation</p> <p>Perform assessment of radiological field survey results</p> <p>Perform data management functions within SDFP</p> <p>Develop final reports or certification reports</p> <p>Perform analysis</p>			

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3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 3/01 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A17	13. TASK DESCRIPTION (ONE LINE) AREA 3A EXC CONTROL/CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

If needed, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning

Includes work scope cross walked from charge number GCJ43 performed during FY01 for excavation control activities.

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Waste Tracking and disposition

Waste Treatment activities

Construction or remediation

Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

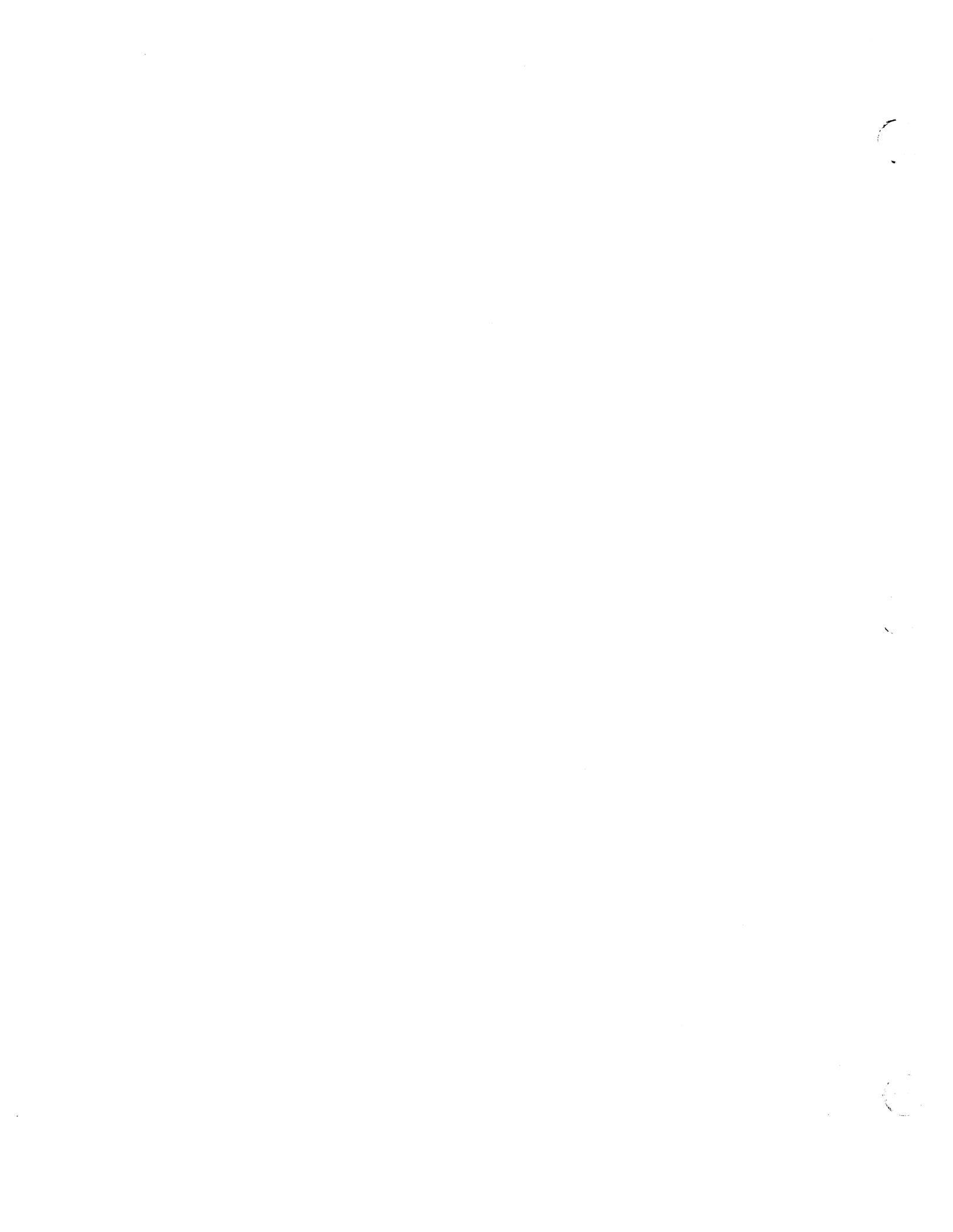
Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

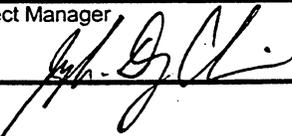
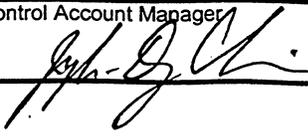
Centralized services and/or equipment

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.



WORK SCOPE DEFINITION
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PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 8/03 - 6/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A18	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontractors</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to waste disposition activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in Area 3A. It is a summary for area-specific waste disposition efforts for waste that does not meet the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) and will require packaging, loading, shipping, and disposal at an approved offsite disposal facility. Offsite treatment of waste materials that do not meet the offsite disposal facility's WAC may be required prior to disposal and is also covered under this account. The waste disposition efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Area 3A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this document covers the offsite disposition of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process. The waste disposition activities covered under this account include the following tasks:</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 2
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3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 8/03 - 6/05
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12. TASK IDENTIFICATION (WORK PACKAGE) G3A18	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP OFFSITE WASTE DISPOSITION
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14. ELEMENT TASK DESCRIPTION

Review existing data and engineering drawings

Perform data management functions within SDFP

Develop final reports

Campaign Planning

Purchase or rental of appropriate containers

Package soil and/or other waste materials into containers

Repackaging, or over-packing

Container movements within the FEMP

Loading containers on/in appropriate conveyance

Shipping to offsite disposal facility

Offsite waste treatment to meet offsite WAC

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Excavation control characterization

Precertification / certification activities

Waste treatment activities

Construction or remediation

Development of engineering plans, drawings, or specifications

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE		2. DATE	
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3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.E	AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		8/03 - 6/05	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G3A18	AREA 3A/LSP OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION			
<p>Land surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p> <p>Onsite waste treatment</p> <p>All activities associated with other PBS elements</p> <p>All activities associated with other PBS-06 control accounts.</p>			



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(Work Package)

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3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 6/06 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3A19	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP ONSITE WASTE TREATMENT		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

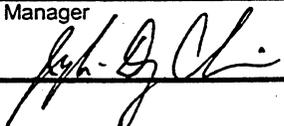
The content of this document applies to waste treatment activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in Area 3A. It is a summary for area-specific physical or chemical waste treatment efforts of material that does not meet either the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) or the offsite disposal facility's WAC. The treatment will reduce the contaminant levels to comply with disposal WAC. The waste treatment efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Area 3A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.

c. SCOPE OF WORK:

The scope of this document covers the onsite waste treatment of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process to be above disposal WAC. The waste treatment activities covered under this account include the following tasks:

Review existing data and engineering drawings

Project Manager 	Control Account Manager 	Control Team Manager 
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(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 2
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3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 6/06 - 1/08
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12. TASK IDENTIFICATION (WORK PACKAGE) G3A19	13. TASK DESCRIPTION (ONE LINE) AREA 3A/LSP ONSITE WASTE TREATMENT
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14. ELEMENT TASK DESCRIPTION

Procure contractor

Prepare Request for Proposal

Perform data management functions within SDFP

Develop final reports

Develop plans

Treatment operations

Site preparation for treatment pad

Benchscale testing / verification of treatment process

Physical sampling

Laboratory analysis

Sample shipping for off-site analysis

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Excavation control characterization

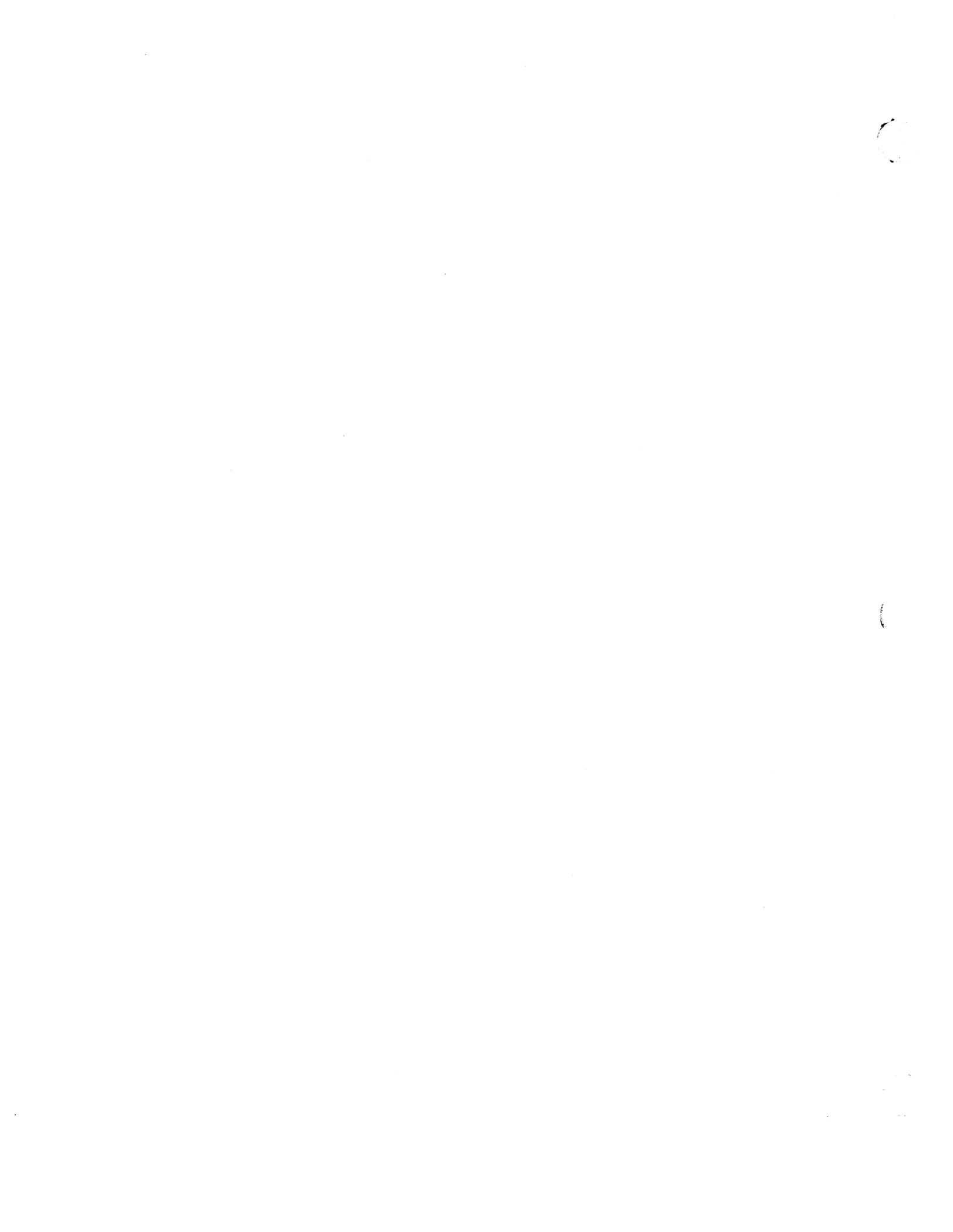
Precertification / certification activities

Construction or remediation

Development of engineering plans, drawings, or specifications

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE		2. DATE	Page 3
FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.E	AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		6/06 - 1/08	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G3A19	AREA 3A/LSP ONSITE WASTE TREATMENT		
14. ELEMENT TASK DESCRIPTION			
<p>Land surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe; RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p> <p>Offsite waste treatment</p> <p>Waste shipping</p> <p>All activities associated with other PBS elements</p> <p>All activities associated with other PBS-06 control accounts.</p>			



**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCJ3	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA PREDESIGN FY01		
14. ELEMENT TASK DESCRIPTION			

a. ELEMENTS OF COST:

Labor
Subcontracts

b. TECHNICAL CONTENT:

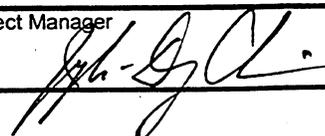
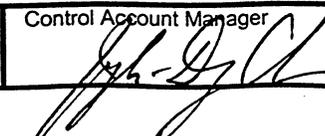
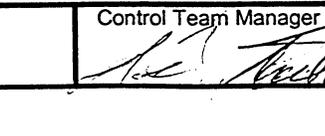
The content of this document applies to the soil characterization program at the FEMP specific to area pre-design characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 3A/4A. It is a summary for area-specific characterization efforts that will be conducted to delineate areas of above Final Remediation Level (FRL) contamination as well as contamination that is above the On-Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC). The data generated from these characterization activities will support remedial design. The Area 3A/4A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

c. SCOPE OF WORK:

The scope of this control account is detailed on one charge number, GCJ31.

d. WORK SPECIFICALLY EXCLUDED:

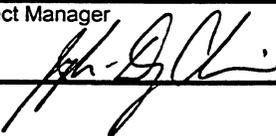
Characterization tasks in other areas
Construction or remediation

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCJ3	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA PREDESIGN FY01		
14. ELEMENT TASK DESCRIPTION Waste tracking or disposition Area pre-certification or certification activities Waste Tracking and disposition Waste Treatment activities Development of Engineering plans, drawings, or specifications Land Surveying, staff, or equipment Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment Characterization personnel covered under GPM14 Centralized services and/or equipment			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E		4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION	
5. PERFORMING DIV/DEPARTMENT CODE 49		6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
8. BUDGET AND REPORTING NUMBER EW05H3060		9. BUDGET TITLE SOILS	
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/01	
12. TASK IDENTIFICATION (WORK PACKAGE) G CJ31		13. TASK DESCRIPTION (ONE LINE) AREA 3A/4A PREDESIGN FY01	
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to the soil characterization program at the FEMP specific to area pre-design characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 3A/4A. It is a summary for area-specific characterization efforts that will be conducted to delineate areas of above Final Remediation Level (FRL) contamination as well as contamination that is above the On-Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC). The data generated from these characterization activities will support remedial design. The Area 3A/4A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Records of Decision (RODs) for OU5 and OU2.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this document covers the characterization support for pre-design of Area 3A/4A performed after December 1, 2000. Pre-design Investigations include the collection of additional data collected to support the engineering design, which will be included in the Integrated Remedial Design Plan (IRDP). The work scope of the pre-design characterization includes characterization planning,</p>			
Project Manager 		Control Account Manager 	Control Team Manager 

WORK SCOPE DEFINITION
(Work Package)

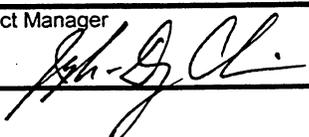
1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 3/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCJ31	13. TASK DESCRIPTION (ONE LINE) AREA 3A/4A PREDESIGN FY01		
14. ELEMENT TASK DESCRIPTION			
<p>field survey work, real-time data collection and reduction, field sampling, laboratory analysis, and data management activities.</p> <p>The predesign characterization effort includes the following tasks:</p> <p>Review and evaluation of existing sampling data, real-time data and geophysical data</p> <p>Review HWMUs, USTs, and potentially RCRA characteristic area</p> <p>Develop contamination models based on existing data</p> <p>Develop and write applicable data quality objectives and Project Specific Plans, as necessary</p> <p>Prep the area for field measurements which includes clearing or brush</p> <p>Physical sampling</p> <p>Assess real-time data generated during predesign</p> <p>Perform assessment of radiological field survey results</p> <p>Perform data management functions within SDFP</p> <p>Laboratory sample analysis</p> <p>Sample shipping for off-site analysis</p> <p>If necessary, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Area 3A/4A predesign performed prior to December 1, 2000</p>			

WORK SCOPE DEFINITION
(Work Package)

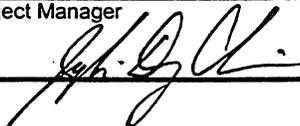
PROJECT TITLE		2. DATE	Page 3
FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.E	AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
CHANGE PER CP# FY01-0015-0006-00		12/00 - 3/01	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
GCJ31	AREA 3A/4A PREDESIGN FY01		
14. ELEMENT TASK DESCRIPTION			
<p>Characterization tasks in other areas</p> <p>Construction or remediation</p> <p>Waste tracking or disposition</p> <p>Area pre-certification or certification activities</p> <p>Waste Tracking and disposition</p> <p>Waste Treatment activities</p> <p>Development of Engineering plans, drawings, or specifications</p> <p>Land Surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p>			



**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCRD	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA DESIGN FY01		
14. ELEMENT TASK DESCRIPTION a. ELEMENTS OF COST: Labor Material Subcontracts ODCs b. TECHNICAL CONTENT: Covers the completion of two designs for production area excavation in Area 3A/4A and the Lime Sludge Ponds. These designs were both underway prior to the transition to the new contract on December 1, 2000. This control account covers only the work necessary to complete the designs and issue the CFC packages. c. SCOPE OF WORK: GCRD4 - Area 3A/4A Title I/II Design GCRD6 - Lime Sludge Ponds Title I/II Design d. WORK SPECIFICALLY EXCLUDED: All design work completed prior to December 1, 2000 on these projects Title III Services			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCRD4	13. TASK DESCRIPTION (ONE LINE) AREA 3A/4A TITLE I/II DESIGN		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3A/4A comprises approximately 41 acres and includes the eastern half of the former production area, as bounded by B Street to the west, the haul road to the north, E Street to the east and 1st Street to the south.</p> <p>Title I/II work involves the completion of the Area 3A/4A Title II design, which was started prior to December 1, 2000. This scope is limited to the preparation of the CFC package (final drawings & specifications), the final Implementation Plan and cost estimate, and the submittal of all records to ECDC.</p> <p>Drivers that affect the cost and schedule of this work include EPA/OEPA approval of the final Implementation Plan.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Title I/II engineering services for Area 3A/4A consists of one task: Title II Design.</p> <p>Title II Design</p> <p>Prepare the CFC package, final IP, and final cost estimate Complete the Davis-Bacon determination Submit project records to ECDC and maintain copies in project file</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCRD4	13. TASK DESCRIPTION (ONE LINE) AREA 3A/4A TITLE I/II DESIGN		

14. ELEMENT TASK DESCRIPTION

Perform project management and control activities

d. WORK SPECIFICALLY EXCLUDED:

All work prior to December 1, 2000

Predesign characterization, Title I design, Title III, excavation, certification, waste disposition

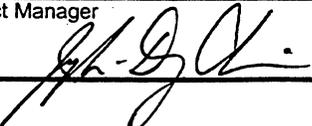
All other control accounts under PBS 06

Area 1, Area 2, Area 3A, Area 4A, Area 3B, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors

All other PBS accounts

PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09, PBS 10, PBS 11, PBS 12

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCRD6	13. TASK DESCRIPTION (ONE LINE) LIME SLUDGE PONDS DESIGN FY01		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The lime sludge ponds (LSP) comprises approximately 2 acres and lie immediately west of the production area and south of 2nd Street.</p> <p>Title I/II work involves the completion of the LSP Title II design, which was started prior to December 1, 2000. This scope is limited to the preparation of the CFC package (final drawings & specifications), the final Implementation Plan and cost estimate, and the submittal of all records to ECDC.</p> <p>Drivers that affect the cost and schedule of this work include EPA/OEPA approval of the final Implementation Plan.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Title I/II engineering services for the LSPs consists of one task: Title II Design.</p> <p>Title II Design</p> <p>Prepare the CFC package, final IP, and final cost estimate Complete the Davis-Bacon determination Submit project records to ECDC and maintain copies in project file Perform project management and control activities</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 5/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCRD6	13. TASK DESCRIPTION (ONE LINE) LIME SLUDGE PONDS DESIGN FY01		

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

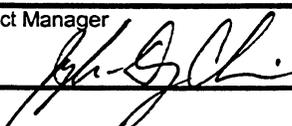
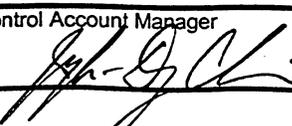
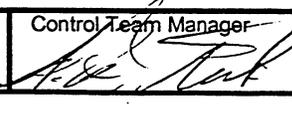
All work prior to December 1, 2000

Predesign characterization, Title I/II design for Area 3A/4A, Title I design for LSP, Title III, excavation, certification, waste disposition

All other control accounts under PBS 06
Area 1, Area 2, Area 3A, Area 4A, Area 3B, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors

All other PBS accounts
PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09, PBS 10, PBS 11, PBS 12

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/01 - 6/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCW3	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA WASTE DISPOSITION FY01		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>This work scope includes Waste Acceptance Organization (WAO) field support during excavation activities. This work will be conducted in accordance with CERCLA, RCRA, the Operable Unit 5 Record of Decision, the Waste Acceptance Criteria (WAC) Attainment Plan for the On-Site Disposal Facility (OSDF), and the Site-Wide Excavation Plan.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this control account is detailed on one charge number, GCW31.</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Pre-design, pre-certification, and certification activities</p> <p>Engineering plans, drawings, or specifications</p> <p>Construction or remediation costs</p> <p>Excavation control characterization</p> <p>Excavation and placement in storage facilities for RCRA and discovered materials</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/01 - 6/01	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) GCW3	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA WASTE DISPOSITION FY01		
14. ELEMENT TASK DESCRIPTION Characterization, treatment, transportation, and disposal of RCRA or discovered materials Waste disposition general planning and oversight charged to the WAO budgets			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/01 - 6/01	

12. TASK IDENTIFICATION (WORK PACKAGE) GCW31	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA WASTE DISPOSITION FIELD SUPPORT FY01
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

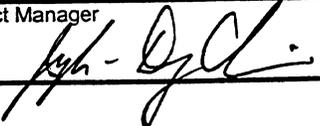
b. TECHNICAL CONTENT:

The content of this document applies to waste disposition activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in the Production Area. It is a summary for area-specific waste disposition efforts for waste that does not meet the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) and will require packaging, loading, shipping, and disposal at an approved offsite disposal facility. Offsite treatment of waste materials that do not meet the offsite disposal facility's WAC may be required prior to disposal and is also covered under this account. The waste disposition efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Production Area physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Site-wide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.

c. SCOPE OF WORK:

The scope of this document covers the offsite disposition of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process. The waste disposition activities covered under this account include the following tasks:

Project Manager 	Control Account Manager 	Control Team Manager 
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WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? CHANGE PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/01 - 6/01	
12. TASK IDENTIFICATION (WORK PACKAGE) GCW31	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA WASTE DISPOSITION FIELD SUPPORT FY01		

14. ELEMENT TASK DESCRIPTION

WAO Coverage.

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Excavation control characterization

Precertification / certification activities

Waste treatment activities

Construction or remediation

Development of engineering plans, drawings, or specifications

Land surveying, staff, or equipment

Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

Centralized services and/or equipment

Onsite waste treatment

Review existing data and engineering drawings

Perform data management functions within SDFP

Develop final reports

Campaign Planning

Purchase or rental of appropriate containers

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.E	4. WBS ELEMENT TITLE/NAME AREA 3A SOIL REMEDIATION		
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12. TASK IDENTIFICATION (WORK PACKAGE) GCW31	13. TASK DESCRIPTION (ONE LINE) PRODUCTION AREA WASTE DISPOSITION FIELD SUPPORT FY01		

14. ELEMENT TASK DESCRIPTION

Package soil and/or other waste materials into containers

Repackaging, or over-packing

Container movements within the FEMP

Loading containers on/in appropriate conveyance

Shipping to offsite disposal facility

Offsite waste treatment to meet offsite WAC

SECTION 5

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.E.	5. WBS ELEMENT TITLE: AREA 3A/LSP SOILS REMEDIATION AND AREA 4A PREDESIGN	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: G3A1/GCJ3/GCRD/GCW3	

SECTION 5: G3A1/GCJ3/GCRD/GCW3 – AREA 3A/LSP SOILS REMEDIATION AND AREA 4A PREDESIGN

1.0 NARRATIVE

1.1 OVERVIEW

This Closure Plan defines the scope of work required to plan, develop, execute, manage and administer the Area 3A remedial activities under PBS-06 (WBS 1.1.G.E; control account G3A1). The G3A1 control account is divided into the following charge numbers: G3A13, Title III Design; G3A14 Site Preparation and Excavation; G3A17, Excavation Monitoring and Certification; G3A18, Off-Site Waste Disposition; and G3A19, On-Site Waste Treatment. The GCJ3 control account covers FY01 work after December 1 for charge account GCJ31, Area 3A/4A Predesign Characterization. The GCRD control account covers FY01 work after December 1 for charge accounts GCRD4, Title I/II design for Area 3A/4A, and GCRD6, Title I/II design for the Lime Sludge Ponds. The GCW3 control account covers FY01 work after December 1 for charge account GCW31, excavation of Area 3A/4A. Remedial activities will remove all impacted soil and at- and below-grade structures to prepare the area for certification and, ultimately, final restoration activities. The external assumptions and drivers that effect the work and descriptions of the physical area and remedial tasks are discussed below.

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1.2 ASSUMPTIONS/EXCLUSIONS

1.2.1 Assumptions

- DOE maintains full baseline funding levels as defined in the closure contract.
- The SDFP restarts in FY2004 with most of the current personnel, or personnel with equivalent experience.
- The time consuming, non-technical, and low-value-added requirements and practices are simplified or eliminated, including: Project Execution Plan (PEP), data quality objectives (DQO), project review, Technical Review Board (TRB), Contract Review Board (CRB), safety start-up review (SSR), etc.
- New requirements or procedures are not implemented unless a cost/schedule evaluation indicates they are needed.

- The contractors will prepare the Safe Work Plan, travelers, penetration permits, field logs, lock and tag records, QA/QC documents, placement planning, coordination and tracking, etc.
- Radiation-control and security requirements will be simplified or eliminated.
- SDFP are cross-trained to perform safety and health, industrial-hygiene, and radiation-control tasks.
- SDFP will self perform Title III engineering services.
- Other PBSs that provide matrixed and centralized personnel to this work scope maintain adequate and competent resources to perform the work identified in Section 1.5.
- Services currently provided by the geoprobe sampling crew, on-site analytical laboratory and SED data entry personnel are maintained.
- All inorganic and radiological COCs (except strontium-90) will be analyzed at the on-site laboratory.
- An area-isolation trench is placed around Area 3A prior to excavation.
- All D&D activities in 3A are complete by start of excavation in 1stQ of FY2004.
- Perched water is not present in quantities that require a significant change to the designed 2:1 slopes.
- Excavation monitoring consists of scanning the entire area after concrete and gravel pads are removed and one-third of the area after each of 3 lifts to account for contamination zones. This equates to a scanning acreage of twice the initial acreage.
- Above-WAC PCE and DCE soil is treated on site and placed in the OSDF.
- RCRA TCE soil is treated on site and placed in the OSDF.
- CDLs are developed concurrent with excavation activities.
- Certification field activities begin during the last quarter of excavation activities.
- Statistical tests conducted on the analytical results will follow the pass/fail guidance in the SEP.
- Staffing needs identified in Manpower Plan (Section 3.0) are met to deal with preparation of plans and start-up activities associated with excavation of 3A.

- PBS-06 staff will not be required to perform additional closure plan work after DOE approves the plan.
- Internal and DOE review of a Project Specific Plan (PSP) is performed in one week.
- The EPA/OEPA review and comment period for the PSPs, Certification Design Letter (CDL) or Certification Report is one month.
- EPA/OEPA will review and approve significant PSP Variance/Field Change Notices (V/FCNs) in 7 days for precertification PSPs and 15 days for certification PSPs.
- EPA/OEPA will review and approve Design Change Notices (DCNs) within 7 days of receipt and CDLs prior to the start of the last quarter of excavation.
- Radiation-control and break trailers are moved from the SWU and installed by SDFP no later than 4thQ of FY2003.
- Electric pumps in certification buffer corridor are fed from overhead lines provided by site utilities group.
- Maintenance activities associated with the buffer corridor are assigned to adjacent areas undergoing remediation after Title III activities cease.
- AWWT operates and maintains pumps in buffer corridor after they are installed and pass start-up process.

1.2.2 Exclusions

- All activities associated with other PBS elements
- All activities associated with other PBS-06 control accounts.

1.2.3 Government-Furnished Equipment/Services

None.

1.2.4 Applicable Requirements

- OU3 and OU5 RODs
- Sitewide CERCLA Quality Assurance Plan
- CDL and CR reviewed and approved by EPA/OEPA
- Dust control measures are implemented during excavation and hauling

- Real time scan between every excavation lift in above-WAC and above-FRL excavations (i.e., no real time scan if excavation is simply to remove structures)
- Remove excavation water from 24 hour/10-year event within 72 hours
- Perform 5:1 grading for interim restoration after certification
- If technetium-99, PCE, TCE, and/or DCE are present at levels that exceed the OSDF WAC, physical samples must be taken along the side slopes and footprints of the above-WAC excavation to confirm their removal prior to initiating below-WAC excavation activities.
- Frisker and/or PID monitoring by radiation control and/or H&S is performed in accordance with applicable DOE and regulatory standards.

1.2.5 Applicable Technical Guidance

- Sitewide Excavation Plan
- Waste Acceptance Criteria for the On-site Disposal Facility
- Impacted Materials Placement Plan for the On-site Disposal Facility
- SSR for the pumps in the certification buffer area
- Visual monitoring of all excavations by WAO
- Excavation water with PCE, TCE or DCE above 50 ug/L goes to AWWT for Phase II treatment
- Certification units are sized to one acre, or 800 linear feet for a utility trench cut below the designed excavation grade
- A precertification scan with HPGe instruments is conducted prior to the collection of certification samples.

1.2.6 Disposal, Treatment, Containers, Utilities

- Organically contaminated soil that does not meet the OSDF WAC will be treated successfully on site and then disposed in the OSDF.
- Soil and debris that do not meet the OSDF radiological or physical WAC are placed at SP-7 until shipped to Envirocare.
- Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to the Nevada Test Site.

- Electric, water and communication utilities are provided to the radiation control and break trailers by infrastructure support.
- Electric tie-in points for pumps in buffer corridor are provided by infrastructure support.
- Infrastructure Services and Central Engineering set-up the treatment trailers and supply the utility hook-ups.
- Subcontractor hired to treat soil obtains air permit and any other regulatory permits required for operation of the treatment equipment.
- A propane tank will be rented for the duration of the soil treatment.

1.3 DRIVERS

- Congressional funding of DOE EM Projects
- Completion of D&D activities For Buildings 64 and 65.
- Congressional funding of DOE EM Projects
- EPA/OEPA review cycles
- DOE review cycles
- Excessive number of rain days
- Discovery, during excavation, of large areas of undocumented contamination.

1.4 PROJECT PHYSICAL DESCRIPTION

Remediation Area 3A comprises approximately 24 acres and lies in the NE corner of the former Production Area. This area contains the surface and subsurface structures associated with the former Boiler Plant, water-treatment tanks, tank farms, Maintenance Building, Plant 9, decontamination pad, and Buildings 64 and 65. Buildings 64 and 65 are presently used for packaging thorium waste streams. The area is bounded by the Haul Road to the north, E Street to the east, 2nd Street to the south, and B Street to the west.

Remedial activities in Area 3A are being carried out in accordance with the OU3 and OU5 RODs, with the primary objective being the removal of all soil contaminated at levels above established FRLs and all at- and below-grade structures. When the remedial actions are completed, the certified area will be graded to 5:1 slopes and seeded according to the Natural Resource Restoration Plan. Predesign characterization work and the Title I/II design were completed in Spring of 2001. Each charge account associated with the remediation of Area 3A is summarized in Section 1.5.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

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FY01 work performed after December 1, 2001 on the predesign characterization, Title I/II design and excavation of Area 3A, Area 4A and the LSPs is covered under FY01 control accounts GCJ3, GCRD and GCW3. Predesign work for Area 3A and Area 4A will be completed under GCJ31. Title I/II design work for Area 3A/4A and the LSPs will be completed under GCRD4 and GCRD6, respectively. Excavation of above-WAC soil and

concrete demolition in Area 3A will be covered under GCW31. These accounts will be closed in FY02.

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Area 3A charge numbers under control account G3A1 (PBS-06, WBS 1.1.G.E) consist of Title III Design (G3A13), Site Preparation/Excavation (G3A14), Excavation Monitoring/Certification (G3A17), Off-site Waste Disposition (G3A18) and On-site Waste Treatment (G3A19). ~~Pre-design and design for Area 3A and the Lime Sludge Ponds have been completed.~~

1.5.1 G3A13 - Title III Design

Title III design activities will focus on the development and approval of design change notices (DCNs) as field activities progress, and the preparation of closure documents after excavation is complete. The activities and deliverables are placed into two tasks:

1) Excavation Support and 2) Prepare Final Documents.

A major technical risk identified for this scope of work is the EPA/OEPA review and approval process for DCNs. Contingencies that can be used to mitigate this risk include a reduction in the number of DCNs and a shorter review and approval cycle.

The Task activities and deliverables will be completed primarily by project staff from the management, engineering, surveying, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified in below, will use the charge account G3A13. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G3A13 will be closed out when the interim restoration of Area 3A is completed.

1) Task #1 - Excavation Support

1.1) Plan/Scope

Excavation support is the link between engineering design and the execution of the construction work. Prior to initiating construction work, the construction subcontract will be placed and work plans will be completed to meet the needs of Area 3A excavation work. Field and design changes that develop during construction activities must be documented and approved to maintain the record between the CFC drawings and final as-built drawings. If needed, the engineering and construction staff must respond to and close out non-conformance reports. Specific activities and deliverables under this work scope include:

- Review and modify construction subcontract and work plans, if needed.
- Prepare and approve design change notices (DCNs).
- Provide information for requests for clarification of information (RCIs).
- Respond to and close out non-conformance reports (NCRs).
- Perform safety walkthroughs and attend safety briefings, as needed.
- Prepare the Yearly Completion Report.

- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: DCNs to the project, EPA/OEPA and ECDC; RCIs to the construction crew; NCRs to the cognizant QA officer; the Yearly Completion Report to the project; and all records to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to modify drawings affected by DCNs. Subcontract costs will be charged to G3A13.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will perform DCN reviews, if applicable. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3A13.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the DCNs, if applicable. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

The work plans will be prepared by project staff from the management, engineering, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to develop the necessary DCNs. A yearly completion report will be prepared by engineering and construction personnel at the end of the construction season to document the performance of the work, the lessons learned, and quantities delivered to the OSDF and other disposition localities.

1.2) Quantification

Table 1 summarizes the quantities and/or deliverables anticipated for Task 1. Per the direction of senior management, 3 safety walkthroughs will be performed each month. Based on the number of DCNs, RCIs, and NCRs for previous Title III work, it is estimated that there will be 100 DCNs, 20 RCIs, and 10 NCRs. The project engineer will approve and sign all DCNs after regulatory approval is obtained. A yearly completion report will be prepared to status the excavation progress.

TABLE 1
 Quantities for Task 1: Excavation Support

ITEM	QUANTITY
Safety Walkthroughs	99
Design Change Notice (DCN)	100
Request for Clarification of Information (RCI)	20
Non-Conformance Report (NCR)	10
Yearly Completion Report	2

2) Task #2 - Prepare Final Documents

2.1) Plan/Scope

After the completion of excavation activities, as-built drawings will be prepared and a close-out report will be developed. The close out report will be filed after interim restoration activities are completed in the certified area. Specific activities and deliverables include:

- Complete the as-built drawings.
- Prepare the Close-Out Report.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The as-built drawings and Close-Out Report will be delivered to central engineering and all records will be filed with ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to prepare the as-built drawings. Subcontract costs will be charged to G3A13.

Matrixed Personnel

Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3A13.

Centralized Personnel

Engineering Services will assist with the as-built drawings, close-out report and termination of the CADD subcontract, as needed. Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to complete the as-built drawings and close-out report. As-built drawings will be prepared after excavation is complete and the pumps are installed in the buffer area. The close-out report for the control account will be issued after completion of all certification and waste-management activities.

2.2) Quantification

Table 2 summarizes the quantities and/or deliverables anticipated for Task 2. Based on the percentage of drawings changed during previous construction activity, it is estimated that there will be 50 as-built drawings. A Close-out Report, for the engineering activities associated with the remediation of Area 3A, will be prepared during certification activities and will be completed after the interim-restoration grading (5H:1V slopes) of the certified area.

TABLE 2
Quantities for Task 2: Prepare Final Documents

ITEM	QUANTITY
As-Built Drawings	50
Close-out Report	1

1.5.2 G3A14 - Site Preparation/Excavation

Prior to initiating the site preparation and excavation work, the excavation subcontract must be placed and all work plans must be completed to document the approach and controls that will govern the construction phase of the remediation. The work plans will be approved prior to excavation of Area 3A by engineering and construction disciplines to ensure integration occurs early in the project. This integration will continue with the parallel execution of site preparation, excavation and Title III activities. The activities and deliverables for this charge number are divided into the following tasks: 1) Site Preparation; 2) Excavation; 3) Control and Management; and 4) Interim Restoration.

Major technical risks include the discovery of large volumes of perched water or encountering prohibited items in quantities that greatly exceed the estimated 25 yd³. A contingency that can mitigate the perched water risk involves maintaining sufficient dewatering pumps and working several areas concurrently.

The activities and deliverables discussed below will be completed primarily by project staff from the management, construction, surveying, engineering, waste disposition and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use the charge account G3A14. Detail on manpower loading needed to execute this

scope of work is provided in Section 3.0. The charge account for G3A14 will be closed out when construction personnel complete the interim-restoration grading.

1) Task # 1 - Site Preparation

1.1) Plan/Scope

Site preparation activities integrate the final documentation process with field work associated with preparing the job site, and these activities must be completed prior to the start of excavation. Specific activities and deliverables include:

- Complete construction travelers, radiation work permit and penetration permit.
- Prepare the submittal log and cross-check to ensure all work plans and permits are in order.
- Procure materials and equipment, as needed.
- Perform clearing and grubbing, if needed.
- Survey and establish the site layout, work limits, area isolation trench, and excavation boundaries for above-WAC and RCRA/HWMU/UST areas.
- Cut area isolation trench and plug storm water and sanitary sewers.
- Establish access controls with radiological and construction fence and signage.
- Relocate radiation control point and change-out facilities.
- Establish the construction support areas: worker and visitor parking, laydown area for materials and equipment, refueling area, sealands for storage, portolets, and water coolers.
- Establish the work area: install the break/cool-down trailers, portolets, water coolers, special materials transfer area, dust control piping, water wells, haul routes and air monitors.
- Connect electric, telephone, water and communication utilities into construction support area.
- Establish surface-water management controls: silt fence, sediment traps and culvert installation.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

- The construction travelers, work permits and submittal log will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install fencing, access controls and surface-water management structures and the special material transfer area will be prepared. After all work plans have been approved, the area-isolation trench will be cut around the perimeter of the area to provide added assurance that all energized utilities have been isolated (Note: it is not the intent of the area-isolation trench to serve as the primary method for isolating energized utilities, as infrastructure personnel and engineers will terminate all known water, electric and gas lines that enter the area prior to initiating this trenching activity). Subcontract costs will be charged to G3A14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number G3A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist with administrative aspects of the construction subcontract. Infrastructure Services will assist with the set-up and maintenance of the trailers and provide U/E support for penetration permits. Security/EM Services will provide access control and emergency response. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Activities will begin with the set-up of the support trailers and utility hook-ups to these trailers. Electric lines will be required for all trailers for heat, lights and the radiation-control station. Water and sewer for showers will be needed for the change-out trailer, as the support building will no longer be present. Bottled drinking water will be provided in all trailers and portable toilets will be set-up outside of the radiation-control trailer. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 3 summarizes the quantities and/or deliverables anticipated for Task 1.

The traveler, permits and submittal log are based on previous submittals by construction contractors, and Fluor Fernald's decision to self-perform the excavation services. Due to safety being the number one site priority, 3,200 linear feet of trench will be cut to a depth of 12 feet around the perimeter of Area 3A to provide a physical back-up for previous utility isolation activities. The quantities for fencing, signage, trailers, containers, water coolers, and portolets are based on previous construction work carried out at the site.

TABLE 3
 Quantities for Task 1: Site Preparation

ITEM	QUANTITY
Construction Traveler	1
Radiation Work Permit	1
Penetration Permit	1
Submittal Log	1
Area Isolation Trench, linear feet	3,200
Silt Fence, linear feet	5,000
Radiological or Construction Fence, linear feet	5,000
Radiological or Construction Signs	100
Radiological Control Point/Change-Out Trailer	1
Break/Cool Down Trailer	1
Sealand Storage Containers	10
Water Coolers	10
Portolets	4

2) Task #2 - Excavation

2.1) Plan/Scope

Excavation activities will result in the removal of all above-FRL soil and at- and below-grade concrete and utilities. Per the guidance developed in the SEP, the above-WAC and RCRA contamination areas will be removed first to minimize cross-contamination. Concrete pads and foundations will be broken and removed using industry-standard cutting, crushing and loading equipment. Bulldozers, excavators and trucks will be used to remove the soil. Seasonal shutdown and post-excavation actions will also be performed under this task. Specific activities include:

- Size-reduce, excavate, load and haul at- and below-grade concrete and utilities to OSDF, SP-7 or the designated off-site staging area.
- Excavate, load and haul impacted soil to the OSDF, SP-7 or the designated off-site staging area.
- Identify, excavate, load containers and stage special materials at the special materials transfer area.

- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.
- Perform post-excavation activities: remove construction support area and work area features, remove utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will be responsible for the safe removal of all soil, utility piping and reinforced concrete. Additionally, all maintenance and seasonal shut-down tasks will be performed by the contractor. Subcontract costs will be charged to G3B14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Environmental Compliance will assist with dust monitoring, if needed. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Personnel from these organizations will use charge number G3A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in management of the subcontract. Infrastructure Services will maintain the trailers, provide porter services, transport VOC water to the AWWT, perform dust control, and maintain roads to OSDF and SP-7. Waste Acceptance Organization will review DCNs and

perform waste manifestation activities. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable functional areas. Survey crews will verify material quantities. Concrete pads and below-grade structures may be size-reduced for use as road-bed material in the OSDF. Piping will be removed and size-reduced to meet the OSDF WAC. Special materials, if found, will be loaded into containers provided by waste generator services and placed at the special material transfer area. Project Controls will provide cost and schedule support to the project manager.

2.2) Quantification

Table 4 summarizes the quantities and/or deliverables anticipated for Task 2. Per senior management, 3 safety walkthroughs will be conducted each month. The basis for the soil quantities is the SDFP spreadsheet *At- and Below-Grade Material Quantities*. Estimates for concrete, asphalt and piping debris were obtained from site drawings, with ten percent of the total piping volume assumed to be above-WAC. Piping volume is calculated from linear feet using a nominal 10-inch diameter. Above-WAC/RCRA soil to be treated contains PCE, TCE and DCE, and this soil will be disposed in the OSDF when successfully treated. Based on past excavation history, the quantity of special materials is estimated to be no greater than 25 cubic yards. A 5-gallon sample of soil will be obtained from the active excavation for every 10,000 cubic yards excavated, and this sample will be delivered to the OSDF for proctor testing.

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TABLE 4
 Quantities for Task 2: Excavation

ITEM	QUANTITY
Safety Walkthroughs	64
Concrete and Asphalt Debris, cubic yards	18,000 19,500
Piping Debris, cubic yards	667
Above-WAC Piping, cubic yards	80
Soil, cubic yards	161,000 191,000
Soil, Backfill	3,400
Soil, utility trenches	13,000
Above-WAC Soil, cubic yards	6,000
Above-WAC/RCRA Soil to Treat, cubic yards	1,800
Special Materials, cubic yards	25
5-Gallon Proctor Sample	16

3) Task #3 - Control and Management

3.1) Scope/Plan

Control and management activities apply to the buffer corridor that surrounds the certification area, access and haul roads, and start-up activities associated with the pump stations. The majority of these activities will follow the excavation of impacted material. Specific activities and deliverables include.

- Install the pump stations in the buffer corridor and perform the Safety Start-up Review.
- Remove sediment from pump sumps located in the buffer corridor and designated sediment traps.
- Maintain surface-water management and erosion control structures.
- Remove water from excavations, as needed.
- Maintain haul roads and access roads.
- Provide dust control, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Documents and reports associated with the SSR process will be delivered to the SDFP and Aquifer Project. All records will be delivered to ECDC.

The scope of work identified above will be executed using the construction subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install pumps and perform maintenance activities in the buffer corridor. Eight pump stations will be installed in the buffer corridor and the pumps will discharge to the nearest storm-water catch basin tied to the FEMP storm-water retention basins. Pumps in the buffer corridor will be configured to start and operate automatically at any time of the day, 365 days a year, and they must be capable of handling the 24 hour/10 year storm event. An SSR will be performed after installation and the system will be turned over to the Aquifer Project for operation and maintenance. Maintenance activities include erosion control on the 2:1 slopes and removal of the sump sediment from the pump stations. Subcontract costs will be charged to G3A14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits and perform RWP briefings. Environmental Compliance will assist with dust monitoring, if needed. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in managing the construction subcontract. Infrastructure Services will perform dust control and maintain roads to OSDF and SP-7. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Prior to the certification of the interior part of Area 3A, a buffer corridor will be established around the perimeter of the certification area to control storm-water run-on. Project personnel will conduct an SSR for the pumps in the buffer corridor and turn the pump system over to the Aquifer Project after successful operation is demonstrated.

3.2) Quantification

Table 5 summarizes the quantities and/or deliverables anticipated for Task 3. The number of pump stations is based on the number of pump stations shown on the construction

drawings for Area 3A. Construction management and the labor force will be responsible for the installation and start up of the pump system, maintenance of the slopes (2:1) and removal of sediment in pump sumps. After installing the pumps, construction management will conduct an SSR and demonstrate operational readiness prior to turning the system over to the Aquifer Project. It is assumed that slope maintenance and sediment removal will occur at the beginning and end of the construction season. After the close-out report has been filed for Cost Account G3A1, activities associated with maintaining the slopes and pump sumps in the buffer corridor will be transferred to the adjacent areas undergoing remediation (i.e., Areas 3B, 4A and 6).

TABLE 5
 Quantities for Task 3: Control and Maintenance

ITEM	QUANTITY
Pump Stations	8
Safety Start-up Review	1
Sediment Removal, biannual	2
Slope Maintenance, biannual	2

4) Task #4 - Interim Restoration

4.1) Scope/Plan

Interim restoration occurs after the remediated area has been certified clean. The 2:1 slopes in the certified area will be graded to 5H:1V, using decontaminated equipment, and seeded. Specific activities include:

- Survey work limits and establish the access controls.
- Procure needed materials and equipment.
- Perform grading to reshape 2:1 slopes to 5:1 slopes.
- Seed 5:1 slopes.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

All project records will be delivered to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Labor required for the interim-restoration grading will be hired from local union halls. Job categories envisioned include foreman, laborer, and heavy-equipment operator. Subcontract costs will be charged to G3A14.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to develop RFPs and procure subcontractor services. Environmental Compliance will assist with dust monitoring, if needed. Personnel from these organizations will use charge number G3A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in placing the labor subcontract. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Project Controls will provide cost and schedule support.

4.2) Quantification

Table 6 summarizes the quantities and/or deliverables anticipated for Task 4. The number of walkthroughs is based on 3 walkthroughs a month, per senior management. An estimate on the amount of soil that must be reshaped is taken as 9 percent of the total soil excavated, which is the percentage calculated for the Area 3A/4A design. The acreage requiring seed is estimated as the initial acreage of Area 3A.

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TABLE 6
 Quantities for Task 4: Interim Restoration

ITEM	QUANTITY
Safety Walkthroughs	6
Soil to Reshape, cubic yards	14,000 24,000
Acres to Seed	24

1.5.3 G3A17 - Excavation Control/Certification

Monitoring and certification activities will occur in parallel to excavation activities. Each excavation lift, in zones of contamination, will be monitored for radium, thorium and uranium levels. Certification Design Letters (CDLs) will be prepared and submitted to EPA/OEPA for review and approval during excavation to minimize the time period between the end of excavation activities and the start of certification sampling. Likewise, all precertification scans will be completed as close as possible to the end of excavation

activities. Specific activities and deliverables are summarized under the following tasks:
1) Excavation Monitoring; 2) Precertification; and 3) Certification.

Major technical risks include: using off-site laboratory services for analysis of organic COCs, insufficient access to the excavation area to begin certification, and EPA/OEPA review cycles for the CDLs and Certification Report (CR). Contingencies that can mitigate the risks include: develop on-site laboratory services for organic COCs, expedite excavation in Area 3A and negotiate shorter EPA/OEPA review cycles.

The task activities and deliverables will be completed primarily by project staff from the management, characterization, surveying, administrative and real time disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G3A17. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for G3A17 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Excavation Monitoring

1.1) Scope/Plan

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Excavation monitoring is the scanning of soil surfaces after each excavation lift to determine if ~~contamination hot spots exist with respect to radium, thorium and/or above-~~ WAC levels of uranium levels are present. Prior to performing the excavation monitoring, a PSP is developed to summarize the monitoring approach and frequency. If applicable, the PSP also addresses physical samples that need to be collected to confirm the removal of other COCs in above-WAC and RCRA areas. Specific activities and deliverables include:

- Perform RTRAK, RSS and/or HPGe measurements between each excavation lift.
- Verify removal of above-WAC uranium ~~and the absence of radium, thorium or uranium hot spots.~~
- Survey and flag ~~hot spot~~ above-WAC and sample locations, as needed, for HPGe measurements and the collection of physical samples.
- Conduct HPGe measurements on soil pads created from soil removed from the bottom of utility trenches.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

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Survey information and real time and laboratory data packages will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. Waste Generator Services will provide containers and package waste if special materials are discovered. Quality Assurance and Safety and Health will provide oversight, as needed. Personnel from these organizations are the only individuals who will use charge number G3A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. The Waste Acceptance Organization will perform visual oversight of the monitoring and prepare waste manifestation forms, if needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Excavation monitoring will be conducted under all removed concrete and gravel surfaces, in known contamination areas after each lift and whenever unexpected material is encountered. ~~In general, about half of the area will be covered by RTRAK and half with HPGe shots. HPGe shots will be conducted on soil removed from the bottom of utility trenches that are cut below the design grade. This soil will be placed in a circular pad adjacent to the trench prior to conducting the HPGe measurements.~~ Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. If unexpected or special materials are encountered, physical samples will be collected as part of the monitoring activities to screen for COCs not measured by the real time instruments. A survey team will document sample locations. Project Controls will provide cost and schedule support.

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1.2) Quantification

Table 7 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past experience, a single PSP will be sufficient to support excavation monitoring in Area 3A. Therefore, 1 DOE draft PSP, 1 DOE RTC package, 1 EPA/OEPA draft PSP, 1 EPA/OEPA RTC package, and 1 final PSP are required. Acres to be scanned during excavation will be estimated as twice the number of initial acres, and this assumes that a scan is conducted over the entire area after concrete and gravel is removed plus 3 lifts over 1/3 of the area to account for contamination zones. Maps for each of the RTRAK, RSS and HPGe measurements will be prepared for each lift. It is also estimated that there will be 4 hot spots and 10 soil samples. The soil samples are assumed to be associated with the discovery of material that is prohibited from disposal in the OSDF. In general, the

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full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on pipe bedding material every 50 feet of linear trench, there will be 176 HPGe shots to cover the 8,800 linear feet of utility trenches that will be cut below the designed excavation grade.~~

TABLE 7
 Quantities for Task 1: Excavation Monitoring

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ITEM	QUANTITY
Draft Project Specific Plan for DOE	1
Response-to-Comments Package for DOE	1
Draft Project Specific Plan for EPA/OEPA	1
Response-to-Comments Package for EPA/OEPA	1
Final Project Specific Plan	1
RTRAK, RS, EMS and/or HPGe Scans, acres	48
RTRAK, RSS EMS and/or HPGe maps	9
Survey and Flag Hot Spots/Sample Locations	14
Soil Samples	10
HPGe Shots for Linear Feet of Utility Trenches to Scan	1768800

2) Task #2 - Precertification

2.1) Scope/Plan

Precertification activities will begin as soon as a portion of Area 3A reaches the design grade, with the intent being to minimize the lag time between the completion of excavation and collection of certification samples. The PSP developed for excavation monitoring will also serve as the PSP for precertification. Based on field conditions and required detection levels, RTRAK, RSS or HPGe measurements will be performed and the precertification maps will be prepared. Certification Unit (CU) boundaries and sample locations will be located by survey and the boundaries and sample locations recorded on maps. Specific activities and deliverables include:

- Walk down field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Prepare the area for field measurements by mowing and installing certification fence postings.
- Perform precertification scans with RTRAK, RSS and HPGe equipment.

- Identify hot-spot zones to excavation, if applicable, and rescan area after hot spot is removed.
- Prepare precertification maps based on scan measurements.
- Survey CU boundaries and sample locations and record the information on maps.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Maps generated from the precertification scans and CU surveys will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. Quality Assurance and Safety and Health will provide oversight on hot spot removal, if needed. Personnel from these organizations are the only individuals who will use charge number G3A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Project Controls will provide cost and schedule support to the project manager. Prior to collecting certification samples, the entire excavation footprint will be scanned with RTRAK and/or HPGe instruments to assess compliance with the FRLs for radium, thorium and uranium. If found, hot spots will be excavated and the area rescanned. After the completion of scanning activities, the CU boundaries and sample locations will be documented by survey.

2.2) Quantification

Table 8 summarizes the quantities and/or deliverables anticipated for Task 2. To account for the excavation slopes, the acreage to be scanned during pre-certification is estimated as 1.5 times the initial Area 3A acreage. A precertification map will be produced for each set of RTRAK, RSS EMS and/or HPGe measurements. Based on guidance in the SEP, each CU will be a maximum of 250 by 250 feet and every 800 linear feet of trench that lies

below the design grade is a CU. This guidance results in the estimate of 32 CUs for Area 3a, with 11 being utility-trench CUs. In general, the full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on soil in the bottom of the trench every 50 feet of linear trench, there will be 176 HPGe shots to cover the 8,800 linear feet of utility trenches that will be cut below the designed excavation grade.~~

TABLE 8
 Quantities for Task 2: Precertification

	ITEM	QUANTITY
R1- D- 417	RTRAK, RSS and HPGe Scans, acres	36
	RTRAK, RSS, EMS and/or HPGe maps	3
	HPGe Shots for Linear Feet of Utility Trenches to Scan	176 8800
	Survey Boundaries, Cus	32

3) Task #3 - Certification

3.1) Scope/Plan

Certification activities begin during excavation with the preparation of the Certification Design Letters (CDLs) and Certification PSP, and end when the Certification Reports (CRs) have been approved by the EPA and OEPA. To minimize the lag time between the end of excavation and collection of certification samples, the CDLs must be approved by the EPA and OEPA before excavation is complete. Specific activities and deliverables include:

- Develop COC list, sampling and analysis strategy, data quality objectives, and off-site laboratory task orders.
- Prepare data tables, CU maps and text for draft CDL/PSP and deliver CDL/PSP to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CDL/PSP.
- Incorporate comment responses into each DOE draft CDL/PSP and deliver EPA/OEPA draft CDL/PSP to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CDL/PSP.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CDL/PSP and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CDL/PSP and deliver final CDL/PSP to project personnel, functional-area personnel, DOE, EPA and OEPA.

- Perform walk downs of field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Conduct work-scope briefings with field crews.
- Mobilize the sampling crew to place the borings and obtain the soil samples.
- Develop variance/field change notices (V/FCN), as needed.
- Deliver the samples to the on-site laboratory and create the sample analysis log for on-site and off-site analysis, as needed.
- Perform the required analytical work and generate laboratory reports to QA/QC Level D.
- Perform 100 percent validation (10% QA/QC Level D, 90% QA/QC Level B) of the laboratory reports.
- Enter data into the SED and perform queries.
- Reduce and interpret data and perform the statistical calculations to develop final CR tables.
- Develop tables, maps and text for CRs and deliver CRs to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CR.
- Incorporate comment responses into each DOE draft CR and deliver EPA/OEPA draft CR to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CR.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CR and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CR and deliver final CR to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The CDLs, PSPs, RTCs, and CRs will be delivered to DOE, EPA/OEPA and the project. All documents and records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Environmental Monitoring and Analytical Services will complete most of the work under Task 3. Environmental Monitoring will be used to complete soil borings, collect soil and water samples and deliver the samples to the on-site laboratory. Analytical Laboratory Services will log samples into the system, complete analytical measurements, issue data packages and ship samples requiring analysis for COCs to off-site labs. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level D data packages will be delivered to the project. Project Controls will provide cost and schedule support. Personnel from these organizations are the only individuals who will use charge number G3A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, SOWs for off-site labs, and the statistical reduction of data to evaluate the certification criteria for pass/fail. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work will be completed by project staff from the management, characterization, survey, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Certification activities will begin with the preparation of the CDLs. Each CDL will identify the number and location of CUs, sample locations, a list of COCs for each CU, and analytical methods and detection limits. Execution of the CDL work will not begin until EPA/OEPA approval is received and the final CDL is released. Field activities will commence with a survey to flag sample locations and samples will be collected after the CDL is approved and precertification is completed. Samples will be sent to the appropriate laboratory for analysis and Level D data packages will be submitted to the project. Ten percent of the data packages will undergo verification and validation, and if problems are found additional packages will be selected for review. The data for each CU will be evaluated with statistical tests identified in the Sitewide Excavation Plan (DOE, June 1998) and a pass/fail decision for each CU will be based on these tests. CUs that fail will be resampled, and possibly subjected to additional excavation, until they pass the certification criteria. The draft CR will be prepared and submitted to EPA/OEPA after all CUs have passed. Once the CR is approved by EPA/OEPA, the final CR will be released and the area will be certified as fully remediated.

3.2) Quantification

Table 9 summarizes the quantities and/or deliverables anticipated for Task 3. The number of CDLs/PSPs prepared for previous projects indicate that approximately 3 CDLs/PSPs will be needed to cover certification activities in Area 3A. Therefore, it is estimated that there will be 3 DOE draft CDLs/PSPs, 3 EPA/OEPA draft CDLs/PSPs, 3 EPA/OEPA RTC packages, and 3 final CDLs/PSPs. The SEP dictates that there are 12 sample locations per CU plus one duplicate sample; the exception being 16 sample locations are surveyed if there is a HWMU or UST in the CU, with 8 of the 16 sample locations in the HWMU or UST footprint. Additionally, a sample is collected every 50 linear feet along the utility-trench CUs. These criteria result in an estimate of 460 certification samples. All samples will be analyzed for uranium, thorium, and radium, with the remaining analyses dependent on the distribution of other COC contamination. The number of laboratory reports that will be generated is based on project history, which indicates one lab report per 12 samples. Per the SEP, 10 percent of these will be validated to Level D and 90 percent to Level B. A CR will be prepared for each CDL and the submittal and review process will follow the CDL scenario.

TABLE 9
 Quantities for Task 3: Certification

ITEM	QUANTITY
Draft CDLs/PSPs for DOE	3
Draft CDLs/PSPs EPA/OEPA	3
Response-to-Comments Package for EPA/OEPA	3
Final CDLs/PSPs	3
Survey and Flag Sample Locations	428
Soil Samples	460
Uranium, Thorium and Radium Analyses	460
Technetium-99 Analyses	26
Metal Analyses	221
VOC Analyses	65
SVOC Analyses	195
Pesticide/PCB Analyses	13
Lab Reports for Radiological COCs	38
Lab Reports for Metal COCs	17
Lab Reports for Organic COCs	16
Radiological Lab Reports to Verify and Validate	38
Metal Lab Reports to Verify and Validate	17
Organic Lab Reports to Verify and Validate	16
Draft CRs for DOE	3
Draft CRs EPA/OEPA	3
Response-to-Comments Packages for EPA/OEPA	3
Final CRs	3

1.5.4 G3A18 - Off-Site Waste Disposition

Soil excavation activities in various areas of the FEMP site may produce waste streams that cannot be disposed of in the OSDF, and off-site waste disposition will be required. Off-site waste disposition refers to the procurement of containers and disposal services, loading and shipping of containers, and preparation of manifestation documentation. Two different types of waste streams are anticipated. First, items that are prohibited from both the OSDF and Envirocare (non-typical waste) will be processed through Fluor Fernald's Waste Generator Services (WGS). Second, AWAC soil and other items that are prohibited from the OSDF but can be transported to Envirocare. Activities under this charge number are divided into the following tasks: 1) Container Receipt and Preparation; 2) Load Containers; and 3) Shipping and Disposal.

Major technical risks include: the loss of the off-site disposal vendor (i.e., Envirocare); the unexpected discovery of a large volume of special material; and/or the discovery of a large volume of soil that requires on-site treatment. Contingencies that can be implemented to reduce this risk include: acquire additional off-site disposal vendors; and place a subcontract to treat soil.

Most of the work will be performed by WGS personnel matrixed to the project. However, some project oversight from the management, characterization, engineering, and administrative disciplines is needed, and these personnel will charge labor to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G3A18. The charge account for G3A18 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Container Receipt and Preparation

1.1) Scope/Plan

Material costs will include the purchase of shipping containers and upon receipt of the containers WGS will prepare them for loading. Specific activities and deliverables include:

- Procure containers and packaging materials.
- Prepare container for loading.
- Deliver the prepared containers to the special material transfer area (SMTA).
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Waste Generator Services (WGS) will prepare and deliver containers to the special material transfer area (SMTA), adjacent to the active excavation. Personnel from these organizations are the only individuals who will use charge number G3A18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager.

1.2) Quantification

Table 10 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past project history, it is estimated that 10 containers (capacity of 2.5 yd³) will be required for non-OSDF waste encountered in Area 3A.

TABLE 10
 Quantities for Task 1: Container Receipt and Preparation

ITEM	QUANTITY
Procure and Prepare Containers	10

2) Task #2 - Load Containers

2.1) Scope/Plan

The project will load waste into containers staged at the SMTA or haul above-WAC waste to SP7 or the designated staging area. Specific activities and deliverables include:

- Load the containers and return filled containers to the SMTA.
- Haul above-WAC debris to SP-7 or the designated storage point for off-site bulk waste.
- Prepare required manifestation, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Manifestation documents will be provided to WGS, the project and ECDC, if applicable.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Labor is required for loading waste into containers and for loading and hauling above-WAC soil and debris to SP-7 or the designated staging area to the railcar load-out area. Job categories envisioned include foreman, laborer, heavy-equipment operator, truck operator and teamsters. Subcontract costs will be charged to G3A18.

Matrixed Personnel

Radiological Protection Operations will perform radiation surveys of containers and equipment. Personnel from these organizations are the only individuals who will use charge number G3A18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. The Waste Acceptance Organization will prepare waste manifestation forms. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager. Management and construction staff will assist the subcontractor in the loading of the containers. Construction personnel will pick up the containers at the SMTA, load the containers, and return them to the SMTA for pick up by WGS. Above-WAC soil and piping will be placed at SP-7 or the designated load-out point for the railcars.

2.2) Quantification

Table 11 summarizes the quantities and/or deliverables anticipated for Task 2. Based on off-site waste quantities from past excavation work, it is estimated that there will be 25 yd³ of containerized waste and 1 percent of the total piping volume will be prohibited from disposal in the OSDF (i.e., 80 yd³ of above-WAC piping). Characterization data for Area 3A indicate that there are approximately 6,000 yards of above-WAC soil. The piping and soil will be loaded into railcars.

TABLE 11
 Quantities for Task 2: Load Containers

ITEM	QUANTITY
Prohibited Special Materials, cubic yards	25
Above-WAC Soil, cubic yards	6,000
Above-WAC Piping, cubic yards	80

3) Task #3 - Shipping and Disposal

3.1) Scope/Plan

WGS will pick-up containers from the SMTA and prepare final manifestation and shipping papers. Above-WAC debris will be bulk shipped via railcar. Specific activities and deliverables include:

- Transport containers from SMTA to shipping area
- Prepare shipping manifestation and ship containers or railcars
- Verify waste disposition at disposal site
- Submit project records to ECDC and maintain copies in project file
- Perform project management and control activities.

Manifestation, shipping and tracking forms will be delivered to the project and off-site disposal facility. Verification of waste disposition will be delivered to the project, and all records will be sent to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

WGS will prepare the final manifestation documentation and ship the containers to the designated off-site disposal facility. Personnel from these organizations are the only individuals who will use charge number G3B18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. WAO will assist with the waste manifestation, as needed. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and administrative staff will assist WGS and/or WAO in the preparation of shipping documents. Project Controls will provide cost and schedule support.

3.2) Quantification

Table 12 summarizes the quantities and/or deliverables anticipated for Task 3. Based on the volumes identified in Task 2, 10 containers and 100 railcars will be shipped. The number of railcars is based on 100 tons per car and an approximate bulk soil density of 1.6 tons per cubic yard. It is assumed that one railcar will be used for the piping debris.

TABLE 12
Quantities for Task 3: Shipping and Disposal

ITEM	QUANTITY
Ship Containers	10
Ship Railcars	100

1.5.5 G3A19 - On-Site Treatment

On-site treatment of soil and disposal in the OSDF is estimated to save approximately one million dollars per 1,000 yd³ of treated soil. Approximately 1,800 yd³ of soil will be treated to lower the concentrations of PCE, TCE and DCE to levels that will allow disposal of the soil in the OSDF. The toxicity characteristic leaching procedure will be used to make the pass/fail decision on the treated soil. A low-temperature thermal desorption process is envisioned and a vendor will be contracted to perform the treatment. A treatment pad will be prepared on the old Maintenance Building pad. Activities and deliverables associated with this work include: 1) Procurement; 2) Prepare Treatment Plans; 3) Site Preparation; and 4) Treatment.

Major technical risks include: heterogeneous distribution of PCE, TCE and DCE results in variable treatment times, with an increase in the chance of failure due to treatment stages being set to one time period. Contingencies that can be implemented to reduce this risk include: acquire batch data on several different zones of contamination and perform statistical analysis of the treatment-time data to determine optimal batch time.

Most of the treatment work will be performed by the treatment subcontractor. However, the subcontractor will develop the treatment plans with engineering, characterization and management staff, and this staff will also perform project oversight. Construction personnel will be needed to stage the untreated soil and remove the treated soil. Engineering, characterization and management personnel will charge labor to PBS-06 control account GPM1. The construction subcontractor, treatment subcontractor, and matrixed labor, as identified below, will use the charge account G3A19. The charge account for G3A19 will be closed when the all treated soil has been disposed in the OSDF.

1) Task #1 - Procurement

1.1) Scope/Plan

The procurement process must be completed prior to assembling the treatment plans, as the selected vendor must provide information on the treatment process and equipment. A request for proposal (RFP) will be developed and advertised to solicit offers on the treatment of all organically contaminated soil in Areas 3A, 4A, and 4B. After responses are received, the proposals will be reviewed and ranked based on the technical and cost criteria. Prior to award of the contract, a best and final offer may be requested of several finalists, if deemed necessary by the review team. Activities and deliverables under this scope of work include:

- Develop the RFP (includes scope of work, technical and cost criteria, required work plan submittals and schedule).
- Submit the RFP to the DOE and legal review teams.
- Incorporate comments from the review teams and advertise the RFP.
- Review and rank the submitted proposals.
- Request an oral presentation or best and final offer, if necessary.
- Perform the final review and award the contract.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The RFP will be delivered to the project and all proposal submittals will be handled confidentially in accordance with procurement procedures. All records will be sent to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

The Acquisitions/Prime Contract Administration will assign a procurement manager to oversee, organize and assist with the preparation of the RFP. Engineering Services, Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will develop and review the RFP and support the procurement process, as needed. Personnel from these organizations will use charge number G3A19.

Centralized Personnel

Acquisitions/Prime Contract Administration will be used to review the RFP and procure the treatment subcontract. Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, characterization, construction, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Engineering and characterization staff will work closely with the procurement manager to develop the scope of work, technical and cost criteria, list of treatment plans to submit, and treatment schedule. Management and construction will support the development of the RFP and participate in reviews. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 13 summarizes the quantities and/or deliverables anticipated for Task 1. A draft RFP will be delivered to the DOE and legal review teams, and the final RFP will incorporate their comments. It is assumed that there will be 6 vendor proposals submitted and the proposal evaluation team will award the contract without an oral presentation or best and final offer.

TABLE 13
 Quantities for Task 1: Procurement

ITEM	QUANTITY
Draft Request for Proposal	1
Final Request for Proposal	1
Review Vendor Proposals	6
Award Contract	1

2) Task #2 - Prepare Plans

2.1) Scope/Plan

Work plans will be developed in collaboration with the selected treatment vendor using engineering, characterization, and management staff. The vendor will be responsible for obtaining the air permit and any other regulatory permits that may apply to the operation of the equipment. A Safe Work Plan, QA/QC Plan and Treatment Plan will be prepared, with the site requirements for safe work and QA/QC met by the first two submittals and the Treatment Plan providing the information required for the DOE and EPA/OEPA reviews. Activities and deliverables for this scope of work include:

- Obtain Air Permit and other regulatory permits, if needed.
- Prepare the Safe Work Plan (includes prepare the treatment pad, movement of soil to and from the pad, operation of treatment equipment and maintenance activities).
- Develop the QA/QC Plan (includes stockpile management on the treatment pad, run-on and run-off controls, operating conditions and documentation).
- Prepare the draft Treatment Plan (includes work scope, soil quantities, organic COCs, criteria for pass/fail, bench-scale test plan, reporting requirements, analytical tests, and secondary waste streams).
- Submit the draft Treatment Plan to DOE for review.
- Incorporate DOE comments and submit the draft Treatment Plan to EPA/OEPA for review.

- Obtain EPA/OEPA comments and prepare the response-to-comments package.
- Prepare the final Treatment Plan after obtaining EPA/OEPA approval.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Work plans will be delivered to the project and DOE. The Treatment Plan and Air Permit will be delivered to DOE and EPA/OEPA for review and approval. Upon receipt of EPA/OEPA approval, the Treatment Plan and Air Permit will be distributed to the project, DOE and EPA/OEPA. All records will be sent to ECDC.

The scope of work identified above will be executed using subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will be responsible for obtaining all necessary regulatory permits and must provide a project manager to assist with the preparation of the work and treatment plans. Subcontractor costs will be billed to G3A19.

Matrixed Personnel

Engineering Services, Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will develop and review the plans, as needed. Personnel from these organizations are the only individuals who will use charge number G3A19.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. The Waste Acceptance Organization will review the plans, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

The Safe Work Plan, QA/QC Plan and Treatment Plan will be completed by project staff from the management, engineering, characterization, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. The plans will summarize safe work objectives, QA/QC controls, soil volume, COCS, run-on and run-off controls for staging the soil on the treatment plan, the treatment equipment and operation, verification testing of the treated soil, analytical methods and detection limits, and data reduction to demonstrate pass/fail criteria. Execution of the treatment work will not begin until EPA/OEPA approval is received and the final Treatment Plan is released. Project Controls will provide cost and schedule support.

2.2) Quantification

Table 14 summarizes the quantities and/or deliverables anticipated for Task 2. The subcontractor will be responsible for obtaining the air permit and, if needed, any other regulatory permits associated with the operation of the equipment. The Safe Work Plan, QA/QC Plan and Treatment Plan will be prepared and reviewed by appropriate functional areas and DOE. DOE comments will be incorporated and the draft Treatment Plan will be submitted to the EPA/OEPA for review. A RTC package will be prepared for the EPA/OEPA comments prior to finalizing the Treatment Plan. These plans will cover all organically contaminated soil in Areas 3A, 4A and 4B.

TABLE 14
 Quantities for Task 2: Prepare Plans

ITEM	QUANTITY
Air Permit	1
Safe Work Plan	1
QA/QC Plan	1
Draft Treatment Plan	1
EPA/OEPA Response-to-Comments Package	1
Final Treatment Plan	1

3) Task #3 - Site Preparation

3.1) Scope/Plan

Site preparation activities will begin during the EPA/OEPA review of the draft Treatment Plan. The treatment pad will be configured and electric hook-ups will be installed to the support trailers for heat, lights and the radiation-control station. Outside lights will also be required to illuminate the treatment area for 24-hour operation. Bottled drinking water will be provided in all trailers and portable toilets will be set-up outside of the radiation-control trailer. Upon receipt of EPA/OEPA approval of the final Treatment Plan, the vendor's equipment will be mobilized and set-up, utility hook-ups will be completed, the SSR will be conducted, and bench-scale testing will begin. Based on the documented results of the bench-scale testing, the system will be set for optimal operation and the treatment process will be verified by TCLP testing prior to initiating full-scale treatment. Specific activities and deliverables include:

- Prepare the treatment pad: install access controls, place concrete curb for run-on/run-off controls, configure stockpile areas, install tie-downs for tarps and run electric and water lines to the pad.
- Prepare the propane tank pad: install pedestals, rent the propane tank, set tank on the pad and run the gas line to the treatment pad.

- Set up the radiation-control and office trailers and run electric and water lines to the trailers.
- Install lighting around the pad to allow 24-hour operation.
- Mobilize and set-up the treatment equipment.
- Conduct the SSR to demonstrate safe operation.
- Perform bench-scale tests to optimize the treatment process and prepare the test report to document the results.
- Treat the first batch of soil and verify the treatment process by TCLP testing.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The bench-scale test report and TCLP results will be delivered to the project, DOE and EPA/OEPA prior to full-scale production. All records will be sent to ECDC.

The scope of work identified above will be executed using subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The construction subcontractor will be responsible for all site-preparation activities, with the exception of set-up activities associated with the treatment equipment. The treatment subcontractor will be responsible for setting up the equipment, demonstrating safe start up and operation within the limits of the air permit. Subcontract costs will be charged to G3A19.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will participate in the SSR. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number G3A19.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction and Treatment Support Contractors will assist with subcontract issues, such as renting the propane tank and arranging for weekly filling of the tank. Infrastructure Services will assist with the set-up and maintenance of the trailers. Security/EM Services will provide access control and emergency response. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontractors and FEMP labor force to ensure all activities are performed in a safe and timely manner. Construction management will oversee the site-preparation activities and engineering will direct the safe set-up of the treatment equipment. Management and engineering will review and approve the test report prior to DOE and EPA/OEPA review. Project Controls will provide cost and schedule support.

3.2) Quantification

Table 15 summarizes the quantities and/or deliverables anticipated for Task 3. The work perimeter is estimated as 2,000 feet, and construction fencing will be placed around this perimeter to establish access controls. The treatment pad measures approximately 350 feet by 150 feet, requiring 1,000 linear feet of 6-inch-high concrete curb to establish run-on and run-off controls. The soil staging area will be approximately 150 feet by 150 feet, and 12 tie downs are needed to hold the stockpile tarp in place. A radiation-control trailer, office trailer, and propane tank must be obtained and set up to support the 24-hour-a-day treatment operation. Eight light poles and light banks will be installed around the treatment pad and electric feed will be run to the lights. The vendor will mobilize and set up their equipment and the site will provide the electrical, water and gas tie ins. After the utilities have been tied to the equipment, the SSR will be performed and the system will be brought on line. Six bench-scale tests will be performed to examine the treatment time variability as a function of PCE, TCE and DCE concentrations. The test report will document the results of these tests and note the optimal operating conditions and contingency plan in the event the soil treatment is not successful. A full-scale test will be performed after the optimal operating conditions have been established and 2 samples will be collected from the treated soil for TCLP testing. Continuous full-scale operation will begin if the soil samples pass the TCLP test.

TABLE 15
 Quantities for Task 3: Site Preparation

ITEM	QUANTITY
Construction Fencing, linear feet	2,000
6-Inch-High Concrete Curb, linear feet	1,000
Tarp Tie Downs and Anchors	12
Radiation-Control Trailer	1
Office Trailer	1
Propane Tank, 20,000 lbs.	1
Light Poles	8
Light Banks, 4 Lights per Bank	8
Electric Feed to Light Banks	8
Mobilize and Set-Up Treatment Equipment	1
Electric tie-in (480 V) for Treatment Equipment	1
Water tie-in for Treatment Equipment	1

Propane Gas Tie-in for Treatment Equipment	1
Safety Start-Up Review	1
Bench-Scale Tests	6
Bench-Scale Test Report	1
full-scale Test	1
Verification Samples	2
TCLP Tests	2

4) Task #4 - Treatment

4.1) Scope/Plan

Treatment of the 1,800 yd³ of soil will begin after the initial TCLP tests verify the success of the treatment process. Soil will be treated 24-hours a day six days a week, with one day allowed for equipment maintenance and housekeeping activities. Treated soil will be staged in a temporary stockpile and a sample for TCLP testing will be collected for every 50 yd³ of soil. When TCLP results indicate the soil has passed treatment, the soil will be hauled to the OSDF. Soil treatment will continue until all Area 3A soil is treated, followed by treatment of Area 4A soil. Specific activities and deliverables for this work include:

- Load stockpiled soil into treatment vessel and perform low-temperature thermal desorption for the designated time period.
- Unload the treated soil and stage the soil in the designated treated stockpile.
- Perform equipment maintenance and housekeeping activities.
- Collect a sample for TCLP testing for every 50 yd³ of treated soil.
- Ship the sample to an off-site lab for TCLP testing and request a Level D QA/QC data package.
- Verify and validate the laboratory report (Level D) and assign pass/fail to the treated soil.
- Haul the treated soil to the OSDF if the TCLP test passes; retreat the soil if the TCLP test fails.
- Continue treatment with Area 4A soil (see scope under G4A19) when Area 3A soil is depleted.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The TCLP results will be delivered to the project, DOE and EPA/OEPA to document the pass/fail decision. All records will be sent to ECDC.

The scope of work identified above will be executed using subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will operate the treatment system, perform standard maintenance activities and maintain the necessary regulatory permits. Subcontract costs will be charged to G3A19.

Matrixed Personnel

Environmental Monitoring will be used to collect samples of treated soil and deliver the samples to Analytical Laboratory Services. Analytical Laboratory Services will log samples into the system and ship samples to off-site labs for TCLP testing. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level D data packages will be delivered to the project. Personnel from these organizations are the only individuals who will use charge number G3A19.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, SOWs for off-site labs, and statistical reduction of data. The Waste Acceptance Organization will review the treatment report prior to hauling the soil to the OSDF. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Project Controls will provide cost and schedule support.

4.2) Quantification

Table 16 summarizes the quantities and/or deliverables anticipated for Task 4. Based on the characterization data in the Area 3A/4A IRDP, there are 1,800 yd³ of organically contaminated soil in Area 3A that require treatment. A soil sample will be collected for every 50 yd³ of treated soil and the samples will be submitted to an off-site laboratory for TCLP testing. A laboratory report will be prepared and issued for every 12 samples and the reports will be validated to QA/QC Level D. Soil will be treated until it passes the TCLP test for PCE, TCE and DCE, and the successfully treated soil will be hauled to the OSDF. Treatment will continue with soil from Area 4A (see scope under G4A19) when all Area 3A soil is depleted.

TABLE 16
Quantities for Task 4: Treatment

ITEM	QUANTITY
Treat Soil, cubic yards	1,800
Soil Samples	36
TCLP Tests	36
Laboratory Reports	3
Level D Validation Package	3
Haul Soil to OSDF, cubic yards	1,800

SECTION 5

2.0 SCHEDULE

Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	Timeline																	
					FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11							
G3A17 AREA 3A / LSP EXC CONTROL / CERTIFICATION																						
GG3A170330	Area 3A Utility Trench Sampling	29DEC05	03MAR06	40																		
GG3A170420	Area 3A Sampling	29DEC05	03MAR06	40																		
GG3A170340	Area 3A Utility Trench Sample Analysis	11JAN06	03MAY06	71																		
GG3A170430	Area 3A Sample Analysis	11JAN06	03MAY06	71																		
GG3A170350	Area 3A Utility Trench Data E/V/Stat	19JAN06	22MAY06	77																		
GG3A170440	Area 3A Data E/V/Stat	19JAN06	22MAY06	77																		
GG3A170450	Area 3A Cert Report	04MAY06	06JUN06	20																		
GG3A170460	Area 3A EPA Review Cert Report	07JUN06	11JUL06	35																		
G3A18 AREA 3A / LSP OFFSITE WASTE DISPOSITION																						
GG3A180110	Area 3A Procurement	08JUL04	01SEP04	36																		
GG3A180120	Area 3A Container Receipt, Prep, Loading	02SEP04	03MAR06	334																		
GG3A180130	Area 3A Shipping and Disposal	05OCT04	04APR06	334																		
G3A19 AREA 3A / LSP ONSITE WASTE TREATMENT																						
GG3A190100	Area 3A Procurement	09AUG05	02FEB06	108																		
GG3A190110	Area 3A Prepare Plans	31OCT05	08MAY06	114																		
GG3A190120	Area 3A Site Preparation	09MAY06	07AUG06	57																		
GG3A190130	Area 3A Treatment	08AUG06	06MAR07	128																		
GCJ31 AREA 3A/4A PREDESIGN FY01																						
GGCJ310100	Area 3A/4A Pre-design - FY01	01DEC00	29MAR01	73																		
GCRD4 AREA 3A/4A DESIGN FY01																						
GGCRD40100	Area 3A/4A Design - FY01	01DEC00	31MAY01	111																		
GCRD6 LIME SLUDGE PONDS DESIGN FY01																						
GGCRD60100	Lime Sludge Pond Design - FY01	01DEC00	31MAY01	111																		

FLUOR FERNALD © Primavera systems, Inc.	Start Date Finish Date Data Date Run Date	01DEC00 27DEC09 01DEC00 10SEP01 16:12	BLCF - GG01	Sheet 2 of 2	SOILS PROJECT 1.1.G.E AREA 3A SOIL REMEDIATION	Early Bar Progress Bar Critical Activity	Date Revision Checked/Approved	F06-048

SECTION 5

3.0 MANPOWER PLANS

Manpower Planning Sheet (CR2)

MPS # 1GE01 AREA 3A/LSP TITLE III

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006															
				Q1	Q2	Q3	Q4																																
608 Area 3A Pre-cert/Certification	10/03/2005	09/29/2006																																					
618 Area 3A Exc. Control Characterization	04/01/2004	09/30/2005																																					
625 Area 3A Interim Restoration	10/02/2006	12/29/2006																																					
626 Lime Sludge Pond Excavation	04/01/2004	09/30/2004																																					
629 Area 3A: Excavation	04/01/2004	06/30/2005																																					
Engineering & Design			0.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC			0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & H Industrial Hygienist Tech.			0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:				2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.30	0.30	0.20	0.00	0.30	0.30	0.30	0.20	0.30	0.30	0.30	0.20	0.30	0.30	0.30	0.20	0.00	0.00				

Manpower Planning Sheet (CR2)

MPS # 1GE01 AREA 3A/LSP TITLE III

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4																
608 Area 3A Pre-cert/Certification	10/03/2005	09/29/2006																				
618 Area 3A Exc. Control Characterization	04/01/2004	09/30/2005																				
625 Area 3A Interim Restoration	10/02/2006	12/29/2006																				
626 Lime Sludge Pond Excavation	04/01/2004	09/30/2004																				
629 Area 3A: Excavation	04/01/2004	06/30/2005																				
Engineering & Design	Engineer Piping/Mechanic		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC	QA Engineer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Industrial Hygienist Tech.		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Manpower Planning Sheet (CR2)

MPS # 1GE02 AREA 3A/LSP SITE PREP/EXCAVATION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006											
				Q1	Q2	Q3	Q4																												
608 Area 3A Precent/Certification	10/03/2005	09/29/2006	1.60	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
618 Area 3A Exc. Control Characterization	04/01/2004	09/30/2005	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625 Area 3A Interim Restoration	10/02/2006	12/29/2006	6.10	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
626 Lime Sludge Pond Excavation	04/01/2004	09/30/2004	0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
629 Area 3A: Excavation	04/01/2004	06/30/2005	0.10	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & H Safety Engineer			0.20	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC																																			
QA/QC Tech.																																			
Environmental Safety & H Rad Tech																																			
Waste Management																																			
Waste Engineer																																			
Hazwat																																			
Motor Vehicle Operator																																			
Sheet Totals:			9.20	0.00	0.00	0.40	0.10	0.00	0.70	0.00	2.80	2.80	1.60	0.80	0.00																				

SECTION 5

4.0 ESTIMATE

G3A13

AREA 3A/LSP TITLE III

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2007

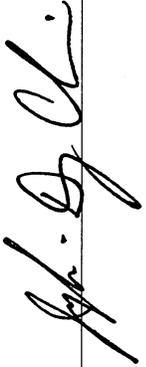
PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: G3A1
CHARGE NO: G3A13
COMMENT NO F06-048

Resource: Res Dept:	ENGMEC	ENGINEER MECH/PIPING Overtime:	Class:			EOC:			LABOR			
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Yr Hours:		0.0	0.0	39.4	164.0	82.6	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	39.4	203.3	285.9	301.0	301.0	301.0	301.0	301.0	301.0
Yr Total Cost:		0	0	2,889	12,750	6,863	1,356	0	0	0	0	0
Cum Total Cost:		0	0	2,889	15,639	22,502	23,858	23,858	23,858	23,858	23,858	23,858

Resource: Res Dept:	INHTEC	INDUST HYGIENIST TEC Overtime:	Class:			EOC:			LABOR			
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Yr Hours:		0.0	0.0	45.2	188.4	94.9	17.3	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	45.2	233.7	328.6	345.9	345.9	345.9	345.9	345.9	345.9
Yr Total Cost:		0	0	2,012	8,882	4,781	944	0	0	0	0	0
Cum Total Cost:		0	0	2,012	10,895	15,676	16,620	16,620	16,620	16,620	16,620	16,620

Resource: Res Dept:	QACENG	QA ENGINEER Overtime:	Class:			EOC:			LABOR			
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10	
Yr Hours:		0.0	0.0	50.7	211.4	106.5	19.4	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	50.7	262.1	368.6	388.0	388.0	388.0	388.0	388.0	388.0
Yr Total Cost:		0	0	2,753	12,149	6,539	1,292	0	0	0	0	0
Cum Total Cost:		0	0	2,753	14,902	21,441	22,733	22,733	22,733	22,733	22,733	22,733

Resource: Res Dept:	GRAND TOTALS:	Class:			EOC:			LABOR				
		Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	135.3	563.8	284.0	51.8	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	135.3	699.1	983.1	1,034.9	1,034.9	1,034.9	1,034.9	1,034.9	1,034.9
Yr Total Cost:		0	0	7,654	33,782	18,183	3,592	0	0	0	0	0
Cum Total Cost:		0	0	7,654	41,436	59,619	63,210	63,210	63,210	63,210	63,210	63,210

CAM  CONTROL TEAM 

G3A14

AREA 3A/LSP SITE PREP/EXCAVATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2006

PBS: OHFN06

WBS: 1.1.G.E

CTRL ACCT: G3A1

CHARGE NO: G3A14

COMMENT NO F06-034, F06-048

Resource:	Res Dept:	RADTEC	RADTEC	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
				EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
	949			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		44.2	0.0	138.4	1,729.9	712.7	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:		44.2	44.2	182.6	1,912.5	2,625.2	2,625.2	2,625.2	2,625.2	2,625.2	2,625.2	2,625.2			
Yr Total Cost:		1,506	0	5,568	73,729	32,454	0	0	0	0	0	0			
Cum Total Cost:		1,506	1,506	7,075	80,804	113,257	113,257	113,257	113,257	113,257	113,257	113,257			

Resource:	Res Dept:	S&HENG	SAFETY ENGINEER	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
				EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
	949			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		44.2	0.0	34.5	431.1	177.6	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:		44.2	44.2	78.7	509.8	687.4	687.4	687.4	687.4	687.4	687.4	687.4			
Yr Total Cost:		2,197	0	2,024	26,801	11,797	0	0	0	0	0	0			
Cum Total Cost:		2,197	2,197	4,221	31,022	42,819	42,819	42,819	42,819	42,819	42,819	42,819			

Resource:	Res Dept:	SERVSUB	EQUIP	SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS	
				EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB
	949			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Units:		53,391.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Units:		53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0	53,391.0			
Yr Total Cost:		53,391	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:		53,391	53,391	53,391	53,391	53,391	53,391	53,391	53,391	53,391	53,391	53,391			

Resource:	Res Dept:	WISE	CONSTRUCTION	SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS		SUBCONTRACTORS	
				EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB
	949			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Units:		75,348.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Units:		75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0	75,348.0			
Yr Total Cost:		75,348	0	0	0	0	0	0	0	0	0	0			
Cum Total Cost:		75,348	75,348	75,348	75,348	75,348	75,348	75,348	75,348	75,348	75,348	75,348			

Resource:	Res Dept:	WSTENG	ENGINEER	LABOR		LABOR		LABOR		LABOR		LABOR		LABOR	
				EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
	949			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	9.1	114.3	47.1	0.0	0.0	0.0	0.0	0.0	0.0			
Cum Hours:		0.0	0.0	9.1	123.4	170.5	170.5	170.5	170.5	170.5	170.5	170.5			
Yr Total Cost:		0	0	551	7,292	3,210	0	0	0	0	0	0			
Cum Total Cost:		0	0	551	7,843	11,053	11,053	11,053	11,053	11,053	11,053	11,053			

PBS: OHFN06
 WBS: 1.1.G.E
 CTRL ACCT: G3A1
 CHARGE NO: G3A14
 COMMENT NO F06-034, F06-048

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2004-2006

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	220.9	0.0	0.0	200.2	2,502.9	1,031.2	0.0	0.0	0.0	0.0
Cum Hours:	220.9	220.9	220.9	421.1	2,924.0	3,955.2	3,955.2	3,955.2	3,955.2	3,955.2
Yr Total Cost:	139,169	0	0	1,508,714	5,795,672	4,686,690	0	0	0	0
Cum Total Cost:	139,169	139,169	139,169	1,647,884	7,443,556	12,130,245	12,130,245	12,130,245	12,130,245	12,130,245




CAM _____ CONTROL TEAM _____

63414

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3A

WBS NUMBER: 1.1.G.E

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-003

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	AE Estimate	<input checked="" type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input checked="" type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Scope of the cost estimate includes Area 3A Soils excavation. The excavated soils along with concrete rubble and other debris will be hauled and dumped to OSDF. Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to Nevada Test Site. Soils and debris that do not meet the OSDF radiological or physical WAC will be placed at SP-7 until shipped to Envirocare.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3A
WBS NUMBER: 1.1.G.E
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-04-003

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 50-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A
- Waste Program Management dollars provided by the Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3A
WBS NUMBER: 1.1.G.E
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-04-003

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and or any other published estimating source. See attachment APPENDIX "A" and APPENDIX "B".

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and or other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX "C".

RISK BUDGET:

N/A

CONTINGENCY:

Contingency is excluded from the target estimate.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3A

WBS NUMBER: 1.1.G.E

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-003

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Excavate, load, haul and dump soil, sand, gravel, concrete rubble and other debris to the OSDF, SP - 7 or the Soil Treatment Area
- Area Isolation Trench around the Perimeter
- Excavate utility trenches and remove bedding materials and piping debris.
- Installation & removal of safety and erosion control fencing.
- Installation of storm water control, diversion and or ditches in the area for water run-off control.
- Off - Day - Dust Control is an allowance of \$ 50,000.
- Reshaping the excavated slope to 5:1 and hydro seed it for stabilization.
- Premobilization, mobilization, demob; Labor, materials and construction equipment.
- Bulking factors are estimated as follows:
 - Concrete rubble 1.33
 - Soils/Sand/Gravel 1.15
 - Piping Debris 2.00
- Temporary Facilities & Utility Hook-up is included in Mobilization on the Detail Sheet and not on the Summary Sheet.
- Misc. Equip. Rental is included in the Detail Sheet and not on the Summary Sheet.
- Premium time

EXCLUSIONS:

- Permits and fees.
- FF G & A (Home Office Expense).
- FF Construction Management
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.
- Sampling, air monitoring and testing of soils.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3A

WBS NUMBER: 1.1.G.E

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-003

- Soil processing (treatment)
- Shipping and disposal cost at Envirocare or NTS.
- White metal box cost
- Delays in construction caused by unidentified contamination of soil, water and debris.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3A
 ESTIMATE #: C2-2001-04-003
 CLIENT: DOE
 WBS #: 1.1.G.E

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

Fluor Fernald, Inc.

ITEM DESCRIPTION	M/H	RATE	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	TOTAL \$
SITE PREPARATION	8,325		\$196,870	\$125,798	\$152,970	\$84,700	\$560,338
EXCAVATION	93,935		\$2,377,276		\$84,000	\$1,226,300	\$3,687,576
STORM WATER MANAGEMENT	14,595		\$351,560	\$15,000	\$102,770	\$204,700	\$674,030
INTERIM RESTORATION	5,425		128,403	50,000	85,960	107,390	\$371,753
DIRECT FIELD COSTS TOTAL	122,281	\$24.98	\$3,054,109	\$190,798	\$425,700	\$1,623,090	\$5,293,697
SUPERVISION - CONTRACTOR	23,400		\$762,322				\$762,322
SMALL TOOLS & CONSUMABLES	-	-	-		\$61,100		\$61,100
MISC. EQUIP. RENTAL	-	-	-				
TEMPORARY FACILITIES							
TEMPORARY UTILITY HOOK-UP							
JOB CLEAN-UP	1,834		\$45,800		\$15,300		\$61,100
PER DIEM / SUBSISTANCE	-	-	-				
HEALTH PHYSICS S/C	837		\$20,900		\$56,000		\$76,900
CERCLA - TRAINING	925		\$23,100				\$23,100
GET/SITE ACCESS & JOB SPECIFIC TRAINING	1,062		\$26,500				\$26,500
PAYROLL BURDENS & BENEFITS	-	-	\$2,241,700				\$2,241,700
OVERHEAD & PROFIT	-	-	-	\$1,709,300			\$1,709,300
BOND	-	-	-	\$133,300			\$133,300
SALES TAX	-	-	-		\$33,500	\$97,400	\$130,900
INDIRECT FIELD COSTS TOTAL	28,058		\$3,120,322	\$1,842,600	\$165,900	\$97,400	\$5,226,222
DIRECT & INDIRECT FIELD COSTS TOTAL	150,339	\$41.07	\$6,174,431	\$2,033,398	\$591,600	\$1,720,490	\$10,519,919
TARGET ESTIMATE							(FY 01 DOLLARS) \$10,519,919

ESTIMATE PERFORMED BY ESTIMATING SERVICES

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO. C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

FACTORS

FIXED PRICE \$	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
DFC DOLLARS	\$3,054,109	\$190,798	\$425,700	\$1,623,090	\$56,000	\$5,349,697
IFC COST FACTOR	2.0217	-	1.1795	1.0000	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2123	1.2123	1.2123	1.2123	1.2123	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.4510	1.2123	1.5157	1.2851	1.2851	
BASE ESTIMATE \$'s	\$7,485,551	\$231,313	\$645,242	\$2,085,813	\$71,965	\$10,519,885
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.4510	1.2123	1.5157	1.2851	1.2851	
FPS TARGET ESTIMATE (FY00 \$)	\$7,485,551	\$231,313	\$645,242	\$2,085,813	\$71,965	\$10,519,885

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G62.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO. C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

**Direct Field Cost
w / FACTORS**

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
		(ASSIGN OR PRORATE PPE MAT'L.S's)-->				56000	
	SITE PREPARATION	196870 \$482,520	125798 \$152,510	152970 \$231,860	84700 \$108,850		\$975,740
	EXCAVATION	2377276 \$5,826,650		84000 \$127,320	1226300 \$1,575,900	56000 \$71,960	\$7,601,830
	STORM WATER MANAGEMENT	351560 \$861,670	15000 \$18,190	102770 \$155,770	204700 \$263,060		\$1,298,690
	INTERIM RESTORATION	128403 \$314,710	50000 \$60,620	85960 \$130,290	107390 \$138,010		\$643,630
TOTAL DIRECT FIELD COSTS w/FACTORS							\$10,519,890

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 11-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

ITEM NO	SITE PREPARATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
	PREMOBILIZATION												
	A Insurance Certificates, List of Sub-Tier Contractors Procurement Documents, Safe Work Plans, QA/QC Plan, Construction and Engineering Documentation Acceptable baseline Schedules Duration 8 wks	1	LS	40	320	65.00			\$20,800				\$20,800
	MOBILIZATION												
	SIC Office Trailer	18	mo			23.57	300		\$5,398	\$500			\$5,398
	Survey and Engineering Controls	1	LS				3,000	500	\$3,000	\$500			\$4,000
	Install Utilities	1	LS	60	60	22.69	1,000	500	\$1,400	\$500			\$2,900
	Other misc. requirements as required.	1	LS	100	100	22.69	500	500	\$2,300	\$500			\$3,300
	SIC Storage Trailer	18	mo				300		\$5,400	\$500			\$5,400
	D SURVEY & STAKE AREA	24	ACRE	60	1677	21.49		154	\$36,050	\$2,400	\$3,700		\$42,150
	D INSTALL WARNING SIGNS	100	EA	2	175	21.49		0.87	\$3,750	\$2,000	\$90		\$5,840
	D SAFETY FENCE 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE, ETC.	5500	LF	0.03	192	21.49		1.62	\$4,130	\$8,910			\$13,040
	D REMOVE CHAIN LINK FENCE	2200	LF	0.09	231	21.49		2.15	\$4,960	\$4,730			\$9,690
	D DOUBLE SWING PIPE GATES IN RAD FENCE, 36" WIDE (INCL. ALL HARDWARES)	7	EA	32	261	21.49		500	\$5,610	\$10,500	\$3,500		\$19,610
	D 8' HIGH, 9 GA. CHAIN LINK FENCE (INCL. ALL HARDWARES)	1100	LF	0.13	167	21.49		2.20	\$3,580	\$9,350	\$2,510		\$15,440
	D DOUBLE SWING GATE, 8' HIGH, 20' OPENING (INCL. ALL HARDWARES)	1	EA	20	23	21.49		375	\$500	\$950	\$380		\$1,830
	D FENCING 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE IN CERT. BUFFER AREA	7100	LF	0.03	248	21.49		1.62	\$5,330	\$11,500			\$16,830
	D ALLOWANCE FOR U.S. COAST GUARD RING BUOY W/ POST, ROPE AND HANGER @ 200'	50	EA	4	204	21.49		200	\$4,380	\$10,000			\$14,380

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 11-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS			COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
D	TEMP. DITCH W/ SILT FENCE W/ WOOD STAKES	3400	LF	0.10	396	21.49					\$3,230		\$11,740
D	SEED & MULCH DISTURBED AREA, 5700' X 25'	4	ACRE	20	93	21.49					\$14,000	\$2,000	\$18,000
D	DEWATERING (INCL. PUMPS, 2" & 3" HOSES AND 10 INLETS)	1	LOT	750	874	21.49					\$47,330		\$66,100
D	CONNECTIONS TO EXISTING STORM DRAIN	1	LOT	40	47	21.49					\$1,000		\$2,000
D	TEMPORARY DITCH LINER, TYPE 'B'	375	LF	0.08	35	21.49					\$750		\$1,500
D	EROSION CONTROL BLANKET	1055	SY	0.07	86	21.49					\$5,280		\$7,130
D	DUMPED ROCK FILL DITCH, 400 LF, 100 LB. AVE	333	TON	0.04	16	21.49					\$5,000	\$350	\$5,680
D	CONSTRUCT SEDIMENT TRAP (20 CY CAPACITY	1	LOT						10,000				\$10,000
D	DEMO CONCRETE PEDESTALS & PIERS	1	LOT						3,000				\$3,000
D	EXTEND REINF. CONC WALLS (4000 PSI CONC PLACED BY CRANE)	20	CY	3	70	21.49					\$2,400	\$1,000	\$4,900
D	WALL FORMWORK	2000	SF	0.25	582	22.43					\$3,780		\$16,840
D	PRECAST CONC JUNCTION BOX (4' X 4' X 6' DEEP)	1	EA	45	52	22.43					\$4,000		\$5,180
D	STORM DRAIN PIPE - 18" CMP	110	LF	0.70	90	21.49					\$1,470		\$3,400
D	SAW CUT CONCRETE ROAD , 12" THICK	80	LF	0.40	37	22.43						\$840	\$840
D	TRENCH BOX	1	EA						1,000				\$1,000

AREA 3A EXCAVATION,
 (FY01 DOLLARS)

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 11-May-01
 ESTIMATOR: Nlemade
 LOCATION: Fernald
 TASK NO.: G3A14

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
0	24" RCP HALF PIPE	50	LF	1.00	58	21.49			\$1,250		\$1,110		\$2,360
0	PATCH CONCRETE ROAD	6	CY	5	35	22.43			\$780		\$750		\$1,530
0	TEMPORARY DRAINAGE SUMPS	3	EA	120.00	419	21.49		4,000	\$9,010			\$12,000	\$21,010
0	INSTALL 15' DIA. PIPE PLUG	2	EA	24.00	56	21.49		50	\$1,200		\$60	\$100	\$1,360
0	INSTALL 12' DIA. PIPE PLUG	2	EA	24	56	21.49		50	\$1,200		\$40	\$100	\$1,340
0	INSTALL 10' DIA. PIPE PLUG	5	EA	32.00	186	21.49			\$4,010				\$4,010
0	EXCAVATE DRAINAGE CHANNEL & BUILD EARTHIER DIKES FOR CERTIFICATION DRAIN	1	LOT	460	536	23.60		6,680	\$12,650	\$10,000		\$6,680	\$19,330
0	ALLOWANCE FOR GMA PROTECTION PUMPING	1	LOT										\$10,000
0	AREA ISOLATION TRENCHING	3200	LF	0.20	745	23.60		13.30	\$17,590			\$42,560	\$60,150
0	MOB & DEMOB OF TRENCHING MACHINE	1	LOT						\$3,250				\$8,000
0	DECON OF TRENCH MACHINE	1	LOT	96	138	23.60							\$3,250
0	TRENCHER CHAIN WILL BE TURNOVER TO CM UPON COMPLETION DUE TO CONTAMINATION (QUOTES FROM TRENCOF FOR MDL. 1460)	1	EA										\$80,000
0	CONSTRUCT ENTRANCE INTO SP-7, 230' X 24' X 1'												
0	GRADE & COMPACT SUBGRADE	613	SY	0.02	14	23.60		1.50	\$340			\$920	\$1,260
0	STABILIZATION MATTING BELOW AGGREGATE	700	SY	0.01	9	21.49		1.50	\$190		\$1,050		\$1,240
0	GRADE & COMPACT AGGREGATE BASE	230	CY	0.14	38	23.60		11.20	\$890		\$4,110	\$2,580	\$7,580
Subtotal Direct Cost: Site Preparation												\$580,338	

AREA 3A EXCAVATION,
 (FY01 D S)

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 11-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Rate	SIC					
mC	DEMOLISH & SIZE REDUCE CONCRETE FDN AND SLABS ABOVE BASEMENTS	18,295	BCY	0.5	17,007	\$21.48			\$365,310			\$79,030	\$444,340
mC	LOAD & HAUL DEBRIS TO OSDF IN 9 MONTHS OUT OF 12MO	18,249	LCY	0.06	2,036	\$21.49			\$43,750			\$35,220	\$78,970
mC	LOAD & HAUL DEBRIS TO OSDF IN 3 MONTHS (WINTER TIME) (DOUBLE HANDLED)	6,083	LCY	0.50	5,655	\$21.48			\$121,470			\$26,280	\$147,750
mC	HYDRAULIC RAM CASING REMOVAL(24" DIA C.I.) (CUT LONGITUDINALLY IN HALF, 10' SECTION)	440	LF	0.15	123	\$21.48			\$2,640			\$4,060	\$6,700
mC	HAUL TO OSDF (CRUSH BY DOZER PRIOR TO HAULING)	1	LOT	16	30	21.48			\$640			\$1,500	\$2,140
mD	ASPHALT PAVEMENT REMOVAL (@ PARKING) (HAUL DISTANCE 5000 FT (ROUND TRIP)	1167	BCY	0.45	753	21.48			\$16,170			\$10,220	\$26,390
mD	HAUL TO OSDF (CRUSH BY DOZER PRIOR TO HAULING)	1,552	LCY	0.05	111	21.48			\$2,390			\$3,000	\$5,390
mC	EXCAVATE ABOVE WAC SOIL.	6000	BCY	0.30	3,347	23.60			\$78,980			\$39,300	\$118,280
mC	LOAD & HAUL TO SP - 7	7980	LCY	0.05	742	23.60			\$17,510			\$15,400	\$32,910
mC	EXCAVATE SPECIAL MATERIALS	25	BCY	2.7	125	23.60			\$2,960			\$400	\$3,360
mC	LOAD SPECIAL MATERIALS & PLACE AT SMTA	33	LCY	0.2	12	21.48			\$270			\$150	\$420
mD	EXCAVATE ABOVE FRL / BELOW OSDF - SOIL. (ASSUME 30% HAULED TO DEWATERING AREA)	48,180	BCY	0.13	8,634	23.60			\$203,760			\$128,160	\$331,920
mD	EXCAVATE ABOVE FRL / BELOW OSDF - SOIL. (ASSUME 70% DRY SOIL HAULED TO OSDF AREA)	112,420	BCY	0.13	20,146	23.60			\$475,440			\$299,040	\$774,480

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 11-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

ITEM ID	EXCAVATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	SIC					
mD	LOAD & HAUL DRY SOIL (ROUND TRIP 5000 FT)	129,283	LCY	0.05	9,267	23.60			1.93			\$249,520	\$468,220
mD	EXCAVATE LIME SLUDGE POND - SOIL (ASSUME 100% HAULED TO DEWATERING AREA)	30,000	BCY	0.13	5,376	23.60			2.66			\$79,800	\$206,670
mD	LOAD & HAUL SOIL TO DEWATERING & THEN TO OSDF (ROUND TRIP 5000 FT)	89,907	LCY	0.10	12,889	23.60			1.93			\$173,520	\$477,700
mD	BACKFILL @ GMA, 5' ENCROACHMENT AREA (ASSUME BORROW AREA ROUND TRIP 12000')	3,410	FCY	0	2,200	23.60			1.82			\$6,210	\$58,130
mD	EXCAVATE OVERBURDEN ON UTILITY TRENCHES (ASSUME SOIL HAULED TO OSDF AREA)	6,857	BCY	0.16	1,573	23.60			2.66			\$18,240	\$55,360
mD	LOAD & HAUL SOIL FROM TRENCHES TO OSDF	7,886	LCY	0.05	565	23.60			1.93			\$15,220	\$28,560
mC	EXCAVATE UTILITY PIPES	750	BCY	0.20	279	23.60			6.25			\$4,690	\$11,270
mC	LOAD & HAUL AWAC PIPING TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	150	LCY	0.06	17	23.60			1.93			\$290	\$680
mC	LOAD & HAUL PIPING TO OSDF	1,350	LCY	0.05	125	23.60			1.93			\$2,610	\$5,570
mD	EXCAVATE BEDDING MATERIALS	5,884	BCY	0.16	516	23.60			2.66			\$5,990	\$18,170
mC	LOAD & HAUL SOIL TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	677	LCY	0.06	29	23.60			1.93			\$500	\$1,180
mD	LOAD & HAUL SOIL TO OSDF (ASSUME 90% OF MATERIALS HAULED TO OSDF)	6,090	LCY	0.05	167	23.60			1.93			\$4,490	\$8,430
mC	DEMO CONC. DUCT BANKS & HAUL TO OSDF (AFTER OVERBURDEN SOIL IS EXCAVATED)	156	CY	1.850	537	23.60			6.25			\$980	\$13,640
mC	DEMO CONC. MANHOLES & CATCHBASINS	270	CY	1	467	23.60			6.25			\$1,690	\$12,710
mC	EXCAVATE ABOVE WAC / RCRA SOIL . HAUL TO TREATMENT	1,800	BCY	0.13	418	23.60			2.66			\$4,790	\$14,660
mC	LOAD & HAUL ABOVE WAC / RCRA SOIL (AFTER TREATMENT HAULED TO OSDF)	2070	LCY	0	231	\$23.60			1.93			\$4,000	\$9,450
D	SEEDING UPON COMPLETION OF EXCAVATION	24	ACRE	20	559	21.49			3,500			\$12,000	\$108,010
	PREMIUM TIME (1.5 TIMES PER HR. OVER 40 HRS.)	1	LOT										\$216,116
	Subtotal Direct Cost Excavation	1	LOT		93,035	\$25.31						1,220,300	\$3,687,576

AREA 3A EXCAVATION (FY01 C S)

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 11-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

ITEM NO	STORM WATER MANAGEMENT	QTY	UNIT	MAN-HOURS			COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C	Mat'l					
D	BUFFER AREA MAINTENANCE (DEWATERING BY 2 HP ELEC TRASH PUMPS)	8	EA	100	932	26.4		1,500	\$24,600		\$12,000		\$36,600	
D	3" DIA DISCHARGE PIPES & FITTINGS	950	LF	0.10	111	26.40		3.38	\$2,920		\$3,210		\$6,130	
D	2" DIA FLEXIBLE SUCTION HOSE	500	LF	0.01	6	26.40		2.59	\$150		\$1,300		\$1,450	
D	35' WOOD POWER POLES	54	EA	8	524	22.66		350	\$11,870		\$18,900	\$3,190	\$33,960	
D	#6 CU OVERHEAD LINE	9,600	LF	0.01	112	22.66		0.52	\$2,530		\$4,990		\$7,520	
D	STEP DOWN XFMR, 30 KVA, 3 PHASE, 60 HZ (POLE MOUNTED)	2	EA	14	33	22.66		2,500	\$740		\$5,000		\$5,740	
D	COMB STARTER W/DISCONNECT SWITCH	8	EA	4.00	37	22.66		915.00	\$840		\$7,320		\$8,160	
D	SILT FENCE W/WOOD STAKES	850	LF	0.01	10	21.49		0.30	\$210		\$260		\$470	
D	FENCING 4" HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE, ETC.	12,000	LF	0.03	419	21.49		1.62	\$9,010		\$19,440		\$28,450	
D	MAINTAIN EROSION CONTROLS (16 HRS/WK FOR 18 MONTHS)	1	LOT	1,248	1454	21.49		15000.00	\$31,240		\$15,000	\$15,000	\$46,240	
D	MAINTAIN HAUL ROADS (ASSUME 1 WK PER MONTH FOR 18 MONTHS)	1	LOT	720	839	21.49		80,000	\$18,020		\$80,000	\$80,000	\$98,020	
D	ALLOWANCE FOR RAD CONTROL FACILITIES	3	EA					5,000					\$15,000	
D	PROVIDE DUST CONTROLS ON HAUL ROADS & EXCAVATION AREAS FOR 14 MONTHS CONSTRUCT BUFFER AREA RDS (AFTER COMPLETION OF EXCAVATION, 3000 X 12 FT.	1	LOT	8,330	9703	21.49		78,469	\$208,510		\$78,470	\$78,470	\$286,980	
D	GRADE & COMPACT SUBGRADE	6,000	SY	0.0	140	21.49		1.50	\$3,000		\$30,350	\$9,000	\$12,000	
D	GRADE & COMPACT AGGREGATE BASE	1,700	CY	0.1	277	21.49		11.20	\$5,960		\$19,040	\$19,040	\$55,350	
D	PREMIUM TIME (15 TIMES PER HR. OVER 40 HRS)	1	LOT						\$31,960				\$31,960	
Subtotal Direct Cost: Storm Water Management										\$351,560	\$15,000	\$102,770	\$204,700	\$574,030

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 11-May-01
 ESTIMATOR: Nemado
 LOCATION: Fernald
 TASK NO.: G3A14

ITEM NO	INTERIM RESTORATION	QTY	UNIT	MAN-HOURS		COST/UNIT		LABOR	S/C	MATL	EQUIP	TOTAL
				Unit	Total	Rate	Rate					
D	INTERIM REMEDIATION GRADING (USE CUT & FILL OPERATIONS TO CONSTRUCT 5 TO 1 SLOPES - ALL SOILS WILL BE EXISTING IN AREA 3A)	24,293	CY	0	3,537	21.49		\$76,010			\$75,070	\$151,080
D	SEEDING UPON COMPLETION OF 5 TO 1 SLOPE	24	ACRE	20	559	21.49	3,500	\$12,020		\$84,000	\$12,000	\$108,020
D	GROUND WATER CONTROL DURING INTERIM GRADING (ASSUME 4 DAYS PER MONTH FOR 3 MONTH PERIOD)	1	LOT	120	140	21.49	1,200	\$3,000		\$1,200		\$4,200
D	TEMP DITCH W/ SILT FENCE W/ WOOD STAKES	800	LF	0	93	21.49	0.95	\$2,000		\$760		\$2,760
D	MAINTAIN EROSION CONTROL DURING INTERIM RESTORATION FOR 3 MONTHS	1	LOT	240	280	21.49	3,500	\$6,010			\$3,500	\$9,510
D	PROVIDE DUST CONTROL ON HAUL ROADS FOR 3 MONTHS	1	LOT	595	693	21.49	16,815	\$14,890			\$16,820	\$31,710
D	OFF-DAY DUST CONTROL (ALLOWANCE)	1	LOT				50,000		\$50,000			\$50,000
D	DEMobilization											
D	Complete Punch List items.	1	LS	20	23	22.69		\$530				\$530
D	Remove Trailer and Change Facilities.	1	LS	20	23	22.69		\$530				\$530
D	Remove all Utilities	1	LS	20	23	22.69		\$530				\$530
mC	Decontaminate Equipment	1	LS	10	19	22.69		\$420				\$420
D	Loadout contractors equipment.	1	LS	20	23	22.69		\$530				\$530
D	Other area requirements	1	LS	10	12	22.69		\$260				\$260
	PREMIUM TIME (1.5 TIMES PER HR. OVER 40 HRS)	1	LOT					\$11,673				\$11,673
Subtotal Direct Cost Interim Restoration		1	LOT		5,425	\$23.67		\$120,403	\$50,000	\$85,960	\$107,390	\$371,753

AREA 3A F
 (FY01
 RS)

DETAIL ESTIMATE WORKSHEETS
Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
ESTIMATE NO.: C2-2001-04-003
CLIENT: DOE
WBS NO.: 1.1.G.E

DATE: 11-May-01
ESTIMATOR: Menade
LOCATION: Fernald
TASK NO.: G3A14

ITEM NO.	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
			Unit	Total		Labor	S/C	Mat'l					
Project Staffing (5 - 10hrs Shift for 18 months) For Premium Time \$ = total dollars(50hrs) multiplied by 0.2 and multiplied by 0.5													
1.	1950	hr	1.0	1950	\$54.42				106,119				\$106,119
2.	3900	hr	1.0	3900	37.85				147,615				\$147,615
3.	1950	hr	1.0	1950	33.19				64,721				\$64,721
4.	2925	hr	1.0	2925	30.34				88,745				\$88,745
5.	975	hr	1.0	975	28.33				27,622				\$27,622
6.	1950	hr	1.0	1950	28.05				54,698				\$54,698
7.	3900	hr	1.0	3900	19.31				75,309				\$75,309
8.	3900	hr	1.0	3900	25.58				99,762				\$99,762
9.	1950	hr	1.0	1950	14.58				28,431				\$28,431
Premium time 50% for 10 hrs per wk									\$69,302				\$69,302
TOTAL						23,400		\$32.58					\$762,300
												762,300	\$762,300
												16,800	\$16,28
												1	LOT
												Subtotal Direct Cost	

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

Fluor Fernald, Inc.

EXAMPLE:

STANDARD CHART MANHOURS = NET 100
 EFFICIENCY FACTORS:
 * SITE SPECIFIC (SEE APPENDIX A) 12% 12.0
 S/T = BASE UNIT MANHOURS 112

OVERTIME PRODUCTIVITY FACTOR 0.00% 0
 (SEE DETAIL WORKSHEET BACK-UP) 112

* TASK SPECIFIC (confined space, high elevation, congestion, etc.) 0.0% 0
 112

* PPE SPECIFIC (Based on current data and estimating knowledge)

	PPE LEVEL										
	D		Mod. 'D'		Mod. "C"		C		C+		
PRODUCTIVITY HOURS (AS A %) / ADD MH's	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's
4.00%	4	28.00%	31	66.00%	74	74.00%	83	96.00%	108		
(AS A MULTIPLIER) / TOTAL HRS	1.04	116.5	1.28	143.4	1.66	185.9	1.74	194.9	1.96	219.5	
TOTAL MULTIPLIER w/SITE PROD.	1.1648		1.4336		1.8592		1.9488		2.1952		

NOTE : Use the Default Productivity Factor of 'mC' for working in a contaminated area if the Safety Level cannot be determined.

(SEE FD FERNALD ESTIMATING SERVICES REFERENCE MANUAL IM-6006 8.10)

Total hours worked in a specific PPE level divided by 10 hour working days = (PPE) ManDays to determine material cost of PPE's.
 (SEE APPENDIX C - HEALTH PHYSICS)

12.0	Man Days	14.0	Man Days	19.0	Man Days	19.0	Man Days	22.0	Man Days
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THESE EFFICIENCY FACTORS WERE APPLIED INDIVIDUALLY THROUGHOUT THE ESTIMATE AT A TASK SPECIFIC LEVEL, TO OBTAIN A MORE ACCURATE ACCOUNT OF OVERALL EFFICIENCY IMPACT DUE TO PPE REQUIREMENTS IN HANDLING CONTAMINATED AND HAZARDOUS WASTE.

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

PPE MULTIPLIER DEVELOPEMENT

		D	mD	mC	C	C+
CREW SIZE & MAKE-UP	STANDARD	7	7	7	7	7
	WORKER-BUDDY	0	0	0	0	0
	SUPPORT TEAM	0	0	0	0	0
	TOTAL CREW	7	7	7	7	7
CREW SIZE RATIO		1.00	1.00	1.00	1.00	1.00
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68
PPE LABOR PRODUCTIVITY FACTOR		1	1	0.86	0.82	0.75
NET PRODUCTIVITY RATIO		0.96	0.78	0.602	0.574	0.51
NET PRODUCTIVITY MULTIPLIER		1.04	1.28	1.65	1.74	1.96

These factors were based on Tables 6.1 and 6.2, Moderate Work Efforts, 66F to 85F temperature of 'Hazardous Waste Cost Control' by R.A.Selg. Modifications were made to reflect a 10 hour work day and no buddy system or support team for levels D, mC and C. The worker-buddy and support team members, if required, may be covered under Construction Mgmt. (Rad Techs).

AVAILABLE WORK TIME FACTOR		D	mD	mC	C	C+
TOTAL WORK MINUTES per D	4 - 10's	600	600	600	600	600
ADDITIONAL SITE SAFETY MEETINGS NOT INCLD. IN BAS	QUANTITY	1	1	1	1	1
	MINUTES	25	25	25	25	25
TOTAL		25	25	25	25	25
PPE DON & DOFFING (ADJUST LEVEL D per WORK PLAN)	QUANTITY	0	0	3	3	3
	MINUTES	0	0	15	15	20
TOTAL			0	45	45	60
WORK BREAKS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	2	2	2	2
	MINUTES	N/A	15	15	15	15
TOTAL			30	30	30	30
MOBILIZATION - ROUND TRIPS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			60	60	60	60
COOLDOWNS PER DAY ** (4 OUT OF 12 MONTHS) 33.33%	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			20	20	20	20
AIR TANK REPLACEMENT	QUANTITY	N/A	N/A	N/A	N/A	N/A
	MINUTES	N/A	N/A	N/A	N/A	N/A
TOTAL						
AVAILABLE WORK TIME		575	465	420	420	405
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68

NOTE: Adjust 'Work Minutes per Day' basis to: 5 - 8's, or leave as 4 - 10's. Any other circumstances, over-ride the minutes per day.

** Assumption based on work performed in May, June, July & August, pro-rating cost over one year. Adjust % to individual circumstances.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

Fluor Fernald, Inc.

PPE's - PERSONAL PROTECTIVE EQUIPMENT

DESCRIPTION	UNIT	UNIT COST	* NO. OF CHANGE OUTS PER WORKER PER DAY				
			Man Days (TOTAL HOURS worked in PPE's Div. by WORK HOURS / DAY)				
PPE LEVEL	C / C+ / B	F/HF MASK w/RESP.&CART.	MAN DAYS	MAT'L'S's	PPE LEVEL	(DOUBLE PPE)	
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0		C / C+
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0		C / C+
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0		C / C+
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0		C / C+
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0		C / C+
APR CARTRIDGES - DISPOSABLE	PR	\$6.98	3	0	\$0		C / C+
SUB-TOTAL		\$17.42	3		\$0		

\$/MD = \$0.00

PPE LEVEL	mC	FULL DRESS w/ FACE SHIELD	MAN DAYS	MAT'L'S's	PPE LEVEL	
LT.WT. DISPOSABLE COVERALLS W/HOOD & BOOTIES	PR	\$4.46	3	3120	\$41,743	mC
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	3120	\$2,246	mC
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	3120	\$2,433	mC
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	3120	\$9,547	mC
SUB-TOTAL		\$5.98	3		\$55,969	

\$/MD = \$17.94

SUBCONTRACTOR REQUIRED PURCHASES			QTY. PER WKR.	NO. OF WORKERS	MAT'L'S's	PPE LEVEL
RUBBER BOOT COVERS-(1)PR.PER WORKER	PR	\$12.70	6	0	\$0	D/C/B
APR w/HALF FACE MASK - (1) PER WORKER	EA	\$22.30	6	0	\$0	C
APR w/FULL FACE MASK - (1) PER WORKER	EA	\$174.00	6	0	\$0	C
SCBA	EA	\$1,894.00	2	0	\$0	B
COOL VESTS	EA	\$137.50	6	0	\$0	C/B
THERMO STRIPS	EA	\$50.00	6	0	\$0	C/B
SUB-TOTAL					\$0	

TOTAL PPE's =

MAT'L'S's
\$56,000

(FORWARD TO PAGE 2 OF 2)

OTHER PPE's SUCH AS HARD HAT, SAFETY GLASSES/GOGGLES, STEEL TOED SAFETY SHOES, HEARING PROTECTION, ARE CONSIDERED THE SUBCONTRACTORS RESPONSIBILITY AND ARE COVERED IN HIS OVERHEAD EXPENSE. COSTS OF FD FERNALD SUPPLIED PPE's, SUCH AS COTTON COVERALLS, EXCHANGE OF RUBBER BOOT COVERS AND RESPIRATORS FOR CHANGEOUTS AND CLEANING OF SAME IS INCURRED BY FD FERNALD AND COSTS ARE NOT INCLUDED AS PART OF PROJECT COSTS AT THIS TIME.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO.: C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

Fluor Fernald, Inc.

-MEDICAL MONITORING -

MEDICAL - PHYSICAL and IN-VIVO MONITORING - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
PHYSICAL (3hrs), IN-VIVO (1hr)						
BASELINE PHYSICALS	1	4	37	148	\$24.98	\$3,700
ANNUAL PHYSICALS	1	4	37	148	\$24.98	\$3,700
EXIT (TERMINATION) PHYSICALS (IN-VIVO)	1	1	37	37	\$24.98	\$920
SUB-TOTAL						\$8,320

RADIATION IN-VITRO SURVEILLANCE - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BI-MONTHLY BIOASSAY	9	1	37	333	\$24.98	\$8,320
SUB-TOTAL						\$8,320

RANDOM DRUG TESTING

	TESTS	HRS	TOTAL HOURS	AVG. RATE	LABOR \$'s	
	86	2	172	\$24.98	\$4,300	
NO. OF WKRS. TESTED	TESTING DAYS PER YR.	AVG. NO. OF TESTS PER DAY	CHANCE/ DAY FOR TEST	NO. OF WKRS. FOR THIS ESTIMATE	CHANCES /DAY FOR TEST FOR PROJECT	CONSTR WORKING DAYS
2340	226	10	0.0042735	59	0.2521	340

LABOR \$'s
THRU
SAFETY LABOR \$'s

WORK DELAYS CAUSED BY MONITORING 0.0% \$3,862,231 \$0

LABOR \$'s

WORK DELAYS CAUSED BY RAD CHECKING 0.0% \$3,862,231 \$0

	TOTAL LABOR	TOTAL MAT'L	GRAND TOTAL
TOTAL HEALTH PHYSICS	\$20,900	\$56,000	\$76,900

(FORWARD TO ESTIMATE SUMMARY SHEET)

ACTIVITY DURATIONS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3A
 ESTIMATE NO. C2-2001-04-003
 CLIENT: DOE
 WBS NO.: 1.1.G.E

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3A14

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
CONSTRUCTION:	11-May-01	01-Oct-03	30-Jun-04	31-Mar-05		18.0 MONTHS
						0 MONTHS
TOTAL						18.0 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
a.	37.7 MONTHS
b.	0 MONTHS

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
OPERATIONS						0 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
	0 MONTHS

ACTIVITY DURATION IS USED IN DETERMINING NUMBER of WORKERS for CERCLA/SAT TRAINING HOURS and HEALTH PHYSICS COSTS.

G3A17

AREA 3A/LSP EXC CTRL/CERTIFICATION

Fluor Fernald, Inc.

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001 & 2004-2006

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
 WBS: 1.1.GE
 CTRL ACCT: G3A1
 CHARGE NO: G3A17
 COMMENT NO F06-034, F06-048

Resource: DRFCAD												
Res Dept: 949												
	LABOR											
	Overtime: EOC: SAL											
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:	0.0	0.0	0.0	0.0	39.8	33.2	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	39.8	73.0	73.0	73.0	73.0	73.0	73.0	73.0
Yr Total Cost:	0	0	0	0	1,553	1,383	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	1,553	2,936	2,936	2,936	2,936	2,936	2,936	2,936

Resource: ENSMGR												
Res Dept: 949												
	LABOR											
	Overtime: EOC: SAL											
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	142.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	142.0	142.0	142.0	142.0	142.0	142.0	142.0
Yr Total Cost:	0	0	0	0	0	10,006	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	10,006	10,006	10,006	10,006	10,006	10,006	10,006

Resource: ENSREP												
Res Dept: 949												
	LABOR											
	Overtime: EOC: SAL											
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:	79.0	0.0	0.0	0.0	0.0	597.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	79.0	79.0	79.0	79.0	79.0	676.0	676.0	676.0	676.0	676.0	676.0	676.0
Yr Total Cost:	3,315	0	0	0	0	33,471	0	0	0	0	0	0
Cum Total Cost:	3,315	3,315	3,315	3,315	3,315	36,786	36,786	36,786	36,786	36,786	36,786	36,786

Resource: ENSTEC												
Res Dept: 949												
	LABOR											
	Overtime: EOC: SAL											
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:	22.0	0.0	0.0	0.0	0.0	812.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	22.0	22.0	22.0	22.0	22.0	834.0	834.0	834.0	834.0	834.0	834.0	834.0
Yr Total Cost:	623	0	0	0	0	30,726	0	0	0	0	0	0
Cum Total Cost:	623	623	623	623	623	31,349	31,349	31,349	31,349	31,349	31,349	31,349

Resource: HEOOPR												
Res Dept: 949												
	LABOR											
	Overtime: EOC: HOU											
	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Yr Hours:	0.0	0.0	0.0	6.4	178.5	105.1	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	6.4	184.9	290.0	290.0	290.0	290.0	290.0	290.0	290.0
Yr Total Cost:	0	0	0	239	7,021	4,416	0	0	0	0	0	0
Cum Total Cost:	0	0	0	239	7,260	11,676	11,676	11,676	11,676	11,676	11,676	11,676

Fluor Fernald, Inc.

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2004-2006

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

Resource: INDMEC
Res Dept: 949

INDUSTRIAL MECHANIC

LABOR

EOC: HOU

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	24.3	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	24.3	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
Yr Total Cost:	0	0	0	0	0	0	0	0	107	107	1,021	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128
Cum Total Cost:	0	0	0	0	0	0	0	0	107	107	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128	1,128

CHEMIST

LABOR

EOC: SAL

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0	579.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986	29,986

LAB MANAGER

LABOR

EOC: SAL

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371	4,371

LAB TECH

LABOR

EOC: SAL

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	
Cum Hours:	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0	550.0
Yr Total Cost:	945	945	945	945	945	945	945	945	945	945	19,160	20,105	20,105	20,105	20,105	20,105	20,105	20,105	20,105	20,105
Cum Total Cost:	945	945	945	945	945	945	945	945	945	945	19,160	20,105	20,105	20,105	20,105	20,105	20,105	20,105	20,105	20,105

MOTOR VEHICLE OPER

LABOR

EOC: HOU

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr Hours:	0.0	0.0	0.0	0.0	0.0	6.4	6.4	138.1	138.1	75.4	75.4	220.0 <td>220.0</td> <td>220.0</td> <td>220.0</td> <td>220.0</td> <td>220.0</td> <td>220.0</td>	220.0	220.0	220.0	220.0	220.0	220.0	
Cum Hours:	0.0	0.0	0.0	0.0	0.0	6.4	6.4	138.1	138.1	75.4	75.4	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0	220.0
Yr Total Cost:	0	0	0	0	0	219	219	4,984	4,984	2,909	2,909	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112
Cum Total Cost:	0	0	0	0	0	219	219	5,203	5,203	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112	8,112

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2004-2006

PBS: OHFN06
WBS: 1.1.GE
CTRL ACCT: G3A1
CHARGE NO: G3A17
COMMENT NO F06-034, F06-048

Resource: PJSMGR		PROJECT SUPPORT MGR												
Res Dept:	949	LABOR												
OverTime:	Class:	EOC:	SAL											
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	Oct 09-	Oct 09-
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 10	Sep 10
Yr Hours:			0.0	0.0	0.0	3.2	79.4	45.3	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	3.2	82.7	128.0	128.0	128.0	128.0	128.0	128.0	128.0
Yr Total Cost:			0	0	0	174	4,542	2,770	0	0	0	0	0	0
Cum Total Cost:			0	0	0	174	4,716	7,486	7,486	7,486	7,486	7,486	7,486	7,486
Resource: QACENG		LABOR												
Res Dept:	949	LABOR												
OverTime:	Class:	EOC:	SAL											
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	Oct 09-	Oct 09-
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 10	Sep 10
Yr Hours:			0.0	0.0	0.0	11.8	63.4	136.8	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	11.8	75.2	212.0	212.0	212.0	212.0	212.0	212.0	212.0
Yr Total Cost:			0	0	0	640	3,645	8,401	0	0	0	0	0	0
Cum Total Cost:			0	0	0	640	4,285	12,686	12,686	12,686	12,686	12,686	12,686	12,686
Resource: RADTEC		LABOR												
Res Dept:	949	LABOR												
OverTime:	Class:	EOC:	SAL											
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	Oct 09-	Oct 09-
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 10	Sep 10
Yr Hours:			0.0	0.0	0.0	0.0	69.2	322.8	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	0.0	69.2	392.0	392.0	392.0	392.0	392.0	392.0	392.0
Yr Total Cost:			0	0	0	0	2,950	14,698	0	0	0	0	0	0
Cum Total Cost:			0	0	0	0	2,950	17,647	17,647	17,647	17,647	17,647	17,647	17,647
Resource: S&HENG		LABOR												
Res Dept:	949	LABOR												
OverTime:	Class:	EOC:	SAL											
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	Oct 09-	Oct 09-
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 10	Sep 10
Yr Hours:			0.0	0.0	0.0	11.8	31.8	21.4	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	11.8	43.6	65.0	65.0	65.0	65.0	65.0	65.0	65.0
Yr Total Cost:			0	0	0	693	1,979	1,419	0	0	0	0	0	0
Cum Total Cost:			0	0	0	693	2,672	4,091	4,091	4,091	4,091	4,091	4,091	4,091
Resource: SERVSUB		SUBS												
Res Dept:	949	SUBS												
OverTime:	Class:	EOC:	LAB		SUB									
			Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	Oct 09-	Oct 09-
			Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 10	Sep 10
Yr Units:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:			0	0	0	0	0	0	0	0	0	0	0	0

INCLUDES ESCALATION COSTS

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001 & 2004-2006

PBS: OHFN06
WBS: 1.1.GE
CTRL ACCT: G3A1
CHARGE NO: G3A17
COMMENT NO F06-034, F06-048

Resource:	WISE Res Dept: 949	WISE CONSTRUCTION		SUBCONTRACTORS		EOC:		Class:		Sub	
		Overtime:									
Yr Units:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Units:		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		0.0	0.0	0.0	0.0	4,385.5	3,654.6	0.0	0.0	0.0	0.0
Cum Total Cost:		0.0	0.0	0.0	0.0	4,385.5	8,040.0	8,040.0	8,040.0	8,040.0	8,040.0
		0	0	0	0	4,888	4,192	0	0	0	0
		0	0	0	0	4,888	9,080	9,080	9,080	9,080	9,080
GRAND TOTALS:											
Yr Hours:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Cum Hours:		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Total Cost:		135.0	0.0	0.0	39.7	603.0	3,474.3	0.0	0.0	0.0	0.0
Cum Total Cost:		135.0	135.0	135.0	174.7	777.7	4,251.9	4,251.9	4,251.9	4,251.9	4,251.9
		4,883	0	0	1,964	31,670	245,557	0	0	0	0
		4,883	4,883	4,883	6,847	38,517	284,075	284,075	284,075	284,075	284,075

[Signature]
CONTROL TEAM

G3A18

AREA 3A/LSP OFFSITE WASTE DISPOSITION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2006

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: G3A1
CHARGE NO: G3A18
COMMENT NO F06-048

Resource: BUYCON Res Dept: 949	BUYER/CONTRACTS ADMIN	Class:	EOC: SAL	LABOR
Overtime:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04
Yr Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Cum Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0
Cum Total Cost:	0 0	0 0	0 0	0 0

Resource: CLERKS Res Dept: 949	CLERKS	Class:	EOC: SAL	LABOR
Overtime:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04
Yr Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Cum Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0
Cum Total Cost:	0 0	0 0	0 0	0 0

Resource: HAZWAT Res Dept: 949	HAZWAT	Class:	EOC: HOU	LABOR
Overtime:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04
Yr Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Cum Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0
Cum Total Cost:	0 0	0 0	0 0	0 0

Resource: HEOOPR Res Dept: 949	HEAVY EQUIP OPERATOR	Class:	EOC: HOU	LABOR
Overtime:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04
Yr Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Cum Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0
Cum Total Cost:	0 0	0 0	0 0	0 0

Resource: MAT300 Res Dept: 949	MATERIAL OBJCLASS300	Class:	EOC: MAT	MATERIAL
Overtime:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04
Yr Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Cum Hours:	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:	0 0	0 0	0 0	0 0
Cum Total Cost:	0 0	0 0	0 0	0 0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2008

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: G3A1
CHARGE NO: G3A18
COMMENT NO F06-048

Resource: Res Dept:	MPCREP 949	MATL PROP CTRL REP Overline:	Class:		EOC:		LABOR							
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	1.2	2.9	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	1.2	31.1	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
Yr Total Cost:		0	0	46	1,208	591	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	46	1,254	1,845	1,845	1,845	1,845	1,845	1,845	1,845	1,845	1,845

Resource: Res Dept:	MVOOPR 949	MOTOR VEHICLE OPER Overline:	Class:		EOC:		LABOR							
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	5.0	62.0	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	5.0	66.9	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5
Yr Total Cost:		0	0	169	2,237	985	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	169	2,406	3,391	3,391	3,391	3,391	3,391	3,391	3,391	3,391	3,391

Resource: Res Dept:	OPRMGR 949	OPERATIONS MGR Overline:	Class:		EOC:		LABOR							
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	2.4	61.3	28.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	2.4	63.7	91.9	91.9	91.9	91.9	91.9	91.9	91.9	91.9	91.9
Yr Total Cost:		0	0	146	4,009	1,969	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	146	4,155	6,124	6,124	6,124	6,124	6,124	6,124	6,124	6,124	6,124

Resource: Res Dept:	PIPFTR 949	PIPE FITTER Overline:	Class:		EOC:		LABOR							
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	2.4	30.0	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	2.4	32.4	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8
Yr Total Cost:		0	0	88	1,172	516	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	88	1,260	1,776	1,776	1,776	1,776	1,776	1,776	1,776	1,776	1,776

Resource: Res Dept:	PRJIMGR 949	PROJECT MANAGER Overline:	Class:		EOC:		LABOR							
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Hours:		0.0	0.0	1.2	29.5	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	1.2	30.7	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2
Yr Total Cost:		0	0	125	3,288	1,608	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	125	3,413	5,021	5,021	5,021	5,021	5,021	5,021	5,021	5,021	5,021

Fluor Fernald, Inc.

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2006

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: G3A1
CHARGE NO: G3A18
COMMENT NO F06-048

Resource: Res Dept:	QA ENGINEER Overtime:	LABOR											
		Class:		EOC:		SAL		Class:		EOC:		SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
	0.0	0.0	0.0	6.0	150.2	68.8	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	6.0	156.2	225.0	225.0	225.0	225.0	225.0	225.0	225.0	
	0	0	0	326	8,634	4,225	0	0	0	0	0	0	
Cum Total Cost:						13,185		13,185		13,185		13,185	

Resource: Res Dept:	RAD ENGINEER Overtime:	LABOR											
		Class:		EOC:		SAL		Class:		EOC:		SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
	0.0	0.0	0.0	0.0	58.7	29.6	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	58.7	88.3	88.3	88.3	88.3	88.3	88.3	88.3	
	0	0	0	0	3,465	1,866	0	0	0	0	0	0	
Cum Total Cost:						5,331		5,331		5,331		5,331	

Resource: Res Dept:	RAD TECH Overtime:	LABOR											
		Class:		EOC:		SAL		Class:		EOC:		SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
	0.0	0.0	0.0	2.4	59.4	27.2	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	2.4	61.8	89.0	89.0	89.0	89.0	89.0	89.0	89.0	
	0	0	0	95	2,531	1,239	0	0	0	0	0	0	
Cum Total Cost:						3,865		3,865		3,865		3,865	

Resource: Res Dept:	SAFETY ENGINEER Overtime:	LABOR											
		Class:		EOC:		SAL		Class:		EOC:		SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
	0.0	0.0	0.0	0.0	150.0	75.6	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	150.0	225.6	225.6	225.6	225.6	225.6	225.6	225.6	
	0	0	0	0	9,324	5,021	0	0	0	0	0	0	
Cum Total Cost:						14,345		14,345		14,345		14,345	

Resource: Res Dept:	SAFETY TECH Overtime:	LABOR											
		Class:		EOC:		SAL		Class:		EOC:		SAL	
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
	0.0	0.0	0.0	2.4	59.4	27.2	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	2.4	61.8	89.0	89.0	89.0	89.0	89.0	89.0	89.0	
	0	0	0	81	2,148	1,051	0	0	0	0	0	0	
Cum Total Cost:						3,280		3,280		3,280		3,280	

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004-2006

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: G3A1
CHARGE NO: G3A18
COMMENT NO F06-048

Resource: Res Dept:	TPSREP 949	TECH/PROG SUPT REP		LABOR		EOC:					
		Overline:	Class:	SAL	Class:	SAL	Class:				
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	31.7	16.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	47.7	47.7	47.7	47.7	47.7	47.7
Cum Total Cost:		0	0	0	0	2,061	1,110	0	0	0	3,171

Resource: Res Dept:	TRNLAB 949	TRANSPORT LABORER		LABOR		EOC:					
		Overline:	Class:	HOU	Class:	HOU	Class:				
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	1.2	29.4	13.5	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	1.2	30.6	44.1	44.1	44.1	44.1	44.1
Cum Total Cost:		0	0	0	34	908	444	0	0	0	1,386

GRAND TOTALS:											
Yr Hours:		0.0	0.0	0.0	91.1	1,053.4	476.9	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	91.1	1,144.5	1,621.3	1,621.3	1,621.3	1,621.3	1,621.3
Yr Total Cost:		0	0	0	5,446	69,407	32,893	0	0	0	0
Cum Total Cost:		0	0	0	5,446	74,853	107,746	107,746	107,746	107,746	107,746

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CONTROL TEAM

CAM

Estimate Summary

Area 3A – Waste Disposition

WBS Element – 1.1.G.E

Control Account – G3A1

Charge Number - G3A18

Labor

Labor is broken down by resource code and by activity on the attached matrixed manpower spreadsheet. The backup for the manpower spreadsheet can be found on the Waste Disposition Campaign Estimate Worksheets that were provided by Waste Generator Services (WGS). WGS estimated resource man-hours, which were then rounded to the tenth of an FTE for Man Power Planning (MPP) purposes to be entered into the MPP database on a quarterly basis. This database was then exported to MicroFrame and expanded into monthly estimates. The monthly figures were then summed to provide a total hours by resource for each activity.

Materials

The materials for this account are estimated to be \$22,274. The backup information for this value can be found on the Waste Disposition Campaign Estimate Worksheets that were provided by Waste Generator Services (WGS). There are two worksheets that were provided and summed for the total materials costs. However, WGS included costs for PPE that have been subtracted from this estimate due to the fact the PPE is provided by a centralized group and does not get charged back to the project.

Equipment

N/A

Subcontracts

N/A

SUMMARY: AREA 3A OFFSITE Waste Disposition - MATRIXED

W/E DATE: 30-Apr-01

ACT. ID.	Procurement		Container Prep & Loading		Shipping & Disposal							
RESOURCE	HOURS	TOTAL \$	HOURS	TOTAL \$	HOURS	TOTAL \$	HOURS	TOTAL \$	HOURS	TOTAL \$	HOURS	TOTAL \$
BUYCON	44.1											
CLERKS			22.4		22.4							
HAZWAT			361.6									
HEOOPR			44.2									
MPCREP			22.4		22.4							
MVOOPR			92.5									
OPRMGR			44.2		47.7							
PIPETR			44.8									
PRJMGR			22.1		22.1							
QACENG			112.0		113.0							
RADENG					80.3							
RADTEC			44.1		44.8							
S&HENG					225.6							
S&HITEC			44.2		44.8							
TFSREP					47.7							
TRNLAB			22.0		22.1							
Subtotal	44		876.5		700.9							
% Complete												

TOTALS											
RESOURCE	HOURS	TOTAL \$	TOTAL \$								
BUYCON	44										
CLERKS	45										
HAZWAT	362										
HEOOPR	44										
MPCREP	45										
MVOOPR	93										
OPRMGR	92										
PIPETR	45										
PRJMGR	44										
QACENG	225										
RADENG	80										
RADTEC	89										
S&HENG	226										
S&HITEC	89										
TFSREP	48										
TRNLAB	44										
Total	1,622										
Percent Complete:											

MAT300 includes 6% sales tax.

G3A19

AREA 3A/LSP ONSITE WASTE TREATMENT

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2006-2007

PBS: OHFN06
 WBS: 1.1.G.E
 CTRL ACCT: G3A1
 CHARGE NO: G3A19
 COMMENT NO F06-048

Resource: CRPNTR												
Res Dept: 949												
	CARPENTER			LABOR			LABOR			LABOR		
	Overtime:			EOC:			EOC:			EOC:		
	Class:			HOU			HOU			HOU		
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	894.0	894.0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	36,994	36,994

Resource: ELECTN												
Res Dept: 949												
	ELECTRICIAN			LABOR			LABOR			LABOR		
	Overtime:			EOC:			EOC:			EOC:		
	Class:			HOU			HOU			HOU		
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	3,031.0	3,031.0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	126,922	126,922

Resource: GLMNT												
Res Dept: 949												
	GEN LABOR MAINT			LABOR			LABOR			LABOR		
	Overtime:			EOC:			EOC:			EOC:		
	Class:			HOU			HOU			HOU		
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	728.0	728.0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	23,773	23,773

Resource: HAZWAT												
Res Dept: 949												
	HAZWAT			LABOR			LABOR			LABOR		
	Overtime:			EOC:			EOC:			EOC:		
	Class:			HOU			HOU			HOU		
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	174.7	174.7
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	7,135	7,135

Resource: HEOOPR												
Res Dept: 949												
	HEAVY EQUIP OPERATOR			LABOR			LABOR			LABOR		
	Overtime:			EOC:			EOC:			EOC:		
	Class:			HOU			HOU			HOU		
Yr Hours:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-		
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	236.0	236.0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	9,920	9,920

Resource: MAT300
Res Dept: 949

MATERIAL OBJCLASS300
OverTime:

EOC: MAT
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: MVOOPR
Res Dept: 949

MOTOR VEHICLE OPER
OverTime:

EOC: HOU
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: PIPFTR
Res Dept: 949

PIPE FITTER
OverTime:

EOC: HOU
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: RADENG
Res Dept: 949

RAD ENGINEER
OverTime:

EOC: SAL
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: RADTEC
Res Dept: 949

RAD TECH
OverTime:

EOC: SAL
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: S&HTEC
Res Dept: 949

SAFETY TECH
OverTime:

EOC: SAL
Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Yr																		
Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SUBCONTRACTORS

EOC:
SUB

Class:

SUBS
Overtime:

Resource: **SERVSUB**
Res Dept: **949**

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
Yr Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LABOR

EOC:
SAL

Class:

WASTE ENGINEER
Overtime:

Resource: **WSTENG**
Res Dept: **949**

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CAM

CONTROL TEAM

Estimate Summary

Area 3A – Waste Treatment

WBS Element – 1.1.G.E
Control Account – G3A1
Charge Number - G3A19

Labor

The treatment labor is broken down by resource code and by activity on the attached matrixed manpower spreadsheet. SDFP estimated resource manpower, which were then rounded to the tenth of an FTE for Man Power Planning (MPP) purposes to be entered into the MPP database on a quarterly basis. This database was then exported to MicroFrame and expanded into monthly estimates. The monthly figures were then summed to provide a total hours by resource for each activity. Area 3A, being the first area to have soil to be treated will provide the funding for site preparation. The backup documentation for site preparation is an attached rough order of magnitude (ROM) estimate provided by D. Osborne. This estimate was developed for Waste Generator Services (WGS) who planned to utilize a nearly identical system as the ones discussed in the attached descriptions. The backup documentation for site preparation labor is on this estimate.

Materials

Materials are \$473,800 for site preparation. This is documented on the ROM estimate discussed above.

Equipment

Equipment is estimated to be \$58,700 for site preparation. This is documented on the ROM estimate discussed above.

Subcontracts

Four informal market research type estimates were provided and attached. The average of the four estimates is used as the value for the subcontract for waste treatment of soil from this area. Since Area 3A will be the first area having readily available soil for treatment, the cost for mobilization will be accounted for within this charge number. However, since Area 4B will be the last to have soil available for treatment, the cost for demobilization/decontamination of equipment will not be accounted for within the charge number. The average of the four market research estimates for 1,800yd³ not including demobilization/decontamination of equipment is \$1,089,740.

The total estimated cost for this subcontract is \$1,089,740.

ESTIMATE SUMMARY SHEET

PROJECT: Vacuum Thermal Desorption
ESTIMATE NO.: Wm010301 (ROM Estimate)
CLIENT: DOE
WBS NO.: Later

FACTORS

DATE: 21-Mar-01
ESTIMATOR: D.Usborne
LOCATION: Fernald
TASK NO.: KART1

FIXED PRICE :	LABOR \$	S/C \$	MATL. \$	EQUIP. \$	PPE \$	TOTAL \$
DFC DOLLARS	\$166,000	\$98,538	\$427,700	\$30,600	\$200	\$723,030
IFC COST FACTOR	2.4025	-	1.0449	1.7484	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2094	1.2094	1.2094	1.2094	1.2094	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.9054	1.2094	1.3395	2.2413	1.2819	
BASE ESTIMATE \$'s	\$482,301	\$119,157	\$572,886	\$68,582	\$256	\$1,243,184
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.9054	1.2094	1.3395	2.2413	1.2819	
FPS TARGET ESTIMATE (FY00 \$)	\$482,301	\$119,157	\$572,886	\$68,582	\$256	\$1,243,184

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G65.

ROM Estimate

ESTIMATE SUMMARY SHEET

PROJECT: Vacuum Thermal Desorption
 ESTIMATE NO. Wm010301 (ROM Estimate)
 CLIENT: DOE
 WBS NO.: Later

**Direct Field Cost
w / FACTORS**

DATE: 21-Mar-01
 ESTIMATOR: D.Usborne
 LOCATION: Fernald
 TASK NO.: KART1

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L. \$	EQUIP. \$	PPE \$	TOTAL \$	
		(ASSIGN OR PRORATE PPE MAT'L.\$'s)-->					200	
	PREMOBILIZATION	24000	0	0	0	200		
		\$69,730	\$0	\$0	\$0	\$260	\$69,990	
	MOBILIZATION	2700	6130	2000	1500			
		\$7,840	\$7,410	\$2,680	\$3,360	\$0	\$21,290	
	DEMOBILIZATION	2400	0	0	0			
		\$6,970	\$0	\$0	\$0	\$0	\$6,970	
	Trailers to Support Processing	37400	26400	81600	14200			
		\$108,660	\$31,930	\$109,300	\$31,830	\$0	\$281,720	
	Process Utilities	28800	36000	38100	6800			
		\$83,680	\$43,540	\$318,930	\$15,240	\$0	\$461,390	
	Process Site Modifications	70700	0	500	8100			
		\$205,410	\$0	\$2,010	\$18,150	\$0	\$225,570	
	Equipment to Assist Process	0	2000	104500	0			
		\$0	\$36,280	\$139,970	\$0	\$0	\$176,250	
0		0	0	0	0			
		\$0	\$0	\$0	\$0	\$0	\$0	
0		0	0	0	0			
		\$0	\$0	\$0	\$0	\$0	\$0	
TOTAL DIRECT FIELD COSTS w/FACTORS		(FY01 DOLLARS)					\$1,243,180	

ROM Estimate

DETAIL ESTIMATE WORKSHEETS

PROJECT: Vacuum Thermal Description
 ESTIMATE NO.: Wm010301 (ROM Estimate)
 CLIENT: DOE
 WBS NO.: Labor

DATE: 21-Mar-01
 ESTIMATOR: D.Usborne
 LOCATION: Fernald
 TASK NO.: KART1

Fluor Fernald, Inc.

ITEM NO.	SUMMARY	QTY	UNIT	MAN-HOURS		Ratio	COST / UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Mat'l					
	Sub Contractor													
	PREMOBILIZATION			480					\$24,000					24,000
	MOBILIZATION			120					\$2,700					12,330
	DEMOBILIZATION			160					\$2,400					2,400
	Trailers to Support Processing			1,607					\$37,360					\$159,450
	Process Utilities			1,115					\$28,770					\$309,680
	Process Site Modifications			3,133					\$70,650					\$80,290
	Equipment to Assist Process													\$134,450
	(Not included in this estimate)													
	Assist with Treatment Equipment Installation													
	Move Containized Waste to #12 Pad													
	Process Containers for Treatment													
	Process Soil for Treatment													
	Load & Haul Treated Soil to OSDF													
	Transfer Liquid Waste to AWWT													
	Package & Ship Distilled Product													
	Burial Fee													
	Decon Process Equipment													
	Assist with Treatment Equipment Removal													
	FAIKLC labor													
	FF Engineering													
	Outside Engineering													
	FF Project Management													
	FF Construction Management													
	ORAN costs													
	Subtotal Direct Cost								\$165,880	\$99,630	\$427,700	\$90,630		\$722,640

DETAIL ESTIMATE WORKSHEETS

PROJECT: Vacuum Thermal Desorption
 ESTIMATE NO.: Wm010301 (ROM Estimate)
 CLIENT: DOE
 WBS NO.: Later

DATE: 21-Mar-01
 ESTIMATOR: D. Liborne
 LOCATION: Fernald
 TASK NO.: KART1

Fluor Fernald, Inc.

ITEM NO.	CITY	UNIT	MAN-HOURS			COST/JUNIT			LABOR	S/C	MATL	EQUIP	TOTAL
			Unit	Total	Rate	Labor	S/C	Matl					
PREMOBILIZATION													
		1	LS	160	480	50.00		\$74,000				\$74,000	
A. Insurance Certificates, List of Sub-Tier Contractors Procurement Documents, Safe Work Plans, O/M/C Plan, Project Execution Plan, Construction and Engineering Documentation, Acceptable Baseline Schedules													
			was										
			men										
MOBILIZATION													
		2	mo	40	80	22.69	300	\$900	\$730	\$500	\$500	\$4,000	
		1	LS	80	80	22.69	3,000	\$1,800	\$3,000	\$1,000	\$500	\$2,400	
		1	LS	80	80	22.69	400	\$1,800	\$2,400	\$500	\$500	\$2,800	
		0	ea	120	120			\$2,700	\$6,130	\$2,000	\$1,500	\$12,330	
TOTAL													
DEMOBILIZATION													
		1	LS	20	20	22.69		\$500				\$500	
		1	LS	20	20	22.69		\$500				\$500	
		1	LS	20	20	22.69		\$200				\$200	
		1	LS	20	20	22.69		\$500				\$500	
		1	LS	10	10	22.69		\$200				\$200	
		1	LS	10	10	22.69		\$200				\$200	
TOTAL													
DEMOBILIZATION													
		1	LS	10	10	22.69		\$2,400				\$2,400	

DETAIL ESTIMATE WORKSHEETS

PROJECT: Vacuum Thermal Desorption
 ESTIMATE NO.: WMD10301 (ROM Estimate)
 CLIENT: DOE
 WBS NO.: Labor

DATE: 21-Mar-01
 ESTIMATOR: D. Urborn
 LOCATION: Fernald
 TASK NO.: CART1

Fluor Fernald, Inc.

ITEM NO.	QTY	UNIT	MAN-HOURS		LABOR	SIC	MATERIAL	EQUIP	TOTAL
			Unit	Total					
Trailers to Support Processing									
	24	mo					\$12,600		\$12,600
	6	Lots					\$3,100		\$3,100
	6	Lots					\$74,000		\$74,000
	24	mo					\$12,600		\$12,600
	24	mo					\$11,740		\$11,740
	3	Allow					\$2,100		\$2,100
	3	ea	22,000	93	21.49		\$780	\$390	\$3,170
	3	ea	22,000	93	21.49		\$540	\$540	\$2,540
	3	Lots	32,867	138	21.49		\$1,470		\$4,440
	296	LF	0.213	89	21.49		\$890		\$2,790
	5	ea	9,000	63	21.49		\$5,000		\$6,360
	2	ea	105,000	296	22.66		\$60	\$13,230	\$6,820
	2	ea	178.67	503	26.40		\$15,040		\$40,160
	840	SF					\$1,050		\$4,570
Dismantle trailers									
	296	LF	0.00	33	21.49		\$720		\$720
	3	Lots	19,600	15	21.49		\$1,700		\$1,700
	5	ea	2,000	8	21.49		\$300		\$300
	3	ea	27,000	93	21.49		\$2,000		\$2,000
	3	ea	1,200	10	21.49		\$2,350		\$2,350
Decon trailers - Assumed to be reused									
	30	mo					\$6,000		\$6,000
	15	mo					\$1,350		\$1,350
SUBTOTAL									\$159,490

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 21-Mar-01
 ESTIMATOR: D.Usborne
 LOCATION: Fernald
 TASK NO.: KART1

PROJECT: Vacuum Thermal Desorption
 ESTIMATE NO.: W/m010301 (KOM Estimate)
 CLIENT: DOE
 WBS NO.: Later

ITEM NO.	Description	QTY	UNIT	MAN HOURS			COST/UNIT			LABOR	SIC	MATL	EQUIP	TOTAL
				Unit	Total	Rate	Labor	SIC	Matl					
	Process Utilities													
	Natural Gas	250.581	gal								\$187,940		\$187,940	
	Propane, 20,000/yr, 4.23 lbs/gal, 53 wks	1	ea								\$18,000		\$18,000	
	18,000 gal tank - purchase	1	Allow								\$7,200	\$100	\$7,300	
	18,000 gal tank - installation	1	Allow								\$25,000	\$6,670	\$31,670	
	Electric supply for process 480V, 150a	500	LF	125.00	176	22.66	36,000	7,200	\$3,990				\$3,990	
	Water, 300 gal/day	1,333	LF	1,333	939	20.40		50,000	\$24,780				\$24,780	
	Compressed air	Not Required												
	Drainage treatment	Not Required												
	Fire protection - Use existing site hydrants	Not Required												
	Process Utilities				1,115				\$28,770	\$36,000	\$238,140	\$6,770	\$309,680	
	Process Site Modifications													
	Conc. Ramps 10'W x 10'L / silica x 6" high,	5.56	CY	3.29	26	22.43		104.00	\$580		\$580	\$10	\$590	
	Conc. Cuts, 6" x 8'V, 2400 LF required													
	Process, 500' x 200'													
	Staging, 200' x 200'													
	Containers, 50' x 50'													
	Dowels 5/8" dia x 12", 24" o/c	1200	ea	0.128	215	22.43		1.06	\$4,650			\$1,270	\$5,920	
	Forms 6" high	2400	SF	0.178	427	22.43		1.61	\$13,490			\$3,660	\$17,150	
	Concrete placement	29.63	CY	2.000	59	22.43		100.00	\$1,870			\$2,960	\$4,830	
	Finish	1200	SF	0.029	35	22.43			\$1,100				\$1,100	
	Conc. Surups	Not Required												
	Area Limits fencing	2400	LF	0.028	84	21.49		0.40	\$1,820		\$960		\$2,780	
	Eye wash / shower stations	2	ea						\$740				\$740	
	Air monitoring station - provided by FF	1	ea						\$640		by FF		\$640	
	Area Lighting, 500' x 200'	100,000	SF		2016	22.60			\$45,560				\$45,560	
	Electrical for eye-wash sta.	incl												
	Electrical for air monitoring	incl												
	Process Site Modifications				3,133				\$70,650		\$1,540	\$6,100	\$80,290	
	SUBTOTAL													

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 21-Mar-01
 ESTIMATOR: D.Usborne
 LOCATION: Fernald
 TASK NO.: KART1

PROJECT: Vacuum Thermal Desorption
 ESTIMATE NO.: WMD10301 (ROM Estimate)
 CLIENT: DOE
 WBS NO.: Later

ITEM NO.	QTY	UNIT	MAN HOURS		CONSTRAINT		LABOR	MAT'L	EQUIP	TOTAL
			Unit	Total	Rate	Lab				
S/C Project Staffing										
1. Project Manager	409	hr	1	409	54.42		\$22,250			\$22,250
2. Project Superintendent	204	hr	1	102	37.85		\$3,870			\$3,870
3. Project Engineer	204	hr	1	102	33.19		\$3,390			\$3,390
4. Safety Engineer	409	hr	1	409	30.34		\$12,410			\$12,410
5. Industrial Hygiene Tech	409	hr	1	409	28.33		\$11,590			\$11,590
6. QA/QC Engineer		hr	1		28.05					
7. Office Administration		hr	1		19.31					
8. Contract Administration Scheduler		hr	1		25.58					
9. Clerical		hr	1		14.58					
TOTAL				1,431	30.18		\$53,510			\$53,510
Duration 6435 min / 15 men @ 40hrs per week										

FOR ESTIMATE

Outline of Cost Breakout Treatment and Disposal of Soils at Incinerator Pad and Maintenance Building

	ECC ¹		MSR ²		HP TDU
	Pilot Pit	EC ³ Clean	Steam		
<i>Schedule (days in Production Excluding Mob/Demob)</i>					
Pit Pit @ 1ton/hr EC ³ Clean @ 6ton/hr	2/17	-60	12/7	198	82
Steam @ 3ton/hr, HP TDU @ 4ton/hr (127 = 12hours/7days week etc...)			24/7	99	
Permitting Costs					
Treatment Costs					
Contractor Mobilization	\$300,000	\$400,000	\$75,000		\$75,000
Operations:					
Excavation ⁴					
Debris/Concrete (100yd ³ @ \$24/yd ³) ⁵	\$2,400	\$2,400	\$2,400		\$2,400
Soil (1800yd ³ @ \$10/yd ³)	\$18,000	\$18,000	\$18,000		\$18,000
LTTD Treatment or Steam Treatment (\$ per ton) @ 1800 yd ³ (2500 ton)	\$480 ⁶	\$250 ⁶	\$150 ⁷	\$375,000	\$950,000
Analytical Verification (1 sample per 50 yd ³) ⁶ \$ per sample 1800 yd ³ = 36 samples	\$190 ⁹	\$190 ⁹	\$190 ⁹	\$6,840	\$6,840
Decontamination of Equipment / Demobilization	\$100,000	\$200,000	\$225,000 ¹¹		\$150,000
Disposal Costs					
Treated Soil (\$/ton) OSDF	\$11 ¹⁰	\$11 ¹⁰	\$11 ¹⁰	\$27,500	\$27,500
Liquids Recovered as Part of LTLD (Org. Solv.)/(\$/ton) Incinerator at K-29 Oak Ridge CWM Port Arthur / TWI Incinerators	\$2 ⁷	\$2 ⁷	\$50 ⁷	\$125,000	\$5,000
Solids Recovered as Part of LTLD					
Total Estimated Costs:	\$1,659,740	\$1,284,740	\$854,740		\$1,234,740

1 ECC: Environmental Chemical Corporation

2 MSR: Midwest Soil Remediation

3 OnSite Technology

4 Excavation costs based on Lockheed Green Technologies estimates for 3A/4A Excavation (Feb 2000, Doc 20800-CE-0001 Rev E)

5 Concrete estimated using 90% Design Drawings for 3A/4A Excavation 28Jan2000 (DWG 90X-1900-G-00008 and 00010)

6 Estimated costs submitted by ECC

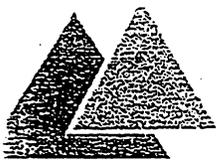
7 Estimated costs submitted by MSR

8 Based on frequency of verifications sampling at the Trap Range

9 Estimated sample analysis cost provided by Grace Ruesink of SMO

10 Cost for OSDF transport and placement based on \$15/yd³ = \$10.80/ton

11 To account for MSR decon/demobilization: Steam Mob cost x 3 (many small parts to decon) - HP TDU Mob cost x 2 (easier to clean)



Midwest Soil Remediation, Inc.

Attention: Frank Miller
Fluor Fernald

Midwest Soil Remediation, Inc. (MSR) operates three indirect heated thermal desorption units (TDUs) that are appropriate for the treatment of chlorinated solvent contaminated soils. These are:

- Steam Plant - 3 to 5 ton/hr closed loop container based system,
- High Performance TDU - 4 to 7 ton/hr two trailer plant with high efficiency primary and condensing train, and
- High Capacity Indirect TDU - 40 to 50 ton/hr twelve trailer plant with high capacity primary and condensing train.

All of these units are described in the attached package, which includes a statement of qualifications for MSR. The High Performance TDU is new to our service line and is described in a technical bulletin.

The high capacity indirect (**HCI**) unit is not presently suitable for operation on radioactive material. Its mobilization charge is prohibitively large for this small of a project. It has completed a similar 32,000 ton chlorinated solvent project with average operation at 45 to 50 ton/hr. If Fluor develops other large projects, this **HCI** unit should be considered for them.

The Steam Plant is routinely used for this type of project and has completed many similar ones. It is normal for us to treat characteristic hazardous waste at the generator's site under the RCRA Subpart I container standards so that the soil is both no longer hazardous, and meets the LDR universal treatment standards (UTS). We would expect to be able to meet your listed treatment standards for the solvents. The Steam Plant has a very small vent rate that is amenable to the redundant HEPA filtration requirement of the nuclear air handling standards.

The High Performance TDU is most suitable to this project and is specifically designed for mixed waste service. Its primary can easily achieve the required operating temperature. Furthermore, in operations on uranium and plutonium contaminated solids we have demonstrated that radioactivity is retained in the primary, and the gas system condensate and vent gas are both non-radioactive.

ESTIMATED TREATMENT COSTS

The Steam Plant has a typical operating cost of about \$75 to \$150 per ton excluding disposal of the treated soil and gas system condensate. The Steam Plant condensate would probably be radioactive and this cost needs to be carefully evaluated. If the historic disposal pricing of the Oak Ridge K-25 incinerator is used for the condensate, then this can add about \$50/ton to the treatment cost. If commercial disposal at the DSSI mixed waste recovery facility is used, then this increment can be as much as ten times higher, or more. It is important to realize that this high condensate disposal cost is not unique to the Steam Plant, but is typical of virtually all conventional thermal desorption units when placed in radioactive waste service. The Steam Plant is relatively easy to install and has a corresponding low mobilization cost of about \$75,000.

The High Performance TDU has an operating cost of about \$180 to \$380 per ton. Since we have shown that the condensate is non-radioactive in operations on uranium, and we have disposed of it at both the CWM Port Arthur and TWI incinerators in the past, the disposal cost for it will add only about \$2/ton to the treatment cost. This is a significant advantage over both the Steam Plant and competitive thermal desorption units in the remediation market. The High Performance TDU is also relatively easy to install, with a mobilization cost of about \$75,000.

EFFECT OF PROJECT SIZE

The costs stated above for the Steam Plant are typical of projects in the size range under consideration by Fluor.

The High Performance unit costs are more sensitive to project size. This is because the unit is a new addition to MSR's service line and is presently carrying relatively high fixed costs. For this reason, we do not presently recommend it for projects as small as 2,000 ton. However, if the projected volume is really in the 5,000 to 10,000 ton range as could be the case at the stated increased volume, then the fixed costs are better managed.

All of the abovementioned costs assume operations consistent with our experience on Superfund and hazardous waste sites. We have developed efficient approach to project planning and execution as is required in this highly competitive market. When a project specification is available for review, we can provide complete cost estimate consistent with your site specific requirements.

PROJECT SCHEDULE

The total project schedule includes time to mobilize and install the unit, the time to process the soil, and the time to decontaminate and demobilize. Mobilization time for both units is similar. Each can be operational within two or three days of arrival at a properly prepared site.

The Steam Plant is suitable for operation either 12 or 24 hours per day. The High Performance TDU is best operated continuously, on a 24/7 or 24/5 schedule. Both have high operational reliability, with on-line factors in excess of 80%. Depending on the soil volume and operating cycle the processing schedule could be over a range of:

Processing Time for Various Scenarios -
Days in Production (Excluding Mob/Demob)

SCENARIO	1,500 yd ³	7,300 yd ³
Steam Plant 12/7	41	198
Steam Plant 24/7	21	99
HP-TDU 24/7	Too small	82

Demobilization is the period of greatest schedule uncertainty. This is because of the need to decontaminate the unit to nuclear free release criteria. The Steam Plant was not designed for radioactive service. Consequently, it has many internal parts that are difficult to access for cleaning. Furthermore, the unit is mostly constructed from carbon steel with its inherent difficulty for decontamination. We would project several weeks of effort to achieve free release status on those components where this is cost effective.

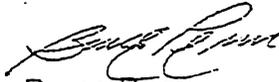
The High Performance TDU on the other hand is designed for radioactive service. Careful attention has been given to limiting the volume and area of contaminated equipment. Also, equipment is constructed from stainless steel which is easier to decontaminate. We have successfully achieved free release for a similar pilot plant that was used for the treatment of both uranium and plutonium contaminated solids. This required only a few days of decontamination with minimal secondary waste generation. We would project one week for the full-scale unit. This can be a significant cost difference, both in direct labor charges and the potential cost of replacing non-releasable equipment items.

SUMMARY

MSR has two units that are potentially suitable for this project. Our Steam Plant has the potential to be the low cost choice depending on overall project factors. However, the total project cost may be lowest using our High Performance TDU, especially if the project size extends to the higher estimated volume and residual disposal and radioactive decontamination costs are considered.

Please call me to advance this discussion as you evaluate your options on this project.

Sincerely,



Bruce Penn
General Manager
Midwest Soil Remediation, inc.

Fernald Site
TCE/Uranium Mixed Waste Contaminated Soil

1. APPROACH

Fernald is evaluating treatment options for a moderate volume of contaminated soil. This soil is contaminated with both trichloroethene (TCE) and uranium. TCE levels are up to 1,100 ppm and uranium levels are at about 300 ppm. Soil that is treated to less than 12 ppm can be disposed in an on-site cell, and does not require off site disposal.

Environmental Chemical Corporation (ECC) has available three thermal desorption units that have the capability to remove TCE from soil to well below the required level. EC Clean™ is its largest unit with capacity of over 20 tons per hour to a pilot scale unit with capacity of 1 ton per hour. We would expect our units to routinely reduce TCE to less than 0.1 ppm, and with optimization to below the standard practical quantitation level of 0.005 ppm.

These thermal desorbers are all indirect heated units, with very low exhaust gas flows. This is critical, since the entire vent gas flow can be economically filtered with multiple HEPA filters to absolutely contain the radioactive uranium.

For this response, we have considered providing either a large pilot unit or our small production unit. The pilot unit is mobile, ships on two trailers, and has a capacity of about 1 ton/hr on this material. The small production unit is also mobile, ships in five sea containers, and has a capacity of about 6-8 ton/hr. As more information becomes available about the project, ECC will be in a better position to recommend the most favorable unit for Fernald.

2. SOIL TREATMENT WITH PILOT PLANT

The pilot plant has already been used by the ECC team for the processing of mixed waste sludges at the Oak Ridge gaseous diffusion plant (K-25). In this work, concentrated uranium sludge from a waste water treatment facility at the Y-12 weapons plant were processed in the thermal desorption pilot plant to remove water and oil. The treated solids were then efficiently stabilized to NRC and EPA RCRA standards for land disposal. The significant result of this work was that it was performed without a measurable release of uranium by any pathway. The air emission from the vent had no detectible uranium. The process unit completely contained the radioactive material such that there was not a single "hot" swipe throughout the operation. This was a key to success, since the project was performed in the parking lot of a receiving facility outside of the highly secure area of the K-25 plant. No uncontrolled contamination was allowed in this area.

A photo of the pilot plant at the Oak Ridge project is attached. This unit can heat soil to approximately 1,000F if required. We would expect operation at about 500-700F for this application. The pilot unit can process about 1000-2,000 lb/hr to this temperature.

Our understanding is that the estimated treatment volume ranges from 1,500 to 5,000 cu.yd. At 1 ton/hr, the smaller volume could be treated in about 150 days with the pilot unit. The unit was installed, functionally tested and inspected for operational readiness at Oak Ridge in about ten days. Decontamination to the DOE's free release limit for uranium required an additional ten days at the end of the project. So, all in, the project could be performed in about five months with the pilot plant.

For 24-hr operation (three per shift), plus an engineering supervisor are required to operate the pilot unit. Additional project staff would be one or two health physics technicians per shift. Depending on the project requirements and division of responsibility between Fluor and ECC, very little other direct project staff may be needed.

The pilot unit sets up in an area 70' by 50' and is fed either from drums or with a small telescoping loader. This choice depends on the contamination control requirements for the project. The unit fires on either propane or natural gas.

Permitting at Oak Ridge took about three to six months. A state air permit was obtained for the new source. The waste was RCRA hazardous (F006) and was treated under a modification to the Oak Ridge RCRA Part A permit. The site performed a Safety Analysis Review (SAR) as required by DOE orders, and an independent SAR was performed by a DOE subcontractor. Operation was authorized by the DOE prime contractor after completion of a shakedown test on a non-radioactive surrogate sludge.

Clearly, ECC can present significant positive experience regarding this and other similar successful mixed waste treatment at the appropriate time.

3. SOIL TREATMENT WITH EC Clean™

ECC has begun production of its second EC Clean™ system which is modular in configuration to facilitate transportation by barge or other ocean going vessel. This system is a smaller version of the very successful trailer mounted unit used for major superfund site remediation of PCB's. The system is truly indirect such that vapor flow rates are very small. The modular system is designed to be transported and erected at low costs, so that smaller sites, like the one at Fernald can be remediated very economically.

While easier to erect and transport, productivity has been optimized. The system has a treatment rate of between 6-11 tons per hour. The system consists of five ocean style container frames interlinked as a 45' by 45' wide by 18 foot high system. Feed storage and soil discharge area plus equipment would occupy a space of about 80' by 120'.

The system is scheduled to undergo its first project January 2001, and will be available for the FDF project during the spring of 2001.

4. BUDGETARY COSTS

ECC has prepared preliminary estimated costs to perform this work. This is to give Fluor information for planning purposes in advance of a specification for the project. As more information is available, these estimates can be refined to be more accurate.

Pilot Plant Costs

The pilot plant is essentially complete now with the required equipment to perform this project. The mobilization cost for the project would be about \$300,000. This is dominated by the cost to install and functionally check out the unit. *This mobilization cost is the area that is the least accurate of the estimate.*

Operating cost would be about \$430/ton, including labor, consumable supplies, utilities, and maintenance of the unit. *Disposal of the recovered TCE, water treatment wastes from the condensed liquids, and the treated solids is not included.* Decontamination and demobilization would cost about \$100,000. There could be several drums of mixed waste generated during decontamination. This is from solids that accumulate in the unit that cannot be removed during operation.

Larger Plant Costs

EC Clean™ would have very similar mobilization costs as the pilot but the emission potential on a per hour basis is 6 times higher. As such, permitting may be more expensive. Also since the rate for processing of soil is 144 tons per day, fugitive emissions may be a concern. Based on these the mobilization estimates should be increased by \$100,000 or a total of \$400,000.

Operating costs for the larger system would be near \$250/ton including labor, consumable supplies, utilities, and maintenance of the unit. *Disposal of the recovered TCE, water treatment wastes from the condensed liquids, and the treated solids is not included.*

Because of its size, decontamination is much more advanced and is twice the cost of the pilot system or \$200,000.

Basis

As with any budget, broad assumptions have been made as to the approach. ECC has a very productive base of thermal treatment experience with nearly 1 million tons of remediated soil. We have used discounted productivities to account for readiness reviews and start up approaches. Care should be taken to understand the approach. Any additional time would increase our costs significantly. The larger system will have a higher standby cost than the pilot system.

Depending on the site's capability to accept contaminated waste waters, as well as new solid wastes from water treatment, this aspect of the treatment can be more or less complicated.

Excavation, monitoring, analytical and backfill/disposal of soils is not included. ECC is a full service contractor and we can provide an estimate to perform any or all of these if you would like.

4. SUMMARY AND CONCLUSION

ECC can mobilize either treatment units to the Fernald site to solve this problem. Either system are economical for the initial quantity of soil. If the quantity of soil grows then the larger modular system offers greater economic advantage.

With either system, operating costs are significantly below off site mixed waste landfill disposal cost, which our present understanding is about \$1,200/ton. Furthermore, TCE at 1,100 ppm does not meet the land ban treatment standard and would not be accepted for mixed waste disposal at any price. Therefore, ECC can perform a valuable service at below market cost for Fernald. Our units are well suited to mixed waste operation, and can meet the rigorous performance requirements of this application. We look forward to advancing this discussion with Fernald.

GCJ31

AREA 3A/4A PREDESIGN FY01

Fluor Fernald, Inc.

DATE: 07-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
 WBS: 1.1.G.E
 CTRL ACCT: GCJ3
 CHARGE NO: GCJ31
 COMMENT NO:

Resource: Res Dept:	CNSCOD 949	CONSTRUCTION COORD OverTime:	Class:		EOC:		LABOR								
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Yr Hours:		12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Yr Total Cost:		400	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		400	400	400	400	400	400	400	400	400	400	400	400	400	400

Resource: Res Dept:	ENSREP 949	ENVIR SCIENCE REP OverTime:	Class:		EOC:		LABOR								
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Yr Hours:		177.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2	177.2
Yr Total Cost:		7,435	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435	7,435

Resource: Res Dept:	LABTEC 949	LAB TECH OverTime:	Class:		EOC:		LABOR								
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Yr Hours:		56.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9
Yr Total Cost:		1,581	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581	1,581

Resource: Res Dept:	SERVSUB 949	SUBS OverTime:	Class:		EOC:		SUBCONTRACTORS								
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10				
Yr Units:		7,528.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:		7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0	7,528.0
Yr Total Cost:		7,528	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528	7,528

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: GCJ3
CHARGE NO: GCJ31
COMMENT NO:

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	246.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7	246.7
Yr Total Cost:	16,944	0	0	0	0	0	0	0	0	0
Cum Total Cost:	16,944	16,944	16,944	16,944	16,844	16,944	16,944	16,944	16,944	16,944

[Signature]

CAM CONTROL TEAM

GCRD4

AREA 3A/4A DESIGN FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: GCRD
CHARGE NO: GCRD4
COMMENT NO:

Resource:	Res Dept:	CNSNG	949	CONSTRUCTION ENG		LABOR		EOC:					
				Overtime:	Class:	SAL	SAL	EOC:	SAL				
Yr Hours:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:				44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Yr Total Cost:				2,414	0	0	0	0	0	0	0	0	0
Cum Total Cost:				2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,414	2,414

Resource:	Res Dept:	ENGINEER	949	ENGINEER		LABOR		EOC:					
				Overtime:	Class:	SAL	SAL	EOC:	SAL				
Yr Hours:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:				983.1	983.1	983.1	983.1	983.1	983.1	983.1	983.1	983.1	983.1
Yr Total Cost:				67,601	0	0	0	0	0	0	0	0	0
Cum Total Cost:				67,601	67,601	67,601	67,601	67,601	67,601	67,601	67,601	67,601	67,601

Resource:	Res Dept:	ODC600	949	ODC600		ODC		EOC:					
				Overtime:	Class:	ODC	ODC	EOC:	ODC				
Yr Units:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:				385.0	385.0	385.0	385.0	385.0	385.0	385.0	385.0	385.0	385.0
Yr Total Cost:				385	0	0	0	0	0	0	0	0	0
Cum Total Cost:				385	385	385	385	385	385	385	385	385	385

Resource:	Res Dept:	PARSONS	949	PARSONS		SUBCONTRACTORS		EOC:					
				Overtime:	Class:	SUB	SUB	EOC:	SUB				
Yr Units:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:				22,001.0	22,001.0	22,001.0	22,001.0	22,001.0	22,001.0	22,001.0	22,001.0	22,001.0	22,001.0
Yr Total Cost:				22,001	0	0	0	0	0	0	0	0	0
Cum Total Cost:				22,001	22,001	22,001	22,001	22,001	22,001	22,001	22,001	22,001	22,001

Fluor Fernald, Inc.

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06

WBS: 1.1.G.E

CTRL ACCT: GCRD

CHARGE NO: GCRD4

COMMENT NO:

Resource: **SERVSUB** EOC: SUBS SUBCONTRACTORS
Res Dept: **949** Overtime: LOCK Class: SUB

Yr	Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
		128,592.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		128,592.0	128,592.0	128,592.0	128,592.0	128,592.0	128,592.0	128,592.0	128,592.0	128,592.0	128,592.0
		128,592	0	0	0	0	0	0	0	0	0
		128,592	128,592	128,592	128,592	128,592	128,592	128,592	128,592	128,592	128,592

Resource: **TECWRT** EOC: LABOR
Res Dept: **949** Overtime: Class: SAL

Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
		202.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		202.4	202.4	202.4	202.4	202.4	202.4	202.4	202.4	202.4	202.4
		9,138	0	0	0	0	0	0	0	0	0
		9,138	9,138	9,138	9,138	9,138	9,138	9,138	9,138	9,138	9,138

Resource: **WSTENG** EOC: LABOR
Res Dept: **949** Overtime: Class: SAL

Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
		44.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
		2,261	0	0	0	0	0	0	0	0	0
		2,261	2,261	2,261	2,261	2,261	2,261	2,261	2,261	2,261	2,261

GRAND TOTALS:

Yr	Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
		1,274.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		1,274.1	1,274.1	1,274.1	1,274.1	1,274.1	1,274.1	1,274.1	1,274.1	1,274.1	1,274.1
		232,392	0	0	0	0	0	0	0	0	0
		232,392	232,392	232,392	232,392	232,392	232,392	232,392	232,392	232,392	232,392

CAM

CONTROL TEAM

GCRD6

LIME SLUDGE PONDS DESIGN FY01

Fluor Fernald, Inc.

DATE: 07-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2001

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

PBS: OHFN08
 WBS: 1.1.G.E
 CTRL ACCT: GCRD
 CHARGE NO: GCRD6
 COMMENT NO:

Resource: CLERKS
 Res Dept: 949
 Class: LABOR
 EOC: SAL

Yr	Hours	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	29.3	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3
Yr Total Cost:	700	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	700	700	700	700	700	700	700	700	700	700	700

Resource: CONSTRUCTION ENG
 Res Dept: 949
 Class: LABOR
 EOC: SAL

Yr	Hours	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	205.9	205.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	205.9	205.9	205.9	205.9	205.9	205.9	205.9	205.9	205.9	205.9	205.9
Yr Total Cost:	11,220	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220

Resource: DRAFTER/CAD OPERATOR
 Res Dept: 949
 Class: LABOR
 EOC: SAL

Yr	Hours	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	29.3	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3	29.3
Yr Total Cost:	914	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	914	914	914	914	914	914	914	914	914	914	914

Resource: ENGINEER
 Res Dept: 949
 Class: LABOR
 EOC: SAL

Yr	Hours	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:	12.6	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Yr Total Cost:	866	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	866	866	866	866	866	866	866	866	866	866	866

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: GCRD
CHARGE NO: GCRD6
COMMENT NO:

Resource:	Res Dept:	MATERIAL OBJ/CLASS300	Class:	EOC:		MATERIAL					
				Overline:	MAT	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-
	949										
Yr Units:		94.0	0.0	0.0	0.0	0.0	0.0				
Cum Units:		94.0	94.0	94.0	94.0	94.0	94.0				
Yr Total Cost:		94	0	0	0	0	0				
Cum Total Cost:		94	94	94	94	94	94				

Resource: PARSONS
Res Dept: 949

Resource:	Res Dept:	PARSONS	Class:	EOC:		SUBCONTRACTORS					
				Overline:	SUB	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-
	949										
Yr Units:		7,355.0	0.0	0.0	0.0	0.0	0.0				
Cum Units:		7,355.0	7,355.0	7,355.0	7,355.0	7,355.0	7,355.0				
Yr Total Cost:		7,355	0	0	0	0	0				
Cum Total Cost:		7,355	7,355	7,355	7,355	7,355	7,355				

Resource: TECHWRT
Res Dept: 949

Resource:	Res Dept:	TECHNICAL WRITER	Class:	EOC:		LABOR					
				Overline:	SAL	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-
	949										
Yr Hours:		79.7	0.0	0.0	0.0	0.0	0.0				
Cum Hours:		79.7	79.7	79.7	79.7	79.7	79.7				
Yr Total Cost:		3,599	0	0	0	0	0				
Cum Total Cost:		3,599	3,599	3,599	3,599	3,599	3,599				

Resource: WSTENG
Res Dept: 949

Resource:	Res Dept:	WASTE ENGINEER	Class:	EOC:		LABOR					
				Overline:	SAL	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-
	949										
Yr Hours:		29.3	0.0	0.0	0.0	0.0	0.0				
Cum Hours:		29.3	29.3	29.3	29.3	29.3	29.3				
Yr Total Cost:		1,496	0	0	0	0	0				
Cum Total Cost:		1,496	1,496	1,496	1,496	1,496	1,496				

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN06
WBS: 1.1.G.E
CTRL ACCT: GCRD
CHARGE NO: GCRD6
COMMENT NO:

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	Sep 01 386.2	Sep 02 0.0	Sep 03 0.0	Sep 04 0.0	Sep 05 0.0	Sep 06 0.0	Sep 07 0.0	Sep 08 0.0	Sep 09 0.0	Sep 10 0.0
Cum Hours:	386.2	386.2	386.2	386.2	386.2	386.2	386.2	386.2	386.2	386.2
Yr Total Cost:	26,246	0	0	0	0	0	0	0	0	0
Cum Total Cost:	26,246	26,246	26,246	26,246	26,246	26,246	26,246	26,246	26,246	26,246

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CONTROL TEAM

CAM

GCW31

PROD AREA WASTE DISP FIELD SUPPORT FY01

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 07-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2001

PBS: OHFN08
WBS: 1.1.G.E
CTRL ACCT: GCW3
CHARGE NO: GCW31
COMMENT NO:

Resource: CLERKS
Res Dept: Overtime: FY01 Class: EOC: SAL

	CLERKS		WASTE ENGINEER		LABOR	
	Yr	Cum	Yr	Cum	Yr	Cum
Hours:	44.2	44.2	0.0	0.0	0.0	0.0
Cost:	1,056	1,056	0	0	0	0
Total Cost:	1,056	1,056	0	0	0	0

Resource: WSTENG
Res Dept: Overtime: FY01 Class: EOC: SAL

	WASTE ENGINEER		LABOR		LABOR	
	Yr	Cum	Yr	Cum	Yr	Cum
Hours:	221.0	221.0	0.0	0.0	0.0	0.0
Cost:	11,278	11,278	0	0	0	0
Total Cost:	11,278	11,278	0	0	0	0

GRAND TOTALS:

	CLERKS		WASTE ENGINEER		LABOR	
	Yr	Cum	Yr	Cum	Yr	Cum
Hours:	265.2	265.2	0.0	0.0	0.0	0.0
Cost:	12,334	12,334	0	0	0	0
Total Cost:	12,334	12,334	0	0	0	0

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CONTROL TEAM

CAM

SECTION 5

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Production Area Predesign FY01		PBS Number: 08		Total Baseline Dollars (Minimum Case):		\$16,944	
Evaluator: R. Abitz / F. Miller		Date: 4/11/01		WBS Number: 1.1.G.E			
CAM: JD Chou		Control Account Number: GCJ3		Internal		Risk Impact	
Project Task		Potential Impact		Or External Driver		Impact Cost \$ (Maximum Case)	
Risk and/or Opportunity		Risk Probability %		Risk Probability Level		Risk Probability Level	
		Risk Level		Risk Critical Value		Risk Handling Strategy	
NONE							
Total:		\$0		Total:		\$0	

Risk/Opportunity Identification and Analysis Form

Project: Production Area Design FY01		PBS Number: 06		Total Baseline Dollars (Minimum Case):		\$258,638	
Evaluator: R. Abitz / F. Miller		WBS Number: 1.1.G.E					
Date: 4/11/01		Control Account Number: GCRD					
Date: 4/11/01		Internal		Risk Impact		Risk	
Risk and/or Opportunity		Or		Level		Probability	
Potential Impact		External		Cost \$		Level	
		Driver		(Maximum		Case)	
				Case)		Probable	
						Cost \$	
						(Likeliest	
						Case)	
						Risk	
						Critical	
						Value	
						Risk	
						Handling	
						Strategy	
NONE							
		Total:		\$0		Total:	
						\$0	

Risk/Opportunity Identification and Analysis Form

Project: Production Area Waste Disposition FY01		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$12,334					
Evaluator: R. Abitz / F. Miller		WBS Number: 1.1.G.E							
CAM: JD Chiou		Control Account Number: GCW3							
Date: 4/11/01		Potential Impact							
Risk and/or Opportunity		Internal Or External Driver							
Project Task	Potential Impact	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
NONE									
			Total:	\$0			Total:	\$0	

Risk/Opportunity Identification and Analysis Form

Project: Area 3A/LSP Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$14,770,774					
Evaluator: R. Abitz / F. Miller		WBS Number: T.1.G.E							
CAM: JD Chiou		Date: 4/11/01							
Project Task		Control Account Number: G3A1							
Risk and/or Opportunity		Potential Impact							
		Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Area 3A Site Prep / Excavation	Certification Units Failure	Internal	\$72,000	2	70	4	\$50,400	3	Accept Risk
	Additional Excavation for 2 Failed CUs. 1/4 footprint of Group 1 CU at a depth of 2'. This equates to 1200cy/CU or 2400 cy @ \$30/cy								
Area 3A Site Prep / Excavation	Groundwater infiltration during excavation	Internal	\$10,000	1	10	1	\$1,000	1	Accept Risk
	Installation and operation of pumps to remove excess water								
Area 3A Site Prep / Excavation	Difficulty in Breaking Concrete	Internal	\$5,000,000	4	60	4	\$3,000,000	8	Accept Risk. Develop a detailed Contingency Plan
	Purchase equipment / 3 month schedule delay.								
Area 3A Site Prep / Excavation	Remediation activities contaminate/recontaminate areas that originally did not need remediation.	Internal	\$30,000	1	30	2	\$9,000	1	Accept Risk
	Additional Excavation of 1000cy @ \$30/cy								
Area 3A Site Prep / Excavation	Extreme Weather Delays	Internal	\$77,000	1	20	2	\$15,400	1	Accept Risk
	Contractor delayed by weather / muddy conditions for all of April and 1/2 of May. Contractor need to work double shift for a month and a half. Impact to Fluor personnel who will cover second shift at overtime for 1.5 months.								
Area 3A Site Prep / Excavation	Encountering 10% more debris than was identified from redesign activities.	Internal	\$50,000	1	10	2	\$5,000	1	Accept Risk
	Additional 2000cy of CAT 2 material requiring excavation and placement at 2x the CAT 1 rate.								

Risk/Opportunity Identification and Analysis Form

Project: Area 3A/LSP Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$14,770,774									
Evaluator: R. Abitz / F. Miller		WBS Number: 1.1.G.E											
CAM: JD Chiou		Control Account Number: G3A1											
Date: 4/11/01		Internal Or External Driver											
Date: 4/11/01		Potential Impact											
Risk and/or Opportunity		Impact Cost \$ (Maximum Case)		Risk Probability %		Risk Probability Level		Probable Cost \$ (Likeliest Case)		Risk Critical Value		Risk Handling Strategy	
Area 3A Site Prep / Excavation	No availability for OnSite Organic Treatment		Internal	\$50,000	1	20	2	\$10,000	1	Accept Risk			
Area 3A Title III	Additional Samples needed to bound contamination (chasing)		Internal	\$8,000	1	60	4	\$4,800	2	Accept Risk			
Area 3A Title III	Implementing Only A Part of the Design		Internal	\$15,000	1	70	4	\$10,500	2	Accept Risk			
Area 3A Offsite Waste Disposition	Containers do not meet shipping requirements		Internal	\$100,000	2	30	2	\$30,000	2	Accept Risk			
Area 3A Offsite Waste Disposition	Discovery of additional material needing containerization.		Internal	\$10,000	1	30	3	\$3,000	1	Accept Risk			
Area 3A Offsite Waste Disposition	Discovery of additional AWAC material.		Internal	\$200,000	2	10	1	\$20,000	1	Accept Risk			
Area 3A Onsite Waste Treatment	No availability for OnSite Organic Treatment		Internal	\$14,500,000	5	20	2	\$2,900,000	8	Avoid Risk - Develop A Detailed contingency Plan for Residual Risk			
Area 3A Excavation Control / Certification	Certification Units Failure		Internal	\$20,000	2	70	4	\$14,000	3	Accept Risk			

Risk/Opportunity Identification and Analysis Form

Project: Area 3A/LSP Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$14,770,774	
Evaluator: R. Abitz / F. Miller		Date: 4/11/01			
CAM: JD Chiou		Date: 4/11/01			
Risk and/or Opportunity		Control Account Number: G3A1			
Project Task		Potential Impact			
		Internal Or External Driver			
		Impact Cost \$ (Maximum Case)			
		Risk Impact Level			
		Risk Probability %			
		Risk Probability Level			
		Probable Cost \$ (Likeliest Case)			
		Risk Critical Value			
		Risk Handling Strategy			
Total:		\$20,142,000		\$6,073,100	

Area	Task	Review Cycle	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Area 3A Onsite Waste Treatment	Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month. (1 FTE for that month)	External	\$10,000	1	30	2	\$3,000	1	
Area 3A Excavation Control / Certification	Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month. (1 FTE for that month)	External	\$10,000	1	30	2	\$3,000	1	

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

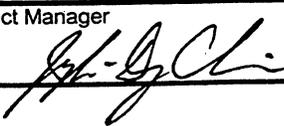
U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-01OH20115		4. INDEX LINE NO. 52	
5. WBS ELEMENT CODE 1.1.G.F		6. WBS ELEMENT TITLE AREA 4A SOIL REMEDIATION	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001	
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 4A comprises approximately 17 acres and lies in the SE quadrant of the former Production Area. The area is bounded by 2nd Street to the north, E Street to the east, 1st Street to the south and B Street to the west.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is defined in control account G4A1, Area 4A Soil Remediation. Key subjects in this account are Title III services, site preparation, at-and below-grade excavation, interim restoration, excavation control monitoring, certification activities, offsite waste disposition and onsite treatment of soil contaminated with hazardous organic compounds.</p> <p>NOTE: Predesign activities were performed under control accounts GCJ3. Title I/II services are included in charge accounts GCRD.</p> <p>Work specifically excluded from this account is as follows:</p> <ul style="list-style-type: none"> - Staff labor charged to GPM1 - Predesign characterization studies covered in control account GCJ3 - Title I/II engineering services covered in control account GCRD - Engineering services for the design and construction of the OSDF 			

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000		
3. IDENTIFICATION NUMBER DE-AC24-01OH20115		4. INDEX LINE NO. 52	
5. WBS ELEMENT CODE 1.1.G.F	6. WBS ELEMENT TITLE AREA 4A SOIL REMEDIATION		
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001	
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060		
11. ELEMENT TASK DESCRIPTION <ul style="list-style-type: none"> - Post-remediation monitoring, maintenance and storm water management - Post-closure documentation - Natural Resource Restoration activities - All remedial work described in other PBS06 control accounts - Area 10 (Soils corridor) - All centralized and services 			

**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G4A1	13. TASK DESCRIPTION (ONE LINE) AREA 4A SOILS REMEDIATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 4A comprises approximately 17 acres and lies in the SE quadrant of the former production area. The area is bounded by 2nd Street to the north, E Street to the east, 1st Street to the south and B Street to the west.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is further defined in the following charge numbers:</p> <p>G4A13 - Area 4A Title III G4A14 - Area 4A Site Prep/Excavation G4A17 - Area 4A Exc Control/Certification G4A18 - Area 4A Offsite Waste Disposition G4A19 - Area 4A Onsite Waste Treatment</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Staff labor charged to GPM1 Predesign characterization studies covered in control account GCJ3</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

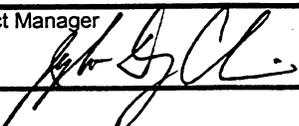
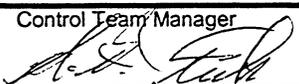
**WORK SCOPE DEFINITION
(Control Account)**

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0115-0006-00		11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G4A1	13. TASK DESCRIPTION (ONE LINE) AREA 4A SOILS REMEDIATION		

14. ELEMENT TASK DESCRIPTION

Title I/II engineering services covered in control account GCRD
Engineering services for the design and construction of the OSDF
Post-remediation monitoring, maintenance and stormwater management
Post-closure documentation
Natural Resource Restoration activiteis
All remedial work described in other PBS06 control accounts
Area 10 (Soils Corridor)
All centralized services

WORK SCOPE DEFINITION
(Work Package)

PROJECT TITLE		2. DATE	Page 1
FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.F	AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		6/04 - 4/06	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G4A13	AREA 4A TITLE III		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontract</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 4A comprises approximately 17 acres and is enclosed by 2nd Street to the north, E Street to the east, 1st Street to the south, and B Street to the west.</p> <p>Title III work involves engineering oversight of the excavation work, preparation and approval of DCNs, assistance with RCIs and NCRs, completion of safety walkthroughs, preparation of the yearly completion report, as-built drawings and close-out report, and the submittal of all records to ECDC.</p> <p>Drivers that affect the cost and schedule of this work include EPA/OEPA review cycles on DCNs, an excessive number of rain days, and unexpected discovery of large areas of undocumented contamination.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Title III engineering services for Area 4A consist of two tasks: Excavation Support and Prepare Final Documents.</p> <p>Excavation Support:</p> <p>Review and modify construction subcontract and work plans, as needed Prepare and approve DCNs Provide information for RCIs</p>			
Project Manager	Control Account Manager	Control Team Manager	
			

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3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A13	13. TASK DESCRIPTION (ONE LINE) AREA 4A TITLE III		

14. ELEMENT TASK DESCRIPTION

Respond to and close out NCRs
 Perform safety walkthroughs and attend safety briefings, as needed
 Prepare the yearly completion report
 Submit project records to ECDC and maintain copies in project file
 Perform project management and control activities

Prepare Final Documents:

Complete as-built drawings
 Prepare the close-out report
 Submit project records to ECDC and maintain copies in project file
 Perform project management and control activities

d. WORK SPECIFICALLY EXCLUDED:

All other charge numbers under control account G4A1

Excavation, certification, waste treatment & disposition

All other control accounts under PBS 06

Area 1, Area 2, Area 3A, Area 3B, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors

All other PBS accounts

PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09, PBS 10, PBS 11, PBS 12

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.

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FEMP (DEFENSE)		09/06/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.F	AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		10/04 - 9/06	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G4A14	AREA 4A SITE PREP/EXCAVATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Perform remedial construction activities for Area 4A.</p> <p>The project boundaries are as follows:</p> <p>North by 2nd Street</p> <p>East by E Street</p> <p>South by 1st Street</p> <p>West by B Street</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Provide site preparation activities prior to the start of excavation. Activities included but not limited to are as follows:</p> <p>Provide and deliver all required permits.</p> <p>Establish work limits and excavation boundaries.</p> <p>Establish construction support areas and work areas.</p>			
Project Manager	Control Account Manager	Control Team Manager	

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3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/04 - 9/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A14	13. TASK DESCRIPTION (ONE LINE) AREA 4A SITE PREP/EXCAVATION		
14. ELEMENT TASK DESCRIPTION			
<p>Connect all utilities into construction support area.</p> <p>Establish surface water management controls.</p> <p>Provide excavation and removal of all above FRL soil and at and below grade concrete and utilities from Area #4A and transportation to the On-site Disposal Facility, SP-7 or other designated staging area in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows:</p> <p>Erosion and sediment control during construction</p> <p>Installation and/or relocation of fencing during construction</p> <p>Equipment, material and support facilities rented/procured for project use</p> <p>Dewatering as necessary during construction</p> <p>Dust Control within designated work area.</p> <p>Decontamination of equipment</p> <p>Matrixed and subcontracted labor directly associated with construction</p> <p>Specific work to be addressed includes:</p> <p>Size reduce, excavate, load and haul at and below grade concrete, utilities, and debris associated with the Impacted Material Haul Road to OSDF as Category 2.</p> <p>Excavate, load and haul impacted soils to the OSDF as Category 1.</p> <p>Cut area utility isolation trenches and plug storm water and sanitary sewers.</p> <p>Interim Restoration Grading.</p>			

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3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 10/04 - 9/06
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12. TASK IDENTIFICATION (WORK PACKAGE) G4A14	13. TASK DESCRIPTION (ONE LINE) AREA 4A SITE PREP/EXCAVATION
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14. ELEMENT TASK DESCRIPTION

Perform Post-Excavation activities.

d. WORK SPECIFICALLY EXCLUDED:

Placement in OSDF

Seeding / Vegetation beyond interim restoration

Road construction

Title I/II design services

Performing and/or managing Title III services

Sampling and testing of waste materials during remediation

Monitoring and maintenance of the remediated area after remediation

Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal

Treatment of lead containing soil

Centralized Personnel, Radiological controls, and Safety management during remedial construction

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A17	13. TASK DESCRIPTION (ONE LINE) AREA 4A EXC CONTROL/CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

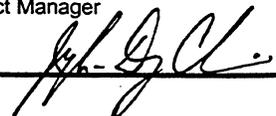
b. TECHNICAL CONTENT:

The content of this document applies to the soil characterization program at the FEMP specific to area characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 4A. It is a summary for area-specific characterization efforts that will be conducted in defined areas of excavation and lesser environmentally impacted areas that may not be excavated, but will require monitoring, sampling, and analytical testing. The characterization efforts are intended to provide information that may be required to supplement the remedial design and to support the remedial action that will result in compliance with the Final Remediation Levels (FRLs) published in the OU5 ROD. The Area 4A physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Site-wide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.

c. SCOPE OF WORK:

The scope of this document covers the characterization support for excavation control, precertification, and certification of Area 4A. Characterization work performed in Area 4A under this scope will assist in determining soil disposition, extent of excavation, and provide sound field and analytical data that prove remedial activities were sufficient. During excavation of Area 4A,

Project Manager 	Control Account Manager 	Control Team Manager 
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8. BUDGET AND REPORTING NUMBER EW05H3060		9. BUDGET TITLE SOILS	
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00			11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06
12. TASK IDENTIFICATION (WORK PACKAGE) G4A17		13. TASK DESCRIPTION (ONE LINE) AREA 4A EXC CONTROL/CERTIFICATION	
14. ELEMENT TASK DESCRIPTION			
<p>radiological field surveying, physical soil sampling, and analysis will be required. This testing will be performed during the excavation process as necessary to determine disposition of excavated material. After excavation is determined to be complete, the remaining soil will be tested for all area specific contaminants of concern (COCs) to demonstrate FRL attainment. The actual radiological field-survey measurements, physical soil sampling and analytical activities covered under this account include the following tasks:</p> <p>Review existing data and engineering drawings</p> <p>Develop and write applicable data quality objectives and projects-specific-plans, as necessary</p> <p>Develop Certification Design Letters and text for the Area Implementation Plan</p> <p>Define and delineate excavation monitoring boundaries in the field</p> <p>Define and delineate Certification Units</p> <p>Prep the area for field measurements which includes clearing of brush</p> <p>Installation of certification fencing and signs</p> <p>Physical sampling</p> <p>Assess real-time data generated during excavation</p> <p>Perform assessment of radiological field survey results</p> <p>Perform data management functions within SDFP</p> <p>Develop final reports or certification reports</p> <p>Perform analysis</p> <p>If needed, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning</p>			

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 6/04 - 4/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A17	13. TASK DESCRIPTION (ONE LINE) AREA 4A EXC CONTROL/CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Waste Tracking and disposition

Waste Treatment activities

Construction or remediation

Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

Centralized services and/or equipment

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 7/04 - 5/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A18	13. TASK DESCRIPTION (ONE LINE) AREA 4A OFFSITE WASTE DISPOSITION		

14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

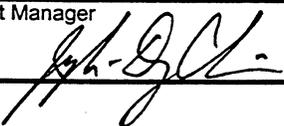
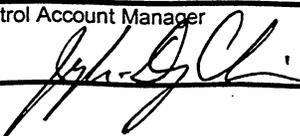
b. TECHNICAL CONTENT:

The content of this document applies to waste disposition activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in Area 4A. It is a summary for area-specific waste disposition efforts for waste that does not meet the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) and will require packaging, loading, shipping, and disposal at an approved offsite disposal facility. Offsite treatment of waste materials that do not meet the offsite disposal facility's WAC may be required prior to disposal and is also covered under this account. The waste disposition efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Area 4A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.

c. SCOPE OF WORK:

The scope of this document covers the offsite disposition of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process. The waste disposition activities covered under this account include the following tasks:

Project Manager 	Control Account Manager 	Control Team Manager 
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 7/04 - 5/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A18	13. TASK DESCRIPTION (ONE LINE) AREA 4A OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION Review existing data and engineering drawings Perform data management functions within SDFP Develop final reports Campaign Planning Purchase or rental of appropriate containers Package soil and/or other waste materials into containers Repackaging, or over-packing Container movements within the FEMP Loading containers on/in appropriate conveyance Shipping to offsite disposal facility Offsite waste treatment to meet offsite WAC <u>d. WORK SPECIFICALLY EXCLUDED:</u> Pre-design work Excavation control characterization Precertification/certification activities Waste treatment activities Construction or remediation Development of engineering plans, drawings, or specifications			

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3. WBS ELEMENT CODE 1.1.G.F	4. WBS ELEMENT TITLE/NAME AREA 4A SOIL REMEDIATION		
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 7/04 - 5/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A18	13. TASK DESCRIPTION (ONE LINE) AREA 4A OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION <p>Land surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p> <p>Onsite waste treatment</p> <p>All activities associated with other PBS elements</p> <p>All activities associated with other PBS-06 control accounts.</p>			

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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 4/06 - 9/06
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12. TASK IDENTIFICATION (WORK PACKAGE) G4A19	13. TASK DESCRIPTION (ONE LINE) AREA 4A ONSITE WASTE TREATMENT
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

- Labor
- Materials
- Subcontracts

b. TECHNICAL CONTENT:

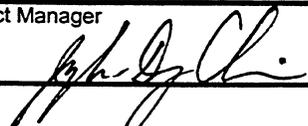
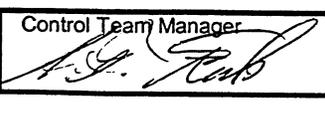
The content of this document applies to waste treatment activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in Area 4A. It is a summary for area-specific physical or chemical waste treatment efforts of material that does not meet either the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) or the offsite disposal facility's WAC. The treatment will reduce the contaminant levels to comply with disposal WAC. The waste treatment efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Area 4A physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.

c. SCOPE OF WORK:

The scope of this document covers the onsite waste treatment of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process to be above disposal WAC. The waste treatment activities covered under this account include the following tasks:

Review existing data and engineering drawings

Project Manager 	Control Account Manager 	Control Team Manager 
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/06 - 9/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A19	13. TASK DESCRIPTION (ONE LINE) AREA 4A ONSITE WASTE TREATMENT		

14. ELEMENT TASK DESCRIPTION

Procure contractor

Prepare Request for Proposal

Perform data management functions within SDFP

Develop final reports

Develop plans

Treatment operations

Site preparation for treatment pad

Benchscale testing / verification of treatment process

Physical sampling

Laboratory analysis

Sample shipping for off-site analysis

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Excavation control characterization

Precertification / certification activities

Construction or remediation

Development of engineering plans, drawings, or specifications

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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 4/06 - 9/06	
12. TASK IDENTIFICATION (WORK PACKAGE) G4A19	13. TASK DESCRIPTION (ONE LINE) AREA 4A ONSITE WASTE TREATMENT		
14. ELEMENT TASK DESCRIPTION Land surveying, staff, or equipment Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment Characterization personnel covered under GPM14 Centralized services and/or equipment Offsite waste treatment Waste shipping			

SECTION 6

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.F.	5. WBS ELEMENT TITLE: AREA 4A SOILS REMEDIATION	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: G4A1	

SECTION 6: G4A1 – AREA 4A SOILS REMEDIATION

1.0 NARRATIVE

1.1 OVERVIEW

This Closure Plan defines the scope of work required to plan, develop, execute, manage and administer the Area 4A remedial activities under PBS-06 (WBS 1.1.G.F; control account G4A1). The control account is divided into the following charge numbers: G4A13, Title III Design; G4A14 Site Preparation and Excavation; G4A17, Excavation Monitoring and Certification; G4A18, Off-site Waste Disposition; and G4A19, On-site Waste Treatment. Remedial activities will remove all impacted soil and at- and below-grade structures to prepare the area for certification and, ultimately, final restoration activities. The external assumptions and drivers that effect the work and descriptions of the physical area and remedial tasks are discussed below.

1.2 ASSUMPTIONS

1.2.1 Assumptions

- DOE maintains full baseline funding levels as defined in the closure contract.
- The SDFP restarts in FY2004 with most of the current personnel or personnel with equivalent experience.
- The time consuming, non-technical, and low-value-added requirements and practices are simplified or eliminated, including: Project Execution Plan (PEP), data quality objectives (DQO), project review, Technical Review Board (TRB), Contract Review Board (CRB), safety start-up review (SSR), etc.
- New requirements or procedures are not implemented unless a cost/schedule evaluation indicates they are needed.
- The contractors will prepare the Safe Work Plan, travelers, penetration permits, field logs, lock and tag records, QA/QC documents, placement planning, coordination and tracking, etc.
- Radiation-control and security requirements will be simplified or eliminated.

- SDFP are cross-trained to perform safety and health, industrial-hygiene, and radiation-control tasks.
- SDFP will self perform Title III engineering services.
- Other PBSs that provide matrixed and centralized personnel to this work scope maintain adequate and competent resources to perform the work identified in Section 1.5.
- Services currently provided by the geoprobe sampling crew, on-site analytical laboratory and SED data entry personnel are maintained.
- All inorganic and radiological COCs (except strontium-90) will be analyzed at the on-site laboratory.
- All D&D activities in 4A are complete by start of excavation in 1stQ of FY2005.
- An area-isolation trench is placed around Area 4A prior to excavation.
- Perched water is not present in quantities that require a significant change to the designed 2:1 slopes.
- Excavation monitoring consists of scanning the entire area after concrete and gravel pads are removed and one-third of the area after each of 3 lifts to account for contamination zones. This equates to a scanning acreage of twice the initial acreage.
- Above-WAC PCE soil is treated on site and staged at SP-7 until shipped off site for disposal.
- CDLs are developed concurrent with excavation activities.
- Certification field activities begin during the last quarter of excavation activities.
- Statistical tests conducted on the analytical results will follow the pass/fail guidance in the SEP.
- Staffing needs identified in Manpower Plan (Section 3.0) are met to deal with preparation of plans and start-up activities associated with excavation of 4A.
- PBS-06 staff will not be required to perform additional closure plan work after DOE approves the plan.
- Internal and DOE review of a Project Specific Plan (PSP) is performed in one week.

- The EPA/OEPA review and comment period for the PSPs, Certification Design Letter or Certification Report is one month.
- EPA/OEPA will review and approve significant PSP Variance/Field Change Notices (V/FCNs) in 7 days for precertification PSPs and 15 days for certification PSPs.
- EPA/OEPA will review and approve Design Change Notices (DCNs) within 7 days of receipt and CDLs prior to the start of the last quarter of excavation.
- Radiation-control and break trailers are obtained from D&D by 31 July 2004, but installed by SDFP no later than 1stQ of FY2005.
- Electric pumps in certification buffer corridor are fed from overhead lines provided by site utilities group.
- Maintenance activities associated with the buffer corridor are assigned to adjacent areas undergoing remediation after Title III activities cease.
- AWWT operates and maintains pumps in buffer corridor after they are installed and pass start-up process.

1.2.2 Exclusions

- All activities associated with other PBS elements
- All activities associated with other PBS-06 control accounts.

1.2.3 Government-Furnished Equipment/Services

None.

1.2.4 Applicable Requirements

- OU3 and OU5 RODs
- Sitewide CERCLA Quality Assurance Plan
- CDL and CR reviewed and approved by EPA/OEPA
- Dust control measures are implemented during excavation and hauling.
- Real time scan between every excavation lift in above-WAC and above-FRL excavations (i.e., no real time scan if excavation is simply to remove structures).
- Remove excavation water from 24 hour/10-year event within 72 hours.
- Perform 5:1 grading for interim restoration after certification.

- If technetium-99, PCE, TCE, and/or DCE are present at levels that exceed the OSDF WAC, physical samples must be taken along the side slopes and footprints of the above-WAC excavation to confirm their removal prior to initiating below-WAC excavation activities.
- Frisker and/or PID monitoring by radiation control and/or H&S is performed in accordance with applicable DOE and regulatory standards.

1.2.5 Applicable Technical Guidance

- Sitewide Excavation Plan
- Waste Acceptance Criteria for the On-site Disposal Facility
- Impacted Materials Placement Plan for the On-site Disposal Facility
- There is a SSR for the pumps in the certification buffer area
- Visual monitoring of all excavations by WAO
- Excavation water with PCE, TCE or DCE above 50 ug/L goes to AWWT for Phase II treatment
- Certification units are sized to one acre, or 800 linear feet for a utility trench cut below the designed excavation grade
- A precertification scan with HPGe instruments is conducted prior to the collection of certification samples.

1.2.6 Disposal, Treatment, Containers, Utilities

- Organically-contaminated soil that does not meet the Envirocare WAC will be treated successfully on site and then staged at SP-7 until shipped to an off-site disposal facility.
- Soil and debris that do not meet the OSDF radiological or physical WAC are placed at SP-7 until shipped to Envirocare.
- Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to the Nevada Test Site.
- Electric, water and communication utilities are provided to the radiation control and break trailers by infrastructure support.
- Electric tie-in points for pumps in buffer corridor are provided by infrastructure support.

- Subcontractor hired to treat soil obtains air permit and any other regulatory permits required for operation of the treatment equipment.
- A propane tank will be rented for the duration of the soil treatment.

1.3 DRIVERS

- Congressional funding of DOE EM Projects
- Completion of D&D activities For Buildings 64 and 65.
- Congressional funding of DOE EM Projects
- EPA/OEPA review cycles
- DOE review cycles
- Excessive number of rain days
- Discovery, during excavation, of large areas of undocumented contamination.

1.4 PROJECT PHYSICAL DESCRIPTION

Remediation Area 4A comprises approximately 17 acres and lies in the SE corner of the former Production Area. This area contains the surface and subsurface structures associated with the former Plants 4, 5, 6 and 7. The area is bounded by 2nd Street to the north, E Street to the east, 1st Street to the south, and B Street to the west.

Remedial activities in Area 4A are being carried out in accordance with the OU3 and OU5 RODs, with the primary objective being the removal of all soil contaminated at levels above established FRLs and all at- and below-grade structures. When the remedial actions are completed, the certified area will be graded to 5:1 slopes and seeded according to the Natural Resource Restoration Plan. Predesign characterization work and the Title I/II design were completed in Spring of 2001. Each charge account associated with the remediation of Area 4A is summarized in Section 1.5.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

Area 4A charge numbers under control account G4A1 (PBS-06, WBS 1.1.G.F) consist of Title III Design (G4A13), Site Preparation/Excavation (G4A14), Excavation Monitoring/Certification (G4A17), Off-site Waste Disposition (G4A18) and On-site Waste Treatment (G4A19).

1.5.1 G4A13 - Title III Design

Title III design activities will focus on the development and approval of design change notices (DCNs) as field activities progress, and the preparation of closure documents after excavation is complete. The activities and deliverables are placed into two tasks:

- 1) Excavation Support and 2) Prepare Final Documents.

A major technical risk identified for this scope of work is the EPA/OEPA review and approval process for DCNs. Contingencies that can be used to mitigate this risk include a reduction in the number of DCNs and a shorter review and approval cycle.

The Task activities and deliverables will be completed primarily by project staff from the management, engineering, surveying, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified in below, will use the charge account G4A13. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G4A13 will be closed out when the interim restoration of Area 4A is completed.

1) Task #1 - Excavation Support

1.1) Plan/Scope

Excavation support is the link between engineering design and the execution of the construction work. Prior to initiating construction work, the construction subcontract will be placed and work plans will be completed to meet the needs of Area 4A excavation work. Field and design changes that develop during construction activities must be documented and approved to maintain the record between the CFC drawings and final as-built drawings. If needed, the engineering and construction staff must respond to and close out non-conformance reports. Specific activities and deliverables under this work scope include:

- Review and modify construction subcontract and work plans, if needed.
- Prepare and approve design change notices (DCNs).
- Provide information for requests for clarification of information (RCIs).
- Respond to and close out non-conformance reports (NCRs).
- Perform safety walkthroughs and attend safety briefings, as needed.
- Prepare the Yearly Completion Report
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: DCNs to the project, EPA/OEPA and ECDC; RCIs to the construction crew; NCRs to the cognizant QA officer; the Yearly Completion Report to the project; and all records to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to modify drawings affected by DCNs. Subcontract costs will be charged to G4A13.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will perform DCN reviews, if applicable. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G4A13.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the DCNs, if applicable. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

The work plans will be prepared by project staff from the management, engineering, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to develop the necessary DCNs. A yearly completion report will be prepared by engineering and construction personnel at the end of the construction season to document the performance of the work, the lessons learned, and quantities delivered to the OSDF and other disposition localities.

1.2) Quantification

Table 1 summarizes the quantities and/or deliverables anticipated for Task 1. Per the direction of senior management, 3 safety walkthroughs will be performed each month. Based on the number of DCNs, RCIs, and NCRs for previous Title III work, it is estimated that there will be 100 DCNs, 20 RCIs, and 10 NCRs. The project engineer will approve and sign all DCNs after regulatory approval is obtained. A yearly completion report will be prepared to status the excavation progress.

TABLE 1
Quantities for Task 1: Excavation Support

ITEM	QUANTITY
Safety Walkthroughs	99
Design Change Notice (DCN)	100
Request for Clarification of Information (RCI)	20
Non-Conformance Report (NCR)	10
Yearly Completion Report	2

2) Task #2 - Prepare Final Documents

2.1) Plan/Scope

After the completion of excavation activities, as-built drawings will be prepared and a close-out report will be developed. The close out report will be filed after interim restoration activities are completed in the certified area. Specific activities and deliverables include:

- Complete the as-built drawings
- Prepare the Close-Out Report
- Submit project records to ECDC and maintain copies in project file
- Perform project management and control activities.

The as-built drawings and Close-Out Report will be delivered to central engineering and all records will be filed with ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to prepare the as-built drawings. Subcontract costs will be charged to G4A13.

Matrixed Personnel

Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G4A13.

Centralized Personnel

Engineering Services will assist with the as-built drawings, closeout report and termination of the CADD subcontract, as needed. Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to complete the as-built drawings and closeout report. As-built drawings will be prepared after excavation is complete and the pumps are installed in the buffer area. The closeout report for the control account will be issued after completion of all certification and waste-management activities.

2.2) Quantification

Table 2 summarizes the quantities and/or deliverables anticipated for Task 2. Based on the percentage of drawings changed during previous construction activity, it is estimated that there will be 50 as-built drawings. A Closeout Report, for the engineering activities associated with the remediation of Area 4A, will be prepared during certification activities and will be completed after the interim-restoration grading (5H:1V slopes) of the certified area.

TABLE 2
Quantities for Task 2: Prepare Final Documents

ITEM	QUANTITY
As-Built Drawings	50
Close-out Report	1

1.5.2 G4A14 - Site Preparation/Excavation

Prior to initiating the site preparation and excavation work, the excavation subcontract must be placed and all work plans must be completed to document the approach and controls that will govern the construction phase of the remediation. The work plans will be approved prior to excavation of Area 4A by engineering and construction disciplines to ensure integration occurs early in the project. This integration will continue with the parallel execution of site preparation, excavation and Title III activities. The activities and deliverables for this charge number are divided into the following tasks: 1) Site Preparation; 2) Excavation; 3) Control and Management; and 4) Interim Restoration.

Major technical risks include: the discovery of large volumes of perched water or encountering prohibited items in quantities that greatly exceed the estimated 25 yd³. A contingency that can mitigate the perched water risk involves maintaining sufficient dewatering pumps and working several areas concurrently.

The activities and deliverables discussed below will be completed primarily by project staff from the management, construction, surveying, engineering, waste disposition and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use the charge account G4A14. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G4A14 will be closed out when construction personnel complete the interim-restoration grading.

1) Task #1 - Site Preparation

1.1) Plan/Scope

Site preparation activities integrate the final documentation process with field work associated with preparing the job site, and these activities must be completed prior to the start of excavation. Specific activities and deliverables include:

- Complete construction travelers, radiation work permit and penetration permit.
- Prepare the submittal log and cross-check to ensure all work plans and permits are in order.
- Procure materials and equipment, as needed.
- Perform clearing and grubbing, if needed.
- Survey and establish the site layout, work limits, area isolation trench, and excavation boundaries for above-WAC and RCRA/HWMU/UST areas.
- Cut area isolation trench and plug storm water and sanitary sewers.
- Establish access controls with radiological and construction fence and signage.
- Relocate radiation control point and change-out facilities.
- Establish the construction support areas: worker and visitor parking, laydown area for materials and equipment, refueling area, sealands for storage, portolets, and water coolers.
- Establish the work area: install the break/cool-down trailers, portolets, water coolers, special materials transfer area, dust control piping, water wells, haul routes and air monitors.
- Connect electric, telephone, water and communication utilities into construction support area.
- Establish surface-water management controls: silt fence, sediment traps and culvert installation.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The construction travelers, work permits and submittal log will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install fencing, access controls and surface-water management structures and the special material transfer area will be prepared. After all work plans have been approved, the area-isolation trench will be cut around the perimeter of the area to provide added assurance that all energized utilities have been isolated (Note: it is not the intent of the area-isolation trench to serve as the primary method for isolating energized utilities, as infrastructure personnel and engineers will terminate all known water, electric and gas lines that enter the area prior to initiating this trenching activity). Subcontract costs will be charged to G4A14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number G4A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist with administrative aspects of the construction subcontract. Infrastructure Services will assist with the set-up and maintenance of the trailers and provide U/E support for penetration permits. Security/EM Services will provide access control and emergency response. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Activities will begin with the set-up of the support trailers and utility hook-ups to these trailers. Electric lines will be required for all trailers for heat, lights and the radiation-control station. Water and sewer for showers will be needed for the change-out trailer, as the support building will no longer be present. Bottled drinking water will be provided in all trailers and portable toilets will be set-up outside of the radiation-control trailer. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 3 summarizes the quantities and/or deliverables anticipated for Task 1.

The traveler, permits and submittal log are based on previous submittals by construction contractors, and Fluor Fernald's decision to self-perform the excavation services. Due to safety being the number one site priority, 2,400 linear feet of trench will be cut to a depth

of 12 feet around the perimeter of Area 4A to provide a physical back-up for previous utility isolation activities. The quantities for fencing, signage, trailers, containers, water coolers, and port-o-are based on previous construction work carried out at the site.

TABLE 3
 Quantities for Task 1: Site Preparation

ITEM	QUANTITY
Construction Traveler	1
Radiation Work Permit	1
Penetration Permit	1
Submittal Log	1
Area Isolation Trench, linear feet	2,400
Silt Fence, linear feet	5,000
Radiological or Construction Fence, linear feet	5,000
Radiological or Construction Signs	100
Radiological Control Point/Change-Out Trailer	1
Break/Cool Down Trailer	1
Sealand Storage Containers	10
Water Coolers	10
Portolets	4

2) Task #2 - Excavation

2.1) Plan/Scope

Excavation activities will result in the removal of all above-FRL soil and at- and below-grade concrete and utilities. Per the guidance developed in the SEP, the above-WAC and RCRA contamination areas will be removed first to minimize cross-contamination. Concrete pads and foundations will be broken and removed using industry-standard cutting, crushing and loading equipment. Bulldozers, excavators and trucks will be used to remove the soil. Seasonal shutdown and post-excavation actions will also be performed under this task. Specific activities include:

- Size-reduce, excavate, load and haul at- and below-grade concrete and utilities to OSDF, SP-7 or the designated off-site staging area.
- Excavate, load and haul impacted soil to the OSDF, SP-7 or the designated off-site staging area.
- Identify, excavate, load containers and stage special materials at the special materials transfer area.

- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.
- Perform post-excavation activities: remove construction support area and work area features, remove utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will be responsible for the safe removal of all soil, utility piping and reinforced concrete. Additionally, all maintenance and seasonal shut-down tasks will be performed by the contractor. Subcontract costs will be charged to G3B14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Environmental Compliance will assist with dust monitoring, if needed. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Personnel from these organizations will use charge number G4A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in management of the subcontract. Infrastructure Services will maintain the trailers, provide porter services, transport VOC water to the AWWT, perform dust control, and maintain roads to OSDF and SP-7. Waste Acceptance Organization will review DCNs and perform waste manifestation activities. Security/EM Services will provide access control

and emergency response. Property Management will receive and log vendor materials, control government inventory and track government-owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable functional areas. Survey crews will verify material quantities. Concrete pads and below-grade structures may be size-reduced for use as road-bed material in the OSDF. Piping will be removed and size-reduced to meet the OSDF WAC. Special materials, if found, will be loaded into containers provided by waste generator services and placed at the special material transfer area. Project Controls will provide cost and schedule support to the project manager.

2.2) Quantification

Table 4 summarizes the quantities and/or deliverables anticipated for Task 2. Per senior management, 3 safety walkthroughs will be conducted each month. The basis for the soil quantities is the SDFP spreadsheet *At- and Below-Grade Material Quantities*. Estimates for concrete, asphalt and piping debris were obtained from site drawings, with ten percent of the total piping volume assumed to be above-WAC. Piping volume is calculated from linear feet using a nominal 10-inch diameter. Above-WAC/RCRA soil to be treated contains PCE, TCE and DCE, and this soil will be disposed in the OSDF when successfully treated. Based on past excavation history, the quantity of special materials is estimated to be no greater than 25 cubic yards. A 5-gallon sample of soil will be obtained from the active excavation for every 10,000 cubic yards excavated, and this sample will be delivered to the OSDF for proctor testing.

TABLE 4
 Quantities for Task 2: Excavation

ITEM	QUANTITY
Safety Walkthroughs	64
Concrete and Asphalt Debris, cubic yards	25,000
Piping Debris, cubic yards	566
Above-WAC Piping, cubic yards	61
Soil, cubic yards	149,000
Soil, utility trenches	13,000
Above-WAC Soil, cubic yards	14,500
Above-WAC/RCRA Soil to Treat, cubic yards	1,800
Special Materials, cubic yards	25
5-Gallon Proctor Sample	15

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3) Task #3 - Control and Management

3.1) Scope/Plan

Control and management activities apply to the buffer corridor that surrounds the certification area, access and haul roads, and start-up activities associated with the pump stations. The majority of these activities will follow the excavation of impacted material. Specific activities and deliverables include.

- Install the pump stations in the buffer corridor and perform the Safety Start-up Review.
- Remove sediment from pump sumps located in the buffer corridor and designated sediment traps.
- Maintain surface-water management and erosion control structures.
- Remove water from excavations, as needed.
- Maintain haul roads and access roads.
- Provide dust control, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Documents and reports associated with the SSR process will be delivered to the SDFP and Aquifer Project. All records will be delivered to ECDC.

The scope of work identified above will be executed using the construction subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install pumps and perform maintenance activities in the buffer corridor. Six pump stations will be installed in the buffer corridor and the pumps will discharge to the nearest storm-water catch basin tied to the FEMP storm-water retention basins. Pumps in the buffer corridor will be configured to start and operate automatically at any time of the day, 365 days a year, and they must be capable of handling the 24 hour/10 year storm event. An SSR will be performed after installation and the system will be turned over to the Aquifer Project for operation and maintenance. Maintenance activities include erosion control on the 2:1 slopes and removal of the sump sediment from the pump stations. Subcontract costs will be charged to G4A14.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits and perform RWP briefings. Environmental Compliance will assist with dust monitoring, if needed. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G4A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in managing the construction subcontract. Infrastructure Services will perform dust control and maintain roads to OSDF and SP-7. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government-owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Prior to the certification of the interior part of Area 4A, a buffer corridor will be established around the perimeter of the certification area to control storm-water run-on. Project personnel will conduct an SSR for the pumps in the buffer corridor and turn the pump system over to the Aquifer Project after successful operation is demonstrated.

3.2) Quantification

Table 5 summarizes the quantities and/or deliverables anticipated for Task 3. The number of pump stations is based on the number of pump stations shown on the construction drawings for Area 4A. Construction management and the labor force will be responsible for the installation and start up of the pump system, maintenance of the slopes (2:1) and removal of sediment in pump sumps. After installing the pumps, construction management will conduct an SSR and demonstrate operational readiness prior to turning the system over to the Aquifer Project. It is assumed that slope maintenance and sediment removal will occur at the beginning and end of the construction season. After the close-out report has been filed for Cost Account G4A1, activities associated with maintaining the slopes and pump sumps in the buffer corridor will be transferred to the adjacent areas undergoing remediation (i.e., Areas 4B, 5 and 6).

TABLE 5
 Quantities for Task 3: Control and Maintenance

ITEM	QUANTITY
Pump Stations	6
Safety Start-up Review	1
Sediment Removal, biannual	2
Slope Maintenance, biannual	2

4) Task #4 - Interim Restoration

4.1) Scope/Plan

Interim restoration occurs after the remediated area has been certified clean. The 2:1 slopes in the certified area will be graded to 5H:1V, using decontaminated equipment, and seeded. Specific activities include:

- Survey work limits and establish the access controls.
- Procure needed materials and equipment.
- Perform grading to reshape 2:1 slopes to 5:1 slopes.
- Seed 5:1 slopes.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

All project records will be delivered to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Labor required for the interim-restoration grading will be hired from local union halls. Job categories envisioned include foreman, laborer, and heavy-equipment operator. Subcontract costs will be charged to G4A14.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to develop RFPs and procure subcontractor services. Environmental Compliance will assist with dust monitoring, if needed. Personnel from these organizations will use charge number G4A14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in placing the labor subcontract. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government-owned property. Training will perform

needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontracted labor force and FEMP labor force to ensure all activities are performed in a safe and timely manner. Project Controls will provide cost and schedule support.

4.2) Quantification

Table 6 summarizes the quantities and/or deliverables anticipated for Task 4. The number of walkthroughs is based on 3 walkthroughs a month, per senior management. An estimate on the amount of soil that must be reshaped is taken as 9 percent of the total soil excavated, which is the percentage calculated for the Area 3A/4A design. The acreage requiring seed is estimated as the initial acreage of Area 4A.

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TABLE 6
 Quantities for Task 4: Interim Restoration

ITEM	QUANTITY
Safety Walkthroughs	6
Soil to Reshape, cubic yards	13,000 20,000
Acres to Seed	17

1.5.3 G4A17 - Excavation Monitoring/Certification

Monitoring and certification activities will occur in parallel to excavation activities. Each excavation lift, in zones of contamination, will be monitored for radium, thorium and uranium levels. Certification Design Letters (CDLs) will be prepared and submitted to EPA/OEPA for review and approval during excavation to minimize the time period between the end of excavation activities and the start of certification sampling. Likewise, all precertification scans will be completed as close as possible to the end of excavation activities. Specific activities and deliverables are summarized under the following tasks:

- 1) Excavation Monitoring; 2) Precertification; and 3) Certification.

Major technical risks include: using off-site laboratory services for analysis of organic COCs, insufficient access to the excavation area to begin certification, and EPA/OEPA review cycles for the CDLs and Certification Report (CR). Contingencies that can mitigate the risks include: develop on-site laboratory services for organic COCs, expedite excavation in Area 4A and negotiate shorter EPA/OEPA review cycles.

The task activities and deliverables will be completed primarily by project staff from the management, characterization, surveying, administrative and real time disciplines, and

these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G4A17. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for G4A17 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Excavation Monitoring

1.1) Scope/Plan

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Excavation monitoring is the scanning of soil surfaces after each excavation lift to determine if ~~contamination hot spots exist with respect to radium, thorium and/or above-WAC levels of uranium~~ levels are present. Prior to performing the excavation monitoring, a PSP is developed to summarize the monitoring approach and frequency. If applicable, the PSP also addresses physical samples that need to be collected to confirm the removal of other COCs in above-WAC and RCRA areas. Specific activities and deliverables include:

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- Perform RTRAK, RSS and/or HPGe measurements between each excavation lift.
- Verify removal of above-WAC uranium ~~and the absence of radium, thorium or uranium hot spots.~~
- Survey and flag ~~hot spot~~ above-WAC and sample locations, as needed, for HPGe measurements and the collection of physical samples.
- Conduct HPGe measurements on soil pads created from soil removed from the bottom of utility trenches.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.
- Survey information and real time and laboratory data packages will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. Waste Generator Services will provide containers and package waste if special materials are discovered. Quality Assurance and Safety and Health will provide oversight, as needed. Personnel from these organizations are the only individuals who will use charge number G4A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted

on an as-needed basis if RCRA issues become relevant to the work scope. The Waste Acceptance Organization will perform visual oversight of the monitoring and prepare waste manifestation forms, if needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Excavation monitoring will be conducted under all removed concrete and gravel surfaces, in known contamination areas after each lift and whenever unexpected material is encountered. ~~In general, about half of the area will be covered by RTRAK and half with HPGe shots. HPGe shots will be conducted on soil removed from the bottom of utility trenches that are cut below the design grade. This soil will be placed in a circular pad adjacent to the trench prior to conducting the HPGe measurements.~~ Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. If unexpected or special materials are encountered, physical samples will be collected as part of the monitoring activities to screen for COCs not measured by the real time instruments. A survey team will document sample locations. Project Controls will provide cost and schedule support.

R1-D-
417

1.2) Quantification

Table 7 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past experience, a single PSP will be sufficient to support excavation monitoring in Area 4A. Therefore, 1 DOE draft PSP, 1 DOE RTC package, 1 EPA/OEPA draft PSP, 1 EPA/OEPA RTC package, and 1 final PSP are required. Acres to be scanned during excavation will be estimated as twice the number of initial acres, and this assumes that a scan is conducted over the entire area after concrete and gravel is removed plus 3 lifts over 1/3 of the area to account for contamination zones. Maps for each of the RTRAK, RSS and HPGe measurements will be prepared for each lift. It is also estimated that there will be 4 hot spots and 10 soil samples. The soil samples are assumed to be associated with the discovery of material that is prohibited from disposal in the OSDF. In general, the full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on pipe bedding material every 50 feet of linear trench, there will be 96 HPGe shots to cover the 4,800 linear feet of utility trenches that will be cut below the designed excavation grade.~~

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TABLE 7
 Quantities for Task 1: Excavation Monitoring

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ITEM	QUANTITY
Draft Project Specific Plan for DOE	1
Response-to-Comments Package for DOE	1
Draft Project Specific Plan for EPA/OEPA	1
Response-to-Comments Package for EPA/OEPA	1
Final Project Specific Plan	1
RTRAK, RSS, EMS and/or HPGe Scans, acres	34
RTRAK, RSS, EMS and/or HPGe maps	9
Survey and Flag Hot Spots/Sample Locations	14
Soil Samples	10
HPGe Shots for Linear feet of Utility Trenches to Scan	96 4800

2) Task #2 - Precertification

2.1) Scope/Plan

Precertification activities will begin as soon as a portion of Area 4A reaches the design grade, with the intent being to minimize the lag time between the completion of excavation and collection of certification samples. The PSP developed for excavation monitoring will also serve as the PSP for precertification. Based on field conditions and required detection levels, RTRAK, RSS or HPGe measurements will be performed and the precertification maps will be prepared. Certification Unit (CU) boundaries and sample locations will be located by survey and the boundaries and sample locations recorded on maps. Specific activities and deliverables include:

- Walk down field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Prepare the area for field measurements by mowing and installing certification fence postings.
- Perform precertification scans with RTRAK, RSS and HPGe equipment.
- Identify hot-spot zones to excavation, if applicable, and rescan area after hot spot is removed.
- Prepare precertification maps based on scan measurements.
- Survey CU boundaries and sample locations and record the information on maps.

- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Maps generated from the precertification scans and CU surveys will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. Quality Assurance and Safety and Health will provide oversight on hot spot removal, if needed. Personnel from these organizations are the only individuals who will use charge number G4A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Project Controls will provide cost and schedule support to the project manager. Prior to collecting certification samples, the entire excavation footprint will be scanned with RTRAK and/or HPGe instruments to assess compliance with the FRLs for radium, thorium and uranium. If found, hot spots will be excavated and the area rescanned. After the completion of scanning activities, the CU boundaries and sample locations will be documented by survey.

2.2) Quantification

Table 8 summarizes the quantities and/or deliverables anticipated for Task 2. To account for the excavation slopes, the acreage to be scanned during pre-certification is estimated as 1.5 times the initial Area 4A acreage. A precertification map will be produced for each set of RTRAK, RSS and HPGe measurements. Based on guidance in the SEP, each CU will be a maximum of 250 by 250 feet and every 800 linear feet of trench that lies below the design grade is a CU. This guidance results in the estimate of 21 CUs for Area 4A, with 6 being utility-trench CUs. In general, the full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on soil in the bottom of the trench every 50 feet of linear trench, there will be 96 HPGe shots to cover the 4,800 linear feet of utility trenches that will be cut below the designed excavation grade.~~

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417

TABLE 8
 Quantities for Task 2: Precertification

R1-D-417	ITEM	QUANTITY
	RTRAK, RSS, EMS and/or HPGe Scans, acres	26
	RTRAK, RSS, EMS and/or HPGe maps	3
	HPGe Shots for Linear feet of Utility Trenches to Scan	96 4800
	Survey Boundaries, CUs	21

3) Task #3 - Certification

3.1) Scope/Plan

Certification activities begin during excavation with the preparation of the Certification Design Letters (CDLs) and Certification PSP, and end when the Certification Reports (CRs) have been approved by the EPA and OEPA. To minimize the lag time between the end of excavation and collection of certification samples, the CDLs must be approved by the EPA and OEPA before excavation is complete. Specific activities and deliverables include:

- Develop COC list, sampling and analysis strategy, data quality objectives, and off-site laboratory task orders.
- Prepare data tables, CU maps and text for draft CDL/PSP and deliver CDL/PSP to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CDL/PSP.
- Incorporate comment responses into each DOE draft CDL/PSP and deliver EPA/OEPA draft CDL/PSP to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CDL/PSP.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CDL/PSP and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CDL/PSP and deliver final CDL/PSP to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Perform walk downs of field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Conduct work-scope briefings with field crews.

- Mobilize the sampling crew to place the borings and obtain the soil samples.
- Develop variance/field change notices (V/FCN), as needed.
- Deliver the samples to the on-site laboratory and create the sample analysis log for on-site and off-site analysis, as needed.
- Perform the required analytical work and generate laboratory reports to QA/QC Level D.
- Perform 100 percent validation (10% QA/QC Level D, 90% QA/QC Level B) of the laboratory reports.
- Enter data into the SED and perform queries.
- Reduce and interpret data and perform the statistical calculations to develop final CR tables.
- Develop tables, maps and text for CRs and deliver CRs to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CR.
- Incorporate comment responses into each DOE draft CR and deliver EPA/OEPA draft CR to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CR.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CR and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CR and deliver final CR to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The CDLs, PSPs, RTCs, and CRs will be delivered to DOE, EPA/OEPA and the project. All documents and records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Environmental Monitoring and Analytical Services will complete most of the work under Task 3. Environmental Monitoring will be used to complete soil borings, collect soil and water samples and deliver the samples to the on-site laboratory. Analytical Laboratory Services will log samples into the system, complete analytical measurements, issue data packages and ship samples requiring analysis for COCs to off-site labs. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level D data packages will be delivered to the project. Project Controls will provide cost and schedule support. Personnel from these organizations are the only individuals who will use charge number G4A17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, SOWs for off-site labs, and the statistical reduction of data to evaluate the certification criteria for pass/fail. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work will be completed by project staff from the management, characterization, survey, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Certification activities will begin with the preparation of the CDLs. Each CDL will identify the number and location of CUs, sample locations, a list of COCs for each CU, and analytical methods and detection limits. Execution of the CDL work will not begin until EPA/OEPA approval is received and the final CDL is released. Field activities will commence with a survey to flag sample locations and samples will be collected after the CDL is approved and precertification is completed. Samples will be sent to the appropriate laboratory for analysis and Level D data packages will be submitted to the project. Ten percent of the data packages will undergo verification and validation, and if problems are found additional packages will be selected for review. The data for each CU will be evaluated with statistical tests identified in the Sitewide Excavation Plan (DOE, June 1998) and a pass/fail decision for each CU will be based on these tests. CUs that fail will be resampled, and possibly subjected to additional excavation, until they pass the certification criteria. The draft CR will be prepared and submitted to EPA/OEPA after all CUs have passed. Once the CR is approved by EPA/OEPA, the final CR will be released and the area will be certified as fully remediated.

3.2) Quantification

Table 9 summarizes the quantities and/or deliverables anticipated for Task 3. The number of CDLs/PSPs prepared for previous projects indicate that approximately 3 CDLs/PSPs will be needed to cover certification activities in Area 4A. Therefore, it is estimated that there will be 3 DOE draft CDLs/PSPs, 3 EPA/OEPA draft CDLs/PSPs, 3 EPA/OEPA RTC packages, and 3 final CDLs/PSPs. The SEP dictates that there are 12 sample locations per CU plus one duplicate sample; the exception being 16 sample locations are surveyed if

there is a HWMU or UST in the CU, with 8 of the 16 sample locations in the HWMU or UST footprint. Additionally, a sample is collected every 50 linear feet along the utility-trench CUs. These criteria result in an estimate of 460 certification samples. All samples will be analyzed for uranium, thorium, and radium, with the remaining analyses dependent on the distribution of other COC contamination. The number of laboratory reports that will be generated is based on project history, which indicates one lab report per 12 samples. Per the SEP, 10 percent of these will be validated to Level D and 90 percent to Level B. A CR will be prepared for each CDL and the submittal and review process will follow the CDL scenario.

TABLE 9
 Quantities for Task 3: Certification

ITEM	QUANTITY
Draft CDLs/PSPs for DOE	3
Draft CDLs/PSPs EPA/OEPA	3
Response-to-Comments Package for EPA/OEPA	3
Final CDLs/PSPs	3
Survey and Flag Sample Locations	276
Soil Samples	297
Uranium, Thorium and Radium Analyses	297
Technetium-99 Analyses	39
Metal Analyses	26
VOC Analyses	65
SVOC Analyses	26
Lab Reports for Radiological COCs	25
Lab Reports for Metal COCs	3
Lab Reports for Organic COCs	6
Radiological Lab Reports to Verify and Validate	25
Metal Lab Reports to Verify and Validate	3
Organic Lab Reports to Verify and Validate	6
Draft CRs for DOE	3
Draft CRs EPA/OEPA	3
Response-to-Comments Packages for EPA/OEPA	3
Final CRs	3

1.5.6 G4A18 - Off-Site Waste Disposition

Soil excavation activities in various areas of the FEMP site may produce waste streams that cannot be disposed of in the OSDF, and off-site waste disposition will be required. Off-site waste disposition refers to the procurement of containers and disposal services, loading and shipping of containers, and preparation of manifestation documentation. Two different types of waste streams are anticipated. First, items that are prohibited from both the OSDF and Envirocare (non-typical waste) will be processed through Fluor Fernald's Waste Generator Services (WGS). Second, AWAC soil and other items that are prohibited from the OSDF but can be transported to Envirocare. Activities under this charge number

are divided into the following tasks: 1) Container Receipt and Preparation; 2) Load Containers; and 3) Shipping and Disposal.

Major technical risks include: the loss of the off-site disposal vendor (i.e., Envirocare); the unexpected discovery of a large volume of special material; and/or the discovery of a large volume of soil that requires on-site treatment. Contingencies that can be implemented to reduce this risk include: acquire additional off-site disposal vendors; and place a subcontract to treat soil.

Most of the work will be performed by WGS personnel matrixed to the project. However, some project oversight from the management, characterization, engineering, and administrative disciplines is needed, and these personnel will charge labor to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G4A18. The charge account for G4A18 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Container Receipt and Preparation

1.1) Scope/Plan

Material costs will include the purchase of shipping containers and upon receipt of the containers WGS will prepare them for loading. Specific activities and deliverables include:

- Procure containers and packaging materials.
- Prepare container for loading.
- Deliver the prepared containers to the special material transfer area (SMTA).
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Waste Generator Services (WGS) will prepare and deliver containers to the special material transfer area (SMTA), adjacent to the active excavation. Personnel from these organizations are the only individuals who will use charge number G4A18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager.

1.2) Quantification

Table 10 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past project history, it is estimated that 10 containers (capacity of 2.5 yd³) will be required for non-OSDF waste encountered in Area 4A.

TABLE 10
Quantities for Task 1: Container Receipt and Preparation

ITEM	QUANTITY
Procure and Prepare Containers	10

2) Task #2 - Load Containers

2.1) Scope/Plan

The project will load waste into containers staged at the SMTA or haul above-WAC waste to SP7 or the designated staging area. Specific activities and deliverables include:

- Load the containers and return filled containers to the SMTA.
- Haul above-WAC debris to SP-7 or the designated storage point for off-site bulk waste.
- Prepare required manifestation, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Manifestation documents will be provided to WGS, the project and ECDC, if applicable.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Labor is required for loading waste into containers and for loading and hauling above-WAC soil and debris to SP-7 or the designated staging area to the railcar load-out area. Job categories envisioned include foreman, laborer, heavy-equipment operator, truck operator and teamsters. Subcontract costs will be charged to G4A18.

Matrixed Personnel

Radiological Protection Operations will perform radiation surveys of containers and equipment. Personnel from these organizations are the only individuals who will use charge number G4A18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. The Waste Acceptance Organization will prepare waste manifestation forms. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager. Management and construction staff will assist the subcontractor in the loading of the containers. Construction personnel will pick up the containers at the SMTA, load the containers, and return them to the SMTA for pick up by WGS. Above-WAC soil and piping will be placed at SP-7 or the designated load-out point for the railcars.

2.2) Quantification

Table 11 summarizes the quantities and/or deliverables anticipated for Task 2. Based on off-site waste quantities from past excavation work, it is estimated that there will be 25 yd³ of containerized waste and 1 percent of the total piping volume will be prohibited from disposal in the OSDF (i.e., 61 yd³ of above-WAC piping). Characterization data for Area 4A indicate that there are approximately 14,500 yards of above-WAC soil. The piping and soil will be loaded into railcars.

TABLE 11
 Quantities for Task 2: Load Containers

ITEM	QUANTITY
Prohibited Special Materials, cubic yards	25
Above-WAC Soil, cubic yards	14,500
Above-WAC Piping, cubic yards	61

3) Task #3 - Shipping and Disposal

3.1) Scope/Plan

WGS will pick-up containers from the SMTA and prepare final manifestation and shipping papers. Above-WAC debris will be bulk shipped via railcar. Specific activities and deliverables include:

- Transport containers from SMTA to shipping area.
- Prepare shipping manifestation and ship containers or railcars.
- Verify waste disposition at disposal site.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Manifestation, shipping and tracking forms will be delivered to the project and off-site disposal facility. Verification of waste disposition will be delivered to the project, and all records will be sent to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

WGS will prepare the final manifestation documentation and ship the containers to the designated off-site disposal facility. Personnel from these organizations are the only individuals who will use charge number G4A18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. WAO will assist with the waste manifestation, as needed. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and administrative staff will assist WGS and/or WAO in the preparation of shipping documents. Project Controls will provide cost and schedule support.

3.2) Quantification

Table 12 summarizes the quantities and/or deliverables anticipated for Task 3. Based on the volumes identified in Task 2, 10 containers and 232 railcars will be shipped. The number of railcars is based on 100 tons per car and an approximate bulk soil density of 1.6 tons per cubic yard. It is assumed that one railcar will be used for the piping debris.

TABLE 12
 Quantities for Task 3: Shipping and Disposal

ITEM	QUANTITY
Ship Containers	10
Ship Railcars	232

1.5.5 G4A19 - On-Site Treatment

On-site treatment of soil and disposal in the OSDF is estimated to save approximately one million dollars per 1,000 yd³ of treated soil. Approximately 1,800 yd³ of soil will be treated to lower the concentrations of PCE to levels that will allow disposal of the soil in the OSDF. The toxicity characteristic leaching procedure will be used to make the pass/fail decision on the treated soil. A low-temperature thermal desorption process is envisioned and a vendor will be contracted to perform the treatment. A treatment pad will be prepared on the old Maintenance Building pad. Activities and deliverables associated with this work include: 1) Procurement; 2) Prepare Treatment Plans; 3) Site Preparation; and 4) Treatment.

Major technical risks include: heterogeneous distribution of PCE results in variable treatment times, with an increase in the chance of failure due to treatment stages being set to one time period. Contingencies that can be implemented to reduce this risk include: acquire batch data on several different zones of contamination and perform statistical analysis of the treatment-time data to determine optimal batch time.

Most of the treatment work will be performed by the treatment subcontractor. However, the subcontractor will develop the treatment plans with engineering, characterization and management staff, and this staff will also perform project oversight. Construction personnel will be needed to stage the untreated soil and remove the treated soil. Engineering, characterization and management personnel will charge labor to PBS-06 control account GPM1. The construction subcontractor, treatment subcontractor, and matrixed labor, as identified below, will use the charge account G4A19. The charge account for G4A19 will be closed when the all treated soil has been disposed in the OSDF.

1) Task #1 - Procurement

1.1) Scope/Plan

The procurement process will be completed as part of the Area 3A Charge Number G3A19.

1.2) Quantification

Quantities identified under Task 1 for Area 3A Charge Number G3A19 also cover Area 4A.

2) Task #2 - Prepare Plans

2.1) Scope/Plan

Work plans developed under the Area 3A Charge Number G3A19 also cover Area 4A.

2.2) Quantification

Quantities identified under Task 2 for Area 3A Charge Number G3A19 also cover Area 4A.

3) Task #3 - Site Preparation

3.1) Scope/Plan

Site preparation activities discussed under the Area 3A Charge Number G3A19 also cover Area 4A.

3.2) Quantification

Quantities identified under Task 3 for Area 3A Charge Number G3A19 also cover Area 4A.

4) Task #4 - Treatment

4.1) Scope/Plan

Treatment of the 1,800 yd³ of soil will begin after the Area 3A soil is treated. Soil will be treated 24-hours a day six days a week, with one day allowed for equipment maintenance and housekeeping activities. Treated soil will be staged in a temporary stockpile and a sample for TCLP testing will be collected for every 50 yd³ of soil. When TCLP results indicate the soil has passed treatment, the soil will be hauled to SP-7 for off-site disposal, as the soil contains above-WAC values of uranium and technetium-99. Soil treatment will continue until all Area 4A soil is treated, followed by treatment of Area 4B soil. Specific activities and deliverables for this work include:

- Load stockpiled soil into treatment vessel and perform low-temperature thermal desorption for the designated time period.
- Unload the treated soil and stage the soil in the designated treated stockpile.
- Perform equipment maintenance and housekeeping activities.
- Collect a sample for TCLP testing for every 50 yd³ of treated soil.
- Ship the sample to an off-site lab for TCLP testing and request a Level D QA/QC data package.

- Verify and validate the laboratory report (Level D) and assign pass/fail to the treated soil.
- Haul the treated soil to the SP-7 if the TCLP test passes; retreat the soil if the TCLP test fails.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The TCLP results will be delivered to the project, DOE and EPA/OEPA to document the pass/fail decision. All records will be sent to ECDC.

The scope of work identified above will be executed using subcontractor, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will operate the treatment system, perform standard maintenance activities and maintain the necessary regulatory permits. Subcontract costs will be charged to G4A19.

Matrixed Personnel

Environmental Monitoring will be used to collect samples of treated soil and deliver the samples to Analytical Laboratory Services. Analytical Laboratory Services will log samples into the system and ship samples to off-site labs for TCLP testing. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level D data packages will be delivered to the project. Personnel from these organizations are the only individuals who will use charge number G4A19.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, SOWs for off-site labs, and statistical reduction of data. The Waste Acceptance Organization will review the treatment report prior to hauling the soil to the OSDF. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Project Controls will provide cost and schedule support.

4.2) Quantification

Table 13 summarizes the quantities and/or deliverables anticipated for Task 4. Based on the characterization data in the Area 3A/4A IRDP, there are 1,800 yd³ of PCE contaminated soil in Area 4A that require treatment. A soil sample will be collected for every 50 yd³ of treated soil and the samples will be submitted to an off-site laboratory for TCLP testing. A laboratory report will be prepared and issued for every 12 samples and the reports will be validated to QA/QC Level D. Soil will be treated until it passes the TCLP test for PCE, and the successfully treated soil will be hauled to the SP-7. Treatment will continue with soil from Area 4B (see scope under G4B19) when all Area 4A soil is depleted.

TABLE 13
Quantities for Task 4: Treatment

ITEM	QUANTITY
Treat Soil, cubic yards	1,800
Soil Samples	36
TCLP Tests	36
Laboratory Reports	3
Level D Validation Package	3
Haul Soil to AP-7, cubic yards	1,800

SECTION 6

2.0 SCHEDULE

SECTION 6

3.0 MANPOWER PLANS

Manpower Planning Sheet (CR2)

MPS # 1GF02 AREA 4A SITE PREP/EXCAVATION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006							
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4																				
604 Area 4A: Excavation	04/01/2004	09/30/2005	2.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.5	0.5	0.5	0.2	0	0
605 Area 4A Interim Restoration	10/02/2006	12/29/2006	2.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.5	0.5	0.5	0.2	0.1	0.1
621 Area 4A Exc. Control Characterization	04/01/2004	09/30/2005	8.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	3	3	1	0.2	0.1	0
634 Area 4A Precert/Certification	10/03/2005	09/29/2006																						XXX XXX							
Environmental Safety & H Safety Engineer			2.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.5	0.5	0.5	0.2	0	0
QA/QC			2.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.5	0.5	0.5	0.2	0.1	0.1
Environmental Safety & H Rad Tech			8.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.5	3	3	1	0.2	0.1	0
Sheet Totals:				12.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.50	4.00	4.00	2.00	0.80	0.20	0.10

Manpower Planning Sheet (CR2)

MPS # 1GF02 AREA 4A SITE PRE/EXCAVATION

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4																
604 Area 4A: Excavation	04/01/2004	09/30/2005																				
605 Area 4A Interim Restoration	10/02/2006	12/29/2006	xxx																			
621 Area 4A Exc. Control Characterization	04/01/2004	09/30/2005																				
634 Area 4A Percert/Certification	10/03/2005	09/29/2006																				
Environmental Safety & Health	Safety Engineer		0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC	QA/QC Tech.		0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Rad Tech		0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:			0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Manpower Planning Sheet (CR2)

MPS # 1GF04 AREA 4A OFFSITE WASTE DISPOSITION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006							
				Q1	Q2	Q3	Q4																								
604 Area 4A: Excavation	04/01/2004	09/30/2005	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.2	0.2	0	0	0
605 Area 4A Interim Restoration	10/02/2006	12/29/2006	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0.1	0	0	0
621 Area 4A Exc. Control Characterization	04/01/2004	09/30/2005	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
634 Area 4A Percen/Certification	10/03/2005	09/29/2006	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor	Hazwat		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Labor	Motor Vehicle Operator		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0
Transportation Labor	Heavy Equipment Operator		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0
Transportation Labor	Transportation Laborer		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Craft Labor	Pipefitter		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operations	Operations Manager		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0
Environmental Safety & H	Rad Tech		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0
QA/QC	QA Engineer		0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0	0	0
Environmental Safety & H	Safety Tech.		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0
Environmental Safety & H	Rad Engineer		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0
Environmental Safety & H	Safety Engineer		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.2	0.1	0	0	0
Procurement	Material Property Control Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
Project Management	Tech/Program Support Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Procurement	Buyer/Contracts Administrator		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0
Project Management	Project Mgr.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0
Administration	Clerks		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
Sheet Totals:			3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.80	0.80	1.00	0.00	0.00	0.00

Manpower Planning Sheet (CR2)

MPS # 1GF05 AREA 4A ONSITE WASTE TREATMENT

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006															
				Q1	Q2	Q3	Q4																																
604 Area 4A: Excavation	04/01/2004	09/30/2005																																					
605 Area 4A Interim Restoration	10/02/2006	12/29/2006																																					
621 Area 4A Exc. Control Characterization	04/01/2004	09/30/2005																																					
634 Area 4A Pre-cert/Certification	10/03/2005	09/29/2006																																					
Waste Management	Waste Engineer		0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor	Hazwat		0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & H	Rad Engineer		0.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:				1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.30	0.20	0.20				

Manpower Planning Sheet (CR2)

MPS # 1GF05 AREA 4A ONSITE WASTE TREATMENT

DRIVERS	START DATE	END DATE	FY 2007				FY 2008				FY 2009				FY 2010				FY 2011			
			Q1	Q2	Q3	Q4																
604 Area 4A: Excavation	04/01/2004	09/30/2005																				
605 Area 4A Interim Restoration	10/02/2006	12/29/2006	xxx																			
621 Area 4A Exc. Control Characterization	04/01/2004	09/30/2005																				
634 Area 4A Precont/Certification	10/03/2005	09/29/2006																				
Waste Management	Waste Engineer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor	Hazwat		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & Health	Rad Engineer		0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:			0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

SECTION 6

4.0 ESTIMATE

G4A13

AREA 4 TITLE III

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A13
COMMENT NO F6-047

Resource:	ENGMEC	ENGINEER MECH/PIPING		EOC:		LABOR					
		Overtime:	Class:	SAL	SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0 0.0	0.0 0.0	0.0 0.0	32.2 32.2	187.2 219.3	126.7 346.0	0.0 346.0	0.0 346.0	0.0 346.0	0.0 346.0
Yr Total Cost:		0	0	0	2,363	14,553	10,525	0	0	0	0
Cum Total Cost:		0	0	0	2,363	16,917	27,441	27,441	27,441	27,441	27,441

Resource:	INHTEC	INDUST HYGIENIST TEC		EOC:		LABOR					
		Overtime:	Class:	SAL	SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0 0.0	0.0 0.0	0.0 0.0	32.2 32.2	187.2 219.3	126.7 346.0	0.0 346.0	0.0 346.0	0.0 346.0	0.0 346.0
Yr Total Cost:		0	0	0	1,432	8,822	6,379	0	0	0	0
Cum Total Cost:		0	0	0	1,432	10,254	16,633	16,633	16,633	16,633	16,633

Resource:	QACENG	QA ENGINEER		EOC:		LABOR					
		Overtime:	Class:	SAL	SAL						
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0 0.0	0.0 0.0	0.0 0.0	32.2 32.2	187.2 219.3	126.7 346.0	0.0 346.0	0.0 346.0	0.0 346.0	0.0 346.0
Yr Total Cost:		0	0	0	1,747	10,757	7,779	0	0	0	0
Cum Total Cost:		0	0	0	1,747	12,504	20,283	20,283	20,283	20,283	20,283

GRAND TOTALS:											
Yr Hours:		0.0	0.0	0.0	96.6	561.5	380.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	96.6	658.0	1,038.1	1,038.1	1,038.1	1,038.1	1,038.1
Yr Total Cost:		0	0	0	5,542	34,132	24,683	0	0	0	0
Cum Total Cost:		0	0	0	5,542	39,674	64,358	64,358	64,358	64,358	64,358

CONTROL TEAM 

CAM

G4A14

AREA 4 SITE PREP/EXCAVATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2007

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A14
COMMENT NO F06-040, F6-047

Resource:	Res Dept:	FIELD SUB	FIELD SUBS	Overtime:	SUBCONTRACTORS											
					Class:	EOC:	SUB		LABOR		LABOR		LABOR		LABOR	
	949		Oct 00- Sep 01		Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10			
Yr Units:			0.0		0.0	0.0	806,760.0	5,028,016.1	4,241,541.9	9,572.0	0.0	0.0	0.0			
Cum Units:			0.0		0.0	0.0	806,760.0	5,834,776.1	10,076,318.0	10,085,890.0	10,085,890.0	10,085,890.0	10,085,890.0			
Yr Total Cost:			0		0	0	874,739	5,604,331	4,864,814	11,297	0	0	0			
Cum Total Cost:			0		0	0	874,739	6,479,070	11,343,884	11,355,180	11,355,180	11,355,180	11,355,180			

Resource:	Res Dept:	QA/QC TECH	Overtime:	LABOR											
				Class:	EOC:	SAL		LABOR		LABOR		LABOR		LABOR	
	949		Oct 00- Sep 01		Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:			0.0		0.0	0.0	0.0	642.8	316.2	0.0	0.0	0.0	0.0		
Cum Hours:			0.0		0.0	0.0	0.0	642.8	959.0	959.0	959.0	959.0	959.0		
Yr Total Cost:			0		0	0	0	24,823	13,048	0	0	0	0		
Cum Total Cost:			0		0	0	0	24,823	37,871	37,871	37,871	37,871	37,871		

Resource:	Res Dept:	RAD TECH	Overtime:	LABOR											
				Class:	EOC:	SAL		LABOR		LABOR		LABOR		LABOR	
	949		Oct 00- Sep 01		Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:			0.0		0.0	0.0	0.0	2,543.0	1,251.2	0.0	0.0	0.0	0.0		
Cum Hours:			0.0		0.0	0.0	0.0	2,543.0	3,794.2	3,794.2	3,794.2	3,794.2	3,794.2		
Yr Total Cost:			0		0	0	0	108,385	56,972	0	0	0	0		
Cum Total Cost:			0		0	0	0	108,385	165,357	165,357	165,357	165,357	165,357		

Resource:	Res Dept:	SAFETY ENGINEER	Overtime:	LABOR											
				Class:	EOC:	SAL		LABOR		LABOR		LABOR		LABOR	
	949		Oct 00- Sep 01		Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:			0.0		0.0	0.0	0.0	607.8	299.0	0.0	0.0	0.0	0.0		
Cum Hours:			0.0		0.0	0.0	0.0	607.8	906.8	906.8	906.8	906.8	906.8		
Yr Total Cost:			0		0	0	0	37,784	19,861	0	0	0	0		
Cum Total Cost:			0		0	0	0	37,784	57,645	57,645	57,645	57,645	57,645		

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A14
COMMENT NO F06-040, F6-047

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2007

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr. Hours:	0.0	0.0	0.0	0.0	3,793.5	1,866.4	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	3,793.5	5,660.0	5,660.0	5,660.0	5,660.0	5,660.0
Yr Total Cost:	0	0	0	874,739	5,775,322	4,954,695	11,297	0	0	0
Cum Total Cost:	0	0	0	874,739	6,650,061	11,604,757	11,616,054	11,616,054	11,616,054	11,616,054

[Handwritten Signature]
CONTROL TEAM

CAM

6414

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 4A

WBS NUMBER: 1.1.G.F

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-004

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	AE Estimate	<input checked="" type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input checked="" type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Scope of the cost estimate includes Area 4A Soils excavation. The excavated soils along with concrete rubble and other debris will be hauled and dumped to OSDF. Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to Nevada Test Site. Soils and debris that do not meet the OSDF radiological or physical WAC will be placed at SP-7 until shipped to Envirocare.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 4A
WBS NUMBER: 1.1.G.F
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-04-004

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 50-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A
- Waste Program Management dollars provided by the Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 4A

WBS NUMBER: 1.1.G.F

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-004

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and or any other published estimating source. See attachment APPENDIX "A" and APPENDIX "B".

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and or other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX "C".

RISK BUDGET:

N/A

CONTINGENCY:

Contingency is excluded from the target estimate.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 4A
WBS NUMBER: 1.1.G.F
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-04-004

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Excavate, load, haul and dump soil, sand, gravel, concrete rubble and other debris to the OSDF, SP – 7 or the Soil Treatment Area
- Area Isolation Trench around the Perimeter
- Excavate utility trenches and remove bedding materials and piping debris.
- Installation & removal of safety and erosion control fencing.
- Installation of storm water control, diversion and or ditches in the area for water run-off control.
- Off – Day - Dust Control is an allowance of \$ 50,000.
- Reshaping the excavated slope to 5:1 and hydro seed it for stabilization.
- Premobilization, mobilization, demob; Labor, materials and construction equipment.
- Bulking factors are estimated as follows:

• Concrete rubble	1.33
• Soils/Sand/Gravel	1.15
• Piping Debris	2.00
- Temporary Facilities & Utility Hook-up is included in Mobilization on the Detail Sheet and not on the Summary Sheet.
- Misc. Equip. Rental is included in the Detail Sheet and not on the Summary Sheet.
- Premium time

EXCLUSIONS:

- Permits and fees.
- FF G & A (Home Office Expense).
- FF Construction Management
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.
- Sampling, air monitoring and testing of soils.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 4A

WBS NUMBER: 1.1.G.F

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-04-004

- Soil processing (treatment)
- Shipping and disposal cost at Envirocare or NTS.
- White metal box cost.
- Delays in construction caused by unidentified contamination of soil, water and debris.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 4A
 ESTIMATE #: C2-2001-04-004
 CLIENT: DOE
 WBS #: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM DESCRIPTION	M/H	RATE	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	TOTAL \$
SITE PREPARATION	6,630		\$159,270	\$111,798	\$124,420	\$64,920	\$460,408
EXCAVATION	94,103		\$2,361,744		\$70,000	\$1,135,380	\$3,567,124
STORM WATER MANAGEMENT	13,929		\$334,895	\$25,000	\$72,820	\$190,710	\$623,425
INTERIM RESTORATION	4,650		110,066	50,000	71,960	90,910	\$322,936
DIRECT FIELD COSTS TOTAL	119,312	\$24.86	\$2,965,975	\$186,798	\$339,200	\$1,481,920	\$4,973,893
SUPERVISION - CONTRACTOR	23,400		\$762,322				\$762,322
SMALL TOOLS & CONSUMABLES	-	-	-		\$59,300		\$59,300
MISC. EQUIP. RENTAL	-	-	-				
TEMPORARY FACILITIES							
TEMPORARY UTILITY HOOK-UP							
JOB CLEAN-UP	1,790		\$44,500		\$14,800		\$59,300
PER DIEM / SUBSISTANCE	-	-	-				
HEALTH PHYSICS S/C	853		\$21,200		\$82,900		\$104,100
CERCLA - TRAINING	950		\$23,600				\$23,600
GET/SITE ACCESS & JOB SPECIFIC TRAINING	1,044		\$26,000				\$26,000
PAYROLL BURDENS & BENEFITS	-	-	\$2,190,900				\$2,190,900
OVERHEAD & PROFIT	-	-	-	\$1,639,900			\$1,639,900
BOND	-	-	-	\$127,900			\$127,900
SALES TAX	-	-	-		\$29,800	\$88,900	\$118,700
INDIRECT FIELD COSTS TOTAL	28,036		\$3,068,522	\$1,767,800	\$186,800	\$88,900	\$5,112,022
DIRECT & INDIRECT FIELD COSTS TOTAL	147,349	\$40.95	\$6,034,497	\$1,954,598	\$526,000	\$1,570,820	\$10,085,915
TARGET ESTIMATE							(FY 01 DOLLARS) \$10,085,915

ESTIMATE PERFORMED BY ESTIMATING SERVICES

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO. C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

FACTORS

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
FIXED PRICE \$	\$2,965,975	\$186,798	\$339,200	\$1,481,920	\$82,900	\$5,056,793
DFC DOLLARS						
IFC COST FACTOR	2.0346	-	1.2185	1.0000	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2125	1.2125	1.2125	1.2125	1.2125	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.4670	1.2125	1.5661	1.2853	1.2853	
BASE ESTIMATE \$'s	\$7,316,973	\$226,497	\$531,204	\$1,904,676	\$106,549	\$10,085,900
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.4670	1.2125	1.5661	1.2853	1.2853	
FPS TARGET ESTIMATE (FY00 \$)	\$7,316,973	\$226,497	\$531,204	\$1,904,676	\$106,549	\$10,085,900

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G65.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO. C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Direct Field Cost w/FACTORS

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L. \$	EQUIP. \$	PPE \$	TOTAL \$
		(ASSIGN OR PRORATE PPE MAT'L.\$'s)->>				82900	
	SITE PREPARATION	159270	111798	124420	64920		
		\$392,910	\$135,560	\$194,850	\$83,440		\$806,760
	EXCAVATION	2361744		70000	1135380	82900	
		\$5,826,350		\$109,620	\$1,459,280	\$106,550	\$7,501,800
	STORM WATER MANAGEMENT	334895	25000	72820	190710		
		\$826,180	\$30,310	\$114,040	\$245,110		\$1,215,640
	INTERIM RESTORATION	110056	50000	71960	90910		
		\$271,530	\$60,630	\$112,690	\$116,840		\$561,690
TOTAL DIRECT FIELD COSTS w/FACTORS		(FY01 DOLLARS)					\$10,085,890

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nernade
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Mat'l					
	PREMOBILIZATION													
	A Insurance Certificates, List of Sub-Tier Contractors Procurement Documents, Safe Work Plans, QA/QC Plan, Construction and Engineering Documentation Acceptable baseline Schedules Duration 8 wks	1	LS	40	320	65.00								\$20,800
	MOBILIZATION													
	S/C Office Trailer	18	mo			23.57	300							\$5,398
	Survey and Engineering Controls	1	LS				3,000	500	500		\$500			\$4,000
	Install Utilities	1	LS	60	60	22.69		1,000	500	\$1,400	\$1,000			\$2,900
	Other misc. requirements as required.	1	LS	100	100	22.69		500	500	\$2,300	\$500			\$3,300
	S/C Storage / Tool Trailer	18	mo				300							\$5,400
	SITE PREPARATION													
	SURVEY & STAKE AREA	20	ACRE	60	1398	21.49		100	154	\$30,040	\$2,000		\$3,080	\$35,120
	INSTALL WARNING SIGNS	100	EA	2	175	21.49		20	0.87	\$3,750	\$2,000		\$90	\$5,840
	SAFETY FENCE 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE, ETC.	5500	LF	0.03	192	21.49		1.62		\$4,130	\$8,910			\$13,040
	REMOVE CHAIN LINK FENCE	1700	LF	0.09	178	21.49			2.15	\$3,830			\$3,660	\$7,490
	DOUBLE SWING PIPE GATES IN RAD FENCE, 36" WIDE (INCL. ALL HARDWARES)	2	EA	32	75	21.49		1,500	500	\$1,600	\$3,000		\$1,000	\$5,600
	8" HIGH, 9 GA. CHAIN LINK FENCE (INCL. ALL HARDWARES)	1100	LF	0.13	167	21.49		8.50	2.28	\$3,580	\$9,350		\$2,510	\$15,440
	DOUBLE SWING GATE, 8' HIGH, 20' OPENING (INCL. ALL HARDWARES)	1	EA	20	23	21.49		945	375	\$500	\$950		\$380	\$1,830
	FENCING 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE IN CERT. BUFFER AREA FENCE	8000	LF	0.03	280	21.49		1.62		\$6,010	\$12,960			\$18,970
	ALLOWANCE FOR U.S. COAST GUARD RING BUOY W/ POST, ROPE AND HANGER @ 200'	50	EA	4	204	21.49		200		\$4,380	\$10,000			\$14,380
	SITE PREPARATION													

AREA 4/
 (FY01 L...LARS)

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM NO	SITE PREPARATION	QTY	UNIT	MAN-HOURS			COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL		
				Unit	Total	Rate	Labor	S/C						Matl	Equip
D	TEMP DITCH W/ SILT FENCE W/ WOOD STAKES	5000	LF	0.10	582	21.49					\$4,750		\$17,270		
D	SEED & MULCH DISTURBED AREA, 5700' X 25'	4	ACRE	20	93	21.49					\$14,000	\$2,000	\$18,000		
D	DEWATERING (INCL. PUMPS, 2" & 3" HOSES AND 10 INLETS)	1	LOT	630	734	21.49					\$47,330		\$63,100		
D	CONNECTIONS TO EXISTING STORM DRAIN	1	LOT	70	82	21.49					\$1,000		\$2,750		
D	TEMPORARY DITCH LINER, TYPE 'B'	375	LF	0.08	35	21.49					\$750		\$1,500		
D	EROSION CONTROL BLANKET	1055	SY	0.07	86	21.49					\$5,280		\$7,130		
D	TEMPORARY DRAINAGE SUMPS	3	EA	120.00	419	21.49						\$12,000	\$21,010		
D	INSTALL 3" DIA. PIPE PLUG	1	EA	4.00	5	21.49					\$10	\$50	\$160		
D	INSTALL 8" DIA. PIPE PLUG	1	EA	4	5	21.49					\$20	\$50	\$170		
D	INSTALL 10" DIA. PIPE PLUG	5	EA	32.00	186	21.49					\$110		\$4,120		
D	EXCAVATE DRAINAGE CHANNEL & BUILD EARTHEN DIKES FOR STORM WATER CONTROL	1	LOT	460	536	23.60						\$6,680	\$19,330		
D	ALLOWANCE FOR GMA PROTECTION PUMPING	1	LOT						10,000				\$10,000		
D	AREA ISOLATION TRENCHING	2400	LF	0.20	559	23.60						\$31,920	\$45,110		
D	MOB & DEMOB OF TRENCHING MACHINE	1	LOT						8,000				\$8,000		
IND	DECON OF TRENCH MACHINE	1	LOT	96	138	23.60							\$3,250		
IND	TRENCHER CHAIN WILL BE TURNOVER TO CM UPON COMPLETION DUE TO CONTAMINATION (QUOTES FROM TRENCOR FOR MDL 1460)	1	EA						80,000				\$80,000		
Subtotal Direct Cost: Site Preparation											159,270	111,798	124,420	4,920	\$160,408

AREA 4A EXCAVATION
 (FY01 DOLLARS)

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemede
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unil	Total	Rate	Labor	S/C					
mC	DEMOLISH & SIZE REDUCE CONCRETE FDN AND SLABS ABOVE BASEMENTS	25,083	BCY	0.5	23,317	\$21.48			\$500,850			\$108,360	\$609,210
mC	LOAD & HAUL DEBRIS TO OSDF IN 9 MONTHS OUT OF 12MO	25,020	LCY	0.06	2,791	\$21.49			\$59,980			\$48,290	\$108,270
mC	LOAD & HAUL DEBRIS TO OSDF IN 3 MONTHS (WINTER TIME) (DOUBLE HANDLED)	8,340	LCY	0.50	7,753	\$21.48			\$166,530			\$36,030	\$202,560
mC	HYDRAULIC RAM CASING REMOVAL(24" DIA. C.I.) (CUT LONGITUDINALLY IN HALF, 10' SECTION)	440	LF	0.15	123	\$21.48			\$2,640			\$4,060	\$6,700
mC	HAUL TO OSDF (CRUSH BY DOZER PRIOR TO HAULING)	1	LOT	16	30	21.48		1500.00	\$640			\$1,500	\$2,140
mD	ASPHALT PAVEMENT REMOVAL (@ PARKING) (HAUL DISTANCE 5000 FT (ROUND TRIP)	432	BCY	0.45	279	21.48		8.76	\$5,990			\$3,780	\$9,770
mD	HAUL TO OSDF (CRUSH BY DOZER PRIOR TO HAULING)	575	LCY	0.05	41	21.48		1.93	\$880			\$1,110	\$1,990
mC	EXCAVATE ABOVE WAC SOIL	14500	BCY	0.30	8,088	23.60		6.55	\$190,870			\$94,980	\$285,850
mC	LOAD & HAUL TO SIP . 7	19285	LCY	0.05	1,793	23.60		1.93	\$42,310			\$37,220	\$79,530
mC	EXCAVATE SPECIAL MATERIALS	25	BCY	2.7	125	23.60		16.00	\$2,960			\$400	\$3,360
mC	LOAD SPECIAL MATERIALS & PLACE AT SMTA	33	LCY	0.2	12	21.48		4.50	\$270			\$150	\$420
mD	EXCAVATE ABOVE FRL / BELOW OSDF . SOIL (ASSUME 30% HAULED TO DEWATERING AREA)	44,700	BCY	0.13	8,010	23.60		2.66	\$189,040			\$118,900	\$307,940
mD	EXCAVATE ABOVE FRL / BELOW OSDF . SOIL (ASSUME 70% DRY SOIL HAULED TO OSDF AREA)	104,300	BCY	0.13	18,691	23.60		2.66	\$441,100			\$277,440	\$718,540
mD	LOAD & HAUL DRY SOIL. (ROUND TRIP 5000 FT.)	119,945	LCY	0.05	8,598	23.60		1.93	\$202,900			\$231,490	\$434,390
mD	LOAD & HAUL SOIL TO DEWATERING & THEN TO OSDF (ROUND TRIP 5000 FT)	51,405	LCY	0.10	7,369	23.60		1.93	\$173,920			\$99,210	\$273,130
EXCAVATION													

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MATL	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Mat'l					
mD	BACKFILL @ GMA, 5' ENCROACHMENT AREA (ASSUME BORROW AREA ROUND TRIP 12000')	3,410	FCY	0.45	2,200	23.60				\$51,920			\$6,210	\$58,130
mD	EXCAVATE OVERBURDEN ON UTILITY TRENCHES (ASSUME SOIL HAULED TO OSDF AREA)	5,064	BCY	0.16	1,162	23.60				\$27,410			\$13,470	\$40,880
mD	LOAD & HAUL SOIL FROM TRENCHES TO OSDF	5,824	LCY	0.05	417	23.60				\$9,850			\$11,240	\$21,090
mC	EXCAVATE UTILITY PIPES	627	BCY	0.20	279	23.60				\$6,580			\$4,690	\$11,270
mC	LOAD & HAUL AWAC PIPING TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	125	LCY	0.06	17	23.60				\$390			\$290	\$680
mC	LOAD & HAUL PIPING TO OSDF (ASSUME 90% OF MATERIALS HAULED TO OSDF)	1,129	LCY	0.05	125	23.60				\$2,980			\$2,610	\$5,570
mD	EXCAVATE BEDDING MATERIALS	3,357	BCY	0.16	516	23.60				\$12,180			\$5,990	\$18,170
mC	LOAD & HAUL SOIL TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	386	LCY	0.06	29	23.60				\$680			\$500	\$1,180
mD	LOAD & HAUL SOIL TO OSDF (ASSUME 90% OF MATERIALS HAULED TO OSDF)	3,474	LCY	0.05	167	23.60				\$3,940			\$4,490	\$8,430
mC	DEMO CONC. DUCT BANKS & HAUL TO OSDF (AFTER OVERBURDEN SOIL IS EXCAVATED)	156	CY	1.850	537	23.60				\$12,660			\$980	\$13,640
mC	DEMO CONC. MANHOLES & CATCHBASINS	270	CY	1	467	23.60				\$11,020			\$1,690	\$12,710
mC	LOAD & HAUL CONCRETE DEBRIS TO OSDF	567	LCY	0.05	53	23.60				\$1,240			\$1,510	\$2,750
mC	EXCAVATE ABOVE WAC / RCRA SOIL, HAUL TO TREAT- MENT	1,800	BCY	0.13	418	23.60				\$9,870			\$4,790	\$14,660
mC	LOAD & HAUL ABOVE WAC / RCRA SOIL (AFTER TREATMENT HAULED TO OSDF)	2070	LCY	0.06	231	\$23.60				\$5,450			\$4,000	\$9,450
D	SEEDING UPON COMPLETION OF EXCAVATION	20	ACRE	20	466	21.49				\$10,010			\$10,000	\$90,010
	PREMIUM TIME (1.5 TIMES PER HR. OVER 40 HRS)	1	LOT							\$214,704				\$214,704
	Subtotal Direct Cost: Excavation	1	LOT		94,103	\$23.10				2,361,744		70,000	1,135,380	\$3,567,124

AREA 4A EXCAVATION
(FY01 DOLLARS)

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

Fluor Fernald, Inc.

ITEM NO	STORM WATER MANAGEMENT	QTY	UNIT	MAN-HOURS		COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Rate					
D	BUFFER AREA MAINTENANCE (DEWATERING BY 2 HP ELEC TRASH PUMPS)	6	EA	100	699	26.4	1.500	\$18,450		\$9,000		\$27,450
D	3" DIA DISCHARGE PIPES & FITTINGS	1800	LF	0.10	210	26.40	3.30	\$5,540		\$6,080		\$11,620
D	2" DIA FLEXIBLE SUCTION HOSE	550	LF	0.01	6	26.40	2.59	\$170		\$1,420		\$1,590
D	35' WOOD POWER POLES	40	EA	8	388	22.66	350	\$8,790		\$14,000	\$2,360	\$25,150
D	#6 CU OVERHEAD LINE	7,500	LF	0.01	87	22.66	0.52	\$1,980		\$3,900		\$5,880
D	STEP DOWN XFMR, 30 KVA, 3 PHASE, 60 HZ (POLE MOUNTED)	2	EA	14	33	22.66	2,500	\$740		\$5,000		\$5,740
D	COMB. STARTER W/ DISCONNECT SWITCH	6	EA	4.00	28	22.66	915.00	\$630		\$5,490		\$6,120
D	SILT FENCE W/ WOOD STAKES	1200	LF	0.01	14	21.49	0.30	\$300		\$360		\$660
D	FENCING 4" HIGH WIRE MESH, INCLUDES 10% FOR OVERLAP, WASIE, ETC.	7,100	LF	0.03	248	21.49	1.62	\$5,330		\$11,500		\$16,830
D	MAINTAIN EROSION CONTROLS (16 HRS/WK FOR 18 MONTHS)	1	LOT	1,248	1,454	21.49	15000.00	\$31,240			\$15,000	\$46,240
D	MAINTAIN HAUL ROADS (ASSUME 1 WK PER MONTH FOR 18 MONTHS)	1	LOT	720	839	21.49	80.000	\$18,020			\$80,000	\$98,020
D	ALLOWANCE FOR RAD CONTROL FACILITIES	5	EA				5,000		\$25,000			\$25,000
D	PROVIDE DUST CONTROLS ON HAUL ROADS & EXCAVATION AREAS FOR 14 MONTHS CONSTRUCT BUFFER AREA RDS (AFTER COMPLETION OF EXCAVATION, 1600 X 12 FT.	3,200	SY	0.02	75	21.49	1.50	\$1,600			\$4,800	\$6,400
D	GRADE & COMPACT SUBGRADE	900	CY	0.1	147	21.49	11.20	\$3,150		\$16,070	\$10,080	\$29,300
D	PREMIUM TIME (1.5 TIMES PER HR. OVER 40 HRS.)	1	LOT					\$30,445				\$30,445
								\$334,095	\$25,000	\$72,020	\$190,710	\$623,425
Subtotal Direct Cost: Storm Water Management												

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

Fluor Fernald, Inc.

ITEM NO.	INTERIM RESTORATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	SIC	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	SIC					
D	INTERIM REMEDIATION GRADING (USE CUT & FILL OPERATIONS TO CONSTRUCT 5 TO 1 SLOPES - ALL SOILS WILL BE EXISTING IN AREA 4A)	19,608	CY	0	2,855	21.49			\$61,350			\$60,590	\$121,940
D	SEEDING UPON COMPLETION OF 5 TO 1 SLOPE	20	ACRE	20	466	21.49		\$10,010		\$70,000	\$10,000		\$90,010
D	GROUND WATER CONTROL DURING INTERIM GRADING (ASSUME 4 DAYS PER MONTH FOR 3 MONTH PERIOD)	1	LOT	120	140	21.49		\$3,000		\$1,200			\$4,200
D	TEMP DITCH W/ SILL FENCE W/ WOOD STAKES	800	LF	0	93	21.49		\$2,000		\$760			\$2,760
D	MAINTAIN EROSION CONTROL DURING INTERIM RESTORATION FOR 3 MONTHS	1	LOT	240	280	21.49		\$6,010			\$3,500		\$9,510
D	PROVIDE DUST CONTROL ON HAUL ROADS FOR 3 MONTHS	1	LOT	595	693	21.49		\$14,890			\$16,820		\$31,710
D	OFF-DAY DUST CONTROL (ALLOWANCE)	1	LOT						\$50,000				\$50,000
D	DEMobilIZATION Complete Punch List Items Remove Trailer and Change Facilities Remove all Utilities Decoronitate Equipment Loadout contractors equipment Other area requirements	1	LS	20	23	22.69		\$530					\$530
D		1	LS	20	23	22.69		\$530					\$530
D		1	LS	20	23	22.69		\$530					\$530
mC		1	LS	10	19	22.69		\$420					\$420
D		1	LS	20	23	22.69		\$530					\$530
D		1	LS	10	12	22.69		\$260					\$260
D	PREMIUM TIME (1.5 TIMES PIER HIR OVER 40 HRS)	1	LOT					\$10,006					\$10,006
Subtotal Direct Cost: Interim Restoration												\$322,930	

AREA 4A EXCAVATION
(FY01 DOLLARS)

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

ITEM NO	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL	
			Unit	Total		Labor	S/C						
Project Staffing (5 - 10hrs. Shift for 18 months) For Premium Time \$ = total dollars(50hrs) multiplied by 0.2 and multiplied by 0.5													
1.	1950	hr	1.0	1950	\$54.42			106,119				\$106,119	
2.	3900	hr	1.0	3900	37.85			147,615				\$147,615	
3.	1950	hr	1.0	1950	33.19			64,721				\$64,721	
4.	2925	hr	1.0	2925	30.34			88,745				\$88,745	
5.	975	hr	1.0	975	28.33			27,622				\$27,622	
6.	1950	hr	1.0	1950	28.05			54,698				\$54,698	
7.	3900	hr	1.0	3900	19.31			75,309				\$75,309	
8.	3900	hr	1.0	3900	25.58			99,762				\$99,762	
9.	1950	hr	1.0	1950	14.58			28,431				\$28,431	
Premium time 50% for 10 hrs per wk													
TOTAL						23,400	\$32.58						\$762,300
Subtotal Direct Cost											762,300	\$762,300	

PROJECT: Soil Excavation Area 4A
ESTIMATE: NOC2-2001-04-004
CLIENT: DOE
WBS NO.: 1.1.G.F.
DATE: 15-May-01
ESTIMATOR: Nemade
LOCATION: Fernald
TASK NO.: G4A14

	PERCENT OF INFLUENCE ON CHART MANHOURS										WT'D VALUE	PROD. RESULT
	40%	50%	60%	70%	80%	90%	100%	105%	110%	% OF INFLUENCE		
CRAFT SKILL (NOTE 1)	POOR			FAIR				STD	V.GOOD	XCELLEN	12.0%	0.12
CRAFT AVAIL.(NOTE 1)		POOR		FAIR				STD			8.0%	0.08
CLIMATE (NOTE 2)	SEVERE	ICE/SNOW			RAIN			+40 TO +85			20.0%	0.18
PLANT ELEVATION		OVER 10,000FT			5,000' TO 10,000 FT			UNDER 5,000 FT			5.0%	0.05
WORK SPACE				200 SF	250 SF	300 SF		350 SF			10.0%	0.1
WORK WEEK		<---- MULTIPLE SHIFTS-										
50 HOUR WORK WEEK				OVER 7 WEEKS	3 TO 7 WEEKS	UP TO 3 WEEKS		4-10s / 5-8s			15.0%	0.15
60 HOUR WORK WEEK			OVER 7 WEEKS	3 TO 7 WEEKS	UP TO 3 WEEKS						0.0%	0
SHIFTWORK											0.0%	0
2ND SHIFT					2ND SHIFT			OR ONE SHIFT ONLY			3.0%	0.03
3RD SHIFT			3RD SHIFT								5.0%	0.05
PROJECT SIZE					400M MH AND UP	300M TO 400M MH		200M TO 300M MH	200M MH OR LESS		4.0%	0.04
PLANT TYPE				REVAMP ONLY	REVAMP & NEW	NEW IN EXIST PLT		GRASS ROOTS			8.0%	0.056
AREA/UNION INFLUENCE	STRONG		MILD		SOME			NONE			10.0%	0.04
NOTES.....											100.0%	89.6%
1. TURNOVER HAS BEEN CONSIDERED												89.6%
2. FOR EXTERIOR WORK ONLY												
											EFFICIENCY (AS A % OFF CHART MANHOURS)	
											MULTIPLIER - (TO BE APPLIED TO CHART M.H.'S TO OBTAIN SITE M.H.'S)	
												1.12

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

Fluor Fernald, Inc.

EXAMPLE:

STANDARD CHART MANHOURS =	NET	100
EFFICIENCY FACTORS:		
• SITE SPECIFIC (SEE APPENDIX A)	12%	12.0
S/T = BASE UNIT MANHOURS		112
OVERTIME PRODUCTIVITY FACTOR (SEE DETAIL WORKSHEET BACK-UP)	0.00%	0
		112
• TASK SPECIFIC (confined space, high elevation, congestion, etc.)	0.0%	0
		112
• PPE SPECIFIC (Based on current data and estimating knowledge)		

PPE LEVEL

	D		Mod.'D'		Mod. "C"		C		C+	
PRODUCTIVITY HOURS (AS A %) / ADD MH's	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	
(AS A MULTIPLIER) / TOTAL HRS	4.00%	4	28.00%	31	66.00%	74	74.00%	83	96.00%	108
TOTAL MULTIPLIER w/SITE PROD.	1.04	116.5	1.28	143.4	1.66	185.9	1.74	194.9	1.96	219.5

NOTE : Use the Default Productivity Factor of 'mC' for working in a contaminated area if the Safety Level cannot be determined.

(SEE FD FERNALD ESTIMATING SERVICES REFERENCE MANUAL IM-6006 8.10)

Total hours worked in a specific PPE level divided by 10 hour working days = (PPE) ManDays to determine material cost of PPE's.
(SEE APPENDIX C - HEALTH PHYSICS)

12.0	Man Days	14.0	Man Days	19.0	Man Days	19.0	Man Days	22.0	Man Days
------	----------	------	----------	------	----------	------	----------	------	----------

THESE EFFICIENCY FACTORS WERE APPLIED INDIVIDUALLY THROUGHOUT THE ESTIMATE AT A TASK SPECIFIC LEVEL, TO OBTAIN A MORE ACCURATE ACCOUNT OF OVERALL EFFICIENCY IMPACT DUE TO PPE REQUIREMENTS IN HANDLING CONTAMINATED AND HAZARDOUS WASTE.

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

Fluor Fernald, Inc.

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

PPE MULTIPLIER DEVELOPEMENT

	D	mD	mC	C	C+
CREW SIZE & MAKE-UP					
STANDARD	7	7	7	7	7
WORKER-BUDDY	0	0	0	0	0
SUPPORT TEAM	0	0	0	0	0
TOTAL CREW	7	7	7	7	7
CREW SIZE RATIO	1.00	1.00	1.00	1.00	1.00
AVAILABLE WORK TIME FACTOR	0.96	0.78	0.7	0.7	0.68
PPE LABOR PRODUCTIVITY FACTOR	1	1	0.86	0.82	0.75
NET PRODUCTIVITY RATIO	0.96	0.78	0.602	0.574	0.51
NET PRODUCTIVITY MULTIPLIER	1.04	1.28	1.66	1.74	1.96

These factors were based on Tables 6.1 and 6.2, Moderate Work Efforts, 66F to 85F temperature of 'Hazardous Waste Cost Control' by R.A.Selg. Modifications were made to reflect a 10 hour work day and no buddy system or support team for levels D, mC and C. The worker-buddy and support team members, if required, may be covered under Construction Mgmt. (Rad Techs).

AVAILABLE WORK TIME FACTOR		D	mD	mC	C	C+
TOTAL WORK MINUTES per D	4 - 10's	600	600	600	600	600
ADDIT'L SITE SAFETY MEETINGS NOT INCLD. IN BASE	QUANTITY	1	1	1	1	1
	MINUTES	25	25	25	25	25
TOTAL		25	25	25	25	25
PPE DON & DOFFING	QUANTITY	0	0	3	3	3
(ADJUST LEVEL D per WORK PLAN)	MINUTES	0	0	15	15	20
TOTAL			0	45	45	60
WORK BREAKS	QUANTITY	N/A	2	2	2	2
(ADJUST LEVEL D per WORK PLAN)	MINUTES	N/A	15	15	15	15
TOTAL			30	30	30	30
MOBILIZATION - ROUND TRIPS	QUANTITY	N/A	4	4	4	4
(ADJUST LEVEL D per WORK PLAN)	MINUTES	N/A	15	15	15	15
TOTAL			60	60	60	60
COOLDOWNS PER DAY	QUANTITY	N/A	4	4	4	4
** (4 OUT OF 12 MONTHS)	MINUTES	N/A	15	15	15	15
TOTAL			20	20	20	20
AIR TANK REPLACEMENT	QUANTITY	N/A	N/A	N/A	N/A	N/A
	MINUTES	N/A	N/A	N/A	N/A	N/A
TOTAL						
AVAILABLE WORK TIME		575	465	420	420	405
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68

NOTE: Adjust 'Work Minutes per Day' basis to: 5 - 8's, or leave as 4 - 10's. Any other circumstances, over-ride the minutes per day.

** Assumption based on work performed in May, June, July & August, pro-rating cost over one year. Adjust % to individual circumstances.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

Fluor Fernald, Inc.

PPE's - PERSONAL PROTECTIVE EQUIPMENT

DESCRIPTION	UNIT	UNIT COST	* NO. OF CHANGE OUTS PER WORKER PER DAY			
			Man Days (TOTAL HOURS worked in PPE's Div. by WORK HOURS / DAY)			
PPE LEVEL C / C+ / B : F/HF MASK w/RESP.&CART.			*	MAN DAYS	MAT'L'S's	PPE LEVEL
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0	C / C+
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0	C / C+
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0	C / C+
APR CARTRIDGES - DISPOSABLE	PR	\$6.98	3	0	\$0	C / C+
SUB-TOTAL		\$17.42	3		\$0	

(DOUBLE PPE)

\$/MD = \$0.00

PPE LEVEL mC : FULL DRESS w/ FACE SHIELD				MAN DAYS	MAT'L'S's	PPE LEVEL
LT.WT. DISPOSABLE COVERALLS w/HOOD & BOOTIES	PR	\$4.46	3	4621	\$61,824	mC
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	4621	\$3,327	mC
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	4621	\$3,604	mC
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	4621	\$14,139	mC
SUB-TOTAL		\$5.98	3		\$82,894	

\$/MD = \$17.94

SUBCONTRACTOR REQUIRED PURCHASES	QTY. PER WKR.	NO. OF WORKERS		MAT'L'S's	PPE LEVEL	
RUBBER BOOT COVERS-(1)PR.PER WORKER	PR	\$12.70	6	0	\$0	D/C/B
APR w/HALF FACE MASK - (1) PER WORKER	EA	\$22.30	6	0	\$0	C
APR w/FULL FACE MASK - (1) PER WORKER	EA	\$174.00	6	0	\$0	C
SCBA	EA	\$1,894.00	2	0	\$0	B
COOL VESTS	EA	\$137.50	6	0	\$0	C/B
THERMO STRIPS	EA	\$50.00	6	0	\$0	C/B
SUB-TOTAL					\$0	

TOTAL PPE's =

MAT'L'S's
 \$82,900

(FORWARD TO PAGE 2 OF 2)

OTHER PPE's SUCH AS HARD HAT, SAFETY GLASSES/GOGGLES, STEEL TOED SAFETY SHOES, HEARING PROTECTION, ARE CONSIDERED THE SUBCONTRACTORS RESPONSIBILITY AND ARE COVERED IN HIS OVERHEAD EXPENSE. COSTS OF FD FERNALD SUPPLIED PPE's, SUCH AS COTTON COVERALLS, EXCHANGE OF RUBBER BOOT COVERS AND RESPIRATORS FOR CHANGEOUTS AND CLEANING OF SAME IS INCURRED BY FD FERNALD AND COSTS ARE NOT INCLUDED AS PART OF PROJECT COSTS AT THIS TIME.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO.: C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

--MEDICAL MONITORING --

MEDICAL - PHYSICAL and IN-VIVO MONITORING - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
PHYSICAL (3hrs), IN-VIVO (1hr)						
BASELINE PHYSICALS	1	4	38	152	\$24.86	\$3,780
ANNUAL PHYSICALS	1	4	38	152	\$24.86	\$3,780
EXIT (TERMINATION) PHYSICALS (IN-VIVO)	1	1	38	38	\$24.86	\$940
SUB-TOTAL						\$8,500

RADIATION IN-VITRO SURVEILLANCE - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BI-MONTHLY BIOASSAY	9	1	38	342	\$24.86	\$8,500
SUB-TOTAL						\$8,500

RANDOM DRUG TESTING

	TESTS	HRS	TOTAL HOURS	AVG. RATE	LABOR \$'s	
	84	2	168	\$24.86	\$4,200	
NO. OF WKRS. TESTED	TESTING DAYS PER YR.	AVG. NO. OF TESTS PER DAY	CHANCE/ DAY FOR TEST	NO. OF WKRS. FOR THIS ESTIMATE	CHANCES /DAY FOR TEST FOR PROJECT	CONSTR WORKING DAYS
2340	226	10	0.0042735	58	0.2479	340

LABOR \$'s THRU SAFETY	LABOR \$'s
------------------------------	------------

WORK DELAYS CAUSED BY MONITORING	0.0%		\$3,772,797	\$0
----------------------------------	------	--	-------------	-----

LABOR \$'s

WORK DELAYS CAUSED BY RAD CHECKING	0.0%		\$3,772,797	\$0
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TOTAL LABOR	TOTAL MAT'L	GRAND TOTAL
\$21,200	\$82,900	\$104,100

TOTAL HEALTH PHYSICS

(FORWARD TO ESTIMATE SUMMARY SHEET)

APPENDIX "D"

ACTIVITY DURATIONS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 4A
 ESTIMATE NO. C2-2001-04-004
 CLIENT: DOE
 WBS NO.: 1.1.G.F

DATE: 15-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G4A14

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
CONSTRUCTION:	11-May-01	01-Oct-03	30-Jun-04	31-Mar-05		18.0 MONTHS
						0 MONTHS
TOTAL						18.0 MONTHS

DATE of EST. to MID-POINT ACTIVITY DURATION	
a.	37.7 MONTHS
b.	0 MONTHS

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
OPERATIONS						0 MONTHS

DATE of EST. to MID-POINT ACTIVITY DURATION	
	0 MONTHS

ACTIVITY DURATION IS USED IN DETERMINING NUMBER of WORKERS for CERCLA/SAT TRAINING HOURS and HEALTH PHYSICS COSTS.

G4A17

AREA 4 EXC CONTROL/CERTIFICATION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A17
COMMENT NO F06-040, F6-047

Resource:	DRFCAD	Res Dept:	949	DRAFTER/CAD OPERATOR	Class:	EOC:		LABOR	
						SAL	SAL		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource:	ENSMGR	Res Dept:	949	ENVIR SCIENTIST MGR	Class:	EOC:		LABOR	
						SAL	SAL		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource:	ENSREP	Res Dept:	949	ENVIR SCIENCE REP	Class:	EOC:		LABOR	
						SAL	SAL		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Resource:	ENSTEC	Res Dept:	949	ENVIR SCIENTIST TECH	Class:	EOC:		LABOR	
						SAL	SAL		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A17
COMMENT NO F06-040, F6-047

Resource:	Res Dept:	HEAVY EQUIP OPERATOR	Class:	EOC:		LABOR					
				HOU	HOU						
	949										
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	82.3	107.7	0.0	0.0	0.0	0.0
Yr Total Cost:		0.0	0.0	0.0	0.0	82.3	190.0	190.0	190.0	190.0	190.0
Cum Total Cost:		0	0	0	0	3,237	4,527	0	0	0	7,764

Resource:	Res Dept:	INDUSTRIAL MECHANIC	Class:	EOC:		LABOR					
				HOU	HOU						
	949										
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	0.4	24.6	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0.4	25.0	25.0	25.0	25.0	25.0
Cum Total Cost:		0	0	0	0	16	1,034	0	0	0	1,050

Resource:	Res Dept:	CHEMIST	Class:	EOC:		LABOR					
				SAL	SAL						
	949										
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	0.0	298.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	298.0	298.0	298.0	298.0	298.0
Cum Total Cost:		0	0	0	0	0	15,434	0	0	0	15,434

Resource:	Res Dept:	LAB MANAGER	Class:	EOC:		LABOR					
				SAL	SAL						
	949										
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0	0.0	0.0	0.0	0.0	33.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	33.0	33.0	33.0	33.0	33.0
Cum Total Cost:		0	0	0	0	0	2,253	0	0	0	2,253

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A17
COMMENT NO F06-040, F6-047

Resource:	Res Dept:	LAB TECH	Overtime:	Class:		EOC:		LABOR	
				949	SAL	SAL	SAL		
Yr Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0		0	0	0	0	0	0
Cum Total Cost:		0		0	0	0	0	0	0

Resource:	Res Dept:	MOTOR VEHICLE OPER	Overtime:	Class:		EOC:		LABOR	
				949	HOU	HOU	HOU		
Yr Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0		0	0	0	0	0	0
Cum Total Cost:		0		0	0	0	0	0	0

Resource:	Res Dept:	PROJECT SUPPORT MGR	Overtime:	Class:		EOC:		LABOR	
				949	SAL	SAL	SAL		
Yr Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0		0	0	0	0	0	0
Cum Total Cost:		0		0	0	0	0	0	0

Resource:	Res Dept:	QA ENGINEER	Overtime:	Class:		EOC:		LABOR	
				949	SAL	SAL	SAL		
Yr Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0		0	0	0	0	0	0
Cum Total Cost:		0		0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A17
COMMENT NO F06-040, F6-047

Resource:	Res Dept:	RAD TECH		LABOR		EOC:						
		OverTime:	Class:	OverTime:	Class:	SAL	SAL					
Yr Hours:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
		0.0	0.0	0.0	0.0	26.4	240.6	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	26.4	267.0	267.0	267.0	267.0	267.0	267.0
		0	0	0	0	1,124	10,958	0	0	0	0	0
Cum Total Cost:		0	0	0	0	1,124	12,082	12,082	12,082	12,082	12,082	
		0	0	0	0	1,124	12,082	12,082	12,082	12,082	12,082	

Resource:	Res Dept:	SAFETY ENGINEER		LABOR		EOC:						
		OverTime:	Class:	OverTime:	Class:	SAL	SAL					
Yr Hours:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
		0.0	0.0	0.0	9.0	12.1	38.9	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	9.0	21.1	60.0	60.0	60.0	60.0	60.0	60.0
		0	0	0	528	750	2,587	0	0	0	0	0
Cum Total Cost:		0	0	0	528	1,278	3,864	3,864	3,864	3,864	3,864	
		0	0	0	528	1,278	3,864	3,864	3,864	3,864	3,864	

Resource:	Res Dept:	SERVSUB		SUBCONTRACTORS		EOC:						
		OverTime:	Class:	OverTime:	Class:	SUB	SUB					
Yr Units:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
		0.0	0.0	0.0	0.0	0.0	18,003.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	18,003.0	18,003.0	18,003.0	18,003.0	18,003.0	18,003.0
		0	0	0	0	0	20,648	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	20,648	20,648	20,648	20,648	20,648	
		0	0	0	0	0	20,648	20,648	20,648	20,648	20,648	

Resource:	Res Dept:	WISE CONSTRUCTION		SUBCONTRACTORS		EOC:						
		OverTime:	Class:	OverTime:	Class:	SUB	SUB					
Yr Units:		Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-	
		Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	
		0.0	0.0	0.0	0.0	468.8	6,251.2	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	468.8	6,720.0	6,720.0	6,720.0	6,720.0	6,720.0	6,720.0
		0	0	0	0	523	7,170	0	0	0	0	0
Cum Total Cost:		0	0	0	0	523	7,692	7,692	7,692	7,692	7,692	
		0	0	0	0	523	7,692	7,692	7,692	7,692	7,692	

Fluor Fernald, Inc.

PBS: OHFN06
 WBS: 1.1.G.F
 CTRL ACCT: G4A1
 CHARGE NO: G4A17
 COMMENT NO F06-040, F6-047

ESTIMATE SUPPORT WORKSHEET
 FOR ACTIVITY BASED ESTIMATING
 (1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
 PROJECT MGR: J.D. CHIOU
 CAM: J.D. CHIOU
 PREPARED BY: T. O'BRIEN
 FISCAL YEAR: 2004 - 2006

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
Yr Hours:	0.0	0.0	0.0	17.0	299.4	2,282.6	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	17.0	316.4	2,598.9	2,598.9	2,598.9	2,598.9	2,598.9
Yr Total Cost:	0	0	0	962	13,712	136,436	0	0	0	0
Cum Total Cost:	0	0	0	962	14,675	151,111	151,111	151,111	151,111	151,111

[Handwritten Signature]
 CONTROL TEAM

CAM

G4A18

AREA 4 OFF SITE WASTE DISPOSITION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A18
COMMENT NO F6-047

Resource: BUYCON Res Dept: 949		BUYER/CONTRACTS ADMIN		Class:		EOC:		LABOR														
Overtime:						SAL																
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	44.8	Oct 04- Sep 05	0.0	Oct 05- Sep 06	0.0	Oct 06- Sep 07	0.0	Oct 07- Sep 08	0.0	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0	
Cum Hours:	0.0		0.0		0.0		0.0		44.8		44.8		44.8		44.8		44.8		44.8		44.8	
Yr Total Cost:	0		0		0		0		2,216		2,216		2,216		2,216		2,216		2,216		2,216	
Cum Total Cost:	0		0		0		0		2,216		2,216		2,216		2,216		2,216		2,216		2,216	

Resource: CLERKS Res Dept: 949		CLERKS		Class:		EOC:		LABOR														
Overtime:						SAL																
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	25.3	Oct 05- Sep 06	14.1	Oct 06- Sep 07	0.0	Oct 07- Sep 08	0.0	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0	
Cum Hours:	0.0		0.0		0.0		0.0		0.0		25.3		39.5		39.5		39.5		39.5		39.5	
Yr Total Cost:	0		0		0		0		0		757		451		0		0		0		0	
Cum Total Cost:	0		0		0		0		0		757		1,208		1,208		1,208		1,208		1,208	

Resource: HAZWAT Res Dept: 949		HAZWAT		Class:		EOC:		LABOR														
Overtime:						HOU																
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	228.7	Oct 05- Sep 06	112.5	Oct 06- Sep 07	0.0	Oct 07- Sep 08	0.0	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0	
Cum Hours:	0.0		0.0		0.0		0.0		0.0		228.7		341.2		341.2		341.2		341.2		341.2	
Yr Total Cost:	0		0		0		0		0		8,233		4,327		0		0		0		0	
Cum Total Cost:	0		0		0		0		0		8,233		12,560		12,560		12,560		12,560		12,560	

Resource: HEOOPR Res Dept: 949		HEAVY EQUIP OPERATOR		Class:		EOC:		LABOR														
Overtime:						HOU																
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	26.0	Oct 05- Sep 06	12.8	Oct 06- Sep 07	0.0	Oct 07- Sep 08	0.0	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0	
Cum Hours:	0.0		0.0		0.0		0.0		0.0		26.0		38.7		38.7		38.7		38.7		38.7	
Yr Total Cost:	0		0		0		0		0		1,021		537		0		0		0		0	
Cum Total Cost:	0		0		0		0		0		1,021		1,558		1,558		1,558		1,558		1,558	

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN08
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A18
COMMENT NO F6-047

Resource: MAT300		MATERIAL OBJCLASS300		EOC: MAT		MATERIAL				
Res Dept: 949	Overtime:	Class:	Class:	Class:	Class:	Class:	Class:			
Yr Units:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Units:	0.0	0.0	0.0	0.0	15,824.4	7,785.6	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	15,824.4	23,610.0	23,610.0	23,610.0	23,610.0	23,610.0
Cum Total Cost:	0	0	0	0	17,638	8,930	26,568	26,568	26,568	26,568

Resource: MPCREP		MATL PROP CTRL REP		EOC: SAL		LABOR				
Res Dept: 949	Overtime:	Class:	Class:	Class:	Class:	Class:	Class:			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	0.0	0.0	0.0	25.3	14.1	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	25.3	39.5	39.5	39.5	39.5	39.5
Cum Total Cost:	0	0	0	0	1,024	611	1,634	1,634	1,634	1,634

Resource: MVOOPR		MOTOR VEHICLE OPER		EOC: HOU		LABOR				
Res Dept: 949	Overtime:	Class:	Class:	Class:	Class:	Class:	Class:			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	0.0	0.0	0.0	56.4	27.8	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	56.4	84.2	84.2	84.2	84.2	84.2
Cum Total Cost:	0	0	0	0	2,037	1,071	3,108	3,108	3,108	3,108

Resource: OPRMGR		OPERATIONS MGR		EOC: SAL		LABOR				
Res Dept: 949	Overtime:	Class:	Class:	Class:	Class:	Class:	Class:			
Yr Hours:	Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:	0.0	0.0	0.0	0.0	54.0	30.2	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	54.0	84.2	84.2	84.2	84.2	84.2
Cum Total Cost:	0	0	0	0	3,530	2,110	5,640	5,640	5,640	5,640

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A18
COMMENT NO F6-047

Resource:	Res Dept:	PIPFTTR	Class:	PIPE FITTER		EOC:		LABOR					
				OverTime:	OverTime:	HOU	HOU						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:				0.0	0.0	0.0	0.0	32.0	15.7	47.7	0.0	0.0	0.0
Cum Hours:				0.0	0.0	0.0	0.0	32.0	47.7	47.7	47.7	47.7	47.7
Yr Total Cost:				0	0	0	0	1,249	656	0	0	0	0
Cum Total Cost:				0	0	0	0	1,249	1,905	1,905	1,905	1,905	1,905

Resource:	Res Dept:	PRJMgr	Class:	PROJECT MANAGER		EOC:		LABOR					
				OverTime:	OverTime:	SAL	SAL						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:				0.0	0.0	0.0	0.0	24.9	13.9	0.0	0.0	0.0	0.0
Cum Hours:				0.0	0.0	0.0	0.0	24.9	38.8	38.8	38.8	38.8	38.8
Yr Total Cost:				0	0	0	0	2,774	1,654	0	0	0	0
Cum Total Cost:				0	0	0	0	2,774	4,428	4,428	4,428	4,428	4,428

Resource:	Res Dept:	QACENG	Class:	QA ENGINEER		EOC:		LABOR					
				OverTime:	OverTime:	SAL	SAL						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:				0.0	0.0	0.0	0.0	109.4	61.2	0.0	0.0	0.0	0.0
Cum Hours:				0.0	0.0	0.0	0.0	109.4	170.6	170.6	170.6	170.6	170.6
Yr Total Cost:				0	0	0	0	6,289	3,758	0	0	0	0
Cum Total Cost:				0	0	0	0	6,289	10,047	10,047	10,047	10,047	10,047

Resource:	Res Dept:	RADENG	Class:	RAD ENGINEER		EOC:		LABOR					
				OverTime:	OverTime:	SAL	SAL						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:				0.0	0.0	0.0	0.0	56.6	35.9	0.0	0.0	0.0	0.0
Cum Hours:				0.0	0.0	0.0	0.0	56.6	92.5	92.5	92.5	92.5	92.5
Yr Total Cost:				0	0	0	0	3,344	2,262	0	0	0	0
Cum Total Cost:				0	0	0	0	3,344	5,606	5,606	5,606	5,606	5,606

Fluor Fernald, Inc.

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A18
COMMENT NO F6-047

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2004 - 2006

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

Resource:	Res Dept:	RAD TECH		RAD TECH		LABOR									
		EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	SAFETY ENGINEER		SAFETY ENGINEER		LABOR									
		EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	SAFETY TECH		SAFETY TECH		LABOR									
		EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL	EOC:	SAL
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	SERVSUB		SERVSUB		WAST		SUBS		SUBS		SUBCONTRACTORS		SUBCONTRACTORS	
		EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB	EOC:	SUB
Yr Units:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. OBRIEN
FISCAL YEAR: 2004 - 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A18
COMMENT NO F6-047

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

Resource:	TPSREP	TECH/PROG SUPT REP	EOC:		LABOR	
			Overtime:	SAL	Class:	Class:
Res Dept:	949					
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:		0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:		0 0	0 0	0 0	0 0	0 0
Cum Total Cost:		0 0	0 0	0 0	0 0	0 0

Resource:	TRNLAB	EOC:		LABOR		
		Overtime:	HOU	Class:	Class:	
Res Dept:	949					
Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05
Cum Hours:		0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
Yr Total Cost:		0 0	0 0	0 0	0 0	0 0
Cum Total Cost:		0 0	0 0	0 0	0 0	0 0

GRAND TOTALS:

Yr Hours:		Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:		0.0 0.0									
Yr Total Cost:		0 0									
Cum Total Cost:		0 0									

CAM _____

[Signature]

CONTROL TEAM _____

[Signature]

G4A19

AREA 4 ON SITE WASTE TREATMENT

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A19
COMMENT NO F6-047

Resource:	Res Dept:	HAZWAT	Overtime:	Class:		EOC:		HAZWAT		LABOR	
				Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	RAD ENGINEER	Overtime:	Class:		EOC:		LABOR		LABOR	
				Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	SERV/SUB	Overtime:	Class:		EOC:		SUBCONTRACTORS		SUBCONTRACTORS	
				Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-
Yr Units:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	WASTE ENGINEER	Overtime:	Class:		EOC:		LABOR		LABOR	
				Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 10-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: T. O'BRIEN
FISCAL YEAR: 2006

PBS: OHFN06
WBS: 1.1.G.F
CTRL ACCT: G4A1
CHARGE NO: G4A19
COMMENT NO: F6-047

GRAND TOTALS:

	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-	Oct 05-	Oct 06-	Oct 07-	Oct 08-	Oct 09-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Hours:	0.0	0.0	0.0	0.0	0.0	475.9	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	475.9	475.9	475.9	475.9	475.9
Yr Total Cost:	0	0	0	0	0	1,032,755	0	0	0	0
Cum Total Cost:	0	0	0	0	0	1,032,755	1,032,755	1,032,755	1,032,755	1,032,755

[Signature]
CONTROL TEAM

CAM

Estimate Summary

Area 4A – Waste Treatment

WBS Element – 1.1.G.F
Control Account – G4A1
Charge Number – G4A19

Labor

Labor is broken down by resource code and by activity on the attached matrixed manpower spreadsheet. SDFP estimated resource manpower, which were then rounded to the tenth of an FTE for Man Power Planning (MPP) purposes to be entered into the MPP database on a quarterly basis. This database was then exported to MicroFrame and expanded into monthly estimates. The monthly figures were then summed to provide a total hours by resource for each activity.

Materials

N/A

Equipment

N/A

Subcontracts

Four informal market research type estimates were provided and attached. The average of the four estimates is used as the value for the subcontract for waste treatment of soil from this area. Since Area 3A will be the first area having readily available soil for treatment the cost for mobilization as well as site preparation will not be accounted for within this charge number. Also, since Area 4B will be the last to have soil available for treatment, the cost for demobilization/decontamination of equipment will not be accounted for within the charge number. Therefore, this Area 4A waste treatment account will only account for treatment. The average of the four market research estimates for 1,800yd³ not including site preparation, mobilization, nor demobilization/decontamination of equipment is \$877,240.

The total estimated cost for this subcontract is \$877,240.

**Outline of Cost Breakout
Treatment and Disposal of Soils at Incinerator Pad and Maintenance Building**

	Pilot Pili	ECC ¹	EC TM Clean	Steam	MSR ²	IP TDU
<i>Schedule (days in Production Excluding Mob/Demob)</i>	24/7	-210	-60	12/7 198 24/7 99		82
<i>Pili Pili @ 1ton/hr ECTM Clean @ 6ton/hr Steam @ 3ton/hr, HP TDU @ 4ton/hr (127 = 12hours/7days week etc...)</i>						
Permitting Costs						
Treatment Costs						
Contractor Mobilization	\$300,000	\$400,000	\$75,000			\$75,000
Operations:						
Excavation ⁴						
Debris/Concrete (100yd ³ @ \$24/yd ³) ⁵	\$2,400	\$2,400	\$2,400			\$2,400
Soil (1800yd ³ @ \$10/yd ³)	\$18,000	\$18,000	\$18,000			\$18,000
LTTD Treatment or Steam Treatment (\$ per ton) @ 1800 yd ³ (2500 ton)	\$480 ⁹	\$250 ⁶	\$625,000	\$150 ⁷	\$380 ⁷	\$950,000
Analytical Verification (1 sample per 50 yd ³) ⁸	\$190 ⁹	\$190 ⁹	\$6,840	\$180 ⁹	\$190 ⁹	\$6,040
\$ per sample 1800 yd ³ = 36 samples						
Decontamination of Equipment / Demobilization	\$100,000	\$200,000	\$225,000 ¹¹	\$225,000 ¹¹		\$150,000
Disposal Costs						
Treated Soil (\$/ton) OSDF:	\$11 ¹⁰	\$27,500	\$27,500	\$11 ¹⁰	\$11 ¹⁰	\$27,500
Liquids Recovered as Part of LTTD (Org. Solv.)/(\$/ton) Incinerator at K-25 Oak Ridge CWM Port Arthur / TWI Incinerators	\$2 ⁷	\$2 ⁷	\$5,000	\$50 ⁷	\$2 ⁷	\$5,000
Solids Recovered as Part of LTTD						
Total Estimated Costs:	\$1,659,740	\$1,284,740	\$854,740			\$1,234,740

1 ECC: Environmental Chemical Corporation
2 MSR: Midwest Site Remediation
3 OnSite Technology
4 Excavation costs based on Lockwood Green Technologies estimates for 3A/4A Excavation (Feb 2000, Doc 20800-CE-0001 Rev E)
5 Concrete estimated using 90% Design Drawings for 3A/4A Excavation 28.Jan2000 (DWG 99X-1900-G-00008 and 00010)
6 Estimated costs submitted by ECC
7 Estimated costs submitted by MSR
8 Based on frequency of verifications sampling at the Trap Range
9 Estimated sample analysis cost provided by Grace Ruesink of SMO
10 Cost for OSDF transport and placement based on \$15/yd³ = \$10.80/ton
11 To account for MSR decontamination: Steam Mob cost x 3 (many small parts to decon) - HP TDU Mob cost x 2 (easier to clean)



Midwest Soil Remediation, Inc.

Attention: Frank Miller
Fluor Fernald

Midwest Soil Remediation, Inc. (MSR) operates three indirect heated thermal desorption units (TDUs) that are appropriate for the treatment of chlorinated solvent contaminated soils. These are:

- Steam Plant - 3 to 5 ton/hr closed loop container based system,
- High Performance TDU - 4 to 7 ton/hr two trailer plant with high efficiency primary and condensing train, and
- High Capacity Indirect TDU - 40 to 50 ton/hr twelve trailer plant with high capacity primary and condensing train.

All of these units are described in the attached package, which includes a statement of qualifications for MSR. The High Performance TDU is new to our service line and is described in a technical bulletin.

The high capacity indirect (**HCI**) unit is not presently suitable for operation on radioactive material. Its mobilization charge is prohibitively large for this small of a project. It has completed a similar 32,000 ton chlorinated solvent project with average operation at 45 to 50 ton/hr. If Fluor develops other large projects, this **HCI** unit should be considered for them.

The Steam Plant is routinely used for this type of project and has completed many similar ones. It is normal for us to treat characteristic hazardous waste at the generator's site under the RCRA Subpart I container standards so that the soil is both no longer hazardous, and meets the LDR universal treatment standards (UTS). We would expect to be able to meet your listed treatment standards for the solvents. The Steam Plant has a very small vent rate that is amenable to the redundant HEPA filtration requirement of the nuclear air handling standards.

The High Performance TDU is most suitable to this project and is specifically designed for mixed waste service. Its primary can easily achieve the required operating temperature. Furthermore, in operations on uranium and plutonium contaminated solids we have demonstrated that radioactivity is retained in the primary, and the gas system condensate and vent gas are both non-radioactive.

ESTIMATED TREATMENT COSTS

The Steam Plant has a typical operating cost of about \$75 to \$150 per ton excluding disposal of the treated soil and gas system condensate. The Steam Plant condensate would probably be radioactive and this cost needs to be carefully evaluated. If the historic disposal pricing of the Oak Ridge K-25 incinerator is used for the condensate, then this can add about \$50/ton to the treatment cost. If commercial disposal at the DSSI mixed waste recovery facility is used, then this increment can be as much as ten times higher, or more. It is important to realize that this high condensate disposal cost is not unique to the Steam Plant, but is typical of virtually all conventional thermal desorption units when placed in radioactive waste service. The Steam Plant is relatively easy to install and has a corresponding low mobilization cost of about \$75,000.

The High Performance TDU has an operating cost of about \$180 to \$380 per ton. Since we have shown that the condensate is non-radioactive in operations on uranium, and we have disposed of it at both the CWM Port Arthur and TWI incinerators in the past, the disposal cost for it will add only about \$2/ton to the treatment cost. This is a significant advantage over both the Steam Plant and competitive thermal desorption units in the remediation market. The High Performance TDU is also relatively easy to install, with a mobilization cost of about \$75,000.

EFFECT OF PROJECT SIZE

The costs stated above for the Steam Plant are typical of projects in the size range under consideration by Fluor.

The High Performance unit costs are more sensitive to project size. This is because the unit is a new addition to MSR's service line and is presently carrying relatively high fixed costs. For this reason, we do not presently recommend it for projects as small as 2,000 ton. However, if the projected volume is really in the 5,000 to 10,000 ton range as could be the case at the stated increased volume, then the fixed costs are better managed.

All of the abovementioned costs assume operations consistent with our experience on Superfund and hazardous waste sites. We have developed efficient approach to project planning and execution as is required in this highly competitive market. When a project specification is available for review, we can provide complete cost estimate consistent with your site specific requirements.

PROJECT SCHEDULE

The total project schedule includes time to mobilize and install the unit, the time to process the soil, and the time to decontaminate and demobilize. Mobilization time for both units is similar. Each can be operational within two or three days of arrival at a properly prepared site.

The Steam Plant is suitable for operation either 12 or 24 hours per day. The High Performance TDU is best operated continuously, on a 24/7 or 24/5 schedule. Both have high operational reliability, with on-line factors in excess of 80%. Depending on the soil volume and operating cycle the processing schedule could be over a range of:

Processing Time for Various Scenarios -
Days in Production (Excluding Mob/Demob)

SCENARIO	1,500 yd ³	7,300 yd ³
Steam Plant 12/7	41	198
Steam Plant 24/7	21	99
HP-TDU 24/7	Too small	82

Demobilization is the period of greatest schedule uncertainty. This is because of the need to decontaminate the unit to nuclear free release criteria. The Steam Plant was not designed for radioactive service. Consequently, it has many internal parts that are difficult to access for cleaning. Furthermore, the unit is mostly constructed from carbon steel with its inherent difficulty for decontamination. We would project several weeks of effort to achieve free release status on those components where this is cost effective.

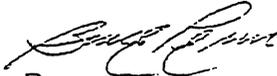
The High Performance TDU on the other hand is designed for radioactive service. Careful attention has been given to limiting the volume and area of contaminated equipment. Also, equipment is constructed from stainless steel which is easier to decontaminate. We have successfully achieved free release for a similar pilot plant that was used for the treatment of both uranium and plutonium contaminated solids. This required only a few days of decontamination with minimal secondary waste generation. We would project one week for the full-scale unit. This can be a significant cost difference, both in direct labor charges and the potential cost of replacing non-releasable equipment items.

SUMMARY

MSR has two units that are potentially suitable for this project. Our Steam Plant has the potential to be the low cost choice depending on overall project factors. However, the total project cost may be lowest using our High Performance TDU, especially if the project size extends to the higher estimated volume and residual disposal and radioactive decontamination costs are considered.

Please call me to advance this discussion as you evaluate your options on this project.

Sincerely,



Bruce Penn
General Manager
Midwest Soil Remediation, inc.

Environmental Chemical Corporation

Fernald Site
TCE/Uranium Mixed Waste Contaminated Soil

1. APPROACH

Fernald is evaluating treatment options for a moderate volume of contaminated soil. This soil is contaminated with both trichloroethene (TCE) and uranium. TCE levels are up to 1,100 ppm and uranium levels are at about 300 ppm. Soil that is treated to less than 12 ppm can be disposed in an on-site cell, and does not require off site disposal.

Environmental Chemical Corporation (ECC) has available three thermal desorption units that have the capability to remove TCE from soil to well below the required level. EC Clean™ is its largest unit with capacity of over 20 tons per hour to a pilot scale unit with capacity of 1 ton per hour. We would expect our units to routinely reduce TCE to less than 0.1 ppm, and with optimization to below the standard practical quantitation level of 0.005 ppm.

These thermal desorbers are all indirect heated units, with very low exhaust gas flows. This is critical, since the entire vent gas flow can be economically filtered with multiple HEPA filters to absolutely contain the radioactive uranium.

For this response, we have considered providing either a large pilot unit or our small production unit. The pilot unit is mobile, ships on two trailers, and has a capacity of about 1 ton/hr on this material. The small production unit is also mobile, ships in five sea containers, and has a capacity of about 6-8 ton/hr. As more information becomes available about the project, ECC will be in a better position to recommend the most favorable unit for Fernald.

2. SOIL TREATMENT WITH PILOT PLANT

The pilot plant has already been used by the ECC team for the processing of mixed waste sludges at the Oak Ridge gaseous diffusion plant (K-25). In this work, concentrated uranium sludge from a waste water treatment facility at the Y-12 weapons plant were processed in the thermal desorption pilot plant to remove water and oil. The treated solids were then efficiently stabilized to NRC and EPA RCRA standards for land disposal. The significant result of this work was that it was performed without a measurable release of uranium by any pathway. The air emission from the vent had no detectible uranium. The process unit completely contained the radioactive material such that there was not a single "hot" swipe throughout the operation. This was a key to success, since the project was performed in the parking lot of a receiving facility outside of the highly secure area of the K-25 plant. No uncontrolled contamination was allowed in this area.

A photo of the pilot plant at the Oak Ridge project is attached. This unit can heat soil to approximately 1,000F if required. We would expect operation at about 500-700F for this application. The pilot unit can process about 1000-2,000 lb/hr to this temperature.

Our understanding is that the estimated treatment volume ranges from 1,500 to 5,000 cu.yd. At 1 ton/hr, the smaller volume could be treated in about 150 days with the pilot unit. The unit was installed, functionally tested and inspected for operational readiness at Oak Ridge in about ten days. Decontamination to the DOE's free release limit for uranium required an additional ten days at the end of the project. So, all in, the project could be performed in about five months with the pilot plant.

For 24-hr operation (three per shift), plus an engineering supervisor are required to operate the pilot unit. Additional project staff would be one or two health physics technicians per shift. Depending on the project requirements and division of responsibility between Fluor and ECC, very little other direct project staff may be needed.

The pilot unit sets up in an area 70' by 50' and is fed either from drums or with a small telescoping loader. This choice depends on the contamination control requirements for the project. The unit fires on either propane or natural gas.

Permitting at Oak Ridge took about three to six months. A state air permit was obtained for the new source. The waste was RCRA hazardous (F006) and was treated under a modification to the Oak Ridge RCRA Part A permit. The site performed a Safety Analysis Review (SAR) as required by DOE orders, and an independent SAR was performed by a DOE subcontractor. Operation was authorized by the DOE prime contractor after completion of a shakedown test on a non-radioactive surrogate sludge.

Clearly, ECC can present significant positive experience regarding this and other similar successful mixed waste treatment at the appropriate time.

3. SOIL TREATMENT WITH EC Clean™

ECC has begun production of its second EC Clean™ system which is modular in configuration to facilitate transportation by barge or other ocean going vessel. This system is a smaller version of the very successful trailer mounted unit used for major superfund site remediation of PCB's. The system is truly indirect such that vapor flow rates are very small. The modular system is designed to be transported and erected at low costs, so that smaller sites, like the one at Fernald can be remediated very economically.

While easier to erect and transport, productivity has been optimized. The system has a treatment rate of between 6-11 tons per hour. The system consists of five ocean style container frames interlinked as a 45' by 45' wide by 18 foot high system. Feed storage and soil discharge area plus equipment would occupy a space of about 80' by 120'.

The system is scheduled to undergo its first project January 2001, and will be available for the FDF project during the spring of 2001.

4. BUDGETARY COSTS

ECC has prepared preliminary estimated costs to perform this work. This is to give Fluor information for planning purposes in advance of a specification for the project. As more information is available, these estimates can be refined to be more accurate.

Pilot Plant Costs

The pilot plant is essentially complete now with the required equipment to perform this project. The mobilization cost for the project would be about \$300,000. This is dominated by the cost to install and functionally check out the unit. *This mobilization cost is the area that is the least accurate of the estimate.*

Operating cost would be about \$480/ton, including labor, consumable supplies, utilities, and maintenance of the unit. *Disposal of the recovered TCE, water treatment wastes from the condensed liquids, and the treated solids is not included.* Decontamination and demobilization would cost about \$100,000. There could be several drums of mixed waste generated during decontamination. This is from solids that accumulate in the unit that cannot be removed during operation.

Larger Plant Costs

EC Clean™ would have very similar mobilization costs as the pilot but the emission potential on a per hour basis is 6 times higher. As such, permitting may be more expensive. Also since the rate for processing of soil is 144 tons per day, fugitive emissions may be a concern. Based on these the mobilization estimates should be increased by \$100,000 or a total of \$400,000.

Operating costs for the larger system would be near \$250/ton including labor, consumable supplies, utilities, and maintenance of the unit. *Disposal of the recovered TCE, water treatment wastes from the condensed liquids, and the treated solids is not included.*

Because of its size, decontamination is much more advanced and is twice the cost of the pilot system or \$200,000.

Basis

As with any budget, broad assumptions have been made as to the approach. ECC has a very productive base of thermal treatment experience with nearly 1 million tons of remediated soil. We have used discounted productivities to account for readiness reviews and start up approaches. Care should be taken to understand the approach. Any additional time would increase our costs significantly. The larger system will have a higher standby cost than the pilot system.

Depending on the site's capability to accept contaminated waste waters, as well as new solid wastes from water treatment, this aspect of the treatment can be more or less complicated.

Excavation, monitoring, analytical and backfill/disposal of soils is not included. ECC is a full service contractor and we can provide an estimate to perform any or all of these if you would like.

4. SUMMARY AND CONCLUSION

ECC can mobilize either treatment units to the Fernald site to solve this problem. Either system are economical for the initial quantity of soil. If the quantity of soil grows then the larger modular system offers greater economic advantage.

With either system, operating costs are significantly below off site mixed waste landfill disposal cost, which our present understanding is about \$1,200/ton. Furthermore, TCE at 1,100 ppm does not meet the land ban treatment standard and would not be accepted for mixed waste disposal at any price. Therefore, ECC can perform a valuable service at below market cost for Fernald. Our units are well suited to mixed waste operation, and can meet the rigorous performance requirements of this application. We look forward to advancing this discussion with Fernald.

SECTION 6

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Area 4A Soils Remediation		Date: 4/11/01		WBS Number: 06		Total Baseline Dollars (Minimum Case): \$13,141,426				
Evaluator: R. Abitz / F. Miller		Date: 4/11/01		Control Account Number: G4A1						
Project Task		Risk and/or Opportunity		Potential Impact		Internal Or External Driver				
				Impact Cost \$ (Maximum Case)	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy	
Area 4A Site Prep / Excavation	Certification Units Failure	Additional Excavation for 2 Failed CUs, 1/4 footprint of Group 1 CU at a depth of 2'. This equates to 1200 cy/CU or 2400cy @ \$30/cy	Internal	\$72,000	2	70	4	\$50,400	3	Accept Risk
Area 4A Site Prep / Excavation	Groundwater infiltration during excavation	Installation and operation of pumps to remove excess water	Internal	\$10,000	1	10	1	\$1,000	1	Accept Risk
Area 4A Site Prep / Excavation	Remediation activities contaminate/recontaminate areas that originally did not need remediation.	Additional Excavation of 1000cy @ \$30/cy	Internal	\$30,000	1	30	2	\$9,000	1	Accept Risk
Area 4A Site Prep / Excavation	Extreme Weather Delays	Contractor delayed by weather / muddy conditions for all of April and 1/2 of May. Contractor need to work double shift for a month and a half. Impact to Fluor personnel who will cover second shift at overtime for 1.5 months.	Internal	\$54,000	1	20	2	\$10,800	1	Accept Risk
Area 4A Site Prep / Excavation	Encountering 10% more debris than was identified from redesign activities.	Additional 3000cy of CAT 2 material requiring excavation and placement at 2x the CAT 1 rate.	Internal	\$77,000	1	10	2	\$7,700	1	Accept Risk
Area 4A Site Prep / Excavation	No availability for OnSite Organic Treatment	Organically contaminated soil is in the way of excavation causing a month delay while the soil is contained. The delay will be corrected for with double shifting for the month following. Impact to Fluor personnel who will cover second shift at overtime for 1 month.	Internal	\$35,000	1	20	2	\$7,000	1	Accept Risk

Risk/Opportunity Identification and Analysis Form

Project: Area 4A Soils Remediation		Date: 4/11/01		WBS Number: 1.1.G.F		Total Baseline Dollars (Minimum Case): \$13,141,426					
Evaluator: R. Abitz / F. Miller		Date: 4/11/01		Control Account Number: G4A1							
CAM: JD Chiou		Risk and/or Opportunity		Potential Impact							
Project Task	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy			
Area 4A Title III	Additional Samples needed to bound contamination (chasing) Implementing Only A Part of the Design		Internal		1	\$8,000	60	4	\$4,800	2	Accept Risk
Area 4A Title III	Containers do not meet shipping requirements		Internal		1	\$15,000	70	4	\$10,500	2	Accept Risk
Area 4A Offsite Waste Disposition	Discovery of additional material needing containerization.		Internal		2	\$100,000	30	2	\$30,000	2	Accept Risk
Area 4A Offsite Waste Disposition	Discovery of additional AWAC material.		Internal		1	\$10,000	30	3	\$3,000	1	Accept Risk
Area 4A Offsite Waste Disposition	No availability for OnSite Treatment		Internal		2	\$600,000	10	1	\$60,000	1	Accept Risk
Area 4A Onsite Waste Treatment	Certification Units Failure		Internal		5	\$14,500,000	20	2	\$2,900,000	8	Accept Risk. Develop a detailed Contingency Plan
Area 4A Excavation Control / Certification	Longer EPA Review Cycle		Internal		2	\$20,000	70	4	\$14,000	3	Accept Risk
		Total:				\$15,531,000			\$3,108,200		
Area 4A Onsite Waste Treatment	Longer EPA Review Cycle		External		1	\$10,000	30	2	\$3,000	1	
Area 4A Excavation Control / Certification	Longer EPA Review Cycle		External		1	\$10,000	30	2	\$3,000	1	

**WBS DICTIONARY
CONTROL ACCOUNT/CHARGE NUMBER**

U.S. DEPARTMENT OF ENERGY
 WORK BREAKDOWN STRUCTURE DICTIONARY
 PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE OF CONTRACT 12/01/2000	
3. IDENTIFICATION NUMBER DE-AC24-010H20115		4. INDEX LINE NO. 53	
5. WBS ELEMENT CODE 1.1.G.G		6. WBS ELEMENT TITLE AREA 3B SOIL REMEDIATION	
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00		8. DATE OF CHANGES 09/05/2001	
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA		10. BUDGET AND REPORTING NUMBER EW05H3060	
11. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts ODCs</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3B comprises approximately 19 acres and lies in the SW quadrant of the former Production Area. The area is bounded by the haul road to the north, B Street to the east, the Plant 1 Pad and Building 71 dock to the south and the Production Area fence line and haul road to the west.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of work for these activities is defined in control account G3B1 Area 3B Soil Remediation. Key subjects in this account are predesign characterization, Title I/II/III services, site preparation, at-and below-grade excavation interim restoration, excavation control monitoring, certification activities, and offsite waste disposition.</p> <p>NOTE: Predesign and Title I/II activities cover Areas 3B, 4B and 5.</p> <p>Work specifically excluded from this account is as follows:</p> <ul style="list-style-type: none"> - Staff labor charged to GPM1 - Engineering services for the design and construction of the OSDF - Post-remediation monitoring, maintenance and storm water management - Post-closure documentation - Natural Resource Restoration activities - All remedial work described in other PBS06 control accounts - Area 10 (Soils Corridor) 			

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE OF CONTRACT 12/01/2000
3. IDENTIFICATION NUMBER DE-AC24-01OH20115	4. INDEX LINE NO. 53
5. WBS ELEMENT CODE 1.1.G.G	6. WBS ELEMENT TITLE AREA 3B SOIL REMEDIATION
7. APPROVED CP NO. NEW PER CP# FY01-0115-0006-00	8. DATE OF CHANGES 09/05/2001
9. SYSTEM DESIGN DESCRIPTION CERCL/ACA	10. BUDGET AND REPORTING NUMBER EW05H3060
11. ELEMENT TASK DESCRIPTION - All centralized services	

**WORK SCOPE DEFINITION
(Control Account)**

PROJECT TITLE		2. DATE	Page 1
FEMP (DEFENSE)		09/05/2001	
3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.G	AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		12/00 - 11/08	
12. TASK IDENTIFICATION (CONTROL ACCOUNT)	13. TASK DESCRIPTION (ONE LINE)		
G3B1	AREA 3B SOILS REMEDIATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3B comprises approximately 19 acres and lies in the SW quadrant of the former production area. The area is bounded by the haul road to the north, B Street to the east, the Plant 1 Pad and Building 71 dock to the south and the production area fence line and haul road to the west.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope for work for these activities is further defined in the following charge numbers:</p> <p>G3B11 - Area 3B/4B/5 Predesign G3B12 - Area 3B/4B/5 Title I/II Design G3B13 - Area 3B Title III G3B14 - Area 3B Site Prep/Excavation G3B17 - Area 3B Exc Control/Certification G3B18 - Area 3B Offsite Waste Disposition</p> <p><u>d. WORK SPECIFICALLY EXCLUDED:</u></p> <p>Staff labor charged to GPM1</p>			
Project Manager	Control Account Manager	Control Team Manager	

WORK SCOPE DEFINITION
(Control Account)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/05/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 11/08	
12. TASK IDENTIFICATION (CONTROL ACCOUNT) G3B1	13. TASK DESCRIPTION (ONE LINE) AREA 3B SOILS REMEDIATION		

14. ELEMENT TASK DESCRIPTION

Engineering services for the design and construction of the OSDF
Post-remediation monitoring, maintenance and stormwater management
Post-closure documentation
Natural Resource Restoration activities
All remedial work described in other PBS06 control accounts
Area 10 (Soils Corridor)
All centralized services

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 1
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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 2/05
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12. TASK IDENTIFICATION (WORK PACKAGE) G3B11	13. TASK DESCRIPTION (ONE LINE) AREA 3B/4B/5 PREDESIGN
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Materials
Subcontracts

b. TECHNICAL CONTENT:

The content of this document applies to the soil characterization program at the FEMP specific to area pre-design characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 3B/4B/5. It is a summary for area-specific characterization efforts that will be conducted to delineate areas of above Final Remediation Level (FRL) contamination as well as contamination that is above the On-Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC). The data generated from these characterization activities will support remedial design. The Area 3B/4B/5 physical boundaries are described in Section 7 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).

Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Records of Decision (RODs) for OU5 and OU2.

c. SCOPE OF WORK:

The scope of this document covers the characterization support for pre-design of Area 3B/4B/5. Pre-design Investigations include the collection of additional data collected to support the engineering design, which will be included in the Integrated Remedial Design Plan (IRDP). The work scope of the pre-design characterization includes characterization planning, field survey work,

Project Manager 	Control Account Manager 	Control Team Manager 
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(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 2/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B11	13. TASK DESCRIPTION (ONE LINE) AREA 3B/4B/5 PREDESIGN		

14. ELEMENT TASK DESCRIPTION

real-time data collection and reduction, field sampling, laboratory analysis, and data management activities.

The predesign characterization effort includes the following tasks:

Review and evaluation of existing sampling data, real-time data and geophysical data

Review HWMUs, USTs, and potentially RCRA characteristic area

Develop contamination models based on existing data

Develop and write applicable data quality objectives and Project Specific Plans, as necessary

Prep the area for field measurements which includes clearing or brush

Physical sampling

Assess real-time data generated during predesign

Perform assessment of radiological field survey results

Perform data management functions within SDFP

Laboratory sample analysis

Sample shipping for off-site analysis

If necessary, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning

Includes work scope cross walked from charge numbers GCJ33 performed during FY01 for predesign activities.

d. WORK SPECIFICALLY EXCLUDED:

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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 2/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B11	13. TASK DESCRIPTION (ONE LINE) AREA 3B/4B/5 PREDESIGN		

14. ELEMENT TASK DESCRIPTION

Area 3B/4B predesign PSP work performed before December 1, 2000

Characterization tasks in other areas

Construction or remediation

Waste tracking or disposition

Area pre-certification or certification activities

Waste Tracking and disposition

Waste Treatment activities

Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

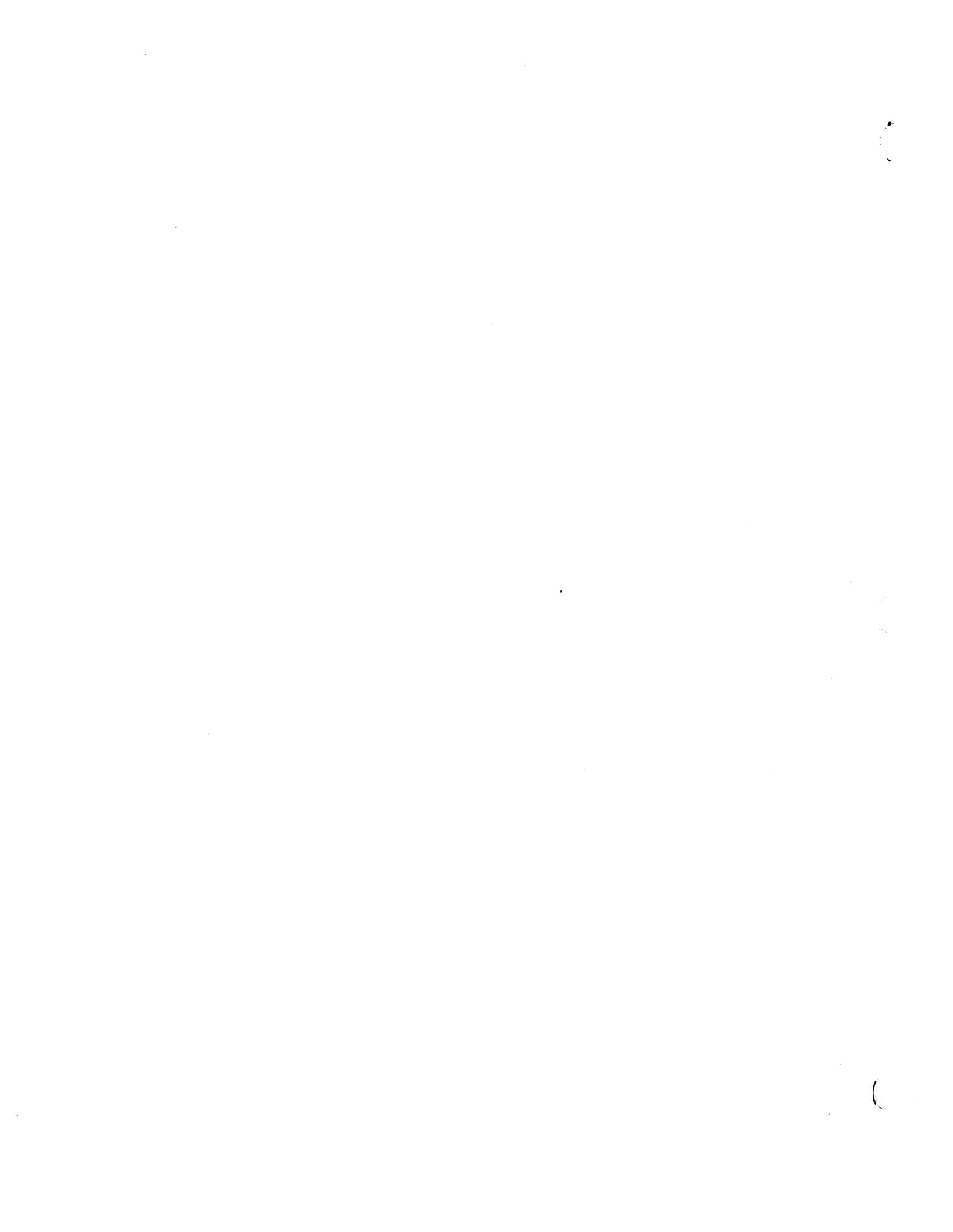
Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

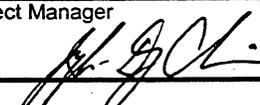
Centralized services and/or equipment

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.



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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0003-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 2/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B12	13. TASK DESCRIPTION (ONE LINE) AREA 3B/4B/5 TITLE I/II DESIGN		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Material Subcontractor</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Area 3B/4B/5 comprises approximately 101 acres and includes the western half of the former production area, the administrative area, the main parking lot, and the eastern storm-water control basin.</p> <p>Title I/II work involves project planning, compilation of reference drawings, development of the functional requirements document (FRD) and design criteria package (DCP), performance grading, evaluation of occupational and environmental ALARA requirements, preparation of drawings, specifications and the Implementation Plan (i.e., the IRDP), development of the cost estimate, and the submittal of all records to ECDC.</p> <p>Drivers that affect the cost and schedule of this work include EPA/OEPA review cycles on the IRDP and completion of predesign characterization activities.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Title I/II engineering services for Area 3B/4B/5 consist of three tasks: Project Planning, Title I Design, and Title II Design.</p> <p>Project Planning:</p> <p>Review reference drawings, NLO project files and other project closure</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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1. PROJECT TITLE		2. DATE	Page 2
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3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.G	AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0003-00		12/00 - 2/05	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G3B12	AREA 3B/4B/5 TITLE I/II DESIGN		
14. ELEMENT TASK DESCRIPTION			
<p>reports</p> <p>Compile and index drawing packages for each grid sector</p> <p>Prepare the 3-D models of at- and below-grade structures</p> <p>Estimate the quantity of piping debris</p> <p>Walk down the production area to check drawings and estimates</p> <p>Prepare the PEP and ASR</p> <p>Develop the FRD, ARARs and TBCs</p> <p>Complete the occupational and environmental ALARA evaluations</p> <p>Procure the needed CADD and civil engineers</p> <p>Conduct the project alignment meeting</p> <p>Submit project records to ECDC and maintain copies in project file</p> <p>Perform project management and control activities</p> <p>Title I Design:</p> <p>Prepare the DCP using the FDR and other applicable design criteria</p> <p>Develop the conceptual design to complete drawings to 30% level</p> <p>Initiate work on the IP and SWECP</p> <p>Perform an engineering analysis and review of the DCP and drawings</p> <p>Conduct a review meeting with project and functional-area personnel</p> <p>Submit project records to ECDC and maintain copies in project file</p> <p>Perform project management and control activities</p> <p>Title II Design</p> <p>Complete the performance grading of systems and structures</p> <p>Develop and complete a cost estimate</p> <p>Present a review of the project to the TRB</p> <p>Prepare the DOE 90% IRDP</p> <p>Complete the RTC package for the DOE 90% IRDP</p> <p>Prepare the EPA/OEPA 90% IRDP</p> <p>Complete the RTC package for the EPA/OEPA 90% IRDP</p> <p>Prepare the CFC package and final IP</p> <p>Complete the Davis-Bacon determination</p> <p>Submit project records to ECDC and maintain copies in project file</p> <p>Perform project management and control activities</p>			

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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0003-00		11. ESTIMATED START / COMPLETION DATE 12/00 - 2/05	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B12	13. TASK DESCRIPTION (ONE LINE) AREA 3B/4B/5 TITLE I/II DESIGN		

d. WORK SPECIFICALLY EXCLUDED:

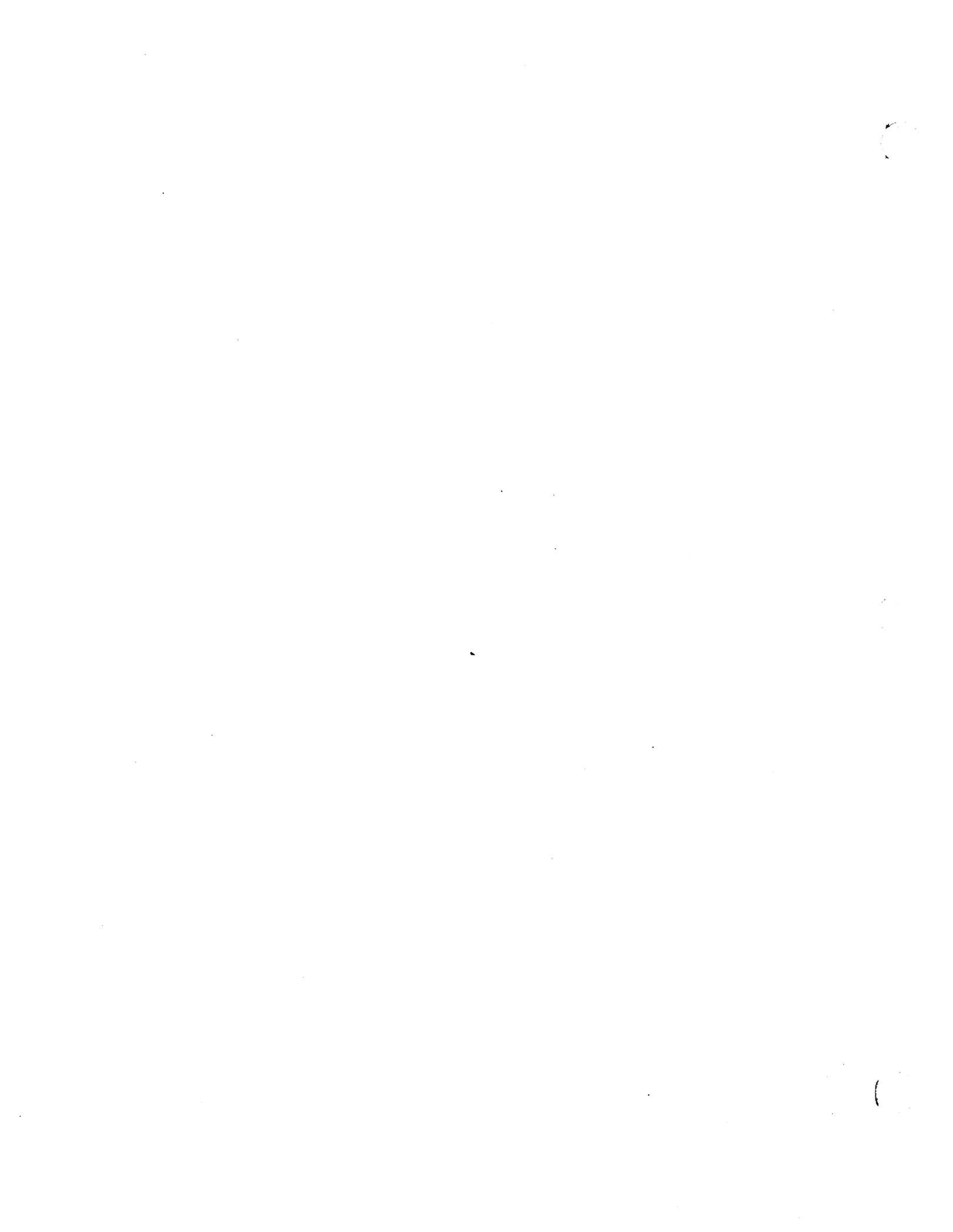
All other charge numbers under control account G3B1
Predesign characterization, Title III design, excavation, certification, waste disposition

All other control accounts under PBS 06
Area 1, Area 2, Area 3A, Area 4A, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors

All other PBS accounts
PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09,
PBS 10, PBS 11, PBS 12

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.



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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 11/08
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12. TASK IDENTIFICATION (WORK PACKAGE) G3B13	13. TASK DESCRIPTION (ONE LINE) AREA 3B TITLE III
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14. ELEMENT TASK DESCRIPTION

a. ELEMENTS OF COST:

Labor
Material
Subcontractor
ODCs

b. TECHNICAL CONTENT:

Area 3B comprises approximately 20 acres and is enclosed by the haul road to the north, B Street to the east, 2nd Street to the south, and the production area fence line to the west.

Title III work involves engineering oversight of the excavation work, preparation and approval of DCNs, assistance with RCIs and NCRs, completion of safety walkthroughs, preparation of the yearly completion report, as-built drawings and close-out report, and the submittal of all records to ECDC.

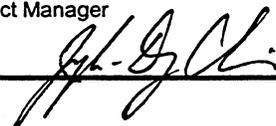
Drivers that affect the cost and schedule of this work include EPA/OEPA review cycles on DCNs, an excessive number of rain days, and unexpected discovery of large areas of undocumented contamination.

c. SCOPE OF WORK:

Title III engineering services for Area 3B consist of two tasks: Excavation Support and Prepare Final Documents.

Excavation Support:

Review and modify construction subcontract and work plans, as needed

Project Manager 	Control Account Manager 	Control Team Manager 
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1. PROJECT TITLE FEMP (DEFENSE)	2. DATE 09/06/2001	Page 2
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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 12/00 - 11/08
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12. TASK IDENTIFICATION (WORK PACKAGE) G3B13	13. TASK DESCRIPTION (ONE LINE) AREA 3B TITLE III
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14. ELEMENT TASK DESCRIPTION

Prepare and approve DCNs
Provide information for RCIs
Respond to and close out NCRs
Perform safety walkthroughs and attend safety briefings, as needed
Prepare the yearly completion report
Submit project records to ECDC and maintain copies in project file
Perform project management and control activities

Prepare Final Documents:

Complete as-built drawings
Prepare the close-out report
Submit project records to ECDC and maintain copies in project file
Perform project management and control activities

d. WORK SPECIFICALLY EXCLUDED:

All other charge numbers under control account G3B1

Predesign characterization, Title I/II design, excavation, certification, waste disposition

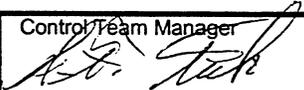
All other control accounts under PBS 06
Area 1, Area 2, Area 3A, Area 4A, Area 4B, Area 5, Area 6, Area 7, Area 8, Area 9, stream corridors

All other PBS accounts
PBS 01, PBS 02, PBS 03, PBS 04, PBS 05, PBS 07, PBS 08, PBS 09,
PBS 10, PBS 11, PBS 12

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.

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3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.G	AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		11/06 - 8/08	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G3B14	AREA 3B SITE PREP/EXCAVATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>Perform remedial construction activities for Area 3B.</p> <p>The project boundaries are as follows:</p> <p>North by the Haul Road</p> <p>East by B Street</p> <p>South by 2nd Street</p> <p>West by Production Area Fence Line</p> <p><u>c. SCOPE OF WORK:</u></p> <p>Provide site preparation activities prior to the start of excavation. Activities included but not limited to are as follows:</p> <p>Provide and deliver all required permits.</p> <p>Establish work limits and excavation boundaries.</p> <p>Establish construction support areas and work areas.</p>			
Project Manager	Control Account Manager	Control Team Manager	
			

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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 11/06 - 8/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B14	13. TASK DESCRIPTION (ONE LINE) AREA 3B SITE PREP/EXCAVATION		
14. ELEMENT TASK DESCRIPTION			
<p>Connect all utilities into construction support area.</p> <p>Establish surface water management controls.</p> <p>Provide excavation and removal of all above FRL soil and at and below grade concrete and utilities from Area #3B and transportation to the On-site Disposal Facility, SP-7 or other designated staging area in accordance with certified construction drawings, specifications and other subcontract requirements. Additional related activities and services within this scope of work are as follows:</p> <p>Erosion and sediment control during construction</p> <p>Installation and/or relocation of fencing during construction</p> <p>Equipment, material and support facilities rented/procured for project use</p> <p>Dewatering as necessary during construction</p> <p>Dust Control within designated work area.</p> <p>Decontamination of equipment</p> <p>Matrixed and subcontracted labor directly associated with construction</p> <p>Specific work to be addressed:</p> <p>Size reduce, excavate, load and haul at and below grade concrete, utilities, and debris associated with the Impacted Material Haul Road to OSDF as Category 2.</p> <p>Excavate, load and haul impacted soils to the OSDF as Category 1.</p> <p>Cut area utility isolation trenches and plug storm water and sanitary sewers.</p> <p>Interim Restoration Grading.</p>			

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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU
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8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS
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10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00	11. ESTIMATED START / COMPLETION DATE 11/06 - 8/08
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12. TASK IDENTIFICATION (WORK PACKAGE) G3B14	13. TASK DESCRIPTION (ONE LINE) AREA 3B SITE PREP/EXCAVATION
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14. ELEMENT TASK DESCRIPTION

Perform Post-Excavation activities.

d. WORK SPECIFICALLY EXCLUDED:

Placement in OSDF

Seeding / Vegetation beyond interim restoration

Road construction

Title I/II design services

Performing and/or managing Title III services

Sampling and testing of waste materials during remediation

Monitoring and maintenance of the remediated area after remediation

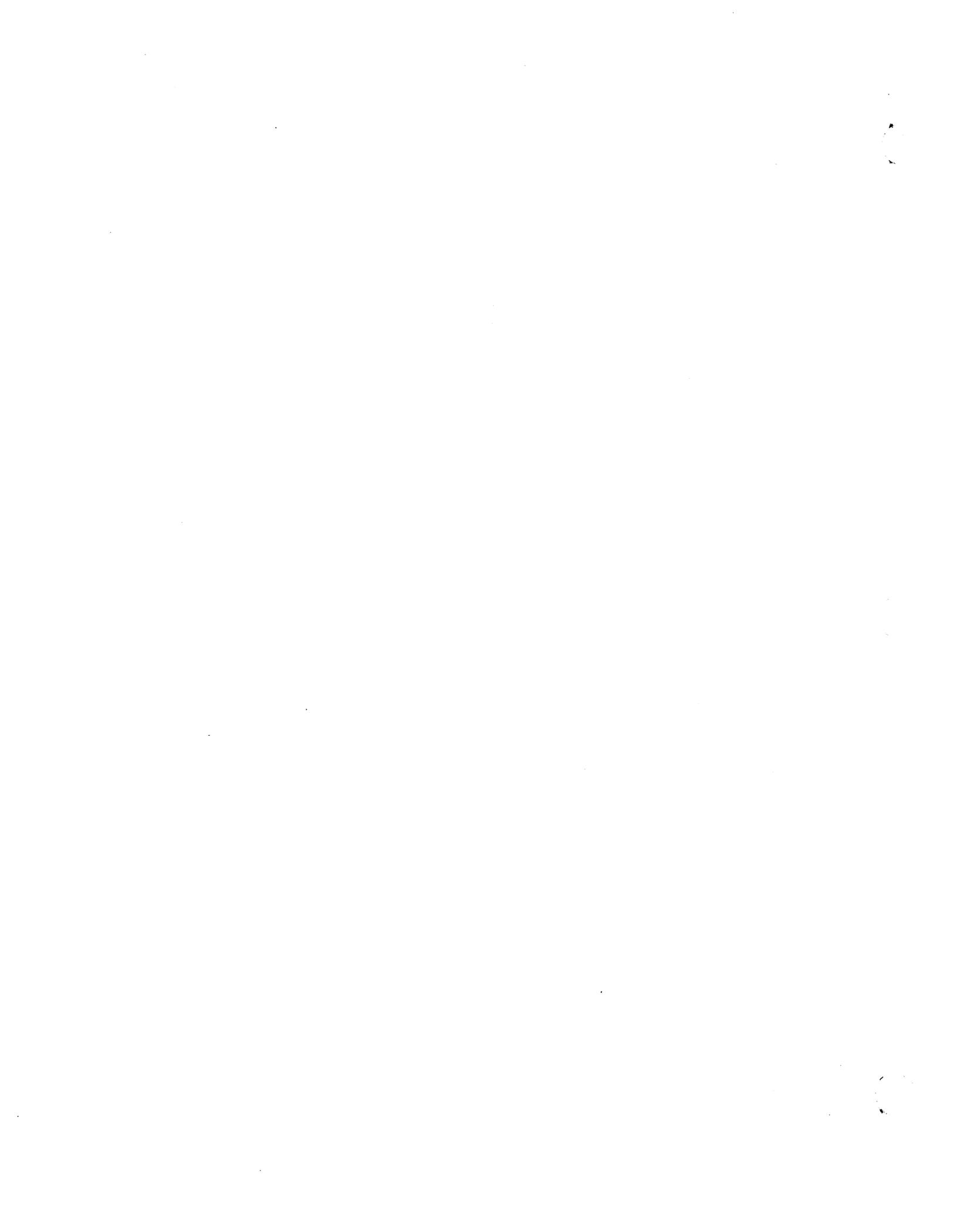
Offsite disposal of materials exceeding the waste acceptance criteria for on-site disposal

Treatment of lead containing soil

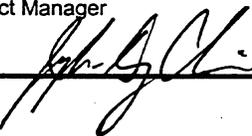
Centralized Personnel, Radiological controls, and Safety management during remedial construction

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.



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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
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5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/06 - 11/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B17	13. TASK DESCRIPTION (ONE LINE) AREA 3B EXC CONTROL/CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to the soil characterization program at the FEMP specific to area characterization, sampling, and analytical work performed by and for the Soil Disposal Facility Project in Area 3B. It is a summary for area-specific characterization efforts that will be conducted in defined areas of excavation and lesser environmentally impacted areas that may not be excavated, but will require monitoring, sampling, and analytical testing. The characterization efforts are intended to provide information that may be required to supplement the remedial design and to support the remedial action that will result in compliance with the Final Remediation Levels (FRLs) published in the OU5 ROD. The Area 3B physical boundaries are described in Section 4 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this document covers the characterization support for excavation control, precertification, and certification of Area 3B. Characterization work performed in Area 3B under this scope will assist in determining soil disposition, extent of excavation, and provide sound field and analytical data</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

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3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/06 - 11/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B17	13. TASK DESCRIPTION (ONE LINE) AREA 3B EXC CONTROL/CERTIFICATION		
14. ELEMENT TASK DESCRIPTION			
<p>that prove remedial activities were sufficient. During excavation of Area 3B, radiological field surveying, physical soil sampling, and analysis will be required. This testing will be performed during the excavation process as necessary to determine disposition of excavated material. After excavation is determined to be complete, the remaining soil will be tested for all area specific contaminants of concern (COCs) to demonstrate FRL attainment. The actual radiological field-survey measurements, physical soil sampling and analytical activities covered under this account include the following tasks:</p> <p>Review existing data and engineering drawings</p> <p>Develop and write applicable data quality objectives and projects-specific-plans, as necessary</p> <p>Develop Certification Design Letters and text for the Area Implementation Plan</p> <p>Define and delineate excavation monitoring boundaries in the field</p> <p>Define and delineate Certification Units</p> <p>Prep the area for field measurements which includes clearing of brush</p> <p>Installation of certification fencing and signs</p> <p>Physical sampling</p> <p>Assess real-time data generated during excavation</p> <p>Perform assessment of radiological field survey results</p> <p>Perform data management functions within SDFP</p> <p>Develop final reports or certification reports</p> <p>Perform analysis</p> <p>If needed, Ground Penetrating Radar (GPR) / Electro-Magnetic (EM) Scanning</p>			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 3
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/06 - 11/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B17	13. TASK DESCRIPTION (ONE LINE) AREA 3B EXC CONTROL/CERTIFICATION		

14. ELEMENT TASK DESCRIPTION

d. WORK SPECIFICALLY EXCLUDED:

Pre-design work

Waste Tracking and disposition

Waste Treatment activities

Construction or remediation

Development of Engineering plans, drawings, or specifications

Land Surveying, staff, or equipment

Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment

Characterization personnel covered under GPM14

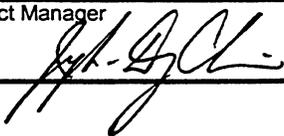
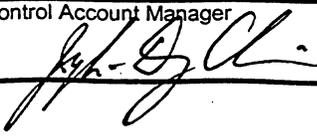
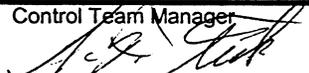
Centralized services and/or equipment

All activities associated with other PBS elements

All activities associated with other PBS-06 control accounts.



WORK SCOPE DEFINITION
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1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 1
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/06 - 5/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B18	13. TASK DESCRIPTION (ONE LINE) AREA 3B OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION			
<p><u>a. ELEMENTS OF COST:</u></p> <p>Labor Materials Subcontracts</p> <p><u>b. TECHNICAL CONTENT:</u></p> <p>The content of this document applies to waste disposition activities at the FEMP specific to work performed by and for the Soil Disposal Facility Project in Area 3B. It is a summary for area-specific waste disposition efforts for waste that does not meet the On Site Disposal Facility (OSDF) Waste Acceptance Criteria (WAC) and will require packaging, loading, shipping, and disposal at an approved offsite disposal facility. Offsite treatment of waste materials that do not meet the offsite disposal facility's WAC may be required prior to disposal and is also covered under this account. The waste disposition efforts are intended to result in compliance with the OU5 Record of Decision (ROD). The Area 3B physical boundaries are described in Section 5 of the Fluor Fernald Closure Plan Basis of Estimate (20300-PL-0005).</p> <p>Drivers of the work are CERCLA, RCRA, the EPA Amended Consent Agreement (ACA), Sitewide Excavation Plan (SEP), and the signed Record of Decision (ROD) for OU5.</p> <p><u>c. SCOPE OF WORK:</u></p> <p>The scope of this document covers the offsite disposition of at and below grade soil and/or other waste materials that have been identified throughout the characterization and remedial action process. The waste disposition activities covered under this account include the following tasks:</p>			
Project Manager 	Control Account Manager 	Control Team Manager 	

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE FEMP (DEFENSE)		2. DATE 09/06/2001	Page 2
3. WBS ELEMENT CODE 1.1.G.G	4. WBS ELEMENT TITLE/NAME AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE 49	6. ORIGINATOR NAME/PHONE JD CHIOU/648-3726	7. WBS ELEMENT MANAGER JD CHIOU	
8. BUDGET AND REPORTING NUMBER EW05H3060	9. BUDGET TITLE SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE? NEW PER CP# FY01-0015-0006-00		11. ESTIMATED START / COMPLETION DATE 10/06 - 5/08	
12. TASK IDENTIFICATION (WORK PACKAGE) G3B18	13. TASK DESCRIPTION (ONE LINE) AREA 3B OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION Review existing data and engineering drawings Perform data management functions within SDFP Develop final reports Campaign Planning Purchase or rental of appropriate containers Package soil and/or other waste materials into containers Repackaging, or over-packing Container movements within the FEMP Loading containers on/in appropriate conveyance Shipping to offsite disposal facility Offsite waste treatment to meet offsite WAC <u>d. WORK SPECIFICALLY EXCLUDED:</u> Pre-design work Excavation control characterization Precertification / certification activities Waste treatment activities Construction or remediation Development of engineering plans, drawings, or specifications			

WORK SCOPE DEFINITION
(Work Package)

1. PROJECT TITLE		2. DATE	
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3. WBS ELEMENT CODE	4. WBS ELEMENT TITLE/NAME		
1.1.G.G	AREA 3B SOIL REMEDIATION		
5. PERFORMING DIV/DEPARTMENT CODE	6. ORIGINATOR NAME/PHONE	7. WBS ELEMENT MANAGER	
49	JD CHIOU/648-3726	JD CHIOU	
8. BUDGET AND REPORTING NUMBER	9. BUDGET TITLE		
EW05H3060	SOILS		
10. ORIGINAL SCOPE? / CHANGE TO WORK SCOPE? / NEW SCOPE?		11. ESTIMATED START / COMPLETION DATE	
NEW PER CP# FY01-0015-0006-00		10/06 - 5/08	
12. TASK IDENTIFICATION (WORK PACKAGE)	13. TASK DESCRIPTION (ONE LINE)		
G3B18	AREA 3B OFFSITE WASTE DISPOSITION		
14. ELEMENT TASK DESCRIPTION			
<p>Land surveying, staff, or equipment</p> <p>Real Time Scanning (HPGe, RSS, RTRAK), staff, or equipment</p> <p>Characterization personnel covered under GPM14</p> <p>Centralized services and/or equipment</p> <p>Onsite waste treatment</p> <p>All activities associated with other PBS elements</p> <p>All activities associated with other PBS-06 control accounts.</p>			

SECTION 7

1.0 NARRATIVE

1. PROJECT TITLE: SOILS EXCAVATION	2. DATE: 09/10/01	3. PBS#: 06
4. WBS ELEMENT CODE: 1.1.G.G.	5. WBS ELEMENT TITLE: AREA 3B SOILS REMEDIATION	
6. CAM NAME/ PHONE: JYH-DONG CHIOU/ 3726	7. CAM SIGNATURE:	
8. ORIGINAL/ CHANGE SCOPE/ PER CP#:	9. CONTROL ACCOUNT: G3B1	

SECTION 7: G3B1 – AREA 3B SOILS REMEDIATION

1.0 NARRATIVE

1.1 OVERVIEW

This Closure Plan defines the scope of work required to plan, develop, execute, manage and administer the Area 3B remedial activities under PBS-06 (WBS 1.1.G.G; control account G3B1). The control account is divided into the following charge numbers: G3B11, Predesign Characterization for Areas 3B/4B/5; G3B12, Title I/II Design for Areas 3B/4B/5; G3B13, Title III Design for Area 3B; G3B14 Site Preparation and Excavation of Area 3B; G3B17, Excavation Monitoring and Certification of Area 3B; and G3B18, Off-site Waste Disposition. Remedial activities will remove all impacted soil and at- and below-grade structures to prepare the area for certification and, ultimately, final restoration activities. The external assumptions and drivers that effect the work and descriptions of the physical area and remedial tasks are discussed below.

1.2 ASSUMPTIONS/EXCLUSIONS

1.2.1 Assumptions

- DOE maintains full baseline funding levels as defined in the closure contract.
- The SDFP restarts in FY2004 with most of the current personnel, or personnel with equivalent experience.
- The time consuming, non-technical, and low-value-added requirements and practices are simplified or eliminated, including: Project Execution Plan (PEP), data quality objectives (DQO), project review, Technical Review Board (TRB), Contract Review Board (CRB), safety start-up review (SSR), etc.
- New requirements or procedures are not implemented unless a cost/schedule evaluation indicates they are needed.
- The contractors will prepare the Safe Work Plan, travelers, penetration permits, field logs, lock and tag records, QA/QC documents, placement planning, coordination and tracking, etc.
- Radiation-control and security requirements will be simplified or eliminated.

- SDFP are cross-trained to perform safety and health, industrial-hygiene, and radiation-control tasks.
- Characterization activities associated with predesign will be minimized.
- SDFP will self perform Title I/II/III engineering services.
- Other PBSs that provide matrixed and centralized personnel to this work scope maintain adequate and competent resources to perform the work identified in Section 1.5.
- Services currently provided by the geoprobe sampling crew, on-site analytical laboratory and SED data entry personnel are maintained.
- All inorganic and radiological COCs (except strontium-90) will be analyzed at the on-site laboratory.
- Organic COCs and strontium-90 will be analyzed at off-site laboratories (14-day turn around).
- Present 3-D modeling hardware, software and personnel are retained for the Area 3B/4B/5 predesign work.
- Prior to initiating Title I design in 1stQ of FY2005, funding is provided in the last three quarters of FY2004 to produce and complete 3-D models of all at- and below-grade structures in Areas 3B, 4B and 5.
- Based on the time required to complete the 3-D structure models for Areas 3A and 4A, Areas 3B, 4B and 5 will require 3 months to compile the archived drawing packages and 6 months to perform the CADD work.
- A subcontract is placed to acquire dedicated CADD support for the 3-D models.
- Fluor Fernald self-performs the 3B/4B/5 Title I/II design as a single package, with subcontracted civil engineers and CADD personnel committed to the project.
- The Title I work requires 50 percent of the predesign characterization data to initiate the design.
- Title II work is initiated with no less than 75 percent of the predesign data.
- Internal and DOE review of a PSP is performed in one week and an IRDP in two weeks.

- The EPA/OEPA review and comment period for the Integrated Remedial Design Package, Project Specific Plans, Certification Design Letter (CDL) or Certification Report is one month.
- EPA/OEPA will review and approve significant PSP Variance/Field Change Notices (V/FCNs) in 7 days for precertification PSPs and 15 days for certification PSPs.
- EPA/OEPA will review and approve Design Change Notices (DCNs) within 7 days of receipt and CDLs prior to the start of the last quarter of excavation.
- A 30-day window to prepare the EPA/OEPA response-to-comments (RTC) package.
- A 30-day EPA/OEPA review and approval cycle for the RTC package.
- A 14-day window to prepare the final Implementation Plan.
- All construction work will be subcontracted.
- All D&D activities in 3B are complete by start of excavation in 1stQ of FY2006.
- An area-isolation trench is placed around Area 3B prior to excavation.
- Two shifts are worked daily (5 days/week, 10 hours/day) between 3rdQ of FY2006 and 1stQ of FY2008.
- Perched water is not present in quantities that require a significant change to the designed 2:1 slopes.
- Excavation monitoring consists of scanning the entire area after concrete and gravel pads are removed and one-third of the area after each of 3 lifts to account for contamination zones. This equates to a scanning acreage of twice the initial acreage.
- CDLs are developed concurrent with excavation activities.
- Certification field activities begin during the last quarter of excavation activities.
- Statistical tests conducted on the analytical results will follow the pass/fail guidance in the SEP.
- Maintenance activities associated with the buffer corridor are assigned to adjacent areas undergoing remediation after Title III activities cease.
- D&D activities are completed to the extent that characterization activities for 3B/4B/5 can achieve 75 percent completion by 1stQ of FY2005.

- Staffing needs identified in Manpower Plan (Section 3.0) are met to deal with accelerated schedule for characterization and Title I/II design.
- PBS-06 staff will not be required to perform additional closure plan work after DOE approves the plan.
- Radiation-control and break trailers are obtained from D&D by 31 July 2004, but installed by SDFP.
- Electric pumps in certification buffer corridor are fed from overhead lines provided by site utilities group.
- AWWT operates and maintains pumps in buffer corridor after they are installed and pass start-up process.

1.2.2 Exclusions

- All activities associated with other PBS elements
- All activities associated with other PBS-06 control accounts.

1.2.3 Government-Furnished Equipment/Services

None.

1.2.4 Applicable Requirements

- OU3 and OU5 RODs
- Sitewide CERCLA Quality Assurance Plan
- IRDP and CFC Package reviewed and approved by DOE
- PSPs, IRDP, CDL, and CR reviewed and approved by EPA/OEPA
- Informal agreement with EPA for review time of V/FCNs
- Dust control measures are implemented during excavation and hauling.
- Real time scan between every excavation lift in above-WAC and above-FRL excavations (i.e., no real time scan if excavation is simply to remove structures).
- Remove excavation water from 24 hour/10-year event within 72 hours.
- Perform 5:1 grading for interim restoration after certification.

- If technetium-99, PCE, TCE, and/or DCE are present at levels that exceed the OSDF WAC, physical samples must be taken along the side slopes and footprints of the above-WAC excavation to confirm their removal prior to initiating below-WAC excavation activities.
- Frisker and/or PID monitoring by radiation control and/or H&S is performed in accordance with applicable DOE and regulatory standards.

1.2.5 Applicable Technical Guidance

- Sitewide Excavation Plan
- Waste Acceptance Criteria for the On-site Disposal Facility
- Impacted Materials Placement Plan for the On-site Disposal Facility
- There is a SSR for the pumps in the certification buffer area.
- Visual monitoring of all excavations by WAO.
- Excavation water with PCE, TCE or DCE above 50 ug/L goes to AWWT for Phase II treatment.
- Certification units are no larger than 250 feet by 250 feet, or 800 linear feet for a utility trench below the designed excavation grade.
- A precertification scan with HPGe instruments is conducted prior to the collection of certification samples.

1.2.6 Disposal, Treatment, Containers, Utilities

- There is no organically-contaminated soil that requires treatment.
- Soil and debris that do not meet the OSDF radiological or physical WAC are placed at SP-7 until shipped to Envirocare.
- Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to the Nevada Test Site.
- Electric, water and communication utilities are provided to rad control and break trailers by infrastructure support.
- Electric tie-in points for pumps in buffer corridor are provided by infrastructure support.

1.3 DRIVERS

- Congressional funding of DOE EM Projects
- Completion of D&D activities on the Plant 1 Pad
- EPA/OEPA review cycles

- DOE review cycles
- Excessive number of rain days
- Discovery, during excavation, of large areas of undocumented contamination

1.4 PROJECT PHYSICAL DESCRIPTION

Remediation Area 3B comprises approximately 20 acres and lies in the NW corner of the former Production Area. This area contains the Chemical and In-Process Warehouses, the Tension Support Structures that house RCRA and nuclear materials, the foundations of the Plant 1 Storage Building, and the Plant 1 Storage Pad. The area is bounded by the haul road to the north, B Street to the east, 2nd Street to the south, and the Production Area fence line to the west.

Remedial activities in Area 3B are being carried out in accordance with the OU3 and OU5 RODs, with the primary objective being the removal of all soil contaminated at levels above established FRLs and all at- and below-grade structures. When the remedial actions are completed, the certified area will be graded to 5:1 slopes and seeded according to the Natural Resource Restoration Plan. Each charge account associated with the remediation of Area 3B is summarized in Section 1.5.

1.5 PROJECT PLAN/TECHNICAL SCOPE AND QUANTIFICATION

Area 3B charge numbers under control account G3B1 (PBS-06, WBS 1.1.G.G) consist of Predesign Characterization (G3B11), Title I/II design (G3B12), Title III design (G3B13), Site Preparation/Excavation (G3B14), Excavation Monitoring/Certification (G3B17), and Off-site Waste Disposition (G3B18).

1.5.1 G3B11 - Predesign Characterization for Areas 3B/4B/5

Predesign characterization will be conducted simultaneously in Areas 3B, 4B and 5. The activities and deliverables associated with this work are divided into the following tasks: 1) Prepare Project Specific Plans (PSPs); 2) Field and Analytical Work; and 3) Data Reduction and Interpretation. Each task is described and detailed below.

Major technical risks associated with the execution and completion of these tasks include insufficient access to the Plant 1 Pad to complete sampling activities and EPA/OEPA review cycle of PSPs. Contingencies for these risks include expedite removal of material on Plant 1 Pad and negotiate shorter review cycles with EPA/OEPA.

The task activities and deliverables discussed below will be completed primarily by project staff from the management, characterization, surveying, administrative and real time disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, identified below, will use the charge account G3B11. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G3B11 will be closed when all characterization data has been received by the Area 3B/4B/5 Title II design team.

1) Task #1 - Prepare Project Specific Plans

1.1) Plan/Scope

Preparation of Project Specific Plans (PSPs) involves a thorough review of existing characterization data and remedial design documents to develop the appropriate list of contaminants and the sampling and analysis strategy. The PSP is the vehicle used to document the data gaps and present the characterization plan to the project personnel, functional-area personnel, DOE, EPA and OEPA. Specific activities and deliverables envisioned for this work include:

- Review of historical photos and records, OU 3 and OU 5 RI/FS data and RODs, OU5 plates on contaminant concentrations, Weston CIS data, removal-action data in the SED, Sitewide Excavation Plan (SEP), utility and foundation drawings, RCRA Part B Permit, and past NCRs and corrective actions.
- Conduct database queries, data evaluation, walk down of former Production Area, and meetings with past-operations personnel.
- Develop COC list, sampling and analysis strategy, data quality objectives, off-site laboratory task orders, penetration permits and radiation work permits.
- Prepare data tables, figures and text for draft PSPs and deliver PSPs to functional area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft PSP.
- Prepare response-to-comment (RTC) package for each DOE draft PSP and obtain DOE approval.
- Incorporate comment responses into each DOE draft PSP and deliver EPA/OEPA draft PSP to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft PSP.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft PSP and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft PSP and deliver final PSP to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Develop 3-D model of uranium contamination and screen all COCs against extent of uranium contamination.

- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables include: the draft PSPs, RTCs, and final PSPs submitted to DOE and EPA/OEPA; the 3-D model of uranium contamination delivered to the Title I/II design team; and all project records to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Quality Control Operations will review and approve PSPs and variances. The Sample Data Management group will provide personnel to develop and complete the draft 3-D model of uranium contamination. Personnel from these organizations are the only individuals who will use charge number G3B11.

Centralized Personnel

Sample Data Management will conduct database queries to collect all existing data (e.g., RI/FS data) and provide the query results to the characterization group. The Waste Acceptance Organization will review and approve PSPs. Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most of the Task 1 work will be completed by project staff from the management, characterization, project controls and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will acquire and review all existing data and documents to develop the COC list and sampling and analysis approach for the PSPs. The tables, figures, text and DQOs presented in the PSPs will be prepared by the characterization staff to document the sampling approach, number of borings, frequency of sample intervals, and the number of COCs that must be characterized. Internal and regulatory reviews of the PSP will be performed and comments will be incorporated to finalize the PSPs prior to initiating field activities. Characterization staff will also be responsible for all RTC packages, the final PSPs, and initiating all activities associated with obtaining penetration and radiation work permits. The project manager will provide needed cost and schedule information to project controls and assure that all project records are delivered to ECDC.

1.2) Quantification

Table 1 summarizes the quantities and/or deliverables anticipated for Task 1. The number of PSPs prepared for Area 3A and Area 4A indicate that approximately 6 PSPs will be

needed to cover predesign activities in Areas 3B, 4B and 5. Therefore, 6 DOE draft PSPs, 6 DOE RTC packages, 6 EPA/OEPA draft PSPs, 6 EPA/OEPA RTC packages, and 6 final PSPs are required. The draft 3-D model of uranium contamination will be issued to the Title I/II design team for review.

TABLE 1
 Quantities for Task 1: Prepare Project Specific Plans

ITEM	QUANTITY
Draft Project Specific Plan for DOE	6
Response-to-Comments Package for DOE	6
Draft Project Specific Plan for EPA/OEPA	6
Response-to-Comments Package for EPA/OEPA	6
Final Project Specific Plan	6
Draft 3-D Model of Uranium Contamination	1

2) Task #2 - Field and Analytical Work

2.1) Plan/Scope

Field and analytical work requires thorough planning to coordinate the support groups and obtain the needed work permits. The field area must be walked down to gauge site conditions as they pertain to safety, clearance and ground cover. Labor crews must be lined up if clearing or mowing activities are needed prior to mobilizing the survey personnel, real time equipment, and sampling crew. Penetration and radiation work permits must be obtained and contamination areas must be posted, if applicable. The on-site laboratory must be notified of incoming samples and off-site laboratory contracts must be in place, if needed. Specific activities and deliverables envisioned for this work include:

- Perform walk downs of field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass or clearing of debris).
- Generate penetration, radiation and other needed work permits.
- Coordinate labor support if clearing or mowing is required.
- Conduct work-scope briefings with field crews.
- Perform RTRAK, RSS and/or HPGe scans and develop scan maps.
- Evaluate RTRAK, RSS and/or HPGe data and perform QC prior to data entry into the Sitewide Environmental Database (SED).
- Survey in boring locations, record coordinates, and flag the locations for sampling crew.

- Mobilize the sampling crew to place the borings and obtain the soil and groundwater samples.
- Develop variance/field change notices (V/FCN), as needed.
- Deliver the samples to the on-site laboratory and create the sample analysis log for on-site and off-site analysis, as needed.
- Perform the required analytical work and generate laboratory reports to the specified QA/QC level.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables include: the penetration, radiation and associated work permits; RTRAK, RSS and HPGe scan maps; survey locations; V/FCNs submitted to DOE and EPA/OEPA; samples to the on-site and off-site laboratory; laboratory reports; and all project records to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Environmental Monitoring and Analytical Services will complete most of the work under Task 2. Environmental Monitoring will be used to complete soil borings, collect soil and water samples and deliver the samples to the on-site laboratory. Analytical Laboratory Services will log samples into the system, complete analytical measurements, issue data packages and ship samples requiring analysis for organic COCs to off-site labs. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level B data packages will be delivered to the project. Infrastructure Services will support the operation of real time vehicles used to complete the RTRAK and RSS scan maps. Personnel from these organizations are the only individuals who will use charge number G3B11.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work completed by project staff from the management, characterization, survey, real time, project control and administrative disciplines will be charged to PBS-06 control account GPM1. Management and characterization staff will perform field and safety walk downs,

coordinate the efforts to obtain the penetration, radiation and needed work permits, oversee the field and analytical work, provide cost and schedule information to project control staff and deliver all records to ECDC. The real time staff will scan grassy areas for surface levels of radium, thorium and uranium. Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. A survey team will locate the boring sites and flag the locations for the sampling crew. Project control staff will track cost and schedule using information provided by the project manager.

2.2) Quantification

Table 2 summarizes the quantities and/or deliverables anticipated for Task 2. The number of safety walk-down reports is dictated as 3 per month by upper level management, and the estimated duration of the field work is 10 months. Real time scans will be limited to approximately 21 acres of grass cover in Areas 3B, 4B and 5, and a summary map for uranium, thorium and radium will be delivered for each area. The number of boring locations is based on the density of sample borings in Areas 3A and 4A and the number of problem areas expected to be encountered in Areas 3B, 4B and 5. One problem area is anticipated for Areas 3B and 5 and three problem areas have been identified in Area 4B: Plant 2/3, Plant 8 and the Pilot Plant. Problem areas are defined as zones containing above-WAC or RCRA contamination, and a higher density of borings is required in these zones to bound the contamination. Based on the number of samples collected in Areas 3A and 4A, it is estimated that 4,750 soil samples (about 7 samples per boring) and 50 perched-water samples will be collected from the entire acreage associated with Areas 3B, 4B and 5. The majority of these samples are anticipated to be collected from Area 4B. Based on the number of Variance/Field Change Notices prepared and approved for Area 3A and Area 4A, approximately 20 V/FCNs will be prepared for each of the 6 PSPs.

TABLE 2
 Quantities for Task 2: Field and Analytical Work

ITEM	QUANTITY
Safety Walk-Down Reports	30
Acres Scanned by RTRAK, RSS or HPGe	21
Scan Maps for Uranium, Thorium and Radium	3
Survey and Flag Boring Locations	474
Geoprobe Borings	474
Soil Samples	3,468
Perched-Water Samples	50
Samples Entered into Tracking Database	3,518
Uranium Analyses	3,518
Thorium and Radium Analyses	847
Technetium-99 Analyses	831
Strontium-90 Analyses	333
Metal Analyses	1,708
VOC Analyses	861
SVOC Analyses	831
Pesticide/PCB Analyses	831
Lab Reports for Radiological COCs	293
Lab Reports for Metal COCs	142
Lab Reports for Organic COCs	72
Variance/Field Change Notices	120

Every soil and perched-water sample will be analyzed for uranium, as this is the primary contaminant at the Fernald Site. Based on historical analytical data, a fraction of the total number of soil samples will be analyzed for other COCs. The approximate percentage of total soil samples to be analyzed for other COCs is as follows: 50 percent for metals; 25 percent for thorium, radium, technetium-99, VOCs and SVOCs; and 10 percent for strontium-90, pesticides and PCBs. Note that Area 5 contamination does not include as many COCs as Areas 3B and 4B. Therefore, the number of non-uranium analyses is not an exact percentage of the total number of uranium analyses. For water samples, the non-uranium COCs will be determined on an as needed basis. In general, laboratory reports will be generated for the radiological, metal and organic COCs at a rate of one report per 12 samples. As documented in the Sitewide Excavation Plan, lab reports will be submitted to meet Level B QA/QC, and it is estimated that there will be 396 radiological, 198 metal and 99 organic lab reports.

3) Task #3 - Data Reduction and Interpretation

3.1) Plan/Scope

Data reduction and interpretation is the key link between predesign characterization activities and the Title I/II design. After data verification and validation is completed, all data must be entered into the SED to allow the characterization, engineering, and

managerial staff to access the information. The characterization staff will work with engineering to interpret the data and develop the needed tables, figures and data-summary appendix for the Title I/II design. Uranium data placed in the SED will be compiled and entered into the draft 3-D model of uranium contamination to prepare the final 3-D model. The final 3-D model of uranium contamination will be delivered to the Title I/II team to develop the extent of excavation. Specific activities and deliverables anticipated for this work include:

- Perform verification and validation (V&V) of data listed in laboratory reports.
- Enter data into the SED and perform queries.
- Reduce and interpret data to develop final list of COCs and extent of contamination.
- Develop tables, figures and data-summary appendix for Title I/II design work.
- Prepare the final 3-D model of uranium contamination.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The V&V packages and final 3-D model of uranium contamination are delivered to the project. These deliverables and other project records are sent to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Sample Data Management will develop the final 3-D model for uranium contamination. Quality Control Operations will review and approve V/FCNs. Personnel from these organizations are the only individuals who will use charge number G3B11.

Centralized Personnel

Sample Data Management will perform verification and validation, enter data, conduct database queries, and provide the query results to the characterization group. Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most of the Task 3 work will be completed by project staff from the management, characterization and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will review laboratory and data reports in parallel with V&V work and use the database queries to define the lateral and vertical extent of all contamination. All non-uranium COCs will be compared to the final 3-D model of uranium contamination to evaluate the capture of all COCs by the uranium contamination zones. COCs that fall outside the modeled uranium contamination will be noted to allow their capture during Title I/II design activities. Tables and figures will be developed by the characterization staff to summarize the distribution of

sample locations and data results. Of special interest will be the above-WAC, RCRA, HWMU/UST areas and the scatter plots that depict the depth of each COC relative to the excavation depth. All tables and figures will be delivered to the Title I/II design team. A data-summary appendix will be prepared to record all samples analyzed during the pre-design work. Project Controls will provide cost and schedule support based on the information supplied by the project manager.

3.2) Quantification

Table 3 summarizes the quantities and/or deliverables anticipated for Task 3. Per the Sitewide Excavation Plan, ten percent of the laboratory data packages will be verified and validated. Based on information used in the Area 3A/4A IRDP, it is anticipated that 15 tables, 50 figures and a data-summary appendix will be prepared for the Area 3B/4B/5 IRDP. The final 3-D model of uranium contamination is needed by the Title I/II design team to capture the extent of excavation.

TABLE 3
 Quantities for Task 3: Data Reduction and Interpretation

ITEM	QUANTITY
Radiological Lab Reports to Verify and Validate	29
Metal Lab Reports to Verify and Validate	14
Organic Lab Reports to Verify and Validate	7
Data Tables	15
Figures	50
Data-Summary Appendix	1
Final 3-D Model of Uranium Contamination	1

1.5.2 G3B12 - Title I/II Design for Areas 3B/4B/5

Title I/II design work will produce a single IRDP for Areas 3B, 4B and 5. The activities and deliverables are divided into three tasks: 1) Project Planning; 2) Title I Design; and 3) Title II Design. Each task is described and detailed below.

Major technical risks identified for this scope of work include insufficient civil engineering and CADD resources and the length of the EPA/OEPA review cycle for the IRDP. Contingencies that can be used to mitigate these risks include A/E services for civil and CADD engineering needs and a negotiated reduction in the time of the review cycle.

The Task activities and deliverables will be completed primarily by project staff from the management, engineering, surveying, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use the charge account G3B12. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for G3B12 will be closed when the Area 3B/4B/5 IRDP has been released as the CFC Package and final Implementation Plan.

1) Task #1 - Project Planning

1.1) Plan/Scope

Project planning is the critical initial step in developing the Title I/II design for excavating soil and at- and below-grade structures. Guidance documents must be prepared and an extensive review of the site reference drawings must be conducted to compile the needed information on at- and below-grade structures and utilities. The compiled drawing packages will be used to prepare the 3-D computer models of at- and below-grade structures, which are needed to design the extent of excavation. Prior to initiating Title I design work, an alignment meeting will be held with all project and functional-area personnel to ensure that assignments are understood and integration channels have been established. Specific activities and deliverables under this task include:

- Review reference drawings, NLO project files and other project closure reports.
- Compile and index drawing packages for each grid sector.
- Prepare the 3-D models of at- and below-grade structures, using the compiled drawing packages, and calculate the concrete quantities.
- Estimate the quantity of piping debris using the compiled drawing packages.
- Walk down the production area to evaluate the completeness of the drawing packages and debris estimates.
- Prepare the Project Execution Plan (PEP) and Auditable Safety Record (ASR).
- Develop the Functional Design Requirements (FDRs), ARARs and TBCs.
- Complete the occupational and environmental ALARAs.
- Procure the needed CADD and civil engineers.
- Conduct the project alignment meeting.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: drawing packages to the subcontractor performing the CADD work to develop the 3-D models; 3-D models and concrete volumes from the subcontractor; estimates on the linear feet and volume of piping debris; the PEP, ASR and FDR (includes ARARs and TBCs); assignment summary from the project alignment meeting; and project records to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Dedicated CADD support is required to develop the 3-D models for at- and below-grade structures in Areas 3B, 4B and 5. All foundations, piers, walls, floors and slabs will be electronically captured in three dimensions. The 3-D models will be used by the design team to finalize excavation slopes around each structure. This design work must be completed prior to the start of Task 2. Subcontract costs will be charged to G3B12.

Matrixed Personnel

Engineering Services will be used to retrieve archived foundation drawings and compile the structural drawing packages that will serve as the input information for the 3-D CADD models. They will also participate in the review of the Functional Design Requirements (FDR) and Project Execution Plan (PEP), and participate in the project alignment meeting. The alignment meeting will be held prior to initiating Task 2. Environmental, Safety, Health and Quality Integration will perform reviews on the Auditable Safety Record (ASR) and PEP, and they will participate in the project alignment meeting. Quality Control Operations will review the FDR and PEP, and participate in the alignment meeting. Radiological Protection Operations will perform reviews of the ASR and PEP, and participate in the alignment meeting. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B12.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the PEP and participate in the alignment meeting. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering and administrative disciplines will provide oversight and support services and prepare most of the text needed for the ASR, FDR and PEP. These personnel will charge their labor hours to PBS-06 control account GPM1. Management will be responsible for integrating all the needed functional areas into the ASR, FDR and PEP documents. Engineering will take the lead role in compiling the archived drawings needed to produce the 3-D CADD drawings. Prior to initiating the Title I design activities, an alignment meeting will be held to discuss schedule and technical details with all principal project team members and functional area groups that support the design effort. Project Controls will provide cost and schedule support based on the information supplied by the project manager.

1.2) Quantification

Table 4 summarizes the quantities and/or deliverables anticipated for Task 1. Based on the number of building structures in Areas 3B, 4B and 5, approximately 50 3-D models will be constructed to illustrate the distribution and extent of concrete slabs and footers. Per site procedures, project management and engineering will prepare the ASR, FDR and PEP. An alignment meeting will be conducted at the end of this task to initiate Title I design work.

TABLE 4
Quantities for Task 1: Project Planning

ITEM	QUANTITY
3-D Models of At- and Below-Grade Structures	50
Auditable Safety Record (ASR)	1
Functional Design Requirements (FDR)	1
Project Execution Plan (PEP)	1
Alignment Meeting	1

2) Task #2 - Title I Design

2.1) Plan/Scope

The goal of Title I design activities is to develop a conceptual design that will serve as the framework for Title II design work. A key element of this scope is the development of the Design Criteria Package (DCP), which is based on the FDR and any other applicable engineering design criteria. Based on the DCP, a conceptual design is developed and drawings and specifications are constructed to meet the design needs. Successful completion of this task requires that dedicated CADD and civil engineers are available to support the design effort, and it is anticipated that these resources will be acquired through a subcontract. Specific activities and deliverables under this task include:

- Prepare the DCP using the FDR and any other applicable engineering design criteria.
- Develop a conceptual design to the extent that needed construction drawings and specifications are completed to the 30 percent level.
- Initiate work on the Implementation Plan (IP) and Storm Water/Erosion Control Plan (SWECP).
- Perform an engineering analysis and review of the DCP, drawings, specifications, IP and SWECP.
- Conduct a review meeting with project and functional-area personnel on the 30 percent design.

- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: the DCP; a 30-percent package for review by the project and functional-area personnel; and project records to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Dedicated CADD support is required to develop the conceptual design drawings. Drawings will be started to show the site layout for trailers, fencing access points, staging areas, etc; utility grids and removal plans; surface-water management structures; excavation plans and cross sections; traffic plan; material tracking locations; certification configuration; and the pumping configuration for the buffer area surrounding the certification area. Subcontract costs will be charged to G3B12.

Matrixed Personnel

Engineering Services will be used to review the Design Criteria Package (DCP) and perform administrative engineering functions that pertain to the CADD subcontract. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will perform design reviews and participate in the final Title I design meeting. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B12.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will perform design reviews and participate in the final Title I design meeting. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering and administrative disciplines will provide oversight and support services and prepare most of the text needed for the DCP, specifications, Implementation Plan (IP) and Surface-Water/Erosion-Control Plan (SWECP). These personnel will charge their labor hours to PBS-06 control account GPM1. Management will prepare most of the IP and be responsible for integrating all the needed functional areas into the DCP, drawings, specifications, IP and SWECP. Engineering will take the lead role in developing the DCP, specifications, drawings and SWECP. The DCP will contain the ARARs and FDR, as well as all engineering criteria that apply to site preparation, storm-water management, excavation, hauling, support facilities, interim restoration, and control and management of applicable systems and structures. Specification will be assembled to cover completing the area isolation trench, surveying,

traffic control, excavation of impacted material, earthwork, removal of asbestos containing material, road construction, waste containerization, erosion and sediment control, surface-water management, vegetation, excavation dewatering, basic electrical requirements and overhead power distribution. The IP and SWECP will be started by assembling the input from needed disciplines and constructing an annotated outline. Prior to initiating Title II design activities, a final Title I meeting will be held to discuss schedule and technical details with all principal project team members and functional area groups that support the design effort.

2.2) Quantification

Table 5 summarizes the quantities and/or deliverables anticipated for Task 2. The basis for the estimated number of documents and drawings is the site engineering procedures and previous design work carried out for the Area 3A/4A Title I design. A DCP is an engineering requirement. Approximately 100 drawings and 20 specifications were prepared during Title I activities carried out for Area 3A/4A. Although Area 3B/4B/5 is larger and contains more structures, it is anticipated that the number of drawings can be held at 100. Based on the similar scope of work to be performed throughout the former production area, there is no need to develop additional specifications. The Area 3A/4A specifications can be modified to fit the Area 3B/4B/5 work scope. Regulatory requirements dictate the preparation of the IP and SWECP. The design review meeting is a project requirement.

TABLE 5
 Quantities for Task 2: Title I Design

ITEM	QUANTITY
Design Criteria Package (DCP)	1
30 % Drawings	100
30 % Specifications	20
30 % Implementation Plan (IP)	1
30 % Storm Water/Erosion Control Plan (SWECP)	1
30 % Design Review Meeting	1

3) Task #3 - Title II Design

3.1) Plan/Scope

Title II design activities must be executed efficiently to ensure that a robust design (i.e., the draft IRDP) is delivered to DOE two months after the completion of Title I activities. DOE will have one month to review the draft IRDP, and the project will respond to comments and reissue the draft IRDP to EPA/OEPA one month after receiving DOE comments. The EPA/OEAP review cycle is the critical schedule element to the successful completion of the Title II design. Specific activities and deliverables under this task include:

- Complete the performance grading of systems and structures.
- Conduct the Occupational and Environmental ALARA evaluations.
- Develop and complete a cost estimate.
- Present a review of the project to the Technical Review Board (TRB)
- Prepare the DOE 90% Integrated Remedial Design Package (IRDP), which includes drawings, specifications, Implementation Plan and Storm Water/Erosion Control Plan.
- Complete the DOE response-to-comment (RTC) package.
- Prepare the EPA/OEPA 90% IRDP.
- Complete the EPA/OEPA RTC package.
- Prepare the Certified for Construction (CFC) package, which includes the final drawings and specifications, and the final Implementation Plan.
- Complete the Davis-Bacon determination.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: performance grading of systems and structures; the occupational and environmental ALARA reviews; the 90% IRDP and RTC package to DOE and EPA/OEPA; the CFC Package to DOE; the final Implementation Plan to EPA/OEPA; and all records to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Dedicated CADD support is required to complete the drawings identified under Task 2 and prepare the drawings for the CFC package. Subcontract costs will be charged to G3B12.

Matrixed Personnel

Engineering Services will be used to review the Design Criteria Package (DCP) and perform administrative engineering functions that pertain to the CADD subcontract. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review the IRDP and participate in the final Title II design

meeting. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B12.

Centralized Personnel

Engineering Services will participate in the TRB and ALARA reviews and will be Tasked with the development and completion of a cost estimate. Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the IRDP and participate in the final Title II design meeting. Industrial Relations will participate in the Davis-Bacon determination. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering and administrative disciplines will provide oversight and support services and complete the DCP, specifications, IP and SWECP. These personnel will charge their labor hours to PBS-06 control account GPM1. Management will complete the IP, represent the project for the Davis-Bacon determination and TRB and ALARA reviews, and be responsible for integrating all the needed functional areas into the DCP, drawings, specifications, IP and SWECP. Engineering will complete the DCP, specifications, drawings and SWECP and provide input and oversight to the TRB and ALARA reviews. Prior to completing the draft IRDP for DOE review, a final Title II meeting will be held to discuss schedule and technical details with all principal project team members and functional area groups that support the design effort. DOE comments will be incorporated into the IRDP by management and engineering and the IRDP will be submitted to EPA/OEPA for review. When all EPA/OEPA comments are resolved, the CFC Package, final Implementation Plan and final cost estimate will be released and a Davis-Bacon determination will be made on the work scope.

3.2) Quantification

Table 6 summarizes the quantities and/or deliverables anticipated for Task 3.

The basis for the estimated number of documents and drawings is the site engineering procedures and previous design work carried out for the Area 3A/4A Title II design. Performance grading, ALARA reviews, and the presentation to the Technical Review Board are site requirements. The development and review of the cost estimate, DOE IRDP (drawings, specifications, IP and SWECP) and RTC package is a DOE requirement. Approximately 100 drawings and 20 specifications were prepared for the Area 3A/4A IRDP. Although Area 3B/4B/5 is larger and contains more structures, it is anticipated that the number of drawings can be held at 100. Based on the similar scope of work to be performed throughout the former production area, the Area 3A/4A specifications can be modified to fit the Area 3B/4B/5 work scope. Regulatory requirements dictate the submittal of the EPA/OEPA IRDP and RTC package and, when the RTC package is approved, the preparation of the certified-for-construction package (final drawings and specifications), final IP and final SWECP.

TABLE 6
 Quantities for Task 3: Title II Design

ITEM	QUANTITY
Performance Grading of Systems and Structures	1
Occupational ALARA	1
Environmental ALARA	1
Presentation to the Technical Review Board	1
Draft Cost Estimate	1
DOE 90% Drawings	100
DOE 90% Specifications	20
DOE 90% Implementation Plan (IP)	1
DOE 90% Storm Water/Erosion Control Plan (SWECP)	1
DOE Response-to-Comment (RTC) Package	1
EPA/OEPA 90% Drawings	100
EPA/OEPA 90% Specifications	20
EPA/OEPA 90% IP	1
EPA/OEPA 90% SWECP	1
EPA/OEPA RTC Package	1
Final Cost Estimate	1
Final Drawings	100
Final Specifications	20
Final IP	1
Final SWECP	1
Davis-Bacon Determination	1

1.5.3 G3B13 - Title III Design for Area 3B

Title III design activities will focus on the development and approval of design change notices (DCNs) as field activities progress, and the preparation of closure documents after excavation is complete. The activities and deliverables are placed into the following tasks: 1) Excavation Support and 2) Prepare Final Documents.

A major technical risk identified for this scope of work is the EPA/OEPA review and approval process for DCNs. Contingencies that can be used to mitigate this risk include a reduction in the number of DCNs and a shorter review and approval cycle.

The Task activities and deliverables will be completed primarily by project staff from the management, engineering, surveying, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed and subcontracted labor, as identified below, will use the charge account G3B13. Detail on the manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G3B13 will be closed out when the interim restoration of Area 3B is completed.

1) Task #1 - Excavation Support

1.1) Plan/Scope

Excavation support is the link between engineering design and the execution of the construction work. Prior to initiating construction work, the construction subcontract and current work plans will be reviewed and modified, if needed, to fit the needs of Area 3B excavation work. Field and design changes that develop during construction activities must be documented and approved to maintain the record between the CFC drawings and final as-built drawings. If needed, the engineering and construction staff must respond to and close out non-conformance reports. Specific activities and deliverables under this work scope include:

- Review and modify construction subcontract and work plans, if needed.
- Prepare and approve design change notices (DCNs).
- Provide information for requests for clarification of information (RCIs).
- Respond to and close out non-conformance reports (NCRs).
- Perform safety walkthroughs and attend safety briefings, as needed.
- Prepare the Yearly Completion Report.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Deliverables associated with the above scope include: DCNs to the project, EPA/OEPA and ECDC; RCIs to the construction crew; NCRs to the cognizant QA officer; the Yearly Completion Report to the project; and all records to ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to modify drawings affected by DCNs. Subcontract costs will be charged to G3B13.

Matrixed Personnel

Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will perform DCN reviews, if applicable. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B13.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. They will also be used when procedural matters need attention. Information Management will provide the project with computer hardware and software needs. Waste Acceptance Organization will review the DCNs, if applicable. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

The work plans will be prepared by project staff from the management, engineering, construction and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to develop the necessary DCNs. A yearly completion report will be prepared by engineering and construction personnel at the end of the construction season to document the performance of the work, the lessons learned, and quantities delivered to the OSDF and other disposition localities.

1.2) Quantification

Table 7 summarizes the quantities and/or deliverables anticipated for Task 1. Per the direction of senior management, 3 safety walkthroughs will be performed each month. Based on the number of DCNs, RCIs, and NCRs for previous Title III work, it is estimated that there will be 100 DCNs, 20 RCIs, and 10 NCRs. The project engineer will approve and sign all DCNs after regulatory approval is obtained. A yearly completion report will be prepared to status the excavation progress.

TABLE 7
 Quantities for Task 1: Excavation Support

ITEM	QUANTITY
Safety Walkthroughs	63
Design Change Notice (DCN)	100
Request for Clarification of Information (RCI)	20
Non-Conformance Report (NCR)	10
Yearly Completion Report	2

2) Task #2 - Prepare Final Documents

2.1) Plan/Scope

After the completion of excavation activities, as-built drawings will be prepared and a close-out report will be developed. The close out report will be filed after interim restoration activities are completed in the certified area. Specific activities and deliverables include:

- Complete the as-built drawings.
- Prepare the Closeout Report.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The as-built drawings and Closeout Report will be delivered to central engineering and all records will be filed with ECDC.

The scope of work identified above will be executed using subcontracted, matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

CADD support is required to prepare the as-built drawings. Subcontract costs will be charged to G3B13.

Matrixed Personnel

Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B13.

Centralized Personnel

Engineering Services will assist with the as-built drawings, close-out report and termination of the CADD subcontract, as needed. Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management will ensure that engineering and construction personnel work together to complete the as-built drawings and close-out report. As-built drawings will be prepared after excavation is complete and the pumps are installed in the buffer area. The close-out report for the control account will be issued after completion of all certification and waste-management activities.

2.2) Quantification

Table 8 summarizes the quantities and/or deliverables anticipated for Task 2. Based on the percentage of drawings changed during previous construction activity, it is estimated that there will be 50 as-built drawings. A Close-out Report, for the engineering activities associated with the remediation of Area 3B, will be prepared during certification activities and will be completed after the interim-restoration grading (5H:1V slopes) of the certified area.

TABLE 8
Quantities for Task 2: Prepare Final Documents

ITEM	QUANTITY
As-Built Drawings	50
Close-out Report	1

1.5.4 G3B14 - Site Preparation/Excavation

Prior to initiating the site preparation and excavation work, the excavation subcontract must be reviewed to ensure that all work plans are updated to document the approach and controls that will govern the construction phase of the remediation. The initial work plans will have been prepared prior to excavation of Area 3B and a review and update will be performed to ensure that the engineering and construction disciplines are integrated early in the project. This integration will continue with the parallel execution of site preparation, excavation and Title III activities. The activities and deliverables for this charge number are divided into the following tasks: 1) Site Preparation; 2) Excavation; 3) Control and Management; and 4) Interim Restoration.

Major technical risks include: the discovery of large volumes of perched water or encountering prohibited items in quantities that greatly exceed the estimated 25 yd³. A contingency that can mitigate the perched water risk involves maintaining sufficient dewatering pumps.

The activities and deliverables discussed below will be completed primarily by project staff from the management, construction, surveying, engineering, waste disposition and administrative disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only the subcontract costs and matrixed labor, as identified below, will use the charge account G3B14. Detail on manpower loading needed to execute this scope of work is provided in Section 3.0. The charge account for G3B14 will be closed out when construction personnel complete the interim-restoration grading.

1) Task #1 - Site Preparation

1.1) Plan/Scope

Site-preparation activities integrate the final documentation process with field work associated with preparing the job site, and these activities must be completed prior to the start of excavation. Specific activities and deliverables include:

- Complete construction travelers, radiation work permit and penetration permit.
- Prepare the submittal log and cross-check to ensure all work plans and permits are in order.
- Procure materials and equipment, as needed.
- Perform clearing and grubbing, if needed.
- Survey and establish the site layout, work limits, area isolation trench, and excavation boundaries for above-WAC and RCRA/HWMU/UST areas.
- Cut area isolation trench and plug storm water and sanitary sewers.

- Establish access controls with radiological and construction fence and signage.
- Relocate radiation control point and change-out facilities.
- Establish the construction support areas: worker and visitor parking, laydown area for materials and equipment, refueling area, sealands for storage, portolets, and water coolers.
- Establish the work area: install the break/cool-down trailers, portolets, water coolers, special materials transfer area, dust control piping, water wells, haul routes and air monitors.
- Connect electric, telephone, water and communication utilities into construction support area.
- Establish surface-water management controls: silt fence, sediment traps and culvert installation.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The construction travelers, work permits and submittal log will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install fencing, access controls and surface-water management structures and the special material transfer area will be prepared. After all work plans have been approved, the area-isolation trench will be cut around the perimeter of the area to provide added assurance that all energized utilities have been isolated (Note: it is not the intent of the area-isolation trench to serve as the primary method for isolating energized utilities, as infrastructure personnel and engineers will terminate all known water, electric and gas lines that enter the area prior to initiating this trenching activity). Subcontract costs will be charged to G3B14.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to modify the construction contract, if needed. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review and the procurement requisitions. Engineering Services will support the installation of utilities in support trailers. Personnel from these organizations will use charge number G3B14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in modifying the construction subcontract, if needed. Infrastructure Services will assist with the set-up and maintenance of the trailers and provide U/E support for penetration permits. Security/EM Services will provide access control and emergency response. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Activities will begin with the set-up of the support trailers and utility hook-ups to these trailers. Electric lines will be required for all trailers for heat, lights and the radiation-control station. Water and sewer for showers will be needed for the change-out trailer, as the support building will no longer be present. Bottled drinking water will be provided in all trailers and portable toilets will be set-up outside of the radiation-control trailer. Project Controls will provide cost and schedule support.

1.2) Quantification

Table 9 summarizes the quantities and/or deliverables anticipated for Task 1. The traveler, permits and submittal log are based on previous submittals by construction contractors, and Fluor Fernald's decision to self-perform the excavation services. Due to safety being the number one site priority, 2,400 linear feet of trench will be cut to a depth of 12 feet around the perimeter of Area 3B to provide a physical back-up for previous utility isolation activities. The quantities for fencing, signage, trailers, containers, water coolers, and portolets are based on previous construction work carried out at the site.

TABLE 9
 Quantities for Task 1: Site Preparation

ITEM	QUANTITY
Construction Traveler	1
Radiation Work Permit	1
Penetration Permit	1
Submittal Log	1
Area Isolation Trench, linear feet	2,400
Silt Fence, linear feet	5,000
Radiological or Construction Fence, linear feet	5,000
Radiological or Construction Signs	100
Radiological Control Point/Change-Out Trailer	1
Break/Cool Down Trailer	1
Sealand Storage Containers	10
Water Coolers	10
Portolets	4

2) Task #2 - Excavation

2.1) Plan/Scope

Excavation activities will result in the removal of all above-FRL soil and at- and below-grade concrete and utilities. Per the guidance developed in the SEP, the above-WAC and RCRA contamination areas will be removed first to minimize cross-contamination. Concrete pads and foundations will be broken and removed using industry-standard cutting, crushing and loading equipment. Bulldozers and excavators will be used to remove the soil. Seasonal shutdown and post-excavation actions will also be performed under this task. Specific activities include:

- Size-reduce, excavate, load and haul at- and below-grade concrete and utilities to OSDF, SP-7 or the designated off-site staging area.
- Excavate, load and haul impacted soil to the OSDF, SP-7 or the designated off-site staging area.
- Identify, excavate, load containers and stage special materials at the special materials transfer area.
- Perform construction management services: survey and track materials removed, create redlines, complete daily construction activity logs, respond to NCRs, prepare event discovery reports/final event reports, conduct safety briefings and walkdowns, and perform Root Cause Analysis, if needed.
- Perform seasonal shutdown and winterization: maintain surface water/erosion controls, perform dust control, complete equipment decontamination, remove water from excavations and seed/stabilize excavations and stockpiles, as required.

- Perform post-excavation activities: remove construction support area and work area features, remove utility runs, remove all fencing and signage, perform equipment decontamination and establish the certification perimeter and access control points.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Survey logs and material estimates, construction logs, NCR resolutions, safety briefings and walkdowns, and event reports will be delivered to the project manager. All project records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

The subcontractor will be responsible for the safe removal of all soil, utility piping and reinforced concrete. Additionally, all maintenance and seasonal shut-down tasks will be performed by the contractor. Subcontract costs will be charged to G3B14.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to modify the construction subcontract, if needed. Environmental, Safety, Health and Quality Integration, Quality Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits, perform RWP briefings, and conduct radiation surveys of contaminated materials and equipment. Environmental Compliance will assist with dust monitoring, if needed. Waste Generator Services will prepare and move containers and package special materials for off-site transportation, if needed. Personnel from these organizations will use charge number G3B14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in modifying the construction subcontract, if needed. Infrastructure Services will maintain the trailers, provide porter services, transport VOC water to the AWWT, perform dust control, and maintain roads to OSDF and SP-7. Waste Acceptance Organization will review DCNs and perform waste manifestation activities. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government-owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, real time and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering, and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Real time scans will be conducted over the contamination areas after each lift. Engineering and construction will prepare DCNs and obtain approval from the applicable functional areas. Survey crews will verify material quantities. Concrete pads and below-grade structures may be size-reduced for use as road-bed material in the OSDF. Piping will be removed and size-reduced to meet the OSDF WAC. Special materials, if found, will be loaded into containers provided by waste generator services and placed at the special material transfer area. Project Controls will provide cost and schedule support to the project manager.

2.2) Quantification

Table 10 summarizes the quantities and/or deliverables anticipated for Task 2. Per senior management, 3 safety walkthroughs will be conducted each month. RTRAK, RSS and/or HPGe scans will be conducted after each excavation lift only in areas of documented uranium contamination, and this is estimated as approximately 3 lifts over 10 acres. The basis for the soil quantities is the SDFP spreadsheet *At- and Below-Grade Material Quantities*. Estimates for concrete, asphalt and piping debris were obtained from site drawings, with ten percent of the total piping volume assumed to be above-WAC. Piping volume is calculated from linear feet using a nominal diameter of 10 inches. Based on past excavation history, the quantity of special materials is estimated to be no greater than 25 cubic yards. A 5-gallon sample of soil will be obtained from the active excavation for every 10,000 cubic yards excavated, and this sample will be delivered to the OSDF for proctor testing.

TABLE 10
Quantities for Task 2: Excavation

ITEM	QUANTITY
Safety Walkthroughs	39
RTRAK, RSS and HPGe Scans, acres	30
Concrete and Asphalt Debris, cubic yards	26,000
Piping Debris, cubic yards	680
Above-WAC Piping, cubic yards	75
Soil, cubic yards	108,000
Above-WAC Soil, cubic yards	0
RCRA Soil, cubic yards	0
Special Materials, cubic yards	25
5-Gallon Proctor Sample	11

3) Task #3 - Control and Management

3.1) Scope/Plan

Control and management activities apply to the buffer corridor that surrounds the certification area, access and haul roads, and start-up activities associated with the pump stations. The majority of these activities will follow the excavation of impacted material. Specific activities and deliverables include.

- Install the pump stations in the buffer corridor and perform the Safety Start-up Review.
- Remove sediment from pump sumps located in the buffer corridor and designated sediment traps.
- Maintain surface-water management and erosion control structures.
- Remove water from excavations, as needed.
- Maintain haul roads and access roads.
- Provide dust control, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Documents and reports associated with the SSR process will be delivered to the SDFP and Aquifer Project. All records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will install 6 pump stations in the buffer corridor and the pumps will discharge to the nearest storm-water catch basin tied to the FEMP storm-water retention basins. Pumps in the buffer corridor will be configured to start and operate automatically at any time of the day, 365 days a year, and they must be capable of handling the 24-hour/10-year storm event. An SSR will be performed after installation and the system will be turned over to the Aquifer Project for operation and maintenance. Erosion-control maintenance of the 2:1 slopes and removal of the sump sediment will be the responsibility of the subcontractor. Subcontract costs will be charged to G3B14.

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to develop RFPs and procure subcontractor services. Environmental, Safety, Health and Quality Integration, Quality

Control Operations, and Radiological Protection Operations will review DCNs, if necessary. Radiological Protection Operations will also maintain radiation permits and perform RWP briefings. Environmental Compliance will assist with dust monitoring, if needed. Project Controls will provide cost and schedule support. Personnel from these organizations will use charge number G3B14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in modifying the construction subcontract, if required. Infrastructure Services will perform dust control and maintain roads to OSDF and SP-7. Security/EM Services will provide access control and emergency response. Property Management will receive and log vendor materials, control government inventory and track government-owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Prior to the certification of the interior part of Area 3B, a buffer corridor will be established around the perimeter of the certification area to control storm-water run-on. Project personnel will conduct an SSR for the pumps in the buffer corridor and turn the pump system over to the Aquifer Project after successful operation is demonstrated.

3.2) Quantification

Table 11 summarizes the quantities and/or deliverables anticipated for Task 3. The number of pump stations is based on 2 pump stations on the north, west and south side of Area 3B. Pumps are not needed along the east side of Area 3B because the corridor between Areas 3B and 3A can be certified as part of Area 3B. Construction management and the subcontractor will be responsible for the installation and start up of the pump system, maintenance of the slopes (2:1) and removal of sediment in pump sumps. After installing the pumps, construction management will conduct an SSR and demonstrate operational readiness prior to turning the system over to the Aquifer Project. It is assumed that slope maintenance and sediment removal will occur at the beginning and end of the construction season. After the close-out report has been filed for Cost Account G3B1, activities associated with maintaining the slopes and pump sumps in the buffer corridor will be transferred to the adjacent areas undergoing remediation (i.e., Areas 6 and 4B).

TABLE 11
 Quantities for Task 3: Control and Maintenance

ITEM	QUANTITY
Pump Stations	6
Safety Start-up Review	1
Sediment Removal, biannual	2
Slope Maintenance, biannual	2

4) Task #4 - Interim Restoration

4.1) Scope/Plan

Interim restoration occurs after the remediated area has been certified clean. The 2:1 slopes in the certified area will be graded to 5H:1V, using decontaminated equipment, and seeded. Specific activities include:

- Survey work limits and establish the access controls.
- Procure needed materials and equipment.
- Perform grading to reshape 2:1 slopes to 5:1 slopes.
- Seed 5:1 slopes.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

All project records will be delivered to ECDC.

The scope of work identified above will be executed with the construction subcontractor using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontractor Work

The subcontractor will survey the work limits and establish the access controls prior to initiating the interim grading work. Certified slopes at 2:1 will be reshaped to 5:1 and the newly formed slopes will be seeded. Subcontractor costs will be charged to G3B14

Matrixed Personnel

Acquisitions/Prime Contract Administration will be used to develop RFPs and procure subcontractor services. Environmental Compliance will assist with dust monitoring, if needed. Personnel from these organizations will use charge number G3B14.

Centralized Personnel

Document Control/Procedure Management will assign document numbers, maintain the project file and distribute controlled documents. The Construction Support Contractor will assist in modifying the construction subcontract, if needed. Security/EM Services will provide access control and emergency response. Property Management will receive and

log vendor materials, control government inventory and track government-owned property. Training will perform needed training for subcontractor personnel. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Project staff from the management, engineering, construction, survey, and administrative disciplines will charge their labor hours to PBS-06 control account GPM1. Management, engineering and construction will work closely with the subcontractor and FEMP labor force to ensure all activities are performed in a safe and timely manner. Project Controls will provide cost and schedule support.

4.2) Quantification

Table 12 summarizes the quantities and/or deliverables anticipated for Task 4. The number of walkthroughs is based on 3 walkthroughs a month, per senior management. An estimate on the amount of soil that must be reshaped is taken as 10 percent of the total soil excavated, which is the approximate percentage calculated for the Area 3A/4A design. The acreage requiring seed is estimated as the initial acreage of Area 3B.

TABLE 12
 Quantities for Task 4: Interim Restoration

ITEM	QUANTITY
Safety Walkthroughs	6
Soil to Reshape, cubic yards	11,000
Acres to Seed	20

1.5.5 G3B17 - Excavation Monitoring/Certification

Monitoring and certification activities will occur in parallel to excavation activities. Each excavation lift, in zones of contamination, will be monitored for radium, thorium and uranium levels. Certification Design Letters (CDLs) will be prepared and submitted to EPA/OEPA for review and approval during excavation to minimize the time period between the end of excavation activities and the start of certification sampling. Likewise, all precertification scans will be completed as close as possible to the end of excavation activities. Specific activities and deliverables are summarized under the following tasks: 1) Excavation Monitoring; 2) Precertification; and 3) Certification.

Major technical risks include: using off-site laboratory services for analysis of organic COCs, insufficient access to the excavation area to begin certification, EPA/OEPA review cycles for the CDLs and Certification Report (CR) and failure to attain the FRLs. Contingencies that can mitigate the risks include: develop on-site laboratory services for organic COCs, expedite excavation in Area 3B, negotiate shorter EPA/OEPA review cycles and collect more certification samples to increase the sample population used in statistical calculations.

The task activities and deliverables will be completed primarily by project staff from the management, characterization, surveying, administrative and real time disciplines, and these personnel will charge their labor hours to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G3B17. Detail on manpower loading for this scope of work is provided in Section 3.0. The charge account for G3B17 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Excavation Monitoring

1.1) Scope/Plan

R1-
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Excavation monitoring is the scanning of soil surfaces after each excavation lift to determine if ~~contamination hot spots exist with respect to radium, thorium and/or above-WAC levels of uranium~~ ~~levels are present~~. Prior to performing the excavation monitoring, a PSP is developed to summarize the monitoring approach and frequency. If applicable, the PSP also addresses physical samples that need to be collected to confirm the removal of other COCs in above-WAC and RCRA areas. Specific activities and deliverables include:

R1-
D-
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- Perform RTRAK, RSS and/or HPGe measurements between each excavation lift.
- Verify removal of above-WAC uranium ~~and the absence of radium, thorium or uranium hot spots~~.
- Survey and flag ~~hot spot~~ ~~above-WAC~~ and sample locations, as needed, for HPGe measurements and the collection of physical samples.
- Conduct HPGe measurements on soil pads created from soil removed from the bottom of utility trenches.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Survey information and real time and laboratory data packages will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles. Waste Generator Services will provide containers and package waste if special materials are discovered. Quality Assurance and Safety and Health will provide oversight, as needed. Personnel from these organizations are the only individuals who will use charge number G3B17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Environmental Compliance will be consulted on an as-needed basis if RCRA issues become relevant to the work scope. The Waste Acceptance Organization will perform visual oversight of the monitoring and prepare waste manifestation forms, if needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Excavation monitoring will be conducted under all removed concrete and gravel surfaces, in known contamination areas after each lift and whenever unexpected material is encountered. ~~In general, about half of the area will be covered by RTRAK and half with HPGe shots. HPGe shots will be conducted on soil removed from the bottom of utility trenches that are cut below the design grade. This soil will be placed in a circular pad adjacent to the trench prior to conducting the HPGe measurements.~~ Results from the real time survey will be delivered as maps that depict the estimated concentration or activity of radium, thorium and uranium. If unexpected or special materials are encountered, physical samples will be collected as part of the monitoring activities to screen for COCs not measured by the real time instruments. A survey team will document sample locations. Project Controls will provide cost and schedule support.

R1-D-
417

1.2) Quantification

Table 13 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past experience, a single PSP will be sufficient to support excavation monitoring and precertification scans in Area 3B. Therefore, one DOE draft PSP, one DOE RTC package, one EPA/OEPA draft PSP, one EPA/OEPA RTC package, and one final PSP are required. Acres to be scanned during excavation will be estimated as twice the number of initial acres, and this assumes that a scan is conducted over the entire area after concrete and gravel is removed plus three lifts over 1/3 of the area to account for contamination zones. Maps for each of the RTRAK, RSS and HPGe measurements will be prepared for each lift. It is also estimated that there will be four hot spots and ten soil samples. The soil samples are assumed to be associated with the discovery of material that is prohibited from disposal in the OSDF. In general, the full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on pipe bedding material every 50 feet of linear trench, there will be 32 HPGe shots to cover the 1,600 linear feet of utility trenches estimated to lie below the excavation grade.~~

R1-
D-
417

TABLE 13
 Quantities for Task 1: Excavation Monitoring

R1-
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ITEM	QUANTITY
Draft Project Specific Plan for DOE	1
Response-to-Comments Package for DOE	1
Draft Project Specific Plan for EPA/OEPA	1
Response-to-Comments Package for EPA/OEPA	1
Final Project Specific Plan	1
RTRAK, RSS, EMS and/or and HPGe Scans, acres	40
RTRAK, RSS, EMS and/or and HPGe maps	9
Survey and Flag Hot Spots/Sample Locations	14
Soil Samples	10
HPGe Shots for Linear feet of Utility Trenches to Scan	321600

2) Task #2 - Precertification

2.1) Scope/Plan

R1-
 D-
 417

Precertification activities will begin as soon as a portion of Area 3B reaches the design grade, with the intent being to minimize the lag time between the completion of excavation and collection of certification samples. The PSP developed for excavation monitoring will also serve as the PSP for precertification. Based on field conditions and required detection levels, RTRAK, RSS, EMS or HPGe measurements will be performed and the precertification maps will be prepared. Certification Unit (CU) boundaries and sample locations will be located by survey and the boundaries and sample locations recorded on maps. Specific activities and deliverables include:

- Walk down field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Prepare the area for field measurements by mowing and installing certification fence postings.
- Perform precertification scans with RTRAK, RSS and HPGe equipment.
- Identify hot-spot zones to excavation, if applicable, and rescan area after hot spot is removed.
- Prepare precertification maps based on scan measurements.
- Survey CU boundaries and sample locations and record the information on maps.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Maps generated from the precertification scans and CU surveys will be delivered to the project. All records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Infrastructure Services will support the operation of real time vehicles and perform any necessary mowing. WISE Construction, or the future site labor contractor will post the certification signs. Quality Assurance and Safety and Health will provide oversight on hot spot removal, if needed. Personnel from these organizations are the only individuals who will use charge number G3B17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Most work will be completed by project staff from the management, characterization, survey, real time and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management, characterization and real time staff will oversee the fieldwork. Project Controls will provide cost and schedule support to the project manager. Prior to collecting certification samples, the entire excavation footprint will be scanned with RTRAK and/or HPGe instruments to assess compliance with the FRLs for radium, thorium and uranium. If found, hot spots will be excavated and the area rescanned. After the completion of scanning activities, the CU boundaries will be documented by survey.

2.2) Quantification

R1-
D-
417

Table 14 summarizes the quantities and/or deliverables anticipated for Task 2. To account for the excavation slopes, the acreage to be scanned during pre-certification is estimated as 1.5 times the initial Area 3B acreage. A precertification map will be produced for each set of RTRAK, RSS, EMS and/or HPGe measurements. Based on guidance in the SEP, each CU will be a maximum of 250 by 250 feet and every 800 linear feet of trench that lies below the design grade is a CU. This guidance results in the estimate of 17 CUs for Area 3B, with 2 being utility-trench CUs. In general, the full suite of real-time instruments will be considered for excavation monitoring and the decision on which particular instrument to use for monitoring will be established in the excavation monitoring PSP. ~~Based on the Area 3A/4A IRDP requirement to perform a HPGe shot on soil in the bottom of the trench every 50 feet of linear trench, there will be 32 HPGe shots to cover the 1,600 linear feet of utility trenches that run along B Street and 2nd Street.~~

TABLE 14
 Quantities for Task 2: Precertification

R1-
D-
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ITEM	QUANTITY
RTRAK, RSS and HPGe Scans, acres	30
RTRAK, RSS and HPGe maps	3
HPGe shots for Linear Feet of Utility Trenches to Scan	321600
Survey Boundaries, CUs	17

3) Task #3 - Certification

3.1) Scope/Plan

Certification activities begin during excavation with the preparation of the Certification Design Letters (CDLs) and Certification PSP, and end when the Certification Reports (CRs) have been approved by the EPA and OEPA. To minimize the lag time between the end of excavation and collection of certification samples, the CDLs must be approved by the EPA and OEPA before excavation is complete. Specific activities and deliverables include:

- Develop COC list, sampling and analysis strategy, data quality objectives, and off-site laboratory task orders.
- Prepare data tables, CU maps and text for draft CDL/PSP and deliver CDL/PSP to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CDL/PSP.
- Incorporate comment responses into each DOE draft CDL/PSP and deliver EPA/OEPA draft CDL/PSP to EPA and OEPA for review.

- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CDL/PSP.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CDL/PSP and obtain EPA and OEPA approvals.
- Incorporate comment responses into each EPA/OEPA draft CDL/PSP and deliver final CDL/PSP to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Perform walk downs of field area to assess site conditions for safety and health hazards, equipment access, and maintenance needs (e.g., mowing of grass).
- Coordinate labor support if mowing is required.
- Conduct work-scope briefings with field crews.
- Mobilize the sampling crew to place the borings and obtain the soil samples.
- Develop variance/field change notices (V/FCN), as needed.
- Deliver the samples to the on-site laboratory and create the sample analysis log for on-site and off-site analysis, as needed.
- Perform the required analytical work and generate laboratory reports to QA/QC Level D.
- Perform 100 percent validation (10% QA/QC Level D, 90% QA/QC Level B) of the laboratory reports.
- Enter data into the SED and perform queries.
- Reduce and interpret data and perform the statistical calculations to develop final CR tables.
- Develop tables, maps and text for CRs and deliver CRs to functional-area personnel and DOE for review.
- Obtain review comments from functional-area personnel and DOE for each DOE draft CR.
- Incorporate comment responses into each DOE draft CR and deliver EPA/OEPA draft CR to EPA and OEPA for review.
- Obtain review comments from EPA and OEPA on each EPA/OEPA draft CR.
- Prepare response-to-comment (RTC) package for each EPA/OEPA draft CR and obtain EPA and OEPA approvals.

- Incorporate comment responses into each EPA/OEPA draft CR and deliver final CR to project personnel, functional-area personnel, DOE, EPA and OEPA.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The CDLs, PSPs, RTCs, and CRs will be delivered to DOE, EPA/OEPA and the project. All documents and records will be delivered to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Environmental Monitoring and Analytical Services will complete most of the work under Task 3. Environmental Monitoring will be used to complete soil borings, collect soil and water samples and deliver the samples to the on-site laboratory. Analytical Laboratory Services will log samples into the system, complete analytical measurements, issue data packages and ship samples requiring analysis for COCs to off-site labs. Samples contracted to off-site laboratories will contain a request for a 14-day turn around time. Analytical measurements will be performed and Level D data packages will be delivered to the project. Project Controls will provide cost and schedule support. Personnel from these organizations are the only individuals who will use charge number G3B17.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Sample Data Management will be used for database queries, data entry, data validation, SOWs for off-site labs, and the statistical reduction of data to evaluate the certification criteria for pass/fail. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Work will be completed by project staff from the management, characterization, survey, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and characterization staff will prepare all documentation and oversee the field and analytical work. Certification activities will begin with the preparation of the CDLs. Each CDL will identify the number and location of CUs, sample locations, a list of COCs for each CU, and analytical methods and detection limits. Execution of the CDL work will not begin until EPA/OEPA approval is received and the final CDL is released. Field activities will commence with a survey to flag sample locations and samples will be collected after the CDL is approved and precertification is completed. Samples will be sent to the appropriate laboratory for analysis and Level D data packages will be submitted to the project. Ten percent of the data packages will undergo verification and validation, and if problems are found additional packages will be selected

for review. The data for each CU will be evaluated with statistical tests identified in the Sitewide Excavation Plan (DOE, June 1998) and a pass/fail decision for each CU will be based on these tests. CUs that fail will be resampled, and possibly subjected to additional excavation, until they pass the certification criteria. The draft CR will be prepared and submitted to EPA/OEPA after all CUs have passed. Once the CR is approved by EPA/OEPA, the final CR will be released and the area will be certified as fully remediated.

3.2) Quantification

Table 15 summarizes the quantities and/or deliverables anticipated for Task 3. The number of CDLs/PSPs prepared for previous projects indicate that approximately three CDLs/PSPs will be needed to cover certification activities in Area 3B. Therefore, it is estimated that there will be three DOE draft CDLs/PSPs, three EPA/OEPA draft CDLs/PSPs, three EPA/OEPA RTC packages, and three final CDLs/PSPs. The SEP dictates that there are 12 sample locations per CU plus one duplicate sample; the exception being 16 sample locations are surveyed if there is a HWMU or UST in the CU, with 8 of the 16 sample locations in the HWMU or UST footprint. Additionally, a sample is collected every 50 linear feet along the utility-trench CUs. These criteria result in an estimate of 233 certification samples. As COCs listed in the SEP for Area 3B have not gone through the predesign screening process, all samples collected from the nominal 250' by 250' CUs are assumed to undergo analysis for the full list of COCs, whereas the utility-trench CUs will be analyzed only for uranium, thorium and radium. The number of laboratory reports that will be generated is based on project history, which indicates one lab report per 12 samples. Per the SEP, 10 percent of these will be validated to Level D and 90 percent to Level B. A CR will be prepared for each CDL and the submittal and review process will follow the CDL scenario.

TABLE 15
 Quantities for Task 3: Certification

ITEM	QUANTITY
Draft CDLs/PSPs for DOE	3
Draft CDLs/PSPs EPA/OEPA	3
Response-to-Comments Package for EPA/OEPA	3
Final CDLs/PSPs	3
Survey and Flag Sample Locations	216
Soil Samples	233
Uranium, Thorium and Radium Analyses	233
Technetium-99 Analyses	199
Metal Analyses	199
VOC Analyses	199
SVOC Analyses	199
Pesticide/PCB Analyses	100
Lab Reports for Radiological COCs	19
Lab Reports for Metal COCs	17
Lab Reports for Organic COCs	17
Radiological Lab Reports to Verify and Validate	19
Metal Lab Reports to Verify and Validate	17
Organic Lab Reports to Verify and Validate	17
Draft CRs for DOE	3
Draft CRs EPA/OEPA	3
Response-to-Comments Packages for EPA/OEPA	3
Final CRs	3

1.5.6 G3B18 - Off-Site Waste Disposition

Soil excavation activities in various areas of the FEMP site may produce waste streams that cannot be disposed of in the OSDF, and off-site waste disposition will be required. Off-site waste disposition refers to the procurement of containers and disposal services, loading and shipping of containers, and preparation of manifestation documentation. Two different types of waste streams are anticipated. First, items that are prohibited from both the OSDF and Envirocare (non-typical waste) will be processed through Fluor Fernald's Waste Generator Services (WGS). Second, AWAC soil and other items that are prohibited from the OSDF but can be transported to Envirocare. Activities under this charge number are divided into the following tasks: 1) Container Receipt and Preparation; 2) Load Containers; and 3) Shipping and Disposal.

Major technical risks include: the loss of the off-site disposal vendor (i.e., Envirocare); the unexpected discovery of a large volume of special material; and/or the discovery of a large volume of soil that requires on-site treatment. Contingencies that can be implemented to reduce this risk include: acquire additional off-site disposal vendors; and place a subcontract to treat soil.

Most of the work will be performed by WGS personnel matrixed to the project. However, some project oversight from the management, characterization, engineering, and administrative disciplines is needed, and these personnel will charge labor to PBS-06 control account GPM1. Only matrixed labor, as identified below, will use the charge account G3B18. The charge account for G3B18 will be closed when the CR report is approved by EPA/OEPA.

1) Task #1 - Container Receipt and Preparation

1.1) Scope/Plan

Material costs will include the purchase of shipping containers and upon receipt of the containers WGS will prepare them for loading. Specific activities and deliverables include:

- Procure containers and packaging materials.
- Prepare container for loading.
- Deliver the prepared containers to the special material transfer area (SMTA).
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

Waste Generator Services (WGS) will prepare and deliver containers to the special material transfer area (SMTA), adjacent to the active excavation. Personnel from these organizations are the only individuals who will use charge number G3B18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. Information Management will provide computer hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager.

1.2) Quantification

Table 16 summarizes the quantities and/or deliverables anticipated for Task 1. Based on past project history, it is estimated that 10 containers (capacity of 2.5 yd³) will be required for non-OSDF waste encountered in Area 3B.

TABLE 16
 Quantities for Task 1: Container Receipt and Preparation

ITEM	QUANTITY
Procure and Prepare Containers	10

2) Task #2 - Load Containers

2.1) Scope/Plan

The project will load waste into containers staged at the SMTA or haul above-WAC waste to SP7 or the designated staging area. Specific activities and deliverables include:

- Load the containers and return filled containers to the SMTA.
- Haul above-WAC debris to SP-7 or the designated storage point for off-site bulk waste.
- Prepare required manifestation, as needed.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Manifestation documents will be provided to WGS, the project and ECDC, if applicable.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Subcontracted Personnel

Labor is required for loading waste into containers and for loading and hauling above-WAC soil and debris to SP-7 or the designated staging area to the railcar load-out area. Job categories envisioned include foreman, laborer, heavy-equipment operator, truck operator and teamsters. Subcontract costs will be charged to G3B18.

Matrixed Personnel

Radiological Protection Operations will perform radiation surveys of containers and equipment. Personnel from these organizations are the only individuals who will use charge number G3B18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. The Waste Acceptance Organization will prepare waste manifestation forms. Information Management will provide computer

hardware and software needs. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management, construction, and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Project Controls will provide cost and schedule support to the project manager. Management and construction staff will assist the subcontractor in the loading of the containers. Construction personnel will pick up the containers at the SMTA, load the containers, and return them to the SMTA for pick up by WGS. Above-WAC soil and piping will be placed at SP-7 or the designated load-out point for the railcars.

2.2) Quantification

Table 17 summarizes the quantities and/or deliverables anticipated for Task 2. Based on off-site waste quantities from past excavation work, it is estimated that there will be 25 yd³ of containerized waste and 1 percent of the total piping volume will be prohibited from disposal in the OSDF (i.e., 78 yd³ of above-WAC piping).

TABLE 17
 Quantities for Task 2: Load Containers

ITEM	QUANTITY
Prohibited Special Materials, cubic yards	25
Above-WAC Piping, cubic yards	78

3) Task #3 - Shipping and Disposal

3.1) Scope/Plan

WGS will pick-up containers from the SMTA and prepare final manifestation and shipping papers. Above-WAC debris will be bulk shipped via railcar. Specific activities and deliverables include:

- Transport containers from SMTA to shipping area.
- Prepare shipping manifestation and ship containers or railcars.
- Verify waste disposition at disposal site.
- Submit project records to ECDC and maintain copies in project file.
- Perform project management and control activities.

Manifestation, shipping and tracking forms will be delivered to the project and off-site disposal facility. Verification of waste disposition will be delivered to the project, and all records will be sent to ECDC.

The scope of work identified above will be executed using matrixed, centralized and projectized personnel. Distribution of the work, and the plan for executing the scope, is described for each division of personnel.

Matrixed Personnel

WGS will prepare the final manifestation documentation and ship the containers to the designated off-site disposal facility. Personnel from these organizations are the only individuals who will use charge number G3B18.

Centralized Personnel

Document Control/Procedure Management will provide document numbers, filing support and issue controlled documents, as needed. WAO will assist with the waste manifestation, as needed. Personnel from these organizations will use their functional area charge numbers.

Projectized Personnel

Minor support work will be completed by project staff from the management and administrative disciplines; and these personnel will charge their labor hours to PBS-06 control account GPM1. Management and administrative staff will assist WGS and/or WAO in the preparation of shipping documents. Project Controls will provide cost and schedule support.

3.2) Quantification

Table 18 summarizes the quantities and/or deliverables anticipated for Task 3. Based on the volumes identified in Task 2, 10 containers and 1 railcar will be shipped. It is assumed that the 78 cubic yards of bulk piping will not exceed the 100 ton limit of the railcar.

TABLE 18
Quantities for Task 3: Shipping and Disposal

ITEM	QUANTITY
Ship Containers	10
Ship Railcars	1

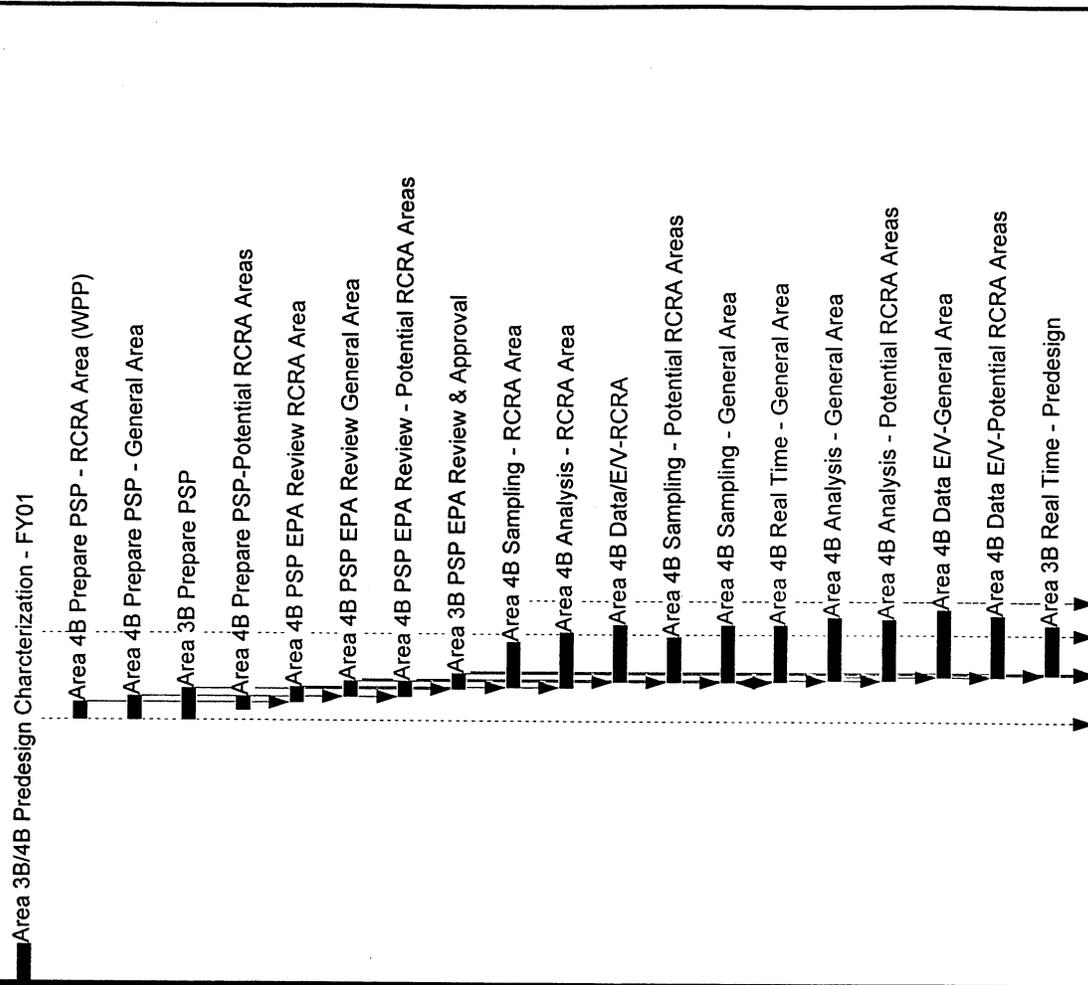
SECTION 7

2.0 SCHEDULE

G PBS 06 SOILS
1.1.G.G AREA 3B SOIL REMEDIATION

G3B11 AREA 3B/4B/5 PREDESIGN

GG3B110100	Area 3B/4B PreDesign Characterization - FY01	01DEC00	30APR01	91
GG3B110210	Area 4B Prepare PSP - RCRA Area (WPP)	01OCT03	04DEC03	40
GG3B110410	Area 4B Prepare PSP - General Area	01OCT03	30DEC03	54
GG3B110120	Area 3B Prepare PSP	01OCT03	29JAN04	73
GG3B110310	Area 4B Prepare PSP-Potential RCRA Areas	03NOV03	31DEC03	34
GG3B110220	Area 4B PSP EPA Review RCRA Area	05DEC03	04FEB04	62
GG3B110420	Area 4B PSP EPA Review General Area	31DEC03	28FEB04	60
GG3B110320	Area 4B PSP EPA Review - Potential RCRA Areas	01JAN04	29FEB04	60
GG3B110150	Area 3B PSP EPA Review & Approval	30JAN04	29MAR04	60
GG3B110230	Area 4B Sampling - RCRA Area	05FEB04	04AUG04	113
GG3B110250	Area 4B Analysis - RCRA Area	10FEB04	08SEP04	132
GG3B110260	Area 4B Data/EV-RCRA	26FEB04	11OCT04	142
GG3B110330	Area 4B Sampling - Potential RCRA Areas	01MAR04	25AUG04	113
GG3B110430	Area 4B Sampling - General Area	01MAR04	07OCT04	140
GG3B110440	Area 4B Real Time - General Area	01MAR04	07OCT04	140
GG3B110450	Area 4B Analysis - General Area	05MAR04	08NOV04	155
GG3B110350	Area 4B Analysis - Potential RCRA Areas	08MAR04	02NOV04	151
GG3B110460	Area 4B Data EV-General Area	22MAR04	09DEC04	163
GG3B110360	Area 4B Data EV-Potential RCRA Areas	23MAR04	18NOV04	151
GG3B110130	Area 3B Real Time - PreDesign	30MAR04	05OCT04	119



Sheet 1 of 4

SOILS PROJECT

1.1.G.G AREA 3B SOIL REMEDIATION

Start Date: 01DEC00
 Finish Date: 27DEC09
 Data Date: 01DEC00
 Run Date: 10SEP01 16:16

BLCF - GG01

Early Bar
 Progress Bar
 Critical Activity

Date: F06-046

Checked/Approved

FLUOR FERNALD

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Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
GG3B140150	AREA 3B SITE PREP / EXCAVATION Area 3B Interim Restoration	10MAR08	07MAY08	38											
GG3B170240	AREA 3B EXC CONTROL / CERTIFICATION Area 3B PSP Dev Exc Monitoring	13MAR06	12MAY06	40											
GG3B170250	Area 3B PSP Excavation Monitoring EPA Review	13MAY06	11JUL06	60											
GG3B170270	Area 3B Precert PSP Development	12JUL06	07SEP06	37											
GG3B170260	Area 3B Real Time Excavation Monitoring	12JUL06	06AUG07	240											
GG3B170280	Area 3B Precert PSP EPA Review	08SEP06	06NOV06	60											
GG3B170290	Area 3B Precert Real Time	07NOV06	06SEP07	186											
GG3B170160	Area 3B CDL/PSP-Utility Trench Development	24MAY07	26JUL07	40											
GG3B170210	Area 3B CDL/PSP Development	24MAY07	26JUL07	40											
GG3B170170	Area 3B CDL/PSP-Utility Trench EPA Review	27JUL07	24SEP07	60											
GG3B170220	Area 3B CDL/PSP EPA Review	27JUL07	24SEP07	60											
GG3B170180	Area 3B Utility Trench Sampling	03AUG07	04OCT07	40											
GG3B170230	Area 3B Sampling	03AUG07	04OCT07	40											
GG3B170190	Area 3B Utility Trench Sample Analysis	17AUG07	11DEC07	71											
GG3B170300	Area 3B Sample Analysis	17AUG07	11DEC07	71											
GG3B170200	Area 3B Utility Trench Data E/V/Stat	11SEP07	16JAN08	77											
GG3B170310	Area 3B Data E/V/Stat	11SEP07	16JAN08	77											
GG3B170320	Area 3B Cert Report	09JAN08	07FEB08	20											
GG3B170330	Area 3B EPA Review & Approve Cert Report	08FEB08	08MAR08	30											
GG3B180110	AREA 3B OFFSITE WASTE DISPOSITION Area 3B Procurement	13APR06	11JUL06	55											
GG3B180120	Area 3B Waste Container Receipt, Prep, Loading	12JUL06	06AUG07	240											

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SOILS PROJECT

1.1.G.G AREA 3B SOIL REMEDIATION

Start Date: 01DEC00 | Finish Date: 27DEC09 | Data Date: 01DEC00 | Run Date: 10SEP01 16:16

BLCF - GG01

Legend:

- Early Bar
- Progress Bar
- Critical Activity

Revision: F06-046

Date: _____

Checked/Approved: _____



Activity ID	Activity Description	Early Start	Early Finish	Orig Dur	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
G3B18	AREA 3B OFFSITE WASTE DISPOSITION	14AUG06	06SEP07	240											
GG3B180130	Area 3B Off-Site Shipping & Disposal														

Area 3B Off-Site Shipping & Disposal

FLUOR FERNALD © Primavera Systems, Inc.	Start Date 01DEC00 Finish Date 27DEC09 Data Date 01DEC00 Run Date 10SEP01 16:16	BLCF - GG01 SOILS PROJECT 1.1.G.G AREA 3B SOIL REMEDIATION	Sheet 4 of 4 Legend: ■ Early Bar ■ Progress Bar ■ Critical Activity	Date F06-046 Revision F06-046 Checked/Approved
	(Empty grid area for activity bars)			

SECTION 7

3.0 MANPOWER PLANS

Manpower Planning Sheet (CR2)

MPS # 1GG03 AREA 3B TITLE III

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006							
				Q1	Q2	Q3	Q4																								
602 Area 3B Excavation	10/03/2005	03/31/2008																										XXX	XXX	XXX	XXX
603 Area 3B Interim Restoration	02/13/2009	05/11/2009																													
609 Area 3B Percert/Certification	04/02/2008	02/09/2009																													
615 Area 3B/4B/5 PreDesign/Design	10/01/2003	09/28/2005																													
620 Area 3B Exc. Control Characterization	10/03/2005	03/31/2008																										XXX	XXX	XXX	XXX
Engineering & Design	Engineer Piping/Mechanic		0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC	QA Engineer		0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & H	Industrial Hygienist Tech.		0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:				2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.20	0.30	0.30

Manpower Planning Sheet (CR2)

MPS # 1GG05 AREA 3B EXCAV CTRL/CERTIFICATION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006											
				Q1	Q2	Q3	Q4																												
602 Area 3B Excavation	10/03/2005	03/31/2008		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603 Area 3B Interim Restoration	02/13/2009	05/11/2009		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
609 Area 3B Precert/Certification	04/02/2008	02/09/2009		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
615 Area 3B/4B/5 PreDesign/Design	10/01/2003	09/28/2005		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
620 Area 3B Exc. Control Characterization	10/03/2005	03/31/2008		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental		Environmental Scientist Mgr.	0.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Environmental		Environmental Scientist Rep.	2.70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1				
Environmental Safety & H		Safety Engineer	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Lab		Chemist	1.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4				
Lab		Lab Tech.	0.90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3				
Environmental Safety & H		Rad Tech	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1				
QA/QC		QA Engineer	0.30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1				
Environmental		Environmental Scientist Tech.	1.40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7				
Sheet Totals:				7.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	2.90						

Manpower Planning Sheet (CR2)

MPS # 1GG06 AREA 3B OFFSITE WASTE DISPOSITION

DRIVERS	START DATE	END DATE	TOT	FY 2001				FY 2002				FY 2003				FY 2004				FY 2005				FY 2006															
				Q1	Q2	Q3	Q4																																
602 Area 3B Excavation	10/03/2005	03/31/2008	0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.2	0.2	0	0.2	0.2	0.2	0	0.2	0.2
603 Area 3B Interim Restoration	02/13/2009	05/11/2009	0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
609 Area 3B Percent/Certification	04/02/2008	02/09/2009	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
615 Area 3B/4B/5 Predesign/Design	10/01/2003	09/28/2005	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
620 Area 3B Exc. Control Characterization	10/03/2005	03/31/2008	0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
General Labor	Hazwat		0.80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.2	0.2	0	0.2	0.2	0.2	0	0.2	0.2
Transportation Labor	Motor Vehicle Operator		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Labor	Heavy Equipment Operator		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
Transportation Labor	Transportation Laborer		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Craft Labor	Pipefitter		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operations	Operations Manager		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0
Environmental Safety & H	Rad Tech		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QA/QC	QA Engineer		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0.1
Environmental Safety & H	Safety Tech.		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
Environmental Safety & H	Rad Engineer		0.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental Safety & H	Safety Engineer		0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.2
Procurement	Material Property Control Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Management	Tech/Program Support Rep.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0
Procurement	Buyer/Contracts Administrator		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Project Management	Project Mgr.		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Administration	Clerks		0.10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sheet Totals:				3.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.80	0.90	0.80	0.00	0.80	0.90				

SECTION 7

4.0 ESTIMATE

G3B11

AREA 3B/4B/5 PREDESIGN

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2005

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B11
COMMENT NO F06-046

Resource: DRFCAD	Res Dept: 949	Class:	EOC:	SAL:	LABOR
DRAFTER/CAD OPERATOR					
Overtime:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05
Yr Hours:	69.5	0.0	0.0	123.7	20.3
Cum Hours:	69.5	69.5	69.5	193.2	213.5
Yr Total Cost:	2,168	0	0	4,556	790
Cum Total Cost:	2,168	2,168	2,168	6,724	7,514

Resource: ENSMGR	Res Dept: 949	Class:	EOC:	SAL:	LABOR
ENVR SCIENTIST MGR					
Overtime:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05
Yr Hours:	12.6	0.0	0.0	1,213.3	36.7
Cum Hours:	12.6	12.6	12.6	1,226.0	1,264.6
Yr Total Cost:	665	0	0	75,551	2,549
Cum Total Cost:	665	665	665	76,216	78,765

Resource: ENSREP	Res Dept: 949	Class:	EOC:	SAL:	LABOR
ENVR SCIENCE REP					
Overtime:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05
Yr Hours:	315.4	0.0	0.0	2,417.2	154.8
Cum Hours:	315.4	315.4	315.4	2,732.6	2,887.4
Yr Total Cost:	13,234	0	0	119,744	8,123
Cum Total Cost:	13,234	13,234	13,234	132,978	141,101

Resource: ENSTEC	Res Dept: 949	Class:	EOC:	SAL:	LABOR
ENVR SCIENTIST TECH					
Overtime:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05
Yr Hours:	44.3	0.0	0.0	3,871.3	124.6
Cum Hours:	44.3	44.3	44.3	3,915.6	4,040.2
Yr Total Cost:	1,254	0	0	129,439	4,414
Cum Total Cost:	1,254	1,254	1,254	130,693	135,107

Resource: INDMEC	Res Dept: 949	Class:	EOC:	HOU:	LABOR
INDUSTRIAL MECHANIC					
Overtime:	Oct 00-	Oct 01-	Oct 02-	Oct 03-	Oct 04-
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05
Yr Hours:	0.0	0.0	0.0	22.0	6.1
Cum Hours:	0.0	0.0	0.0	22.0	28.0
Yr Total Cost:	0	0	0	816	238
Cum Total Cost:	0	0	0	816	1,054

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2005

PBS: OHFN06

WBS: 1.1.G.G

CTRL ACCT: G3B1

CHARGE NO: G3B11

COMMENT NO F06-046

Resource: INHTEC

Res Dept: 949

INDUST HYGIENIST TEC

EOC: SAL

LABOR

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Hours																		
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	53.5	53.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	53.5	53.5	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
Yr Total Cost:	0	0	0	0	0	0	2,382	2,382	23	23	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	2,382	2,382	2,405	2,405	2,405	2,405	2,405	2,405	2,405	2,405	2,405	2,405	2,405	2,405

Resource: INSMGR

Res Dept: 949

INFO SYSTEMS MGR

EOC: SAL

LABOR

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Hours																		
Yr Hours:	12.6	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Yr Total Cost:	739	739	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739	739

Resource: LABCHM

Res Dept: 949

CHEMIST

EOC: SAL

LABOR

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	2,726.0	2,726.0	401.0	401.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	2,726.0	2,726.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0	3,127.0
Yr Total Cost:	0	0	0	0	0	0	124,745	124,745	19,439	19,439	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	124,745	124,745	144,184	144,184	144,184	144,184	144,184	144,184	144,184	144,184	144,184	144,184	144,184	144,184

Resource: LABMGR

Res Dept: 949

LAB MANAGER

EOC: SAL

LABOR

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	296.5	296.5	43.4	43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	296.5	296.5	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
Yr Total Cost:	0	0	0	0	0	0	17,896	17,896	2,776	2,776	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	17,896	17,896	20,673	20,673	20,673	20,673	20,673	20,673	20,673	20,673	20,673	20,673	20,673	20,673

Resource: LABTEC

Res Dept: 949

LAB TECH

EOC: SAL

LABOR

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours	Yr	Hours
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	3,773.3	3,773.3	557.7	557.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	3,773.3	3,773.3	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0	4,331.0
Yr Total Cost:	0	0	0	0	0	0	123,800	123,800	19,381	19,381	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	123,800	123,800	143,181	143,181	143,181	143,181	143,181	143,181	143,181	143,181	143,181	143,181	143,181	143,181

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2005

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B11
COMMENT NO F06-046

Resource: MAT300		Class:		EOC:		MATERIAL	
Res Dept:	949			Mat			
Yr Units:	90	0	0	0	0	0	0
Cum Units:	90	90	90	90	90	90	90
Yr Total Cost:	90	0	0	0	0	0	0
Cum Total Cost:	90	90	90	90	90	90	90

Resource: QACENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
Yr Hours:	0	0	0	0	0	0	0
Cum Hours:	0	0	0	0	0	0	0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: RADTEC		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
Yr Hours:	0	0	0	0	0	0	0
Cum Hours:	0	0	0	0	0	0	0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: S&HENG		Class:		EOC:		LABOR	
Res Dept:	949			SAL			
Yr Hours:	0	0	0	0	0	0	0
Cum Hours:	0	0	0	0	0	0	0
Yr Total Cost:	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0

Resource: SERVSUB		Class:		EOC:		SUBCONTRACTORS	
Res Dept:	949			SUB			
Yr Units:	776	0	0	0	0	0	0
Cum Units:	776	776	776	776	776	776	776
Yr Total Cost:	776	0	0	0	0	0	0
Cum Total Cost:	776	776	776	776	776	776	776

Fluor Fernald, Inc.

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B11
COMMENT NO F06-046

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2001 & 2004-2005

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

Resource: **TECWRT**
Res Dept: **949**

TECHNICAL WRITER
Overtime:

LABOR

EOC:
SAL

Class:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
Yr Hours:	12.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Yr Total Cost:	569	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20
Yr Hours:	467.0	0.0	0.0	16,943.8	1,486.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	467.0	467.0	467.0	17,410.8	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0	18,897.0
Yr Total Cost:	19,496	0	0	1,246,726	141,595	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	19,496	19,496	19,496	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818	1,407,818

CAM

CONTROL TEAM

G3B12

AREA 3B/4B/5 TITLE I/II DESIGN

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2008

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B12
COMMENT NO F06-046

Resource:	Res Dept:	ENGINEER MECH/PIPING	Overtime:	Class:		EOC:		LABOR					
				Oct 01-	Oct 02-	SAL	LABOR						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			0.0	0.0	0.0	100.3	279.3	10.3	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	100.3	379.7	390.0	390.0	390.0	390.0	390.0	390.0
Yr Total Cost:			0	0	0	7,367	21,721	859	0	0	0	0	0
Cum Total Cost:			0	0	0	7,367	29,087	29,947	29,947	29,947	29,947	29,947	29,947

Resource:	Res Dept:	INDUST HYGIENIST TEC	Overtime:	Class:		EOC:		LABOR					
				Oct 01-	Oct 02-	SAL	LABOR						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			0.0	0.0	0.0	10.8	157.6	6.3	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	10.8	168.4	174.7	174.7	174.7	174.7	174.7	174.7
Yr Total Cost:			0	0	0	480	7,430	317	0	0	0	0	0
Cum Total Cost:			0	0	0	480	7,910	8,227	8,227	8,227	8,227	8,227	8,227

Resource:	Res Dept:	QA ENGINEER	Overtime:	Class:		EOC:		LABOR					
				Oct 01-	Oct 02-	SAL	LABOR						
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Hours:			0.0	0.0	0.0	10.8	200.3	8.4	0.0	0.0	0.0	0.0	0.0
Cum Hours:			0.0	0.0	0.0	10.8	211.1	219.5	219.5	219.5	219.5	219.5	219.5
Yr Total Cost:			0	0	0	585	11,514	516	0	0	0	0	0
Cum Total Cost:			0	0	0	585	12,099	12,615	12,615	12,615	12,615	12,615	12,615

Resource:	Res Dept:	SERVSUB	Overtime:	A/E	Class:		EOC:		SUBCONTRACTORS				
					Oct 01-	Oct 02-	SUB	SUB					
	949			Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Yr Units:			0.0	0.0	0.0	83,769.3	539,435.6	15,037.1	0.0	0.0	0.0	0.0	0.0
Cum Units:			0.0	0.0	0.0	83,769.3	623,204.9	638,242.0	638,242.0	638,242.0	638,242.0	638,242.0	638,242.0
Yr Total Cost:			0	0	0	90,828	601,266	17,247	0	0	0	0	0
Cum Total Cost:			0	0	0	90,828	692,094	709,341	709,341	709,341	709,341	709,341	709,341

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2004-2006

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B12
COMMENT NO F06-046

GRAND TOTALS:

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-			
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 11	Sep 12	Sep 13	Sep 14	Sep 15	Sep 16	Sep 17	Sep 18	Sep 19	Sep 20		
Yr Hours:	0.0	0.0	0.0	121.9	637.3	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cum Hours:	0.0	0.0	0.0	121.9	759.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2	784.2
Yr Total Cost:	0	0	0	99,260	641,930	18,939	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	99,260	741,190	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130	760,130




CAM

CONTROL TEAM

G3B13

AREA 3B TITLE III DESIGN

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2008

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B13
COMMENT NO F06-046

Resource:	ENGMEC	ENGINEER MECH/PIPING																			
Res Dept:		LABOR																			
		EOC:		Class:		EOC:		Class:		EOC:		Class:									
		SAL		SAL		SAL		SAL		SAL		SAL									
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	0.0	Oct 05- Sep 06	89.8	Oct 06- Sep 07	243.9	Oct 07- Sep 08	7.4	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0
Cum Hours:	0.0		0.0		0.0		0.0		0.0		0.0		89.8		243.9		7.4		0.0		0.0
Yr Total Cost:	0		0		0		0		0		0		7,462		21,971		705		0		341.2
Cum Total Cost:	0		0		0		0		0		0		7,462		29,433		30,138		30,138		30,138

Resource:	INHTEC	INDUST HYGIENIST TEC																			
Res Dept:		LABOR																			
		EOC:		Class:		EOC:		Class:		EOC:		Class:									
		SAL		SAL		SAL		SAL		SAL		SAL									
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	0.0	Oct 05- Sep 06	104.8	Oct 06- Sep 07	276.6	Oct 07- Sep 08	7.4	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0
Cum Hours:	0.0		0.0		0.0		0.0		0.0		0.0		104.8		381.4		388.8		388.8		388.8
Yr Total Cost:	0		0		0		0		0		0		5,278		15,099		427		0		0
Cum Total Cost:	0		0		0		0		0		0		5,278		20,377		20,804		20,804		20,804

Resource:	QACENG	QA ENGINEER																			
Res Dept:		LABOR																			
		EOC:		Class:		EOC:		Class:		EOC:		Class:									
		SAL		SAL		SAL		SAL		SAL		SAL									
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	0.0	Oct 05- Sep 06	92.4	Oct 06- Sep 07	249.6	Oct 07- Sep 08	7.4	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0
Cum Hours:	0.0		0.0		0.0		0.0		0.0		0.0		92.4		342.0		349.4		349.4		349.4
Yr Total Cost:	0		0		0		0		0		0		5,674		16,615		521		0		0
Cum Total Cost:	0		0		0		0		0		0		5,674		22,289		22,810		22,810		22,810

GRAND TOTALS:																					
Yr Hours:	0.0	Oct 00- Sep 01	0.0	Oct 01- Sep 02	0.0	Oct 02- Sep 03	0.0	Oct 03- Sep 04	0.0	Oct 04- Sep 05	0.0	Oct 05- Sep 06	287.0	Oct 06- Sep 07	770.1	Oct 07- Sep 08	22.3	Oct 08- Sep 09	0.0	Oct 09- Sep 10	0.0
Cum Hours:	0.0		0.0		0.0		0.0		0.0		0.0		287.0		1,057.1		1,079.4		1,079.4		1,079.4
Yr Total Cost:	0		0		0		0		0		0		18,414		53,685		1,652		0		0
Cum Total Cost:	0		0		0		0		0		0		18,414		72,099		73,752		73,752		73,752

CAM  CONTROL TEAM 

G3B14

AREA 3B SITE PREP/EXCAVATION

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3B

WBS NUMBER: 1.1.G.G

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-05-001

BASIS OF ESTIMATE

SUPPORTING DOCUMENTATION:

Verbal Scope	<input type="checkbox"/>	P & ID's	<input type="checkbox"/>	Work Plan	<input type="checkbox"/>
Drawings	<input type="checkbox"/>	Equipment List	<input type="checkbox"/>	Site Walk	<input type="checkbox"/>
Sketches	<input type="checkbox"/>	Specifications	<input type="checkbox"/>	Eng. Mtg.	<input checked="" type="checkbox"/>
Flow Diagrams	<input type="checkbox"/>	Written Scope	<input checked="" type="checkbox"/>	AE Estimate	<input checked="" type="checkbox"/>

TYPE OF ESTIMATE:

Change Proposal	<input type="checkbox"/>	Government	<input type="checkbox"/>
Plan/Feasibility	<input type="checkbox"/>	Conceptual	<input type="checkbox"/>
Construction	<input type="checkbox"/>	Title I Design	<input type="checkbox"/>
Budget	<input checked="" type="checkbox"/>	Independent	<input type="checkbox"/>

BASIS OF ESTIMATE:

Scope of the cost estimate includes Area 3B Soils excavation. The excavated soils along with concrete rubble and other debris will be hauled and dumped to OSDF. Special materials, as defined in the OSDF WAC Plan, will be packaged and shipped to Nevada Test Site. Soils and debris that do not meet the OSDF radiological or physical WAC will be placed at SP-7 until shipped to Envirocare.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3B
WBS NUMBER: 1.1.G.G
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-05-001

ESTIMATE ASSUMPTIONS

EXECUTION:

- This project is to be performed on a 50-hour week, 10 hours a day.
- This project is to be performed on a 40-hour week, 8 hours a day.
- Premium time allowed.

WAGE RATES:

- Wage rates within this estimate are based on Project Labor Agreement rates, effective October 2000 and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF Support Contractor FSC 599 wage rates, effective October 1999 have been escalated 3% and are considered FY01 dollars for estimating.
- Wage rates within this estimate are based on FF FTE Planning Labor Rates FY01.

ENGINEERING:

- N/A
- Engineering dollars provided by the Project Engineer.
- Engineering dollars have been factored in at the standard 12% of the total direct and indirect field costs as per request of Project Engineer.

CONSTRUCTION MANAGEMENT:

- N/A
- Construction Management dollars provided by the Project Engineer.
- Construction Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

PROJECT MANAGEMENT:

- N/A
- Project Management dollars provided by the Project Engineer.
- Project Management dollars have been factored in at the standard 30% of the total direct and indirect field costs as per request of Project Engineer.

WASTE PROGRAM MANAGEMENT:

- N/A
- Waste Program Management dollars provided by the Project Engineer.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3B

WBS NUMBER: 1.1.G.G

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-05-001

PRODUCTIVITY:

A productivity factor has been developed and applied to the unit man-hours derived from MEANS, Richardson, NECA, and or any other published estimating source. See attachment APPENDIX "A" and APPENDIX "B".

ESCALATION:

Escalation costs are excluded from the target estimate. The escalation costs are calculated within the Micro-Frame computer system according to the plan for rebaselining.

UNIT RATES:

Unit man-hours, equipment and material dollars are based on Richardson, MEANS, NECA, and or other published rates.

G & A (HO EXPENSE):

G & A are excluded from the target estimate. The G & A cost are calculated within the Micro-Frame computer system according to the plan for rebaselining.

HEALTH PHYSICS:

See attached APPENDIX "C".

RISK BUDGET:

N/A

CONTINGENCY:

Contingency is excluded from the target estimate.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3B
WBS NUMBER: 1.1.G.G
PROJECT ENGINEER: R. Abitz
ESTIMATOR: B. Nemade
ESTIMATE NUMBER: C2-2001-05-001

ESTIMATE INCLUSIONS & EXCLUSIONS

INCLUSIONS:

- Excavate, load, haul and dump soil, sand, gravel, concrete rubble and other debris to the OSDF, SP - 7 or the Soil Treatment Area
- Area Isolation Trench around the Perimeter
- Excavate utility trenches and remove bedding materials and piping debris.
- Installation & removal of safety and erosion control fencing.
- Installation of storm water control, diversion and or ditches in the area for water run-off control.
- Off - Day - Dust Control is an allowance of \$ 50,000.
- Reshaping the excavated slope to 5:1 and hydro seed it for stabilization.
- Premobilization, mobilization, demob; Labor, materials and construction equipment.
- Bulking factors are estimated as follows:

• Concrete rubble	1.33
• Soils/Sand/Gravel	1.15
• Piping Debris	2.0
- Night Shift Differential is Estimated as an \$0.35 Per Hr. Per Worker
- Temporary Facilities & Utility Hook-up is included in Mobilization on the Detail Sheet and not on the Summary Sheet.
- Misc. Equip. Rental is included in the Detail Sheet and not on the Summary Sheet.
- Premium time

EXCLUSIONS:

- Permits and fees.
- FF G & A (Home Office Expense).
- FF Construction Management
- Any second tier subcontract costs.
- Project Management dollars.
- Waste Management dollars.

Fluor Fernald, Inc.
PROJECTS CONTROLS
ESTIMATING SERVICES

May 15, 2001

PROJECT DESCRIPTION: Soils Excavation Area 3B

WBS NUMBER: 1.1.G.G

PROJECT ENGINEER: R. Abitz

ESTIMATOR: B. Nemade

ESTIMATE NUMBER: C2-2001-05-001

- Sampling, air monitoring and testing of soils.
- Soil processing (treatment)
- Shipping and disposal cost at Envirocare or NTS.
- White metal box cost.
- Delays in construction caused by unidentified contamination of soil, water and debris.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3B
 ESTIMATE #: C2-2001-05-001
 CLIENT: DOE
 WBS #: 1.1.G.G.

Fluor Fernald, Inc.

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM DESCRIPTION	M/H	RATE	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	TOTAL \$
SITE PREPARATION	6,133		\$148,590	\$111,798	\$130,300	\$56,240	\$446,928
EXCAVATION	61,049		\$1,558,453	\$14,145	\$70,000	\$757,200	\$2,399,798
STORM WATER MANAGEMENT	16,050		\$349,510	\$15,000	\$93,660	\$204,340	\$662,510
INTERIM RESTORATION	3,397		73,130	50,000	71,960	64,310	\$259,400
DIRECT FIELD COSTS TOTAL	86,629	\$24.58	\$2,129,683	\$190,943	\$365,920	\$1,082,090	\$3,768,636
SUPERVISION - CONTRACTOR	26,100		\$772,984				\$772,984
SMALL TOOLS & CONSUMABLES	-	-	-		\$42,600		\$42,600
MISC. EQUIP. RENTAL	-	-	-				
TEMPORARY FACILITIES							
TEMPORARY UTILITY HOOK-UP							
JOB CLEAN-UP	1,299		\$31,900		\$10,600		\$42,500
PER DIEM / SUBSISTANCE	-	-	-				
HEALTH PHYSICS S/C	565		\$13,900		\$54,600		\$68,500
CERCLA - TRAINING	600		\$14,800				\$14,800
GET/SITE ACCESS & JOB SPECIFIC TRAINING	828		\$20,400				\$20,400
PAYROLL BURDENS & BENEFITS	-	-	\$1,700,700				\$1,700,700
OVERHEAD & PROFIT	-	-	-	\$1,286,200			\$1,286,200
BOND	-	-	-	\$100,300			\$100,300
SALES TAX	-	-	-		\$28,400	\$64,900	\$93,300
INDIRECT FIELD COSTS TOTAL	29,393		\$2,554,684	\$1,386,500	\$136,200	\$64,900	\$4,142,284
DIRECT & INDIRECT FIELD COSTS TOTAL	116,022	\$40.37	\$4,684,367	\$1,577,443	\$502,120	\$1,146,990	\$7,910,920
TARGET ESTIMATE							\$7,910,920

ESTIMATE PERFORMED BY ESTIMATING SERVICES

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO. C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

FACTORS

FIXED PRICE \$	LABOR \$	S/C \$	MAT'L \$	EQUIP. \$	PPE \$	TOTAL \$
DFC DOLLARS	\$2,129,683	\$190,943	\$365,920	\$1,082,090	\$54,600	\$3,823,236
IFC COST FACTOR	2.1996	-	1.1454	1.0000	-	
BOND + OVERHEAD & PROFIT COST FACTOR	1.2125	1.2125	1.2125	1.2125	1.2125	
SALES TAX	-	-	1.0600	1.0600	1.0600	
DIRECT FIELD COST FACTOR =	2.6670	1.2125	1.4721	1.2853	1.2853	
BASE ESTIMATE \$'s	\$5,679,839	\$231,520	\$538,678	\$1,390,767	\$70,175	\$7,910,979
BASE FACTOR	1.0000	1.0000	1.0000	1.0000	1.0000	
TARGET ESTIMATE FACTOR	2.6670	1.2125	1.4721	1.2853	1.2853	
FPS TARGET ESTIMATE (FY00 \$)	\$5,679,839	\$231,520	\$538,678	\$1,390,767	\$70,175	\$7,910,979

NOTE:

If there are no DFC Equip. \$, enter The IFC Equip. \$'s into the direct field cost TOTAL and delete IFC Factor in G62.

ESTIMATE SUMMARY SHEET

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO. C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

Direct Field Cost w / FACTORS

DATE: 14-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

PAY ITEM NO.	DESCRIPTION	LABOR \$	S/C \$	MAT'L. \$	EQUIP. \$	PPE \$	TOTAL \$
		(ASSIGN OR PRORATE PPE MAT'L.\$'s)-->				54600	
	SITE PREPARATION	148590 \$396,290	111798 \$135,560	130300 \$191,820	56240 \$72,280		\$795,950
	EXCAVATION	1558453 \$4,156,380	14145 \$17,150	70000 \$103,050	757200 \$973,200	54600 \$70,180	\$5,319,960
	STORM WATER MANAGEMENT	349510 \$932,140	15000 \$18,190	93660 \$137,880	204340 \$262,630		\$1,350,840
	INTERIM RESTORATION	73130 \$195,040	50000 \$60,630	71960 \$105,930	64310 \$82,660		\$444,260
TOTAL DIRECT FIELD COSTS w/FACTORS		(FY01 DOLLARS)					\$7,911,010

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-06-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nomado
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS		COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor					
1	PREMOBILIZATION A Insurance Certificates, List of Sub-Tier Contractors Procurement Documents, Safe Work Plans, QA/QC Plan, Construction and Engineering Documentation, Acceptable baseline Schedules Duration 8 wks	1	LS	40	320	65.00		\$20,800				\$20,800
	MOBILIZATION											
	S/C Office Trailer	18	mo			23.57	300		\$5,398	\$500	\$500	\$5,398
	Survey and Engineering Controls	1	LS				3,000		\$3,000	\$1,000	\$500	\$4,000
D	Install Utilities	1	LS	60	60	22.69	500	\$1,400	\$500	\$500	\$500	\$2,900
D	Other misc requirements as required.	1	LS	100	100	22.69	500	\$2,300	\$500	\$500	\$500	\$3,300
D	S/C Storage Trailer	18	mo			23.57	300		\$5,400			\$5,400
D	SURVEY & STAKE AREA	20	ACRE	60	1398	21.49		\$30,040		\$2,000	\$3,080	\$35,120
D	INSTALL WARNING SIGNS	100	EA	2	175	21.49		\$3,750		\$2,000	\$90	\$5,840
D	SAFETY FENCE 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE, ETC	5500	LF	0.03	192	21.49		\$4,130		\$8,910		\$13,040
D	REMOVE CHAIN LINK FENCE	2200	LF	0.09	231	21.49		\$4,960			\$4,730	\$9,690
D	DOUBLE SWING PIPE GATES IN RAD FENCE, 36' WIDE (INCL. ALL HARDWARES)	7	EA	32	261	21.49		\$5,610		\$10,500	\$3,500	\$19,610
D	8' HIGH, 9 GA. CHAIN LINK FENCE (INCL. ALL HARDWARES)	1100	LF	0.13	167	21.49		\$3,580		\$9,350	\$2,510	\$15,440
D	DOUBLE SWING GATE, 8' HIGH, 20' OPENING (INCL. ALL HARDWARES)	1	EA	20	23	21.49		\$500		\$950	\$380	\$1,830
D	FENCING 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE IN CERT. BUFFER AREA	7100	LF	0.03	248	21.49		\$5,330		\$11,500		\$16,830

AREA 3B EXCAVATION
(FY01 DOLLARS)

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM NO.	SITE PREPARATION	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total		Labor	S/C	Matl'					
D	ALLOWANCE FOR U.S. COAST GUARD RING BUOY W/ POST, ROPE AND HANGER @ 200'	50	EA	4	204	21.49		200	\$4,380		\$10,000		\$14,380	
D	TEMP DITCH W/ SILT FENCE W/ WOOD STAKES	3400	LF	0.10	396	21.49		0.95	\$8,510		\$3,230		\$11,740	
D	SEED & MULCH DISTURBED AREA, 5000' X 25'	3	ACRE	20	70	21.49		3,500	\$1,500		\$10,500	\$1,500	\$13,500	
D	DEWATERING (INCL PUMPS, 2" & 3" HOSES AND 10 INLETS)	1	LOT	750	874	21.49		47,330	\$18,770		\$47,330		\$66,100	
D	CONNECTIONS TO EXISTING STORM DRAIN	1	LOT	40	47	21.49		1,000	\$1,000		\$1,000		\$2,000	
D	TEMPORARY DITCHLINER, TYPE 'B'	375	LF	0.08	35	21.49		2	\$750		\$750		\$1,500	
D	EROSION CONTROL BLANKET	1055	SY	0.07	86	21.49		5	\$1,850		\$5,280		\$7,130	
D	DUMPED ROCK FILL DITCH, 400 LF, 100 LB. AVE.	333	TON	0.04	16	21.49		15	\$330		\$5,000	\$350	\$5,680	
D	EXCAVATE DRAINAGE CHANNEL & BUILD EARTHEN DIKES FOR CERTIFICATION DRAIN	1	LOT	460	536	23.60		6,660	\$12,650			\$6,680	\$19,330	
D	ALLOWANCE FOR GMA PROTECTION PUMPING	1	LOT				10,000			\$10,000			\$10,000	
D	AREA ISOLATION TRENCHING	2400	LF	0.20	559	23.60		13,300	\$13,200			\$31,920	\$45,120	
D	MOB & DEMOB OF TRENCHING MACHINE	1	LOT				8,000			\$8,000			\$8,000	
mD	DECON OF TRENCH MACHINE	1	LOT	96	138	23.60			\$3,250				\$3,250	
mD	TRENCHER CHAIN WILL BE TURNOVER TO CM UPON COMPLETION DUE TO CONTAMINATION (QUOTES FROM TRENCOR FOR MDL. 1460)	1	EA				80,000			\$80,000			\$80,000	
Subtotal Direct Cost: Site Preparation											117,080	130,310	66,240	\$416,920

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: Nemado
 LOCATION: Fernald
 TASK NO.: G3B14

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C					
mC	DEMOLISH & SIZE REDUCE CONCRETE FDN AND SLABS ABOVE BASEMENTS	25900	BCY	0.5	24,077	\$23.60			\$568,310			\$111,890	\$680,200
mC	LOAD & HAUL DEBRIS TO OSDF IN 9 MONTHS OUT OF 12MO	25,835	LCY	0.06	2,882	\$23.60			\$68,030			\$49,860	\$117,890
mC	LOAD & HAUL DEBRIS TO OSDF IN 3 MONTHS (WINTER TIME (DOUBLE HANDELLED))	8,612	LCY	0.12	1,921	\$23.60			\$45,350			\$16,620	\$61,970
mD	EXCAVATE ABOVE FRL / BELOW OSDF - SOIL (ASSUME 30% HAULED TO DEWATERING AREA)	32,400	BCY	0.13	5,806	\$21.48			\$124,710			\$86,180	\$210,890
mD	EXCAVATE ABOVE FRL / BELOW OSDF - SOIL (ASSUME 70% DRY SOIL HAULED TO OSDF AREA)	75,600	BCY	0.13	13,548	\$21.49			\$291,140			\$201,100	\$492,240
mD	LOAD & HAUL DRY SOIL (ROUND TRIP 5000 FT)	86,940	LCY	0.05	6,232	23.60			\$147,100			\$167,790	\$314,890
mD	LOAD & HAUL SOIL TO DEWATERING & THEN TO OSDF (ROUND TRIP 5000 FT)	37,260	LCY	0.05	2,671	23.60			\$63,040			\$71,910	\$134,950
mD	EXCAVATE OVERBURDEN ON UTILITY TRENCHES (ASSUME SOIL HAULED TO OSDF AREA)	4,000	BCY	0.16	918	23.60			\$21,660			\$10,640	\$32,300
mD	LOAD & HAUL SOIL FROM TRENCHES TO OSDF	4600	LCY	0.05	330	23.60			\$7,780			\$8,880	\$16,660
mC	EXCAVATE UTILITY PIPES	750	BCY	0.20	279	23.60			\$6,580			\$4,690	\$11,270
mC	LOAD & HAUL AWAC PIPING TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	150	LCY	0.06	17	23.60			\$390			\$290	\$680
mC	LOAD & HAUL PIPING TO OSDF (ASSUME 90% OF MATERIALS HAULED TO OSDF)	1350	LCY	0.05	125	23.60			\$2,960			\$2,610	\$5,570

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM NO.	EXCAVATION	QTY	UNIT	MAN-HOURS			COST/UNIT			LABOR	S/C	MATL	EQUIP	TOTAL
				Unit	Total	Rate	Labor	S/C	Matl					
mD	EXCAVATE BEDDING MATERIALS	2,250	BCY	0.16	516	23.60						\$5,990	\$18,170	
mC	LOAD & HAUL SOIL TO SP - 7 (ASSUME 10% OF MATERIALS HAULED TO SP - 7)	259	LCY	0.06	29	23.60			\$680			\$500	\$1,180	
mD	LOAD & HAUL SOIL TO OSDF (ASSUME 90% OF MATERIALS HAULED TO OSDF)	2,329	LCY	0.05	167	23.60			\$3,940			\$4,490	\$8,430	
mC	DEMO CONC. DUCT BANKS & HAUL TO OSDF (AFTER OVERBURDEN SOIL IS EXCAVATED)	156	CY	1.850	537	23.60			\$12,670			\$980	\$13,650	
mC	DEMO CONC MANHOLES & CATCHBASINS	270	CY	0.93	467	23.60			\$11,020			\$1,690	\$12,710	
mC	LOAD & HAUL TO OSDF	567	CY	0.06	63	23.60			\$1,490			\$1,090	\$2,580	
D	SEEDING UPON COMPLETION OF EXCAVATION	20	ACRE	20	466	21.49		3,500	\$10,010		\$70,000	\$10,000	\$90,010	
	LIGHT TOWERS TOWABLE, W/ DIESEL GENERATOR, 4 KW (2 UNITS, FOR 5 MONTHS RENTAL)	5	MO					2,400	\$12,000				\$12,000	
D	OPERATING COST (DIESEL & LUBRICATION) (FOR 5 MONTHS = 22 WKS = 110 DAYS)	110	DAYS					19.50	\$2,145				\$2,145	
	GENERATOR OPERATOR (WORKER / HELPER)	1,100	HRS	1.00		12.34			\$13,574				\$13,574	
	PREMIUM TIME OVER 40 HRS WORK IS 1.5 TIMES								\$139,904				\$139,904	
	NIGHT SHIFT DIFFERENTIAL \$0.35 PER HR PER WORKER (TOTAL HRS WORKED = TOTAL EXC. HR/18 MONTH X 5 MONTHS)								\$5,935				\$5,935	
Subtotal Direct Cost: Excavation										1,558,453	14,145	70,000	757,200	\$2,395,798

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM NO	STORM WATER MANAGEMENT	QTY	UNIT	MAN-HOURS		Rate	COST/UNIT		LABOR	S/C	MAT'L	EQUIP	TOTAL
				Unit	Total		Labor	S/C					
D	BUFFER AREA MAINTENANCE (DEWATERING BY 2 HP ELEC. TRASH PUMPS)	6	EA	100	699	26.4			\$18,450		\$9,000		\$27,450
D	3" DIA DISCHARGE PIPES & FITTINGS	750	LF	0.10	87	26.40			\$2,310		\$2,540		\$4,850
D	2" DIA FLEXIBLE SUCTION HOSE	400	LF	0.01	5	26.40			\$120		\$1,040		\$1,160
D	35' WOOD POWER POLES	48	EA	8	466	22.66		59.00	\$10,550		\$16,800	\$2,830	\$30,180
D	#6 CU OVERHEAD LINE	7,200	LF	0.01	84	22.66		0.52	\$1,900		\$3,740		\$5,640
D	STEP DOWN XFMR, 30 KVA, 3 PHASE, 60 HZ (POLE MOUNTED)	2	EA	14	33	22.66		2,500	\$740		\$5,000		\$5,740
D	COMB STARTER W/ DISCONNECT SWITCH	6	EA	4.00	28	22.66		915.00	\$630		\$5,490		\$6,120
D	SILT FENCE W/ WOOD STAKES	850	LF	0.01	10	21.49		0.30	\$210		\$260		\$470
D	FENCING 4' HIGH, WIRE MESH, INCLUDES 10% FOR OVERLAP, WASTE, ETC.	12,000	LF	0.03	419	21.49		1.62	\$9,010		\$19,440		\$28,450
D	MAINTAIN EROSION CONTROLS (16 HRSMWK FOR 15 MONTHS)	1	LOT	2,080	2423	21.49		15,000.00	\$52,070		\$15,000	\$15,000	\$67,070
D	MAINTAIN PUMP ACCESS ROADS (ASSUME 1 WK. PER MONTH FOR 10 MONTHS)	1	LOT	1,440	1677	21.49		80,000	\$36,050		\$80,000	\$80,000	\$116,050
D	ALLOWANCE FOR RAD CONTROL FACILITIES	3	EA					5,000					\$15,000
D	PROVIDE DUST CONTROLS ON HAUL ROADS & EXCAVATION AREAS FOR 14 MONTHS CONSTRUCT BUFFER AREA RDS. (AFTER COMPLETION OF EXCAVATION, 3000 X 12 FT,	1	LOT	8,330	9703	21.49		78,469	\$208,510		\$78,470	\$78,470	\$286,980
D	GRADE & COMPACT SUBGRADE	6,000	SY	0.0	140	21.49		1.50	\$3,000		\$9,000	\$9,000	\$12,000
D	GRADE & COMPACT AGGREGATE BASE	1,700	CY	0.1	277	21.49		11.20	\$5,960		\$19,040	\$19,040	\$55,350
Subtotal Direct Cost - Storm Water Management									\$349,510	\$15,000	\$93,060	\$204,310	\$662,510

DETAIL ESTIMATE WORKSHEETS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemado
 LOCATION: Fernald
 TASK NO.: G3B14

ITEM NO.	INTERIM RESTORATION	QTY	UNIT	MAN-HOURS		COST/UNIT			LABOR	S/C	MATL	EQUIP	TOTAL			
				Unit	Total	Rate	Lebor	S/C						Matl	Equip	
D	INTERIM REMEDIATION GRADING (USE CUT & FILL OPERATIONS TO CONSTRUCT 5 TO 1 SLOPES - ALL SOILS WILL BE EXISTING IN AREA 3B)	11,000	CY	0.13	1,602	21.49			\$34,420			\$33,990	\$68,410			
D	SEEDING UPON COMPLETION OF 5 TO 1 SLOPE	20	ACRE	20	466	21.49			\$10,010		\$70,000	\$10,000	\$90,010			
D	GROUND WATER CONTROL DURING INTERIM GRADING (ASSUME 4 DAYS PER MONTH FOR 3-MONTH PERIOD)	1	LOT	120	140	21.49			\$3,000		\$1,200		\$4,200			
D	TEMP. DITCH W/ SILT FENCE W/ WOOD STAKES	800	LF	0	93	21.49			\$2,000		\$760		\$2,760			
D	MAINTAIN EROSION CONTROL DURING INTERIM RESTORATION FOR 3 MONTHS	1	LOT	240	280	21.49		3,500	\$6,010			\$3,500	\$9,510			
D	PROVIDE DUST CONTROL ON HAUL ROADS FOR 3 MONTHS	1	LOT	595	693	21.49		16,815	\$14,890			\$16,820	\$31,710			
D	OFF-DAY DUST CONTROL (ALLOWANCE)	1	LOT						\$50,000				\$50,000			
D	DEMOLITION															
D	Complete Punch List items	1	LS	20	23	22.69			\$530				\$530			
D	Remove Trailer and Change Facilities	1	LS	20	23	22.69			\$530				\$530			
D	Remove all Utilities	1	LS	20	23	22.69			\$530				\$530			
mC	Decontaminate Equipment	1	LS	10	19	22.69			\$420				\$420			
D	Loadout contractors equipment	1	LS	20	23	22.69			\$530				\$530			
D	Other area requirements	1	LS	10	12	22.69			\$260				\$260			
Subtotal Direct Cost: Interim Restoration												\$73,130	\$80,000	\$71,960	\$64,310	\$259,400

AREA 3B EXCAVATION
(FY01 DOLLARS)

APPENDIX "A"

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO: 2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

SITE SPECIFIC
 EFFICIENCY / MULTIPLIER ANALYSIS

DATE: 11-May-01
 ESTIMATOR: Nemad
 LOCATION: Ferrald
 TASK NO.: G3B14

	PERCENT OF INFLUENCE ON CHART MANHOURS							110%	105%	100%	90%	80%	70%	60%	50%	40%	% OF INFLUENCE	WT'D VALUE	PROD. RESULT
	100%	90%	80%	70%	60%	50%	40%												
CRAFT SKILL (NOTE 1)	POOR			FAIR					STD								100.0%	12.0%	0.12
CRAFT AVAIL.(NOTE 1)		POOR		FAIR					STD								100.0%	8.0%	0.08
CLIMATE (NOTE 2)	SEVERE	ICE/SNOW				RAIN			+40 TO +85								90.0%	20.0%	0.18
PLANT ELEVATION		OVER 10,000FT				5,000' TO 10,000 FT			UNDER 5,000 FT								100.0%	5.0%	0.05
WORK SPACE				200 SF		250 SF			350 SF		300 SF						100.0%	10.0%	0.1
WORK WEEK									4-10s / 5-8s								100.0%	15.0%	0.15
60 HOUR WORK WEEK				OVER 7 WEEKS		3 TO 7 WEEKS			UP TO 3 WEEKS								0.0%	0.0%	0
60 HOUR WORK WEEK				OVER 7 WEEKS		3 TO 7 WEEKS			UP TO 3 WEEKS								0.0%	0.0%	0
SHIFTWORK																			
2ND SHIFT						2ND SHIFT			OR ONE SHIFT ONLY								100.0%	3.0%	0.03
3RD SHIFT						3RD SHIFT											100.0%	5.0%	0.05
PROJECT SIZE									200M TO 300M MH		300M TO 400M MH						100.0%	4.0%	0.04
PLANT TYPE						REVAMP & NEW			GRASS ROOTS		NEW IN EXIST PLT						70.0%	8.0%	0.056
AREA/UNION INFLUENCE	STRONG					SOME			NONE								40.0%	10.0%	0.04
																	100.0%		89.6%

NOTES.....
 1. TURNOVER HAS BEEN CONSIDERED
 2. FOR EXTERIOR WORK ONLY

EFFICIENCY (AS A % OFF CHART MANHOURS)

MULTIPLIER - (TO BE APPLIED TO CHART M.H.'S TO OBTAIN SITE M.H.'S)

AREA 3B

EXCAVATION (FY01 DOLLARS)

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

Fluor Fernald, Inc.

EXAMPLE:

STANDARD CHART MANHOURS =	NET	100
EFFICIENCY FACTORS:		
• SITE SPECIFIC (SEE APPENDIX A)	12%	12.0
S/T = BASE UNIT MANHOURS		112
OVERTIME PRODUCTIVITY FACTOR (SEE DETAIL WORKSHEET BACK-UP)	0.00%	0
		112
• TASK SPECIFIC (confined space, high elevation, congestion, etc.)	0.0%	0
		112
• PPE SPECIFIC (Based on current data and estimating knowledge)		

PPE LEVEL

	D		Mod.'D'		Mod. "C"		C		C+	
PRODUCTIVITY HOURS (AS A %) / ADD MH's	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER	MH's	MULTIPLIER
(AS A MULTIPLIER) / TOTAL HRS	4.00%	4	28.00%	31	66.00%	74	74.00%	83	96.00%	108
TOTAL MULTIPLIER w/SITE PROD.	1.1648		1.4336		1.8592		1.9488		2.1952	

NOTE : Use the Default Productivity Factor of 'mC' for working in a contaminated area if the Safety Level cannot be determined.

(SEE FD FERNALD ESTIMATING SERVICES REFERENCE MANUAL IM-6006 8.10)

Total hours worked in a specific PPE level divided by 10 hour working days = (PPE) ManDays to determine material cost of PPE's.
(SEE APPENDIX C - HEALTH PHYSICS)

12.0	Man Days	14.0	Man Days	19.0	Man Days	19.0	Man Days	22.0	Man Days
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THESE EFFICIENCY FACTORS WERE APPLIED INDIVIDUALLY THROUGHOUT THE ESTIMATE AT A TASK SPECIFIC LEVEL, TO OBTAIN A MORE ACCURATE ACCOUNT OF OVERALL EFFICIENCY IMPACT DUE TO PPE REQUIREMENTS IN HANDLING CONTAMINATED AND HAZARDOUS WASTE.

EFFICIENCY FACTORS

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

PPE MULTIPLIER DEVELOPEMENT

	D	mD	mC	C	C+
CREW SIZE & MAKE-UP					
STANDARD	7	7	7	7	7
WORKER-BUDDY	0	0	0	0	0
SUPPORT TEAM	0	0	0	0	0
TOTAL CREW	7	7	7	7	7
CREW SIZE RATIO	1.00	1.00	1.00	1.00	1.00
AVAILABLE WORK TIME FACTOR	0.96	0.78	0.7	0.7	0.68
PPE LABOR PRODUCTIVITY FACTOR	1	1	0.86	0.82	0.75
NET PRODUCTIVITY RATIO	0.96	0.78	0.602	0.574	0.51
NET PRODUCTIVITY MULTIPLIER	1.04	1.28	1.66	1.74	1.96

These factors were based on Tables 6.1 and 6.2, Moderate Work Efforts, 66F to 85F temperature of "Hazardous Waste Cost Control" by R.A.Seig. Modifications were made to reflect a 10 hour work day and no buddy system or support team for levels D, mC and C. The worker-buddy and support team members, if required, may be covered under Construction Mgmt. (Rad Techs).

AVAILABLE WORK TIME FACTOR		D	mD	mC	C	C+
TOTAL WORK MINUTES per D	4 - 10's	600	600	600	600	600
ADDITNL SITE SAFETY MEETINGS NOT INCLD. IN BAS	QUANTITY	1	1	1	1	1
	MINUTES	25	25	25	25	25
TOTAL		25	25	25	25	25
PPE DON & DOFFING (ADJUST LEVEL D per WORK PLAN)	QUANTITY	0	0	3	3	3
	MINUTES	0	0	15	15	20
TOTAL			0	45	45	60
WORK BREAKS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	2	2	2	2
	MINUTES	N/A	15	15	15	15
TOTAL			30	30	30	30
MOBILIZATION - ROUND TRIPS (ADJUST LEVEL D per WORK PLAN)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			60	60	60	60
COOLDOWNS PER DAY ** (4 OUT OF 12 MONTHS)	QUANTITY	N/A	4	4	4	4
	MINUTES	N/A	15	15	15	15
TOTAL			20	20	20	20
AIR TANK REPLACEMENT	QUANTITY	N/A	N/A	N/A	N/A	N/A
	MINUTES	N/A	N/A	N/A	N/A	N/A
TOTAL						
AVAILABLE WORK TIME		575	465	420	420	405
AVAILABLE WORK TIME FACTOR		0.96	0.78	0.7	0.7	0.68

NOTE: Adjust 'Work Minutes per Day' basis to: 5 - 8's, or leave as 4 - 10's. Any other circumstances, over-ride the minutes per day.

** Assumption based on work performed in May, June, July & August, pro-rating cost over one year. Adjust % to individual circumstances.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

PPE's - PERSONAL PROTECTIVE EQUIPMENT

DESCRIPTION	UNIT	UNIT COST	* NO. OF CHANGE OUTS PER WORKER PER DAY			
			Man Days (TOTAL HOURS worked in PPE's Div. by WORK HOURS / DAY)			
PPE LEVEL	C / C+ / B	F / HF MASK w/RESP.&CART.		MAN DAYS	MAT'L'S's	PPE LEVEL
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
TYVEK COVER-ALL w/HOOD & BOOTIES - DISPOSABLE	EA	\$4.46	3	0	\$0	C / C+
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	0	\$0	C / C+
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	0	\$0	C / C+
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	0	\$0	C / C+
APR CARTRIDGES - DISPOSABLE	PR	\$6.98	3	0	\$0	C / C+
SUB-TOTAL		\$17.42	3		\$0	

(DOUBLE PPE)

\$/MD = \$0.00

PPE LEVEL mC : FULL DRESS w/ FACE SHIELD				MAN DAYS	MAT'L'S's	PPE LEVEL
LT.WT. DISPOSABLE COVERALLS w/HOOD & BOOTIES	PR	\$4.46	3	3042	\$40,695	mC
GLOVE LINER - DISPOSABLE	PR	\$0.24	3	3042	\$2,190	mC
GLOVE, LASTEX - DISPOSABLE	PR	\$0.26	3	3042	\$2,372	mC
GLOVE, WORK - DISPOSABLE	PR	\$1.02	3	3042	\$9,307	mC
SUB-TOTAL		\$5.98	3		\$54,564	

\$/MD = \$17.94

SUBCONTRACTOR REQUIRED PURCHASES			QTY. PER WKRL	NO. OF WORKERS	MAT'L'S's	PPE LEVEL
RUBBER BOOT COVERS-(1)PR.PER WORKER	PR	\$12.70	6	0	\$0	D/C/B
APR w/HALF FACE MASK -(1) PER WORKER	EA	\$22.30	6	0	\$0	C
APR w/FULL FACE MASK - (1) PER WORKER	EA	\$174.00	6	0	\$0	C
SCBA	EA	\$1,894.00	2	0	\$0	B
COOL VESTS	EA	\$137.50	6	0	\$0	C/B
THERMO STRIPS	EA	\$50.00	6	0	\$0	C/B
SUB-TOTAL					\$0	

TOTAL PPE's = MAT'L'S's
\$54,600

(FORWARD TO PAGE 2 OF 2)

OTHER PPE's SUCH AS HARD HAT, SAFETY GLASSES/GOGGLES, STEEL TOED SAFETY SHOES, HEARING PROTECTION, ARE CONSIDERED THE SUBCONTRACTORS RESPONSIBILITY AND ARE COVERED IN HIS OVERHEAD EXPENSE. COSTS OF FD FERNALD SUPPLIED PPE's, SUCH AS COTTON COVERALLS, EXCHANGE OF RUBBER BOOT COVERS AND RESPIRATORS FOR CHANGEOUTS AND CLEANING OF SAME IS INCURRED BY FD FERNALD AND COSTS ARE NOT INCLUDED AS PART OF PROJECT COSTS AT THIS TIME.

HEALTH PHYSICS

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO.: C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

Fluor Fernald, Inc.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

-MEDICAL MONITORING -

MEDICAL - PHYSICAL and IN-VIVO MONITORING - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION PHYSICAL (3hrs), IN-VIVO (1hr)	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BASELINE PHYSICALS	1	4	24	96	\$24.58	\$2,360
ANNUAL PHYSICALS	1	4	24	96	\$24.58	\$2,360
EXIT (TERMINATION) PHYSICALS (IN-VIVO)	1	1	24	24	\$24.58	\$590
SUB-TOTAL						\$5,310

RADIATION IN-VITRO SURVEILLANCE - LOST WORKER TIME for RAD II WORKERS ONLY

DESCRIPTION	QTY	HRS	WKR	TOTAL HOURS	AVG. LABOR RATE	TOTAL LABOR \$
BI-MONTHLY BIOASSAY	9	1	24	216	\$24.58	\$5,310
SUB-TOTAL						\$5,310

RANDOM DRUG TESTING

	TESTS	HRS	TOTAL HOURS	AVG. RATE	LABOR \$'s	
	67	2	134	\$24.58	\$3,300	
NO. OF WKRS. TESTED	TESTING DAYS PER YR.	AVG. NO. OF TESTS PER DAY	CHANCE/ DAY FOR TEST	NO. OF WKRS. FOR THIS ESTIMATE	CHANCES /DAY FOR TEST FOR PROJECT	CONSTR WORKING DAYS
2340	226	10	0.0042735	46	0.1966	340

LABOR \$'s
THRU
SAFETY

WORK DELAYS CAUSED BY MONITORING | 0.0% | \$2,934,567 | \$0

LABOR \$'s

WORK DELAYS CAUSED BY RAD CHECKING | 0.0% | \$2,934,567 | \$0

TOTAL LABOR	TOTAL MAT'L	GRAND TOTAL
\$13,900	\$54,600	\$68,500

TOTAL HEALTH PHYSICS

(FORWARD TO ESTIMATE SUMMARY SHEET)

ACTIVITY DURATIONS

Fluor Fernald, Inc.

PROJECT: Soil Excavation Area 3B
 ESTIMATE NO. C2-2001-05-001
 CLIENT: DOE
 WBS NO.: 1.1.G.G.

DATE: 13-May-01
 ESTIMATOR: Nemade
 LOCATION: Fernald
 TASK NO.: G3B14

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
CONSTRUCTION:	11-May-01	01-Oct-03	30-Jun-04	31-Mar-05		18.0 MONTHS
						0 MONTHS
TOTAL						18.0 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
a.	37.7 MONTHS
b.	0 MONTHS

ACTIVITY	EST. DATE	START DATE	MID POINT	COMPL. DATE	ACTIVITY	DURATION
OPERATIONS						0 MONTHS

DATE of EST. to MID-POINT	
ACTIVITY DURATION	
	0 MONTHS

ACTIVITY DURATION IS USED IN DETERMINING NUMBER of WORKERS for CERCLA/SAT TRAINING HOURS and HEALTH PHYSICS COSTS.

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2008

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B17
COMMENT NO: F06-046

Resource:	Res Dept:	INDUSTRIAL MECHANIC	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				HOU	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	CHEMIST	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				SAL	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	LAB MGR	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				SAL	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	LAB TECH	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				SAL	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	MVOOPR	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				HOU	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource:	Res Dept:	LABCHM	Overtime:	EOC:		Class:		LABOR		EOC:		Class:		LABOR		
				SAL	SAL	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2008

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B17
COMMENT NO F06-046

Resource: PJSMGR		PROJECT SUPPORT MGR																			
Res Dept:	949	LABOR																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	94.4	105.0	105.0	105.0	105.0	105.0	105.0	105.0	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	650	6,249	6,899	6,899	6,899	6,899	6,899	6,899	6,899	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	650	6,249	6,899	6,899	6,899	6,899	6,899	6,899	6,899	6,899

Resource: QACENG		QA ENGINEER																			
Res Dept:	949	LABOR																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.1	154.2	205.0	205.0	205.0	205.0	205.0	205.0	205.0	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	1,296	10,268	13,645	13,645	13,645	13,645	13,645	13,645	13,645	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	1,296	11,564	13,645	13,645	13,645	13,645	13,645	13,645	13,645	13,645

Resource: RADTEC		RAD TECH																			
Res Dept:	949	LABOR																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.7	202.7	202.7	202.7	202.7	202.7	202.7	202.7	202.7	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	1,522	10,008	11,530	11,530	11,530	11,530	11,530	11,530	11,530	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	1,522	11,530	11,530	11,530	11,530	11,530	11,530	11,530	11,530	11,530

Resource: S&HENG		SAFETY ENGINEER																			
Res Dept:	949	LABOR																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0	49.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	1,195	3,529	4,724	4,724	4,724	4,724	4,724	4,724	4,724	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	1,195	4,724	4,724	4,724	4,724	4,724	4,724	4,724	4,724	4,724

Resource: SERVSUB		SUBS																			
Res Dept:	949	LAB																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: SUBS		SUBS																			
Res Dept:	949	SUBS																			
Yr Hours:		Oct 00- Sep 01		Oct 01- Sep 02		Oct 02- Sep 03		Oct 03- Sep 04		Oct 04- Sep 05		Oct 05- Sep 06		Oct 06- Sep 07		Oct 07- Sep 08		Oct 08- Sep 09		Oct 09- Sep 10	
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Yr Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2008

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B17
COMMENT NO F06-046

Resource: WISE
Res Dept: 949
WISE CONSTRUCTION
Overnight:

EOC:
SUB

Class:

WISE CONSTRUCTION

Subcontractors

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-	
	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10	Sep 01	Sep 02	Sep 03	Sep 04	Sep 05	Sep 06	Sep 07	Sep 08	Sep 09	Sep 10
Yr Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Units:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTALS:																				
Yr Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

[Handwritten Signature]
CONTROL TEAM

G3B18

AREA 3B OFF SITE WASTE DISPOSITION

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2007

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B18
COMMENT NO F06-046

Resource: MPCREP
Res Dept: 949

MATL PROP CTRL REP
Overtime:

LABOR
EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-				
	Yr	Hours:																					
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: MVOGPR
Res Dept: 949

MOTOR VEHICLE OPER
Overtime:

LABOR
EOC: HOU

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-					
	Yr	Hours:																						
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: OPRMGR
Res Dept: 949

OPERATIONS MGR
Overtime:

LABOR
EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-						
	Yr	Hours:																							
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: PIPFTR
Res Dept: 949

PIPE FITTER
Overtime:

LABOR
EOC: HOU

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-						
	Yr	Hours:																							
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Resource: PRJMGR
Res Dept: 949

PROJECT MANAGER
Overtime:

LABOR
EOC: SAL

	Oct 00-		Oct 01-		Oct 02-		Oct 03-		Oct 04-		Oct 05-		Oct 06-		Oct 07-		Oct 08-		Oct 09-						
	Yr	Hours:																							
Cum Hours:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Yr Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cum Total Cost:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fluor Fernald, Inc.

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2007

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B18
COMMENT NO F06-046

Resource: Res Dept:	QACENG 949	QA ENGINEER Overtime:	Class:		EOC:		LABOR		EOC:	SAL
			Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07		
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:		0	0	0	0	0	0	0		
Cum Total Cost:		0	0	0	0	0	0	0		
Resource: Res Dept:		RADENGINEER 949	Class:		EOC:		LABOR			
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:		0	0	0	0	0	0	0		
Cum Total Cost:		0	0	0	0	0	0	0		
Resource: Res Dept:		RADTECH 949	Class:		EOC:		LABOR			
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:		0	0	0	0	0	0	0		
Cum Total Cost:		0	0	0	0	0	0	0		
Resource: Res Dept:		S&HENG 949	Class:		EOC:		LABOR			
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:		0	0	0	0	0	0	0		
Cum Total Cost:		0	0	0	0	0	0	0		
Resource: Res Dept:		S&HTEC 949	Class:		EOC:		LABOR			
Yr Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Cum Hours:		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Yr Total Cost:		0	0	0	0	0	0	0		
Cum Total Cost:		0	0	0	0	0	0	0		

INCLUDES ESCALATION COSTS

Fluor Fernald, Inc.

ESTIMATE SUPPORT WORKSHEET
FOR ACTIVITY BASED ESTIMATING
(1 FTE EQUALS 1747 HOURS)

DATE: 05-Sep-01
PROJECT MGR: J.D. CHIOU
CAM: J.D. CHIOU
PREPARED BY: W. FICK
FISCAL YEAR: 2006-2007

PBS: OHFN06
WBS: 1.1.G.G
CTRL ACCT: G3B1
CHARGE NO: G3B18
COMMENT NO F06-046

Resource:	Res Dept:	TPSREP	949	TECH/PROG SUPT REP		LABOR		EOC:					
				Overtime:	Class:	EOC:	SAL						
Yr Hours:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:				0.0	0.0	0.0	0.0	0.0	5.0	34.4	0.0	0.0	0.0
Yr Total Cost:				0.0	0.0	0.0	0.0	0.0	5.0	39.4	39.4	39.4	39.4
Cum Total Cost:				0	0	0	0	0	348	2,587	2,935	2,935	2,935

Resource:	Res Dept:	TRNLAB	949	TRANSPORT LABORER		LABOR		EOC:					
				Overtime:	Class:	EOC:	HOU						
Yr Hours:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:				0.0	0.0	0.0	0.0	0.0	8.1	39.5	0.0	0.0	0.0
Yr Total Cost:				0	0	0	0	0	8.1	47.6	47.6	47.6	47.6
Cum Total Cost:				0	0	0	0	0	266	1,413	1,679	1,679	1,679

Resource:	Res Dept:	TPSREP	949	TECH/PROG SUPT REP		LABOR		EOC:					
				Overtime:	Class:	EOC:	SAL						
Yr Hours:				Oct 00- Sep 01	Oct 01- Sep 02	Oct 02- Sep 03	Oct 03- Sep 04	Oct 04- Sep 05	Oct 05- Sep 06	Oct 06- Sep 07	Oct 07- Sep 08	Oct 08- Sep 09	Oct 09- Sep 10
Cum Hours:				0.0	0.0	0.0	0.0	0.0	299.1	1,196.8	0.0	0.0	0.0
Yr Total Cost:				0	0	0	0	0	299.1	1,495.9	1,495.9	1,495.9	1,495.9
Cum Total Cost:				0	0	0	0	0	21,157	90,618	111,775	111,775	111,775

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CONTROL TEAM

Estimate Summary

Area 3B – Waste Disposition

WBS Element – 1.1.G.G

Control Account – G3B1

Charge Number - G3B18

Labor

Labor is broken down by resource code and by activity on the attached matrixed manpower spreadsheet. The backup for the manpower spreadsheet can be found on the Waste Disposition Campaign Estimate Worksheets that were provided by Waste Generator Services (WGS). WGS estimated resource man-hours, which were then rounded to the tenth of an FTE for Man Power Planning (MPP) purposes to be entered into the MPP database on a quarterly basis. This database was then exported to MicroFrame and expanded into monthly estimates. The monthly figures were then summed to provide a total hours by resource for each activity.

Materials

The materials for this account are estimated to be \$22,274. The backup information for this value can be found on the Waste Disposition Campaign Estimate Worksheets that were provided by Waste Generator Services (WGS). There are two worksheets that were provided and summed for the total materials costs. However, WGS included costs for PPE that have been subtracted from this estimate due to the fact the PPE is provided by a centralized group and does not get charged back to the project.

Equipment

N/A

Subcontracts

N/A

SECTION 7

5.0 RISK PLAN

Risk/Opportunity Identification and Analysis Form

Project: Area 3B Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$12,165,935				
Evaluator: R. Abitz / F. Miller		WBS Number: 1.1.G.G						
CAM: JD Chlou		Date: 4/11/01						
Control Account Number: G3B1		Date: 4/11/01						
Risk and/or Opportunity		Potential Impact						
Project Task	Internal Or External Driver	Impact Cost \$ (Maximum Case)	Risk Impact Level	Risk Probability %	Risk Probability Level	Probable Cost \$ (Likeliest Case)	Risk Critical Value	Risk Handling Strategy
Area 3B/4B/5 PreDesign	Internal	\$205,000	2	75	4	\$153,750	3	Accept Risk
Additional Samples needed to bound contamination (chasing)	An additional 10% of the original predesign samples will be collected and analyzed for an average of 2 analytes. This equates to 586 samples.							
Area 3B/4B/5 Title I/II	Internal	\$130,000	2	40	3	\$52,000	2	Accept Risk
Inadequate Engineering Discipline. Inadequate CADD or drafting experience.	Bring in outside Teaming Partners for 6 months of work.							
Area 3B Site Prep / Excavation	Internal	\$36,000	2	60	4	\$21,600	3	Accept Risk
Certification Units Failure	Additional Excavation for 1 Failed CU. 1/4 footprint of CU at a depth of 2'. This equates to 1200cy @ \$30/cy							
Area 3B Site Prep / Excavation	Internal	\$20,000	1	30	2	\$6,000	1	Accept Risk
Groundwater infiltration during excavation	Installation and operation of pumps to remove excess water							
Area 3B Site Prep / Excavation	Internal	\$30,000	1	30	2	\$9,000	1	Accept Risk
Remediation activities contaminate/recontaminat e areas that originally did not need remediation.	Additional Excavation of 1000cy @ \$30/cy							
Area 3B Site Prep / Excavation	Internal	\$86,000	1	20	2	\$17,200	1	Accept Risk
Extreme Weather Delays	Contractor delayed by weather / muddy conditions for all of April and 1/2 of May. Contractor need to work double shift for a month and a half. Impact to Floor personnel who will cover second shift at overtime for 1.5 months.							
Area 3B Site Prep / Excavation	Internal	\$65,000	1	10	2	\$6,500	1	Accept Risk
Encountering 10% more debris than was identified from predesign activities.	Additional 2500cy of CAT 2 material requiring excavation and placement at 2x the CAT 1 rate.							
Area 3B Title III	Internal	\$8,000	1	60	4	\$4,800	2	Accept Risk
Additional Samples needed to bound contamination (chasing)	DCN generation							
Area 3B Title III	Internal	\$15,000	1	70	4	\$10,500	2	Accept Risk
Implementing Only A Part of the Design	Rework of IRDP to accommodate smaller scope. Rework of support plans							
Area 3B Offsite Waste Disposition	Internal	\$100,000	2	30	2	\$30,000	2	Accept Risk
Containers do not meet shipping requirements	All containers must be overpacked into ISOs							
Area 3B Offsite Waste Disposition	Internal	\$10,000	1	30	3	\$3,000	1	Accept Risk
Discovery of additional material needing containerization.	Containerized volume increases by 10%. Need to purchase additional boxes and ship to disposal facility.							
Area 3B Excavation Control / Certification	Internal	\$10,000	2	60	4	\$6,000	3	Accept Risk
Certification Units Failure	1 CUs Fail - Resampling and Analysis / Schedule Delay of 2.5 months							
Total:		\$715,000			Total:	\$320,350		

Area 3B/4B/5 PreDesign	External	\$10,000	1	30	2	\$3,000	1	
Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month.							
Area 3B/4B/5 Title I/II	External	\$10,000	1	30	2	\$3,000	1	
Longer EPA Review Cycle	EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month.							

Risk/Opportunity Identification and Analysis Form

Project: Area 3B Soils Remediation		PBS Number: 06		Total Baseline Dollars (Minimum Case): \$12,185,935	
Evaluator: R. Abitz / F. Miller		WBS Number: 1.1.G.G			
CAM: JD Chiou		Date: 4/11/01			
Control Account Number: G3B1		Risk and/or Opportunity			
Project Task		Potential Impact			
Area 3B Excavation Control / Certification		Longer EPA Review Cycle			
Internal Or External Driver		Impact Cost \$ (Maximum Case)			
EPA Takes 30 days longer than the normal 60 days to review documents. Schedule delay of 1 month.		\$10,000			
Risk Probability %		Risk Impact Level			
30		1			
Risk Probability Level		Probable Cost \$ (Likeliest Case)			
2		\$3,000			
Risk Critical Value		Risk Handling Strategy			
1					

