



Rocky Mountain  
Remediation Services, L.L.C  
*... protecting the environment*

# FERNALD SILO 3 PROJECT

## Pre-Operational Environmental Control Plan RMR-0445-0060-000

April 21, 2000



2937

## TABLE OF CONTENTS

LIST OF ACRONYMS ..... iii

1.0 PURPOSE ..... 1

2.0 EROSION AND STORMWATER CONTROL PLAN ..... 2

3.0 FUGITIVE DUST CONTROL PLAN ..... 8

4.0 WASTE MANAGEMENT PLAN ..... 13

5.0 REFERENCES ..... 18

6.0 APPENDICES

    Appendix A Erosion and Stormwater Control Features Details

    Appendix B Control of Fugitive Emission Daily Records

    Appendix C Off-Hours Dust Control Procedure

    Appendix D Material Segregation and Containerization Criteria

    Appendix E Estimated Amounts of Each Type of Waste Stream

**LIST OF ACRONYMS**

2937

|        |                                                                       |
|--------|-----------------------------------------------------------------------|
| ACL    | Administrative Control Level                                          |
| BAT    | Best Available Technology                                             |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR    | Code of Federal Regulations                                           |
| CM     | Construction Manager                                                  |
| CWA    | Contractors' Work Area                                                |
| DOE    | Department of Energy                                                  |
| DPC    | Designated Primary Contact                                            |
| EM     | Environmental Management                                              |
| FEMP   | Fernald Environmental Management Project                              |
| ISA    | Interim Storage Area                                                  |
| MSDS   | Material Safety Data Sheet                                            |
| MSCC   | Material Segregation and Containerization Criteria                    |
| MTL    | Material Tracking Location                                            |
| NAAQS  | National Ambient Air Quality Standards                                |
| ODNR   | Ohio Department of Natural Resources                                  |
| ODOT   | Ohio Department of Transport                                          |
| OEPA   | Ohio Environmental protection Agency                                  |
| OSDF   | On-Site Disposal Facility                                             |
| OSHA   | Occupational Safety and Health Administration                         |
| PPE    | Personal Protective Equipment                                         |
| PECP   | Pre-Operational Environmental Control Plan                            |
| RMRS   | Rocky Mountain Remediation Services, L.L.C.                           |
| RQ     | Reportable Quantity                                                   |
| STD    | Standard                                                              |
| SWA    | Subcontractor Work Area                                               |
| SWMEC  | Surface-Water Management and Erosion Controls                         |
| SWMECP | Surface-Water Management and Erosion Control Plan                     |
| TBD    | To Be Determined                                                      |
| TSF    | Treatment and Stabilization Facility                                  |
| WAC    | Waste Acceptance Criteria                                             |
| WSA    | Waste Storage Area                                                    |

2937

1  
2 **1.0 PURPOSE**  
3

4 This Pre-Operational Environmental Control Plan (PECP) provides details of the methods and  
5 materials that RMRS and its subcontractors will use during the site preparation and construction  
6 phase of the Silo 3 Project to control erosion, stormwater, fugitive dust, contaminated soil,  
7 construction waste and minimize the impact of these activities on the environment. This plan  
8 covers the construction of the Interim Storage Area, the Silo 3 Retrieval Facility and the  
9 Treatment Facility at the U.S. Department of Energy (DOE) FEMP site, Fernald, Ohio. These  
10 areas are shown in RMRS Silo 3 Project Drawing Number 52-3002. The Silo 3 Project PECP  
11 contains the following plans:  
12

- 13 ● Erosion and Stormwater Control: Descriptions of the methods and materials that will be used  
14 to prevent erosion of soil either by wind or surface water in the process or project work area  
15 and to reduce sediment loading in the stormwater. Descriptions of the methods, materials  
16 and existing site features that will be used to capture and control stormwater.
- 17 ● Fugitive Dust Control: Descriptions of the methods and materials that will be used to  
18 suppress and minimize the creation and dispersion of dust.
- 19 ● Waste Management: Description of the methods that will be used to manage waste and debris  
20 generated during site preparation and construction.  
21

22 In Section 2.0 of the Silo 3 Project PECP the Erosion and Stormwater Control Plan is described;  
23 in Section 3.0 the Fugitive Dust Control Plan and in Section 4.0 the Waste Management Plan.  
24 Section 5.0 lists the references that have been used. These three plans comprise the key elements  
25 of the RMRS Pre-Operational Environmental Control Plan for the Silo 3 Project.  
26

1 **2.0 EROSION AND STORMWATER CONTROL PLAN** - 2937  
2

3 Section 2.0 describes the RMRS Erosion and Stormwater Control Plan that will be used during  
4 the pre-operational phase of the Silo 3 Project including erosion control practices and surface  
5 water management that will be followed and implemented. This Plan addresses surface-water  
6 management and erosion control practices throughout the construction of the Interim Storage  
7 Area (ISA) and the Silo 3 Retrieval Facility and the Treatment Facilities, consistent with  
8 drawings and technical specifications detailed in the Site Preparation Package (RMR-0445-  
9 0058).

10  
11 **2.0 Functional Requirement of the Plan**

12  
13 The functional requirement of this Erosion and Stormwater Control Plan will satisfy the criteria  
14 outlined below:

- 15  
16 • Routing surface-water to designated locations where it can be appropriately managed  
17 • Protecting Infrastructure Road, 2<sup>nd</sup> Street, Silo 3 and ISA construction areas from damage  
18 caused by precipitation and storm water run-on and run-off  
19 • Discharging of surface-water into existing watercourses will be in accordance with  
20 applicable Ohio Department of Natural Resources (ONDR), Ohio Environmental Protection  
21 Agency (OEPA) and Department of Energy (DOE) directives and requirements  
22 • Segregating clean area run-off from potentially contaminated area run-off. Contaminated  
23 stormwater will not be discharged with "clean" stormwater.

24  
25 Functional requirements will be met by constructing the run-on/run-off control feature outlined  
26 below. Erosion control feature will be installed prior to any disturbance of soil in work areas.  
27 RMRS Silo 3 Project Drawing Number 52-3012 illustrates the location and limits of the control  
28 features.

29  
30 These include, but are not limited to, the following nine control features: Fluor Fernald

- 31  
32 • Installation of silt fences on the down slope sides of the construction areas  
33 • Construction of sediment traps as required  
34 • Installation of silt fences below sump discharges where applicable  
35 • Installation of temporary culverts along roads next to construction site as required  
36 • Installation of check dams in drainage channels and swales as required  
37 • Installation of additional permanent riprap as required  
38 • Construction of necessary drainage channels as shown in Drawing number 52-3012  
39 • Maintenance, repair or replacement of existing surface water and erosion control features as  
40 required  
41 • Excavations, which are expected to be inactive for 45 days or more, will be stabilized within  
42 7 days of their final use  
43 • Dewatering  
44

1 The type and location of erosion control features will be subject to adjustment depending on field  
2 conditions. As described in RMRS Technical Specification 02485, RMRS will routinely inspect  
3 and evaluate the effectiveness of, and need for maintenance of the control measures that are in  
4 place.

## 5 6 **2.2 Run-On/Run-Off Control Structural Practices**

7  
8 Process design and operation will minimize the potential for generation of contaminated  
9 stormwater, including any run-on and run-off. A description of the construction, inspection and  
10 maintenance of the run-on/run-off control feature is presented in this section. These features  
11 may include, but will not be limited to:

- 12
- 13 • drainage channels and swales
- 14 • check dams
- 15 • culverts
- 16 • silt fences
- 17 • diversions.

18  
19 Any repairs to the erosion and stormwater control measures will be corrected by RMRS within  
20 24 hours of the problem being discovered. Areas of excavation, and all erosion control measures  
21 will be inspected by RMRS to verify that they are installed in accordance with RMRS Technical  
22 Specification 02485, and are still functioning properly. An inspection checklist will be developed  
23 by RMRS in support of the inspection schedule. Disturbed areas will also be inspected for  
24 evidence of excessive erosion or siltation. These inspections will occur, at a minimum, at the  
25 following frequency:

- 26
- 27 • weekly for general inspections
- 28 • daily after each rain event exceeding 0.5 inches at the site
- 29 • at least once per day during prolonged rainfall events at the site.

30  
31 Inspections will be documented in the RMRS Daily Activity Report at the Silo 3 Project site.  
32 These records will be made available to Fluor Fernald for review upon request. This inspection  
33 frequency is in addition to any specific requirements identified in the 'Inspection and  
34 Maintenance' requirements for each control measure below.

### 35 36 **2.2.1 Temporary Drainage Channels and Swales**

37  
38 Where applicable, temporary drainage channel and swales will be constructed between control  
39 points on predefined lines and grades. Temporary drainage channels and swales will be  
40 stabilized in accordance with the RMRS Technical Specification Number 02485, *Soil Erosion*  
41 *and Sedimentation Control*.

1  
2 **Inspection and Maintenance**

2937

3  
4 Drainage channels and swales will be inspected by RMRS in accordance with the following, as a  
5 minimum:

- 6  
7 • Temporary drainage channels and swales will be inspected according to the criteria stipulated  
8 in Section 2.2. Repairs to drainage channels will be made promptly.  
9 • Drainage channels and swales shall be kept clear of debris at all times.  
10 • The protective lining vegetation or erosion-resistant materials will be maintained as built to  
11 prevent undermining, scour, or deterioration  
12 • Silt fence placement requirements.

13  
14 **2.2.2 Check Dams**

15  
16 Check dams will be used in channels that have a design flow equal to or greater than 3-feet per  
17 second or as needed. Check dams will be incorporated to enhance water quality benefits by  
18 maximizing the detention time within the swale and to increase channel stability by decreasing  
19 flow velocities.

20  
21 Check dams will be installed in accordance with the requirements of Ohio Department of Natural  
22 Resources, "Rainwater and Land Development" Manual, and RMRS Technical Specification  
23 02485 at the necessary spacing.

24  
25 Check dams will be constructed of 4-inch to 8-inch diameter stone to a height of 2-feet over the  
26 entire channel width. The top of the check dam will be constructed so that the center is  
27 approximately 6 inches lower than the outer edges, so that water will flow across the center and  
28 not around the ends. The maximum height of the check dam at the center of the weir will not  
29 exceed 3 feet. A detail of the check dam is provided in Appendix A.

30  
31 **Inspection and Maintenance**

32  
33 Check Dams will be inspected by RMRS in accordance with the following, as a minimum:

- 34  
35 • Check dams will be inspected according to the criteria stipulated in Section 2.2  
36 • Check dams will be maintained as constructed  
37 • Frequent inspections will be made to ensure that the structures have not been damaged by  
38 high-energy flows.

39  
40 **2.2.3 Road Culverts**

41  
42 Culverts will be installed according to Ohio Department of Transport (ODOT) requirements. Fill  
43 material will be placed and compacted around and over culverts to provide adequate coverage for  
44 vehicular traffic.

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1  
2  
3 **Inspection and Maintenance**  
4

5 Culverts will be inspected by RMRS according to the following, as a minimum:  
6

- 7
- 8 • Culverts will be inspected according to the criteria stipulated in Section 2.2
  - 9 • Culverts will be inspected periodically to ensure that they are clear of debris and not  
10 damaged. Sediment and debris that have been deposited and trapped will be removed and  
11 stockpiled in the designated RMRS work area.
  - 12 • Appropriate equipment will be available to keep culverts relatively free of sediment and  
13 debris.

14 **2.2.4 Riprap**  
15

16 Where required, properly sized riprap will be placed in the designated work area. Type "D"  
17 riprap will be installed in the temporary drainage channel as check dams at appropriate locations.  
18

19 **Inspection and Maintenance**  
20

21 Riprap will be inspected by RMRS according to the following, as a minimum:  
22

- 23
- 24 • Riprap will be inspected according to the criteria stipulated in Section 2.2
  - 25 • Riprap will be periodically inspected to determine if high flows have caused scour beneath  
26 the riprap or dislodged any of the stone. If repairs are needed, RMRS will ensure that those  
27 repairs are accomplished within the same workday of their discovery.

28 **2.2.5 Silt Fences**  
29

30 Silt fences will be installed in accordance with ODNR requirements and RMRS Technical  
31 Specification 02485. Silt fences will be constructed before up slope land disturbance begins.  
32 Silt fences will be installed as close to the contours as possible so that water will not concentrate  
33 at low points in the fence. Silt fences will be installed on the down slope side of disturbed area,  
34 perpendicular to where run-off occurs as sheet flow or where flow through small rill can be  
35 converted to sheet flow. RMRS will use appropriate equipment and personnel to install the silt  
36 fence at locations shown on RMRS Silo 3 Project Drawing Number 52-3012. The silt fence will  
37 be placed in a trench cut to a minimum of 9 inches deep, staked and back filled accordingly. The  
38 height of the silt fence will be a minimum of 16 inches above the original ground surface. To  
39 prevent water being ponded by the silt fence and flowing around its ends, each end will be  
40 constructed up slope so that the ends are at a higher elevation. Seams between sections of silt  
41 fencing will be overlapped with the end stakes of each section wrapped together before driving  
42 into the ground. Breaks and overlaps will be installed as necessary to allow equipment access to  
43 the construction area. Silt fences will remain in place until the disturbed area has been stabilized.

2937

1 **Inspection and Maintenance**

2  
3 Proper applications of silt fencing will allow the intercepted run-off to pass as diffused flow  
4 through the geotextile. If diffused flow does not occur, the layout of the silt fence will be  
5 changed, accumulated sediment will be removed and other practices will be implemented.

6  
7 Silt fences will be inspected and maintained by RMRS according to the following, as a  
8 minimum:

- 9  
10 • Silt fences will be inspected and maintained according to the criteria stipulated in Section 2.2  
11 • Appropriate equipment will be available to maintain silt fencing. Sediment and debris that  
12 have been deposited and trapped will be removed from the silt fence will be relocated and  
13 stockpiled in the designated RMRS work area.

14  
15 Inspection and repair activities will be documented in the RMRS Daily Activity Report and  
16 available for review by Fluor Fernald.

17  
18 **2.2.6 Temporary Diversions**

19  
20 If required by changing site conditions, RMRS will construct temporary diversions. Earthen  
21 material cut out for the channel will be used to build the berm on the opposite side. The  
22 temporary diversion will be similar to the one shown in Appendix A. Check dams will be  
23 installed to slow the flow velocity.

24  
25 **Inspection and Maintenance**

26  
27 RMRS will regularly inspect and maintain any constructed temporary diversions as follows, as a  
28 minimum:

- 29  
30 • Temporary diversions will be inspected according to the criteria stipulated in Section 2.2  
31 • Repair damage and removed deposits or sediment from the diversion  
32 • Re-stabilize as needed  
33 • Check for points of scour or bank failure, rubbish or channel construction, rodent holes,  
34 breaching or settling of the berm, excessive wear for pedestrian traffic and construction  
35 traffic on a regular schedule.

36  
37 Inspection and repair activities will be documented in the RMRS Daily Activity Report and  
38 available for review by Fluor Fernald.

39  
40 **2.2.7 Run-On/Run-Off Control - Non-Structural Practices**

41  
42 **2.2.7.1 Temporary Seeding and Mulching**

43  
44 Temporary seeding and mulching will be used during Silo 3 Project construction activities as  
45 required to stabilize disturbed areas. Seed mixes according to RMRS Technical Specification

1 02900, *Seeding* as approved by Fluor Fernald F for use at FEMP will be spread by hydraulic  
2 methods to provide temporary soil stabilization. Seed mixes will vary depending on the season  
3 that sowing is required and in accordance with RMRS Technical Specification 02900, *Seeding*.  
4 The application rates for seeds and related materials will be in accordance with RMRS Technical  
5 Specification 02900. Temporary seeding will be performed in all areas, which are expected to be  
6 inactive for 45 days or more, within 7 days after the last activity. This includes areas disturbed  
7 by construction and other Silo 3 Project activities. Forty-five calendar days will be the  
8 maximum time that a stockpile can be left in an exposed condition without stabilization. RMRS  
9 will be responsible for maintaining controls on the stockpile until final acceptance or disposition.

10  
11 Areas to be seeded will generally be free of debris, rock, root material, and other objects that  
12 may impede soil preparation and seeding activities. It is recognized that repeat cultivation may  
13 be necessary where equipment used for hauling and spreading has compacted sub-grades. The  
14 seedbed will be tracked as required or disked by existing soil conditions. (Lime and fertilizer  
15 may be added, in accordance with RMRS Technical Specification 02900 to establish temporary  
16 stands of vegetation.)

17  
18 Coir matting, in preference to other matting, will be used to stabilize easily eroded area such as  
19 channels and steep slopes while vegetation is becoming established. RMRS will determine the  
20 location of these areas in the field in accordance with RMRS Technical Specifications 02900 and  
21 02485. RMRS will be responsible for watering this area and any fugitive dust controls  
22 requirements until vegetation is established.

23  
24 If after three weeks seeding and vegetation has not become well established in any specific area,  
25 the area will be re-seeded and mulched. Areas requiring re-seeding will be prepared in the same  
26 manner as the original installation. RMRS will inspect vegetated areas after each significant  
27 rainfall event greater than 0.5 inches until a dense stand of grass is established. Documentation  
28 of inspections in the form of filed note entries will be provided to Fluor Fernald.

#### 29 30 **2.2.7.2 Permanent Seeding and Mulching**

31  
32 Permanent seeding is required for disturbed areas as defined in RMRS Technical Specification  
33 02900. Permanent seeding will also be applied by RMRS if an area has been idle for more than  
34 one year. A disk, tracked vehicle (dozer) or other implement will be used to reduce soil  
35 compaction and allow maximum infiltration in areas that are finely graded and required  
36 permanent seeding such as the completed, drainage channel and other disturbed area. Seed and  
37 fertilizer mix will be applied by hydraulic methods. Seeding and mulching will be installed in  
38 accordance with the requirements identified in the RMRS Silo 3 Project Technical Specification  
39 02900.

### 3.0 FUGITIVE DUST CONTROL PLAN

2937

This Fugitive Dust Control Plan describes the methodology that will be used by RMRS for controlling fugitive dust emissions and ensuring compliance with the required standards and site specific limits for the Silo 3 Project. RMRS will proactively suppress dust releases from field activities by applying Best Available Technology (BAT) dust control materials and/or implementing BAT work practices either at the beginning and during field activities. RMRS will use Fluor Fernald, RM-0047, *Fugitive Dust Control Requirements*, as the appropriate site-specific definition of BAT for fugitive dust control together with OAC 3745-17-07 and OAC 3745-17-08, BAT to minimize the creation and dispersion of fugitive dust.

#### 3.1 Site-Specific Limits

RMRS will apply the following Site-Specific Limits:

- Visible particulate emission from any paved roadway or paved parking area should not exceed one minute during any sixty-minute observation period.
- Visible particulate emissions from any unpaved roadway, unpaved parking area, project field activities, or wind erosion from storage piles should not exceed three minutes during any sixty-minute observation period.

Qualified RMRS personnel using 40 CFR Part 60 Appendix A, Method 22 "Visual Determination of Fugitive Emission from Material Sources and Smoke Emissions for Flares will verify compliance with these limits." Fluor Fernald will provide "Method 22" training to qualify RMRS personnel.

#### 3.2 Suppression Equipment

Due to the radiological issues associated with working on the Silo 3 Project, RMRS intends to use dedicated equipment for their radiological work zones to avoid potential decontamination requirements. If required by site conditions, RMRS may, after decontamination and radiological scanning, switch equipment and systems between areas. The proposed equipment list to suppress dust releases includes, but is not limited to, the following:

- Motor Grader
- Backhoe
- Miscellaneous Hand tools (shovels, brooms)
- Miscellaneous Pumps and Hoses
- Skid Steer Loader with Broom Attachment (for road crossing only if water flushing and hand wet brooming is ineffective)
- Water Wagon
- Smooth Drum Roller

2937

### 3.3 Methods and Materials

At the beginning of each day and periodically throughout that day, project personnel will tour the Silo 3 Project site, applying BAT Fugitive Dust Controls and/or other work practices to identify control and thereby minimize dust generation. Before fugitive dust emissions are visible, BAT fugitive dust controls and/or work practices will be implemented or increased. If the visible limit is exceeded, i.e., visible particulate emissions from any paved roadway or paved parking area exceeding one minute during any sixty-minute observation period or visible particulate emissions from any unpaved roadway, unpaved parking area, project field activities, or wind erosion from storage piles exceeding three minutes duration during any sixty-minute period, then mechanical dust generating activities must cease immediately. An increase of BAT dust controls and/or work practices will be instigated or increased to bring the fugitive emission, as a minimum, below the visible limit during the dust generating activities. Additionally, BAT dust controls and/or work practices will be implemented at the end of each day in order to minimize the occurrences of off-hours dust alert. Specific materials and methods may include the following:

- Water
- Crusting agents such as Pine Sap Emulsion® or equivalent (as approved by Fluor Fernald)
- Plastic Sheeting or Tarps
- Revegetation Materials.

### 3.4 Work Practices

RMRS and Fluor Fernald will continuously monitor project field activities for visible emissions. RMRS will be responsible for implementing, directing and coordinating BAT work practices to monitor project field activities for visible emissions. Specific work practices may include the following:

- Effective "Wheel Washing" prior to entering the paved area and/or as required by contamination control
- Application of dust suppression materials (mainly water) to active work areas or other areas where dust is likely to be generated
- Before the end of shift, sealing off (by rolling, grading or compacting) work areas stockpiles, working piles, etc. where fugitive emissions are likely to occur if not sealed
- During dry conditions or as needed initiating dust control prior to start of shift and continuing throughout the day as needed to minimize fugitive dust emission.
- Wet sweep, blade or otherwise remove any clods, clumps, tracks, or other deposits of soil of mud from paved roadways and parking area, applying appropriate dust control measures to suppress the generation of visible dust that may result from the removal process
- Using alternative routing for hauling of materials
- Changing method of excavation when feasible including reducing the rate of excavation
- Maintaining roadway shoulders
- Minimizing unnecessary traffic

- 1 • Adhering to site specific speed limits of 15 mph on paved surfaces and 10 mph on unpaved
- 2 and if necessary, further reduce the speed of equipment and haul/other site vehicles
- 3 • Applying water or other appropriate dust suppression agents to material being transported
- 4 and cover truck beds when material is still likely to become airborne
- 5 • Utilizing load covers during periods of equipment movement, regardless of truck being
- 6 empty or full
- 7 • Minimizing configuration of material being hauled (i.e., place less material in haul vehicle)
- 8 • Minimizing drop height during loading and unloading
- 9 • If practical, cover small storage piles with tarps or plastic sheeting
- 10 • For extended periods of planned inactivity, vegetate as a last resort, if protective cover or
- 11 periodic application of surfactants or crusting agents prove ineffective
- 12 • Repair or resurface roadways/parking areas as needed or use an alternative road surface as a
- 13 last resort.

### 14 3.5 Implementation of the Fugitive Dust Control Plan

15 RMRS will be responsible for implementing, directing and coordinating the Silo 3 Project  
16 Fugitive Dust Control Plan. RMRS will communicate the information contained in this plan to  
17 their workforce through a pre-task briefing and through other periodic briefings as required.  
18 These briefings will be documented. Those workers who will have specific dust suppression  
19 duties will be briefed to the special record keeping requirements of this task.

20 RMRS responsibilities include, but are not limited to the following:

- 21 • Briefing field personnel
- 22 • Monitoring for visible emissions
- 23 • Directing of BAT suppression activities
- 24 • Receiving opacity monitoring information from Fluor Fernald personnel
- 25 • Coordinating maintenance and repair of equipment and systems components
- 26 • Directing of alternative work practices when required
- 27 • Overseeing the record keeping process and maintaining permanent records
- 28 • Stopping field activities if fugitive dust limits are exceeded and coordinating the restart
- 29 of the activity with Fluor Fernald personnel after corrective measure have been
- 30 implemented. Site Specific Limits are defined in Section 3.1 of the Pre-Operational
- 31 Environmental Control Plan.

### 32 3.6 Monitoring

33 All personnel, who have been briefed on this plan, will report suspected fugitive dust emissions  
34 to the appropriate RMRS personnel who will then direct the implementation of BAT work  
35 practices and fugitive dust control. As outlined in Section 3.4, RMRS will, together with Fluor  
36 Fernald personnel, regularly monitor field conditions for visible dust emission. RMRS will also  
37 communicate with Fluor Fernald personnel regarding information gathered for the Fluor Fernald  
38 Opacity Monitoring activities. When required, BAT material will be applied and BAT work  
39 practices will be implemented to limit fugitive dust emissions.

### 3.7 Record Keeping

The record keeping process will begin with the RMRS Silo 3 Project Field Supervisors/Managers, who will brief those workers applying BAT materials pursuant to the required record keeping. The form to be filled out can be found in Appendix B. Appropriate personnel will complete these forms. Completed forms will be part of the Silo 3 Project Daily Activity Report and will be filed in the permanent project files and transmitted to Fluor Fernald when requested. Additional blank copies of the forms will be kept in the cabs of the equipment and in the field trailer. Completed forms will be turned over to the RMRS Silo 3 Project Field Supervisors on a daily basis. Forms will be reviewed for completeness and incomplete forms will be returned to the appropriate individual for corrections. Failure of an individual to consistently produce complete and accurate records will result in disciplinary action.

### 3.8 Off-Hours Fugitive Dust Alert Notification

A "Dust Alert" is defined as when excessive or visible dust emanates from anywhere within the Contract Work Area during non-working periods. "Non-Work" periods are defined as hours when neither RMRS nor any subcontractor is performing Silo 3 construction activities on site. However, the FEMP remains staffed by Fluor Fernald Security personnel twenty-four (24) hours per day. RMRS or Fluor Fernald will have Silo 3 Project trained personnel on-call during non-work periods, seven (7) days per week (including holidays) to respond to any off-hours fugitive dust alert. These personnel are not trained to implement fugitive dust controls. Therefore, if visible dust is observed within the Work Area during project non-work periods, Fluor Fernald will notify RMRS. Dust suppression will begin within two (2) hours of notification by Fluor Fernald.

#### 3.8.1 Notification Procedure

During a Dust Alert, Fluor Fernald will refer to the "Off-Hours Dust Alert Schedule" that will be provided by RMRS prior to initiation of construction activities. If Fluor Fernald cannot contact the RMRS Designated Primary Contact (DPC) within a reasonable time frame, an attempt to reach the designated alternative contact will be made. Similarly, if the alternative cannot be expeditiously contacted, the second alternative will be contacted. In the unlikely event that all three of these individuals cannot be reached, Fluor Fernald will attempt to contact any other person identified on the RMRS approved contact list.

Upon receiving notification from Fluor Fernald, the RMRS DPC will then contact qualified personnel, as appropriate, to respond to the Dust Alert. The RMRS DPC must verify that those responding to the "Off-Hours Dust Alert" are able to gain access to a controlled area if required. Only those personnel who meet the appropriate training and medical requirements for this work should be contacted. The RMRS DPC, as well as those personnel contacted, will go to the site to direct the work and implement the necessary corrective actions. Due to the nature of dust suppression being defined as a Limited Scope Work, RMRS is not required to have the Site Health and Safety Officer respond to these Dust Alerts. Fluor Fernald will provide any necessary safety coverage.

1 The proposed RMRS internal Off-Hour Dust Control Procedure is attached as Appendix C of  
2 this plan.

### 3.8.2 RMRS Site Response

5  
6 RMRS personnel will utilize adequate BAT dust control methods to bring any fugitive dust  
7 emissions to below the Site-Specific Limit during dust generating activities. Designated RMRS  
8 personnel will not leave the Silo 3 Project site without concurrence from Fluor Fernald that  
9 sufficient controls are in place or until Fluor Fernald has signed the Dust Alert Work Order  
10 included in Appendix C.

### 3.8.3 Schedule and Contacts

11  
12 The Off-Hours Dust Alert Schedule and Contact List will be provided to Fluor Fernald prior to  
13 the start of RMRS Silo 3 Project construction activities.  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26

## 4.0 WASTE MANAGEMENT PLAN

The purpose of the Waste Management Plan is to describe the materials and methodology RMRS will use to support safe construction including careful removal and disposition of relevant waste materials. Management of secondary wastes generated as a result of the Silo 3 Project construction activities will be consistent with Fluor Fernald site procedures and applicable regulatory drivers.

### 4.1 Waste Types

It is expected that RMRS construction activities will generate three main groups of secondary waste materials, i.e., clean construction debris, radiologically contaminated construction debris and excavated soil. Smaller quantities of additional solid waste, e.g., personnel protection equipment, wood, and potentially some drums are anticipated. Clean construction debris is material that as a result of construction has been brought onto the Silo 3 Project site by RMRS or is created by construction activities, and has been surveyed or characterized and released by Fluor Fernald as non-radioactive and non-hazardous waste. Radiological contaminated construction debris is material that has been contaminated during construction by whatever means inside the Controlled Area. Excess excavated soil will be generated as a consequence of earthwork, particularly from the construction of the ISA pad.

There is also the potential that RMRS will encounter some unknown debris during soil excavation. This material may be manufactured objects or natural solid waste. These items will be dealt with on an item by item basis at the time of discovery. Fluor Fernald will be responsible for characterizing and approving the ultimate disposition of this material.

RMRS will manage all excavated soil per Fluor Fernald guidance as stated herein.

- Waste oils, engine coolants, hydraulic fluids and other lubricants from the servicing of equipment have not been identified as a "waste stream" as these items will not be stored on the site. Vehicle and construction equipment maintenance will be done off-site. On-site failure of equipment or vehicles will be managed on an item by item basis following approval by Fluor Fernald and in accordance with Fluor Fernald ACR-007, *Waste Material Handling Criteria for Construction Projects*. Any accident spill of these materials will be subject to Fluor Fernald spill notification requirements. RMRS will conduct weekly inspections of fuel storage tanks and equipment.
- Any chemicals brought on-site by RMRS or its subcontractors will be approved in advance by Fluor Fernald. When RMRS requires liquids (such as paints, thinners, caulks etc.) Material Safety Data Sheets (MSDS) will be submitted to Fluor Fernald for each item at least 10 calendar days prior to their usage on-site. Fluor Fernald ACR-007 lists those items that are prohibited from being brought onto FEMP.

An estimate of the amount of each type of waste stream is given in Table 4-1.

## 4.2 Waste Minimization

RMRS will make every effort to minimize waste generation by limiting the amount of material that enters the Controlled Area whenever possible. Material wrapping and packaging will be minimized on-site by requesting that suppliers provide material with as little packaging as possible. Where feasible assembly of equipment modules will be done off-site. Pre-job planning will be used to ensure that the number of tools identified and the equipment needed to complete the job are minimized. RMRS will not bring any hazardous materials into the Controlled Area unless absolutely necessary and only with the prior approval of Fluor Fernald. RMRS does not intend to do any vehicle or equipment maintenance on-site. This does not rule out any emergency/breakdown maintenance that may be required. RMRS will contact Fluor Fernald for guidelines on on-site controls and waste disposition for any emergency vehicle maintenance activities on a case by case basis.

It is expected that only small quantities of "hazardous" materials (e.g., pipe sealants, concrete sealants, marking paints, caulking materials) will be required for the Silo 3 Project construction activities. To minimize the amount of this type of waste, only that quantity which is required to complete the job will be brought on-site.

## 4.3 Construction Debris Management

RMRS will set aside construction debris generated in predetermined locations and install controlled boundaries to define each area as well as limit access to them. Fluor Fernald Radiological Control will survey the debris and determine if it meets the free-release criteria specified by Fluor Fernald Site Procedure RP-0009, *Radiological Requirements for the Release of Materials at the FEMP*. Fluor Fernald will be responsible for determining whether waste generated by RMRS is either radiologically contaminated, hazardous or clean construction waste. The waste will be segregated by RMRS based on their determination.

Construction wastes such as fencing will be cleaned of soils awaiting radiological survey to ensure that it meets the free-release criteria.

Construction debris that does not meet the free-release criteria for the site will be segregated and containerized into waste streams. RMRS and Fluor Fernald project personnel will be briefed on the waste segregation and size-reduction criteria for the Silo 3 Project prior to mobilization. The estimated volume of secondary waste from construction activities, underground material, soft waste and caulking/sealants is estimated to be no greater than 62yd<sup>3</sup>. The estimated amount of each waste type is given in the table in Appendix E.

Fluor Fernald will arrange for the delivery and pickup of containers of contaminated construction debris only. Fluor Fernald personnel will track the volume of contaminated waste generated by the Silo 3 Project construction activities. RMRS will be responsible for minimizing the amount of "free-releasable" waste, tracking the total volume generated and for its final off-site disposition.

1 Fluor Fernald will be responsible for the appropriate disposition of unused chemicals and any  
2 empty chemical containers. Fluor Fernald will provide RMRS with technical direction on the  
3 temporary storage of these materials.  
4

5 **4.4 Soil Management**  
6

7 During site preparation, particularly construction of the ISA pad, RMRS has estimated that they  
8 will generate approximately 1,650 yd<sup>3</sup> of 'cut' volume and 290 yd<sup>3</sup> of 'raw fill' soil. The 'cut'  
9 volume will be monitored and dispositioned as excess waste according to Fluor Fernald  
10 requirements. The soil staging area is identified on Silo 3 Project Drawing Number 52-3002.  
11 Erosion controls will be installed in accordance with RMRS Technical Specification 02485 prior  
12 to placement of soil in the staging area. The soil pile will be maintained in accordance with  
13 RMRS Technical Specification 02210. Earthwork and related activities will not be performed  
14 during unfavorable weather conditions, e.g., rain, snow or high winds. Soil management will  
15 comply with the Silo 3 Project Health and Safety Plan, the Erosion and Stormwater Control Plan  
16 and the Fugitive Dust Control Plan. Excess soil will be dispositioned as soon as practical post  
17 excavation. Transportation of the soil to the OSDF will be the responsibility of Fluor Fernald.  
18 The OSDF subcontractor will transport the soil as soon as practical. The schedule for  
19 transportation of the soil will be dependent upon the OSDF availability and the OSDF  
20 subcontractor's transportation schedules. It is expected that transportation of the excess soil to  
21 the OSDF will be completed within 45 days of completing excavation.  
22

23 As documented in the "Phase II Soil Sampling Strategy for Area 7 Soils (Silos Project Area),"  
24 dated April 20, 1999, and approved by OEPA and USEPA, existing soil sampling data, indicate  
25 that soil in the AWR Project Area meets the On-site Disposal Facility's (OSDF) waste  
26 acceptance criteria (WAC). The phase II Soil sampling strategy identifies locations in the  
27 staging area south of Silos 1 and 2 for additional uranium and technetium-99 samples.  
28 Additional OSDF WAC sampling locations in the proposed trailer area at the east end of the  
29 project area has been identified since the Phase II strategy was approved. These locations have  
30 been described to the Agencies in Variances/Field Change Notices.  
31

32 During site preparation, particularly construction of the ISA pad, RMRS has estimated that they  
33 will generate approximately 1,650 yd<sup>3</sup> of meets-OSDF WAC category 1 'cut' volume and 290  
34 yd<sup>3</sup> of meets-OSDF category 1 WAC 'raw fill' soil. Excavations will be monitored by a Waste  
35 Acceptance Organization (WAO) representative to ensure that OSDF WAC is met as described  
36 in the U.S. Dept. of Energy's WAC Attainment Plan for the OSDF. Excess 'cut' will be  
37 characterized as either Category 1 (soil and soil-like material), Category 2 (debris), or Category 4  
38 (organic or highly compressible). Materials will be segregated by OSDF category within the  
39 work area before being transported to the separate stockpiles within the Temporary Excess Soil  
40 Staging Area identified on Drawing Number 52-3002. Separate stockpiles of each category will  
41 be maintained in the staging area. While awaiting transportation to the OSDF. RMRS will report  
42 the final volume of excess material generated to Fluor Fernald at the end of each normal working  
43 day. These excess materials will be tracked by WAO through the use of the Field Tracking Log  
44 (FTL) to stockpiles within the Temporary Excess Soil Staging Area. This material will  
45 subsequently be manifested prior to dispositioning in the OSDF from the Temporary Excess Soil  
46 Staging Area. Additionally, any interim material movements (whether soil or debris) between

1 Material Tracking Locations (MTLs) established by WAO, will also be tracked by WAO using  
2 the FTL. The schedule for transportation of the stockpile material will be dependent upon the  
3 OSDF availability and OSDF subcontractor's transportation schedules. It is expected that the  
4 transportation of the excess soil to the OSDF will be completed within 45 days of completing  
5 excavation.

6  
7 Erosion controls will be installed in accordance with RMRS Technical Specification 02485 prior  
8 to the placement of soil in the staging area. The soil pile will be maintained in accordance with  
9 RMRS Technical Specification 02210. Earthwork and related activities will not be performed  
10 during unfavorable weather conditions, e.g. rain, snow, or high winds. Soil management will  
11 comply with the Silo 3 Project Health and Safety Plan, the Erosion and Stormwater Control Plan,  
12 and the Fugitive Dust Control Plan.

13  
14 During construction and excavation, materials may be encountered which may not meet the  
15 OSDF WAC or Envirocare WAC. Upon discovery of these materials by RMRS, the Fluor  
16 Fernald Construction Manager shall be notified and will require further evaluation through the  
17 use of the Fluor Fernald's real-time monitoring and OSDF WAC Attainment Plan. Any OSDF  
18 above-radiological WAC material that meets the Envirocare WAC will be dispositioned to SP-7.

#### 21 4.5 Unknown Debris Management

22  
23 During excavation, RMRS may encounter debris previously buried underground e.g., conduit,  
24 piping, concrete. Prior to beginning earthwork, RMRS will determine the location of all existing  
25 underground utilities in the areas of work and take the necessary action. In the event that  
26 unknown debris is unearthed RMRS will stop work and notify Fluor Fernald immediately of any  
27 non-soil debris requiring special handling or disposition. Unexpected debris will be managed in  
28 accordance with Fluor Fernald Safe Work Plan requirements (ACR-002). RMRS will develop a  
29 Safe Work Plan for handling unknown debris that will include the criteria that must be met prior  
30 to resumption of excavation. Fluor Fernald will arrange for container delivery, debris  
31 characterization and any sampling tasks that may be required and ultimate transportation of the  
32 container to the appropriate facility. Fluor Fernald will track the volume of such debris.

#### 34 4.6 Waste Container Management

35  
36 Fluor Fernald will provide the appropriate waste containers for the various waste categories  
37 identified in the Waste Management Plan. RMRS will use the Material Segregation and  
38 Containerization (MSCC) form, Attachment D, to identify categories of waste and as their basis  
39 for containerization activities. These containers will include, but are not limited to, the  
40 following:

- 41
- 42 ● Large metal boxes
- 43 ● ISO containers
- 44 ● Small metal boxes
- 45 ● 55-gallon drums with lids
- 46 ● Roll-off boxes

1 • Dumpsters.

2  
3 Waste containers staged inside the Controlled Area will be lockable and will be kept locked  
4 unless authorized loading is taking place. Fluor Fernald Radiological Control will be present to  
5 survey waste prior to authorized loading operations. Unfilled waste containers will be secured  
6 when no loading is in progress to prevent the addition of unknown materials. Fluor Fernald will  
7 provide and maintain the lock and key to clean waste containers.

8  
9 RMRS will notify Fluor Fernald at least two (2) working days prior to needing waste containers.  
10 Fluor Fernald will deliver empty containers and pallets to the RMRS container staging area.  
11 Fluor Fernald will dispose of full containers placed in this area by RMRS.

12  
13 Designated RMRS personnel will be responsible for supervising container operations, including  
14 inspection of empty containers on receipt and waste loading activities. They will have the  
15 responsibility to ensure that containers, boxes and drums are filled such that the interior volume  
16 is as efficiently and compactly loaded as practical either up to the maximum gross weight limit  
17 of that container or until full by volume.

18  
19 Containers will be checked for free liquid prior to loading. Ice is considered a free liquid.  
20 Containers will be weather protected, particularly when the lid is not secured, to prevent entry of  
21 snow and rain.

22  
23 Clean construction waste will be surveyed and loaded into dumpsters provided by RMRS or its  
24 subcontractors on a daily basis to prevent an excessive amount of material from piling up near  
25 the container staging area. These dumpsters will remain locked when no loading is taking place.

26  
27 Fluor Fernald will visibly inspect full containers prior to final securing of their lids and container  
28 disposition.

29  
30 RMRS will follow the requirements of Fluor Fernald ACR-007, *Waste Material Handling*  
31 *Criteria for Construction Projects*, Rev. 2 (June 1998).

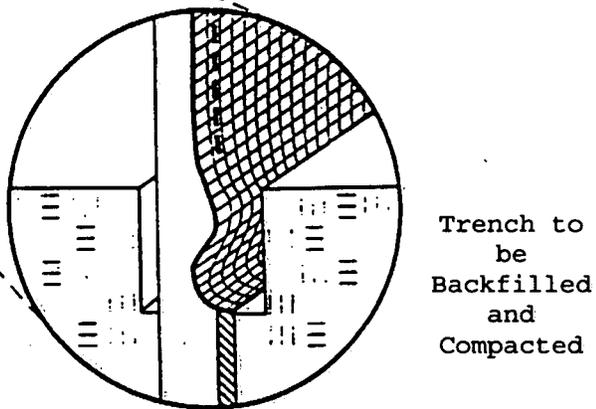
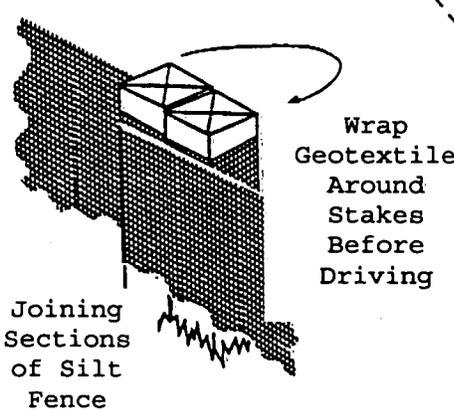
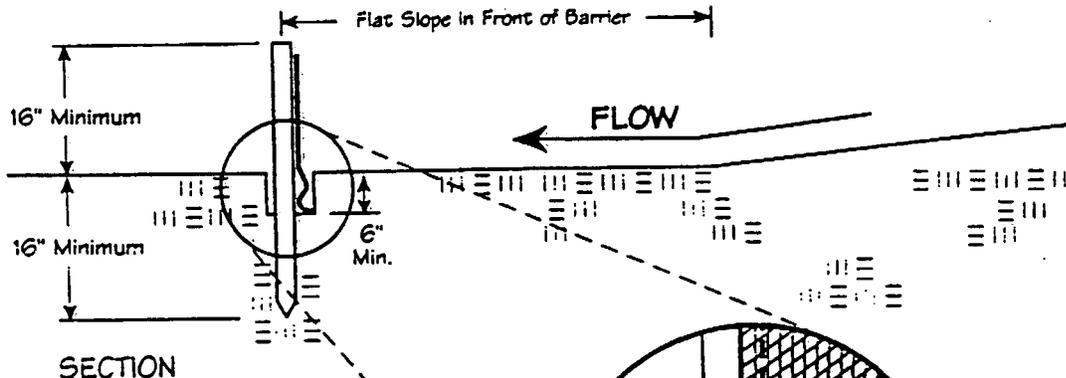
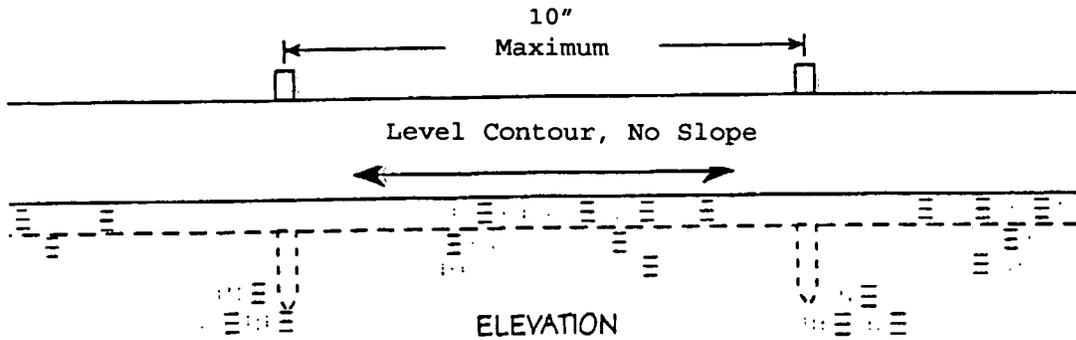
## 5.0 REFERENCES

1. Fluor Fernald, *Stormwater Pollution Prevention Plan*, PL-3088, Rev. 0, Fernald Environmental Management Project, Fernald, OH (October 1999).
2. Ohio Environmental Protection Agency, Chapter 3745-17-08 of the Ohio Administrative Code, *Restriction of Emission of Fugitive Dust*, (July 1997).
3. RMRS, TS-02900, Technical Specification, *Seeding* (December 1998).
4. Fluor Fernald, *Waste Material Handling Criteria for Construction Projects*, ACR-007, Rev. 2 Fernald Environmental Management Project, Fernald, OH (June 1998).
5. Fluor Fernald, *Fugitive Dust Control Requirements*, RM-0047, Rev. 0 (August 1997).
6. 40 CFR Part 60 Appendix A, Method 22, *Visual Determination of Fugitive Emission for Material Sources and Smoke Emissions for Flares*
7. ACR-002, Fluor Fernald Administrative Contractor Requirements, *Contract Safe Work Plan Format Requirements*, Rev. 2 (November 1994).
8. Fernald Silo 3 Project, *Site Preparation Package*, RMR-0445-0058 (February 2000).
9. Fluor Fernald RP-0009, *Radiological Requirements for the Release of Materials at the FEMP*.
10. RMRS Technical Specification, 02485, *Soil Erosion and Sedimentation Control*.

**Appendix A**  
**Erosion and Stormwater Control**  
**Features Details**

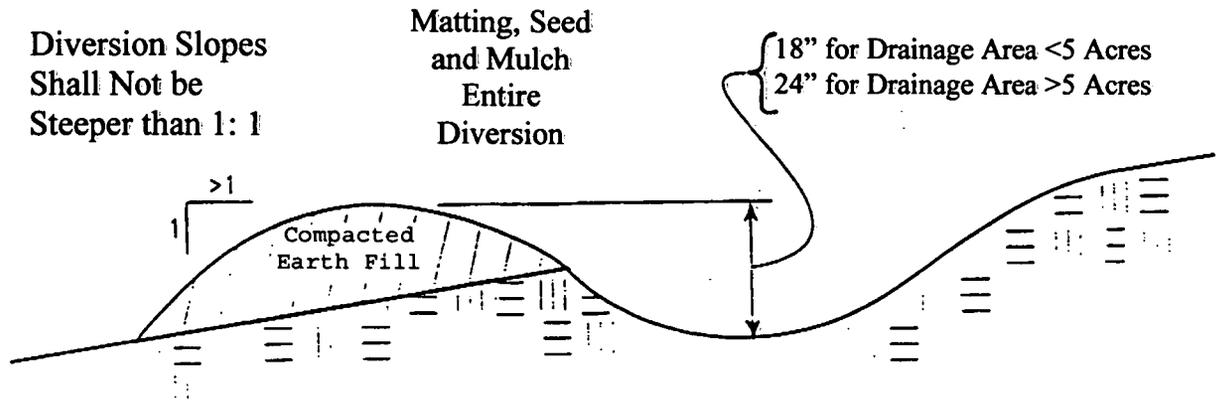
**000022**

### Silt Fence



Temporary Diversion

2937



Diversion Slopes  
Shall Not be  
Steeper than 1: 1

Matting, Seed  
and Mulch  
Entire  
Diversion

18" for Drainage Area <5 Acres  
24" for Drainage Area >5 Acres

1. Diversion shall be compacted by traversing with tracked earth-moving equipment.
2. Diversions shall not be breached or lowered to allow construction traffic to cross; instead, the top width may be made wider and side slopes made flatter than specified above.
3. Diversions shall be stabilized with vegetation and check dams or the following treatments:

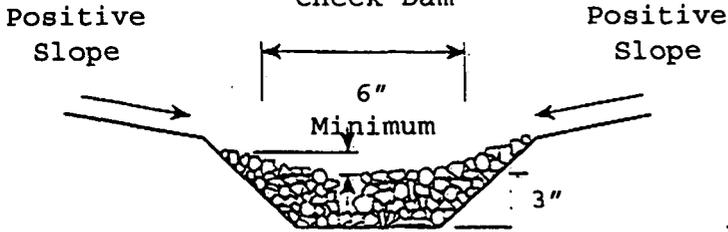
| <b>Temporary Diversion Stabilization Treatment</b> |                   |                  |                   |
|----------------------------------------------------|-------------------|------------------|-------------------|
| <b>Diversion Slope</b>                             | <b>&lt; 2 ac.</b> | <b>2 – 5 ac.</b> | <b>5 – 10 ac.</b> |
| 0 – 3%                                             | Seed & Matting    | Seed & Matting   | Seed and Straw    |
| 3 – 5%                                             | Seed & Matting    | Seed & Matting   | Seed & Matting    |
| 5 – 8%                                             | Seed & Matting    | Seed & Matting   | Seed & Matting    |
| 8 – 20%                                            | Seed & Matting    | Seed & Matting   | Engineered        |

**Note:** Diversions with steeper slopes or greater drainage areas are beyond the scope of this standard and must be designed for stability. Seed, straw and matting used shall meet the *Specifications for Temporary Seeding, Mulching and Matting*.

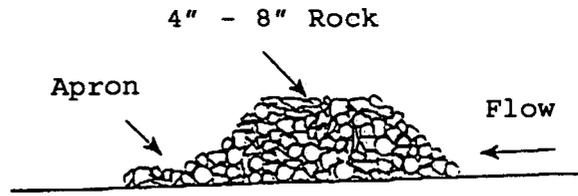
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### Specifications for Check Dam

Low Center  
Section - Must  
Cause Flow Over,  
Not Around,  
Check Dam



Cross Section



Profile

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**Appendix B**  
**Control of Fugitive Emissions**  
**Daily Records**

## CONTROL OF FUGITIVE EMISSIONS DAILY RECORD

Date \_\_\_\_\_

| TIME | AREA TREATED<br>(see sketch) | TREATMENT METHOD | APPLICATION RATE | TOTAL WATER VOLUME | EQUIPMENT OPERATOR/<br>SUPERINTENDENT | COMMENTS |
|------|------------------------------|------------------|------------------|--------------------|---------------------------------------|----------|
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |
|      |                              |                  |                  |                    |                                       |          |

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**Appendix C**  
**RMRS Off-Hour Dust Control Procedure**

RMRS

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## RMRS OFF-HOUR DUST CONTROL PROCEDURE

### ISA/Silo 3 Construction

1. RMRS personnel or their subcontractors with responsibilities for the Off-Hour Dust Control Coverage will retain a copy of the Off-Hour Dust Alert Schedule and a RMRS Employee Contact Sheet, both at the Fluor Fernald Site Office and in their vehicle or home, i.e., the schedule and contact sheet should be readily available at all reasonable times.
2. RMRS personnel or their subcontractors working on Silo 3 Project construction activities are responsible for being aware of their duties and responsibilities regarding Off-Hour Dust Control.
3. If a scheduling conflict arises, personal or otherwise, the affected person is responsible for making the required revisions to the Off-Hour Dust Alert Schedule to ensure adequate personnel coverage is maintained at all times. The responsible person within RMRS or his designee must approve all revisions to this schedule. A copy of the modified schedule must be distributed to all affected RMRS and Fluor Fernald personnel no later than the Thursday before the affected week in the schedule.
4. Each week, RMRS will designate one person as the qualified water wagon operator and one person as the sprinkler system operator. The RMRS Designated Primary Contact (DPC) and the designated operators must be fully trained and medically cleared to operate in a Controlled Area.
5. When RMRS is notified by Fluor Fernald that Off-Hour Dust Control is required, the RMRS DPC or his equivalent will contact the designated operators and coordinate the implementation of this dust control procedure, as detailed in approved Fugitive Dust Control Plan.
6. If either of the designated operators have not responded within 15 minutes of initial attempts to contact them, alternative operators will be contacted until available operators can be found. These operators must also be fully trained and medically cleared to operate in a Controlled Area.
7. It is the responsibility of the RMRS DPC to keep the designated Fluor Fernald Management Contact informed of all efforts to contact operators and to give details concerning their estimated arrival times at the Silo 3 Project site.
8. Once on-site, the RMRS DPC and operators, together with the designated Fluor Fernald contact will implement the Emergency Dust Control measures including, but not necessarily limited to, the preparation of a Safe Work Plan and the Fugitive Dust Control Plan.

9. The RMRS DPC is responsible for documenting RMRS' efforts, including contacts and response times and communication the same to Fluor Fernald and RMRS' Silo 3 Project Management. The Off-Hour Dust Alert Work Order must be filled out by RMRS and countersigned by the designated Fluor Fernald representative prior to RMRS leaving the Silo 3 Project site. Note: Off-Hours Dust Control is an additive unit pay item to the RMRS Silo 3 Project contract and must be properly documents for payment.

**Off-Hours Dust Alert  
WORK ORDER**

-- 2937

Date of Response: \_\_\_\_\_

Time of First Contact by Fluor Fernald: \_\_\_\_\_

Management Person Responding: \_\_\_\_\_

Operators/Laborers Contacted

|       |       |       |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Operators/Laborers Responding

|       |       |       |
|-------|-------|-------|
| _____ | _____ | _____ |
|-------|-------|-------|

Time Manager on Site: \_\_\_\_\_

Time Operator/Laborer on Site: \_\_\_\_\_

Time Suppression Activities End: \_\_\_\_\_

Total Elapsed Site Time: \_\_\_\_\_

Description of Situation Causing Alert:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Suppression Material and Equipment Utilized (including quantities):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe Area Treated (attach sketch if necessary):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: Rocky Mountain Remediation Services, L.L.C.

Concurrence of Response Completion by Fluor Fernald

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**Appendix D**  
**Material Segregation and**  
**Containerization Criteria**



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**Appendix E**  
**Estimated Amounts of Each Type of Waste Stream**

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**Table 4.1**  
ESTIMATE OF WASTE DURING CONSTRUCTION

| <b>Waste Type</b>   | <b>Estimated Volume<br/>(yd<sup>3</sup>)</b> |
|---------------------|----------------------------------------------|
| Soft Waste          | 13                                           |
| Construction Debris | 16                                           |
| Soil                | 1,650                                        |
| Caulking, sealers   | 3                                            |
| Underground Debris  | 30                                           |