CCR FUGITIVE DUST CONTROL PLAN

MUSCATINE POWER AND WATER
Muscatine County, Iowa
CCR Landfill

October 19, 2015
Revised December 5, 2018
Revised December 15, 2022

Prepared For:
Muscatine Power and Water

Muscatine Power and Water
Your reliable neighbor

Prepared By:

HRGreen

CERTIFICATION

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Date: 12/17/2022

STACY EILEEN WOODSON, P.E.

License No. **17389**

My renewal date is **December 31**, **2024**

Pages or sheets covered by this seal:

Entire Document

Prepared By:

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Signature:

Date: December 17, 2022

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I. INTRODUCTION

Muscatine Power and Water (MPW) operates a Coal Combustion Residuals (CCR) monofill that receives CCR produced by the MPW electricity generating units. The CCR materials include mixtures of synthetic gypsum, coal fly ash, bottom ash, and slag. The landfill is located in the Southwest ½ of Section 16, Township 76 North, Range 3 West in Muscatine County Iowa. The landfill has been in continuous operation since 1985 and is overseen by a Certified Landfill Operator. The total area occupied by the active and future disposal areas is about 40 acres.

The purpose of this document is to serve as the CCR Fugitive Dust Control Plan for the MPW CCR landfill as required by Federal rule 40 CFR 257.80 "Air Criteria".

This plan includes the following:

1. Identification and description of the CCR fugitive dust control measures that MPW uses to minimize CCR from becoming airborne at the facility.
2. Procedures to emplace conditioned CCR.
3. Procedures to log citizen complaints
4. Description of procedures MPW will follow to periodically assess the effectiveness of the control plan.

This document is an updated revision of the December 2018 update; the original plan was dated October 19, 2015. The plan will be amended whenever there is a change in conditions that warrant revision of the written plan.

II. CCR TRANSPORTATION TO SITE

A variety of haul trucks are used to move bulk CCR material to MPW's CCR Landfill. Dust emissions from haul trucks, if uncontrolled, may be a safety hazard by impairing visibility or by depositing debris on roads or other vehicles. MPW and its contractors will completely cover or enclose material in a manner that prevents CCR materials from blowing, dropping, sifting, leaking, or otherwise escaping from the vehicle.

MPW contracts with outside contractors for hauling and placing the materials. Contractors are trained by MPW staff (typically landfill operators). Part of this training includes dust control measures as outlined this document.

Transportation of the CCR materials from the site of generation to the landfill is via covered truck on paved roads. Fly ash, which is dry and powdery, is transported in covered trucks on paved roads. Other CCR materials are wet and may be transported in tarped dump trucks and/or a tarped side-dump semi-truck, or a tarped bottom dump truck. The truck routes are shown on attached Figure 1.

III. DESCRIPTION OF FUGITIVE DUST CONTROL MEASURES AND PROCEDURES FOR PLACEMENT OF CONDITIONED CCR

Dust Control on Haul Road

Upon entering the landfill site, trucks take the unpaved haul road before entering the active area of the disposal cell. These haul roads will continue to be used in the future. In 2019, a landfill updates were made that changed the route into the active area. Previous entry to the active area was from the north, with the 2019 updates entry to the active area is now from the south. The haul roads are unpaved so, on dry days, there is potential for dust from trucks on the roads. The road(s) will be watered down as needed using tanker trucks fitted with spray nozzles. Picture 1 shows this activity taking place on a haul road. A map of the site showing the haul roads and active areas is included as attached Figure 2.

Picture 1: Water Tanker Truck wetting the haul road

Dust Control during CCR Deposition onto the Active Area

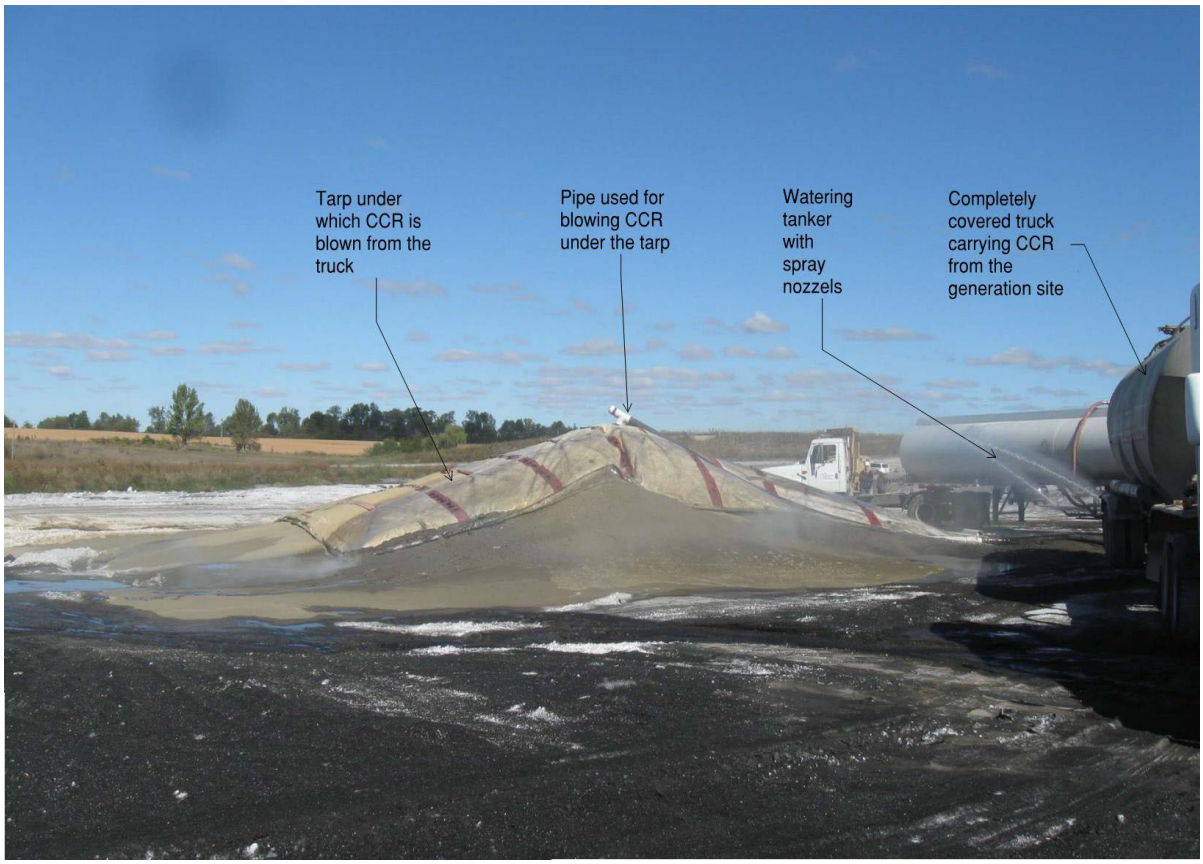
The current active landfill areas are Phases I and II as shown on attached Figure 2. When depositing fly ash in either of these areas, the material is deposited from the truck directly to the surface or underneath a tarp. As the fly ash is discharged, a water truck or portable tank with spray capability, spray irrigation equipment, or equivalent water application equipment

will be used to moisture condition the fly ash and spray down fugitive dust when needed. The spray process is shown in Picture 2. For this truck option, when the fly ash flows through the pipe into the tarp, or if sufficient liquid is applied during unloading, drop height is not of concern. MPW's contractors are instructed to stop operations if significant dusting occurs and/or if it appears fugitive dust would cross the property boundary and proceed with an altered or slower process to minimize significant dust. MPW continues to evaluate options for dust control and may test an additional method while still instructing contractors to minimize dusting; if a method seems acceptable an amendment to this fugitive dust control plan may add the tested as an option. MPWs employees and contractors are instructed to minimize free flow of liquid while wetting down. Wetting will be stopped if liquid begins to pond significantly or run off.

When temperatures are above freezing and wind speeds exceed 25 miles per hour, fly ash will not be placed at the landfill unless operating conditions provide no other viable option. If necessary, off-loading CCR will be temporarily halted if MPW staff or trained contractors determine that fugitive dust control methods are not being effective.

Wet dust suppression is typically not used during freezing temperatures. When temperatures are below freezing, fly ash placed at the landfill is scrutinized by MPW or contractor personnel instructed to minimize significant fugitive dust as needed when wind speeds exceed 25 MP; fly ash will not be placed at the landfill unless operating conditions provide no other viable option.

These methods for dust suppression along with contractor and employee training have been effective and will continue in the future. If alternative means are used in the future, this plan will be modified to address the change.



Picture 2: Example Dust Control Option during CCR placement

Dust Control in Active Area

During regular working hours, if areas of the active cell show potential for fugitive dust (loose CCR on the surface), an irrigation device (such as Ag-Rain Model T40A/1320) or other spray equipment can be used for dust suppression. The Ag Rain process is shown in Picture 3. If alternative means are used in the future, this plan will be modified to address the change.

Picture 3: Ag Rain being used to suppress dust on the active area

If fugitive dust is reported or observed during nonworking hours, MPW staff can monitor weather via NOAA website to make determinations regarding wind conditions and take appropriate action. Where necessary, surfactants and/or binders (such as Soil Sement or Benetech BT-468) may be applied to areas that are deemed to have the potential for fugitive dust for these periods. If alternative means are used in the future, this plan will be modified to address the change.

Wind on the site is typically out of the southwest.

IV. PROCEDURE TO LOG CITIZEN COMPLAINTS

Citizens can log complaints with regard to fugitive dust in the following manner:

1. Access the MPW CCR Rule Compliance Data and Information link on the MPW website at **www.mpw.org**
2. Click on the "Fugitive Dust Complain Form" icon.
3. Type in date and description of complaint. Contact information for the complainant will be part of the form.

The complaint will be routed to the appropriate staff at MPW. MPW staff will then respond to the complaint by contacting the complainant within 24 hours to discuss the conditions. The same process will occur if a complaint is received by a route other than the CCR website. Complaints and responses will be logged by MPW staff and placed in the landfill operating record.

V. DESCRIPTION OF PROCEDURES TO BE FOLLOWED TO ASSESS EFFECTIVENESS OF PLAN

Visual inspection of airborne CCR will serve as the primary means for assessing effectiveness of the plan. Liquid spray rate and frequency will be adjusted as needed to minimize fugitive dust as needed. If needed, off-loading will be temporarily halted if MPW staff or trained contractors determine that fugitive dust control methods are not being effective.

Either MPW staff or trained outside contractors will be responsible not only for hauling the material but for ensuring that the haul road is watered to keep dust down as needed. Visual inspection will serve as the primary medium for this as well.

The following items will trigger a reevaluation and change of the fugitive dust control plan:

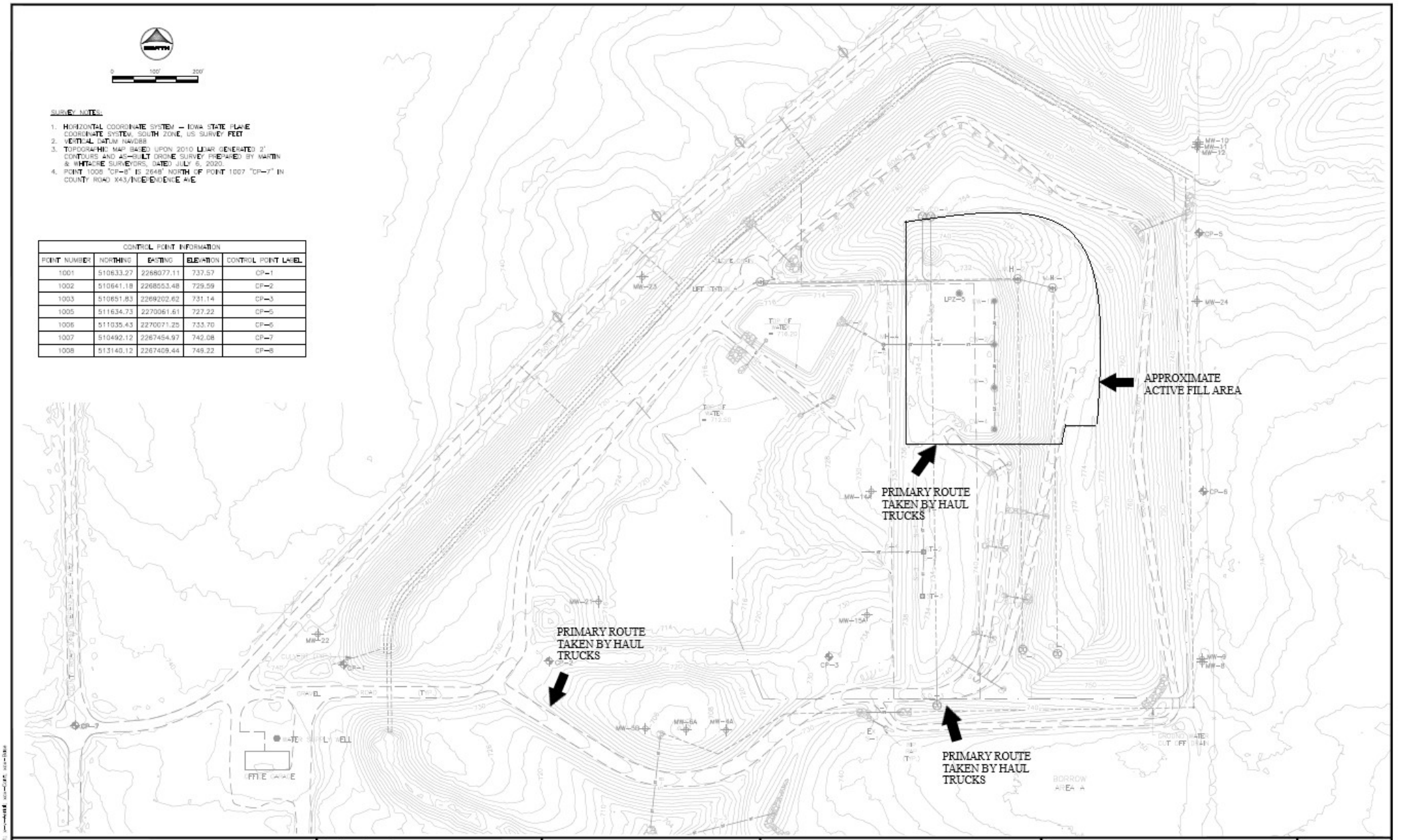
1. Transportation of the materials from the site of generation to the landfill is changed from paved to gravel roads.
2. Routing of trucks within the landfill is changed, i.e. other haul roads than what are included in this plan are built and used.
3. Means for dust control that are NOT described in section III of this plan are used.

It is the responsibility of MPW or MPW's contractor performing dust generating activities at the landfill to comply with the requirements of this plan to meet and use all dust control measures as needed to control fugitive dust.

FIGURES

FIGURE 1

MUSCATINE POWER AND WATER			
DESCRIPTION	GENERATION SITE TRUCK ROUTE TO LANDFILL		
DRAWN: RR	SCALE: NONE		DATE: 10/7/2015
CHECKED:	BY:		DRAWING NUMBER:
APPROVED:	GENERATION SITE		GS-G-006
APPROVED:			



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APPROVED: JES	JOB NUMBER: 10100095.21		
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CAD FILE: J:\2019\10100095.21\CAD\Dwgs\C\C101.dwg			

NO.	DATE	BY	REVISION DESCRIPTION

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SHEET NO.
FIGURE 2