

**ANNUAL INSPECTION REPORT
EXISTING COAL COMBUSTION RESIDUE (CCR) LANDFILL
MUSCATINE POWER & WATER**

REPORT DATE: DECEMBER 23, 2015

A. Rule Requirement – Federal CCR Rule §257.84(b)

Under §257.84(b)(1) existing CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a Qualified Professional Engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards.

B. Documents Used to Review Status and Conditions – §257.84(b)(i)

1. This facility is regulated under Iowa Department of Natural Resources Sanitary Disposal Project Permit No. 70-SDP-06-82P which was issued on August 9, 2010 and expires on August 9, 2020 and with the following permit amendments:

Amendment	Date	Purpose
#1	03/23/11	- Incorporate Plugging Record for MW-16.
#2	02/13/12	- Incorporate field tile slope drain extension-2011. - Authorization to construct Phase II expansion.
#3	05/08/12	- Incorporate Plugging Records for MW-15, MW-18, MW-19, and MW-20. - Work plan requirement to replace these wells.
#4	10/24/12	- Incorporate Construction Documentation Report for Phase II Development. - Authorization to place CCR in Phase II area. - Incorporate Plugging Record for MW-14. - Incorporate construction documentation for MW-14A, MW-15A, and MW-18A. - Revise Permit Special Provision #3a pertaining to the HMSP.
Unnumbered	05/22/13	- Deleting the requirement for submittal of a Semiannual Water Quality Report to DNR.
#5	07/29/13	- Incorporate the Updated HMSP.
#6	09/04/15	- Revise Permit Special Provision #3d relating to constituent monitoring requirements. - Revise Permit Special Provision #3e relating to Method Detection Limits.

The following variances have also been issued:

Variance	Date	Purpose
#1	01/25/93	- From having a certified landfill operator on duty during all hours of operation.
#2	07/08/94	- From methane monitoring and reporting requirements incorporated in Permit X.2.j.

2. This facility is regulated under Iowa Department of Natural Resources National Pollutant Discharge Elimination System (NPDES) Permit No. 7000109 which was issued on January 19, 2010 and expired on January 18, 2015. An application for permit renewal was submitted to DNR on July 18, 2014. This permit requires monitoring of specified constituents at the Farm Pond discharge outfall.

3. Landfill Development, Plans and Specifications, and Reports

Date	Title
11/01/91	-Closure/Post Closure Plan. Original date 11/01/91, revised January 1996 and December 2009
11/21/91	-Supporting Documentation Plans and Specifications (DOPS).
01/29/93	-Supplemental Plan Sheet 16.
Various	-Supplemental information dated 10/02/08, 12/17/09, and 03/30/10.
1/17/12	-CCR Landfill Cell Development – Phase II
11/24/14	-Annual Groundwater and Surface Water Monitoring Report
11/24/14	-Leachate Control System Performance Evaluation Report

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C. Visual Inspection of the CCR Landfill – §257.84(b)(ii)

The existing landfill was visually reviewed by a Qualified Professional Engineer to identify signs of distress or malfunction of the CCR unit. The review was assisted by MP&W staff.

CCR Unit Location: SW½, Section 16, T76N R3W, Muscatine County, Iowa

Date of Inspection: September 30, 2015
Weather: Sunny, 70 degrees, wind gusts (estimate 15-20 mph)

Field Observation By: Harman Mallhi, P.E., HR Green, Inc.,
Iowa License: No. 20806, renewal date: 12/31/16

Others Present: Greg Brennan, Emily Smart – HR Green, Inc.
Brian Cox, Mike Avesing, Mark Costello, Scott Clester – MP&W

D. Inspection Report – §257.84(b)(2)

§257.84(b)(2)(i)

This is the first annual landfill inspection under the new Federal CCR Rule §257.84(b) and so evaluation of any changes in geometry of the structure since the previous annual inspections is not applicable this year.

However, it can be stated that the basic geometry is unchanged from recent history. Most recently, the Phase II expansion consisting of a new 4.5 acre clay lined cell was opened in November 2012 and so the only recent change in geometry is due to the planned CCR disposal in Phase II since its opening.

§257.84(b)(2)(ii)

The approximate volume of CCR contained in the unit at the time of the inspection was 765,000 cubic yards. This volume was derived by estimating the Phase I volume using a cut-and-fill calculation and then adding the actual Phase II volume using the Fee-Exempt Material Quarterly Reports to DNR. This value will be updated annually.

§257.84(b)(2)(iii)

There are no obvious appearances of an actual or potential structural weakness of the CCR unit. There are no known existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit.

§257.84(b)(2)(iv)

There are no known change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection. (Again, this is the first annual inspection under the Federal CCR Rule so this is relative to recent history.)

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Other Comments

Based on the review there is no apparent distress or malfunction of the CCR unit.

- Development is proceeding in accordance with approved plans and specifications, including fill areas, slopes, height, access roads, monitoring wells, etc.
- The CCR unit is operated in accordance with existing permits and amendments.
- Dust is effectively controlled as described in the *CCR Fugitive Dust Prevention and Control Plan* dated October 19, 2015.
- The groundwater monitoring system (i.e., monitoring wells) appears operational from a visual review. The current system operates under Iowa Administrative Code Chapter 103 and the permit and amendments listed above.
 - The last sampling/monitoring event was conducted in September 2015 and reported to DNR on November 25, 2015 in the *Annual Groundwater and Surface Water Monitoring Report*.
 - Maintenance work may be needed by a Certified Well Contractor at water level measuring point MW-17 which reportedly is obstructed to a water level probe. If the well cannot be restored it should be, with Iowa DNR's prior approval, plugged and abandoned by a Certified Well Contractor and DNR Form 542-1226 submitted to DNR upon completion. This well is not a water quality monitoring point.
- The leachate collection system is operating as described in the *Annual Leachate Control System Performance Evaluation Report* dated November 25, 2015.
- The transition area for the surface runoff between Phase 2 and the leachate control pond was reshaped and reinforced with fly ash boulders in 2014. An additional 200 tons of rock rip rap was placed in June 2015 to further reinforce the drainage area. This area continues to be stable in 2015.
- Storm water is effectively routed into the run off control pond.
- Minor erosion along the south edge (landfill side) of the north road was mitigated by placing fly ash boulders for stabilization, which will continue to be monitored.
- The first weekly CCR landfill inspection by a qualified person as required under the new Federal CCR Rule §257.84(a) was completed by MP&W on October 16, 2015.

A copy of this report will be placed in the operating record as required under §257.105(g)(9).

Under §257.84(c) Muscatine Power & Water intends to comply with the recordkeeping requirements specified in §257.105(g)(9), the notification requirements specified in §257.106(g)(7), and the public internet site requirements specified in § 257.107(g)(7).

As required under §257.84(b)(4), the deadline for completing the next annual inspection report is established by the Report Date on this document.


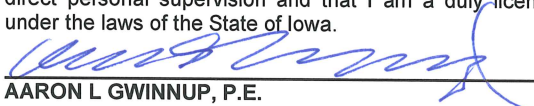
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CERTIFICATION

ANNUAL INSPECTION REPORT

CCR LANDFILL
Permit No. #70-SDP-06-82P-CCR

MUSCATINE POWER & WATER
MUSCATINE, IOWA

	<p>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.</p> <p> AARON L GWINNUP, P.E. License No. 22558 My renewal date is December 31, 2017 Pages or sheets covered by this seal: <u>1-4 of this Report</u></p> <p>Date: <u>12/23/2015</u></p>
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Prepared By:

Name: Gregory J. Brennan, P.H.G., P.G.
Certified Professional Hydrogeologist
Licensed Professional Geologist

Signature: 

Date: December 23, 2015

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