

**JOHN TWITTY ENERGY CENTER
UTILITY WASTE LANDFILL**

**Run-On & Run-Off Control System Plan
In Accordance with CFR Part 257.81**

Prepared for:
City Utilities of Springfield
301 E. Central
P. O. Box 551
Springfield, MO 65801
(417) 874-8005

Revision 0

September 26, 2016

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REVISION PAGE

Rev.	Date	Reason for Revision	Originator	Checker	Lead Engineer	Project Engineer
0	9/26/16	Final Issue	FMP	WB	FMP	FMP

**John Twitty Energy Center
Run-On & Run-Off Control System Plan**

I, Franklin M. Parton, Jr., do hereby certify that to the best of my knowledge this document meets the criteria established by the Code of Federal Regulations Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, dated April 17, 2015 (257.81(c)(5)). This certification is based on information, drawings, data, reports, calculations, visual observations, and other document provided by City Utilities, and reviewed personally by me or individuals under my direct supervision and includes documents prepared personally by me or individuals under my direct supervision.



Run-On & Run-Off Control System Plan

1. Introduction

As an existing facility, the John Twitty Energy Center (JTEC) is required to prepare an initial Run-On and Run-Off Control System Plan for the CCR Landfill by October 17, 2016 under 40 CFR 257.81 (c)(3)(i).

The JTEC site is owned and operated by City Utilities of Springfield, Missouri, and is located west of the city. The plant consists of dual-fueled coal fired (coal or natural gas) boilers. Originally, bottom ash was sluiced to two 7-9 acre on-site temporary holding ponds. The ash was stored in the ponds until an appreciable volume was reached. The ponds were then drained and the ash excavated and placed within the on-site permitted landfill. The ponds will be excavated one final time and the material placed in the landfill. In 2015, City Utilities constructed two (2) concrete tanks to temporarily accept the ash prior to disposal in the permitted landfill (Geotechnical Investigation Report, John Twitty Energy Center Utility Waste Landfill, Anderson Engineering, Inc., December 9, 2011).

The landfill (40 acre footprint) was originally permitted in 1980 by the Missouri Department of Natural Resources (MDNR) under permit number 707702. In 1990, MDNR issued their approval for a vertical expansion of the landfill to a total capacity of 2,900,000 cubic yards. Again, in 2012 a vertical expansion and design changes were approved by the MDNR.

The landfill at JTEC is constructed on the side of a small hill. A clay berm was built around three sides of the landfill to contain the ash and the contact water. A detention pond was constructed at the bottom of the hill to hold the contact water

2. Regulatory Requirements

2.1 Design Criteria

The design criteria for the CCR landfill requires a run-on control system to prevent flow onto the active portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm, [CFR 257.81(a)(1)]. It also requires a run-off control system from the active portion of the CCR unit to collect and control at least the water volume resulting from a 24-hour, 25-year storm, [CFR 257.81(a)(2)].

2.2 Run-Off Compliance with CFR 257.3-3

The active portion of the CCR landfill facility is designed such that contact water is collected in a pond. Water is collected and reused for beneficial purposes. This system complies with 40 CFR 257.3-3 and the existing permit.

3. Run-On & Run-Off Control System Plan

3.1 Landfill Run-On Control

The Utility Waste Landfill was designed and constructed as an above grade landfill. The clay berm constructed around the landfill varies in elevation. The topography of the surrounding area is such that only the north side of the landfill can contribute run-on. Starting from the north, approximately half of the landfill is covered with a final cover per DNR Permit 707702. A large swale/ ditch was constructed on the west side of the landfill to route water around the landfill. This ditch was sized to carry the run-on from a 25-year storm (Geotechnical Investigation Report, John Twitty Energy Center Utility Waste Landfill, Anderson Engineering, Inc., December 9, 2011). The ground on the east and south sides of the landfill slope away from the landfill and therefore do not contribute any run-on. See Appendix A for a layout of the landfill and ditch system.

3.2 Landfill Run-Off Control

As designed, a stormwater detention pond is maintained at the south end of the landfill to collect contact water. This pond was designed to meet the requirements of MDNR. All contact water flows to this detention pond (Geotechnical Investigation Report, John Twitty Energy Center Utility Waste Landfill, Anderson Engineering, Inc., December 9, 2011). The pond is drained as needed to maintain adequate water retention capacity so that uncontrolled discharges do not occur. Approximately three fourths of the landfill is permanently covered in accordance with the DNR permit. The remaining active portion will be closed in accordance with the DNR approved closure plan.

4. Amendment to the Plan

It is understood that the Run-On and Run-Off Control System Plan may be amended at any time provided that the revised plan is placed in the facility's operating record as required by [CFR 257.105(g)(3)] and that an amendment must be made whenever there is a change in conditions that would substantially affect the current plan. Technical amendments to this plan will be certified by a qualified professional engineer.

5. Inspection Plan

Inspections of the CCR landfill are required under CFR 257.84. These inspections include the run-on and run-off control features of the facility. A summary of the prescribed inspections include:

- **Weekly Inspection Reports:** A qualified person will inspect for any appearance of actual or potential structural weaknesses and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR landfill.
- **Annual Inspection:** A qualified professional engineer will make an annual inspection of the CCR landfill to ensure the design, construction, operation and maintenance of the CCR landfill is consistent with recognized and generally accepted good engineering standards.

6. Prescribed Frequency of Revisions

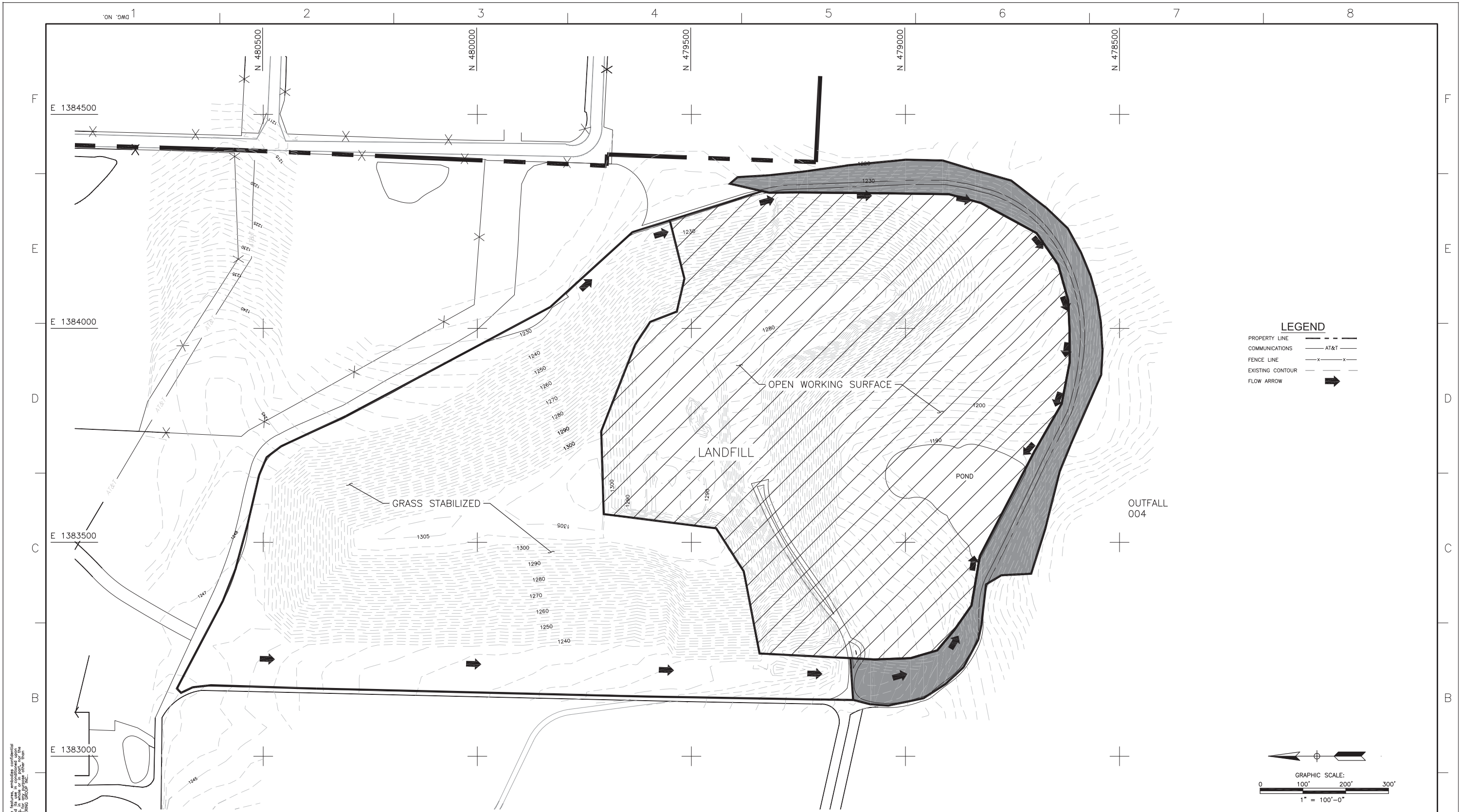
At a minimum, this Run-On and Run-Off Control System Plan will be updated every five years. The deadline for completion is five years from the date the initial plan is placed in the facility's operating record.

7. Record Keeping Plan

This Run-On and Run-Off Control System Plan must comply with the recordkeeping, notification and website requirements described in 40 CFR 257.105(g)(3),(8) and (9), 257.106(g)(3) and (7) and 257.107(g)(3) and (7).

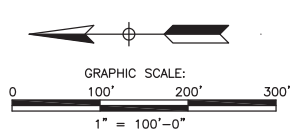
APPENDIX A

JTEC CCR Landfill Run-On and Run-Off Control Systems Site Plan



LEGEND

PROPERTY LINE	---
COMMUNICATIONS	—x—x—
FENCE LINE	—x—x—
EXISTING CONTOUR	- - -
FLOW ARROW	➔



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REV.	DESCRIPTION	BY	CKD.	APP.	DATE	REF. DWG. NO.	DESCRIPTION	RPE
A	ISSUED							

SIGNATURE	DATE
DRAWN BY: J. ASHWORTH	
DESIGN BY: F.M. PARTON JR.	
CHECK BY:	
APPROVED:	

JACOBS 125 Broadway Ave. Oak Ridge, Tennessee 37830
Tel: 865-220-4800 Fax: 865-220-6170

JTEC CCR LANDFILL RUN-ON AND RUN-OFF CONTROL SYSTEMS

SCALE: 1" = 100' DWG. NO. JTEC-01 REV. A