

Initial JTEC Landfill Inspection Report

INITIAL JTEC LANDFILL INSPECTION REPORT

CITY UTILITIES OF SPRINGFIELD, MISSOURI

PREPARATION DATE: 1/14/2016

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JTEC LANDFILL INSPECTION REPORT CERTIFICATION

Gerad Fox, Missouri Professional Engineer, License Number 2013019048, hereby certifies that the Initial JTEC Landfill Inspection Report herein meets the requirements of 40 CFR Section 257.84.

Name: Gerad Fox

Signature: 

Date: 1/14/2016

Affix Seal Here:



1. WEEKLY LANDFILL INSPECTIONS REVIEW

A City Utilities of Springfield MO (CU) qualified person performed weekly landfill visual inspections of the JTEC landfill beginning October 15, 2015. Inspections were completed using a Landfill Inspection Checklist prepared by CU. Inspection items include:

- Visible settlement or depressions
- Visible sign of structural weakness
- Proper function/maintenance of run-off system
- Condition present that may disrupt operation
- Surface water percolation minimized
- Adequate vegetation (Capped Areas)
- Visible erosion
- Transverse, longitudinal, or desiccation cracks
- Cap system maintained and operational (Capped Areas)
- Proper placement of waste (Uncapped Areas)
- Dust controlled
- Transverse, longitudinal, or desiccation cracks
- Visible depressions, bulges, sloughs, or slides
- Visible animal burrows
- Presence of leachate collection
- Visible sign of leachate leaving system

During this process each weekly Landfill Inspection Checklist was reviewed along with the corrective action taken for each issue noted on the weekly Landfill Inspection Checklist. CU performed the weekly inspections at least every 7 days as required by the Coal Combustion Residual (CCR) rule. No major concerns were noted on the weekly inspections reviewed. Visible erosion on the active section of the landfill was noted after heavy rainfall events. Work orders to regrade and compact the affected areas were submitted and completed in a timely manner after discovery of visible erosion. In order to improve record keeping the completed date needs to be filled out when the work request is completed and description of the work needs to provide additional detail(s) of the actual work completed. Animal burrows were discovered and noted on multiple weekly inspections. CU responded to the animal burrows by contacting the United State Department of Agriculture (USDA) to remediate the issue. Liner maintenance to the landfill leachate system was also noted in the weekly inspection logs as being performed and completed. Overall the weekly landfill inspections and process appears to be functional and appropriate in ensuring the JTEC landfill is operating properly.

2. ANNUAL LANDFILL INSPECTION REVIEW

On January 7, 2016 a CU qualified professional engineer performed an annual inspection on the JTEC Landfill. The inspection was completed using the Landfill Inspection Checklist – Annual form. The annual inspection checklist is attached to this report. Inspection items include:

- Visible settlement or depressions
- Visible sign of structural weakness
- Proper function/maintenance of run-off system
- Condition present that may disrupt operation
- Surface water percolation minimized
- Adequate vegetation (Capped Areas)
- Visible erosion
- Transverse, longitudinal, or desiccation cracks
- Cap system maintained and operational (Capped Areas)
- Proper placement of waste (Uncapped Areas)
- Dust controlled
- Transverse, longitudinal, or desiccation cracks
- Visible depressions, bulges, sloughs, or slides
- Visible animal burrows
- Presence of leachate collection
- Visible sign of leachate leaving system
- Review of available operating records
- Review results of weekly inspections
- Review previous annual inspections
- Any visible sign of stress/malfunction of unit or structures
- Any visible changes in geometry
- Approx. volume of CCR in unit
- Liner system maintained and operational

The JTEC landfill appears to be in good working/operating condition. Results of the inspection checklist attached show no actual or potential structural weakness present in or around the JTEC landfill that will disrupt the operation and safety of the CCR unit. The finished or capped portion of the landfill appears to be functioning properly and is being maintained with adequate vegetation presently. The water run-off system appears to be working properly in both the capped and uncapped areas with minimal ponding or visible signs of surface water. Visible erosion was present in the uncapped or working area of the landfill but CU was actively regrading and compacting the erosion areas during the inspection. As noted in the most recent weekly inspections heavy rainfall occurred prior to the annual inspection. CU is placing the CCR in a conditioned state within the landfill as required by the CCR rule. No fugitive dust

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was observed during the inspection. The landfill leachate system is in good working condition maintaining containment of the leachate water.

The landfill operating records were reviewed. The landfill operating record includes daily amount of ash hauled to the landfill as well as records of any maintenance activities including but not limited to; final cover placement, seeding and mowing, outfall water releases, soil cement application, and state inspection reports.

As stated in the Weekly Inspection Report Review section of this report the weekly landfill inspections were reviewed, verified and determined to be satisfactory.

The CCR rule states that any geometry changes since the last annual inspection and the previous annual inspections reports are to be reviewed as part of this report. As this is the initial annual inspection report for the JTEC landfill this activity was not applicable at the time of this review.

As part of this annual inspection CU is required to estimate the amount of CCR within the JTEC landfill. CU performed a landfill survey in November of 2015. The permitted capacity of the JTEC landfill 3,131,600 cubic yards. At the time of the survey the JTEC landfill had 1,416,762 cubic yards of CCR within the landfill leaving the remaining volume of approximately 1,714,838 cubic yards available for CCR placement.

In conclusion the JTEC landfill appears to be in good working condition with no major issues. CU needs to continue to watch for visible erosion during heavy rainfall events and remedy the situation as quickly and practicably as possible. As discussed improvements on the record keeping (via work orders) of work completed on the landfill due to the landfill weekly inspections is necessary and recommended.

APPENDIX A
(Annual Landfill Inspection Checklist)

LANDFILL INSPECTION CHECKLIST-ANNUAL INSPECTION BY PROFESSIONAL ENGINEER

The CCR landfill is visually examined by a licensed professional engineer as required by §257.84 and is recorded in the facility's operating record as required by § 257.105.

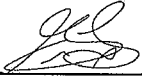
| | | | |
|---|-------------------------------------|-------------------------------------|-----------------------|
| ID: JTEC Landfill | Date Inspected: 1/7/2015 | Inspector: Gerad Fox | |
| | YES | NO | COMMENTS |
| CAPPED (INACTIVE) | | | |
| A. Visual settlement or depressions? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| B. Visible sign of structural weakness? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| C. Proper function/maintenance of run-off system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| D. Condition present that may disrupt operation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| E. Surface water percolation minimized? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| F. Adequate vegetation? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| G. Visible erosion? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| H. Transverse, longitudinal, or desiccation cracks? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| I. Cap system maintained and operational? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| J. Visible animal burrows? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | East Side of Landfill |
| UNCAPPED (ACTIVE) | | | |
| A. Visible settlement? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| B. Signs of structural weakness? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| C. Proper function/maintenance of run-off system? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| D. Condition present that may disrupt operation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| E. Proper placement of waste? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| F. Surface water percolation minimized? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| G. Dust controlled? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| H. Visible erosion? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | See Below |
| I. Transverse, longitudinal, or desiccation cracks? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| J. Visible depressions, bulges, sloughs, or slides? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| K. Visible animal burrows? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| LEACHATE COLLECTION | | | |
| A. Presence of leachate collection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| B. Visible sign of leachate leaving system? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |

LANDFILL INSPECTION CHECKLIST (continued)

| | YES | NO | COMMENTS |
|--|-------------------------------------|-------------------------------------|---------------------------------|
| ADDITIONAL ANNUAL INSPECTION ITEMS | | | |
| A. Review of available operating records? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| B. Review results of weekly inspections? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| C. Review previous annual inspections? | <input type="checkbox"/> | <input type="checkbox"/> | N/A - Initial Annual Inspection |
| D. Any visible sign of stress/malfunction of unit or structures? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| E. Any visible changes in geometry? | <input type="checkbox"/> | <input type="checkbox"/> | N/A - Initial Annual Inspection |
| F. Approx. volume of CCR in unit? | 1,416,762 cubic yards | | |
| G. Liner system maintained and operational? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |

ADDITIONAL COMMENTS:

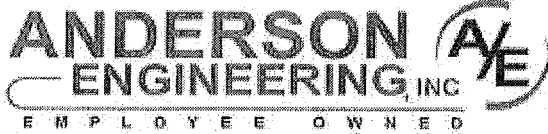
No major issues found at the JTEC landfill during the annual inspection. Visible erosion present in the uncapped/ working portion of the landfill. Periods of heavy rainfall occurred during the past several weeks prior to the annual inspection. CU has begun to regrade these areas but areas remain that need to be managed as soon as practicable. An animal burrow was discovered on the east side of the capped section of the landfill. CU has contact USDA to address the animal burrows.

Inspector Signature and Seal: _____ 



1/14/2016

APPENDIX B
(JTEC Landfill Survey Report)



December 10, 2015

City Utilities of Springfield
PO Box 551
Springfield, Missouri, 65801

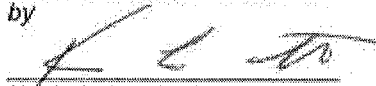
Attn: Ted Salveter, P.E.
Re: John Twitty Energy Center, Ash Landfill

At CU's request, in November of 2015, we performed a survey of the active area of filling to ascertain the current landfill volume. The accompanying survey (WB 110-498) shows the existing contours and the landfill boundary. Also we have computed ash quantities for the landfill. These were computed from an existing ground surface made from fitting the planned base surface to matching the contours outside the current landfill footprint. The current surface was contours generated from the RTK, GPS, topographic survey using Softdesk Land Development software. The planned permitted surface was generated by fitting as best we could the plan into the existing boundary. Copies of drawings with surveys are included. The volume of -304,525 cubic yards of ash has been added to the working area of the landfill since the December 2013 survey.

| | |
|---|-----------------------|
| The volume of ash presently in the Landfill minus the 1.5 foot cap | 1,416,762 cubic yards |
| The volume remaining minus the 1.5 foot cap | 1,714,838 cubic yards |
| Total permitted volume minus the 1.5 foot cap | 3,131,600 cubic yards |
| Volume of the 1.5 cap | 87,400 cubic yards |
| Total permitted volume including the cap | 3,219,000 cubic yards |

Should you have any questions or require additional information or copies of the surveys, please don't hesitate to call.

Anderson Engineering, Inc.
by


Kevin L. Lambeth PLS
Vice President/ Survey Manager

