Annual CCR Landfill Inspection

Ottumwa-Midland Landfill
15300 130th Street
Ottumwa, Iowa 52501

Prepared for:

Interstate Power and Light Company
15300 130th Street
Ottumwa, Iowa 52501

SCS ENGINEERS

25225073.00 | December 9, 2025

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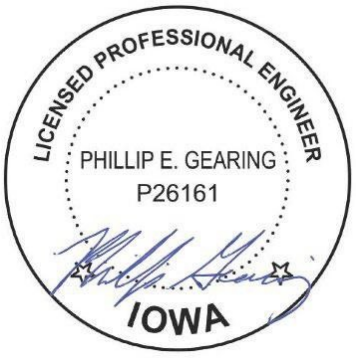
PE CERTIFICATION



I, Phillip E. Gearing, hereby certify that this Annual CCR Landfill Inspection Report meets the requirements of 40 CFR 257.84(b)(2), was prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

12/09/2025

(signature) (date)

Phillip E. Gearing

(printed or typed name)

License number E-45115

My license renewal date is December 31, 2025.

Pages or sheets covered by this seal:
All - Annual CCR Landfill Inspection, Ottumwa-Midland Landfill, December 9, 2025

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1.0 INTRODUCTION

1.1 PURPOSE

SCS Engineers (SCS) completed an annual inspection of the Interstate Power and Light Company (IPL) Ottumwa-Midland Landfill (OML) in Ottumwa, Iowa. The annual inspection was completed in accordance with the U.S. Environmental Protection Agency (U.S. EPA) Coal Combustion Residuals (CCR) rule, 40 CFR 257 Subpart D, in particular 257.84(b)(1). According to 40 CFR 257.84(b)(1), an annual inspection by a qualified professional engineer is required for all existing and new CCR landfills and any lateral expansion of a CCR landfill. The purpose of the annual inspection is to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and
- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

This report has been prepared in accordance with 40 CFR 257.84(b)(2) to document the annual inspection.

1.2 BACKGROUND

The OML facility includes an active, existing CCR landfill, which consists of two phases, both constructed prior to the effective date of the CCR rule:

- OML Existing Landfill (original landfill footprint developed at OML in the 1990s).
- OML Expansion Phase 1 (first phase of a multi-phase expansion completed in September 2015).

The OML Existing Landfill and OML Expansion Phase 1 are one existing CCR landfill under the federal CCR Rule. The phases are used to describe the location of items observed during the inspection. The inspection requirements in 40 CFR 257.84(b)(1) apply to both phases.

At the time of the inspection, the CCR unit was active in various stages of development and used as described in the table below.

CCR Unit	CCR Rule Status	Basis for Status
Existing Landfill Expansion Phase 1	Existing CCR Landfill, currently accepting CCR	Received CCR before and after the effective date of the CCR Rule. Both phases of the landfill unit were constructed before the effective date of the CCR rule.

2.0 SUMMARY OF RESULTS AND RECOMMENDATIONS

SCS identified no deficiencies or releases during the annual inspection of the CCR unit at OML. Deficiencies and releases must be remedied by the owner or operator as soon as feasible, and the remedy documented.

SCS did identify conditions during the annual inspection that are not considered deficiencies but have the potential to become a deficiency if left unaddressed. Each condition and the recommendations provided by SCS to address them are summarized in the table below. These conditions, remedial recommendations, and activities completed or planned to remedy each item, as available from IPL, are described in further detail in Section 4.0.

Condition	Location/ Phase	Recommendation(s) / [STATUS]	Report Section
Woody vegetation in leachate drainage layer sand	Expansion Phase 1 (northeast corner at toe of slope and contact water swale)	Spot removal of woody vegetation. **[COMPLETE]** Monitor during 7-day inspections.	4.3.2
Woody vegetation encroaching on liner limits	Expansion Phase 1 – north and south of liner limits	Remove woody vegetation. **[COMPLETE]** Monitor during 7-day inspections.	4.3.2
Small tree growing in stormwater swale	North of proposed Phase 2 area (east of inlet to culvert draining to Sedimentation Basin No. 2)	Remove tree. **[COMPLETE]** Monitor stormwater features for woody growth during 7-day inspections.	4.3.2
Minor exposed soil areas without vegetation within intermediate soil cover	Existing Landfill (intermediate cover, various locations)	Repair/restore areas as vegetation maintenance is completed or if CCR is exposed. **[COMPLETE]** Monitor during 7-day inspections.	4.3.4
Small area of erosion of leachate drainage sand	Expansion Phase 1 – west interior berm slope near contact water basin inlet pipes	Supplement leachate drainage sand to maintain minimum 1 foot of material above geomembrane. **[COMPLETE]** Monitor during 7-day inspections.	4.3.4

Condition	Location/ Phase	Recommendation(s) / [STATUS]	Report Section
Exposed soil areas without vegetation	Slopes of Sedimentation Basin No. 2 (Various locations)	Repair/restore vegetation. Add topsoil, seed, and erosion mat. **[COMPLETE]** If vegetation establishment is difficult, add geotextile and riprap. Monitor during 7-day inspections.	4.3.4
Potential loss of contact water run-off control due to flow restriction and reduced freeboard	Expansion Phase 1 (northeast corner at toe of slope and contact water swale)	Remove woody vegetation and CCR/sediment buildup. **[COMPLETE]** Monitor during 7-day inspections.	4.4.2.1
Separated stitched rain cover ballast seams with vegetation	Expansion Phase 1 – rain cover ballast (various locations)	Repair stitching with zip ties or add supplemental sandbag ballast in lieu of stitching. **[COMPLETE]** Remove woody vegetation. **[COMPLETE]** Monitor during 7-day inspections.	4.4.2.1
Bare areas and small surface cracking	Expansion Phase 1 – west berm of temporary contact water basin	Add topsoil, seed, and erosion mat. **[PLAN TO SEED IN SPRING 2026]** Use geotextile/aggregate if vegetation does not establish. Fill cracks with soil/bentonite if needed. Monitor during 7-day inspections.	4.4.2.1
Level sensor in leachate head well LH-1 (transducer) is reading "-1.2" inches.	Expansion Phase 1 – Control Panel Readout	Evaluate sensor (i.e. place sensor in 5-gallon bucket and observe readout). Discuss sensor calibration with EPG Companies (EPG) [leachate level measurement system manufacturer]. https://www.epgco.com/aboutus/contact-us/ **[SCS ENGINEERS REACHED OUT TO EPG REGARDING READING. EPG TO ASSIST WITH RECALIBRATION.]** Monitor during 7-day inspections.	4.4.2.1

Condition	Location/ Phase	Recommendation(s) / [STATUS]	Report Section
GU-1/GU-2 outlet manhole without cover	GU-1/GU-2 outlet manhole, west of Phase 1	Trim vegetation around the manhole. Install a manhole cover or grate. **[NO LONGER APPLICABLE DUE TO CONSTRUCTION WORK IN AREA. VEGETATION REMOVED AND INFRASTRUCTURE UPDATED]**	4.4.2.1

3.0 ANNUAL INSPECTION

Mr. Phillip Gearing of SCS completed an annual inspection of the active CCR unit at OML on August 11, 2025. Mr. Gearing is a licensed professional engineer in Iowa and holds a Bachelor of Science degree in Geological Engineering. He has over 19 years of experience in the design, construction, and operation of solid waste disposal facilities. The scope of the annual inspection is described in Sections 3.1 and 3.2. The results of the annual inspection are discussed in Section 4.0.

3.1 OPERATING RECORD REVIEW

SCS reviewed the available information in the operating record for OML, in addition to the visual inspection discussed in Section 3.2. Information reviewed by SCS included operating record materials provided by IPL and the information posted on Alliant Energy's CCR Rule Compliance Data and Information website for the OML facility.

3.2 VISUAL INSPECTION

SCS completed a visual inspection of OML to identify signs of distress or malfunction of the CCR unit.

The visual inspection included observations of the following:

- CCR placement areas including active filling areas, intermediate cover areas, and exterior non-CCR berms or slopes.
- Leachate collection and removal system components including visible leachate drainage layer materials, leachate vaults, cleanouts, and the leachate storage lagoon.
- Contact water run-off management features including internal contact water drainage features and Temporary Contact Water Basin 1/2.
- Non-contact storm water run-on and run-off control features including swales and sedimentation basins located adjacent to active fill areas but outside the landfill limits.
- Groundwater underdrain system components including the visible underdrain discharge pipes and GU-1/GU-2 manhole.

4.0 INSPECTION RESULTS

The results of the annual inspection, along with a description of any deficiencies or releases identified during the visual inspection, are summarized in the following sections.

4.1 CHANGES IN GEOMETRY

No apparent changes in geometry were noted that would indicate distress or malfunction of the CCR unit at the facility since the previous annual inspection at OML, completed under 40 CFR 257.84(b)(1) in 2024. All changes in geometry observed during the annual inspection were the result of planned CCR filling.

At the time of the visual inspection, the Existing Landfill remained covered with intermediate cover, and no exposed CCR was observed.

Active CCR placement was evident in Expansion Phase 1. Placement has continued vertically and to the west since the previous inspection. The temporary rain cover remains in place on the upper portions of the interior west and south slopes.

4.2 CCR VOLUMES

The approximate volume of CCR contained in the CCR unit at the time of the 2025 inspection is summarized below. A description of how the estimate was developed and the sources used are also summarized.

CCR Unit	Estimated Volume of CCR in Place	Basis for Estimate and Source
OML	1,335,400 cubic yards (cy)	Estimated volume as of 8/11/2025 based on the estimated in-place volume as of 3/11/2025 (based on topographic drone survey by SCS Engineers), plus estimated CCR disposed between 3/11/2025 and 8/11/2025. CCR disposed from 3/11/2025 to 8/11/2025 was estimated using actual disposal data provided by IPL and average daily disposal rates estimated using the data provided. Disposal records provided by IPL through June 2025 supported this estimate.

4.3 APPEARANCE OF STRUCTURAL WEAKNESS

The inspection included a review of the appearance of an actual or potential structural weakness of the CCR unit. The visual inspection included a review of CCR fill areas including the top slopes, internal side slopes, external side slopes, and internal ramps/haul roads for the presence of the following conditions:

- Signs of surface movement or instability:
  - Sloughing, slumping, or sliding.
  - Surface cracking.
  - Slopes in excess of 3 horizontal feet to 1 vertical foot (3H:1V).
  - Toe of slope bench movement.
  - Evidence of inadequate compaction of exposed CCR.
- Inappropriate vegetation growth.
- Animal burrows.

- Erosion damage.
- Unusual surface damage caused by vehicle traffic.

4.3.1 Signs of Surface Movement or Instability

No signs of surface movement or instability were noted during the inspection.

4.3.2 Inappropriate Vegetation Growth

No inappropriate vegetation growth impacting the CCR unit was noted during the inspection. The following items have the potential to become a deficiency if left unaddressed:

- Woody vegetation was present in the leachate drainage layer sand at the toe of slope in the northeast corner of Expansion Phase 1 near the sump area and contact water swale. If left to grow, it could impede contact water flow or leachate flow within the sand leachate drainage layer. Removal of vegetation is recommended, and areas should be monitored during the 7-day inspections.

- Woody vegetation was encroaching on the liner limits along the north and south boundaries of Expansion Phase 1. If left to grow, it could damage the liner. Removal of vegetation is recommended, and areas should be monitored during the 7-day inspections.

- A small tree was observed to be growing in the stormwater swale north of proposed Phase 2 and just east of the inlet to the culvert draining to Sedimentation Basin No. 2. If left to grow, it could impede water flow. Removal of the tree is recommended, and the area should be monitored during the 7-day inspections.

- Vegetation was generally dense across the intermediate cover and perimeter features. Mowing is recommended to facilitate 7-day inspections.

Vegetation growth was discussed with plant staff. Mowing of intermediate and perimeter features was performed based on post-inspection observations by SCS personnel. Maintenance and removal of vegetation has occurred post the inspection based on conversations with IPL staff.

4.3.3 Animal Burrows

No animal burrows were noted during the inspection of the CCR unit.

4.3.4 Erosion Damage

The following erosion damage or exposed soil conditions were noted during the inspection:

- Minor exposed soil areas without vegetation were present within the intermediate soil cover area of the existing landfill. If left unaddressed, CCR material could become exposed. It is recommended that vegetation be restored and areas monitored during the 7-day inspections for improved growth.

- Localized erosion of leachate drainage sand was observed at the toe of the west interior berm slope near the contact water basin inlet pipes in expansion Phase 1. If left unaddressed, the geomembrane material could be exposed and vulnerable to damage. It

is recommended that the leachate drainage layer sand be supplemented to maintain at least 1 foot of material above the geomembrane. Monitor area during 7-day inspections.

- Exposed soil areas lacking vegetation were present in various locations along the slopes of Sedimentation Basin No. 2. This could impact stormwater run-on/run-off control features if vegetation is not restored. It is recommended to add topsoil, seed, and erosion mat to exposed areas to restore vegetation. If vegetation establishment is difficult, add geotextile and riprap. Monitor area for stabilization during the 7-day inspections.

The erosion or exposed soil conditions were discussed with plant staff. Maintenance of the erosion damage or exposed soil areas has occurred post the inspection based on conversations with IPL staff.

4.3.5 Unusual Surface Damage Caused by Vehicle Traffic

No unusual surface damage caused by vehicle traffic was noted during the inspection.

4.4 DISRUPTIVE CONDITIONS

4.4.1 Existing Disruptive Conditions

4.4.1.1 Current Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the annual inspection.

4.4.1.2 Previous Inspection

No existing conditions that were disrupting the operation and safety of the CCR unit were noted during the previous inspection.

4.4.2 Potentially Disruptive Conditions

4.4.2.1 Current Inspection

The following potentially disruptive conditions were observed during the annual inspection:

- Woody vegetation, CCR, and sediment build-up in contact water management features at the northwest corner of Expansion Phase 1 toe slope, and the contact water swale is reducing the freeboard available for contact water run-off features. It is recommended that the woody vegetation and accumulated CCR/sediment be removed and the area monitored during the 7-day inspections.

  Based on correspondence with IPL, the accumulation of woody vegetation, CCR, and sediment has been addressed.

- Stitched rain cover ballast material seams have started to separate at various locations on the rain cover ballast in Expansion Phase 1, and some woody material was growing on the ballast material. This may subject the rain cover material to uplift and cause potential damage. Some seams have been repaired with zip ties. It is recommended that the

separated stitching is repaired, or supplemental sandbag ballast is added in lieu of stitching, and that the rain cover ballast material be monitored during the 7-day inspections.

Based on correspondence with IPL, the separated rain cover ballast material seams identified during the inspection have been repaired and the woody material has been removed.

- Bare areas and minor surface cracking was observed on the temporary contact water basin berm. Erosion was not observed in the bare areas. The minor cracking was due to desiccation of the soil from dry conditions. Add topsoil, seed, and erosion mat to exposed areas. If vegetation fails to establish, it is recommended that geotextile and aggregate be placed where vegetation is bare or across the entire berm. Monitor the area during the 7-day inspections.

  Based on correspondence with IPL, steps to revegetate bare areas of the temporary contact water basin berm will occur in the Spring of 2026. If cracking becomes pronounced, before bare soil is rectified, fill cracks with soil/bentonite mixture.

- The leachate headwell (LH-1) level sensor (transducer) was observed to be reading -1.2 inches. The level of leachate in the sump was adequate and there were no alarms observed at the control panel. It is recommended that the sensor be tested in a 5-gallon bucket for accuracy and that a conversation be had with EPG on the calibration of the transducer. Continue to monitor the leachate levels in both the sump and headwell during 7-day inspections.

  EPG was contacted and will assist with recalibration of the level sensor.

- The GU-1/GU-2 outlet manhole located west of Phase 1 was under construction and lacking a cover or grate, and dense vegetation surrounded the structure. There was no observed debris in the manhole at the time of inspection and the system appeared to be operating effectively. It is recommended that the vegetation be trimmed to prevent future debris from falling into the manhole, and that a manhole cover or grate be installed.

  Post inspection, construction work around the manhole had been performed and upgrades were occurring to the outlet; therefore, the inspection items have been resolved.

4.4.2.2 Previous Inspection

The following potentially disruptive conditions were observed during the previous inspection.

- Leachate levels were high enough to trigger the high-level alarm condition in the sump. This condition was not observed during the 2025 inspection.

- Woody vegetation, CCR, and sediment build-up in contact water management features in the Expansion Phase 1 toe of slope and the contact water swale were observed during the 2024 inspection. The condition was observed again during the 2025 inspection.

- Stitched rain cover ballast material seams have started to separate at various locations on the rain cover ballast in Expansion Phase 1. This may subject the rain cover material to uplift and cause potential damage. Some seams have been repaired with zip ties. This

is an ongoing maintenance condition that will continue until the rain cover is no longer needed.

4.4.2.3 Post-Inspection Items

The following potentially disruptive conditions were identified by site staff following the annual inspection. The existing landfill leachate collection and underdrain systems are operational; however, there are some infrastructure conditions that were observed and inspected by site staff after the annual inspection of the landfill. The items include the following:

- Damage to fiberglass wall of the existing landfill leachate lift station.
- Stormwater pond water is potentially infiltrating the underdrain pipe, causing a higher volume of water that is managed due to:
  - Leakage in an existing landfill groundwater underdrain transfer pipe.
  - A suspected leaking stormwater pond isolation valve.

These items are not currently disrupting the operation and safety of the CCR unit. IPL is currently working to investigate and repair the items above.

4.5 OTHER CHANGES SINCE PREVIOUS ANNUAL INSPECTION

No changes to site conditions that appear to have the potential to affect the stability or operation of the facility were noted during the inspection of OML.

5.0 FUTURE INSPECTIONS

5.1 EXISTING CCR LANDFILL

As stated in 40 CFR 257.84(b)(4), the owner or operator of the CCR unit must conduct the inspection required by paragraphs (b)(1) and (2) of this section on an annual basis. The date of completing the inspection report is the basis for establishing the deadline to complete the next subsequent inspection. Any required inspection may be conducted prior to the required deadline, provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record.

The next annual inspection of OML must be completed within 1 year of the placement of this inspection report in the operating record for the facility.

5.2 NEW CCR LANDFILLS AND LATERAL EXPANSIONS

As discussed above, the CCR unit at the OML facility is considered an existing CCR unit. The initial annual inspection for CCR units constructed in the future must be completed within 14 months of the initial receipt of CCR in the module per 40 CFR 257.84(b)(3)(ii).

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