DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: February 25, 2025

To: Lindsey Hummel
Permits Branch

Thru: Shyamala Raman, Chief SCR
Engineering Section 2/25/25

From: Jeff Teague
Engineering Section

Subject: Solid Waste Land Disposal Facility Permit Minor Modification
Gibson Station South Landfill
Gibson County
RWS I Landfill
Solid Waste Program ID 26-06
eRTE 18292

Minor Modification	September 17, 2024	VFC 83698381
Additional Information	January 8, 2025	VFC 83746396
	February 13, 2025	VFC 83763720
Insignificant modification	September 19, 2024	VFC# 83698920
Current Permit issued	May 30, 2024	VFC #83645633
Corrected and replaced	June 13, 2024	VFC #83651745

Introduction
I have completed my review of the Minor modification request for the Type I Restricted Waste Landfill for Duke – Gibson, South Landfill. The request was received on September 17, 2024 (VFC 83698381).

Summary
Summary of Proposed Minor Modification:

The minor modification proposes the following design changes:

- Revise final grade slopes from 6H:1V to 4H:1V. There will be adequate air space in 4 cells with 4:1 slope and hence Cells 5 and 6 will not be necessary in the near future. The resulting air space gain in the entire landfill footprint is 318,600 cubic yards.
- Removal of the North Retention Pond. Non-contact water will be diverted to existing borrow areas B & C. Contact water will be routed to the existing south retention pond.
- Modification of solid waste boundary to support changes to final grades.

Background

The Gibson Station South Landfill is a Restricted Waste Site Type I facility with a total acreage of 367.23 acres. (

The site currently receives an average of about 7,100 tons per operating day with up to 9,600 tons per day in the future.

The types of waste currently approved to be received at this facility are Coal Combustion
Products described as follows:

- Green sand filter media.
- Sand blast media and coal mill rejects.
- Stormwater Ditch Material.
- Coal Fines.
- Fly ash, bottom ash.
- Fixated scrubber sludge.
- Synthetic gypsum, fixated gypsum.
- FGD wastewater treatment solids and mixtures of all such wastes.
- Slag and water treatment solids from coal gasification from Duke Energy's Edwardsport IGCC Plant.

Wastes that will be generated onsite by the
closure and demolition of Gibson Generating Station which will include:

- Remaining Coal from the Coal Pile following closure of the Gibson Generating Station.
- Construction and Demolition (C&D) debris generated from the demolition of the Gibson Generating Station facilities.
- Gravel and Concrete that may be contaminated with CCR material.
- Asbestos Containing Material (ACM) generated from the demolition of the Gibson Generating Station facilities. ACM handling and disposal will comply with the requirements of Title 329 Indiana Administrative Code (IAC) 10-8.2-4, Title 40 Code of Federal Regulations (CFR) § 61.145, and 40 CFR § 61.150 (a).

Modifications since the last renewal or relevant to this modification:
Minor Mod 2021 dated April 7, 2021 and approved May 11, 2022 VFC # 83314650

- Revise the solid waste boundary that reduces the permitted landfill acreage from 377.70 acres to 366.80 acres. (Note: should have been 367.23 acres)
- Modify the west expansion area in the SALF as follows:
  (1) Revise the baseliner grades
  (2) Revise the final cover grades
- Modify the North Retention Pond as follows:
  1) Expand the size of the pond from 5 acres to 12 acres
  2) Revise the liner design and configuration with a double liner system
  3) Revise the contact surface water and storm water drainage to the North Retention Pond
- Revise the stormwater management and run-off controls for the existing landfill cells and west area expansion
- Revise the construction quality assurance manual

Insignificant Modification July 23, 2024 VFC # 83671442
The proposal dated June 24, 2024 (VFC #83659518) proposing to do the following at the Gibson South RWS I landfill: eliminate Cells 5 and 6 from construction, construct a new perimeter berm around Cell 4, revise leachate collection piping in Cells 4 and 5 as shown on Figure 5 (VFC #83659518, p. 11 of 12), and widen the perimeter access road around Cell 4 from 12 feet to 50 feet.

Insignificant modification September 19, 2024 VFC# 83698920
Revised Design Grades: Adjustments to the design grades to transition from the as-built condition to the original design grades, as detailed in Figures 1 through 5 of Attachment B, due to the unit discrepancy in the LandXML file. The unit discrepancy resulted in the base grades for Cell 4 to be offset by 2.073 ft. south and 5.5316 ft. west. Based on the drawings, it appears that construction was based on the Southeast corner so there was a slight encroachment into Cell 5 (5.5316 ft), but no additional volume was added to the landfill.

- Deferred Construction of West Perimeter Berm: The full height of the west perimeter berm will not be constructed until CCR waste placement begins in Cell 4.
- Delayed Construction of Perimeter Ditch: The perimeter ditch along the north and south sections of Cell 4 will also be deferred until CCR waste placement begins in Cell 4.
- Separation Berm Construction: A separation berm will be constructed along the western side of Cell 4 to a height of 405 feet, approximately 5 feet above the 100-year flood elevation.

Additional Information

The RAI Response provided the following addressing the issues identified in the RAI:
1. AutoCAD drawings so IDEM could verify the volume increase.

2. Drawings certified by an Indiana Professional Engineer. IDEM sent another email request and received all of the drawings certified by Indiana PE.
3. The slope stability calculations
4. Use of the Borrow Areas B and C as future storm water ponds.
5. Information on other storm water ponds at the facility.
6. Revised Hydrocad modelling to address issues with the original HydroCAD models (e.g., hints and warnings).

Recommendations

Based upon my review of the application and the response, the Engineering Section recommends approval of the minor modification application. The approval requirements are enclosed.

Minor Modification Approval Requirements
Gibson Station South Landfill
Gibson County
SW Program ID 26-06

FOR THE COVER LETTER

Duke Energy Indiana, Inc.'s minor modification application for the Gibson Station Restricted Waste Site Type I (RWS I) South Landfill is approved. It is located at 1097 N 950 W, Owensville in Gibson County.

The minor modification allows Duke Energy of Indiana, Inc. to make the following design changes at the Gibson Station RWS I South Landfill, also known as the South Aggregate Landfill (SALF):

- Revise the final grade slopes from 6H:1V to 4H:1V for Cells 1 - 4. The resulting air space gain in the entire landfill footprint is 318,600 cubic yards.
- Remove the North Retention Pond. Non-contact water will be diverted to the existing borrow areas B and C. Contact water will be routed to the existing south retention pond.
- Modification to the solid waste boundary to support changes to final grades. The solid waste boundary approved for filling is revised from 367.23 acres to 367.36 acres .

Documents related to this approval include the minor modification application dated September 17, 2024 (VFC #83698381), and additional information dated January 8, 2025 (VFC #83746396) and February 13, 2025 (VFC #83763720).

PERMIT REQUIREMENTS

The following Permit Requirements are in addition to or in replacement of the corresponding permit requirements in the facility's corrected permit renewal dated June 13, 2024 (VFC #_#83651745). The permittee must implement the permit modification as specified in the minor permit modification application date September 17, 2024 (VFC #83698381), and additional information dated January 8, 2025 (VFC #83746396) and February 13, 2025 (VFC #83763720), and the requirements of this approval.

Note: all page numbers are the page numbers of the PDF file referenced in VFC, not the original numbering of the document.

D. OPERATIONAL REQUIREMENTS

The former Requirement D4 is replaced with the following requirement:

D4. The permittee must not dispose of waste outside of the solid waste boundary line shown on the drawing Sheet 9 titled "4 TO 1 OPTION - FINAL GRADING PLAN," dated February 21, 2024 and submitted with the document dated January 8, 2025 (VFC 83746396, p 12 of 490).

F. CLOSURE REQUIREMENTS

The former Requirement F3 is replaced with the following requirement:

F3. The permittee must construct the final cover system as follows:

a. Within 180 days after:

(1) Receiving its final waste volume), or

(2) Any area of the landfill is filled to its approved elevation, less the thickness of the cover materials.

b. As specified in the approved final grading plan drawing Sheet 9 titled "4 TO 1 OPTION - FINAL GRADING PLAN," dated February 21, 2024 and submitted with the document January 8, 2025 (VFC 83746396, p 12 of 490)and

c. In compliance with the applicable requirements of 329 IAC 10-30-2 and 329 IAC 10-28-11. Grading and stabilization of the final cover must be accomplished in accordance with 329 IAC 10-28-14; and

d. The composite final cover system with the following components,

extending from top of waste:

(1) One foot of compacted cohesive soil layer with a hydraulic conductivity of $1x10^{-6}$ cm/sec or two feet of fixated coal combustion residuals (CCR) materials with a hydraulic conductivity of $1x10^{-6}$ cm/sec, or a GCL layer
(2) A geomembrane such as 30 mil PVC, 60 mil HDPE or 40 mil LLDPE
(3) A geotextile/geocomposite cushion/drainage layer
(4) 30-inch layer of protective soil cover
(5) Six-inch layer of vegetative soil cover

The final closure of the landfill consists of 367.36 acres. As of the date of this permit, no area has been certified closed. The post-closure period for the closed portion of the landfill will not begin until the entire facility is certified closed.

F5. The permittee must construct the landfill surface water control structures as shown on the drawing titled "DRAINAGE AREA MAP WITH CELL 4, (4 TO 1 SIDE SLOPES)," dated February 13, 2025 and submitted with the document datedFebruary 13, 2025 (VFC 83763720, p 4 of 15) and the HydroCAD model and other storm water calculations submitted with the document dated January 8, 2025 (VFC 83746396, pp.127 – 490 of 490).

I. Compliance Schedule

The following new compliance schedule will be added to the permit. Note: this condition is almost identical to I2 (except for the addition of the last word) which has already been met. The new compliance schedule I3 is for a updated storm water run-on and run-off control plan based on the changes with this permit modification.

I3. The permittee must submit the updated storm water run-on and run-off control plan developed to comply with the Federal CCR rule at 40 CFR 257.81 within 60 days after the issuance of this permit modification.