April 26, 2021

The following documentation related to Northern Indiana Public Service Company's Michigan City Generating Station surface impoundments regulated under the Coal Combustion Residuals ("CCR") rule fulfills the requirement for CCR unit closure and post closure plans listed in §257.107(i)(4). The two CCR rule regulated units at the facility are Primary Settling Pond #2 and the Boiler Slag Pond.

These documents include:

- Approval Packet for Final Closure Permit (46-010)
- IDEM's Request for Additional Information
- NIPSCO's response to IDEM's Request for Additional Information

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

March 10, 2021

VIA EMAIL jloewe@nisource.com
Northern Indiana Public Service Company
Attn: Jeff Loewe
801 East 86th Avenue
Merrillville, Indiana 46410

Dear Jeff Loewe:

Re: Approval of Closure/Post-Closure Plan
Michigan City Generating Station
SW Program ID 46-010
LaPorte County

Northern Indiana Public Service Company's (NIPSCO) coal combustion residuals (CCR) surface impoundment closure and post-closure plan for the Michigan City Generating Station (MCGS) is approved under 329 IAC 10-3-1(9) and 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D (the federal CCR regulations). The MCGS surface impoundment system consists of Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No. 2, and the Boiler Slag Pond. This approval is subject to the terms of this letter, the closure and post-closure plans referenced in this document, and the enclosed requirements. The MGCS is located at 101 Wabash Street, Michigan City, LaPorte County, Indiana.

The MCGS surface impoundment system closure approval encompasses approximately 11.4 acres. The entire 11.4 acres will be closed using the closure by removal approach. The CCR material, approximately one foot of blast furnace slag layer placed in the bottom of the ponds (slag layer), and one additional foot of material beneath the slag layer, will be excavated. The excavated area will be backfilled with clean soil. Upon completing closure, these ponds will be subject to post-closure requirements.

Public records for your facility are available in IDEM's Virtual File Cabinet at www.in.gov/idem. Documents related to this approval include the closure and post-closure plans dated December 20, 2018 (VFC #82976831), and additional information dated February 28, 2019 (VFC #82709758), June 5, 2019 (VFC #82791433), February 13, 2020 (VFC #82914980), September 10, 2020 (VFC #83044085), and December 7, 2020 (VFC #83081101).

The five ponds in the MCGS surface impoundment system are also considered Solid Waste Management Units subject to RCRA Corrective Action under the Agreed

Order in Cause No. H-13872 (VFC #69102798). Documents related to RCRA Corrective Action are available in VFC under the hazardous waste program ID IND000715375.

This approval does not: convey any property rights of any sort or any exclusive privileges; authorize any injury to any person or private property or invasion of other private rights or any infringement of federal, state, or local laws or regulations; or preempt any duty to comply with other state or local requirements.

If you wish to appeal this decision, you must file a request for administrative review with the Office of Environmental Adjudication within 18 days after the postmark of this letter. The enclosed guidance provides information on the appeal process and your rights and responsibilities for filing an adequate and timely appeal.

If you have any questions, please contact Alysa Raleigh, the Permit Manager assigned this facility, by dialing (317) 234-4596 or by e-mail at ARaleigh@idem.in.gov.

Sincerely,

Stephen D. Thill, Chief
Permits Branch
Office of Land Quality

Enclosures: Approval Requirements
Guidance on How to Appeal IDEM Decision

cc with enclosures: LaPorte County Health Department
LaPorte County Commissioners
Laporte County Solid Waste Management District
Director, Northwest Regional Office
Mayor, City of Michigan City

REQUIREMENTS

A. General Requirements

B. Closure Requirements

C. Post-Closure Requirements

D. Groundwater Monitoring Requirements

E. Financial Responsibilities for Closure and Post-Closure

F. Compliance Schedule Requirements

A. GENERAL REQUIREMENTS

A1. The owner or operator must close and maintain the Michigan City Generating Station (MCGS) surface impoundment system as described in the approved plans and specifications in the document titled "Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application – Michigan City Generating Station," dated December 20, 2018 (VFC #82976831), the following subsequent submittals, and the requirements of this approval:

a. Document dated February 28, 2019 (VFC #82709758), Supplemental Addendum for Monitoring Well Network;

b. Document dated June 5, 2019 (VFC #82791433), response to request for additional information (RAI) dated April 9, 2019 (VFC #82746466);

c. Document dated February 13, 2020 (VFC #82914980), NIPSCO MCGS Impoundment Closure; and

d. Document dated December 7, 2020 (VFC #83081101).

The MCGS surface impoundment system consists of the Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No. 2, and the Boiler Slag Pond.

A2. The owner or operator must request approval from IDEM before modifying the approved closure and post-closure requirements and procedures.

A3. The owner or operator must call **(888) 233-7745** (IDEM's emergency response line) as soon as possible after learning of any event that may cause an imminent and substantial endangerment to human health or the environment, such as a reportable spill (327 IAC 2-6.1) or a fire or explosion that requires the response of the local fire department.

The owner or operator must follow up by sending a written report to the Solid Waste Permits Section at the address given in Requirement A4 within five business days after the event. The report must describe the event, and actions taken or planned to correct the event and prevent its recurrence.

A4. Unless otherwise noted, submittals must be sent to the permit manager assigned your facility at the following address:

Indiana Department of Environmental Management
Office of Land Quality
Solid Waste Permits Section
IGCN 1101
100 North Senate Avenue
Indianapolis, IN 46204-2251

We greatly appreciate an electronic copy in Acrobat PDF format on CD or DVD, or emailed to the Permit Manager.

A5. Records of all monitoring information and activities which are required to be submitted by this approval or specified in the closure or post-closure plan, must contain information listed in 329 IAC 10-1-4(a). Records must be maintained as specified in 40 CFR 257.105 and 329 IAC 10-1-4(b) and (c).

A6. Reports must be signed as specified in 329 IAC 10-11-3(b).

B. CLOSURE REQUIREMENTS

B1. The owner or operator must follow the approved closure and post-closure plans and specifications for the MCGS surface impoundment system as described in the approved plans and specifications in the document titled "Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application – Michigan City Generating Station," dated December 20, 2018 (VFC #82976831), the following submittals, and the requirements of this approval:

a. Document dated February 28, 2019 (VFC #82709758);

b. Document dated June 5, 2019 (VFC #82791433); and

c. Document dated February 13, 2020 (VFC #82914980).

B2. The MCGS surface impoundment system is approved to close by the closure by removal[1] method with removal of CCR material, the slag layer, and one additional foot of material. All excavated material must be managed or disposed of properly according to approved plans and/or local, state, and federal regulations. The MCGS surface impoundment system consists of the following ponds:

- Primary Settling Pond No.1 - This pond is subject to 329 IAC 10-3-1(9).
- Secondary Settling Pond No.1 - This pond is subject to 329 IAC 10-3-1(9).
- Primary Settling Pond No.2 - This pond is subject to 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D.
- Secondary Settling Pond No.2 - This pond is subject to 329 IAC 10-3-1(9).
- The Boiler Slag Pond - This pond is subject to 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D.

B3. The owner or operator must notify IDEM in writing at least 15 days before initiating each of the following closure activities for the MCGS surface impoundments:

a. Excavation of the CCR materials

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[1] *As used in this approval, "removal" does not mean closure as contemplated by 40 CFR 257.102(c). "Removal" as used herein is intended to have its commonly understood, everyday meaning, and is not intended as a term of art.*

b. Backfilling the excavated area upon removal of one additional foot of material

c. Construction of the final cover

B4. The owner or operator must follow the schedule included in the supplemental closure and post-closure document dated December 7, 2020 (VFC #83081101, Attachment 1, p. 9 of 318) to complete the preparation activities and final closure of the MCGS surface impoundment system.

B5. The owner or operator must manage surface water as described in the approved plans and meet the following requirements:

a. Maintain drainage ditches and the sedimentation basin to prevent off-site deposition of waste and sediments. Remove sediment deposits from drainage ditches as necessary to convey storm water as designed.

b. Construct temporary run-off structures as needed in areas that are unable to drain to the sedimentation basin.

c. Construct erosion and surface water control structures as depicted on the following drawings submitted with the document dated February 13, 2020 (VFC #82914980, pp. 85 and 92-96 of 100):

(1) Sheet C-0289, Final Grading Plan – Overall,

(2) Sheet C-0296, Storm Sewer Plan and Profiles,

(3) Sheet C-0297, Storm Sewer Details,

(4) Sheet C-0298, Civil Details,

(5) Sheet C-0299, Erosion and Sediment Control Plan, and

(6) Sheet C-0300, Erosion & Sediment Control Details and Notes.

B6. The owner or operator must properly dispose of water that has been in contact with waste, in accordance with all applicable local, state, and federal laws (329 IAC 10-28-16 and IC 13-30-2-1), including applicable NPDES permit or intermediate discharge limits provided by IDEM Office of Water Quality (OWQ) NPDES Permits Section.

B7. The owner or operator must perform inspections of the MCGS surface impoundment system until completion of the final closure as described in 40 CFR 257.83 (Inspection Requirement for CCR Surface Impoundments) and as required by this approval.

B8. The owner or operator must adopt measures that will effectively minimize coal combustion residuals from becoming airborne, including waste that generates fugitive dust (40 CFR 257.80) (Air Criteria) and fugitive particulate matter, in a way that does not violate the rule for fugitive dust (326 IAC 6-4) or fugitive particulate matter (326 IAC 6-5), including 326 IAC 6-5-4(g) for solid waste handling control measures (329 IAC 10-8.2-2). The owner or operator must implement dust control measures as specified in the facility's Coal Combustion Residue Fugitive Dust Control Plan dated October, 2015 (VFC #82791433, Attachment 2-1, pp. 9 – 16 of 72) and the project specific dust control plan according to Compliance Schedule Requirement F2, and take any additional steps necessary to prevent violations of fugitive dust rules and 40 CFR 257.80.

B9. The owner or operator must follow the confirmation procedure for the removal of CCR material, the slag layer, and one additional foot of material from the MCGS surface impoundments as described in the document dated December 20, 2018 (VFC #82976831, pp. 25-27 of 951). The approximate bottom of CCR excavation contours are depicted on the drawing titled "Sheet C-0285, CCR Excavation Plan - Overall," revised February 10, 2020 (VFC #82914980, p. 81 of 100).

To verify waste, slag, and additional material excavation, the facility must provide surveys and photographs for the following surfaces, as described in the document dated February 13, 2020 (VFC #82914980, Appendix A, pp. 73- 74 of 100):

- The bottom of CCR material excavation;
- The bottom of blast furnace slag layer excavation; and
- The bottom of one-foot of additional material excavation.

B10. The owner or operator may use amendments such as, cement kiln dust [CKD], quick lime [Lime], lime kiln dust [LKD], or portland Type I cement [Portand] to stabilize the CCR materials in the MCGS surface impoundment system as approved by IDEM upon submittal.

B11. The owner or operator must follow the facility's approved grading plan and construct the final cover for the MCGS surface impoundment system as follows:

a. As specified in the approvad final grading plan on the drawing titled "Sheet C-0289, Final Grading Plan – Overall," revised February 10, 2020 (VFC #82914980, p. 85 of 100).

b. Grade and stabilize the final cover as specified in 329 IAC 10-28-14.

B12. The owner or operator must construct the final cover in compliance with the following specifications:

a. **For Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, and Secondary Settling Pond No. 2**.

The final cover system starting from top to the bottom of excavation grade must consist of the following as shown in Detail 9 of the drawing titled "Sheet C-0298, Civil Details," revised February 10, 2020 (VFC #82914980, p. 94 of 100).

- 6 inches of topsoil
- 18 inches of compacted clean soil consisting of GC, SM, SC, ML-CL, and CL in accordance with the Unified Soil Classification System (USCS) with a permeability no greater than 1 x 10^{-5} centimeter/second
- Compacted clean soil structural fill consisting of SM, SW, SC, SP, ML, and CL in accordance with USCS (thickness varies)

b. **For Boiler Slag Pond**.

(1) The final cover system for the area in the immediate vincinty of the underground recirculation water pipes starting from top to the bottom of subgrade (above the CCR material left in place) must consist of the following as shown in Section K-K' and Section L-L' of the drawing titled "Sheet C-0295, Profiles and Cross Sections – 03," revised February 10, 2020 (VFC #82914980, p. 91 of 100).

- Flowable backfill to final grade (thickness varies)
- 40 mil double sided textured linear low-density polyethylene (LLDPE)

(2) The final cover system for the remaining area, after the removal of CCR material, the slag layer, and one additional foot of material as specified in Requirement B9, starting from top to the bottom of excavation grade must consist of the following as shown in Detail 7 of the drawing titled "Sheet C-0298, Civil Details – CCR Surface Impoundment Closure Design," revised February 10, 2020 (VFC #82914980, p. 94 of 100).

- 12 inches of INDOT No.2 crushed stone
- 12 ounce/square yard nonwoven geotextile
- 24 inches of compacted clean soil consisting of GC, SM, SC, ML-CL, and CL in accordance with the Unified Soil Classification System (USCS) with a permeability no greater than 1 x 10^{-5} centimeter/second
- Compacted clean soil structural fill consisting of SM, SW, SC, SP, ML, and CL in accordance with USCS (thickness varies)

B13. The owner or operator must test and install final cover components as specified in the approved Construction Quality Assurance (CQA) Plan submitted with document dated February 13, 2020 (VFC #82914980, pp. 25-74 of 100) and as revised according to Compliance Schedule Requirement F3.

B14. The owner or operator must submit a final closure certification, and verification of environmental restrictive covenant (ERC) and deed notation to IDEM no later than 90 days after the completion of construction of the final cover system and establishment of vegetation. The final closure certification must comply with the following:

a. Meet the requirements of 40 CFR 257.102(f)(3), (g), (h), and (i), and 329 IAC 10, as applicable.

b. Certify the final closure is constructed according to the approved closure plan and the CQA plan.

c. A registered professional engineer must certify the closure construction complies with the approved plans and specifications.

d. The final closure certification must include the following:

(1) The boundaries of the certified area,

(2) The results of all tests conducted during construction,

(3) Documentation of all storm water management features that have been constructed or installed to the extent possible as designed,

(4) Any deviation/changes from the approved closure plan must be noted and explained in the report, if any, and

(5) Surveys and photographic verification for the following: the bottom of CCR material excavation, the bottom of slag layer excavation, the bottom of one-foot of additional material excavation, and the final cover elevations.

C. POST-CLOSURE REQUIREMENTS

C1. The owner or operator must perform a minimum of 30 years of post-closure monitoring and maintenance including the activities specified in the supplemental closure and post-closure document dated December 7, 2020 (VFC #83081101, Attachment 2, pp. 10 - 21 of 318), and the following requirements for the MCGS surface impoundment system:

a. Performance standards and post-closure duties, as specified in requirements of 40 CFR 257.104 and 329 IAC 10, as applicable.

b. The 30-year post-closure period will begin when all areas of the MCGS surface impoundment system is certified closed and IDEM accepts the certification.

c. Monitor and maintain the closed areas of the MCGS surface impoundment system until the 30-year post-closure period begins.

d. Maintain the exterior (waterside) sheet pile along Lake Michigan, including repair of any damage which compromises the structural integrity of the wall as determined by a qualified professional engineer, to provide flood protection against storm events throughout the closure and during post-closure care period.

Please note the owner or operator is already required to maintain the integrity of the sheet pile wall along Trail Creek pursuant to applicable law.

C2. To be released from post-closure monitoring, the owner or operator must submit a post-closure certification statement signed by both the owner/operator and a registered professional engineer stating that the post-closure care requirements have been met and the surface impoundments are stabilized. The post-closure certification is considered adequate unless, within 90 days of receipt of the post-closure certification, IDEM either notifies the owner/operator the certification is inadequate or issues a notice of deficiency that post-closure care is not complete, including actions necessary to correct the deficiencies.

C3. The owner or operator must comply with facility's ERC and/or deed restriction subsequent to the completion of post-closure care certification. The owner or operator is responsible for the following:

a. Correcting and controlling any nuisance conditions occurring at the facility (329 IAC 10-31-5);

b. Eliminating any threat to human health or the environment (329 IAC 10-31-6); and

c. Performing any remedial action at the facility, if necessary (329 IAC 10-31-7).

D. GROUNDWATER MONITORING REQUIREMENTS

D1. The owner or operator must comply with 329 IAC 10-9-1(c) and 40 CFR 257, Subpart D (Groundwater Monitoring and Corrective Action).

D2. The owner or operator must conduct groundwater monitoring throughout the closure and the 30-year post-closure care period of the unit (40 CFR 257.104(c)). IDEM will extend the post-closure care period if the facility is under assessment monitoring until the facility returns to detection monitoring (40 CFR 257.104(c)(2)).

MONITORING DEVICES

D3. The facility's groundwater monitoring system (System) includes the following groundwater monitoring wells: GMMW-1, GMMW-2, GAMW-01A, GAMW-01B, GAMW-02, GAMW-03A, GAMW-03B, GAMW-10, GAMW-14, GAMW-15, GAMW-16, MW-3, MW-103, MW-103A, MW-104, MW-105, MW-105A, MW-110, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119. Background groundwater monitoring wells are MW-110, MW-113, MW-114, and MW-115.

At least 60 days before installing new monitoring devices, the owner or operator must submit a device-installation plan for IDEM approval. See Requirement F8 regarding the installation plan for groundwater monitoring wells MW-103A, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119.

The plan must provide the following:

a. A map showing the location of each device with respect to the facility's entire System and a current potentiometric surface.

b. A demonstration that each device will yield representative groundwater samples at an appropriate location and depth within the same aquifer or aquifers as the facility's existing System, and will meet the installation requirements of 40 CFR 257.91(e).

c. Drilling methods and procedures that follow 329 IAC 10-21-4; well construction materials and details, including protocol for collecting, describing, and analyzing consolidated or unconsolidated materials (329 IAC 10-24-3(3)).

d. An example of a borehole log that includes information specified under 329 IAC 10-24-3(2).

e. Environmental qualifications of all field personnel.

f. Provisions to include the installation records in the facility operating record (40 CFR 257.91(e)(1)).

The owner or operator must submit all field documentation to IDEM within 60 days after completing all related field work.

D4. The owner or operator must label all groundwater monitoring wells with a permanent and unique identification. When reporting well and piezometer information, the owner or operator must include the identification for each well.

D5. The owner or operator must secure the access ways to all groundwater monitoring wells to prevent unauthorized access and maintain the access ways so they are passable year round with the exception of flooding conditions.

D6. The owner or operator must maintain all groundwater monitoring wells as follows:

a. Complete necessary repairs, other than replacement (see Requirement D8), within 10 days after discovery or other time frame approved by IDEM.

b. Keep the wells securely capped and locked when not in use.

c. Repair all cracks in and around the casings and well pads that may affect the integrity of the wells.

d. Control vegetation height.

e. Redevelop the wells as needed.

D7. When abandoning a groundwater monitoring well that is part of the facility's approved System (listed in Requirement D3), the owner or operator must:

a. Submit a written proposal for approval explaining the reasons for and detailing the method of abandonment.

b. Use methods that comply with Indiana Department of Natural Resources (IDNR) regulation 312 IAC 13-10-2.

c. Notify the IDEM Geology Section by phone, email, or letter at least 10 days before the date the abandonment work will occur.

d. Provide written notification of abandonment to IDEM and IDNR within 30 days after plugging is complete. (IDNR (312 IAC 13-10-2(f)) requires written notice.); and

e. Include the abandonment records in the facility operating record (40 CFR 257.91(e)(1)).

D8. The owner or operator must notify IDEM by phone, email, or letter within 10 days after discovering that a groundwater monitoring well has been destroyed or is not functioning properly. The owner or operator must repair the well if possible. If the well cannot be repaired, then within 30 days after discovery, the owner or operator must submit a proposal for abandonment or replacement.

PLANS

D9. The permittee must follow the Sampling and Analysis Plan (SAP) in Attachment 3 of the Closure Application Approval Letter Response dated December 7, 2020 (VFC #83081101),

D10. The owner or operator must follow the Quality Assurance Project Plan (QAPjP in Attachment 4 of the Closure Application Approval Letter Response dated December 7, 2020 (VFC #83081101).

D11. The owner or operator must follow the Statistical Evaluation Plan (StEP) in Section 4 of the SAP.

D12. If IDEM requests a revision to an SAP, QAPjP, or StEP, the owner or operator must submit the revised plan(s) for approval. The owner or operator must submit the plan(s) within 60 days after receiving the request. This submittal must include one original paper copy and one PDF electronic file of each plan. The owner or operator must not implement the revised plan(s) before receiving approval.

D13. If the owner or operator makes design changes to the existing System listed in Requirement D3, the owner or operator must submit a revised SAP, and if applicable, a revised QAPjP or StEP for approval. The owner or operator must submit the plans within 60 days after completing all field activities associated with the design changes. This submittal must include one original paper copy and one PDF electronic file of each plan. The owner or operator must not implement the revised plan(s) before receiving approval.

MONITORING PROGRAMS

D14. The owner or operator must sample the facility's System listed in Requirement D3, including future groundwater wells installed for Requirement F8, semiannually during April and October of each year. Each sample must be analyzed following the Detection Monitoring Program (40 CFR 257.94) for the following Appendix III constituents:

a. Total Boron

b. Total Calcium

c. Chloride

d. Fluoride

e. Field pH

f. Sulfate

g. Total Dissolved Solids

The owner or operator may demonstrate an alternative frequency of sampling for the Appendix III constituents following 40 CFR 257.94(d).

When applicable (see Requirement D19), each sample must be analyzed following the Assessment Monitoring Program (40 CFR 257.95) for the following Appendix IV constituents:

h. Total Antimony

i. Total Arsenic

j. Total Barium

k. Total Beryllium

l. Total Boron

m. Total Cadmium

n. Total Chromium

o. Total Cobalt

p. Fluoride

q. Total Lead

r. Total Lithium

s. Total Mercury

t. Total Molybdenum

u. Total Selenium

v. Total Thallium

w. Radium 226 and 228 combined

For specific metallic constituents, if the permittee demonstrates with the approval of IDEM that the results for a filtered (dissolved) metal are no greater than 20% of the relative percent difference of an unfiltered (total recoverable) metal, then the owner or operator may incorporate historic filtered results into the background data set instead of collecting a minimum of eight additional independent samples (40 CFR 257.94(c)) for the unfiltered metal results. The owner or operator may propose an alternative method for incorporating historic results of the specific dissolved metal into the background data set for IDEM review and approval.

Whenever results of total chromium occur at or above its background concentration or maximum contaminant level, whichever is the higher concentration, the owner or operator must speciate and report both trivalent and hexavalent chromium.

D15. The owner or operator must use the results of the static water level measurements from the System listed in Requirement D3 to prepare potentiometric surface maps or groundwater flow maps for each screened interval (shallow, intermediate, and deep) that include the following information:

a. Location and identification of each groundwater monitoring well.

b. Groundwater elevations for each well, and surface water elevation of Lake Michigan. The owner or operator must measure all static water levels on the same day and as close in time as possible before the purging and sampling event.

c. Date and time of static water level measurement for each well.

d. Ground-surface elevation at each well.

e. Facility property boundaries.

f. Identification of the aquifer represented, either by a name or elevation.

g. Solid waste fill boundaries.

h. Facility name and county.

i. Map scale, north arrow, groundwater flow direction arrows, and potentiometric-surface contour intervals.

j. Indications of which wells are considered background, upgradient, or downgradient.

k. Locations and elevations of all site benchmarks.

D16. If a groundwater flow map indicates that the groundwater flow direction, including flow reversals, is other than anticipated in the design of the System listed in Requirement D3, then the owner or operator must notify IDEM of the difference in the groundwater monitoring report submitted for Requirement D23. The notification must include either of the following: information demonstrating that the System complies with 40 CFR 257.91(c); or a proposal to revise the System design for IDEM approval.

The owner or operator must determine if the System currently complies with 40 CFR 257.91(c) before collecting samples for the scheduled semiannual sampling event. If a flow reversal occurs, and with IDEM approval, the owner or operator may postpone the scheduled semiannual sampling event in 30-day extension increments if they determine that the System does not comply with 40 CFR 257.91(c).

If the owner or operator determines a groundwater flow reversal occurred during a scheduled semiannual sampling event, then data from that sampling event must not be utilized in statistical evaluations specified in the StEP or incorporated into background groundwater quality and groundwater protection standard calculations. unless the owner or operator adequately demonstrates to IDEM that the data accurately represents established groundwater quality conditions when a flow reversal did not occur. Additionally, the owner or operator must immediately schedule a replacement sampling event in order to complete the required semiannual evaluation for groundwater releases from the facility. Within

seven days of scheduling the replacement sampling event, the owner or operator must notify IDEM of the schedule.

If design changes to the existing System are necessary, then the owner or operator must make the changes within 30 days after receiving IDEM approval of the revised design or other time frame approved by IDEM.

D17. Background groundwater monitoring well(s) must provide groundwater samples that represent historical conditions unaffected by a CCR unit or facility activities that may contribute Appendix III and Appendix IV constituents listed in Requirement D14 against which background comparisons occur. Additionally, for any background well added to the System listed in Requirement D3, the owner or operator must:

a. Establish background groundwater quality for the Appendix III and Appendix IV constituents listed in Requirement D14.

b. Determine the background groundwater quality by sampling each new well for eight independent sampling events within 12 months after the well's installation, unless the owner or operator can justify to IDEM an extended period of no more than 12 additional months.

If the owner, operator, or IDEM determines that the current System (see Requirement D3) does not have the required background well(s), then within 60 days the owner or operator must submit a plan per Requirement D3 proposing to establish new or additional background wells for the current System for IDEM review and approval. This plan must include well location(s) for obtaining background groundwater quality samples that satisfy the specifications of this requirement.

D18. The owner or operator must implement the StEP identified in Requirement D11 and include the outcome of each statistical determination in a statistical evaluation report (see Requirement D23.d).

D19. The owner or operator must implement a detection monitoring program consistent with 40 CFR 257.94 and the StEP. If the owner or operator determines there is a statistically significant increase (SSI) over background for one or more of the Appendix III constituents listed in Requirement D14 at any of the downgradient groundwater monitoring wells, then the owner or operator must comply with one of the following requirements:

a. Demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (40 CFR 257.94(e)(2)). Within 45 days of detecting an SSI over background levels, or other time frame approved by IDEM, the owner or operator must submit the written demonstration to IDEM.

If the demonstration is approved, the owner or operator may continue with a detection monitoring program for any unit for which the demonstration

was made;

b. Within 30 days of receiving notice that the demonstration is not acceptable to IDEM, submit an assessment monitoring program plan meeting the requirements of 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14, to IDEM for approval. Within 90 days of determining an SSI, the owner or operator must establish and implement the assessment monitoring program following 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14. The owner or operator must also implement the assessment monitoring program plan after receiving approval from IDEM; or

c. If a demonstration is not pursued, the owner or operator must submit an assessment monitoring program plan specified in Requirement 19.b within 30 days of determining the SSI. Within 90 days of determining an SSI, the owner or operator must establish and implement the assessment monitoring program following 40 CFR 257.95, which includes the Appendix IV constituents listed in Requirement D14. The owner or operator must also implement the assessment monitoring program plan after receiving approval from IDEM.

D20. Within 90 days of finding that any of the Appendix IV constituents listed in Requirement D14 have been detected at a statistically significant level exceeding the groundwater protection standards (40 CFR 257.95(h)), or the groundwater protection standard for total boron of 4 mg/L or background, whichever is greater, the owner or operator must comply with one of the following requirements (40 CFR 257.95(g)(3)):

a. Complete the assessment of corrective measures as required by 40 CFR 257.96, and submit the results of the corrective measures assessment to IDEM for approval. As part of the selection of corrective measures, the owner or operator must include an evaluation of potential groundwater flow reversals on the System. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. After receiving IDEM approval, the owner or operator must implement Requirement D21; or

b. Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant level exceeding the groundwater protection standard resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality consistent with 40 CFR 257.95(g)(3)(ii). Within 90 days of detecting a statistically significant level exceeding the groundwater protection standard, the owner or operator must complete and submit the written demonstration to IDEM for approval.

If the demonstration is approved, then the owner or operator may continue with an assessment monitoring program for any unit for which the demonstration was made.

D21. At least 30 days prior to initiating 40 CFR 257.97, the owner or operator must hold a public meeting to discuss the results of the corrective measures assessment with interested and affected parties. As soon as feasible, the owner or operator must select a remedy that, at a minimum, meets the standards listed in 40 CFR 257.97(b). The owner or operator must submit the first semiannual report describing the progress in selecting and designing the remedy (40 CFR 257.97(a)) to IDEM for review and approval. If additional semiannual progress reports are necessary, the owner or operator must submit the reports within six months of submitting the previous semiannual report. The final report for the selected remedy must, at a minimum, meet the standards listed in 40 CFR 257.97(b), utilizing the provisions specified in 40 CFR 257.97(c) and (d), and must be approved by IDEM.

D22. Within 90 days of receiving IDEM approval of the selected remedy, the owner or operator must initiate remedial activities based on the approved remedy and the standards listed in 40 CFR 257.98. The corrective action program is complete when IDEM approves the owner or operator's demonstration that concentrations of Appendix IV constituents listed in Requirement D14 have not exceeded the groundwater protection standard(s) for a period of three consecutive years at all points of the plume beyond the System following 40 CFR 257.98(c).

REPORTING

D23. The owner or operator must submit a groundwater monitoring report that includes the results obtained from the implementation of Requirements D14 or D17 no later than 60 days after each groundwater monitoring event with the following exceptions:

- The owner or operator must submit radium-specific information no later than 90 days after the groundwater monitoring event.
- If the owner or operator implements a verification resampling program, then the owner or operator must submit verification resampling results no later than 30 days after the last verification event. Verification resampling is defined in the March 2009 *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (EPA 530/R-09-007).

The owner or operator must submit the report to the IDEM Solid Waste Permits Section in one unbound paper copy and in one electronic PDF file. The report must include the following:

a. One original unbound laboratory-certified report with analytical results, field parameters (see Requirement D24), field sheets, and chain-of-custody forms. The laboratory-certified report must include the following: detection limit for each chemical constituent, date samples collected, date the laboratory received the samples, date the laboratory analyzed the samples, date the laboratory prepared the report, method of analysis the laboratory used for each constituent, sample identification number for each sample, and results of all sample analyses.

b. All information specified in Requirement D15 and a table summarizing the static water level and groundwater elevation for each well.

c. An evaluation of the groundwater quality, recent notifications of any compliance issues related to a problematic well (see Requirement D8), special field observations and procedures, and deviations from the SAP.

d. One original unbound copy of the statistical evaluation report (see Requirement D18).

The owner or operator may mail the PDF copy and electronic data file specified in Requirement D24 on a CD-ROM or DVD. The owner or operator must clearly label the PDF copy and electronic data file with the facility name and a brief description of the file. Alternatively, the owner or operator may email the PDF copy and electronic data file to the IDEM Solid Waste Permits Section at the address listed in Requirement A3 and carbon copy olqdata@idem.IN.gov. The email must include the facility name and a brief description typed in the email's subject heading.

D24. The owner or operator must submit one electronic data file of the analytical results and field parameters from the System (see Requirement D3) formatted as an ASCII, tab-delimited text file. The electronic data file must contain the facility name, SW Program ID number, and the name of the analytical laboratory. Additionally, the file must include the fields listed below for the analytical results and as applicable, the following field parameters: pH, specific conductance, temperature, turbidity, well depth, depth to water, and static water elevation.

a. SamplingDate: Month, day, and year (mm/dd/yyyy). Value should be formatted as a date if possible.

b. SamplePointName: Names of groundwater monitoring wells, piezometers, leachate wells, surface water collection points, etc.

c. LaboratorySample ID: ID assigned to the sample by the laboratory.

d. SampleType: Regular, duplicate(s), trip blank(s), equipment blank(s), field blank(s), verification re-sample(s), and replicate(s).

e. SpeciesName: Chloride, sodium, ammonia, field pH, etc. The order of constituents is not critical. However, it is best to reflect the order that is on the laboratory-data sheets and keep all field data grouped together. Metals should indicate "dissolved" phase or "total" phase. Associated static water levels do not have their own header, but must be entered as "GW WaterLevel" under the header "SpeciesName." The actual elevations must be entered under the header "Concentration."

f. Concentration (results): The entry must be a number. Please do not enter text, such as "NA," "ND," or "<."

g. ConcentrationUnits: mg/l, µg/l, standard units for pH, degrees Celsius (°C) or degrees Fahrenheit (°F) for temperature, and umhos/cm for specific conductance.

h. Detected: Yes or no.

i. DetectionLimit.

j. AnalyticalMethods.

k. EstimatedValue: Indicate "Yes" if the reported concentration is an estimated value. If a value recorded was not estimated, enter "No." If a concentration is estimated, use the "Comment" field to explain why the concentration was estimated.

l. Comment: Analytical laboratory and/or field personnel comments regarding the reported results.

m. SampleMedium: Groundwater, leachate, surface water, etc.

n. ProgramArea: Solid Waste.

Additional guidance on electronic data file submittals is available on IDEM's website at www.in.gov/idem/landquality/2369.htm or by emailing questions to olqdata@idem.IN.gov.

D25. The owner or operator must retain laboratory quality assurance/quality control (QA/QC) documentation from valid analyses of groundwater samples for at least three years.

Upon IDEM request, the owner or operator must submit the laboratory QA/QC for a specified groundwater monitoring data package, in one paper copy and one electronic copy in PDF format, within 60 days after receiving the request. The "*Solid & Hazardous Waste Programs, Analytical Data Deliverable Requirements: Supplemental Guidance*" provides additional information about laboratory QA/QC. The guidance is available on IDEM's website at www.in.gov/idem/landquality/files/sw_resource_data_deliverable_reqs.pdf.

E. FINANCIAL RESPONSIBILITY FOR CLOSURE AND POST-CLOSURE

E1. The owner or operator must update and maintain a financial assurance mechanism as specified in 329 IAC 10-39 in an amount not less than the estimated costs of closure and post-closure in the approved closure and post-closure plan for the MCGS surface impoundment system. The owner or operator must submit signed originals of the financial assurance mechanism and updates used to meet this requirement.

E2. The owner or operator must annually review and submit an update by June 15 addressing the following items as detailed in 329 IAC 10-39-2(c) and (d), and 329 IAC 10-39-3(c):

a. The owner or operator must adjust the closure and post-closure cost estimates for inflation.

b. The owner or operator must revise the cost estimates to account for changes which increase the cost of closure or post-closure.

c. The owner or operator may revise the cost estimates to account for changes which reduce the cost of closure or post-closure. The permittee must provide documentation supporting reduced cost-estimates, for example, letters and maps documenting areas certified as closed.

d. The owner or operator must submit an existing contour map of the approved solid waste land disposal facility that delineates the boundaries of all areas into which waste has been placed, and the boundaries of areas certified as closed. The map must be certified by a professional engineer or a registered land surveyor.

e. The owner or operator must submit documentation showing that the financial assurance mechanism is current to cover the estimated costs of closure and post-closure. The permittee must submit signed originals of the financial assurance and/or updates used to meet this requirement.

F. COMPLIANCE SCHEDULE REQUIREMENTS

F1. At least 60 days prior to the placement of borrow material, the owner or operator must provide the following documentation to IDEM and receive approval before using soil borrow area(s) for the final cover construction:

a. Plans depicting the location(s) of the borrow area(s) and the locations of the borrow area(s) test pits if applicable.

b. Results of the borrow area test pits and/or the soil specifications for the borrow area(s).

c. A soil balance calculation to support the availability of soils for the final cover.

F2. At least 60 days before beginning excavation of CCR material, the owner or operator must submit a project-specific dust control plan to IDEM for review.

F3. At least 60 days before beginning excavation of CCR material, the owner or operator must submit a revise CQA Plan to IDEM for approval. The revised CQA plan must address the project-specific construction procedures that must include, but are not be limited to, the following:

a. A description of the mixing procedures for ash conditioning, stockpiling, loading and the transportation of CCR material and the excavated material;

b. An updated table for Geotechnical Laboratory Testing Requirements that includes the testing methods and the minimum testing frequency for pre-construction and construction of soil cover material. Testing frequencies specified in 329 IAC 10-17-5 are recommended. If the testing frequency for the soil cover material is different from the recommended frequency, the owner or operator must provide a justification to IDEM for approval.

c. The specifications for the flowable fill to be used in the closure of the Boiler Slag Pond as specified in Requirement B12.b.(1).

F4 The owner or operator must establish a financial assurance mechanism as specified in 329 IAC 10-39 in an amount not less than the estimated costs of closure and post-closure in the approved closure and post-closure plan no later than 45 days after receipt of this IDEM approval letter and submit proof of the establishment of the financial assurance to IDEM no later than 60 days after receipt of this approval.

F5. Within 60 days of receiving this IDEM Approval Letter, the owner or operator must submit a well installation plan for groundwater monitoring wells MW-103A, MW-113, MW-114, MW-115, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119. The plan must include a timeline for well installation.

F6. Within 60 days after completing well installations described under Requirement F8, the owner or operator must submit new and updated geologic cross-sections, which incorporate the new groundwater monitoring well additions.

NOTICE OF DECISION

The Indiana Department of Environmental Management (IDEM) issued a permit decision for the Michigan City Generating Station (MCGS) (SW Program ID 46-010) at 101 Wabash Street, Michigan City, Indiana, LaPorte County. This coal combustion residuals (CCR) surface impoundment closure and post-closure plan for the MCGS CCR Pond System, allows the permittee, Northern Indiana Public Service Company, to close the MCGS CCR Pond System using the closure by removal approach. The final decision is available online via IDEM's Virtual File Cabinet (VFC). Please go to: http://vfc.idem.in.gov/. You can search there for approval documents using a variety of criteria. A copy of the permit decision has also been mailed to the following library:

Michigan City Public Library, 100 East 4th Street, Michigan City, 46360

However, due to the COVID-19 pandemic, the library may be closed or have limited access. If you need assistance accessing the permit, please contact the Solid Waste Permits Section at (317) 234-9536 or toll free within Indiana at (800) 451-6027, or send an e-mail to OLQ@idem.IN.gov with the permit information in the subject line.

APPEAL PROCEDURES

If you wish to challenge this decision, IC 13-15-6-1 and IC 4-21.5-3-7 require that you file a Petition for Administrative Review. If you seek to have the effectiveness of the permit stayed during the Administrative Review, you must also file a Petition for Stay. The Petition(s) must be submitted to the Office of Environmental Adjudication (OEA) at the following address within 15 days of the date of newspaper publication of this Notice:

Office of Environmental Adjudication
Indiana Government Center North, Room N103
100 North Senate Avenue
Indianapolis, IN 46204

The Petition(s) must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision, or otherwise entitled to review by law. Identifying the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, or date of this notice will expedite review of the petition. Additionally, IC 13-15-6-2 and 315 IAC 1-3-2 require that your Petition include:

1. the name, address, and telephone number of the person making the request;
2. the interest of the person making the request;
3. identification of any persons represented by the person making the request;
4. the reasons, with particularity, for the request;
5. the issues, with particularity, for the request;
6. identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type granted or denied by the Commissioner's action; and
7. a copy of the pertinent portions of the permit, decision, or other order for which you seek review, at a minimum, the portion of the Commissioner's action that identifies the person to whom the action is directed and the identification number of the action.

Pursuant to IC 4-21.5-3-1(f), any document serving as a petition for review or review and stay must be filed with the OEA. Filing of such a document is complete on the earliest of the following dates:

1. the date on which the petition is delivered to the OEA;
2. the date of the postmark on the envelope containing the petition, if the petition is mailed to the OEA by United States mail; or
3. the date on which the petition is deposited with a private carrier, as shown by a receipt issued by the carrier, if the petition is sent to the OEA by private carrier.

In order to assist permit staff in tracking any appeals of the decision, please provide a copy of your petition to Alysa Raleigh, IDEM, Solid Waste Permits, IGCN 1154, 100 North Senate Ave., Indianapolis, IN 46204-2251.

The OEA will provide you with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders regarding this decision if you submit a written request to the OEA. If you do not provide a written request to the OEA, you will no longer be notified of any proceedings pertaining to this decision.

More information on the review process is available at the website for the Office of Environmental Adjudication at http://www.in.gov/oea.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

What if you are not satisfied with this decision and you want to file an appeal?

Who may file an appeal?
The decision described in the accompanying Notice of Decision may be administratively appealed. Filing an appeal is formally known as filing a "Petition for Administrative Review" to request an "administrative hearing".

If you object to this decision issued by the Indiana Department of Environmental Management (IDEM) and are: 1) the person to whom the decision was directed, 2) a party specified by law as being eligible to appeal, or 3) aggrieved or adversely affected by the decision, you are entitled to file an appeal. (An aggrieved and adversely affected person is one who would be considered by the court to be negatively impacted by the decision. If you file an appeal because you feel that you are aggrieved, it will be up to you to demonstrate in your appeal how you are directly impacted in a negative way by the decision).

The Indiana Office of Environmental Adjudication (OEA) was established by state law – see Indiana Code (IC) 4-21.5-7 – and is a separate state agency independent of IDEM. The jurisdiction of the OEA is limited to the review of environmental pollution concerns or any alleged technical or legal deficiencies associated with the IDEM decision making process. Once your request has been received by OEA, your appeal may be considered by an Environmental Law Judge.

What is required of persons filing an appeal?
Filing an appeal is a legal proceeding, so it is suggested that you consult with an attorney. Your request for an appeal must include your name and address and identify your interest in the decision (or, if you are representing someone else, his or her name and address and their interest in the decision). In addition, please include a photocopy of the accompanying Notice of Decision or list the permit number and name of the applicant, or responsible party, in your letter.

Before a hearing is granted, you must identify the reason for the appeal request and the issues proposed for consideration at the hearing. You also must identify the permit terms and conditions that, in your judgment, would appropriately satisfy the requirements of law with respect to the IDEM decision being appealed. That is, you must suggest an alternative to the language in the permit (or other order, or decision) being appealed, and your suggested changes must be consistent with all applicable laws (See Indiana Code 13-15-6-2) and rules (See Title 315 of the Indiana Administrative Code, or 315 IAC).

The effective date of this agency action is stated on the accompanying Notice of Decision (or other IDEM decision notice). If you file a "Petition for Administrative Review" (appeal), you may wish to specifically request that the action be "stayed" (temporarily halted) because most appeals do not allow for an automatic "stay". If, after an evidentiary hearing, a "stay" is granted, the IDEM-approved action may be halted altogether, or only allowed to continue in part, until a final decision has been made regarding the appeal. However, if the action is not "stayed" the IDEM-approved activity will be allowed to continue during the appeal process.

Where can you file an appeal?
If you wish to file an appeal, you must do so in writing. There are no standard forms to fill out and submit, so you must state your case in a letter (called a petition for administrative review) to the Indiana Office of Environmental Adjudication (OEA). Do not send the original copy of your appeal request to IDEM. Instead, send or deliver your letter to:

The Indiana Office of Environmental Adjudication
100 North Senate Avenue, Room N103
Indianapolis, IN 46204

If you file an appeal, also please send a copy of your appeal letter to the IDEM contact person identified in the Notice of Decision, and to the applicant (person receiving an IDEM permit, or other approval).

Your appeal (petition for administrative review) must be received by the Office of Environmental Adjudication in a timely manner. The due date for filing an appeal may be given, or the method for calculating it explained, on the accompanying Notice of Decision (NOD). Generally appeals must be filed within 18 days of the mailing date of the NOD. To ensure that you meet this filing requirement, your appeal request must be:

1) Delivered in person to OEA, by the close-of-business on the eighteenth day (if the 18th day falls on a day when the Office of Environmental Adjudication (OEA) is closed for the weekend or for a state holiday, then your petition will be accepted on the next business day on which OEA is open), or
2) Given to a private carrier who will deliver it to the OEA on your behalf, (and from whom you must obtain a receipt dated on or before the 18th day), or
3) For those appeal requests sent by U.S. Mail, your letter must be postmarked by no later than midnight of the 18th day, or
4) Faxed to the OEA at (317) 233-9372 before the close-of-business on the 18th day, provided that the original signed "Petition for Administrative Review" is also sent, or delivered, to the OEA in a timely manner.

What are the costs associated with filing an appeal?
The OEA does not charge a fee for filing documents for an administrative review or for the use of its hearing facilities. However, OEA does charge a fifteen cent ($.15) per page fee for copies of any documents you may request. Another cost that could be associated with Your appeal would be for attorney's fees. Although you have the option to act as your own

Attorney, the administrative review and associated hearing are complex legal proceedings; therefore, you should consider whether your interests would be better represented by an experienced attorney.

What can you expect from the Office of Environmental Adjudication (OEA) after you file for an appeal?

The OEA will provide you with notice of any prehearing conference, preliminary hearings, hearings, "stays," or orders disposing of the review of this decision. In addition, you may contact the OEA by phone at (317) 233-0850 with any scheduling questions. However, technical questions should be directed to the IDEM contact person listed on the Notice of Decision.

Do not expect to discuss details of your case with OEA other than in a formal setting such as a prehearing conference, a formal hearing, or a settlement conference. The OEA is not allowed to discuss a case without all side being present. All parties to the proceeding are expected to appear at the initial prehearing conference.

Indiana Department of Environmental Management
Michigan City Generating Station CCR Closure Plan
Comment Period April 22, 2020 through June 22, 2020
Response to Public Comments
Solid Waste ID 46-010

Document	Date	VFC #
Closure Plan	12-20-2018	82976831
Geology Teleconference	01-25-2019	82740322
Supplemental Addendum	02-28-2019	82709758
Request for Additional Information	04-09-2019	82746466
Response to Request for Additional Information	06-05-2019	82791433
Communication Plan	11-19-2019	82866156
Public Comments	12-09-2019	82887314
Additional Information	02-13-2020	82914980
Geology Additional Information	04-29-2020	82964997
Public Comments	06-22-2020	82993769
NIPSCO Press Release	06-25-2020	82997509
Completeness Letter	09-25-2020	83048724
Library Receipt	10-01-2020	83056923
Public Comments	11-06-2020	83109598
Additional Information	12-07-2020	83081101

Public Comments and IDEM Responses

Comment 1: For constituent to be removed from the unit, as required, excavation of the unit will have to continue until it reaches soil or rock untainted by coal ash. Given the 14 feet of mixed CCR fill or more under the Michigan City ash ponds, the excavation will have to extend to the bottom of the fill in order to reach untainted soil or rock. The Closure Application does not address how excavation is going to proceed once it gets into the CCR fill below the ash ponds.

Response: We concur that the fill materials are present underneath the surface impoundments near Primary Settling Pond No.2 and the Boiler Slag Pond. These fill materials are the historical fill resulting from the process of the creation of "made land". A significant portion of the facility was constructed on this "made land". As stated in the closure plan, the fill material is primarily natural sand mixed with minor percentages of fly ash and boiler slag. IDEM's regulatory authority under 329 IAC 10-9-1(c) only extends to waste from CCR surface impoundments. The closure plan proposes to excavate CCR material to the limits of impoundment, the blast furnace slag on the bottom of the ponds, and an additional foot of material beneath the slag layer in an effort to remove all the regulated CCR materials. The fill material under the ash ponds is a historical fill. The fill is not part of the CCR ash pond closure. The removal of the historical fill is outside of the scope of the CCR Rule.

Comment 2: **The Closure Application states that the surface impoundments will be closed by removal of the CCR, the impoundment liners (which are blast furnace slag), and an additional foot of underlying soil. Following excavation of those materials, the plan says that removal of CCR will be confirmed by visual inspection. However, since CCR fill extends to 14 feet or more beneath the impoundments, the excavation of one additional foot below the impoundment liner will be excavation of fill material containing CCR. Visual observation after removal of that additional foot will reveal more CCR and will not be able to confirm "removal of physical CCR materials". The visual observations will be that CCR is still present. The Closure Plan does not address this problem.**

Response: See response to Comment 1.

For the verification of regulated CCR material excavation, the facility is required to provide surveys and photographs for the following surfaces, as described in the document dated February 13, 2020 (IDEM Virtual File Cabinet (VFC) document #82914980, Appendix A, pp. 73-74 of 100):

- The bottom of CCR material excavation (i.e., CCR material that currently remains in the impoundment);
- The bottom of one-foot of blast furnace slag layer excavation; and
- The bottom of one-foot of additional material excavation.

Comment 3: **Another complication the CCR fill brings to the impoundment closure at Michigan City Generating Station MCGS is the potential for continued contamination of the groundwater after closure. The CCR present in the fill at MCGS is as likely to leach contaminants into the groundwater as the CCR in the impoundments. Given that the MCGS site is 123 acres and the cross sections show fill occupying more than half the site to a depth of at least 10 feet, then a very conservative estimate is that there is at least 950,000 cubic yards of fill. If CCR makes up 20% or more of the fill (190,000 cubic yards), then the amount of CCR in the fill exceeds the amount in the impoundments. Therefore, the CCR fill is likely to have a significant contribution to groundwater contamination at MCGS.**

Response: If CCR contributed to groundwater contamination, then the contribution will be detected, assessed, and corrective measures implemented through the provisions in the CCR rule and the approved closure plan. It should also be noted that NIPSCO is proposing to remove the source area (i.e., CCR waste in the impoundments), which will assist in addressing any groundwater impacts from the impoundments.

Comment 4: **The Closure Application vaguely defers action on groundwater contamination by CCR fill until the site reaches the corrective action stage of the CCR rule. At a minimum, the closure plans should include an investigation of the extent of groundwater contamination by the fill and the risk that the contamination will continue after excavation of the ash ponds.**

Response: If CCR contributed to groundwater contamination, then the contribution will be detected, assessed, and corrective measures implemented through the provisions in the CCR rule and the approved closure plan.

Comment 5: Leaving coal ash in the floodplain creates a risk of an ash spill into Lake Michigan and Trail Creek. During a flood, the sheet pile and rip rap that currently protect the lake and creek could fail causing a coal ash spill.

Response: Even though small portions of the MCGS Surface Impoundment System are located within the fringe of the flooding limits, according to the closure plan, the regulated CCR materials currently remaining in the ponds will be removed. After the removal of the regulated CCR material currently remaining in the ponds, the area will be backfilled with clean (uncontaminated) soil and covered with an additional 18 inches of compacted soil with a permeability no greater than 1×10^{-5} cm/sec and six inches of topsoil in compliance with 40 CFR 257, Subpart D (CCR rule). In addition, the facility is required to maintain all components of the final cover system during the 30-year post-closure period, and subsequent to the post-closure certification at the end of the post-closure period.

In addition, as noted in the comment, the MCGS and the CCR ponds are protected by the sheet pile barrier along the waterside property boundaries to the east (Trail Creek) and north (Lake Michigan). The facility is responsible for maintaining the sheet pile barrier in good condition after final closure is completed and during the post-closure care period, as specified in Requirement C1.d. The facility is responsible for correcting any damage to the cover system and the sheet pile barrier. With the sheet pile, upon removal of all regulated CCR materials currently remaining in the CCR ponds and the area covered with soil cover, any spill of coal ash into the waters will be unlikely.

Comment 6: If the coal ash fill is left in place at MCGS, there will need to be future maintenance to deal with water damage to the bulkheads and shoreline protection at MCGS in order to try to prevent a coal ash spill. The sheet pile in the bulkhead and shoreline protection will eventually need replacement given the ongoing corrosion documented in the 2018 inspection. Maintenance will still be needed beyond the 30-year post-closure period.

Response: See response to Comment 5.

Comment 7: In the Closure Application, NIPSCO listed wells GAMW-05, GAMW-12, and GAMW-18 as "background". This is not in keeping with the requirements under the CCR rule. The rule requires that background wells accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit. The Indiana requirements for impoundment closure also emphasize the need to measure background in groundwater that is not impacted by the waste material. Concentrations of constituents in the designated background wells at MCGS (GAMW-05, GAMW-12, and GAMW-18) confirm that they are impacted by CCR.

Response: In a conference call with IDEM OLQ Geology Section Staff and NIPSCO personnel on January 24, 2019 and meeting summary email on January 25, 2019 (VFC #82740322), we asked for background monitoring locations that are

capable of providing groundwater quality samples that represent historical conditions unaffected by CCR unit or facility activities that may contribute constituents of concern against which background comparisons occur. NIPSCO responded with a Supplemental Addendum to the Closure Plan on February 28, 2019 (VFC #82709758), proposing four new background monitoring wells (existing well MW-110 and three yet to be installed wells MW-113, MW-114, and MW-115). We determined that the proposed background wells met the requirements of 329 IAC 10-9-1(c), which incorporates portions of 40 CFR 257, Subpart D, in a Geology letter dated September 9, 2019 (VFC #82852674). We added applicable requirements to the approval letter, as described in Requirement D17 of the closure plan approval.

Comment 8: The Groundwater Monitoring and Corrective Action Reports for 2017 and 2018 list multiple results removed from the data set for wells GAMW-05, GAMW-12, and GAMW-18 for the following reason: inconsistent with concentrations detected in other background monitoring wells. This is an unjustified manipulation of the data. The data removed for this reason should be replaced and revised groundwater reports issued.

Response: See response to Comment 7.

Wells GAMW-05, GAMW-12, and GAMW-18 are no longer designated background wells.

Comment 9: Installing the new background wells after completion of closure is inadequate. We agree with IDEM that the original background wells were inappropriate, but NIPSCO's proposed timing for new wells violates both state and federal law. New background wells are needed in order to comply with the requirements of the federal CCR Rule, as well as Indiana regulations.

Response: We agree. IDEM has included a compliance schedule item stating that within 60 days of the Closure Plan approval, NIPSCO must submit a well installation plan that includes a timeline to install background wells MW-113, MW-114, and MW-115 and downgradient wells MW-103A, MW-105A, MW-116A, MW-116B, MW-117A, MW-117B, MW-118A, MW-118B, and MW-119.

Comment 10: As with the original background wells, the proposed locations for the new background wells are also problematic because most are in areas of heavy CCR fill. Groundwater at these locations is likely affected by CCR, so they will not fulfill IDEM's requirement that background wells be unaffected by a CCR unit or facility activities.

Response: We determined that the new background well locations met the requirements of 329 IAC 10-9-1(c) , which incorporates portions of 40 CFR 257, Subpart D, in a Geology memo dated September 13, 2019 (VFC #82852674). The boring log for MW-110 (see Closure Application dated December 20, 2018, VFC #82976831), depicts fine sand, gravel, fine coal fragments, fine CCR, and fill in the upper 10 feet of the boring. The screened interval (20-30 feet) consists of fine sand. Wells MW-113 through MW-115 will be located upgradient and on the perimeter of the facility (see Supplemental Addendum dated February 28, 2019, VFC

#82709758). Background groundwater monitoring well(s) must provide groundwater samples that represent historical conditions unaffected by a CCR unit or facility activities that may contribute Appendix III and Appendix IV constituents listed in Requirement D14 against which background comparisons occur.

Also see response to Comment 7.

Comment 11: There are monitoring wells at Michigan City that appear to be more appropriate for use as background. The RCRA Facility Investigation Report filed in December 2018 shows wells MW-108 and MW-109, which are located away from CCR disposal units, and the Closure Application shows they are in areas of only minimal CCR fill. We suggest that MW-108, MW-109, and MW-36 be considered for background wells.

Response: See response to Comment 10.

Comment 12: Once appropriate background wells, unaffected by coal ash, have been established at MCGS, the results from those wells should be used to calculate new Groundwater Protection Standards (GWPS) and the Statistically Significant Levels (SSLs) in accordance with 40 C.F.R.§§ 257.95(h) and 257.93(h). Using GWPS that are based on groundwater affected by coal ash will reduce detection of groundwater contamination. Only by using new GWPS based on appropriate background groundwater will the actual groundwater contamination be detected.

Response: We agree. Once the new background wells are installed, the facility will have appropriate locations for performing statistical comparisons and to calculate representative GWPS for use if/when they trigger into assessment monitoring.

Comment 13: Since one SSL has been reported and others are likely when appropriate background wells are used, plans to delineate the extent of the groundwater plume at MCGS should be forthcoming.

Response: We agree. Once IDEM provides the approval letter with groundwater monitoring requirements, NIPSCO will begin detection monitoring which can trigger into assessment monitoring. If the facility triggers into assessment monitoring, then they will need to calculate GWPS. If a GWPS is exceeded, then the facility will need to determine the nature and extent of the exceedance(s) followed by implementation of corrective measures under a corrective action program.

Comment 14: There is evidence that the contaminated groundwater at the Michigan City Generating Station is leaking into Lake Michigan and Trail Creek. The evidence includes: (a) the groundwater flow direction; (b) the groundwater flow velocity; (c) the history of the sheet pile construction; and (d) the most recent sheet pile inspection. The Closure Application currently lays out no plans for stopping the leak. Coal ash closure at the Michigan City Generating Station should fully assess and then eliminate leaks of contaminated groundwater into Lake Michigan and Trail Creek, and it should eliminate the potential of any future leakage.

Response: We agree that CCR contamination may potentially be migrating toward Lake Michigan and Trail Creek. NIPSCO will need to address the nature and extent of any exceedance(s) above the GWPS following 40 CFR 257, Subpart D, and the approval letter.

If the facility triggers into assessment monitoring and exceeds a GWPS, then the facility will need to determine the nature and extent of any exceedance(s) followed by implementation of corrective measures.

Comment 15: Not only is there documented leakage of contaminated groundwater into Trail Creek, but there is also evidence that the coal ash fill itself is being released into the creek. The Waterfront Facilities Investigations and Assessments makes it clear that the fill behind the sheet-pile bulkhead is being lost into the creek. Since Michigan City Generating Station has been releasing coal ash fill and contaminated groundwater into Trail Creek, likely for several decades, we are requesting an assessment of off-site release of waste materials. The water and sediments of Trail Creek should be tested and the release of ash and contaminated groundwater thoroughly investigated. Since people in the area consume fish from Trail Creek, we are also requesting an evaluation of fish tissue in Trail Creek, both existing data from Indiana fish tissue monitoring and testing for other bio-accumulative contaminants from coal ash in fish tissue.

Response: We agree that impacted groundwater may be migrating toward Lake Michigan and Trail Creek. The facility is required to address the nature and extent of any impacts above the GWPS following 40 CFR 257, Subpart D, and the approval letter.

If the facility triggers into assessment monitoring and exceeds a GWPS, then the facility will need to determine the nature and extent of the release followed by implementation of corrective measures.

If the water and sediments of Trail Creek are contaminated with CCR, then the facility will take into account ecological impacts as part of their corrective measures assessment.

Additionally, the facility must comply with NPDES permit IN0000116. Any discharge of contaminants, ash, sediments or coal into waters of the US is regulated under the Water Pollution Control Act and 327 IAC 5.

The Indiana State Department of Health (ISDH) maintains a database for fish consumption advisories with data provided by IDEM and the Indiana Department of Natural Resources (DNR). It can be accessed at https://secure.in.gov/isdh/23650.htm.

Comment 16: Over the long history of burning coal at the Michigan City Generating Station, there have been releases of coal ash that have settled on the surrounding community. Therefore, we are requesting an investigation of whether soil in Michigan City has been contaminated by coal ash, particularly in the nearby prison and parks. We also request that the investigation assess whether ash was used as fill in Michigan City. Such an

investigation would be in keeping with Indiana coal ash regulation 327 IAC 10-9-1.

Response: The scope of this closure plan is specific to the CCR rule and the closure of the following surface impoundments: Primary Settling Pond #1, Secondary Settling Pond #1, Settling Pond #2, Secondary Settling Pond #2, and the Boiler Slag Pond.

Comment 17: The Conceptual Closure Plan for the Boiler Slag Pond posted on NIPSCO's CCR website indicates that the berms surrounding the pond will be pushed into the ponds after the coal ash is excavated. The more complete Closure Application submitted to IDEM does not include grading the berms inward. The berms should neither be graded into the excavated ponds nor left standing since they contain CCR. Since they contain CCR, the berms should be removed from the site and taken to the landfill with the rest of the coal ash.

Response: The ponds are incised ponds (below grade) and berms referenced here are the side slopes below grade ponds. As stated in the December 20, 2018 closure plan (VFC #82976831, p. 26 of 951), the berm between the Secondary Settling Pond No. 1 and the Primary Settling Pond No. 2, and the berm between the Secondary Settling Pond No. 2 and the Boiler Slag Pond, will remain. As stated in response to Comment 1, a significant portion of the facility was constructed on the "made land" that is primarily natural sand mixed with minor percentages of fly ash and boiler slag. The field borehole logs show these fill materials are consistently present in the lands outside of the limits of impoundments including the lands that separate the ash ponds. The proposed closure plan will remove all the regulated CCR materials currently remaining in the ponds. IDEM's regulatory authority under 329 IAC 10-9-1(c) only extends to waste from inside CCR surface impoundments. The fill is not part of the CCR ash pond closure. The removal of the historical fill is outside of this closure approval.

Comment 18: In its request for additional information (RAI) in April 2019, IDEM noted the absence of the dust control plan and required that it be submitted before excavation begins. NIPSCO's response to the RAI reiterated that they would place this responsibility on the contractor and said they would share the control plan with IDEM. We appreciate NIPSCO's stated commitment to dust control during closure. We hope to see a plan detailing specific dust control measures soon. These essential safety measures must not be left solely in the hands of a contractor, but must be scrutinized by IDEM and the public to guarantee their adequacy to protect public health.

Response: We concur with the comment. The site-specific dust control plan is part of the compliance schedule Requirement F2 of the closure plan approval. IDEM will post the plan to the Virtual File Cabinet (VFC) once it is received.

Comment 19: We ask that IDEM and NIPSCO postpone the excavation and transportation of NIPSCO's coal ash from the Michigan City Generating Station until after the pandemic has resolved. The delay should remain effective until the U.S. Centers for Disease Control and Prevention (CDC) has determined that the dangers posed by the coronavirus to human and animal populations are no

longer present for the State of Indiana or the Indiana State Department of Health has reported no new cases of COVID-19 in both La Porte and Jasper Counties for at least 14 consecutive days.

Response: NIPSCO intends to delay closure activities until Spring 2021, as stated in a press release dated June 25, 2020 (VFC #82997509).

Comment 20: I write to you today in order to request an extension for one month on the current public comment period concerning the NIPSCO Michigan City permit application due to the Covid-19 outbreak.

Response: NIPSCO held their public meeting to discuss the Closure Plan on April 22, 2020. The original deadline for submitting public comments was May 22, 2020. However, due to the COVID-19 pandemic, a one-month extension was granted. The final deadline to submit a public comment was June 22, 2020. Additionally, a second public meeting was held by NIPSCO on October 6, 2020 with an additional 30 day comment period.

Comment 21: As NIPSCO prepares to close its Michigan City Generating Station, a coalition of residents and environmental groups are calling for the establishment of an independent Community Review Committee to assess the cleanup and closure process, and to better connect members of the community to the planning and implementation of the closure.

Response: The public involvement provisions in the CCR rule require publicly accessible internet posting. IDEM has maintained a policy on public notice, public meeting, and public comment periods and notice of decision for the closure of coal ash ponds. Community monitoring is beyond the scope of this approval. The approval requires notification of beginning closure activities and closure certification reports that would be available in IDEM's VFC. This information is also available on NIPSCO's public website https://www.nipsco.com/about-us/ccr-rule-compliance-data-information.

Comment 22: The draft "Michigan City Generating Station Contractor Fugitive Dust Management Outline" lacks any requirement for continuous air monitoring. The absence of continuous air monitoring in both the closure plan and the contractor outline is a fatal flaw that must be corrected. The plan should include the following elements: scope, air monitoring strategy, pollutants, monitoring locations, sampling methods and instruments, sampling schedule, operational contingencies, placarding, worker training and protection, action levels, transparency, quality assurance, notifications, and reporting obligations as well as defining the form of standard reports, etc.

Response: See response to Comment 18. The CCR Rule does not require continuous air monitoring.

Comment 23: According to NIPSCO's "Sampling and Analysis Plan, Ash and Amendment Assessment, Michigan Generating Station" dated January 2020, NIPSCO intends to characterize stockpile materials and fly ash for the purpose of

determining their "acceptability as waste streams to be disposed in the RMSGS landfill" by "evaluating the leaching potential of the various materials." There are three significant deficiencies in this plan that must be corrected. First, the plan contains no assessment of the chemical composition of the CCR. An analysis of the levels of toxic metals in the coal ash is essential, because there is potential for exposure to the ash at the removal site, along the transport route and at the final disposal site. Because the hazardous components of CCR pose significant health risks, it is necessary that NIPSCO determine the levels of such chemicals in the coal ash. Second, there are significant deficiencies in the leaching tests that NIPSCO plans to conduct on the coal ash. Since 2009, the U.S. EPA has concluded that the leach test that NIPSCO proposes to use, the Toxicity Characteristic Leaching Procedure (TCLP), does not provide an accurate prediction of the level of chemicals that will leach from disposed CCR and "may underestimate the actual leach rates of toxic constituents from CCR under different field conditions." We request that NIPSCO update its sampling method to reflect the best available science and EPA recommendations. Third, NIPSCO's Sampling and Analysis plan does not require leach testing for several of the most common coal ash contaminants. NIPSCO should conduct LEAF tests for these CCR contaminants, as well as the other parameters in Appendix IV of the CCR rule.

Response: The sampling and analysis plan for the stockpile materials and fly ash were for disposal into a permitted Type I Restricted Waste Site (RWS) landfill. Per 329 IAC 10-9-4, CCR (e.g. fly ash) does not need to be tested for disposal into a Type I RWS. Since the stockpile materials are a mixed waste, we requested that those be sampled for TCLP metals consistent with other waste going into a Type I RWS. An approval for disposing of the stockpile material at Schahfer Generating Station (SW Program ID 37-01), was issued May 14, 2020 (VFC #83041068). More extensive testing including parameters in Appendix IV of the CCR rule would be needed for materials not going to a RWS Type I landfill. The NIPSCO Type I RWS has groundwater monitoring sampled for a larger set of constituents per section E of their permit (VFC #82975469) and a soil and geomembrane bottom liner with a leachate collection system.

Comment 24: Given the hazards associated with excavation and transportation of coal ash, we request that IDEM plan for periodic inspections of both Michigan City Generating Station and the Schahfer landfill in Jasper County during the closure process.

Response: The facility is responsible for complying with fugitive dust control requirements of the closure plan approval and 40 CFR 257.80. IDEM conducts periodic inspections of the facility and will monitor for fugitive dust during those visits.

Comment 25: Multiple decades worth of coal ash are stored on the MCGS site as fill. The coal ash fill will continue to contaminate the groundwater after removal of the coal ash ponds, particularly since a significant portion of it is below the water table. A permanent solution is needed for containment of the coal ash fill at MCGS.

Response: See responses to Comments 1 and 3.

Comment 26: I would like the NIPSCO coal ash pond closure to take into consideration public input, especially from the communities that live closest to it. I believe any resident would like to have a transparent and collaborative process that both ensures community members and NIPSCO can properly close the coal ash pond, remediate and monitor the area, and responsibly treat and isolate any pollutants that have left the coal ash pond. Let us not forget that community members are NIPSCO customers, and community members who have had to live with the coal ash pond have had to deal with the disproportionate negative effects that other communities do not. Please ensure that the voice of the community is heard and that there is an equitable process that allows community members and NIPSCO to close the coal ash pond in congruence. There should be an extensive public comment period with measures taken to ensure public participation is representative of the community near the coal ash pond. Public comment period should also take safeguards to stem the spread of COVID-19. All decisions that are being made should include the voice of community members and not solely NIPSCO employees, supporters, and/or benefactors.

Response: See response to Comments 20 and 21.

Comment 27: Is there a difference between Coal Ash and Fly Ash?

Response: Fly ash is a type of coal ash. Fly ash is a fine, powdery material made from the burning of ground coal in a boiler. Coal ash, or coal combustion residuals (CCR), also includes bottom ash, boiler slag and flue gas desulfurization material. Together, these residuals from the burning of coal are referred to as coal ash.

Comment 28: Is NIPSCO absolved from any future responsibility / litigation within the borders of the Town of Pines with regards to Fly Ash?

Response: The Town of Pines is located approximately 4 miles west of Michigan City and was not the subject of the NIPSCO closure plan. Town of Pines is an EPA Superfund Site. Additional information on Town of Pines can be found at https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0508071. You may also contact IDEM's Office of Land Quality – Remediation Branch, Doug Petroff at 317-234-7179 or DPetroff@idem.in.gov for additional information on Town of Pines. IDEM, Land Quality Permits Branch cannot speak to any litigation or future responsibility as it pertains to the Town of Pines.

Comment 29: Are all 5 ponds under review within the footprint of the lakefront generating station property?

Response: The ponds that are being addressed in the CCR closure plan are Primary Settling Pond No. 1, Secondary Settling Pond No. 1, Primary Settling Pond No. 2, Secondary Settling Pond No.2, and the Boiler Slag Pond. These ponds are located at the Michigan City Generating Station and are being closed by removal.

Comment 30: In the Town of Pines many of our roads are paved over a base of NIPSCO Fly Ash. The town has numerous ponds and wetland areas. Assuming the rain runoff from the roads goes into these wetland areas, is this standing water being tested periodically? If so by whom? Is it reasonable that the residents within a distance of say 150 yards of problem areas be notified of any high toxins /carcinogenic levels near their homes? Can a Pines resident ask for testing at NIPSCO's expense?

Response: See response to Comment 28.

Comment 31: Is there any data on increased cancer rates either near the NIPSCO gen station or The Town of Pines?

Response: See response to Comment 28.

Comment 32: Are there mandatory real estate laws on the books that would require a future home sale in the Town of Pines be labeled a potential contaminated property?

Response: See response to Comment 28.

Comment 33: When NIPSCO demolishes the gen station will the ground be "virgin" soil again? Will the plot be sold by NIPSCO to developers or is there a deal in place that the city of Michigan City will take it over?

Response: The MCGS CCR closure plan does not involve NIPSCO's plans for the property where the Station is currently located after the closure of the generating station.

Comment 34: Is NIPSCO paying for all the plot remediation or is the government helping out?

Response: IDEM is not providing funding for the pond closure activities at MCGS.

Comment 35: What is the service life span of a steel brake-wall piling?

Response: Service life span for steel brake-wall piling can be 50 years or more, depending on the corrosion of steel and other factors such as the type of water the steel is in contact with, considering such things as high salt content, pH or chlorides. Contemporary pilings likely have anti-corrosion properties, and can last longer, but 40 to 50 years is a safe estimate.

Comment 36: We were pleased to hear about the beginning phase of the closure of the Michigan City NIPSCO facility. We are hoping you will create opportunities for community monitoring and communication as safety of the surrounding population and the fragile dune environment is critical.

Response: See response to Comment 21.

Comment 37: I have seen some comments to the effect that the work on removing the material from the ash pits should be delayed until after the current pandemic has ended. I understand why some might suggest this, but given

that we really have no idea when this pandemic will end, I would not recommend such a delay. The concerns expressed by these groups seem to be that particulate matter will be put in the atmosphere that could exacerbate illnesses such as Covid-19. This suggestion seems to me correct, but the solution is not to wait until the pandemic passes and then be satisfied that an increase in particulates won't be unsafe, but rather to minimize the local increase in particulates as much as possible from the beginning. Even after the pandemic passes, there may be people in the area with other diseases such as emphysema, asthma, and other respiratory ailments who will even then be at risk from increases in particulates in the local area. Creating a local advisory committee so that problems that may arise during the process of removing the coal ash can easily be brought forward does seem to me a worthwhile strategy. Monitoring of the pollution in local air and water should be an essential component of the plan as well.

Response: Given many unknown factors regarding the Covid-19 pandemic, the project may be delayed. However, if circumstances allow, the closure activities will proceed as scheduled. The closure plan proposes a project-specific Dust Control Plan that will address dust and particulate matter management and monitoring during closure activities.

Also see response to Comments 19 and 21.

Comment 38: This coal ash is concerning myself and individuals that live around the Schafer Generating Plant in Wheatfield. That's approximately 60 miles away from Michigan City. Really! We need to stop this from happening. This coal ash is toxic and causes a lot of health issues, etc. Our lives matter here around the Wheatfield area. We are no exception to allowing this to come to our area. We are human, too. We have the Kankakee River that the engineering and state are trying to restore. How can toxic coal ash benefit us or the Kankakee River? It will only contaminate us. This is an unethical way of doing business jeopardizing our ground and lives here in the Wheatfield area.

Response: The closure plan proposes to dispose the excavated CCR material in the permitted Type I RWS landfill at RM Schahfer Generating Station (RMSGS) (SW Program ID 37-01), also owned and operated by NIPSCO. This landfill is constructed and operated in accordance with 329 IAC 10, which is Indiana's solid waste land disposal rule, and includes bottom liner, leachate collection system, and groundwater monitoring. This facility is permitted to accept such waste.

Comment 39: Transport the coal ash in appropriately contained trucks and follow procedures to minimize dust along the transport route and at the landfill.

Response: Regarding the ash transportation, the closure plan proposes to place the excavated material in roll-off boxes or end dump trucks equipped with bed liners, leak-proof beds, sealed and locked tailgates, dog locks, etc. and capable of being covered for transportation to RMSGS landfill for disposal. Please see the Construction Assurance Plan submitted with the document dated February 13, 2020 (VFC #82914980, pp. 25-74 of 100).

All loads on public roads are required to comply with local ordinances and Indiana Department of Transportation (INDOT) standards.

Comment 40: Monitor the waters of Trail Creek and Lake Michigan to ensure contaminants do not migrate there.

Response: Construction of the cover system for the ash ponds should eliminate potential for surface migration of contaminants from these ponds. Upon closure of these ash ponds, the facility is required to maintain that cover and perform groundwater monitoring for at least 30 years.

Comment 41: Publicize a complaint line on an easily accessible public internet site.

Response: The federal CCR regulation requires the facility to log any complaints received. The information can be found in NIPSCO's website at https://www.nipsco.com/about-us/ccr-rule-compliance-data-information.

The public can also report any concerns to IDEM's Complaint Coordinator. More information can be found here: https://www.in.gov/idem/5274.htm

Comment 42: We who live within a three-mile radius of the site have special concern for the health and safety of the workers, many of whom will be neighbors, relatives, and friends. We will need public review of all NIPSCO's "Request for Quotes" (RFQs) related to this project. RFQs should meet at least these few criteria to provide a safe working environment. The project must install one or more "change trailers," or equivalent facilities. Such facilities provide a gateway for workers arriving to and departing from the work site. On arrival, workers put on proper PPE (e.g., boots, TyVek suits, respirators); on departure, they return the gear. This measure will reduce incidental transmission of toxic waste into our community and into our homes. The loads of coal ash must be sprayed with water just after loading, and within a short distance, before securing the tarps. Trucks that leave the loading site must exit through one or more wash stations. The truck tires and undercarriages must be washed before leaving the site. Wastewater must be captured and treated as toxic.

This comment elaborates on one I submitted earlier this afternoon. Below is a quick compilation of some of the health impacts on workers and communities from improper coal ash cleanup. These impacts stem directly from a debacle of conflicts of interest, failure of oversight and lack of due diligence. In light of the information below, it occurs to me that our community could be better served if an independent agency conducted the on-site monitoring of toxic waste management. Of course, NIPSCO would foot the bill, but the agency might be hired by Michigan City, and operate under City oversight. I checked more carefully and found that I live about 1.5 miles from the cleanup site. Some friends and neighbors will be eager for jobs in this project. I urge IDEM to protect my community from the harms mentioned below.

Response: Worker safety is governed by Occupational Safety and Health Administration (OSHA) regulations. NIPSCO must comply with all local, state and federal requirements in addition to IDEM regulations and closure approval requirements.

Comment 43: The project should provide for regular testing of the Kankakee River near the coal ash dump site. Tests should include water and fish, upstream and downstream from the site.

Response: Groundwater monitoring is addressed under the RMSGS Type I RWS landfill permit. Currently, groundwater monitoring results do not indicate an impact to the Kankakee River.

The Indiana State Department of Health (ISDH) maintains a database for fish consumption advisories with data provided by IDEM and the Indiana Department of Natural Resources (DNR). It can be accessed at https://secure.in.gov/isdh/23650.htm.

Comment 44: Why is it unsafe to leave the coal ash in the Michigan City plant? Why would it then be safe to dump the coal ash into the Wheatfield plant? Any contamination that would make it unsafe to leave the coal ash in Michigan City would be the same at the Wheatfield plant, if not greater at the Wheatfield plant due to the water table and use of wells for drinking water.

Response: In order to minimize releases from the impoundments, NIPSCO opted to remove the CCR material and transport the material to the RMSGS Type I RWS landfill for final disposal. Schahfer RWS I landfill is a permitted landfill approved to accept coal combustion wastes generated by NIPSCO facilities. Please see Requirement D2 of the current permit renewal dated May 27, 2020 (VFC #82975469). In 2017, NIPSCO submitted a minor modification to revise the base liner design and final cover design for Phase VII and VIII of the landfill to comply with the Federal CCR regulations for the disposal of coal combustion wastes. Please see IDEM approval dated May 23, 2018 (VFC #82552898).

Also see response to Comment 38.

Comment 45: I do not think 30 days for a forum is a suitable time frame due to the current events in our country and the world. It seems to me like this is being "rushed" through while people are focused on the safety of their families. Is this something that we can also address?

Response: NIPSCO held their public meeting to discuss the Closure Plan on April 22, 2020. The original deadline for submitting public comments was May 22, 2020. However, due to the COVID-19 pandemic, a one-month extension was granted. The final deadline to submit a public comment was June 22, 2020. Additionally, a second public meeting was held by NIPSCO on October 6, 2020 with an additional 30-day comment period.

Comment 46: Request transparency on the plan to bring the coal ash residue to the Wheatfield location. I am not against closing the Michigan City plant, I am however against dumping the coal ash into the Wheatfield water supply.

More of a concern is how there have been minimal meetings or announcements/public forum with the residents of Wheatfield.

Response: The coal ash removed from the surface impoundments at MCGS will be transported to the Schahfer RWS Type I landfill for final disposal. Restricted waste sites are designed and operated to accommodate specific types of waste. This RWS I landfill is a permitted facility approved to accept coal combustion wastes generated by NIPSCO. Please see Requirement D2 of the current permit renewal dated May 27, 2020 (VFC #82975469). In 2017, NIPSCO submitted a minor modification to revise the base liner design and final cover design for Phase VII and VIII of the landfill to comply with the Federal CCR regulations for the disposal of coal combustion wastes. Please see IDEM approval dated May 23, 2018 (VFC #82552898).

Also see response to Comments 21 and 45.

Comment 47: I am wondering, are we going to hold a public forum in Wheatfield to let the residents know the plans to dump the coal ash in our community.

Response: According to the communication plan provided by NIPSCO, Jasper County officials were presented with information on the closure plan for Michigan City on March 31, 2020, prior to the first public meeting on April 22, 2020. A public notice was printed in the Rensselaer Republican local paper on October 3, 2020, announcing the second public meeting which took place on October 7, 2020.

Also see response to Comments 21 and 45.

Comment 48: My name is Mike Atkinson and I am the CEO of Advanced Mobile Filtration Services LLC (AMFS). It was brought to my attention that there is remediation required for the ash pits at the NIPSCO Power Plant in Michigan City, Indiana that is being closed. Based on the articles that I have read, one of the main problems and concerns for the residents and the IDEM is dust that will be created and emitted into the atmosphere once the pits are dried and the fine powdery residue is then removed by trucks and transported to the designated landfill for disposal. I know NIPSCO would be the potential client here, however, if not for this Michigan City remediation project, I would like to make you and the IDEM aware of AMFS and how we can handle projects such as this in the future.

Response: We appreciate information on AMFS, however IDEM does not dictate which technology or remediation system NIPSCO must choose.

Comment 49: Please, can you tell me what you will be doing with the coal ash? Where will the coal ash go and what will be done with it.

Response: See response to Comments 38 and 46.

Comment 50: I'm a homeowner in Beverly Shores, IN, and I'm alarmed by the massive transport of NIPSCO coal ash that is routed down Hwy. 12. The Hoosier Environmental Council estimates there will be 6,000-7,000 truckloads of TOXIC coal ash in the process. Not only will that damage the road, but what

assurances do we have that these contaminated loads are secured with a seal that is impermeable to wind blow off, rather than a flimsy tarp?

Response: See response to Comment 39.

Comment 51: The Town Council of Beverly Shores urges IDEM to approve a route for trucking that prohibits transport along U.S. Highway 12 (Dunes Highway) west of Indiana Highway 520 in Town of Pines. Such a prohibition would keep trucks out of the heart of the Indiana Dunes National Park and away from a narrow two-lane roadway lacking adequate shoulders. IDEM should instead require that trucks transport coal ash from Michigan City westward on U.S. Highway 12 only as far as the Town of Pines. There, trucks should turn south on Indiana Highway 520 to U.S. Highway 20 and westward on 20 to Indiana Highway 49. Indiana Highway 520 and U.S. Highway 20 are both 4-lane roadways, more suitably designed for trucking of the tremendous scale planned for these closure activities.

Response: See response to Comment 39.

Comment 52: IDEM should require that trucks carrying coal ash be covered securely to eliminate fugitive discharge of ash from trucks onto the roadway to prevent adversely affecting other motorists and blowing onto private property and into drainage ways. IDEM and law enforcement personnel should regularly inspect transport vehicles to deter a possible lack of diligence on the part of haulers used by NIPSCO.

Response: See response to Comment 39.

Comment 51: When the time arrives and months prior before deconstructing begins, make a simple post in newspaper, Facebook, or/and City Hall.

Response: See response to Comment 21.

Comment 52: If the resident resides on the Westside and can show proof of residence (mail, I.D., only), they should be automatically qualified to help with labor and make a seasonal flat pay, paid per diem, or hourly rate at weekly pay. This is a strong way to get the community involved by showing initiative through an opportunity given.

Response: See response to Comment 16. IDEM does not have authority to dictate whom NIPSCO hires to implement the closure plan.

Comment 53: We need to SAVE, sustain, and try to maintain Mt. Baldy.

Response: See response to Comment 16.

Comment 54: The city needs something new and modern and that would bring life out of people being curiously happy. We could design our own layout of an attraction like Navy Pier in Chicago. It could be such a delight. All proceeds can go to saving the dunes and staff. The objective is to save the dunes regardless by helping preserve as much as possible and allowing Mother

Nature to take its course. Beautifying our city and dunes. Create something recreational and forever cool like experiencing how to float in air or fly or know what it's like without gravity. Something spacious and fun. V-lining could definitely be something to think about. To be able to V-Line from 1 side Nipsco area to the dunes. We could build Dunes Drive-In Theater.

Response: See response to Comment 16.

Comment 55: I'd like to formally provide my support for Save the Dunes' recommendations based on their comment letter provided to IDEM earlier (https://savedunes.org/wpcontent/uploads/2020/05/SDCF-on-NIPSCO-Coal-Ash-Pond-Closure.pdf).

Response: At the time that IDEM is responding, this link does not work. We asked for written comments via email or mail, and IDEM has responded to them in this document. We are unable to respond to the comments in the link above.

Comment 56: Transport the coal ash in trucks compliant with hazardous materials transport, as required by the U.S. Department of Transportation.

Response: See response to Comment 39.

Comment 57: Ensure the safety of the community receiving the coal ash by minimizing dust at the receiving landfill in Jasper County and along the trucking route.

Response: See response to Comments 39 and 46.

Comment 58: Clearly identify people in charge at IDEM so that community concerns can be responded to effectively, quickly and consistently.

Response: For questions regarding the closure plan approval, please contact the Permit Manager Alysa Raleigh at 317-234-4596 or ARaleigh@idem.in.gov.

Comment 59: NIPSCO work with an independent Community Review Committee to assess the cleanup and closure process, provide the Committee regular updates, and fund a technical expert who can monitor the Project and provide instruction, information, and advice to the Committee.

Response: See response to Comment 21.

Comment 60: IDEM publish an online webpage so public comments/concerns can be readily collected during the Project.

Response: See response to Comment 21.

Comment 61: IDEM establish and enforce procedures that ensure the safe excavation, loading, transportation, and disposal of the coal ash with substantial penalties for non-compliance, to ensure that coal ash dust does not endanger clean-up workers or the public.

Response: IDEM has established procedures and will routinely inspect and oversee removal of CCR material from the impoundments and its placement into the Schahfer RWS Type I Landfill.

Also see response to Comments 39 and 42.

Comment 62: Hire an experienced, neutral third-party to be paid for by NIPSCO to monitor the air for particulate matter near the Michigan City plant and Schafer landfill sites during excavation, transportation, and disposal of the coal ash and make real-time data from the monitoring available to the public to protect the health and safety of the workers and the public.

Response: See response to Comments 16 and 21.

Comment 63: NIPSCO transport the coal ash in "sift proof' vehicles and encapsulated to prevent ash from escaping during transportation.

Response: See response to Comment 39.

Comment 64: NIPSCO permanently and properly secure and contain the coal ash and its residue at its Michigan City facility to prevent the possibility of future spills into Lake Michigan and Trail Creek and submit to IDEM a supplemental closure plan that includes addressing and providing alternatives for replacing the deteriorating sheet pile walls.

Response: See response to Comments 5, 39, and 46.

Comment 65: A website be established by NIPSCO and IDEM so the public may be apprised of the removal and transport process which reports progress and accidents should any occur and on which community residents may post questions and concerns.

Response: See response to Comment 21. NIPSCO has a publicly accessible website concerning its CCR closure projects.

Comment 66: All trucks used to transport the coal ash be well-maintained and operated by a power source or fuel other diesel fuel to prevent additional particulate emissions. Coal ash be wetted during excavation, truck loading, and dumping to minimize fugitive dust. Transport trucks have sealed covers to prevent any leakage of dust during transport. Truck trailers and tires are rinsed thoroughly before they leave the MCGS site and the landfill site in Jasper County. Transport trucks are well-spaced in their use of roadways between MCGS and Jasper County to prevent traffic impacts during transport. INDOT be asked to provide a report prior to the transfer, estimating the impact to all roadways resulting from the thousands of truck loads traveling between MCGS and Jasper County, and that NIPSCO be required to provide a certificate of insurance or escrow funding to pay for possible, necessary repairs to the roads as a result of the coal ash transfer. The landfill in Jasper County should cover all coal ash as soon as the transfer from MCGS is complete to prevent contaminated run-off from intense rain events.

Response: See response to Comments 39 and 46.

Comment 67: NIPSCO should install twenty (20) air quality monitoring devices in locations that consider prevailing wind directions, residential density, and monitoring saturation of the entire area, to measure particulate matter levels in an area within a one-mile radius of the MCGS and the Jasper County Landfill site. NIPSCO should collect air quality data in this manner beginning before transfer of coal ash begins. All air quality data collected should be published in local media outlets and reported to IDEM no less often than monthly during active coal ash transfer and quarterly once the coal ash transfer is completed. Any air quality monitoring data that shows an increase in particulate matter must be reported to local media outlets, the City of Michigan, and IDEM within twelve (12) hours. Any increases in particulate matter of 20% or more should require the coal ash transfer activity to immediately stop until IDEM can review the process on site and additional steps taken to reduce fugitive dust are confirmed by IDEM.

Response: The CCR Rule does not require continuous air monitoring.

Comment 68: All data collected by NIPSCO must be reviewed and collected independently by IDEM engineers at least bi-annually. Monitoring data must also be published in local media outlets and provided to the Michigan City Sanitary District.

Response: IDEM reviews data collected and submitted by NIPSCO. This data is put into VFC and is accessible to the public. Additionally, NIPSCO has a publicly accessible website concerning its CCR closure projects.

Comment 69: IDEM should submit a supplemental closure plan to address the current failed barrier between the MCGS site and the Lake to ensure that any residual coal ash is properly contained.

Response: See response to Comment 5.

Comment 70: I email you today in regards to the IDEM/NIPSCO Pond Ash clean up plan and ask if you are still looking for additional beneficial reuse applications for the ponded ash? LafargeHolcim is the World's leader in manufacturing building materials (cement, concrete, aggregates, asphalt, etc), and within our company we also have Geocycle which is our alternative fuels/coprocessing division (please see a brief introduction to Geocycle which I have attached). Through Geocycle we are currently beneficially reusing ponded ash at 6 or more of our cement plants and if this ash is suitable, we believe we could have the ability to beneficially reuse the majority of the ash that is currently scheduled to be landfilled.

Response: We appreciate information on LafargeHolcim, however IDEM does not dictate whether NIPSCO must beneficially reuse the excavated coal ash, or which technology or remediation system NIPSCO must choose.

Comment 71: The ash needs to be removed and transported safely to hardened waste facilities.

Sadly, if consumers had been charged sufficiently to stay ahead of the tons of ash and to return the impacted areas to their original (AKA "pristine") condition, then we wouldn't require the large expenditure to do it right. The air, the water, public health, all are much more important than fueling the predatory expansion of industry and luxuries of the wealthy class.

Please, return them to original condition, and raise standards on the new renewable energy sources that are now on schedule to replace the old.

The cost of energy MUST include the cost of protecting the environment and the American public.

Response: See response to Comments 39 and 46.

Comment 72: There are three major events that will be happening in my little corner of the county. Number one... A large solar company is coming in and going to retain 1000 acres of farm ground to put solar panels in... All of which will be chain-link fence. Number two there is a house bill 1270 I believe that is going to be changing the course of the Kankakee River basin. And number 3, now the new coal ash dump from Michigan City is coming to the Shafer plant. I am not sure how much more our little community can take. It is up to people like you to help us retain our way of life, keep our ground clean, keep our water clean and safe, and keep all of us safe. We did not move out here to have to put up with major events that affect us in which we have no say. That is for intelligent people like you to recognize and stop the injustice.

Response: See response to Comments 39 and 46.

Comment 73: Do Not move coal ash from Michigan City, IN to Wheatfield, IN without proper Environmental Watchdog oversight and Proper air testing. Ethical and moral behavior and profits are NOT mutually exclusive. The Region has the best air quality we've had in decades d/t limited activity because of the pandemic. Gotta say it's been quite nice to breathe a bit easier lately. You putting toxic chemicals into our air is unacceptable. At any time!! The lungs of your consumer stakeholders are an important consideration for you, or should be. Do The Right Thing! EPA, and IDEM that includes you too!

Response: See response to Comments 24, 39, and 44.

Comment 74: Why stir up more problems? We already have enough people out of work. YOU SAY IT WOULD BE A CLEAN MOVE WITH TRUCKS BEING COVERED. HAVE YOU EVER DRIVEN BEHIND SO CALLED COVERED TRUCKS. ROCK TRUCKS,THROW ROCKS. ROOFING COMPANIES USE COVERED TRUCKS TO HAIL SCRAP SHINGLES YET YOU WILL FIND THEM ON THE ROADS. SO COVERED TRUCKS ARE NOT SAFE. WHY NOT LEAVE THINGS THE WAY THEY ARE? NO CONTAMINATION AND NO LOST JOBS.

Response: See response to Comments 39 and 46.

Comment 75: In regards to coal plant on Lake Michigan do you guys care about taking toxic chemicals from one place putting it in another where entire city drinks ground water? I live in Wheatfield and it's not acceptable. I thought you guys where here to protect public everywhere not just one place or city in going to be monitoring this situation.

Response: See response to Comment 46.

Comment 76: The community has never had, and absolutely deserves, increased transparency about subsurface movements (past, present, and future) of coal ash contaminants. Informal discussions with NIPSCO staff in the past have indicated that the ponds are unlined on a sand substrate, which as you know means an almost absolute certainty of subsurface contaminant migration. In the present, we hope that this will indicate a need for expanded water monitoring well beyond the site to reflect this probability in surrounding groundwater, Lake Michigan, and Trail Creek with easily accessible testing results and accompanying for the lay public.

Response: All reports that are submitted to IDEM are posted to VFC and available to the public. Additionally, NIPSCO has its own website concerning its CCR closure projects.

Also see response to Comment 14.

From: Poe, Diane L

To: "awspaeth@gmail.com"; "abazan@umich.edu"; "a.freymann@comcast.net"; "amylittle3@gmail.com"; "ageorgion12@gmail.com"; "andrewjgriffin@gmail.com"; "annntom@hotmail.com"; "amprimack@gmail.com"; "orca3639@yahoo.com"; "ashley.williams@sierraclub.org"; "barb@lagonihealth.com"; "carl.landwehr@verizon.net"; "hernandezc@claycorp.com"; "cathimurray810@gmail.com"; "hunter@csinet.net"; "csowa2@sbcglobal.net"; "indianacon@gmail.com"; "dzygas@emichigancity.com"; "danegcarlson@gmail.com"; "dawn@goblinandthegrocer.com"; "deb.j.abrahamson@gmail.com"; "deborahlchubb@gmail.com"; "donbriggs@mac.com"; "dhancock@pangere.com"; "donnalopez575@gmail.com"; "akleese@comcast.net"; "heisler.marc@gmail.com"; "beth.rutherford@icloud.com"; "beverlyshores.clerk@gmail.com"; "pastorerica@clcvalpo.org"; "phrankly@LIVE.COM"; "rosevbraun@gmail.com"; "ringguy@gmail.com"; "glavoll@le-sc.org"; "IFrank@hecweb.org"; "jp@duneoaks.net"; "janmparr@gmail.com"; "jason.griffin@lafargeholcim.com"; "jenny@wardo.com"; "eversjd@outlook.com"; "kaycoughlin3@gmail.com"; "kayrosen@earthlink.net"; "boatlakemichigan@gmail.com"; "ms.ltroutman@live.com"; "lbmclean@icloud.com"; "levans@earthjustice.org"; "nrfplcom@yahoo.com"; "lisa.sarsany@gmail.com"; "redhotpress@mac.com"; "kasparasloretta@gmail.com"; "marla.hannon@eastporter.k12.in.us"; "marvel.1@osu.edu"; "melissaerke@me.com"; "mike@amfsfiltration.com"; "nancy@cassidyphoto.com"; "dancinarts@gmail.com"; "nmolden@comcast.net"; "nancy@sassafrasenterprises.com"; "nplooster@falk-pli.com"; "mulconrey@comcast.net"; "petitomk@yahoo.com"; "patrick.bergerson@gmail.com"; "pkysel@live.com"; "moniquetrub@gmail.com"; "ryoung@prattindustries.com"; "rloftus@aol.com"; "roandalan@yahoo.com"; "dimitroffs@msn.com"; "ryancmcgrath@gmail.com"; "sheilamarie@benedictine.com"; "townofpines@comcast.net"; "sthom1113@gmail.com"; "suzyvance@mac.com"; "tweber.bstowncouncil@gmail.com"; "todkelly@alumni.iu.edu"; Tyler Hempfling; "tylag@cdwg.com"

Cc: Raleigh, Alysa

Subject: Michigan City Generating Station Permit Closure/Post-Closure Plan Approval

Date: Wednesday, March 10, 2021 7:47:00 AM

Attachments: 031021 46-010 Approval Packet.pdf
image002.png
image005.png
image006.png
image007.png
image008.png
image004.png

Attached is correspondence regarding the above property in LaPorte County. You are receiving this email due to your expressed interest in this decision.

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the Anthem NurseLine online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP)**: Available to full-time state employees and adults in household regardless of health plan participation. Call 800-223-7723 or visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

Diane Poe, Administrative Assistant
Permits Branch | Office of Land Quality
Indiana Department of Environmental Management

(317) 232-4473 | dpoe@idem.IN.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

March 10, 2021

Michigan City Public Library
100 East 4th Street
Michigan City, Indiana 46360

Re: Documents for Public View

Dear Sir/Madam:

A copy of a permit decision for the Michigan City Generating Station is enclosed. Also enclosed is a copy of the public notice announcing this permit decision and indicating the documents' availability at your library. This public notice will appear in a local newspaper soon. Please make these documents available to the public for the next 20 days since this permit can be appealed.

We recognize your facility may be closed or have limited hours due to the COVID-19 pandemic, and the public notice notes there may be limitations to the document's availability at your library. Please date and sign the enclosed verification of receipt form and mail it to our office in the envelope provided with a description of how and when the document was made available to the public for review.

If you have any questions or comments about the permit notice, please contact me by dialing (317) 234-4596 or by e-mail at ARaleigh@idem.in.gov.

Sincerely,

Alysa Raleigh

Alysa Raleigh
Solid Waste Permits Section
Office of Land Quality

Enclosures: Notice of Decision
Permit Letter
Verification of Receipt Form
Agency Addressed Envelope

cc with enclosures: LaPorte County Health Department
LaPorte County Commissioners
Laporte County Solid Waste Management District
Director, Northwest IDEM Regional Office
Mayor, City of Michigan City

From: Poe, Diane L
To: "icains@lpheralddispatch.com"
Bcc: OAKES, GLYNDA; Raleigh, Alysa
Subject: Michigan City Generating Station Permit Closure/Post-Closure Plan Approval
Date: Wednesday, March 10, 2021 7:41:00 AM
Attachments: 031021 46-010 NOD Only COVID.docx
image002.png
image004.png
image005.png
image006.png
image007.png
image008.png

To Whom It May Concern:

Please insert for one time only the enclosed legal notice, in The News Dispatch, on Friday, March 12, 2021 (or earliest possible date).

If there is an additional charge to post this notice on your web site, please DO NOT post.

Starting January 2019, we are asking all newspapers to provide us an estimated invoice prior to publishing this notice. You may email it to my attention. Please include **Account Number 60047284** on all billing correspondence.

As we understand it, you will provide us with a notarized form (publishers claim) and clippings showing the date on which the advertisement appeared in your paper. This information should be mailed to Diane Poe at the following address:

dpoe@idem.IN.gov or

Indiana Department of Environmental Management
Office of Land Quality
Permits Branch
IGCN Room 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Please contact Diane Poe at (317) 232-4473 or dpoe@idem.IN.gov or Alysa Raleigh at (317) 234-4596 or araleigh@idem.in.gov if you have any questions. Thank you for your cooperation.

COVID-19 Resources:

- **Indiana State Dept. of Health (ISDH) COVID-19 Call Center:** Call 877-826-0011 (available 8:00 am-5:00 pm daily).
- **Anthem NurseLine:** Call 800-337-4770 or visit the Anthem NurseLine online for a FREE symptom screening. Available to anyone with an Anthem health plan (this includes State of IN employees)
- **Anthem Employee Assistance Program (EAP)**: Available to full-time state employees and adults in household regardless of health plan participation. Call 800-223-7723 or

visit anthemeap.com (enter State of Indiana) for crisis counseling, help finding child/elder care, legal/financial consultation and much more.

Diane Poe, Administrative Assistant
Permits Branch | Office of Land Quality
Indiana Department of Environmental Management

(317) 232-4473 | dpoe@idem.IN.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

April 9, 2019

VIA CERTIFIED MAIL 7017 2400 0000 0752 3143

Northern Indiana Public Service Company
Attn: Mark Okin
Remediation and Due Diligence Manager
801 East 86th Avenue
Merrillville, Indiana 46410

Dear Mr. Okin:

Re: Request for Additional Information
Michigan City Generating Station
LaPorte County
SW Program ID 46-010

We reviewed your Closure/Post Closure Plan application received on December 20, 2018 (VFC #82667597) and Supplemental Addendum received on March 1, 2019 (VFC #82709758). Additional information and/or changes are needed before we can continue our review. The needed information or changes are identified in the enclosure(s).

Please provide two copies of your response. At least one copy should be on paper printed double sided. If possible, please submit one (the other copy) in Acrobat PDF format, either on a CD or DVD with the printed copy, or by e-mail to ahopkins@idem.in.gov. Please note any e-mail and its attachment(s) must total less than 20 MB in size. The date we receive the paper copies will be the receipt date for your response.

Enclosed is a signature and certification statement which must be submitted with each copy of your response; you may submit one signed original and one copy of this statement. One copy can be included as part of the PDF version.

Please mail paper copies and CDs/DVDs to:

Alysa Hopkins, Permit Manager
Indiana Department of Environmental Management
Solid Waste Permits
IGCN 1101
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Since our goal is to provide you with as timely a permit decision as possible, we request you provide the required information within 60 days from the date you receive this letter. If you believe you cannot submit the requested information within that time frame, please contact Alysa Hopkins to arrange a schedule for submitting the information.

Public records for your facility are available in IDEM's Virtual File Cabinet (VFC) at www.IN.gov/idem; the VFC can be accessed under the Online Services tab by clicking the Virtual File Cabinet link. Documents related to this request include the application we received on December 20, 2018 (VFC #82667597), and the Supplemental Addendum we received on March 1, 2019 (VFC #82709758).

Indiana Code (IC) and Indiana Administrative Code (IAC) references in this document can be reviewed at iga.IN.gov. IC references are under the "Laws" link; IAC references are under the "Publications" link.

If you have any questions, please contact Alysa Hopkins, the Permit Manager assigned this facility, by dialing (317) 234-4596 or by e-mail at ahopkins@idem.in.gov.

Sincerely,

Thomas Hall

for Amy McClure, Chief
Solid Waste Permits Section
Office of Land Quality

Enclosures: Engineering
Certification Statement

cc with enclosures: LaPorte County Health Department
LaPorte County Commissioners
LaPorte County Solid Waste Management District
Director, Northwest IDEM Regional Office
Mayor, City of Michigan City
President, Merrillville Town Council

ENGINEERING ENCLOSURE
Request for Additional Information
Michigan City Generating Station (MCGS)
Closure/Post Closure Plan Application
Solid Waste Program ID 46-010
LaPorte County

Reviewer: Michelle Lu

Telephone: (317) 233-9488
Email: xlu@idem.in.gov

Please address the following comments developed from an engineering review of your closure plan dated December 20, 2018 (VFC #82667597) and Supplemental Addendum received on March 1, 2019 (VFC #82709758) for the coal ash surface impoundments at the Michigan City Generating Station.

The closure plan proposes closure and post-closure of the following surface impoundments:

- Primary Settling Pond No. 1 –subject to RCRA Agreed Order
- Secondary Settling Pond No.1 – subject to RCRA Agreed Order
- Primary Settling Pond No.2 – subject to CCR Rule and RCRA AO
- Secondary Settling Pond No.2 – subject to RCRA Agreed Order
- Boiler Slag Pond – subject to CCR Rule and RCRA AO

The closure plan proposes closure-by-removal (and not clean closure) for all these surface impoundments.

Closure Narrative

1. Section 7.3.2 Excavation

   You state that based on physical condition of the excavated materials, the conditioning of the excavated coal combustion residuals (CCR) material may need to be performed. We recommend you condition the CCR before sending it offsite for disposal. Please also provide detailed description of how the stabilization materials such as lime kiln dust (LKD), Portland cement, etc., will be mixed with ash, where the mixing will be performed, and the procedures for ensuring the mixing is uniform, thorough, and has proper mixing ratio.

2. Section 7.3.2 Excavation

You state that a project-specific Dust Control Plan will be one of the contractor's required submittals for performance of excavation, transportation, and backfilling activities, and this document will be incorporated into NIPSCO's Annual CCR Fugitive Dust Control Plan. Please note this plan needs to be submitted to IDEM for approval before beginning excavation. Please submit it if it is available now.

3. Section 7.3.3 CCR Material Transport and Disposal

You state that NIPSCO will obtain the required permits and/or authorizations for transportation and disposal of the CCR material in accordance with local, municipal, state, and federal rules and regulations. Please note the disposal of conditioned CCR materials mixed with non-commercialized lime agent, such as Lime Kiln Dust in a restricted waste site, requires prior approval from IDEM, including a waste classification for lime kiln dust.

4. Section 7.3.4 Closure Removal Verification

Please provide a detailed description of the confirmation methods that will be used to ensure removal of CCR materials, a blast furnace slag liner and one foot of underlying soil. This includes, in addition to visual observations, survey confirmation and photographs of the area after the removal of each of the following: CCR materials, the blast furnace slag liner, and one foot of underlying soil.

5. Section 7.4 Final backfill description

You state that the final cover will include areas of concrete and asphalt pavement, as well as a minimum six inches of topsoil in undisturbed areas. We note the description for the final cover is not clear and consistent through the proposed closure plan, e.g. Appendix C - Hydrologic and Hydraulic Calculations assumes all the surface of the closed impoundments is covered with gravel. We understand your currently proposed final cover system may be temporary and needs to be finalized in the future. Therefore, we recommend you propose a general soil cover with a minimum 18 inches of soil (soils GC, SC, ML, ML-CL, or CL and 95% compaction) and six inches of topsoil for a total thickness of minimum 24 inches final cover for the closed surface impoundments (including all the side slopes). When you determine the final use for the closed areas, you can submit a revised detailed proposal for the alternative final cover to IDEM for approval. The alternative cover proposal should include the following:

a. Locations of soil cover, concrete cover, and asphalt pavement cover.

b. Drawings showing the final cover system details for each of the proposed final covers.

6. Section 7.4 Final Backfill Description

If you decide to use the final cover alternative design for the former Primary Settling Pond No. 2 with a "hard surface" (concrete or asphalt), or with six to eight inches of coarse aggregate material, please specify the following:

If the facility plans to make a decision at a future date, please propose a soil cover as indicated in comment #5 above and provide an alternative cover design proposal including the following information to IDEM for approval before construction:

a. Locations of the concrete cover, asphalt cover, and coarse aggregate material cover.

b. Drawings showing the final cover system details for each of the proposed final cover.

c. The type of coarse aggregate material that will be used for the final cover. Provide the specifications for the selected aggregate material.

7. Section 7.6 Closure Certification

Please provide a legal description for each surface impoundment that includes the solid waste boundary, if available. If not, include a statement that a legal description for the closed surface impoundments solid waste boundary will be provided with the closure certification report and Environmental Restrictive Covenant (ERC).

8. Appendix A – Closure Application Drawings

Please address the following:

a. For drawings titled "MCGS-06, MCGS-26, and MCGS-27, Cross Sections" show the cap thickness on some side slopes is less than 24 inches. We recommend to install a minimum thickness of 24 inches of soil cover in all the surface of the closed impoundments, including the side slopes. Please see Comment #5 above.

b. For drawings titled "MCGS-08 and MCGS-28, Erosion and Sediment Control Plan," provide a typical cross section detail for the proposed collection ditches. Also, review "*Appendix C Hydrologic and Hydraulic Calculations - Channel Input*" for the depth and width of the collection ditches to ensure consistency. It appears the entire geometry of the closed surface impoundment area for Primary Settling Pond 1, Primary Settling Pond 2, and Secondary Settling Pond 1 is used in the model for calculating available runoff control and conveyance, and the proposed depth for ditches varies from 7 - 15 feet. In addition, the proposed collection ditch for boiler slag pond is not shown in the model's channel input. A minimum thickness of 24 inches soil cover should be installed over the surface impoundments after the removal of CCR (see comment #5 above). Please revisit this analysis and make the appropriate changes.

c. For drawing MCGS-25, the "Final Grading Plan" shows a side slope of 2.5:1 for Primary Settling Pond 1 and Primary Settling Pond 2, and a side slope of 2.6:1 to 2.9:1 for Secondary Settling Pond 1. Also note drawing MCGS-05 does not show the side slopes. Please note a stability analysis may need to be performed depending on the material of construction on the side slopes.

9. Appendix D – Construction Quality Assurance Plan

You state that the construction activities such as excavation, soil backfill, topsoil and aggregates placement, etc., will use the methods and procedures specified in Section 31 20 00 – Earth Moving of the Technical Specifications. The plan also indicates using Section 33 05 33.16 – High Density Polyethylene (HDPE) Pipe of the Technical Specifications for HDPE pipe installation and Section 01 71 23 – Field Engineering of the Technical Specifications for backfill and topsoil thickness verification. Please provide a copy of these technical specifications.

10. Appendix F – Closure and Post-Closure Cost Estimates

Please address the following:

a. Post-Closure Form, Part K, include "other post-closure costs" for items such as stormwater management maintenance, erosion control measures maintenance, etc.

b. Include 10% contingency cost of total closure cost estimates, and 10% contingency cost of total post-closure cost estimates for unforeseen expenses.

Solid Waste Land Disposal Facilities
Signatures and Certification Statements for Requested Additional Information

329 IAC 10-11-3(d) requires that the signatory of a solid waste land disposal facility permit application and of other information requested by or on behalf of the Commissioner (including the supplemental information requested by our office for your solid waste land disposal facility permit application) sign the following certification statement:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information."

_____ _____

APPLICANT'S SIGNATURE DATE

_____

APPLICANT'S NAME TYPED

Note: It is not necessary to submit this form if an equivalent signed certification statement is incorporated into your submittal.

NIPSCO

June 5, 2019

Alysa Hopkins, Permit Manager
Indiana Department of Environmental Management
Solid Waste Permits
IGCN 1101
100 North Senate Avenue
Indianapolis, IN 46204-2251

Subject: Response to Request for Additional Information
Closure Application for Surface Impoundments
SW Program ID 46-010
Michigan City Generation Station
Laporte County, Indiana

Dear Ms. Hopkins:

Northern Indiana Public Service Company (NIPSCO) respectfully submits the enclosed Response to Request for Additional Information (RAI) for the above referenced Closure Application. A signature and certification statement is enclosed per your request. If you have questions or require additional information, please contact me at 614-460-4722 or mokin@nisource.com.

Sincerely,

Marc B. Okin, CPG
Remediation and Due Diligence Manager

Wood Environment & Infrastructure Solutions, Inc.
11003 Bluegrass Parkway
Suite 690
Louisville, Kentucky 40299
USA
T: 502-267-0700
www.woodplc.com

June 5, 2019

Mr. Marc B. Okin, CPG
Remediation and Due Diligence Manager
Northern Indiana Public Service Company
801 E. 86th Avenue
Merrillville, IN 46410

Subject: Response to Request for Additional Information
Closure Application – Surface Impoundments
Michigan City Generating Station - SW Program ID 46-010
Laporte County, Indiana
Wood Project No. 7382173270

Dear Mr. Okin:

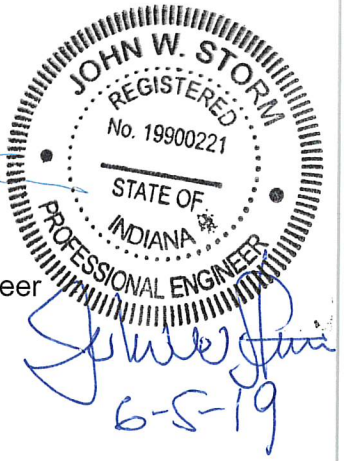
Wood Environment and Infrastructure Solutions (Wood) is submitting this Response to IDEM's Request for Additional Information (RAI) for the referenced Closure Application. The Response document addresses the ten IDEM comments and includes attachments as identified below.

We appreciate this opportunity to provide engineering services to Northern Indiana Public Service Company. If you have questions regarding the Response Letter, please contact us at 502-267-0700.

Sincerely
Wood Environment and Infrastructure Solutions, Inc.

Richard A. Isaac, PE
Senior Engineer

John W. Storm PE
Project Manager, Principal Engineer



RAI Attachments:

	Signature and Certification Statement
2-1	MCGS CCR Fugitive Dust Control Plan
8-1,2,3	Typical Drainage Channel Section/ Calculation
9-1,2,3	Typical Specification for Earth Moving, Field Engineering, HDPE Pipe
10-1,2	Revised Closure and Post Closure Cost Form

Solid Waste Land Disposal Facilities
Signatures and Certification Statements for Requested Additional Information

329 IAC 10-11-3(d) requires that the signatory of a solid waste land disposal facility permit application and of other information requested by or on behalf of the Commissioner (including the supplemental information requested by our office for your solid waste land disposal facility permit application) sign the following certification statement:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information."

John W Stamm, PE (on behalf of NIPSCO)
APPLICANT'S SIGNATURE

JUNE 5, 2019
DATE

Northern Indiana Public Service Company (NIPSCO)
APPLICANT'S NAME TYPED

Note: It is not necessary to submit this form if an equivalent signed certification statement is incorporated into your submittal.

June 05, 2019

IDEM RAI Response

1. **Comment:** *You state that based on the physical condition of the excavated materials, the conditioning of the excavated CCR may need to be performed. We recommend you condition the CCR before sending it to offsite for disposal. Please also provide detailed description of how the stabilization materials such as lime kiln dust (LKD), Portland cement, etc, will be mixed with ash, where the mixing will be performed and the procedures for ensuring the mixing is uniform through and has proper mixing ratio.*

   Response: As part of the closure by removal process, CCR will be excavated from the impoundments and transported to the NIPSCO RMSGS CCR compliant landfill or an approved commercial landfill facility. During the closure activities, appropriate measures will be taken to ensure the CCR is stable and at a moisture level such that CCR, solid or liquid, is not displaced during the transport process. Construction/ transportation methods to be considered will include conditioning of the CCR, as well as truck types, lining of trucks and covering during hauling. At the MCGS, several of the units do not currently contain water or CCR is above the groundwater level (not saturated and at varying moisture levels).

   Conditioning of the CCR during the closure process will include physical, mechanical, and/or chemical additive methods. The level of conditioning necessary will vary based on site-specific conditions, including type of CCR, saturation or initial moisture level when excavated, and tendency of CCR to release water naturally. Initially, an in-place dewatering activity will occur prior to excavation. This activity will drain a percentage of interstitial water prior to the removal process. CCR will then be excavated and placed into stockpiles within the CCR impoundment footprint and allowed to naturally drain. If weather conditions are conducive, the CCR may be allowed to drain/dry for several days. As a second step, if appropriate, the CCR can be spread or windrowed to allow further drying. Dry CCR may also be mixed with wet CCR to achieve a moisture content that is stable for transport. As a further step, where necessary, chemical stabilization will be performed to lower moisture to a required level for transport. Lime kiln dust (LKD), quick lime, Portland cement, or other industry accepted stabilization chemical will be mixed to lower the moisture to appropriate levels. Mixing ratios generally vary from three to eight percent, however ratios vary depending on the CCR and chemical additive. Bench scale testing, including paint filter test, will be performed during the closure activities to establish acceptable moisture content and additive percentage for transport. Dust control/air emission requirements will be incorporated into conditioning/ transport activities. General requirements for excavation, loading and transport of CCR, as described above will be identified in the project contract documents. Means and methods are typically established by the contractor based on the contract document specifications.

2. **Comment.** *You state that a project specific Dust Control Plan will be one of the contractor's required submittals for performance of excavation, transportation and backfilling activities, and this document will be incorporated into NIPSCO's Annual CCR Fugitive Dust Control Plan. Please note*

this plan needs to be submitted if it is available now for approval before beginning excavation. Please submit if it is available now.

Response. Dust emissions management will be a priority during the CCR closure project. NIPSCO proposes to address dust control using the following measures:

1) NIPSCO has prepared a CCR Fugitive Dust Control Plan as required by the CCR Final Rule (see attached document). This plan addresses CCR dust control measures and is posted on the NIPSCO CCR website. The Dust Control Plan will be updated, as necessary, to address dust control measures throughout MCGS surface impoundments closure activities.
2) MCGS maintains a facility EPA Air Quality Permit. Appropriate sections of the document pertaining to dust control will be referenced into the contract documents for the project.
3) The contract documents will include a specification section for dust control, establishing requirements for the contractor during the closure activities. This document will be prepared during final drawing development and can provided to IDEM when complete.
4) The contractor will be required to control and manage dust emissions throughout each phase of the project and to meet the conditions of the above referenced documents. The contractor will prepare a project-specific Construction Dust Control Plan as a required submittal for performance of the excavation, transportation, grading, and cover soil placement activities.

3. **Comment.** *You state that NIPSCO will obtain the required permits and/or authorizations for transportation and disposal of the CCR material in accordance with local, municipal, state, and federal rules and regulations. Please note the disposal of conditioned CCR material mixed with non-commercialized lime agent such as Lime Kiln Dust in a restricted waste site requires approval from IDEM, including a waste classification for lime kiln dust.*

Response. Concur, efforts are underway to modify disposal permits at NIPSCO RM Schahfer CCR compliant landfill facility to include CCR mixed with chemical additives and provide associated waste classification.

4. **Comment.** *Please provide a detailed description of the confirmation methods that will be used to ensure removal of CCR materials, blast furnace slag liner and one foot of underlying soil. This includes, in addition to visual observation, survey confirmation and photographs of the area after removal of each of the following: CCR materials, the blast furnace slag liner, and one foot of underlying soil.*

Response. Field survey and visual observation will be conducted to evaluate removal of CCR within the surface impoundment limits. A field survey of the excavation will document the removal limits as well as photographs of the excavated area subgrade. Upon completion of these activities, an additional one-foot of material will be removed beneath the bottom of the impoundments. If a slag zone is present, this layer will be field delineated (surveyed) as well. Field survey confirmation of the excavation limits and photographs will be performed to document the removal of each material/zone (impoundment limits, slag zone, and additional one-foot of subgrade).

5. **Comment.** *You state that the final cover will include areas of concrete and asphalt pavement, as well as a minimum six inches of topsoil in undisturbed areas. We note the description for the final cover is not clear and consistent through the proposed closure plan, e.g. Appendix C- Hydrologic and Hydraulic Calculations assumes all the surface of the closed impoundments is covered with gravel.*

   We understand your currently proposed cover system may be temporary and needs to be finalized in the future. Therefore, we recommend you propose a general soil cover with a minimum18 inches of soil (GC, SC, ML, ML-CL, or CL and 95% compaction) and six inches of topsoil for a total thickness of 24 inches of final cover for the closed surface impoundments (including all the side slopes). When you determine the final use for the closed areas, you can submit a revised detailed proposal for the alternative final cover to IDEM for approval. The alternative cover proposal should include the following:

   a) Locations of soil cover, concrete cover, and asphalt pavement cover.
   b) Drawings showing the final cover system details for each of the proposed final covers.

   Response: Post closure usage and therefore, final cover conditions have not been finalized. The typical site cover within the surface impoundment footprint(s) will be 18 inches of soil cover (conforming to the USCS classifications identified above) and 6 inches of topsoil. Should the typical surface cover be modified during final design, IDEM will be notified. A gravel cover was used for the H&H calculations as it has a high runoff coefficient and reflects a representative runoff volume condition. We concur with a general cover system consisting of the soil types listed above and a 95 percent compaction rate.

6. **Comment**. *If you decide to use the final cover alternative design for the former Primary Settling Pond #2 with a "hard surface" (concrete or asphalt), or with six to eight inches of coarse aggregate material, please specify the following:*

   If the facility plans to make a decision at a future date, please propose a soil cover as indicated in comment #5 above and provide an alternative cover design proposal including the following information to IDEM for approval before construction:

   a) Locations of concrete cover, asphalt cover, and coarse material aggregate.
   b) Drawings showing the final cover system details for each of the proposed final cover.
   c) The type of coarse aggregate material that will be used for the final cover. Provide a specification for the selected aggregate material.

   Response: Concur, final drawings will be resubmitted to IDEM at a later date.

7. **Comment.** *Please provide a legal description for each surface impoundment that includes the solid waste boundary, if available. If not, include a legal description for the closed surface impoundment's solid waste boundary will be provided with the closure certification report and the Environmental Restrictive Covenant (ERC).*

   Response: Concur, a legal description of each surface impoundment will be provided with the closure certification.

8. **Comment.** *Please address the following:*

a) *For Drawings titled "MCGS-06, MCGS-26 and MCGS-27, Cross Sections" show the cap thickness on some side slopes is less than 24 inches. We recommend installing a minimum thickness of 24 inches of soil cover in all the surface of the closed impoundments, including the side slopes.*

Response: Concur, refer to comment #5 above.

b) *For drawings titled "MCGS-08 and MCGS-28, Erosion and Sediment Control Plan", provide a typical cross section detail for the proposed collection ditches. Also review "Appendix C: Hydrologic and Hydraulic Calculations- Channel Input" for the depth and width of the collection ditches to ensure consistency. It appears the entire geometry of the closed surface impoundment area for Primary Settling Pond #1, Primary Settling Pond #2 and Secondary Settling Pond #1 is used in the model for calculating available runoff control and conveyance, and the proposed depth for ditches varies from 7-15 feet. In addition, the proposed collection ditch for Boiler Slag is not shown in the model channel's input. A minimum thickness of 24 inches soil cover should be installed over the surface impoundments after removal of the CCR.*

Response: A collection ditch detail sketch is included (see attachment 8-1) and will be included in the revised drawings to be submitted at a later date. A minimum 2-foot-thick cover will be shown on the drawings. Ditch calculations for the Boiler Slag Pond ditches are attached for information (a ditch cross-section is shown as well). The ditch has adequate capacity for the conservative flow estimated. Regarding the collection ditches for Primary Ponds 1 and 2, as well as Secondary Pond No. 1, they are similar to the calculation provided for the Boiler Slag Pond (~ 2% side slopes). The ditch slope for the primary and secondary ponds is 1.3%, and the attached calculations indicate the water depth is about the same, assuming a flow rate of 85 cfs (combined peak flows for these three ponds) for the 100-year storm event. Thus, the ditches have adequate capacity.

c) *For drawing MCGS-25, the "Final Grading Plan" shows a side slope of 2.5:1 for the Primary Settling Pond 1 and Primary Settling Pond 2, and a side slope of 2.6:1 to 2.9:1 for Secondary Settling Pond1. Also note drawing MCGS-05 does not show side slopes. Please note a stability analysis may need to be performed depending on the material of construction on the side slopes.*

Response: Concur, side slopes will be reviewed during final design. A stability analysis will be performed for slopes less than 3:1.

9. ***Comment:*** *Appendix D- Construction Quality Assurance Plan*

You state that the construction activities such as excavation, soil backfill, topsoil and aggregates placement, etc., will use the methods and procedures specified in Section 31 20 00- Earthmoving of the Technical Specifications. The plan also indicates using Sections 33 05 33.16 – High Density Polyethylene (HDPE) Pipe of the Technical Specifications for HDPE pipe installation and Section 01 71 23 – Field Engineering of the Technical Specifications for the backfill and topsoil thickness verification. Please provide a copy of these specifications.

Response: These specifications are yet to be developed; they can be provided at a later date when final drawings are completed. Typical specifications for the above referenced sections are attached (Refer to Attachment 9-1, 9-2, and 9-3). Note that these specifications are generic, not project specific, therefore content may change based on project conditions

10. **Comment:** *Appendix F – Closure and Post Closure Cost Estimates*

Please address the following:

a. *Post-Closure Form, Part K, include "other post closure costs" items such as stormwater management maintenance, erosion control measures maintenance, etc.*

Response: Costs for these items have been added to Part K of the Post-Closure Form. The revised Post-closure Form is attached to this response.

b. *Include 10% contingency cost of total closure estimates, and 10% contingency cost of total post closure estimates for unforeseen expenses.*

Response: Concur, a minimum 10% contingency was included in the closure and post closure costs. Revised closure and post closure documents are attached. (Refer to Attachment 10-1 and 10-2)

ATTACHMENT 2-1

CCR Fugitive Dust Control Plan

in support of

40 CFR Part 257

for Northern Indiana Public Service Company's

Michigan City Generating Station

NIPSCO

Table of Contents

Introduction....3
Regulatory Text....4
Requirement 1 – Identification and Description....5
Bottom Ash....5
Slag....5
FGD Residue and Fly Ash....5
Haul Roads....5
Requirement 2 – Conditioned CCR in Landfill....6
Requirement 3 – Citizen Complaints....6
Requirement 4 – Effectiveness of Plan....6
Requirement 5 – Deadline for Initial Plan....7
Requirement 6 – Amending the Plan....7
Requirement 7 – Professional Engineer Certification....8

Introduction

The rule titled "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities" (hereinafter the "CCR Rule") was published as a final rule in the *Federal Register* on April 17, 2015. [80 FR 21302]

Per 40 CFR 257.80(a), the owner or operator of a coal combustion residuals (CCR) landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

Furthermore, 40 CFR 257.80(b) requires the owner or operator of the CCR unit to prepare and operate in accordance with a CCR fugitive dust control plan as outlined in 40 CFR 257.80(b)(1) through (7).

Northern Indiana Public Service Company (NIPSCO) is the owner and operator of the Michigan City Generating Station (MCGS) located in La Porte County in Michigan City, Indiana. There is one coal-fired electric utility steam generating unit at MCGS:

- Unit 12 is a cyclone coal-fired boiler with a design heat input capacity of 4,650 million British thermal units per hour (MMBtu/hr)

NIPSCO owns and operates CCR surface impoundments at MCGS. The remainder of this document constitutes the requisite CCR fugitive dust control plan for MCGS.

Regulatory Text

The requirements for the CCR fugitive dust control plan are found at 40 CFR 257.80(b)(1) through (7). The regulatory text of this section, as published on April 17, 2015, is presented below for ease of reference (as published in the *Federal Register* at 80 FR 21302).

40 CFR 257.80(b) - *CCR fugitive dust control plan.* The owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan as specified in paragraphs (b)(1) through (7) of this section. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

(1) The CCR fugitive dust control plan must identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: Locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

(2) If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.

(3) The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.

(4) The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.

(5) The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this subpart after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(1).

(6) *Amendment of the plan.* The owner or operator of a CCR unit subject to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by § 257.105(g)(1). The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit.

(7) The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section.

Requirement 1 – Identification and Description

"The CCR fugitive dust control plan must identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: Locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover."

[40 CFR §257.80(b)(1)]

The following control measures are applicable and appropriate for site conditions due to observed performance of these measures during prior years of operation.

Bottom Ash

Bottom ash is not produced from Unit 12.

Slag

The slag produced from Unit 12 is wet sluiced to a surface impoundment and stored there until reclaimed. Due to the nature of slag and the wet sluicing process, there are not CCR fugitive dust concerns from this process.

FGD Residue and Fly Ash

FGD residue and fly ash are pneumatically conveyed from the FGD baghouse to the existing fly ash silo and to the FGD waste silo. Each of these silos is equipped with a bin vent filter. FGD residue and fly ash is unloaded from the silo to trucks in a dry state, with fugitive dust emissions controlled by use of a telescopic chute with a vacuum system that returns fugitive fly ash dust to the silo. The bin vent filter on the silo controls emissions resulting from the vacuum return process. The truck loading stations for these silos contain interlock systems that require the overhead doors on the loading stations to be closed when the trucks are being loaded. The FGD residue and fly ash are then transported to NIPSCO's Rollin M. Schahfer Generating Station to be conditioned and landfilled.

Haul Roads

Water trucks are used to wet the haul roads to minimize the release of dust from transportation activities at the station. Road watering is suspended during periods of freezing conditions when watering would be inadvisable for safety conditions (e.g., icy roads).

Requirement 2 – Conditioned CCR in Landfill

"If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent."

[40 CFR §257.80(b)(2)]

CCR is not emplaced into a landfill at MCGS. All CCR generated at MCGS is hauled offsite to be conditioned and landfilled at NIPSCO's Rollin M. Schahfer Generating Station.

Requirement 3 – Citizen Complaints

"The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility."

[40 CFR §257.80(b)(3)]

Citizen complaints involving CCR fugitive dust events at MCGS will be forwarded to the station environmental coordinator, who will document the complaints in a proper format to ensure necessary recordkeeping. Citizen complaints will be logged into the operating record.

Requirement 4 – Effectiveness of Plan

"The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan."

[40 CFR §257.80(b)(4)]

The CCR fugitive dust control plan will be periodically reviewed to ensure it is effective at minimizing CCR fugitive dust from becoming airborne.

The station environmental coordinator will also conduct periodic visual observations of the various potential CCR fugitive dust sources identified in this plan. If any significant airborne fugitive dust is observed by the station environmental coordinator, corrective actions will be implemented as necessary to minimize fugitive dust. If fugitive dust observations become significantly recurring at a particular fugitive dust source location, additional control measures will be implemented, and this CCR Fugitive Dust Control Plan will be updated accordingly.

Requirement 5 – Deadline for Initial Plan

"The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this subpart after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(1)."

[40 CFR §257.80(b)(5)]

This initial CCR fugitive dust control plan will be placed in the MCGS operating record prior to October 19, 2015.

Requirement 6 – Amending the Plan

"*Amendment of the plan.* The owner or operator of a CCR unit subject to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by § 257.105(g)(1). The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit."

[40 CFR §257.80(b)(6)]

Any future amendments to this plan will be done in accordance with 40 CFR 257.80(b)(6) and will be tracked below in the Change Log.

CCR Fugitive Dust Control Plan Change Log

Date	Name and Title of Reviewer(s)	Update(s) Made
10/8/2015	Keith Weber, Environmental Coordinator 3 Ed Pierce, Environmental Coordinator 3 John Ross, Environmental Strategy Manager Jeff Neumeier, Principal Environmental Compliance Greg Costakis, Manager Environmental Compliance	Initial plan created

Requirement 7 – Professional Engineer Certification

"The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section."

[40 CFR §257.80(b)(7)]

This initial CCR fugitive dust control plan was certified by Edward D. Pierce, P.E., as evidenced below.

Professional Engineer Certification

40 CFR 257.80(b)(7)

"I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR 257.80(b), attest that this CCR Fugitive Dust Control Plan has been prepared in accordance with good engineering practices. In preparation of the Plan, consideration of applicable industry standards has been accounted for along with procedures for required inspections and testing. The Plan is adequate for the facility. However, in no way does this certification relieve the owner or operator of a facility of his duty to fully implement the Plan."

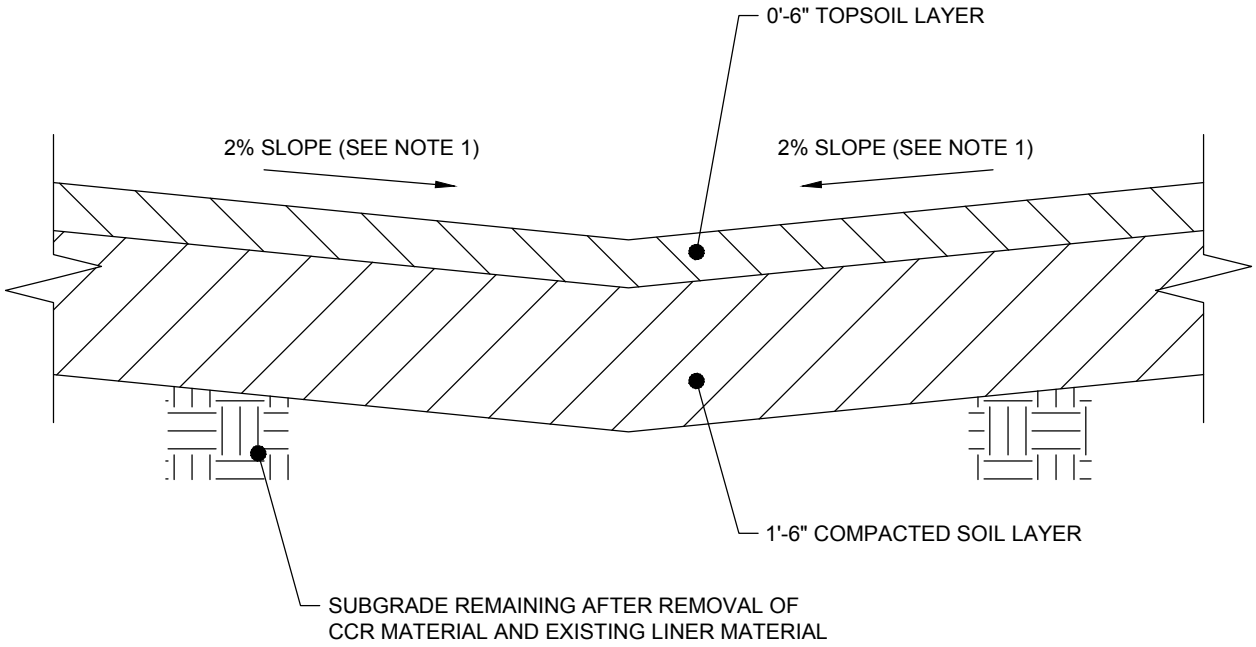
Certifying Engineer: Edward D. Pierce, P.E.

Signature: Edward D Pierce **Date:** 10/8/2015

Registration Number: PE10000155

State: Indiana

ATTACHMENT 8-1



NOTES:

1. 2% CROSS SLOPE SHOWN IS NOMINAL, AND MAY VARY SLIGHTLY DEPENDING ON FINAL GRADING.

wood.

Environment & Infrastructure Solutions, Inc.
11003 BLUEGRASS PARKWAY, SUITE 690
LOUISVILLE, KY 40299

CLIENT: NIPSCO

TITLE: TYPICAL DRAINAGE CHANNEL FOR PRIMARY PONDS AND BOILER SLAG POND CLOSURE

MICHIGAN CITY GENERATING STATION

DRAW:	REVIEW:	SCALE:
CTH	JS	NTS
CHECK::	DATE:	FIGURE:
DRS	05/30/2019	-
PROJ. NO.:		
7382173270		

ATTACHMENT 8-2

Cross Section for Triangular Channel - 2

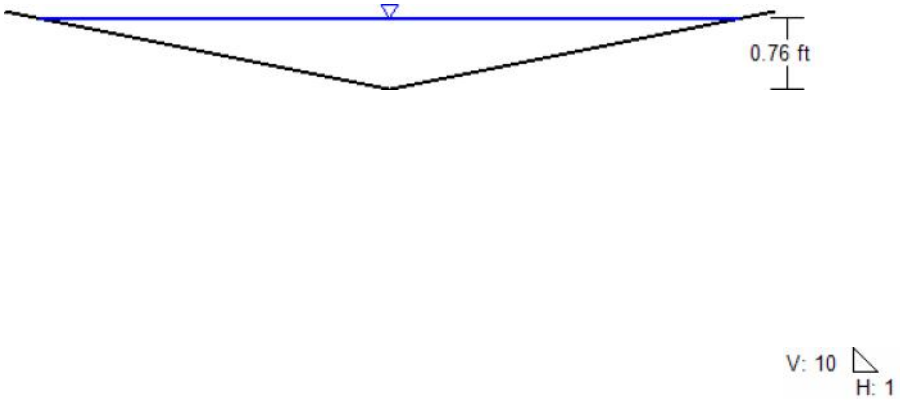
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01300	ft/ft
Normal Depth	0.76	ft
Left Side Slope	50.00	ft/ft (H:V)
Right Side Slope	50.00	ft/ft (H:V)
Discharge	85.00	ft³/s

Cross Section Image



ATTACHMENT 8-2

Worksheet for Triangular Channel - 2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01300	ft/ft
Left Side Slope	50.00	ft/ft (H:V)
Right Side Slope	50.00	ft/ft (H:V)
Discharge	85.00	ft^3/s

Results

Normal Depth	0.76	ft
Flow Area	28.75	ft^2
Wetted Perimeter	75.84	ft
Hydraulic Radius	0.38	ft
Top Width	75.83	ft
Critical Depth	0.71	ft
Critical Slope	0.01853	ft/ft
Velocity	2.96	ft/s
Velocity Head	0.14	ft
Specific Energy	0.89	ft
Froude Number	0.85	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.76	ft
Critical Depth	0.71	ft
Channel Slope	0.01300	ft/ft
Critical Slope	0.01853	ft/ft

ATTACHMENT 8-3

Cross Section for Triangular Channel - 1

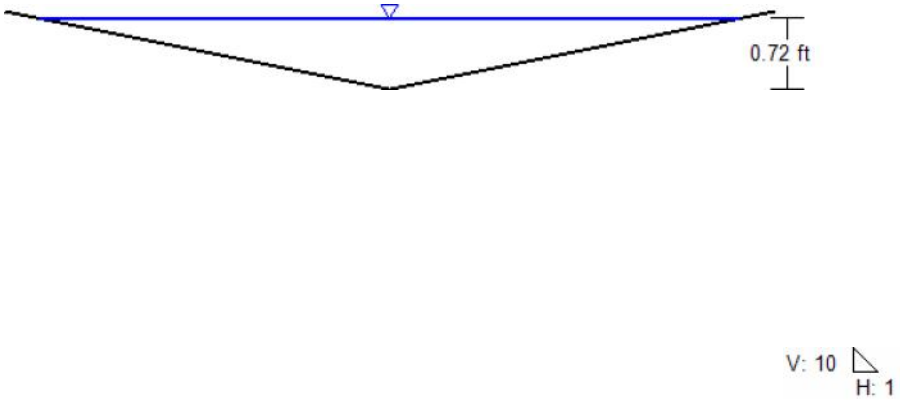
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01000	ft/ft
Normal Depth	0.72	ft
Left Side Slope	50.00	ft/ft (H:V)
Right Side Slope	50.00	ft/ft (H:V)
Discharge	66.00	ft³/s

Cross Section Image



ATTACHMENT 8-3

Worksheet for Triangular Channel - 1

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01000	ft/ft
Left Side Slope	50.00	ft/ft (H:V)
Right Side Slope	50.00	ft/ft (H:V)
Discharge	66.00	ft^3/s

Results

Normal Depth	0.72	ft
Flow Area	26.23	ft^2
Wetted Perimeter	72.44	ft
Hydraulic Radius	0.36	ft
Top Width	72.43	ft
Critical Depth	0.64	ft
Critical Slope	0.01917	ft/ft
Velocity	2.52	ft/s
Velocity Head	0.10	ft
Specific Energy	0.82	ft
Froude Number	0.74	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.72	ft
Critical Depth	0.64	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.01917	ft/ft

SECTION 31 20 00

EARTH MOVING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Agreement and Division 01 Technical Specifications, apply to this Technical Specification.

B. Indiana Department of Environmental Management (IDEM) Indiana Storm Water Quality Manual, October 2007.

C. Indiana Department of Transportation Standard Specifications, 2018.

1.2 SUMMARY

A. This Technical Specification covers the requirements for earthwork activities including the following:

1. Former surface Impoundments Closure.

a. Furnishing, loading, hauling, placing, and grading of Owner-approved onsite soil materials for construction of the soil cover.

b. If required, furnishing, loading, hauling, placing, and grading of Owner-approved off-site soil materials for construction of the soil cover.

c. Furnishing, loading, hauling, placing, and grading of Owner-approved off-site topsoil materials.

d. Excavation to establish the storm water control diversion ditches/swales and storm water pond.

B. Furnish all materials to meet or exceed the requirements of this Technical Specification including performance of the Work in accordance with the procedures provided in these Project specifications.

C. Furnishing labor, materials, equipment and incidentals required to construct/install the items listed in Subparagraph 1.2A.

D. Performance of all laboratory quality control (QC) testing as specified herein by the Contractor. Performance of the field/laboratory quality assurance (QA) testing by the Owner.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Technical Specification 01 11 00 – Summary of Work.

B. Technical Specification 01 33 00 - Submittal Procedures.

C. Technical Specification 01 35 26 – Safety Requirements.

D. Technical Specification 02 01 00 - Maintenance of Existing Structures.

E. Technical Specification 31 10 00 - Site Clearing.

F. Technical Specification 31 25 00 - Erosion and Sedimentation Controls.

G. Technical Specification 33 05 33.16 - High Density Polyethylene (HDPE) Pipe.

H. Technical Specification 33 05 73 - Polyethylene Manholes and Structures.

1.4 REFERENCES

A. The publications listed below, latest edition unless otherwise noted, form a part of this Technical Specification to the extent referenced. The publications are referred to in the text by basic designation only.

B. American Society for Testing and Materials (ASTM)

1. ASTM C88-13	Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
2. ASTM C136/C136M-14	Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
3. ASTM C535-16	Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
4. ASTM D422-63(2007)e2	Standard Test Method for Particle-Size Analysis of Soils
5. ASTM D698-12e2	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3)

6. ASTM D854-14	Standard Test Method for Specific Gravity of Soils Solids by Water Pycnometer
7. ASTM D1140-17	Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
7. ASTM D1557-12e1	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
8. ASTM D2216-10	Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
9. ASTM D2321-14e1	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
10. ASTM D2487-11	Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
11. ASTM D2974-14	Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
12. ASTM D374012a	Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
13. ASTM D4318-10e1	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
14. ASTM D4972-13	Standard Test Method for pH of Soils
15. ASTM D5084-16a	Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter
16. ASTM D5101-12	Standard Test Method for Measuring the Filtration Compatibility of Soil-Geotextile Systems
17. ASTM D5519-15	Standard Test Methods for Particle Size Analysis of Natural and Man-Made Riprap Materials
18. ASTM D6938-15	Standard Test Methods for in-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

C. Indiana Department of Transportation (INDOT):

1. Standard Specifications, 2018

1.5 DEFINITIONS

A. Excavation: Removal of materials e.g. soil, rock to the lateral extent and depths as shown on the Project drawings.

1. Authorized Excavation: Excavation below existing ground surface to the lines, grades, and elevations as shown on the Project drawings.

2. Unauthorized Excavation: Excavation below or beyond indicated lines, grades, and elevations as shown on the Project drawings without direction by the Owner. Unauthorized excavation, as well as remedial Work directed by the Owner to correct unauthorized excavation, performed without additional compensation to the Contractor.

B. Embankment/Fill: Embankment/fill is defined as a surface formed by placement, grading, and compaction of soil and/or rock above existing grade.

C. Compaction: The degree of compaction is specified as the in-situ dry density expressed as a percent of the maximum dry density obtainable at optimum moisture content by the referenced standard compaction test i.e. Standard Proctor ASTM D698-12e2.

D. Utilities: On-site pipelines, overhead power lines, groundwater monitoring wells, piezometers, and other Owner facilities and on-site structures.

1.6 PROJECT CONDITIONS

A. Minimize interference with adjoining roads and other adjacent occupied or used Owner facilities during performance of earthwork activities.

B. Do not close or obstruct streets or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction.

C. Provide alternate routes around closed or obstructed traffic ways, if required by authorities having jurisdiction.

D. Do not commence earthwork activities until erosion and sedimentation control measures are in place and clearing activities designated for earthwork are completed.

E. Existing Job Site Structures and Facilities: The following structures and facilities are to remain in service for use by the Owner throughout the duration of this Project:

1. Facilities e.g., buildings, roads, equipment, etc.

2. Groundwater Monitoring Wells.

3. Piezometers.

Protect structures and facilities as stipulated in Technical Specification 02 01 00 - Maintenance of Existing Conditions.

1.7 SUBMITTALS

A. General: Submit each item in this Technical Specification in accordance with the Conditions of the Agreement and Technical Specification 01 33 00 - Submittal Procedures.

B. Soil Cover Implementation Plan: Submit a plan including, but not limited to, how loading, hauling, placement, grading, backfill, compaction for those construction activities where compaction is required, and excavation is performed for the Work on this Project. Discuss how these activities are performed for the soil obtained from the approved onsite and off-site soil borrow source(s), if required, and approved off-site topsoil material for the construction of the soil cover system including the soil material component and the topsoil component.

C. List of equipment proposed for use by the Contractor to accomplish the activities required by the Project drawings and Technical Specifications.

D. Dust Control Plan: Dust control management is an important aspect of the Contractor's earthwork operations. **Complete dust control is required at all times.** Adhere to the Owner-approved plan developed by the Contractor. The Owner reserves the right to reevaluate the dust control process at any time. If the Dust Control Plan is found to be inadequate, the Contractor is required to revise and resubmit the Dust Control Plan and change operations accordingly. Develop the Dust Control Plan considering one or a combination of the three methods as follows:

1. Water Application.

2. Chemical Application.

3. Cover Material.

E. Project record drawings and documents, in accordance with Technical Specification 01 78 39 - Project Record Documents, identifying and accurately locating area(s) where earthwork was performed.

PART 2 PRODUCTS

2.1 GENERAL

A. The following types of materials are used to construct the components of the soil cover:

1. Soil cover material – Owner-approved onsite and off-site, if required, borrow soil material placed to the lines and grade shown on the drawings.

2. Topsoil – Owner-approved off-site topsoil material possessing adequate organic content, minerals, and nutrients used to promote the growth of vegetation.

2.2 SOIL COVER

A. Soil material: Obtain from the Owner-approved onsite and off-site, if required, soil borrow source(s).

1. Do not obtain and have delivered to the Job Site any soil that has not been pre-approved by the Owner. Return non-approved soil obtained by the Contractor and delivered to the Job Site to the source of the non-approved soil.

2. Soil material meeting the requirements of the following paragraphs of this Technical Specification are considered suitable fill e.g. common borrow soil.

3. Approval of the use and appropriate location for each material classification for fill and soil cover construction is at the discretion of the Owner.

B. Remove/segregate rock pieces from the soil material.

C. Soil – Physical Requirements: Soil material acceptable for use in the embankment(s) and soil cover conforming to the following:

1. A maximum particle size of three (3) inches.

2. A Unified Soil Classification System (USCS) classification of GC, SC, ML, ML-CL, or CL as determined by ASTM D2487-11.

3. A liquid limit ≤ 40 as determined by ASTM 4318-10e1.

D. Following removal/segregation of rock pieces per Paragraph 2.2B, soil not meeting the criteria of Paragraph 2.2C of this Technical Specification is identified as mixed soil and rock not suitable fill for the soil cover as approved by the Owner.

2.3 TOPSOIL

A. Topsoil: Obtain topsoil from an Owner-approved off-site source(s).

B. Requirements for off-site topsoil source: Loose, friable, natural loam, sandy loam, silty loam, or clay loam humus-bearing soils that is free of stones two inch or greater in overall dimension, admixture of subsoil, refuse, stumps, roots, brush, weeds, and other material that prevent the formation of a suitable seed bed conforming to the requirements of Section 914.01 Topsoil in the INDOT Standard Specifications, 2018.

C. Off-Site Topsoil – Physical Requirements: Topsoil material acceptable for use as the topsoil component of the final cover system conforming to the following:

Property	Test Method	Criteria	Frequency
Particle Size Analysis	ASTM D422-63(2007)e2	Clay: 40 % max.	Every 3,000 cubic yards
		Silt: 70% max.	
		Sand: 60% max.	
Organic Content	ASTM D2974-14	2% min.; 10% max.	Every 3,000 cubic yards
pH	ASTM D4972-13	6.2 min.; 7.4 max.	Every 3,000 cubic yards

Notes:

% - percent; min. – minimum; max. – maximum; ASTM - American Society for Testing and Materials

D. Final approval of the off-site topsoil material is at the sole discretion of the Owner. Replace any off-site topsoil material that does not conform to this Technical Specification by the Contractor.

2.4 GRANULAR BEDDING MATERIAL

A. Furnish granular bedding material consisting of imported material approved by the Owner free of any metals, roots, trees, stumps, concrete, construction debris, or any organic matter or deleterious material meeting the requirements of the INDOT Standard Specifications Section 904.05 Structure Backfill.

B. Requirements for granular bedding material is coarse aggregate stone No. 5, No. 8, No. 9, No. 11 or No. 12.

C. Final approval of the granular bedding material is at the sole discretion of the Owner. Replace any granular bedding material that does not conform to this Technical Specification by the Contractor.

PART 3 EXECUTION

3.1 PREPARATION

A. Examination: Examine the areas and conditions under which excavating, filling, and grading are to be performed and notify the Owner of conditions detrimental to the proper and timely completion of the Work.

B. Erosion and Sedimentation Controls: Perform no earthwork activities until erosion and sedimentation controls have been installed and the installation is approved by the Owner. Refer to Technical Specification 31 25 00 – Erosion and Sedimentation Controls for requirements.

1. Protect and maintain erosion and sedimentation controls during performance of earth moving activities.

C. Preparation for earth moving operations including removal of vegetation, grubbing, debris, obstructions, and deleterious materials from ground surface is specified in Technical Specification 31 10 00 - Site Clearing. Perform no earth moving operations e.g. excavation, filling, and grading activities until site clearing activities have been performed and approved by the Owner.

D. Dust Suppression: Provide dust suppression by spraying water on excavated areas, embankment areas, and areas of heavy construction traffic to minimize visible dust emissions from leaving the Job Site throughout the performance of the Work in accordance with the Dust Control Plan discussed in Paragraph 1.7C of this Technical Specification.

E. Safety: Provide and maintain safety equipment including, but not limited to, orange barrels, safety tape, barricades, and temporary metal plates to eliminate access to excavation areas and/or unstable areas.

F. Surface Water Runoff Control:

1. Provide adequate pumping and drainage facilities to maintain excavation or fill areas sufficiently dry from surface water runoff to not adversely affect Work procedures nor cause excessive disturbance of underlying natural ground. Manage the drainage of all water resulting from pumping to not cause physical or environmental damage to adjacent area(s).

2. Perform pumping and dewatering operations in such a manner as to prevent damage to the Work and so that no loss of ground results from these operations. Take precautions to protect the new Work from flooding during

storm events or from other causes. Perform continuous pumping, as required, to protect the Work and/or to maintain satisfactory progress of the Work.

3. Control the grading in the areas surrounding excavations so that the surface of the ground is properly sloped to prevent water from running into the excavated area.

4. Control erosion/sediment to minimize impact of the Work to off-site surface water bodies or drainage systems.

G. Take measures required to prevent all trucks and equipment from tracking soil, dirt, mud, trash, debris, waste, etc. on the tires or undercarriage of the vehicle from the Job Site. Use one of the following methods or a combination of the following methods:

1. Construction of an aggregate construction entrance where the trucks leave the Job Site and enter a public roadway.

2. Construction of a temporary wheel/undercarriage wash located where the vehicles leave the Work area(s) and/or before the vehicles exit the Job Site.

3. Mechanical and/or manual removal of trash, debris, waste, etc. before the vehicles exit the Job Site.

4. Return any and all soil, dirt, mud, trash, debris, waste, etc. removed from the tires/undercarriage to the area(s) of the Job Site from where the soil, dirt, mud, trash, debris, waste, etc. originated.

5. Immediately clean up any and all soil, dirt, mud, trash, debris, waste, etc. that is tracked onto public roadways by the Contractor with the approval of the Owner.

H. At any excavation and/or subgrade/embankment/fill construction location where the existing grade varies from the Project drawings due to past construction activity, perform a survey of actual grades for use in computing quantities. Upon agreement between the Owner and the Contractor, use the survey data in lieu of the plan configuration.

3.3 EXCAVATION

A. General

1. Excavation: Excavate soil material from the designated area(s) to the lines, grades, and elevations as shown on the drawings.

a. Establish vertical controls/procedures to limit/maintain the excavation to the required widths and depths below the existing ground surface.

b. Document the lateral and vertical extent of the final excavation area by field surveying.

c. Excavation tolerances: Elevations within ±0.10 feet and a horizontal tolerance of ±0.5 feet for all excavation Work.

d. The Owner reserves the right to increase or decrease the excavation widths and depths or make such other changes in the excavation sections as may be deemed necessary.

2. Classification: Without regard to the materials encountered, excavation is unclassified, unless noted otherwise.

3. Common Excavation: Including subgrade excavation and storm water control diversion/swale construction consists of and includes the removal of all materials encountered or involved in such excavation at the location shown on the Project drawings.

4. Rock Excavation: If encountered, excavation for rock and rock cuts consists of and includes the removal of all materials encountered or involved in such excavation at the location(s) shown on the Project drawings. The side slopes are as shown on the Project drawings.

   a. If rock excavation is required, accomplish the rock excavation by mechanical removal: Blasting is not allowed unless specifically approved by the Owner in writing.

5. Utilization of Excavated Materials: All suitable material removed from the excavations is used as suitable fill, in constructing the permanent Work.

6. The Contractor repairs unauthorized excavations carried below the indicated depths, except when directed by the Owner, with material satisfactory to the Owner. Do not include unauthorized over-excavation in measurement for payment.

7. Visual observation of the excavation activities is performed by the Owner's CQA personnel (monitors).

3.4 SUBGRADE/EMBANKMENT/FILL

A. General

1. Configure the subgrade/embankment/fill construction to maximize production while minimizing potential slope stability, erosion, and safety issues.

    a. Use equipment of the type, size, and capacity that can adequately and safely move along the contour of the Job Site.

    b. Establish vertical controls/procedures for construction of the subgrade/ embankment/fill.

    c. Document the lateral and vertical extent of the subgrade/embankment/fill by field surveying.

    d. Subgrade/embankment/fill tolerances: Elevations within ±0.10 feet and a horizontal tolerance of ±0.5 feet for all subgrade/embankment/fill Work.

2. Uniformly grade areas, including adjacent transition areas, in conformance with this Technical Specification and the Project drawings.

3. Smooth finish surface compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

4. During construction, keep the top surface of all subgrade/embankments/fills crowned with grades of not less than two (2) percent in order that the fill drains freely toward the slopes to prevent ponding (accumulation) of surface water.

5. Pulverize soil material coming from the Owner-approved soil borrow source(s) in the form of large lumps or masses by disking, harrowing using mechanical pulverizers prior to compacting. Break down lumps or masses, whose largest dimension exceeds three (3) inches prior to compacting.

    a. Perform this procedure in a manner that does not cause the existing soils to become airborne.

B. Soil Cover

1. Construct the soil cover as follows:

    a. Place and grade the soil cover material obtained from the Owner-approved onsite and off-site, if required, soil borrow source(s) to the lines, grades, and cross sections indicated on the Project drawings.

b. Place the soil material in successive horizontal lifts of loose material not more than eight (8)-inches in thickness. Spread each lift uniformly on the preceding lift that has been moistened or aerated, as necessary, and scarified or otherwise broken up in such a manner that the material bonds with the surface on which the material is placed.

   1). Slope the surface of each lift as shown on the Project drawings to promote free draining of water from the lift.

   2). The surface of each lift is free of loose material, foreign objects and rocks greater than six (6) inches in maximum dimension.

      i No rocks greater than 1.5-inches in dimension are allowed in the top six (6) inches of the soil cover.

   3). Fill and level ruts in the surface of any lift before compacting.

   4). Seal the surface of the last lift placed at the end of each day using a smooth drum roller.

c. Compaction: Accomplished by sheepsfoot roller, pneumatic-tired roller, vibratory compactor, or other equipment suitable to compact the soil material.

   1). Compact each lift of soil placed and graded with a minimum of five (5) passes of the compaction equipment in each direction and such that the soil lift is not visibly yielding.

      i. Acceptable criteria for compaction is at a moisture content within -2% to +3% of the Standard Proctor (ASTM D698-12e2) optimum moisture content to achieve a dry density greater than or equal to 95 percent of the Standard Proctor (ASTM D698-12e2) maximum dry density.

   2). Performance of in-place density testing using a nuclear density gauge to verify acceptance of the compaction effort by the Owner's CQA monitor.

      i. For any areas of any lift that fail the compaction requirements, moisture condition the fill (if necessary) and recompact the area until the area meets the compaction requirements. If large areas of any lift fail the compaction requirements, either scarify the entire lift or moisture condition the entire lift before the succeeding lift is placed.

2. Following completion and acceptance of the soil cover by the Owner, layout the 200-foot grid and obtain surface elevations of the soil cover as discussed in Technical Specification 01 71 23 – Field Engineering.

   a. Do not initiate installation of the topsoil component until the 200-foot grid is established and surface elevations of the soil cover are obtained and recorded.

3. The Owner reserves the right to adjust the soil cover and/or contours or make such other changes in the soil cover sections as may be deemed necessary.

C. Topsoil

1. Construct the topsoil component as follows:

   a. Place and grade the topsoil material obtained from the Owner-approved off-site source(s) to the lines, grades, and cross sections indicated on the Project drawings.

   b. Placed the topsoil material in one (1) horizontal lift of loose material to a minimum thickness of at least six (6) inches. Spread the topsoil lift uniformly on the underlying soil material that has been moistened or aerated, as necessary, and scarified or otherwise broken up in such a manner that the topsoil material bonds with the surface on which the topsoil material is placed.

      1). Slope the surface of the topsoil as shown on the Project drawings to promote free draining of water from the lift.

      2). The surface of the topsoil lift is free of loose material, foreign objects and rocks greater than one (1) inch in maximum dimension.

   c. Place and spread the specified topsoil material utilizing vehicles with a low ground pressure as shown in the following table:

Equipment/Cover Soil Material Requirements

Maximum Allowable Equipment Ground Pressure (psi)	Initial Lift Thickness of Overlying Soil Cover (feet)
<5	1.0
<10 but >5	1.5
<20 but >10	2.0
>20	3.0

Notes:

psi – pounds per square inch; < - less than; > - greater than

   d. Compaction: Compaction of the topsoil material is by traffic compaction of placement and grading equipment

      1). Traffic compaction consists of a minimum of two (2) passes over all areas.

2. Following completion and acceptance of the topsoil by the Owner, layout the same 200-foot grid used for the cover soil and obtain surface elevations of the topsoil as discussed in Technical Specification 01 71 23 – Field Engineering.

    a. Do not initiate the seeding until the 200-foot grid is established and surface elevations of the topsoil are obtained, recorded, and the thickness of the topsoil is verified and approved by the Owner.

3.5 TRENCH EXCAVATION

A. Excavation: Excavate the pipeline, manhole, structures, and appurtenances trench below the existing ground surface to the lines, grades, and elevations shown on the Project drawings and as directed by the Owner regardless of the character of surface and subsurface conditions encountered. Excavated materials include soil materials, rock, and riprap.

B. Stockpile excavated soil materials, rock, riprap, etc. away from edge of excavations, but within the vicinity of the excavation for use in backfilling excavations following installation of pipelines, manholes, structures, and appurtenances.

3.6 TRENCH BEDDING MATERIAL

A. Place granular bedding material in the trench excavation below the barrel of the pipe and coarse aggregate bedding material below the manhole or structure base as indicated on the Project drawings before placement of the pipe, manhole, structure, and appurtenances in the trench.

1. Place the granular/coarse bedding material in the bottom of the trench, level, and compact to ensure uniform placement of the material within and across the trench section.

2. After the pipe or manhole or structure has been laid to alignment and grade, place granular bedding material in lifts simultaneously on both sides of the pipe or manhole or structure keeping the level of granular bedding material the same on each side of the pipe or manhole or structure.

3. Place additional granular bedding material in lifts a minimum of six (6) inches above the pipe or manhole or structure for the full width of the trench and compact to the specified requirements.

4. Compact the granular bedding material by hand methods to not compromise the integrity of the pipe, manhole, structure, or appurtenances.

3.7 TRENCH BACKFILLING

A. Place the excavated soil/rock material above the granular bedding material in the trench as backfill to the level of the existing ground surface at the edge of the excavation.

1. Place the soil/rock material in successive horizontal lifts of loose material not more than eight (8) inches in thickness.

2. Spread each lift uniformly on the preceding lift that has been moistened or aerated, as necessary, and scarified or otherwise broken up in such a manner that the material bonds with the surface on which the material is placed.

B. Perform compaction by equipment suitable to compact the soil/rock material without compromising the integrity of the pipe, manhole, structure, and appurtenances.

1. Compact each lift of soil/rock material placed and graded with a minimum of five (5) passes of the compaction equipment in each direction and such that the soil/rock lift is not visibly yielding. Compact the soil/rock at a moisture content within -2% to +3% of the Standard Proctor (ASTM D698-12e2) optimum moisture content to achieve a dry density greater than or equal to 95 percent of the Standard Proctor (ASTM D698-12e2) maximum dry density.

2. Performance of in-place density testing using a nuclear density gauge to verify acceptance of the compaction effort by the Owner's CQA monitor.

   a. For areas of a lift that fail the compaction requirements, dry or moisture condition the fill (if necessary) and re-compact the area until the lift meets the compaction requirements. If large areas of a lift fail the compaction requirements, either scarify the entire lift or moisture condition the entire lift before the succeeding lift is placed, if directed by the Owner.

3.8 MOISTURE CONTROL

A. Obtain water used in controlling moisture from an Owner-approved source.

B. Add water to the fill materials at the source or after the material has been brought onto the fill area, whichever is the most practical. When material deposited on the fill area is too dry, sprinkle each layer and obtain uniform moisture distribution in the layer by disking, blading or other approved methods. Accurately control the amount of applied water so that free water does not appear on the surface during or subsequent to compaction operations.

C. Remove or spread material deposited on the fill that is too wet and permit to dry, assisted by disking or blading, if necessary, until the moisture content is reduced to the specified limits.

D. When the top surface of a layer becomes too dry or too smooth to permit suitable bond with the subsequent layer, loosen the material by scarifying or disking. Traversing the fill surface with a tamping foot compactor or track equipment may not achieve adequate scarification. Then moisten the loosened material to acceptable moisture content and re-compact the material to the specified density.

E. Adjustments of moisture content are made based on the determination of moisture by field tests as construction progresses.

3.9 FIELD QUALITY CONTROL

A. Material Thickness: Assist the Owner with maintenance of daily log measurements of soil lifts, soil characteristics, and other observations. Top surface of the completed soil cover and topsoil checked on a minimum 200-foot grid interval.

B. In-Place Soil Testing: Assist and coordinate with the Owner as required during soil testing.

C. Deficient Areas of Work: If, based on field measurement and monitoring, the soil cover and topsoil is below the specified thickness, undertake necessary corrective actions or conduct additional testing. A rejected area can be retested once prior to the Contractor undertaking corrective actions. Rework an area rejected for nonconformance with the specified thickness or grading requirements until the rejected area meets the specification requirements, provided such Work does not cause the area to deviate from the other requirements of conformance. All defective Work must be corrected before final acceptance.

3.10 APPROVAL

A. The Owner must approve and accept the final grading. Maintain and protect the completed grades in a satisfactory condition until final acceptance of the Work by the Owner. Repairs of graded areas are the responsibility of the Contractor until final acceptance of the entire Project. If, in the opinion of the Owner, the hauling equipment causes horizontal shears or slicken sides, rutting, quaking, heaving, cracking or excessive deformation of the embankment/fill, limit the type, load or travel speed of the hauling equipment on the embankment/fill.

B. Any approved material which is lost in transit or rendered unsuitable after being placed, either subgrade or final grades, and before final acceptance of the Work, replace by the Contractor in a satisfactory manner and at additional payment from

the Owner. Excavate and remove from the embankment/fill any material which the Owner considers objectionable and dispose of such material and refill the excavated areas as directed.

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the the Agreement and Division 01 Technical Specifications, apply to this Technical Specification.

1.2 SUMMARY

A. This Technical Specification includes general procedural requirements governing field surveying including, but not limited to, the following:

1. Construction layout and staking for all the Work.

2. Progress surveys during construction as required for determining quantities.

3. Actual constructed limits (location, footprint, and elevations) including, but not limited to, structures demolished/removed; structures e.g. pipelines abandoned in place; subgrades; final grades; excavation limits, final cover system components; storm water diversions, channels, ditches, piping and manholes; inflow and outflow structures; and access roads.

4. Topographic survey including elevations of final grades and structures and utility invert elevations.

5. Project record drawings.

1.3 EXACT DIMENSIONS AT SITE

A. Prior to furnishing materials and equipment for the Agreement, obtain exact dimensions at the Job Site. The lengths and locations shown on the drawings are not, under any circumstances, to be so construed as to relieve the Contractor from responsibility for taking measurements at the Job Site and furnishing materials or equipment of the correct length, size, and shape.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. Technical Specification 01 33 00 – Submittal Procedures

B. Technical Specification 01 73 29 – Cutting and Patching

C. Technical Specification 02 41 19 – Selective Site Demolition

D. Technical Specification 03 20 00 – Fabric-Form Concrete

E. Technical Specification 03 48 00 – Precast Concrete Specialtes

F. Technical Specification 31 10 00 – Site Clearing

G. Technical Specification 31 20 00 – Earth Moving

H. Technical Specification 31 25 00 – Erosion and Sedimentation Controls

I. Technical Specification 31 37 00 – Riprap

J. Technical Specification 32 11 23 – Aggregate Base Courses

K. Technical Specification 32 92 19 – Seeding

L. Technical Specification 33 05 33.16 – High Density Polyethylene (HDPE) Pipe

M. Technical Specification 33 05 73 – Polyethylene Manholes and Structures

1.5 SUBMITTALS

A. At the Owner's request, submit the following:

1. A copy of the professional surveyor's license who is providing the field engineering and survey services.

2. Data demonstrating qualifications of persons providing/assisting with the field engineering and survey services.

3. Documentation verifying accuracy of the survey work. On request, provide GPS information and elevations using handheld surveying instrumentation.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 TECHNICAL REQUIREMENTS OF SURVEY

A. Map Accuracy: Ninety percent of the elevations determined from the solid-line contours for the topographic maps have an accuracy with respect to true elevation of 0.5 contour interval (0.5 foot) or better, and the remaining ten (10) percent of such elevations are not in error by more than one (1) contour interval (1 foot).

B. Vertical Control: Use the Owner-provided existing benchmarks and control points to establish a permanent Project benchmark for vertical control.

C. Horizontal Control: Plot each horizontal control point on the drawing(s) within the coordinate grid in which the horizontal control point should lie to an accuracy of one one-hundredth inch (0.01 inch) of the horizontal control point's true position as expressed by the plane coordinates computed for this horizontal control point.

D. Spot Elevations: Construct the survey providing an accuracy of 0.05 feet vertically. Shots exceeding 500 feet are not allowed. Ninety percent of all spot elevations placed on the drawings have an accuracy of at least 0.05 feet, and the remaining ten (10) percent are not in error by more than one-half (0.5 feet) of the contour interval (0.025 feet).

E. Accuracy: Accuracies and accuracy tests apply to the stereo compilation scale of the original manuscript (i.e., if the manuscript is compiled at a scale of 1" = 50' and then reduced to 1" = 100', then the accuracies apply to the original 1" = 50' scale). This is also true if the manuscript is enlarged to some larger scale.

3.2 FIELD SURVEYING

A. Identification: The Owner has provided the existing benchmarks, control points, and property corners as shown on the drawings.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during Work operations.

1. Report all survey data in both Indiana State Plane Coordinate System and longitudinal/latitudinal coordinate systems. The primary locational and elevational geodetic networks used are North American Datum (NAD) 83 and North American Vertical Datum (NAVD) 88, Geoid 12A, respectively. Provide survey data in ASCI format and as CAD layers for direct input into the Job Site survey.

2. Do not change or relocate existing benchmarks or control points without prior written approval of the Owner. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to the Owner before proceeding.

3. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Maintain a complete and accurate log of control and survey work as the survey work progresses.

D. Provide verification surveys, surveys for measurement and payment, and Project record documentation in electronic file format compatible with AutoCAD 2017 or later.

E. Construction Layout and Staking: Use the services of a Professional Land Surveyor licensed in the State of Indiana to perform field surveying for the purposes of construction layout and staking for the Work performed as part of this Project.

1. Use skilled persons, trained and experienced in the necessary tasks and techniques for the proper execution of the Work. Locate and layout the Work by survey instrumentation and similar appropriate means.

F. Soil Cover Volume Verification: Create in the field a 200-foot grid used to verify the thickness of the soil cover and topsoil components constructed for the final grading of the former surface impoundments.

1. Layout the baselines of a 200-foot grid in a location that is not compromised and which can be replicated.

2. When the excavation is completed and approved by the Owner, use the 200-foot baselines to establish the 200-foot grid and shoot elevations of the top of the completed subgrade (excavation bottom) at each grid point.

3. Following completion and approval of the soil cover component, re-establish the 200-foot grid and shoot elevations of the top of the placed soil cover at each grid point.

    a. Subtract the subgrade elevation from the soil cover elevation to determine the thickness of the soil cover at each grid point.

    b. Use this data to verify 18 inches of soil cover is present across the former surface impoundments area. Regrade and/or add additional soil cover material in area(s) where the surface of the soil cover is too high or too low.

    c. Do not initiate placement of the topsoil component until a minimum of 18 inches of soil cover is verified and approved by the Owner.

4. Following completion and approval of the topsoil component installation, re-establish the 200-foot grid and shoot elevations of the top of the placed topsoil at each grid point.

    a. Subtract the soil cover elevation from the topsoil elevation to determine the thickness of the topsoil at each grid point.

    b. Use this data to verify six (6) inches of topsoil is present across the former surface impoundments area. Regrade and/or add additional topsoil material in area(s) where the surface of the topsoil is too high or too low.

    c. Do not initiate seeding until a minimum of six (6) inches of topsoil is verified and approved by the Owner.

5. Prepare plan view drawings for the following:

    a. Former surface impoundments area:

        1). Top of subgrade contours including the grid points and elevations

        2). Top of soil cover contours including the grid points and elevations

        3). Top of topsoil contours including the grid points and elevations,

    b. Include tables with the grid points, the surface elevations, and the thicknesses of the soil cover and the topsoil components.

G. Certified Final Record Survey: Opon completion of the Project Work, prepare a final record survey showing dimensions, locations, and elevations of the Work. Include on the survey a certification, signed by Professional Land Surveyor licensed in the State of Indiana, that principal metes, bounds, lines, and levels of the Work are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a Job Site corner to a legal point.

2. Use measurements, data, and information obtained for the certified final record survey in the preparation of the certified project record drawings.

END OF SECTION

SECTION 33 05 33.16

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Agreement and other Division 01 Technical Specifications apply to this Technical Specification.

1.2 DESCRIPTION

A. This Technical Specification specifies the following materials, equipment, installation procedures, and testing associated with the following:

1. Six (6)-inch, 24-inch, 30-inch, and 36-inch nominal diameter high density polyethylene (HDPE) pipe, tees, elbows, and appurtenances.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Technical Specification 01 33 00 - Submittal Procedures

B. Technical Specification 31 20 00 – Earth Moving

C. Technical Specification 31 05 19.13 – Geotextiles

D. Technical Specification 33 05 73 – Polyethylene Manholes and Structures

1.4 REFERENCES

A. The publications listed below, latest edition unless otherwise noted, form a part of this Technical Specification to the extent referenced. The publications are referred to in the text by the basic designation only.

B. American National Standards Institute/American Water Works Association (ANSI/AWWA)

1. ANSI/AWWA C111/A21.11 Standard specification for Low Alloy Corrosion Resistant High Strength Steel Bolts
2. ANSI/AWWA C906-07 Standard for Polyethylene (PE) Pressure Pipe and Fittings, 4-inch through 63-inch, for Water Distribution and Transmission

C. American Society for Testing and Materials (ASTM)

1. ASTM A193/A193M-16 Standard Specification for Alloy-Steel and Stainless-Steel Bolting of High Temperature or High-Pressure Service and Other Special Pur-

	pose Applications
2. ASTM D1248-05	Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
3. ASTM D2412-02 (2008)	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plastic Loading
4. ASTM D1784-11	Standard Specification for Rigid Poly Vinyl Chloride (PVC) Compounds and Chlorinated Poly Vinyl Chloride (PVC) Compounds
5. ASTM D3212-07	Standard Specification for Joints of Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
6. ASTM D3261-03	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
7. ASTM D3350-08	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
8. ASTM D4101-08	Standard Specification for Polypropylene Injection and Extrusion Materials
9. ASTM F714-08	Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
10. ASTM F1055-98(2006)	Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing
11. ASTM F2620-13	Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings

D. PE Pipe Handbook: Chapter 7 – Installation Guidance

1.5 QUALITY ASSURANCE

A. Inspection and Testing:

1. All HDPE materials, pipe and fittings are inspected and tested in accordance with the requirements of AWWA C906-07.

B. Affidavit of Compliance:

1. Furnish an affidavit of compliance from the manufacturer conforming to the requirements of AWWA C906-07 affirming that the piping components comply with the requirements of AWWA C906-07 and this Technical Specification.

1.6 SUBMITTALS:

A. General: Submit each item in this Technical Specification in accordance with the Conditions of the Agreement and Technical Specification 01 33 00 - Submittal Procedures.

1. Detail shop drawings which show the type and location of the HDPE pipe required for this Project including all fittings, joints, and connections to structures and equipment.

PART 2 PRODUCTS

2.1 GENERAL

A. Furnish HDPE materials, pipe and fittings manufactured, inspected, sampled and tested in accordance with the requirements of AWWA C906-07 and this Technical Specification. In case of conflict between the requirements of this Technical Specification and AWWA C906-07, the requirements of this Technical Specification prevail.

B. Furnish HDPE pipe as specified in Paragraph 2.3 of this Technical Specification including required appurtenances.

2.2 MATERIALS

A. HDPE pipe and components: Manufactured from resin that meets or exceeds the requirements of the Plastic Piping Institute (PPI) designation PE 4710 and meets the specifications of ASTM D3350-08 with a cell classification of PE: 445574C.

1. The pipe, fittings, and appurtenances contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material.

2. Pipe marking conforms to the requirements of AWWA C906-07.

3. Fittings:

   a. Butt Fusion Fittings: Butt fusion fittings have a manufacturing standard of ASTM D3261-03. Molded and fabricated fittings have the same pressure rating as the pipe unless otherwise specified. Fabricated fittings are manufactured using a Data Logger. Temperature, fusion pressure, and a graphic representation of the fusion cycle are part of the quality control documents.

   b. Electrofusion Fittings: Electrofusion fittings have a manufacturing standard of ASTM F1055-98(2006). Fittings have the same pressure rating as the pipe unless otherwise specified.

4. Flanged and mechanical joint adaptors are PE 4710 HDPE, Cell Classification of 445574C as determined by ASTM D3350-08 with a manufactured standard of ASTM D3261-03. Fitting have the same pressure rating as the pipe unless otherwise specified.

5. Bolts and nuts for mechanical joining components such as flanges are made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any protective coating.

2.3 HDPE PIPE

A. Furnish HDPE pipe with nominal six (6)-inch, 24-inch, 30-inch, and 36-inch outside diameter (OD) with the dimensions and tolerances specified in AWWA C906-07. DR rating and pressure class are 17 and 100 pounds per square inch (psi) WPR, respectively. HDPE pipe has a manufacturing standard of ASTM F714-08.

2.4 FASTENERS

A. Bolts, studs, and nuts are ASTM A193/A193M-09 Grade B16 of the diameter recommended by the fitting or equipment manufacture and are of a length that provides a minimum of one (1) thread and a maximum of four (4) threads projecting from the nut when properly tightened.

1. Install a single flat washer under each nut or bolt head when fastening plastic fittings.

2. Lubricate all bolt and stud threads with a nickel-based anti-seize compound during assembly.

PART 3 EXECUTION

3.1 HANDLING AND STORAGE

A. Use care in handling, transporting, and storage of the pipe, fittings, and appurtenances. During transportation, rest each pipe on pads, strips, skids, or blocks securely tied in place. Store pipe, fittings, and appurtenances on clean, level ground to prevent undue scratching or gouging. If the pipe must be stacked for storage, stack the pipe in accordance with the pipe manufacturer's recommendations. Handle the pipe, fittings, and appurtenances in such a manner that the pipe, fittings, and appurtenances are not damaged by dragging over sharp objects or cut by chokers or lifting equipment. Nylon slings are preferred for the lifting of pipe.

B. Completely remove from the Job Site sections of pipe, fittings and appurtenances with cuts, gouges, or scratches on the outside diameter (OD) surface that exceed ten (10) percent of the wall thickness of the pipe, fitting, or appurtenance. The inside diameter (ID) surface to be free of cuts, gouges, and/or scratches. Replace damaged pipe, fittings, or appurtenances.

3.2 HDPE PIPE JOINING

A. Join pipe and fittings into continuous lengths on the Job Site above ground. Unless otherwise specified, join by the butt-fusion method performed in accordance with the pipe manufacturer's recommendations and ASTM D2657-07. Do not use socket fusion, extrusion welding and hot gas welding.

1. Butt fusion joining meets the following conditions:

a. 400 - 450 degrees Fahrenheit (ºF) with 425 ºF optimum.

b. An internal fusion pressure of 75 psi.

c. A yield joint strength equal to or greater than the tensile strength of the pipe.

d. Made with fusion equipment equipped with a data logger to provide temperature, fusion pressure, and a graphic representation of the fusion cycle.

B. Consult the pipe supplier to obtain machinery and expertise for butt-fusion joining of HDPE pipe and fittings. Joining pipe or fittings by fusion by any of the Contractor's personnel is not allowed unless the Contractor's personnel are adequately trained and qualified in the techniques involved.

C. Flanged joining, or other mechanical joining methods specified, can be used to make connections to differing piping materials, to equipment, valves, and other appurtenances, and where specified.

1. Use full-faced flanges and full-faced gaskets for flanged connections.

3.3 INSTALLATION

A. General:

1. Place pipelines in the trench excavation(s) and backfill as specified in Technical Specification 31 20 00 - Earth Moving.

B. Location and Alignment:

1. Place pipe, fittings, and appurtenances with the trench excavation invert or the storm water perimeter ditch conforming to the elevations, slopes, and alignments shown on the drawings.

3.4 TESTING

A. GENERAL:

1. Perform testing of pipe, fittings, and appurtenances as specified in this paragraph.

2. Testing is by air pressure.

3. Pipe, fittings, and appurtenances are fully pressure tested prior to placing into service.

4. The Owner is present during the testing to observe and document the test results.

B. PIPE, FITTINGS, AND APPURTENANCES:

1. Perform pressure testing using the following procedures:

a. Air is used as the test medium for pressure testing the pipe, fittings, and appurtenances.

b. Secure the pipe at intervals and/or at curves, if necessary, to hold the pipe in place during testing. Extreme caution should be exercised when performing air pressure testing.

c. Cap both ends of the pipe and attach the pressure gages.

d. After all free air is removed from the test section; the pressure in the pipe is raised at a steady rate to the required pressure of ten (10) pounds per square inch (psi).

   1) Measure the pressure in the test section at the lowest point of the test section.

   2) Apply the initial pressure up to ten (10) psi and allowed to stand without makeup pressure for one hour.

   3) Observe no pressure drops during the test period for a passing test.

END OF SECTION

ATTACHMENT 10-1

SOLID WASTE CLOSURE PLAN
***for* RWS I, II, & III, C/D SITE, *and* NON_MSWLF FACILITIES**

I. GENERAL INFORMATION

A. Facility Name: Michigan City Generating Station

B. Facility Location: 101 Wabash Street

Michigan City, Indiana 46360

C. Facility County: La Porte

D. Facility Solid Waste Permit No.: NA

E. Total Fill Acreage (See Instructions): 11.4

II. CLOSURE ACTIVITIES

(Provide a description of the steps that will be used to partially close, if applicable, and finally close the facility. See instructions for items that should be included.)

For each of the five surface impoundments, the steps required to implement closure include the following general construction activities:

A. Mobilization, demolition, installation of erosion and sediment control.
B. Removal of free and interstitial water from CCR material.
Treatment of interstitial and contact water.
C. Excavation, loading of CCR material, including existing liner material (blast furnace slag), and an additional one-foot layer of material beneath the blast furnace slag.
D. Transport of excavated materials (including CCR material, blast furnace slag (liner), and additional one-foot thickness of material) to the NIPSCO RM Schahfer Generating Station onsite landfill.
E. Develop off-site soil borrow area(s)
Backfilling the former surface impoundments with off-site soil and installing storm drain piping.
F. Furnish, transport, place, and grade off-site topsoil
G. Seeding

The closure of the surface impoundments will be performed as a closure by removal including the previously listed construction activities.

After completion of the CCR material excavation, off-site soil material will be used to backfill the former surface impoundment area to the final surface contours and grades shown on the drawings presented in Appendix A of the Closure Application. The contours and grades are designed to also include surface water controls and storm water management. A minimum of six inches of off-site

topsoil material will be placed on top of the backfilled soil material. This soil backfill/topsoil configuration following the removal of the CCR materials is being used in lieu of the typical final cover cap system used for an in-place closure method. As such, the closure costs provided will be for the soil backfill and topsoil configuration.

III. LABOR, MATERIALS, & TESTING (Provide a listing of items necessary to close the facility. For items that will vary depending upon the number of acres to be closed, the quantities should be indicated on a per acre basis.)

A. Item	B. Quantity	C. Units
Off-site soil material	154,876	Cubic yards
Off-site topsoil material	9,200	Cubic yards

IV. EXPECTED YEAR OF CLOSURE

A. Expected Year of Closure (begin closure in 2020) 2022

B. Total Time Required to Close Facility
(See instructions) 2 years

C. Time Required for Intermediate Steps in Closure (Provide a description of intermediate closure activities and the time required. See instructions.)

Not Applicable. Total acreage of the surface impoundments is 11.4 acres and closure of the entire surface impoundments area will be completed sequentially.

V. COST PER ACRE FOR FINAL COVER & VEGETATION

Note: CCR material will be removed and the former surface impoundments will be backfilled with off-site soil overlain by off-site topsoil. Thus, no final cover is being installed.

A. What Percent of Final Cover and topsoil is Available from Areas that are Controlled, and Will be Controlled through Post-Closure by the Permittee?

1. % of final cover 0%

2. Describe location of sources The off-site soil backfill material will be obtained by the contractor performing the surface impoundments closure activities from a borrow source(s) in strict accordance with the technical specifications and approved by NIPSCO.

3. % of topsoil 0%

4. Describe location of sources The off-site topsoil material will be obtained by the contractor performing the surface impoundments closure activities from a borrow source(s) in strict accordance with the technical specifications and approved by NIPSCO.

B. Cost Per Acre for Acquisition, Placement, & Compaction of Two Feet of Final Cover

NOTE: The costs provided in Section B are for the acquisition, placement, and compaction of the volume of off-site soil backfill material required to create the final surface contours and grades shown on the drawings presented in Appendix A of the Closure Application. This is not a final cover system and the information is provided to fit this form as close as possible.

1. Acquisition

   a. Quantity of clay (soil material) needed per acre (cy/acre) 13585

   b. Excavation unit cost ($/cy) (if obtained on-site) NA

c. Purchase unit cost ($/cy) (if obtained off-site)	$17.00
d. Delivery unit cost ($/cy) (if obtained off-site)	Included in c.
e. Acquisition cost ($/acre) Line 1a*Line 1b* (or) Line 1a* (Line 1c + Line 1d)	$230,945
2. Placement and Compaction	
a. Placement/spreading unit cost	Included in 1.
b. Compaction unit cost ($/cy)	Included in 1.
c. Placement and Compaction Cost ($/acre) Line 1a* (Line 2a + Line 2b)	Included in 1.
3. Testing	
a. Soil classification (if soil source is of variable quality)($/Acre)	Included in 1.
b. Survey control for cover thickness and proper slopes ($/acres	Included in 1.
c. Density testing ($/acre)	Included in 1.
d. Testing Cost ($/acre) Line 3a + Line 3b + Line 3c	Included in 1.
4. Clay Cover Cost ($/acre) Line 1e+ Line 2c + Line 3d	Same as 1e.

C. <u>Cost Per Acre for Acquisition & Placement of Topsoil</u>

1. Acquisition	
a. Quantity of topsoil needed per acre (cy/acre)	807
b. Excavation unit cost ($/cy) (if obtained off-site)	Included in 1d.
c. Purchase unit cost ($/cy) (if obtained off-site)	Included in 1d.

d. Delivery unit cost ($/cy) (if obtained off-site)	$12.00
e. Acquisition cost ($/acre) Line 1a*Line 1b* (or) Line 1a* (Line 1e + Line 1d)	$9,684
2. Placement	
a. Spreading unit cost ($/cy)	Included in 1d.
b. Placement cost ($/acre)	Included in 1d.
3. Topsoil Cost ($/acre) Line 1e+ Line 2b	Same as 1e.

D. Cost Per Acre to Establish Vegetation

1. Vegetation	
a. Seeding unit cost ($/acre)	$6,534
b. Fertilization unit cost ($/acre)	Included in 1a.
c. Mulching unit cost ($/acre)	Included in 1a.
d. Vegetation Establishment Cost ($/acre) Line 1a + Line 1b + Line 1c	$6,534

E. Cost Per Acre to Certify Closure

1. Registered Professional Engineer	
a. Initial review of closure plan (hrs)	40
b. Total number of inspections	8
c. Inspection time required (hrs/visit)	16
d. Total inspection time (hrs) Line 1b*Line 1c	128

e.	Prepare final documentation (hrs)	40
f.	Total engineer time (hrs) Line 1a + Line 1d + Line 1e	208
g.	Engineer unit labor cost ($/hr)	$125
h.	Professional engineer cost ($) Line 1f*Line1g	26,000
i.	Area of site permitted for filling (acres)	11.4
j.	Closure Certification Cost ($/acre) Line 1h/Line1i	2,280

F. Other Costs Per Acre for Final Cover and Vegetation

1.	Other Costs ($/acre)	$0

G. Total of Items B through F (Must not be less than $5,000) **$249,443**

VI. OTHER CLOSURE COSTS (Give these on a total facility basis rather than per acre.)

A. Notification of Property Deed 2,500

B. Other Costs

Cost for items such as drainage features, installation of gas vents, etc., should be delineated in this section.

1. Activity	Cost
Mobilization, demolition, erosion control	$825,000
Dewatering, water treatment, storm water control	$3,100,000
CCR Removal, excavate and load	$2,087,000
Transport CCR to Schahfer Landfill	$3,614,000
Borrow site development, storm water control, restoration	$3,789,000

2. Total of Other Costs ($) $13,415,000

C. Total (Add costs from Sections A. and B.) $13,417,500

VII. CLOSURE COST ESTIMATE (Multiply Item I.E. by Item V.G. and then add Item (VI.C.): **$16,050,273**

*A contingency greater than 10 percent is included in the costs.

VIII. ADDITIONAL INFORMATION REQUIRED FOR FACILITIES PROVIDING FINANCIAL ASSURANCE ON AN INCREMENTAL BASIS

A. Will Closure Financial Assurance be Provided on an Incremental Basis? (If the answer to this question is no, skip to Item IX.) **NO**

B. Map of Areas of Waste Deposition (Attach a copy of the facility's final contour map which shows the maximum areas of waste deposition on a yearly basis for the remaining life of the facility.)
NOT APPLICABLE

C. Maximum Areas of Waste Deposition & Closure Costs (Fill in the following table for each remaining year of the facility's life.)

NOT APPLICABLE

Year	Max. Area of Waste Deposition (cumulative acres) (end of year)	Closure Cost w/o Partial Closure ($)	Area Partially Closed (cumulative acres) (start of year)	Increm. Closure ($)

IX. ENGINEER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information.

Signature: RAIsaac **Date:** 5/31/19

Name: Richard A. Isaac

Address: 921 Eastwind Drive, Suite 129

Westerville, Ohio 43081

Telephone No.: (614) 440-9923

Professional Engineer Registration No.: Indiana 11700594

ATTACHMENT 10-2

SOLID WASTE POST-CLOSURE PLAN
***for* RWS I, II, & III, C/D SITE, *and* NON_MSWLF FACILITIES**

I. GENERAL INFORMATION

A. Facility Name: Michigan City Generating Station

B. Facility Location: 101 Wabash Street

Michigan City, Indiana 46360

C. Facility County: La Porte

D. Facility Solid Waste Permit No.: NA

II. POST-CLOSURE CONTACT PERSON

A. Name: Jeff Neumeier

B. Address: 246 Bailly Station Road

Chesterton, Indiana 46304

C. Telephone No.: (219) 787-7337 (Bailly Generating Station Office)

(219) 873-7337 (Michigan City Generating Station Office)

(219) 680-7098 (Mobile)

D. E-Mail Address: JNeumeier@Nisource.com

III. GROUNDWATER MONITORING ACTIVITIES (Provide a description of planned groundwater monitoring activities including the frequency of the activities. See instructions.)

The post-closure groundwater monitoring program includes 20 existing groundwater monitoring wells that will monitor groundwater quality near the five surface impoundments shown in the following table:

	Monitoring Well Locations	Top of Casing Elevation (ft-msl)	Total Depth of Well (ft-bgs)	Screen Interval Top (ft-bgs)		Screen Interval Bottom (ft-bgs)	Well Diameter (inches)
Background	GAMW-05	600.02	15.0	10.0	-	15.0	2
	GAMW-12	600.83	15.0	10.0		15.0	2
	GAMW-18	603.40	15.0	5.0		15.0	2
Primary 2	GAMW-08	612.06	25.0	20.0	-	25.0	2
	GAMW-09	613.20	25.0	20.0	-	25.0	2
	GAMW-13	612.25	24.0	19.0		24.0	2
	GAMW-14	612.66	24.0	19.0		24.0	2
	GAMW-15	613.05	24.0	19.0		24.0	2
	GAMW-16	613.30	25.0	20.0		25.0	2
	GAMW-17	613.52	25.0	20.0		25.0	2
	GMMW1	612.31	28.3	18.3	-	28.3	2
Boiler Slag Pond	GAMW-10	594.26	15.0	10.0		15.0	2
	GAMW-11	594.17	15.0	10.0		15.0	2
	GMMW2	596.48	19.3	14.3	-	19.3	2
Primary 1 and Secondary 1	GAMW-01A	612.67	37.0	32.0	-	37.0	2
	GAMW-01B	612.57	50.0	45.0	-	50.0	2
	GAMW-02	612.81	30.0	25.0	-	30.0	2
	MW-3	610.84	31.6	NA	-	NA	1.5
Secondary 2	GAMW-03A	595.98	15.0	10.0	-	15.0	2
	GAMW-03B	596.01	26.0	21.0	-	26.0	2
	Lake Michigan	586.40	-	-	-	-	-

Notes:

Locations surveyed in US State Plane Indiana West Zone NAD 1983, NAVD 1988 (ft)

ft-bgs = feet below ground surface

ft-msl = feet above mean sea level

ft-btoc = feet below top of casing

CCR and RCRA Background well

CCR Downgradient Well

RCRA Downgradient Well

Post-closure monitoring frequency will be as follows:

- Years 1 to 30 – **semi-annual monitoring** for all parameters necessary to detect/assess changes in groundwater quality because of closure activities. NIPSCO will maintain consistency with the ongoing semi-annual RCRA assessment and CCR monitoring programs, for which sampling is currently conducted primarily in April and October. The initial semi-annual event will be scheduled for the earlier of either April or October following post-closure certification.
- Year 6 –Upon completion of five years of semi-annual monitoring post-closure, in Year 6, NIPSCO will **develop trend lines, data plots, and statistical analyses** of select indicator parameters to determine whether monitoring data confirm plume stability has been achieved. NIPSCO will evaluate potential trends in wells at both the waste management boundary (i.e., detection wells) and at the leading edge of the plume. If data confirm plume stability, NIPSCO will concurrently review changes to the CCR Final Rule and State of Indiana analogous regulations to determine the viability of program alternatives to strict semi-annual monitoring.

Assuming technical and regulatory support is available, NIPSCO will propose an annual monitoring program discussed in the following bullet item to begin upon IDEM's review and approval.

- Potential Alternative: Years 6 to 30 – **annual monitoring** (if supported by the previous bullet discussion) for all parameters in April or October, consistent with completion of Year 5 semi-annual monitoring activities. At the conclusion of the 30-year post-closure monitoring period and/or implementation of active groundwater remediation efforts, NIPSCO will cease monitoring if groundwater quality has achieved background concentrations or gradients have reversed because of groundwater extraction (i.e., wells that were formerly downgradient are rendered upgradient due to the effects of groundwater pumping). If the program remains in the assessment phase of monitoring at the end of the 30-year period, NIPSCO will continue monitoring efforts beyond the nominal 30 years until returning to detection for three consecutive years, at which point all groundwater monitoring will be discontinued.

Consistent with the CCR Final Rule monitoring requirements and the IDEM 7 February 2018 groundwater monitoring parameter expansion, the post-closure monitoring parameter list will include:

Field-based water quality parameters	pH, specific conductivity, temperature, turbidity, oxidation-reduction potential
40 CFR, Part 257 Appendix III Detection Monitoring Parameters	Boron, calcium, chloride, fluoride, sulfate, total dissolved solids, pH
40 CFR, Part 257 Appendix IV Assessment Monitoring Parameters	Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, radium 226 and 228 (combined)
Supplemental Parameter	Hardness

A detailed discussion of the groundwater monitoring program for the former surface impoundments is presented in Section 9.1 in the Closure Application.

IV. MAINTENANCE ACTIVITIES (Provide a description of planned maintenance activities and the frequency at which they will be performed. See instructions.)

Inspections will be performed biannually for the following items:

- Final backfill area
- Surface water management system
- Groundwater monitoring program
- Site benchmarks and other survey control integrity.

The maintenance activities will depend on the issues observed during the biannual inspections throughout the post-closure care period. The post-closure care plan addresses how the identified issues will be handled in a general sense, with specific remedial efforts determined based on the severity of each identified issue. A schedule for addressing identified issues will be included in the inspection report, again, determined based on the severity of each identified issue.

The maintenance activity for each specific issue will be performed as soon as practical. Initiation of maintenance activities and length of time required to address each issue will vary depending on the issue severity. For example, replacing a missing or broken lock on a groundwater monitoring well protective casing can be performed in a much shorter timeframe than repairing erosion gullies/rills or settlement in the final backfill area.

A detailed discussion of the post-closure inspection/maintenance activities for the former surface impoundments is presented in Section 9.2 and Section 9.3, respectively in the Closure Application.

V. POST-CLOSURE COST ESTIMATE (See instructions. Note that these estimates are to be presented for the entire post-closure care period rather than on a year basis.)

A. Cost for Semi-Annual Inspections and Reports

1. Inspection

a. Number of inspections during post-closure period (semi-annual inspections for 30 years)	60
b. Inspector time required (hrs/insp)	8
c. Inspector unit cost ($/hr)	$95
d. Inspection cost ($) Line 1a*Line 1b*Line 1c	$45,600

2. Report Preparation

a. Number of reports during post-closure period	60
b. Cost per report ($/hr)	$1,200
c. Report cost ($) Line 2a*Line 2b	$72,000

3. Inspection and Report Cost ($)	$117,600

B. Cost for Maintenance of Final Cover and Vegetation

The cost for cover maintenance and vegetation shall be 10% of the cost per Acre calculated for final cover and vegetation in the closure plan.

1. Final Cover Maintenance

a. 10% of the cost for placement of final cover and Vegetation (as determined in Item V.G. of the Closure Plan)($/Acre)	
b. Total area of site permitted for filling (acres)	
c. Cover Maintenance Cost ($) Line 1a*Line 1b	Refer to K. Other Costs

C. Cost for Vegetation Control

Certain areas are required to be mowed per regulation. See instructions.

1. Mowing

a. Mowing frequency (visits/30 years)	60
b. Area to be mowed (acres/visit)	11.4
c. Mowing unit cost ($/acre)	$150
d. Vegetation Control Cost ($) Line 1a*Line 1b*Line 1c	$102,600

D. Cost for Maintenance of Access Control & Benchmarks

1. Access Control Maintenance

a. Access control maintenance frequency (visits/30 years)	NA
b. Amount of fence needing replacement (linear feet/visit)	NA
c. Fence unit cost ($/linear foot)	NA
d. Fence Cost ($) Line 1a*Line 1b*Line 1c	The access control to the former surface impoundments is via the perimeter security fence around the entire MCGS facility; therefore, no access control maintenance is required
e. Other ($) (Specify) None	NA
f. Access Control Maintenance Cost ($) Line 1d + Line 1e	NA

2. Benchmark Maintenance Cost (if any)($)	$5,000
3. Access Control & Benchmark Repair Cost ($) Line 1f + Line 2	$5,000

E. Cost for Leachate Collection System Monitoring and Maintenance

1. Leachate Collection System Inspection

   a. Inspection frequency (insp/30 years) NA

   b. Inspection time required (hrs/insp) NA

   c. Inspection unit labor cost ($/hr) NA

   d. Inspection Cost ($)
   Line 1a*Line 1b*Line 1c NA

2. Leachate Collection System Maintenance

   a. Number of pumps replaced during post-closure
   (pumps/30 years) NA

   b. Pump unit cost ($/pump) NA

   c. Other ($) NA
   (Specify) _____
   _____
   _____

   d. Leachate System Maintenance ($)
   (Line 2a*Line 2b) + Line 2c NA

3. Leachate Collection Monitoring and Maintenance Cost ($)
   Line 1d + Line 2d NA

F. Cost for Methane Control System Monitoring and Maintenance

1. Methane Control System Monitoring

   a. Gas monitoring frequency (visits/30 years) NA

   b. Time required to monitor (hrs/visit) NA

   c. Contract lab technician unit
   labor cost ($/hr) NA

d.	Gas Monitoring Cost ($) Line 1a*Line 1b*Line 1c	NA
2.	Gas Monitoring Well Maintenance	
a.	Maintenance frequency (visits/30 years)	NA
b.	Monitoring wells needing maintenance per visit	NA
c.	Maintenance time required (hrs/well)	NA
d.	Unit labor cost ($/hr)	NA
e.	Monitoring and Well Maintenance Cost ($) Line 2a*Line 2b*Line 2c*Line 2d	NA
3.	Gas Monitoring and Maintenance Cost ($) Line 1d + Line 2e	NA

G. Cost for Groundwater Monitoring System Maintenance

1.	Monitoring Well Maintenance	
a.	Maintenance frequency (visits/30 years)	5
b.	Number of monitoring wells needing maintenance per visit	1
c.	Maintenance time required (hrs/well)	10
d.	Unit labor cost ($/hr)	$70
e.	Monitoring Well Maintenance Cost ($) Line 1a*Line 1b*Line 1c*Line 1d	$3,500
2.	Monitoring Well and Parts Replacement	
a.	Number of wells needing replacement during post-closure period	5

b.	Existing monitoring well sealing unit cost ($/well)	$1,500
c.	New monitoring well construction unit cost ($/well)	$3,800
d.	Monitoring Well Replacement Cost ($) Line 2a*(Line 2b + Line 1c)	$26,500
e.	Number of pumps needing replacement during post-closure period	10
f.	Pump unit cost ($/pump)	$500
g.	Pump Cost ($) Line 2e*Line 2f	$5,000
3.	Groundwater Monitoring System Maintenance Cost ($) Line 1e + Line 2d + Line 2g	$35,000

H. Cost for Groundwater Monitoring

1.	Groundwater Monitoring	
a.	Number of required monitoring wells	20
b.	Monitoring frequency (semi-annual sampling for 30 years)	60
c.	Sampling and analysis ($/well)	$1,383
d.	Groundwater Monitoring Cost ($) Line 1a*Line 1b*Line 1c	$1,659,600

I. Cost for Leachate Hauling

1.	Leachate Pumping & Hauling	
a.	Leachate removal frequency (visits/30 years)	NA

b. Quantity to be managed off-site (gallons/visit) NA

c. Truck capacity (gallons NA

d. Number of loads/visit Line 1b/Line 1c (round up to the nearest integer) NA

e. Pumping and transportation unit cost($/load) NA

f. Leachate Hauling Cost ($) Line 1a*Line 1d*Line 1e NA

J. Cost for Leachate Disposal

1. Leachate Treatment

a. Volume of leachate requiring Disposal (gallons NA

b. Disposal unit cost ($/gal) NA

c. Leachate Disposal Cost ($) Line 1a*Line 1b NA

K. Other Costs

Any costs not included in the above items should be included here. These might include drainage ditch, access road, and sedimentation pond maintenance, lift station power costs, etc.

1. **Activity**	**Cost**
Maintenance of soil backfill and topsoil: assume one foot of soil/topsoil over two percent of the former surface impoundments area required to fix erosion rills/gullies per year for the first five years following completion of the closure activities and once every five years for the remaining 25 years of the post-closure care period.	$44,400
Maintenance of vegetation – additional seeding: assume two percent of the former surface impoundments area required to be revegetated per year for the first five years following	

	completion of the closure activities and once every five years for the remaining 25 years of the post-closure care period.	$4,560
2.	Total of Other Costs ($)	$48,960
L.	**Total Post-Closure Cost Estimate ($)** (Total of preceding categories)	$1,933,760

*A contingency greater than 10 percent is included in the costs.

VI. SIGNATORY CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further certify that I am authorized to submit this information.

Signature: RIA **Date:** 5/31/19

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