UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 4 & REGION 3

IN THE MATTER OF: Eden Ash Spill, (a/k/a/ Duke Coal Ash Spill) Eden, Rockingham County, North Carolina	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTION
	U.S. EPA Region 4 U.S. EPA Region 3
Duke Energy Carolinas, LLC Respondent	CERCLA Docket No. 04-2014-3762 Proceeding Under Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Settlement Agreement and Order on Consent ("Settlement Agreement") is entered into by the United States Environmental Protection Agency ("EPA") and Duke Energy Carolinas, LLC ("Respondent" or "Duke Energy"). This Settlement Agreement provides for the performance of a removal action by Respondent and the payment of certain response costs incurred by the United States at or in connection with the "Eden Ash Spill Site", a/k/a/ "Duke Coal Ash Site", (the "Site") as defined below.

2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622, as amended ("CERCLA"), and delegated to the Administrator of the EPA by Executive Order 12580, 52 Fed. Reg. 2923 (Jan. 23, 1987), and within EPA further delegated to the Regional Administrators by EPA Delegation Nos. 14-14-C and 14-14-D, and re-delegated to the Regional Superfund/Hazardous Site Cleanup Directors by Regional Delegations 14-14-C and 14-14-D.

3. EPA has notified the State of North Carolina and the Commonwealth of Virginia (the "States") of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

4. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact, and conclusions of law and determinations in Sections IV and V of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

5. This Settlement Agreement applies to and is binding upon EPA and upon Respondent and its successors and assigns. Any change in ownership or corporate status of the Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this Settlement Agreement.

6. Respondent shall ensure that its contractors, subcontractors, and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement. Respondent shall be responsible for any noncompliance with this Settlement Agreement.

III. DEFINITIONS

7. Unless otherwise expressly provided in this Settlement Agreement, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations.

Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Action Memorandum" shall mean the EPA Action Memorandum relating to the Site signed on May 22, 2014, by the Regional Administrator, EPA Region 4, or her delegate, and all attachments thereto. The Action Memorandum is attached as Appendix B.

b. "Administrative Record" shall mean the record supporting the Action Memorandum, compiled by the EPA and located at 61 Forsyth St., Atlanta, GA 30303.

c. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675.

d. The term "day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

e. "Eden Special Account" shall mean the special account, within the EPA Hazardous Substances Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

f. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXX.

g. "EPA" (or "Agency") shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

h. "NCDENR" shall mean the North Carolina Department of Environment and Natural Resources and any successor departments or agencies of the State of North Carolina.

i. "Future Response Costs" shall mean all costs including but not limited to direct and indirect costs that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement. Future Response Costs shall also include (a) all interest on those costs Settling Defendants have agreed to reimburse under this Settlement Agreement that have accrued pursuant to 42 U.S.C. Section 9607(a) during the period from the effective date of the Order to the date of payment, and (b) all costs incurred in connection with the Site prior to the effective date of this Settlement Agreement but paid after that date.

j. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

k. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

l. "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral or an upper or lower case letter.

m. "Parties" shall mean EPA and the Respondent.

n. "Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site through the Effective Date of this Administrative Order on Consent, plus Interest on all such costs through such date.

o. "RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.* (also known as the Resource Conservation and Recovery Act).

p. "Respondent" shall mean the Duke Energy Carolinas, LLC, a Delaware Corporation, headquartered at 550 South Tryon Street, Charlotte, NC 28202.

q. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral.

r. "Settlement Agreement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Settlement Agreement and any appendix, this Settlement Agreement shall control.

s. "Site" shall mean the Eden Ash Spill Superfund Site located at 900 South Edgewood Road in Eden, Rockingham County, North Carolina, 27288 and the areal extent of contamination, and depicted generally on the maps attached as Appendix A.

t. "States" shall mean the State of North Carolina and the Commonwealth of Virginia.

u. "United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

v. "VDEQ" shall mean the Virginia Department of Environmental Quality and any successor departments or agencies of the Commonwealth of Virginia.

w. "Waste Material" shall mean (a) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (c) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

x. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement except those required by Section XI (Record Retention).

IV. EPA's FINDINGS OF FACT

8. Duke Energy owns the Dan River Steam Station ("Steam Station") north of Eden, North Carolina in Rockingham County. As a result of the combustion of the coal in the Steam Station power plant, residual fly ash and bottom ash was generated. At the Steam Station, Duke maintained two impoundments (primary and secondary), which, at the time of the spill, collectively held approximately 1.2 million tons of coal ash mixed with surface water.

9. At approximately 1500 hrs on February 2, 2014, security officials at the Steam Station noticed some of the coal ash and water mixture being released from a buried 48" storm sewer into the Dan River. Initial efforts by Duke Energy were not fully successful in stopping the release. The North Carolina Department of Environment and Natural Resources (NCDENR) was notified of the release by Duke Energy on February 2, 2014, and investigated the facility. Once it was determined that there was a release of coal ash ("ash") the United States Environmental Protection Agency Region 4 Raleigh Outpost On-Scene Coordinator ("OSC") was notified and requested to assist in the oversight of cleanup activities. Following coordination with the EPA Region 4 Telephone Duty Officer and Region 4 Removal Manager, two OSCs were deployed to the scene from Atlanta, Georgia. Because the coal ash flowed downstream into Virginia, an OSC was deployed from EPA Region 3 to provide additional assessment and oversight support.

10. The cause of the release is currently under investigation, but appears to be the result of a sudden collapse of a 48-inch diameter storm sewer line that runs beneath the primary coal ash storage impoundment. Coal ash and ash pond water flowed into the failed section of the 48-inch line, and was then discharged to the Dan River. NCDENR discovered a second, 36-inch storm water drain beneath the ash pond, which was releasing groundwater containing elevated levels of arsenic. The 48-inch storm sewer line and a 36-inch storm sewer line that both run under the primary coal ash basin were eventually sealed. The estimated volume of ash released was between 30,000 and 39,000 cubic yards. In addition, approximately 27 million gallons of ash pond water waste were released.

11. The Dan River is a navigable-in-fact water of the United States, and its watershed is home to two identified endangered species. The Dan River is a recreational water body used for subsistence fishing as well as canoeing and kayaking, and is a source of drinking water. The nearest drinking water intakes are Danville, VA (23 miles downstream) and South Boston, VA (68 miles downstream). Livestock has access to the river and the river is used for crop irrigation. The release extended to approximately 70 miles downstream, into Kerr Reservoir, Virginia.

12. On February 28, 2014, NCDENR regulators issued notices of violation to Duke Energy with the possibility of fines for violations of state environmental laws related to the spill. One notice of violation alleges that Duke Energy did not apply for nor obtain a National Pollutant Discharge Elimination System storm water permit required for storm water discharges to the Dan River. NCDENR directed Duke Energy to respond in writing within 30 calendar days of receiving the notice. Duke responded to this notice on March 27, 2014. The second notice of violation cited Duke Energy for allegedly violating water quality laws, rules and permit conditions in association with the management of the coal ash pond and the spill. Duke responded to this notice on March 31, 2014.

13. Since the release, EPA, the States, and Duke Energy have conducted extensive sampling of surface water, sediment, and ash material. Sampling results for surface water have revealed levels of arsenic, lead, aluminum, iron, beryllium, copper, boron, zinc, nitrate nitrogen, and manganese which exceed Region 4's risk-based ecological risk screening levels ("ERSL"s). Sediment sampling results detected concentrations of aluminum, arsenic, barium, copper, lead, iron, manganese, selenium, silver, and thallium which exceed Region 4's ERSLs. Region 4's ERSLs are based on conservative endpoints and sensitive ecological effects data, and represent a preliminary screening of site contaminant levels to determine if there is a need to conduct further investigations at a site. As maintained in the Action Memorandum attached hereto as Appendix B, the actual or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health, welfare, or the environment within the meaning of Section 104(a) and 106(a).

V. EPA'S CONCLUSIONS OF LAW AND DETERMINATIONS

14. Based on the Findings of Fact set forth above, and the Administrative Record supporting this removal action, EPA has determined that:

a. The Duke Energy Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

b. Coal ash released from the Site contains constituents such as arsenic, aluminum, beryllium, cadmium, chromium, copper, lead, mercury, nickel, manganese, selenium, and zinc, which are "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), because they are listed at 40 C.F.R. § 302.4.

c. The Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

d. The Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and is liable for performance of response action and for response costs incurred and to be incurred at the Site. Respondent is the "owner(s)" and/or "operator(s)" of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

e. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C.§ 9601(22).

f. The removal action required by this Settlement Agreement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement Agreement, will be consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

VI. SETTLEMENT AGREEMENT AND ORDER

15. Based upon the foregoing Findings of Fact, Conclusions of Law, Determinations, and the Administrative Record for this Site, it is hereby Ordered and Agreed that Respondent

shall comply with all provisions of this Settlement Agreement, including, but not limited to, all attachments to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

16. Respondent shall retain one or more contractors to perform the Work and shall notify EPA of the name(s) and qualifications of such contractor(s) within fourteen (14) days of the Effective Date. Respondent shall also notify EPA of the name(s) and qualification(s) of any other contractor(s) or subcontractor(s) retained to perform the Work at least fourteen (14) days prior to commencement of such Work. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If EPA disapproves of the selection of the contractor, Respondent shall retain a different contractor and shall notify EPA of that contractor's name and qualifications within ten (10) days of EPA's disapproval. The proposed contractor must demonstrate compliance with ANSI/ASQC E-4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B0-1/002), or equivalent documentation as required by EPA. Any decision not to require submission of the contractor's QMP should be documented in a memorandum from the OSC and Regional QA personnel to the Site file.

17. Within fourteen (14) days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the selection of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number, and qualifications within ten (10) days following EPA's disapproval. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by the Respondent. Respondent's Project Coordinator shall not be Respondent's legal representative.

18. EPA has designated Ken Rhame of the Emergency and Enforcement Response Branch, Region 4, as its On-Scene Coordinator ("OSC"). Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement to the OSC at EPA Region 4, 61 Forsyth Street, Atlanta, Georgia, 30303. In addition, the Respondent shall also direct copies of all submissions relating to matters in the Commonwealth of Virginia to Myles Bartos at EPA Region 3, Eastern Response Branch, 1650 Arch Street, 3HS31, Philadelphia, PA 19103-2029. Upon request by EPA, Respondent shall submit such documents in electronic form.

19. EPA and Respondent shall have the right, subject to Paragraph 17, to change its respective designated OSC or Project Coordinator. Respondent shall notify EPA ten (10) days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notice.

VIII. WORK TO BE PERFORMED

20. Respondent shall perform the actions listed below at the Site:

a. Continue surface water, drinking water, and sediment assessments and monitoring as determined by the EPA in consultation with NCDENR, VDEQ and local jurisdictions to detect the presence of contamination until implementation of the removal Site assessment outlined in part (e) of this paragraph;

b. Remove any remaining coal ash from the Dan River from the Steam Station Release Location at the Site to the Schoolfield Dam located in Danville, Virginia, 27 river-miles downstream of the Steam Station, as such locations are generally depicted in the map attached hereto as Appendix A, to the maximum extent practicable as determined by EPA in consultation with NCDENR, VDEQ, and the U.S Fish and Wildlife Service, taking into consideration factors including but not limited to, avoiding inappropriate disturbance of sensitive ecosystems, and environmentally problematic disturbance of legacy contamination in the Dan River;

c. Ensure that coal ash material recovered during work described above is properly managed pending ultimate disposal;

d. Treat water generated as a result of the work described above in accordance with NPDES requirements and applicable surface water quality standards for return to the Dan River;

e. Develop and implement a comprehensive removal Site assessment, including ecological, surface water, and sediment assessments, to determine the extent of any residual contamination remaining in the Dan River to and including the Kerr Reservoir after previous cleanup activities and the work described above. If EPA determines, based on the comprehensive removal Site assessment, that additional removal actions to address residual contamination are necessary to protect public health, welfare, or the environment, EPA will notify Respondent in writing of that determination. This Order may later be amended if further removal actions are needed to address such residual contamination;

f. Dispose off-site all recovered coal ash removed from the work described above in accordance with Section 121(d)(3) of CERCLA and 40 C.F.R. 300.440, and paragraph 27 (Off-Site Shipments);

g. Provide the EPA OSC an engineering report describing the post-release containment measures implemented by Respondent to provide for the structural integrity of the impoundments and storm sewer lines running under the primary coal ash basin, and describing the temporary storm water system measures approved by NCDENR and implemented by Respondent; and

h. In the event the Respondent initiates permanent closure at the two impoundments at the Site, Respondent shall notify the EPA.

21. Work Plan and Implementation.

a. Within fifteen (15) days after the Effective Date, Respondent shall submit to EPA for approval a draft Work Plan for performing the removal action generally described in Paragraph 20 above (other than Paragraphs 20.e and 20.g). The draft Work Plan shall provide a description of, and an expeditious schedule for, the actions required by this Settlement Agreement. The Work Plan shall include a Quality Assurance Project Plan ("QAPP"). The QAPP should be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001, Reissued May 2006), and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/240/R-02/009, December 2002).

b. No later than July 15, 2014, Respondent shall submit to EPA for approval an additional draft Work Plan for performing the comprehensive removal Site assessment generally described in Paragraph 20.e above.

c. EPA, in consultation with NCDENR and VDEQ as appropriate, may approve, disapprove, require revisions to, or modify the draft Work Plans in whole or in part. If EPA requires revisions to a draft Work Plan, Respondent shall submit a revised draft Work Plan within fourteen (14) days of receipt of EPA's notification of the required revisions. Respondent shall implement the Work Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement Agreement.

d. Approval of the Work Plan shall not limit the EPA's authority under the terms of this Order to require Respondent to conduct activities to accomplish the work outlined in Paragraph 20 of this Order.

e. After the effective date, Respondent shall not commence any Work except in conformance with the terms of this Settlement Agreement. Respondent shall not commence implementation of the Work Plan developed hereunder until receiving written EPA approval pursuant to Paragraph 21(c).

22. Health and Safety Plan. Within thirty (30) days after the Effective Date, Respondent shall submit for EPA review and acceptance, in consultation with NCDENR and VDEQ as appropriate, a plan that ensures the protection of the public health and safety during performance of on-site work under this Settlement Agreement. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the removal action.

23. Quality Assurance and Sampling.

a. All sampling and analyses performed pursuant to this Settlement Agreement shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control ("QA/QC"), data validation, and chain of custody procedures. Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate EPA guidance. Respondent shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001; Reissued May 2006)," or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.

b. Upon request by EPA, Respondent shall have such a laboratory analyze samples submitted by EPA for QA monitoring. Respondent shall provide to EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

c. Upon request by EPA, Respondent shall allow EPA or its authorized representatives, and NCDENR and VDEQ, to take split and/or duplicate samples. Respondent shall notify EPA not less than ten (10) days in advance of any sample collection activity, unless shorter notice is agreed to by EPA. EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Respondent to take split or duplicate samples of any samples it takes as part of its oversight of Respondent's implementation of the Work.

24. Post-Removal Site Control. In accordance with the Work Plan schedule, or as otherwise directed by EPA, Respondent shall submit a proposal for post-removal site control consistent with Section 300.415(*l*) of the NCP and OSWER Directive No. 9360.2-02. Upon EPA approval in consultation with NCDENR and VDEQ as appropriate, Respondent shall implement such controls and shall provide EPA with documentation of all post-removal site control arrangements.

25. Reporting.

a. Respondent shall submit a written progress report to EPA, with copies to NCDENR and VDEQ, concerning actions undertaken pursuant to this Settlement Agreement every 7th day after the date of receipt of EPA's approval of the Work Plan until termination of this Settlement Agreement, unless otherwise directed in writing by the appropriate OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule

of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

b. Respondent shall submit copies of all plans, reports or other submissions required by this Settlement Agreement or any EPA-approved work plan to the OSC. Upon request by EPA, Respondent shall submit such documents in electronic form.

c. Respondent shall, at least 30 days prior to the conveyance of any interest in real property at the Site, give written notice to the transferee that the property is subject to this Settlement Agreement and written notice to EPA and the States of the proposed conveyance, including the name and address of the transferee. Respondent also agrees to require that its successors comply with the immediately preceding sentence and Sections IX (Site Access) and X (Access to Information).

26. Final Report. Within sixty (60) days after completion of all Work required by this Settlement Agreement, Respondent shall submit for EPA review, and approval in consultation with NCDENR and VDEQ as appropriate, a final report summarizing the actions taken to comply with this Settlement Agreement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports." The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Settlement Agreement, a listing of quantities and types of materials removed off-site or handled on-site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, a listing and discussion of the areas from which ash material was removed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a (i) a president, secretary, treasurer or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing facilities employing more than 250 persons:

"Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is 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."

27. Off-Site Shipments.

a. Respondent may ship hazardous substances, pollutants and contaminants collected, staged, or otherwise handled pursuant to this Settlement Agreement to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 200.440(b). Respondent may ship Investigation Derived Waste

(IDW) from the Site to an off-Site facility only if Respondent complies with EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992).

b. Respondent may ship Waste Material collected, staged, or otherwise handled pursuant to this Settlement Agreement to an out-of-state waste management facility only if, prior to any shipment, it provides written notice to the appropriate state environmental official in the receiving facility's state and to the OSC. This written notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent also shall notify the state environmental official referenced above and the OSC of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the written notice after the award of the contract for the removal action and before the Waste Material is shipped.

IX. SITE ACCESS

28. If the Site, or any other property where access is needed to implement this Settlement Agreement is owned or controlled by Respondent, Respondent shall, commencing on the Effective Date, provide EPA, the States, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

29. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within thirty (30) days after the Effective Date, or as otherwise specified in writing by the OSC. Respondent shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. EPA may then assist Respondent in gaining access, to the extent necessary to effectuate the response actions described in this Settlement Agreement, using such means as EPA deems appropriate. Respondent shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XV (Payment of Response Costs).

30. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

X. ACCESS TO INFORMATION

31. Respondent shall provide to EPA, upon request, copies of all documents and information within its possession or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the

Work. Respondent shall also make available to EPA, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

32. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA, or if EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent.

33. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, it shall provide EPA with the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of the author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the contents of the document, record, or information; and (f) the privilege asserted by Respondent. However, no documents, reports, or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged or confidential.

34. No claim of privilege or confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site. The EPA reserves all rights under Section 104(e) to request any documents and information.

XI. RECORD RETENTION

35. Until 10 years after Respondent's receipt of EPA's notification pursuant to Section XXVIII (Notice of Completion of Work), the Respondent shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 10 years after Respondent's receipt of EPA's notification pursuant to Section XXVIII (Notice of Completion of Work), Respondent shall also instruct its contractors and agents to preserve all documents, records, and information of whatever kind, nature, or description relating to performance of the Work.

36. At the conclusion of this document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such records or documents, and, upon request by EPA, Respondent shall deliver any such records or documents to EPA. Respondent may assert

that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide EPA with the following: (a) the title of the document, record, or information; (b) the date of the document, record, or information; (c) the name and title of the author of the document, record, or information; (d) the name and title of each addressee and recipient; (e) a description of the subject of the document, record, or information; and (f) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged or confidential.

37. The Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any records, documents, or other information (other than identical copies) relating to its potential liability regarding the Site since the earlier of notification of potential liability by EPA or the States or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA and States' requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927, and applicable state laws.

XII. COMPLIANCE WITH OTHER LAWS

38. Respondent shall perform all actions required pursuant to this Settlement Agreement in accordance with all applicable state and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 6921(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-site actions required pursuant to this Settlement Agreement shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental or facility siting laws.

XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

39. In the event of any action or occurrence during performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate, or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer at (404) 562-8700, of the incident or Site conditions. For any emergency situations in Virginia, Respondent shall immediately notify Myles Bartos and the Regional Duty Station Officer at (215) 814-9016, as well as the Virginia Department of Emergency Management at (800) 468-8892. For any emergency situation in North Carolina, Respondent shall immediately notify the North Carolina Emergency Management 24-hour Operations Center at (800) 858-0368. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XV (Payment of Response Costs).

40. In addition, in the event of any new release of a hazardous substance from the Site, Respondent shall immediately notify the OSC at (404) 562-8700 and the National Response Center at (800) 424-8802. Respondent shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

XIV. AUTHORITY OF ON-SCENE COORDINATOR

41. The OSC shall oversee Respondent's implementation of this Settlement Agreement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement Agreement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

XV. PAYMENT OF RESPONSE COSTS

42. Payment for Past Response Costs.

a. Within 30 days after the Demand for Payment of Past Costs, Respondent shall pay to EPA for Past Response Costs. Payment shall be made to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address - FRNYUS33
33 Liberty Street
New York NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall reference Region 4 Site/Spill ID Number B41W, Region 3 Site/Spill ID Number A3XS, and the EPA docket number for this action.

b. At the time of payment, Respondent shall send notice that payment has been made to the EPA Cincinnati Finance Office by email at acctsreceivable.cinwd@epa.gov, or by mail to

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

with a copy to:

Ken Rhame
Federal On-Scene Coordinator
U.S. EPA, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
Perry Gaughan @epa.gov

with a copy to:

Myles Bartos
Federal On-Scene Coordinator
U.S. EPA, Region 3
1650 Arch Street
3HS31
Philadelphia, Pennsylvania 19103-2029

and a copy to:

Paula V. Painter
U.S. EPA, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
painter.paula@epa.gov

Such notice shall reference Region 4 Site/Spill ID Number B41W, Region 3 Site/Spill ID Number A3XS, and the EPA docket number for this action.

c. The total amount to be paid by Respondents pursuant to Paragraph 42.a shall be deposited by EPA in the Eden Special Account and the Duke Coal Ash Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

43. Payments for Future Response Costs.

a. Respondent shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondent a bill requiring payment that includes a Superfund Cost Recovery Package Imaging and On-Line System ("SCORPIOS") Report, which includes direct and indirect costs incurred by EPA, its contractors, and the Department of Justice. Respondent shall make all payments within thirty (30) days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 45 of this Settlement Agreement.

b. Respondent shall make all payments required by this Paragraph to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street

New York NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall reference Site/Spill ID Number B41W, Region 3 Site/Spill I Number A3XS, and the EPA docket number for this action.

c. At the time of payment, Respondent shall send notice that payment has been made to the EPA Cincinnati Finance Office by email to acctsreceivable.cinwd@epa.gov, or by mail to:

EPA Cincinnati Finance Office
26 Martin Luther King Drive
Cincinnati, Ohio 45268

with a copy to:

Ken Rhame
Federal On-Scene Coordinator
U.S. EPA, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
gaughan.perry@epa.gov

with a copy to:

Myles Bartos
Federal On-Scene Coordinator
U.S. EPA, Region 3
1650 Arch Street
3HS31
Philadelphia, Pennsylvania 19103-2029

and a copy to:

Paula V. Painter
U.S. EPA, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
painter.paula@epa.gov

Such notice shall reference Site/Spill ID Number B41W, Region 3 Site/Spill I Number A3XS, and the EPA docket number for this action.

d. The total amount to be paid by Respondent pursuant to Paragraph 43.a shall be deposited by EPA in the Eden Special Account and the Duke Coal Ash Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

44. Interest. In the event that the payment for Past Response Costs is not made within 30 days of the Effective Date, or the payments for Future Response Costs are not made within

30 days of Respondent's receipt of a bill, Respondent shall pay Interest on the unpaid balance. The Interest on Past Response Costs shall begin to accrue on the Effective Date and shall continue to accrue until the date of payment. The Interest on Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVIII.

45. Respondent may contest payment of any Future Response Costs billed under Paragraph 43 if it determines that EPA has made a mathematical error or included a cost item that is not within the definition of Future Response Costs, or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the OSC. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondent shall within the 30-day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 43. Simultaneously, Respondent shall establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation ("FDIC"), and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondent shall send to the EPA Region 4 OSC a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondent shall initiate the Dispute Resolution procedures in Section XVI (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 43. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to EPA in the manner described in Paragraph 43. Respondent shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVI (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its Future Response Costs.

XVI. DISPUTE RESOLUTION

46. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any disagreements concerning this Settlement Agreement expeditiously and informally.

47. If Respondent objects to any EPA action taken pursuant to this Settlement Agreement, including billings for Future Response Costs, it shall notify EPA in writing of its objection(s) within fourteen (14) days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondent shall have fourteen (14) days from EPA's receipt of

Respondent's written objection(s) to resolve the dispute through formal negotiations (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA.

48. Any agreement reached by the parties pursuant to this Section shall be in writing and shall, upon signature by both parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA management official at the Superfund Division Director level or higher will issue a written decision on the dispute to Respondent. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.

XVII. FORCE MAJEURE

49. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, a *force majeure* is defined as any event arising from causes beyond the control of Respondent, or of any entity controlled by Respondent, including but not limited to its contractors and subcontractors, which delays or prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

50. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify EPA orally within twenty-four hours of when Respondent first knew that the event might cause a delay. Within seven (7) days thereafter, Respondent shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if it intends to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondent from asserting any claim a *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

51. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Settlement Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Respondent in writing of

the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

XVIII. STIPULATED PENALTIES

52. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 53 and 54 for failure to comply with the requirements of this Settlement Agreement specified below, unless excused under Section XVII *(Force Majeure)*. "Compliance" by Respondent shall include completion of the activities under this Settlement Agreement or any work plan or other plan approved under this Settlement Agreement identified below in accordance with all applicable requirements of law, this Settlement Agreement, and any plans or other documents approved by EPA pursuant to this Settlement Agreement and within the specified time schedules established by and approved under this Settlement Agreement.

53. Stipulated Penalty Amounts - Work (Including Payments).

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 53.b:

Penalty Per Violation Per Day	Period of Noncompliance
$ 2,000	1st through 14th day
$ 4,000	15th through 30th day
$ 8,000	31st day and beyond

b. Compliance Milestones

(1) Failure to timely submit modifications requested by EPA or its representatives to the draft Work Plan;

(2) Failure to timely submit Work Plans as required under Paragraph 21.

(3) Failure to obtain insurance as required by Paragraph 83;

(4) Failure to comply with any schedule in the EPA-approved Work Plan;

(5) Failure to submit a Final Report pursuant to Paragraph 26;

(6) Failure to obtain Financial Assurance pursuant to Paragraph 84;

(7) Failure to pay Past Response Costs pursuant to Paragraph 42; and

(8) Failure to pay Future Response Costs pursuant to Paragraph 43.

54. Stipulated Penalty Amounts - Reports. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or other written documents pursuant to Paragraphs 21 - 26:

Penalty Per Violation Per Day	Period of Noncompliance
$ 1,000	1st through 14th day
$ 2,000	15th through 30th day
$ 4,000	31st day and beyond

55. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 65 (Work Takeover), Respondent shall be liable for a stipulated penalty in the amount of $500,000.

56. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under Section VIII (Work to be Performed), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (b) with respect to a decision by the EPA Management Official at the Superfund Division Director level or higher, under Paragraph 48 of Section XVI (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA management official issues a final decision regarding such dispute. Nothing in this Settlement Agreement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.

57. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, EPA may give Respondent written notification of the failure and describe the noncompliance. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.

58. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures under Section XVI (Dispute Resolution). Respondent shall make all payments required by this Paragraph to EPA by Fedwire Electronic Funds Transfer ("EFT") to:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045
Field Tag 4200 of the Fedwire message should read "D 68010727 Environmental Protection Agency"

and shall reference stipulated penalties, Site/Spill ID Number B41W, and the EPA docket number for this action.

At the time of payment, Respondent shall send notice that payment has been made as provided in Paragraph 43.c above.

59. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.

60. Penalties shall continue to accrue during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

61. If Respondent fails to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 58. Nothing in this Settlement Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(*l*) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(*l*), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 106(b) or 122(1) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Section, except in the case of a willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 65 ("Work Takeover"). Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XIX. COVENANT NOT TO SUE BY EPA

62. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work, Past Response Costs, and Future Response Costs. This covenant not to sue shall take effect upon receipt by EPA of the payment required by Paragraph 42 (Payment for Past Response Costs) and any Interest or Stipulated Penalties due thereon under Paragraph 44 (Interest) or Section XVIII (Stipulated Penalties). This covenant not to sue is conditioned upon the complete and satisfactory performance by Respondent of its obligations under this Settlement Agreement, including, but not limited to, payment of Future Response Costs pursuant to Paragraph 43 (Payments for Future Response Costs). This covenant not to sue extends only to Respondent and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

63. Except as specifically provided in this Settlement Agreement, nothing in this Settlement Agreement shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to

prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Settlement Agreement shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.

64. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:

a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;

b. liability for costs not included within the definitions of Past Response Costs or Future Response Costs;

c. liability for performance of response action other than the Work;

d. liability under any other federal statute;

e. criminal liability;

f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

g. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and

h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.

65. Work Takeover. In the event EPA determines that Respondent has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondent may invoke the procedures set forth in Section XVI (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by the United States in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondent shall pay pursuant to Section XV (Payment of Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANT NOT TO SUE BY RESPONDENT

66. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Past Response Costs, Future Response Costs, or this Settlement Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the North Carolina Constitution, the Virginia Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or state law relating to the Work, Past Response Costs, or Future Response Costs.

67. Except as provided in Paragraphs 70 (Claims Against De Micromis Parties), these covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to any of the reservations set forth in Section XX (Reservations of Rights by EPA), other than in Paragraph 64.a (claims for failure to meet a requirement of the Settlement Agreement) or 64.e (criminal liability), but only to the extent that Respondent's claim arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

68. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

69. **RESERVED**

70. Claims Against De Micromis Parties. Respondent agrees not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that it may have for all matters relating to the Site against any person where the person's liability to Respondent with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials.

71. The waiver in Paragraph 63 shall not apply with respect to any defense, claim, or cause of action that a Respondent may have against any person meeting the above criteria if such

person asserts a claim or cause of action relating to the Site against such Respondent. This waiver also shall not apply to any claim or cause of action against any person meeting the above criteria if EPA determines:

a. that such person has failed to comply with any EPA requests for information or administrative subpoenas issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) or 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site, or has been convicted of a criminal violation for the conduct to which this waiver would apply and that conviction has not been vitiated on appeal or otherwise; or

b. that the materials containing hazardous substances contributed to the Site by such person have contributed significantly, or could contribute significantly, either individually or in the aggregate, to the cost of response action or natural resource restoration at the Site.

XXII. OTHER CLAIMS

72. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA shall not be deemed a party to any contract entered into by Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement Agreement.

73. Except as expressly provided in Paragraphs 70 (Claims Against De Micromis Parties) and Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages, and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

74. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. EFFECT OF SETTLEMENT/CONTRIBUTION

75. Except as provided in Paragraphs 70 (Claims Against De Micromis Parties), nothing in this Settlement Agreement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement Agreement. Except as provided in Section XXI, each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement Agreement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional

response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

76. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided by law, for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work to be Performed, Past Response Costs, and Future Response Costs. The Parties further agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has, as of the Effective Date, resolved its liability to the United States for the Work to be Performed, Past Response Costs, and Future Response Costs.

77. The Respondent shall, with respect to any suit or claim brought by it for matters related to this Settlement Agreement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. The Respondent also shall, with respect to any suit or claim brought against it for matters related to this Settlement Agreement, notify EPA in writing within ten (10) days of service of the complaint or claim upon it. In addition, the Respondent shall notify EPA within 10 days of service or receipt of any Motion for Summary Judgment and within ten (10) days of receipt of any order from a court setting a case for trial, for matters related to this Settlement Agreement.

78. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, *res judicata*, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant by EPA set forth in Section XIX.

79. Effective upon signature of this Settlement Agreement by the Respondent, the Respondent agrees that the time period after the date of its signature shall not be included in computing the running of any statute of limitations potentially applicable to any action brought by the United States related to the "matters addressed" as defined in Paragraph 76 and that, in any action brought by the United States related to the "matters addressed," the Respondent will not assert, and may not maintain, any defense or claim based upon principles of statute of limitations, waiver, laches, estoppel, or other defense based on the passage of time after its signature of this Settlement Agreement. If EPA gives notice to Respondent that it will not make this Settlement Agreement effective, the statute of limitations shall begin to run again commencing ninety days after the date such notice is sent by EPA.

XXIV. INDEMNIFICATION

80. Respondent shall indemnify, save, and hold harmless the United States, its officials, agents, contractors, subcontractors, employees, and representatives from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States.

81. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.

82. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between the Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between the Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

XXV. INSURANCE

83. At least seven (7) days prior to commencing any on-site work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of one (1) million dollars, combined single limit, naming EPA as an additional insured. Within the same time period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then

Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

84. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security for the benefit of EPA in the amount of $1,000,000 in one or more of the following forms, in order to secure the full and final completion of Work by Respondent:

a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;

b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA;

c. a trust fund administered by a trustee acceptable in all respects to EPA;

d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;

e. a written guarantee to pay for or perform the Work provided by the Respondent, or by one or more unrelated companies that have a substantial business relationship with the Respondent, including a demonstration that any such guarantor company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or

f. a demonstration of sufficient financial resources to pay for the Work made by the Respondent, which shall consist of a demonstration that the Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

85. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 84, above. In addition, if at any time EPA notifies Respondent that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondent shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

86. If Respondent seeks to ensure completion of the Work through a guarantee pursuant to Paragraph 84.e or 84.f of this Settlement Agreement, Respondent shall (a) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (b) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date or such other date as agreed by EPA, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R.

Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the dollar amount to be used in the relevant financial test calculations shall be the current cost estimate of $1,000,000 for the Work at the Site plus any other RCRA, CERCLA, TSCA, or other federal, State, or tribal environmental obligations financially assured by the relevant Respondent or guarantor to EPA by means of passing a financial test.

87. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 84 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondent may seek dispute resolution pursuant to Section XVI (Dispute Resolution). Respondent may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

88. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. MODIFICATIONS

89. The OSC may make modifications to any EPA-approved plan or schedule to implement the actions listed in Paragraph 20 in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Copies of modifications memorialized in writing shall be provided to VDEQ and NCDENR. Terms and any other requirements of this Settlement Agreement may be modified in writing by mutual agreement of the parties.

90. If Respondent seeks permission to deviate from any approved work plan, Respondent's Project Coordinator shall submit a written request to EPA, with copies to VDEQ and NCDENR, for approval outlining the proposed modification and its basis. Respondent may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 89.

91. No informal advice, guidance, suggestion, or comment by the OSC or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXVIII. NOTICE OF COMPLETION OF WORK

92. When EPA determines, after EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, including Post Removal Site Controls, payment of Future Response Costs, or record retention, EPA will provide written notice to Respondent. If EPA determines that such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the Work Plan if appropriate in order to correct such deficiencies. Respondent shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondent to implement the approved modified Work Plan shall be a violation of this Settlement Agreement.

XXIX. INTEGRATION/APPENDICES

93. This Settlement Agreement and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

SITE MAP ..... APPENDIX A
ACTION MEMORANDUM ..... APPENDIX B

XXX. EFFECTIVE DATE

94. This Settlement Agreement shall be effective when the Regional Administrators or their delegatees sign this document.

The undersigned representative of Respondent certifies that they are fully authorized to enter into the terms and conditions of this Settlement Agreement and to bind the party they represent to this document.

Agreed this 20 day of May, 2014.

For Respondent Duke Energy Carolinas, LLC

BY: Jean M. Allen

Title SVP EHS

Duke Energy Carolinas, LLC

It is so ORDERED and Agreed this _____ day of May, 2014.

BY: _____ DATE:_____
Franklin Hill
Director
Superfund Division
Region 4
U.S. Environmental Protection Agency

EFFECTIVE DATE: May _____, 2014.

It is so ORDERED and Agreed this 22nd day of May, 2014.

BY: _____ DATE: May 22, 2014
Franklin Hill
Director
Superfund Division
Region 4
U.S. Environmental Protection Agency

EFFECTIVE DATE: May 22, 2014.

It is so ORDERED and Agreed this May 22 day of May, 2014.

BY: Cecil Rodrigues DATE: 5/22/2014
Cecil A. Rodrigues
Director
Hazardous Site Cleanup Division
Region 3
U.S. Environmental Protection Agency

APPENDIX A

Legend

- Approximate Subject Site Boundary
- Parcels

N
W E
S

0 500 1,000
Feet

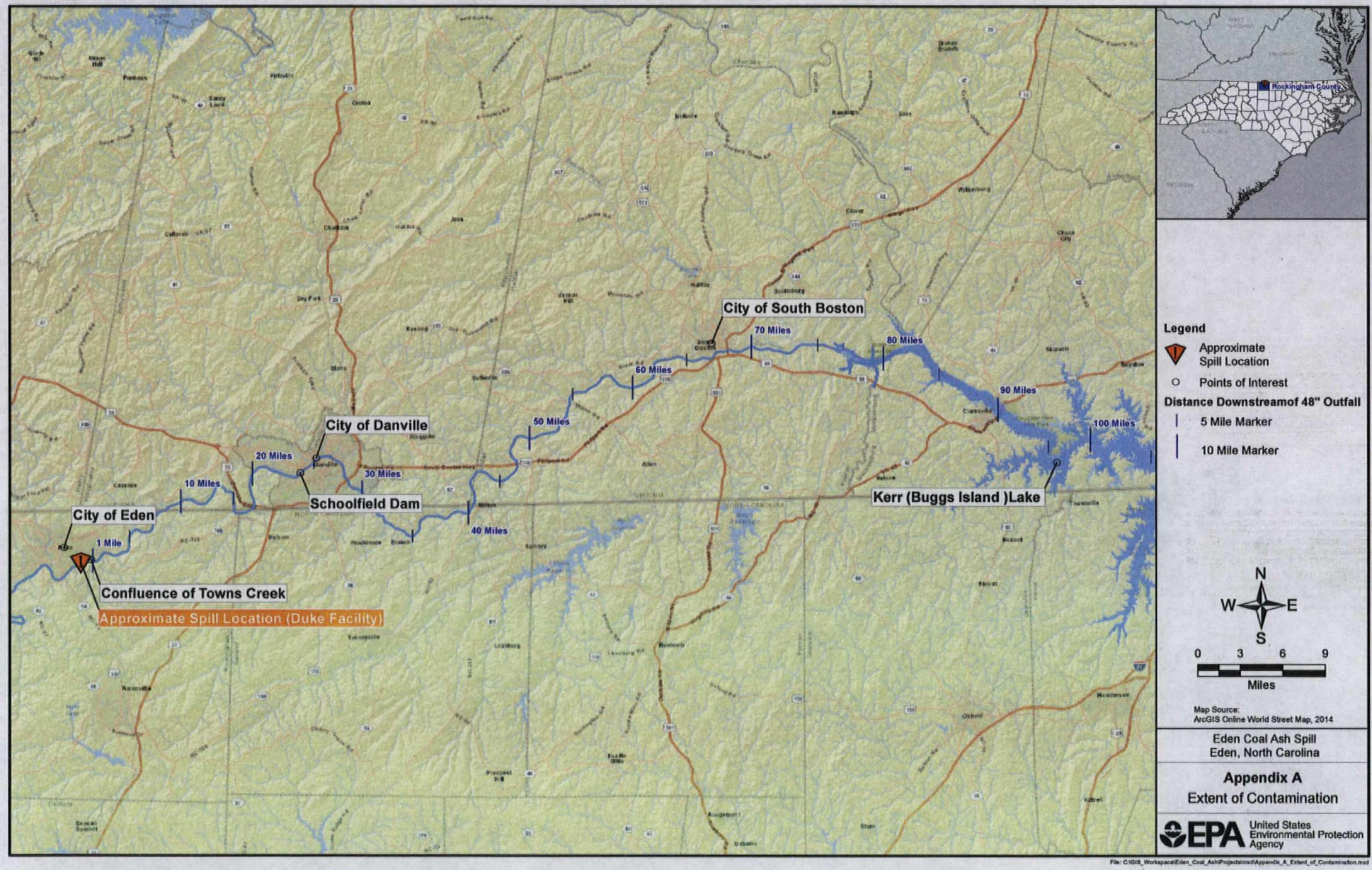
Map Source:
Rockingham County Parcel Boundaries, 2014
Rockingham County Aerial Imaery, 2010

Eden Coal Ash Spill
Eden, North Carolina

Appendix A
Property Boundary

EPA United States Environmental Protection Agency

File: C:\GIS_Workspace\Eden_Coal_Ash\Projects\mxd\Appendix_A_Property_Boundary.mxd


City of South Boston
70 Miles
80 Miles
60 Miles
90 Miles
100 Miles
50 Miles
City of Danville
20 Miles
30 Miles
10 Miles
Schoolfield Dam
Kerr (Buggs Island)Lake
City of Eden
1 Mile
40 Miles
Confluence of Towns Creek
Approximate Spill Location (Duke Facility)
Rockingham County
Legend
Approximate Spill Location
Points of Interest
Distance Downstreamof 48" Outfall
5 Mile Marker
10 Mile Marker
N
W
E
S
0 3 6 9
Miles
Map Source:
ArcGIS Online World Street Map, 2014
Eden Coal Ash Spill
Eden, North Carolina
Appendix A
Extent of Contamination
EPA United States Environmental Protection Agency
File: C:\GIS_Workspace\Eden_Coal_Ash\Projects\mxd\Appendix_A_Extent_of_Contamination.mxd

APPENDIX B

ENFORCEMENT ACTION MEMORANDUM

SUBJECT: Request for a Removal Action at the Eden NC Coal Ash Spill Site
900 S. Edgewood Road, Eden, Rockingham County, North Carolina
and Locations Downstream

FROM: Kenneth B. Rhame, On-Scene Coordinator
Emergency Response and Removal Branch

THRU: James Webster, Chief
Emergency Response and Removal Branch

TO: Franklin Hill, Director
Superfund Division, Region 4

Dave Wright, Director
Office of Preparedness and Response, Region 3

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed enforcement-lead, time-critical removal action described herein at the Eden NC Coal Ash Spill Site, Eden, Rockingham County, North Carolina (Site). The Site is comprised of the Duke Energy Dan River Steam Station located at 900 South Edgewood Road in Eden, Rockingham, County, North Carolina, 27288, and the areal extent of contamination resulting from the release of coal ash into the Dan River. The release or threat of release of hazardous substances at the Site poses a threat to public health and the environment pursuant to Section 104 (a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that meets National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Section 300.415(b) criteria for removal actions.

As a result of Site conditions, CERCLA removal actions are necessary. Duke Energy Carolinas, LLC (Duke) is the current operator of the Dan River Steam Station. This removal action is anticipated to be enforcement-lead pursuant to an Administrative Order on Consent (AOC) with Duke.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: NCD024668535
Site ID Number: B41W
Removal Category: Time-Critical Removal

A. Site Description

On February 2, 2014, at approximately 1500 hours, Duke security officials noticed a drop in the levels of the primary coal ash pond while conducting a routine security inspection of the coal ash storage impoundments.

Duke reported that 50,000 – 82,000 tons (60,000 – 100,000 cubic yards) of coal ash and 27 million gallons of coal ash contaminated water were released to the Dan River. This estimate was later updated to 30,000 - 39,000 tons of coal ash after a third party engineering firm completed an engineering study and analysis.

There are two ash ponds (primary and secondary) at the Site containing a total of approximately 1.2 million tons of coal ash. The source of the release was a damaged 48" storm sewer line extending under the primary ash pond. The dike wall on the river side of the primary ash pond was undamaged. The dike wall on the plant side of the ash pond was eroded and compromised but did not release material.

On February 14, 2014, the EPA and the North Carolina Department of Environment and Natural Resources (NCDNER) identified a second storm sewer line extending under the primary ash basin as a potential source of an additional release from the ash basin. On February 18, 2014, Duke was ordered to immediately halt unauthorized discharges of groundwater from this second storm water pipe after receipt of analytical results indicating that this line was releasing water containing elevated concentrations of arsenic.

1. Removal Site Evaluation

Duke reported that 50,000 – 82,000 tons (60,000 – 100,000 cubic yards) of coal ash and 27 million gallons of coal ash contaminated water were released to the Dan River. This estimate was later updated to 30,000 - 39,000 tons of coal ash. Coal ash deposits in the river vary from up to six feet in thickness at the storm drain outfall to a few inches in thickness down-river. The majority of the coal ash appears to have been deposited between the release location and the Schoolville Dam, approximately 24 river-miles downstream of the release site. Initial water quality monitoring and sampling indicated metals concentrations that exceeded State water quality standards and EPA Remedial Screening Levels. Reports of turtle, clam and mussel mortality were reported.

During the initial emergency response phase, the EPA took the following samples:

- 31 drinking water samples from the Danville Water Treatment Plant (WTP), South Boston WTP and the Clarksville WTP, and analyzed for:
    - Volatile Organic Compounds
    - Semi-Volatile Organic Compounds
    - Total Metals
    - Dissolved Metals

- Nutrients

- 165 surface water samples from upstream/downstream locations, facility outfalls, river intakes, water column depths and the sediment to-water interface, and analyzed for:
  - Volatile Organic Compounds
  - Semi-Volatile Organic Compounds
  - Total Metals
  - Dissolved Metals
  - Nutrients
- 65 sediment samples from upstream/downstream locations, facility outfalls and the Kerr Reservoir and analyzed for:
  - Volatile Organic Compounds
  - Semi-Volatile Organic Compounds
  - Total Metals
  - Nutrients
- 6 coal ash samples (Source Material) from the primary coal ash impoundment and analyzed for:
  - Volatile Organic Compounds
  - Semi-Volatile Organic Compounds
  - Total Metals
  - TLCP Metals

Regional Removal Management Levels (RMLs) for residential soil were exceeded in multiple Source Material samples for arsenic.

Regional RMLs for residential soil and Human Health Risk Screening Levels for recreational exposure were exceeded in one sediment sample for arsenic.

Surface Water Ecological Risk Screening Levels were exceeded in multiple samples for aluminum, copper, and iron.

River Sediment Ecological Risk Screening Levels were exceeded in multiple samples for aluminum, arsenic, barium, iron, selenium, strontium, and yttrium.

2. Physical Location

The Dan River Steam Station is located at 900 S. Edgewood Road, Eden, Rockingham County, North Carolina, latitude 36.4878601° by longitude -79.7189733°. The Dan River Steam Station and the coal ash storage impoundments are located directly adjacent to the Dan River.

The Dan River is a navigable-in-fact water of the United States. The Dan River is a recreational water body used for subsistence and recreational fishing as well as swimming, canoeing and kayaking, and is a source of drinking water. The United States Fish and Wildlife Service (FWS) identified two endangered species known to inhabit the river. The nearest drinking water intakes are Danville, VA, 23 river-miles downstream and South Boston, VA, 70 river-miles downstream. Livestock has access to the river, and the river is used for crop irrigation. The release extended to approximately 70 miles downstream, into J.H. Kerr Reservoir in Virginia.

3. Site Characteristics

The Site is located at 900 S. Edgewood Road, Eden, Rockingham County, North Carolina, and includes the areal extent of contamination resulting from the release of coal ash into the Dan River. The Dan River Steam Station is a decommissioned, coal-fired, electric generation plant operated by Duke. The plant is located adjacent to the Dan River. Duke began decommissioning the plant in 2012. The main powerhouse building and two wet-coal ash storage impoundments remain along with ancillary structures. Two dry-coal ash storage landfills also remain on-site. The two ash impoundments (primary and secondary) contain a total of approximately 1.2 million tons of coal ash.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

Coal ash at the Site contains metals such as arsenic, beryllium, cadmium, chromium, copper, lead, mercury and selenium, which are hazardous substances as defined by CERCLA Section 101(14) and listed in the Title 40 of the Code of Federal Regulations (CFR), Section 302.4. Coal ash has been released into the Dan River and has migrated downstream into Virginia.

During periods of high river-flow, coal ash containing metals may be suspended in the water column for short periods of time and carried downstream. Furthermore, the analysis of total and dissolved metals in surface water samples indicated that certain metals exceed Ecological Risk Screening Levels. These included aluminum, copper, and iron. Also, the analysis of total metals in sediment samples indicated some metals exceed Ecological Risk Screening Levels. These included aluminum, arsenic, barium, iron, selenium, strontium, and yttrium.

5. National Priorities List (NPL) Status

The Site is not on the NPL, and it is unlikely to be placed on the NPL in the future.

6. Maps, pictures, and other graphic representations

Maps and figures are attached to this Action Memorandum.

B. Other Actions to Date

1. Previous Actions

a. Notification and Deployment

The NCDENR was notified of the release by Duke on February 2, 2014. Once it was determined that there was a release of coal ash, NCDENR notified the EPA Region 4 Raleigh Outpost On-Scene Coordinator (OSC) and requested assistance in overseeing cleanup activities. Two OSCs were deployed to the scene from Atlanta, Georgia. Due to proximity and the potential for cross-regional impacts, an OSC was deployed from EPA Region 3 to provide additional assessment and oversight support.

The Region 3 OSC arrived at the Site at 2300 hrs on February 3, 2014. Region 4 OSCs arrived just after midnight on February 4, 2014. The EPA entered into Unified Command with Duke Energy, NCDENR and the Virginia Department of Environmental Quality (VDEQ) and established a full Incident Management Team following the National Incident Management System.

b. Source Control Efforts

Initial attempts by Duke Energy to plug the 48-inch storm sewer were unsuccessful. On February 6, 2014, temporary containment systems in the ash pond and storm sewer outfall were installed which successfully stopped all ongoing release to the Dan River. On February 8, 2014, a 27-foot section of the breached 48-inch storm sewer line was filled with concrete. This concrete plug sealed the breached storm sewer.

On February 15, 2014, NCDENR's Division of Energy, Mineral and Land Resources (EMLR) Land Quality Section recommended that a second, 36-inch storm drain be repaired in several places. On February 18, 2014, NCDENR ordered Duke to immediately halt unauthorized discharges of groundwater containing elevated levels of arsenic from this second storm water pipe beneath the coal ash basin. On February 19, 2014, crews installed temporary containment measures and stopped the release from this storm drain into the Dan River. On February 21, 2014, a 40-foot long section of the 36-inch storm drain was filled with concrete.

In April, 2014, Duke removed ash deposits upstream of the City of Danville Water Treatment Plant, as well as from the pre-sedimentation basin. In addition, Duke also removed ash deposits near the Town of South Boston Water Treatment Plant and from the plant's pre-sedimentation basin.

c. Scope and Extent Sampling and Assessment

Water quality sampling was conducted by the EPA Region 4 Science and Ecosystem Support Division (SESD) and the EPA Regions 3 and 4 Superfund Technical Assessment and Response Team Contractors, at the spill source and multiple downstream locations including water intakes at Danville and South Boston, Virginia WTPs. SESD also implemented a sediment/water column sampling plan along the Dan River, the purpose of which was to delineate the downstream extent of the ash plume.

Coal ash deposition assessments occurred starting at the release point and extended into the Kerr Reservoir. Multiple areas of ash deposits were identified. Afterward, the FWS was consulted to determine if endangered species or sensitive habitats might be impacted by removal operations. The United States Corp of Engineers reviewed removal plans and provided input. Samples of sediment from the Dan River were evaluated to determine the presence or absence of pre-spill contamination and, if present, whether that might be re-suspended as a result of removal activities.

The first coal ash deposit was identified directly adjacent to the release point. Approximately 22 cubic yards of coal ash and coal ash-contaminated sediment were removed from this area using vacuum trucks and divers between February 22, 2014, and March 6, 2014.

d. Public Information and Outreach

EPA Regions 3 and 4 Community Involvement Coordinators (CICs) developed site-specific information updates to inform the community of on-going activities. Community briefing were held in Danville, VA, Eden, NC and the South Boston, VA.

2. Current Actions

Coal ash deposition assessments, such as those described above, are ongoing from the release point and extending into the Kerr Reservoir in Virginia. A coal ash deposit has been identified on the left descending bank up-river of the Schoolfield Dam in Danville Virginia. Initial estimates indicate that there are approximately 3,000 cubic yards of ash and ash-contaminated sediments. This material will be removed using hydraulic dredging equipment. This work began in early May, 2014. Another area containing approximately 40 cubic yards coal ash was identified on a sand bar in Town Creek in Eden, North Carolina.

Sedimentation basins at the Danville and South Boston Water Treatment Plants are currently contaminated with coal ash. This material will also be removed and sent for off-site disposal at the request of the local agencies.

The EPA assessed three areas in the Dan River where sand mining occurs (Danville and South Boston areas). No coal ash was immediately visible in any of these areas. However, future assessments may be warranted.

The EPA Regions 3 and 4 START continues surface and drinking water sampling. START is currently validating, managing, and posting EPA sample data as it is received from the laboratory.

Weekly meetings of all federal, state, and local stakeholders take place to discuss short term goals and operations, water sampling and sediment data to date, and long term ecological assessments and goals.

The EPA Regions 3 and 4 CICs continue to keep the community informed of on-going activities.

C. State and Local Authorities' Role

1. State and Local Actions to Date

a. North Carolina Department of Environment and Natural Resources

NCDENR notified the EPA Region 4 Raleigh Outpost OSC and requested assistance in the oversight of cleanup activities on February 3, 2014. NCDENR subsequently entered into the Unified Command with the EPA and VDEQ.

NCDENR is collecting water quality samples, sediment samples, fish tissue samples and is assisting with overall human health and ecological health risk evaluation and assessment. NCDENR actively participated in the EPA public information sessions.

A third storm water outfall to the Dan River from the Dan River Steam Station, up-river from the release locations, was investigated by NCDENR. NCDENR also reviewed the current NPDES permit and evaluated this discharge as well as conducted a review of all storm water and discharge pipes at the Duke Energy Eden, NC facility.

On February 15, 2014, NCDENR's EMLR Land Quality Section viewed video footage taken from within a second, 36-inch storm water drain beneath the coal ash, and recommended the pipe be repaired in several places. As indicated previously, on February 18, 2014, NCDENR ordered Duke Energy to immediately halt unauthorized discharges of groundwater containing elevated levels of arsenic from this storm water drain.

b. Virginia Department of Environmental Quality

VDEQ entered into Unified Command with the EPA and NCDENR and actively participate in EPA public information sessions.

VDEQ is collected water quality samples, sediment samples, fish tissue samples and assisting with overall human health and ecological health risk evaluation and assessment.

2. Potential for Continued State and Local Response

NCDENR and VDEQ will continue to play a large role in the response activities at the Site. In addition, the State and the Commonwealth will continue to be involved in sampling efforts, as well as any long-term ash assessments and monitoring programs. NCDENR will be substantially involved in any final closure of the primary and secondary coal ash impoundments at the Site. The EPA will coordinate with State and Commonwealth officials to ensure that they are apprised of all progress made in responding to the release.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Conditions resulting from the coal ash release at the Dan River Steam Station present a substantial threat to the public health or welfare and the environment if not properly managed. Conditions meet the criteria for a time-critical removal action as provided for in the NCP Section 300.415(b)(2). The primary criteria that are met at the Site include:

Section 300.415(b)(2)(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

The coal ash contains hazardous substances, which may be re-suspended in the water column, and can have impact on the aquatic environment. Human exposure may occur should large deposits of ash accumulate on areas used for recreation.

Section 300.415(b)(2)(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems

Although monitoring results indicate that the downstream river water supplies have not been impacted, it has been established that the coal ash contains hazardous substances such as metals, and should sufficient ash migrate through the Dan River, there is the future potential for short-term contamination of the surface water that serves as a source of drinking water for downstream WTP customers.

Section 300.415(b)(2)(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released and Section 300.415(b)(2)(viii) Other situations or factors that may pose threats to public health or welfare of the United States or the environment

Weather conditions, including rainfall and snowmelt, which generate high river flow and flood events, contribute to the downstream migration and potential overbank deposition of ash material. Historical flow information shows that high flows occur numerous times throughout the year.

Section 300.415 (b)(2)(vii) The availability of other appropriate federal or state response mechanisms to respond to the release

NCDENR and VDEQ have indicated that their agencies lack available funds to implement a cleanup at the Site in a timely manner.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

a. Continue surface water, drinking water, and sediment assessments and monitoring as determined by the EPA in consultation with NCDENR, VDEQ and local jurisdictions to detect the presence of contamination until implementation of the removal Site assessment outlined in part (e) of this paragraph;

b. Remove any remaining coal ash from the Dan River from the Steam Station Release Location at the Site to the Schoolfield Dam located in Danville, Virginia, 27 river-miles downstream of the Site, as such locations are generally depicted in the map attached hereto as Appendix A, to the maximum extent practicable as determined by EPA in consultation with NCDENR, VDEQ, and the U.S Fish and Wildlife Service, taking into consideration factors including but not limited to, avoiding inappropriate disturbance of sensitive ecosystems, and environmentally problematic disturbance of legacy contamination in the Dan River;

c. Ensure that coal ash material recovered during work described above is properly managed pending ultimate disposal;

d. Treat water generated as a result of the work described above in accordance with NPDES requirements and applicable surface water quality standards for return to the Dan River;

e. Develop and implement a comprehensive removal Site assessment, including ecological, surface water, and sediment assessments, to determine the extent of any residual contamination remaining in the Dan River to and including the Kerr Reservoir after previous cleanup activities and the work described above. If EPA determines, based on the comprehensive removal Site assessment, that additional removal

actions to address residual contamination are necessary to protect public health, welfare, or the environment, EPA will notify Respondent in writing of that determination. This Order may later be amended if further removal actions are needed to address such residual contamination;

f. Dispose off-site all recovered coal ash removed from the work described above in accordance with Section 121(d)(3) of CERCLA and 40 C.F.R. 300.440, and paragraph 27 (Off-Site Shipments);

g. Provide the EPA OSC an engineering report describing the post-release containment measures implemented by Respondent to provide for the structural integrity of the impoundments and storm sewer lines running under the primary coal ash basin, and describing the temporary storm water system measures approved by NCDENR and implemented by Respondent; and

h. In the event the Respondent initiates permanent closure at the two impoundments at the Site, Respondent shall notify the EPA.

B. Contribution to remedial performance

The proposed removal action is warranted in order to address the threats discussed in Section III, which meet NCP Section 300.415 (b) (2) removal criteria. The removal action contemplated in this Action Memorandum would be consistent with any remedial action.

C. Engineering Evaluation/Cost Analysis (EE/CA)

This proposed action is time-critical and does not require an EE/CA.

D. Applicable or Relevant and Appropriate Requirements (ARARs)

On-Site removal actions conducted under CERCLA are required to attain ARARs to the extent practicable, considering the exigencies of the situation. Off-site removal activities need only comply with all applicable federal and state laws. This cleanup is being conducted as a time-critical removal action.

a. Federal ARARs

Under CERCLA Section 121(e)(1), CERCLA actions must only comply with the "substantive requirements," not the administrative requirements of a regulation. Administrative requirements include permit applications, reporting, record keeping, and consultation with administrative bodies. Although consultation with state and federal agencies responsible for issuing permits is not required, it is recommended for determining compliance with certain requirements. Accordingly, the EPA sent a letter to NCDENR and VDEQ on May 21, 2014, requesting identification of propose State ARARs.

All waste transferred off-site will also comply with the CERCLA Off-Site Rule (40 CFR 300.440).

b. State ARARs

A letter was sent to the North Carolina Department Environment and Natural Resources and to the Commonwealth of Virginia Department of Environmental Quality on May 21, 2014, requesting identification of State ARARs.

The OSC will continue to coordinate with State officials to identify State ARARs and will evaluate such ARARs in accordance with the NCP.

E. Project schedule

Duke, with oversight from EPA, NCDENR and VDEQ is currently performing surface water and drinking water monitoring, coal ash containment, and initial dredging and coal ash activities. Portions of that work have been conducted under the EPA's emergency authorities and in accordance with work plans approved by NCDENR, VDEQ and EPA.

The EPA is currently negotiating with Duke to continue the removal action as outlined in this document. The project schedule will be incorporated in the work plan submitted to the EPA for approval under the AOC.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If this response action is significantly delayed or not taken, the potential for disturbances that result in additional release will continue, increasing the potential for migration of coal ash and increasing the possibility of exposure to the public and the environment.

VII. OUTSTANDING POLICY ISSUES

In 2010, the EPA proposed national rules under the Resource Conservation and Recovery Act (RCRA) to ensure the safe disposal and management of coal ash from coal-fired power plants. The EPA was tasked to finalize the proposed coal ash rule by December 19, 2014.

VIII. ENFORCEMENT

The EPA anticipates that Duke will both fund and conduct the removal action. Duke is the current operator of the Steam Station. The EPA has not identified any other potentially responsible party (PRP), and it is expected that Duke will be the sole PRP for this Site. The EPA and Duke are currently negotiating the terms of the AOC for conducting the removal.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Eden NC Coal Ash Spill Site located in Eden, Rockingham County, North Carolina, and the areal extent of contamination downstream including Virginia, developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan (NCP). The document is based on the Administrative

Record for the Site. Conditions at the Site meet the NCP Section 300.415 (b) criteria for a time-critical removal action.

APPROVED: _____ DATE: May 22, 2014

Franklin E. Hill, Director
Superfund Division, EPA Region 4

DISAPPROVED: _____ DATE: _____

Franklin E. Hill, Director
Superfund Division, EPA Region 4

APPROVED: _____ DATE: 5/22/14

Dave Wright, Director
Office of Preparedness and Response, EPA Region 3

DISAPPROVED: _____ DATE: _____

Dave Wright, Director
Office of Preparedness and Response, EPA Region 3

Attachments:

Attachment 1: Sample Exceedence tables
Attachment 2: Site Layout Map
Attachment 3: Sample Exceedence location map.

ATTACHMENT 1

SAMPLE EXCEEDENCE TABLES

EDEN NORTH CAROLINA COAL ASH SPILL
ASH RESULTS

Analyte	Residential Removal Management Level		Industrial Removal Management Level		Primary Ash Basin		Primary Ash Basin		Primary Ash Basin	
Sample Information										
Sample ID					EDEN-PRIMARYBASIN-ASH-20140206		EDEN-BASIN1-ASH3-20140212		EDEN-BASIN1-ASH3-20140212-DUP	
Date					2/6/2014		2/12/2014		2/12/2014	
Time					0943		1120		1125	
Status					Validation Complete		Validation Complete		Validation Complete	
Type					Ash		Ash		Ash	
Latitude					36.489326		36.487004		36.487004	
Longitude					-79.714496		-79.717849		-79.717849	
Total Metals										
Aluminum	230,000	mg/kg	3,000,000	mg/kg	9,660	mg/kg	9,460	mg/kg	9,350	mg/kg
Antimony	94	mg/kg	1,200	mg/kg	0.81J	mg/kg	1.03J	mg/kg	0.796J	mg/kg
Arsenic	61	mg/kg	240	mg/kg	60.8	mg/kg	57.7	mg/kg	55.5	mg/kg
Barium	46,000	mg/kg	570,000	mg/kg	360	mg/kg	1,030	mg/kg	1,110	mg/kg
Beryllium	470	mg/kg	6,000	mg/kg	4.1	mg/kg	3.58	mg/kg	3.67	mg/kg
Boron	47,000	mg/kg	610,000	mg/kg	13.4	mg/kg	33U	mg/kg	31U	mg/kg
Cadmium	210	mg/kg	2,400	mg/kg	0.084U	mg/kg	0.237J	mg/kg	0.294J	mg/kg
Calcium	-	mg/kg	-	mg/kg	1,810	mg/kg	3,590	mg/kg	4,340	mg/kg
Chromium	29	mg/kg	560	mg/kg	13.3	mg/kg	13.2	mg/kg	14.0	mg/kg
Cobalt	70	mg/kg	910	mg/kg	10.1	mg/kg	11.6	mg/kg	12.2	mg/kg
Copper	9,400	mg/kg	120,000	mg/kg	50.5	mg/kg	49.4	mg/kg	50.0	mg/kg
Iron	160,000	mg/kg	2,100,000	mg/kg	5,040	mg/kg	16,200	mg/kg	20,600	mg/kg
Lead	400	mg/kg	800	mg/kg	18.3	mg/kg	12.4	mg/kg	11.9	mg/kg
Magnesium	-	mg/kg	-	mg/kg	848	mg/kg	958	mg/kg	935	mg/kg
Manganese	5,500	mg/kg	68,000	mg/kg	75.0	mg/kg	134	mg/kg	169	mg/kg
Mercury	30	mg/kg	130	mg/kg	0.19	mg/kg	0.191	mg/kg	0.236	mg/kg
Molybdenum	1,200	mg/kg	15,000	mg/kg	1.0	mg/kg	1.79J	mg/kg	2.35J	mg/kg
Nickel	-	mg/kg	-	mg/kg	17.9	mg/kg	19.2	mg/kg	19.9	mg/kg
Potassium	-	mg/kg	-	mg/kg	1,630	mg/kg	2,310	mg/kg	2,300	mg/kg
Selenium	1,200	mg/kg	15,000	mg/kg	4.0	mg/kg	5.64J	mg/kg	6.38	mg/kg
Silica	-	mg/kg	-	mg/kg	5,360	mg/kg	45.4	%	47.2	%
Silver	1,200	mg/kg	15,000	mg/kg	2.1U	mg/kg	3.26U	mg/kg	3.14U	mg/kg
Sodium	-	mg/kg	-	mg/kg	304	mg/kg	472	mg/kg	448	mg/kg
Thallium	2	mg/kg	31	mg/kg	1.3U	mg/kg	6.52U	mg/kg	6.27U	mg/kg
Vanadium	1,200	mg/kg	15,000	mg/kg	48.4	mg/kg	44.8	mg/kg	44.8	mg/kg
Zinc	70,000	mg/kg	920,000	mg/kg	34.6	mg/kg	20.4	mg/kg	20.1	mg/kg

Notes

%	Percent
EPA	U.S. Environmental Protection Agency
J	Value is estimated
J-	Value is estimated with a possible low bias
mg/kg	Milligrams per kilogram
U	Analyte was not detected at the listed reporting limit.

EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT RESULTS WITH HUMAN HEALTH SCREENING LEVEL EXCEEDANCES

Analyte	Human Health Screening Standards for Sediment[1]		Confluence of Dan and Staunton Kerr Reservoir	
Sample Information				
Sample ID	-		EDEN-KRCON-L-SD-20140327	
Date	-		03/27/2014	
Time	-		1206	
Status	-		Validation Complete	
Type	-		Sediment	
Latitude	-		36.6956	
Longitude	-		-78.65213	
Total Metals				
Arsenic	120	mg/kg	5.7U	mg/kg
Cadmium	246[a]	mg/kg	2.85U	mg/kg
Chromium	104[b]	mg/kg	241J-	mg/kg
Lead	400	mg/kg	13.3	mg/kg
Mercury	27.4[c]	mg/kg	0.111U	mg/kg
Selenium	1,370	mg/kg	5.7U	mg/kg

Notes

[1] Values are based on ELCR=10-4 or HI = 1. Assumptions: EF=100 days/year. ET=2 hr/event

[a] Cadmium from diet

[b] Chromium (VI)

[c] Methyl Mercury

EPA	U.S. Environmental Protection Agency
J	Value is estimated
J-	Value is estimated with a possible low bias
mg/kg	Milligrams per kilogram
ND	No fly ash detected at a PLM reporting limit of 1 percent
U	Analyte was not detected at the listed reporting limit. which is an estimated quantitation.
	Shaded values exceed the human health screening criteria.

EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT RESULTS WITH ECOLOGICAL SCREENING LEVEL EXCEEDANCES

Analyte	Human Health Screening Standard for Sediment Samples[1]		Ecological Screening Standard for Sediment Samples[2]		Directly outside 48" RCP outfall		Approximately 2.3 mile downstream of Berry Hill Bridge		Approximately 3.3 mile downstream of Berry Hill Bridge		Approximately 5.2 mile downstream of Berry Hill Bridge	
Sample Information												
Sample ID	-		-		DRP-0214SD		DR12-0214SD		DR13-0214SD		DR15-0214SD	
Date	-		-		02/08/2014		02/10/2014		02/10/2014		02/10/2014	
Time	-		-		0940		1140		1310		1415	
Status	-		-		Validation Complete		Validation Complete		Validation Complete		Validation Complete	
Media	-		-		Sediment		Sediment		Sediment		Sediment	
Latitude	-		-		36.48824		36.55011		36.54822		36.5633	
Longitude	-		-		-79.71413		-79.56908		-79.55289		-79.53118	
Total Metals												
Arsenic	120	mg/kg	9.8	mg/kg	22	mg/kg	18	mg/kg	7.5	mg/kg	21	mg/kg
Cadmium	246[a]	mg/kg	0.99	mg/kg	0.1U	mg/kg	0.11	mg/kg	0.1U	mg/kg	0.14	mg/kg
Chromium	104[b]	mg/kg	43.4	mg/kg	8.9	mg/kg	12	mg/kg	16	mg/kg	14	mg/kg
Lead	400	mg/kg	35.8	mg/kg	5.1	mg/kg	8.6	mg/kg	6.9	mg/kg	11	mg/kg
Mercury	27.4[c]	mg/kg	0.18	mg/kg	0.05U	mg/kg	0.12J,QL-3	mg/kg	0.073J,QL-3	mg/kg	0.13J,QL-3	mg/kg
Selenium	1,370	mg/kg	2[d]	mg/kg	1.9	mg/kg	4.6	mg/kg	2.7	mg/kg	5.8	mg/kg

Notes

[1] Values are based on ELCR=10-4 or HI = 1. Assumptions: EF=100 days/year. ET=2 hr/event

[2] MacDonald, D.D.; Ingersoll, C.G.; Smorong, D.E.; Lindskoog, R.A.; Sloane, G; and T. Biernacki. 2003. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters. Florida Department of Environmental Protection, Tallahassee, FL. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters.

[a] Cadmium from diet

[b] Chromium (VI)

[c] Methyl Mercury

[d] The screening value for selenium is from Region 3 after Lemley, A.D. 2002. Selenium assessment in aquatic ecosystems. US Forest Service, Blacksburg, VA.

EPA	U.S. Environmental Protection Agency
J	Value is estimated
mg/kg	Milligrams per kilogram
QL-3	Laboratory control spike precision outside of method control limits
U	Analyte was not detected at the listed reporting limit, which is an estimated quantitation.
	Shaded values exceed the ecological screening criteria.

EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT RESULTS WITH ECOLOGICAL SCREENING LEVEL EXCEEDANCES

Analyte	Human Health Screening Standard for Sediment Samples[1]		Ecological Screening Standard for Sediment Samples[2]		Approximately 6.3 mile downstream of Berry Hill Bridge		Approximately 1.9 mile upstream of US Hwy 58 Bridge		Approximately 1.5 mile upstream of Berry Hill Bridge		Approximately 0.7 mile upstream of Berry Hill Bridge		Approximately 0.4 mile SW of Staunton River State Park boat ramp	
Sample Information														
Sample ID	-		-		DR16-0214SD		DR17-0214SD		DR8-0214SD		DR9-0214SD		DR37-0214SD	
Date	-		-		02/10/2014		02/10/2014		02/10/2014		02/10/2014		02/15/2014	
Time	-		-		1400		1515		1015		1130		1252	
Status	-		-		Validation Complete		Validation Complete		Validation Complete		Validation Complete		Validation Complete	
Media	-		-		Sediment		Sediment		Sediment		Sediment		Sediment	
Latitude	-		-		36.55466		36.54186		36.52644		36.53773		36.68737	
Longitude	-		-		-79.51836		-79.51791		-79.62107		-79.61567		-78.67237	
Total Metals														
Arsenic	120	mg/kg	9.8	mg/kg	15	mg/kg	22	mg/kg	23	mg/kg	19	mg/kg	2	mg/kg
Cadmium	246[a]	mg/kg	0.99	mg/kg	0.1	mg/kg	0.13	mg/kg	0.12	mg/kg	0.12	mg/kg	0.1	mg/kg
Chromium	104[b]	mg/kg	43.4	mg/kg	15	mg/kg	13	mg/kg	9.8	mg/kg	11	mg/kg	26	mg/kg
Lead	400	mg/kg	35.8	mg/kg	9.3	mg/kg	11	mg/kg	8.6	mg/kg	10	mg/kg	12	mg/kg
Mercury	27.4[c]	mg/kg	0.18	mg/kg	0.094J,QL-3	mg/kg	0.13J,QL-3	mg/kg	0.15	mg/kg	0.14	mg/kg	0.053	mg/kg
Selenium	1,370	mg/kg	2[d]	mg/kg	4.6	mg/kg	5.5	mg/kg	6.3	mg/kg	5.5	mg/kg	3.4	mg/kg

Notes

[1] Values are based on ELCR=10-4 or HI = 1. Assumptions: EF=100 days/year. ET=2 hr/event

[2] MacDonald, D.D.; Ingersoll, C.G.; Smorong, D.E.; Lindskoog, R.A.; Sloane, G; and T. Biernacki. 2003. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters. Florida Department of Environmental Protection, Tallahassee, FL. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters.

[a] Cadmium from diet

[b] Chromium (VI)

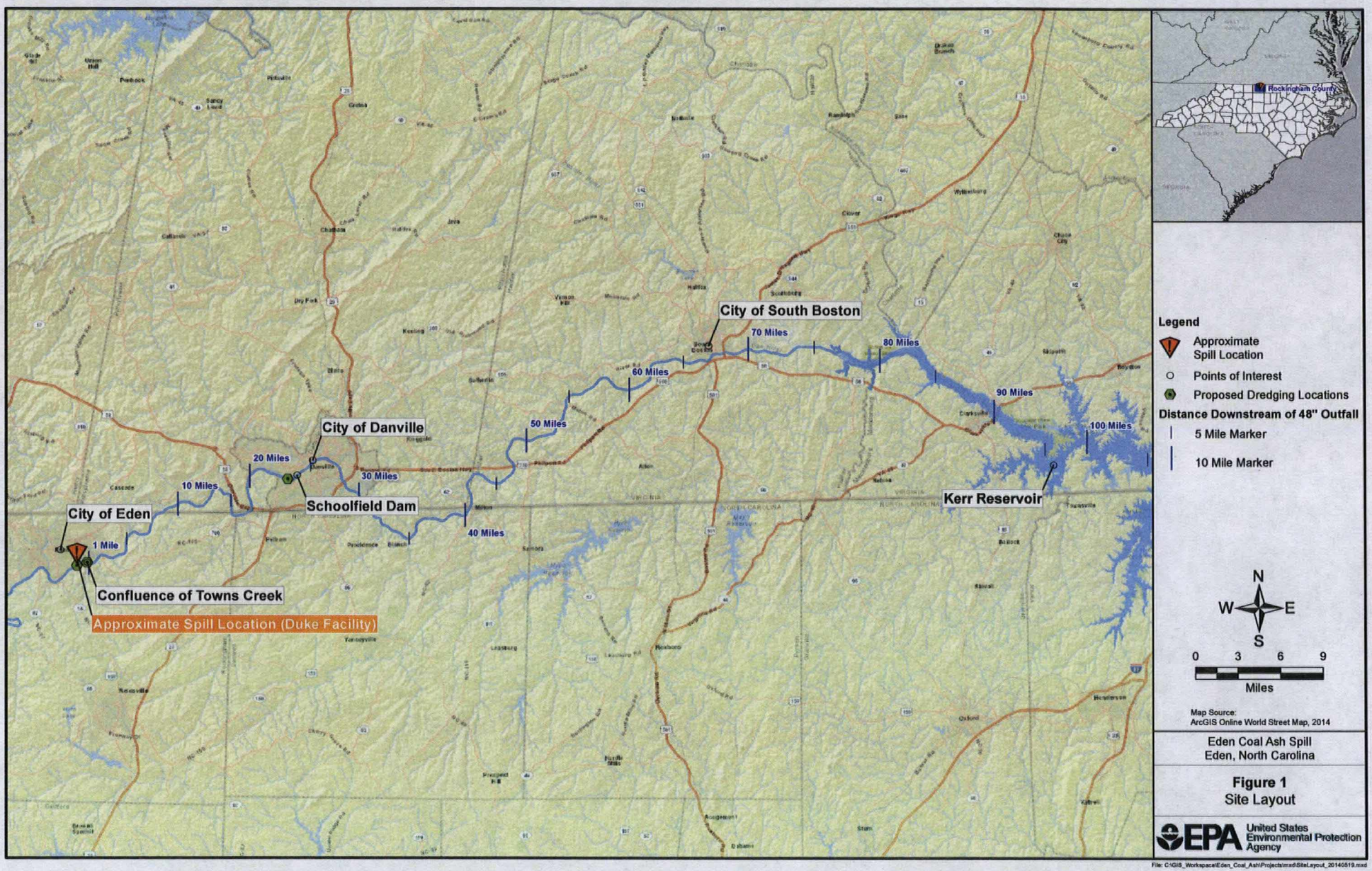
[c] Methyl Mercury

[d] The screening value for selenium is from Region 3 after Lemley, A.D. 2002. Selenium assessment in aquatic ecosystems. US Forest Service, Blacksburg, VA.

EPA	U.S. Environmental Protection Agency
J	Value is estimated
mg/kg	Milligrams per kilogram
QL-3	Laboratory control spike precision outside of method control limits
U	Analyte was not detected at the listed reporting limit, which is an estimated quantitation.
	Shaded values exceed the ecological screening criteria.

ATTACHMENT 2

SITE LAYOUT MAP



Eden Coal Ash Spill
Eden, North Carolina

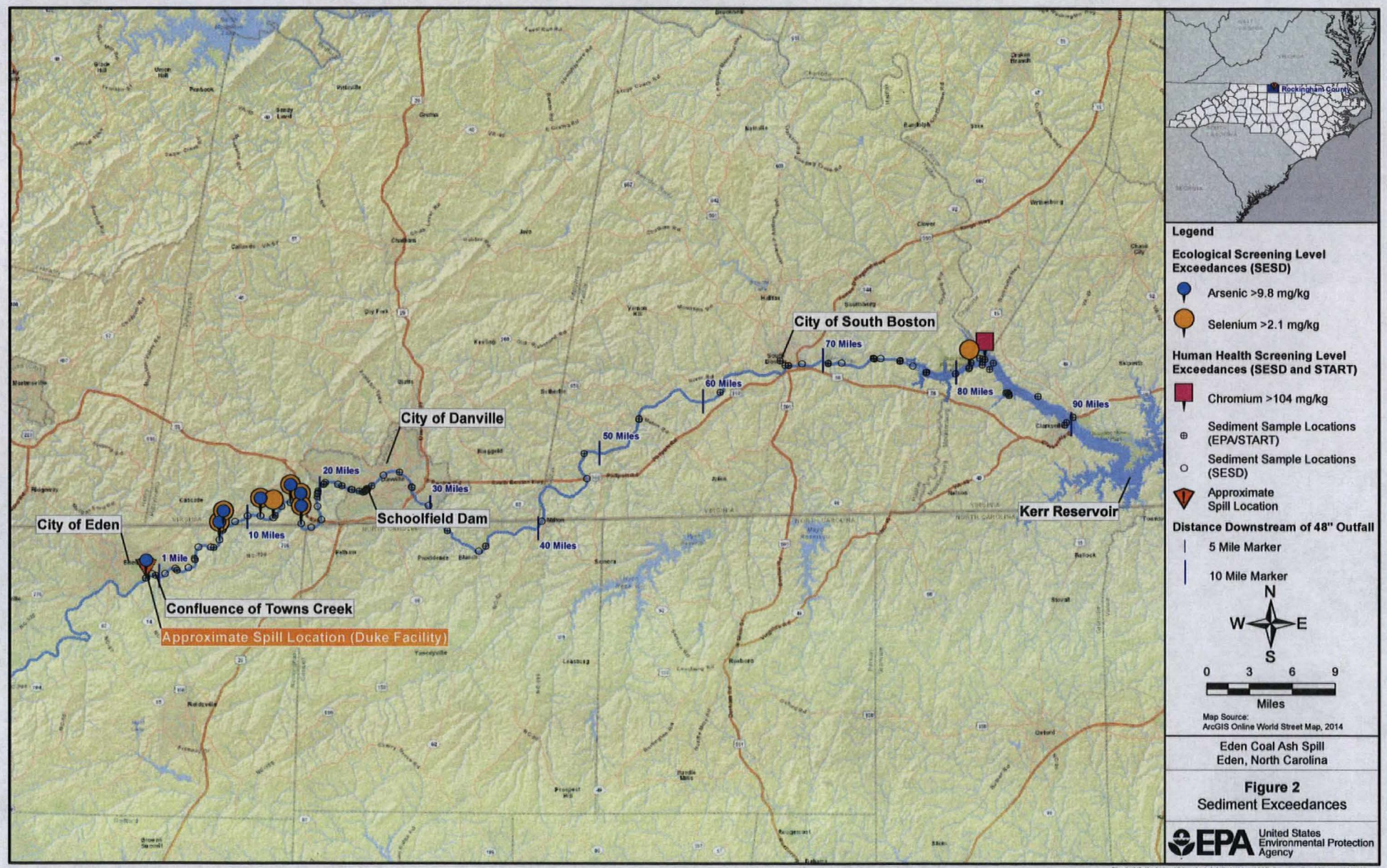
Figure 1
Site Layout

EPA United States Environmental Protection Agency

File: C:\GIS_Workspace\Eden_Coal_Ash\Projects\mxd\SiteLayout_20140519.mxd

ATTACHMENT 3

SAMPLE EXCEEDENCE LOCATION MAP


City of Eden
1 Mile
10 Miles
20 Miles
30 Miles
40 Miles
50 Miles
60 Miles
70 Miles
80 Miles
90 Miles
City of Danville
Schoolfield Dam
City of South Boston
Kerr Reservoir
Confluence of Towns Creek
Approximate Spill Location (Duke Facility)
Rockingham County
Legend
Ecological Screening Level Exceedances (SESD)
Arsenic >9.8 mg/kg
Selenium >2.1 mg/kg
Human Health Screening Level Exceedances (SESD and START)
Chromium >104 mg/kg
Sediment Sample Locations (EPA/START)
Sediment Sample Locations (SESD)
Approximate Spill Location
Distance Downstream of 48" Outfall
5 Mile Marker
10 Mile Marker
N
W
E
S
0 3 6 9
Miles
Map Source:
ArcGIS Online World Street Map, 2014
Eden Coal Ash Spill
Eden, North Carolina
Figure 2
Sediment Exceedances
EPA United States Environmental Protection Agency
File: C:\GIS_Workspace\Eden_Coal_Ash\Projects\mxd\SED_Sampling_Exceedances_20140519.mxd