

May 7, 2014

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Region 5  
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RE: Response to EPA Comments  
SWMU 15 Work Plan  
NIPSCO Bailly Generating Station  
EPA ID: IND000718114

In a letter dated April 8, 2014, the United States Environmental Protection Agency (EPA) indicated that they, the National Park Service (NPS), and the Indiana Dunes National Lakeshore (IDNL) had reviewed NIPSCO's February 28, 2014 work plan submittals for pre-design investigation work at SWMU 15 and within the IDNL area. A comment response letter for the IDNL Work Plan was provided to the EPA and NPS on April 17, 2014. Reproduced below are EPA's comments specific to SWMU 15 along with NIPSCO's responses. As requested by EPA in their letter dated April 8, 2014, the SWMU 15 Work Plan has been revised in accordance with the following responses, and submitted under separate cover on May 7, 2014, within the thirty 30-day deadline established by EPA. Work at SWMU 15 is scheduled to begin on May 12, 2014.

## **SWMU 15 Supplemental Landfill Delineation**

### **Borehole Advancement and Sampling:**

EPA Comment: Please provide the rationale for the 4-foot metric associated with the thickness of the underlying clay.

*Response: As indicated in Figure 6-2 of the Area C RFI Report (AMEC 2011), a thin silt and clay layer was encountered above sand before a more substantial clay unit was encountered. Borings SWMU15-SB10 and SWMU15-SB11 penetrated the clay surface to depths of 11 and 12 feet, respectively. AMEC's decision to penetrate clay a minimum of four feet is to: (1) confirm that we have reached the lower, more substantial clay unit; (2) provide the volume needed for the proposed geotechnical parameters; and (3) provide extra volume for archiving in the event additional testing is desired.*

EPA Comment: NIPSCO proposes to collect native soil samples at six locations for SPLP where ash extends below the water table. Four native soil samples are proposed to be collected at each location in one-foot vertical intervals. Please describe the data quality objectives for these native soil samples. Presumably, the purpose of these samples is to determine if all native soil in contact with saturated CCR will serve as a source. Are six sample locations adequate to support this objective for an area that is over 16 acres? Will it be appropriate to make remedial decisions regarding native soil in other areas based upon these six locations? Please provide support.

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*Response: As indicated in Figure 6-2 of the Area C RFI (AMEC 2011), the coal combustion residuals (CCR) at SWMU 15 are underlain by dune beach and lacustrine sands that are not anticipated to vary much from location to location. We also have recent site-specific data from post-excavation sampling and SPLP analysis of native soils at SWMU 18 (the Horseshoe Area) in Area A. Over 10,000 tons of material containing CCR and approximately 6 inches of native soil were removed from SWMU 18. The exposed native soil covered approximately one acre. Nineteen composite samples were collected from the upper six inches of exposed soil (i.e., within one foot of the former base of CCR) and submitted for SPLP analysis of boron and selenium. Selenium was not detected in any of the 19 samples and boron was not detected above the site-specific leaching based standard established for SWMU 18. Language referencing the previous work at SWMU 18 has been included in the Work Plan for SWMU 15. Based on the knowledge gained at SWMU 18 it is anticipated that the SPLP leachate concentrations will drop substantially from the CCR (which is also proposed for SPLP analysis in the SWMU 15 Work Plan) to the first one-foot interval of native soil underlying the CCR. Even so, the next underlying, one-foot interval of native soil will also be submitted to the laboratory for SPLP analysis. Although not anticipated, the frozen archived samples from the third and fourth one-foot intervals of native soil can be retrieved for SPLP analysis if necessary.*

*For these reasons, we feel that six locations will be adequate to make an initial assessment of the "secondary" source depth in native soils underlying CCR at SWMU 15. Also, please note that the Work Plan inadvertently stated that samples for SPLP analysis would be collected below the water table. The Work Plan has been corrected to clarify that samples for SPLP analysis will be collected below the CCR but from the vadose zone, above the water table.*

*Finally, NIPSCO and EPA/NPS are in the process of developing media cleanup standards (MCS) for SWMU 15 and IDNL groundwater. Great Lakes Initiative (GLI) values and Maximum Contaminant Levels (MCLs) form the basis for MCS in groundwater at the IDNL. Following the accepted approach for leaching-based standards at SWMU 18 in Area A, the MCS for groundwater will be multiplied by a factor of 10 for comparison to the SPLP results. These leaching-based values will also be used to establish reporting limits for the laboratory analysis. Please note that silver was inadvertently included in the previous list. Silver has been removed from the SPLP testing as it is not a contaminant of concern in any media at Bailly or the IDNL.*

**EPA Comment:** Please provide the same support regarding the proposal to collect nine samples for geotechnical parameters. Also, provide the data quality objectives associated with each of the proposed geotechnical tests. For example, what will the triaxial shear test or compaction test be used for and what metrics will inform that decision? The Agency recognizes that these tests are being conducted to generally evaluate remedial alternatives, such as capping, in the CMS. Further bracketing data interpretation and use supports transparency and streamlining remedial decision making. Last, provide the SOPs to be used for these tests (ASTM, ISO, etc).

*Response: Based on recent findings from the IDNL investigation and a re-evaluation of the existing information on the site stratigraphy, AMEC proposes to scale back the type of geotechnical testing proposed for this phase of the CMS. As mentioned above, the sand and clay present at the site is relatively consistent and has been well characterized by the investigations conducted since 2005. With this understanding, AMEC believes the enough useful information will be gained through characterizing soils and ash based on a suite of index testing including grain-size distribution (ASTM D422), moisture content (ASTM D2216), specific gravity (ASTM D854), Atterberg Limits (ASTM D 4318), and classification by the Unified Soil*

*Classification System (USCS) method (ASTM D2487). Soil classifications and index testing results may be used to support CMS selection by evaluating other soil material properties (such as material strength and compressibility) based on well-established correlations to index test properties.*

*Once a corrective measures alternative is selected, more detailed information (e.g., compaction characteristics, shear strength, and permeability) may be necessary at a frequency and from locations not currently known. Note that the SWMU 15 work plan includes the archiving of samples in an on-site freezer, and any of those samples may be candidates for future geotechnical testing.*

*The IDNL Work Plan has been revised to add the requested detail for the geotechnical testing, to include reference to the proposed method of testing.*

**Figure 1:**

Provided the localized impacts seen in the area of MW-119 and IDNL-GW13, please provide support for not proposing additional borings in that corner (northeast of SB33, southeast of SB28) to ensure the current interpretation of the fill area is accurate.

*Response: A 110-foot long test pit (SWMU15-TP26) was excavated to the fenceline northeast of SB-33. As shown in Figure 1 of the work plan by the label "S15-TP26 END", CCR was not present at the fenceline. To address the uncertainty regarding the border between SWMU 15 and the area surrounding IDNL-GW13, AMEC proposes to advance three additional direct-push borings to a depth of 20 feet. The first is proposed in the walking path north of SWMU15-TP26, the second is proposed in the IDNL walking path where the SWMU 15 boundary turns 90 degrees north, and the third is proposed in the flat area between SWMU15-CPT08 and IDNL-GW13 (see SB-49, SB-50, and SB-51 in the revised Figure 1). The purpose of these three borings is to determine if CCR has encroached onto the IDNL property near IDNL-GW13.*

*Text to this effect has been added to the SWMU 15 Work Plan; Figure 1 and Table 1 have also been revised to reflect these additions.*