

**2017 ANNUAL SURFACE IMPOUNDMENT INSPECTION REPORT**

**LUMINANT – MONTICELLO STEAM ELECTRIC STATION  
BOTTOM ASH PONDS  
TITUS COUNTY, TEXAS**

January 2018

Prepared for:

**LUMINANT GENERATION COMPANY, LLC**  
6555 Sierra Drive  
Irving, TX 75039

Prepared by:

**PASTOR, BEHLING & WHEELER, LLC**  
5416 Plaza Drive  
Texarkana, Texas 75503-2704  
Texas Engineering Firm No. 4760



Brian Thomas, P.E.  
Principal

PBW Project No. 5313D

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LUMINANT

## 1.0 INTRODUCTION

Luminant Power (Luminant) operated the Monticello Steam Electric Station (MOSES) located off FM 127 approximately nine miles southwest of Mount Pleasant, Texas (see Figure 1). The MOSES consists of three coal/lignite-fired units with a combined operating capacity of approximately 1,880 megawatts. Coal Combustion Residuals (CCR) including fly ash, bottom ash, flue gas desulfurization materials, and boiler slag are generated as part of MOSES unit operation. The CCRs are transported off-site for beneficial reuse by third-parties or are managed via mine-placement by Luminant at the MOSES G Ash Area in the Winfield South Mine.

The CCR Rule (40 CFR 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) has been promulgated by EPA to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. The final CCR Rule was published in the Federal Register on April 17, 2015. The effective date of the CCR Rule is October 19, 2015.

The CCR Rule establishes operating criteria for existing CCR surface impoundments and landfills, including annual inspection requirements for all CCR units to ensure that the design, construction, operation, and maintenance of the CCR impoundment are consistent with recognized and generally accepted good engineering standards. Pastor, Behling & Wheeler, LLC (PBW) was retained by Luminant to perform the 2017 annual inspections of the CCR Units at the MOSES. This report presents the findings of the 2017 annual inspections.

### 1.1 MOSES Units Subject to Annual CCR Inspection Requirements

The CCR Rule defines coal combustion residuals as fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers. The annual inspection requirements of the CCR Rule apply to surface impoundments and landfills that dispose or otherwise engage in solid waste management of CCRs.

The following surface impoundments at the MOSES have been identified as CCR Units subject to the annual CCR inspection requirements:

- Northeast Ash Water Pond (NE Pond),

- West Ash Settling Pond (West Pond), and
- Southwest Ash Settling Pond (SW Pond)
- **Bottom Ash Ponds.** The NE Pond, West Pond and SW Pond (collectively “Bottom Ash Ponds” or “BAPs”) are located approximately 800 feet southeast of the MOSES power plant (Figure 2). The NE Pond and West Ponds share an interior embankment and are each approximately 500 feet wide, covering an area of approximately 5.5 acres and 6.6 acres, respectively. The approximately 8-acre SW Pond shares an embankment with the West Pond (North end of the SW Pond). The impoundments are constructed partially above and partially below grade and are surrounded by engineered earthen dikes that extend approximately 10 to 20 feet above grade depending on the surrounding topography. The BAPs were originally constructed in the 1974 as a two-basin system and were subsequently segregated and relined with a 3-foot thick clay liner in 1990.

The Bottom Ash Ponds serve as settling basins. The ponds also act as a surge basin for various water streams in the ash-water system. Based on the design of the BAPs, minimal accumulation of solids occurs within the SW Pond.

## 1.2 Annual CCR Surface Impoundment Inspection Requirements

Section 257.83(b) of the CCR Rule specifies that annual inspections by a qualified professional engineer be performed for each CCR surface impoundment that: (1) has a dike height of five feet or more and a storage volume of 20 acre-feet or more; or (2) has a dike height of 20 feet or more. The annual CCR surface impoundment inspection for the Northeast Ash Water Retention Pond, West Ash Settling Pond, and Southwest Ash Settling Pond must include the following:

- A review of available information regarding the status and condition of the CCR unit, including files available in the operating record, such as CCR unit design and construction information required by Sections 257.73(c)(1) and 257.74(c)(1), previous periodic structural stability assessments required under Sections 257.73(d) and 257.74(d), the results of inspections by the qualified person as required under Section 257.83(a), and the results of previous annual CCR inspections (where applicable).
- A visual inspection of the CCR unit to identify signs of distress or malfunction of the impoundment and appurtenant structures, and
- A visual inspection of any hydraulic structures underlying the base of the impoundment or passing through the dike of the impoundment for structural integrity and continued safe and reliable operation.

The qualified professional engineer must prepare a report following each inspection that addresses the following:

- Any changes in geometry of the impounding structure since previous annual inspection;
- The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

- The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;
- The storage capacity of the impounding structure at the time of the inspection;
- The approximate volume of the impounded water and CCR at the time of the inspection;
- Any appearances of actual or potential structural weakness of the impoundment, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the impoundment and appurtenant structures; and
- Any other change(s) which may have affected the stability or operation of the impounding structure since the previous inspection.

The first annual CCR inspection for the BAPs was performed in 2015 (PBW, 2016b). A 2016 annual CCR inspection would have been required for the BAPs in accordance with Section 257.83(b); however, CCR Rule Section 257.83(b)(4)(ii) states the following regarding annual inspection requirements for surface impoundments:

*(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by Sections 257.73(d) and 257.74(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year...*

A five-year structural stability assessment was performed for the BAPs during 2016 by Golder Associates as required under CCR Rule Section 257.73(d) (Golder, 2016). Since the five-year structural stability assessment was performed for the BAPs during 2016, a 2016 annual inspection was not performed for the BAPs in accordance with CCR Rule Section 257.83(b)(4)(ii).

## **2.0 RECORDS REVIEW**

In accordance with the requirements specified in 40 CFR Part 257.83(b)(i), Luminant provided PBW with copies of the Fugitive Dust Control Plan (FDCP), weekly inspection records, available CCR unit construction drawings, and an evaluation of the structural stability of the CCR surface impoundments.

### **2.1 CCR Surface Impoundment Operating Records**

The following sections provide a summary of the CCR FDCP and weekly surface impoundment inspection reports, which are maintained in the operating record for the CCR units.

#### **2.1.1 CCR Fugitive Dust Control Plan**

The CCR FDCP for MOSES dated October 2015 was reviewed by PBW as part of the annual CCR inspection process. The FDCP was certified by a Registered Professional Engineer on October 5, 2015, and placed into the operating record on October 16, 2015. CCR within the BAPs is managed using wet handling systems, which virtually eliminates the generation of fugitive dust. However, the MOSES CCR FDCP does include the following dust control measures:

- Water spray or fogging systems;
- Compaction;
- Vegetative cover; and
- Reduced vehicle speeds.

These dust controls shall be implemented during periodic removal of CCR solids from the BAPs. In addition, during loading of fly ash at MOSES the material is conditioned during the loading process to mitigate fugitive dust. The FDCP includes provisions to amend the plan as necessary, and the plan includes a log for citizen complaints. No citizen complaints were recorded with the FDCP at the time of the annual inspection.

#### **2.1.2 Weekly Qualified Person Inspection Records**

In accordance with the requirements specified in 40 CFR Part 257.83(b)(i), PBW reviewed completed weekly inspection forms for the BAPs. Luminant initiated weekly CCR inspections in October 2015, and PBW reviewed copies of weekly inspections performed by Luminant in the year prior to the annual inspection performed on October 3, 2017. No conditions with potential to result in structural

weakness of the impoundment embankments or that could potentially disrupt the operation and safety of the impoundment were noted during the weekly inspections. Luminant personnel did indicate the need to address a number of maintenance related issues including:

- Re-grading/repair of dike crest ruts;
- Vegetative maintenance;
- Minor pipe leak repairs (CCR transfer piping);
- Identification/repair of animal burrows; and
- Identification/repair of slope irregularities (local erosional features along the north (downstream) embankment of NE Pond and West Pond)

## **2.2 CCR Unit Design Documentation**

Luminant provided PBW with the following documents that provide information concerning the design, construction and modification of the BAPs at MOSES:

- CCR Study for MOSES (Prepared by Burns & McDonnell; dated July 31, 2015); and
- CCR Closure Plan for Monticello Steam Electric Station Bottom Ash Ponds (PBW, 2016a).

Section 4.0 and Appendices A, B and C of the CCR Study prepared by Burns & McDonnell summarizes available records concerning the original design, construction, operation and inspection of the BAPs at MOSES. This report also includes the “Ash and Scrubber Pond Stability Investigation Report” and an addendum prepared by Golder. The original construction of a 2-basin bottom ash pond occurred in 1974; however, no original construction design or as-built drawings were available. The embankments were reportedly constructed using clayey fill (e.g. sandy clay or clayey sand) that was likely obtained from an on-site borrow source. The westernmost basin of the original 2-basin system was apparently modified in 1989 by constructing an internal embankment to segregate the west pond into two ponds (e.g. the existing West Pond and SW Pond).

The BAPs are designed as a closed-loop system using pumps for surface withdrawal of water from the surface impoundments as needed. Discharge of fluids from the BAPs is currently controlled by a 3-foot diameter pipe that penetrates the southwest embankment of the West Pond. The drainage control pipe is connected to a concrete surge chamber and the pump station located approximately 300 feet southwest of the MOSES generating units. The SW Pond was originally constructed to allow for fluid take off from a valve controlled outlet structure that discharged to a concrete chamber (transfer station) located immediately south of the SW Pond; however, the dewatering system has reportedly never been

used. The control for the drainage valve is located on the manway that extends into the SW Pond from the southern embankment. The drainage control valves, piping and other components of the dewatering system are not visible and thus were not included in the annual inspection.

### **2.3 CCR Unit Structural Stability Assessment**

Section 4.2.3.2 of the MOSES CCR Study (Burns & McDonnell, 2015) includes a summary of stability analyses of the BAPs at MOSES that was performed by Golder. Golder also prepared a structural Stability Assessment Report for the BAPs in October 2016. This report documents the condition of the BAPs and in accordance with the CCR rule an annual inspection was not required in 2016. The stability analysis in the 2015 dam safety assessment report included an evaluation of the BAP embankments for both the long term and short-term steady-state seepage conditions using both the empty and full pond scenarios. The October 2016 Structural Stability Assessment Report prepared by Golder did not identify any structural stability deficiencies and previous geotechnical investigations indicate that the critical embankment slopes in the BAPs were stable under short-term and long-term conditions.

### **2.4 2015 Annual CCR Inspection Report**

PBW reviewed the 2015 Annual CCR Inspection Report for the CCR Units at the MOSES (PBW, 2016b), which is the most recent inspection report for the BAPs. The recommendations from the 2015 Annual CCR Inspection Report for each CCR unit and the status of activities to address the recommendations at the time of the 2017 Annual CCR Inspection can be summarized as follows:

Recommendation from Most Recent Annual CCR Inspection	Status at Time of 2017 Annual CCR Inspection
<b>NORTHEAST ASH WATER POND</b>	
Repair surficial rutting on the slope near the southeast corner of the NE Pond.	Area has been repaired.
Monitor wet conditions near the toe of the embankment northwest portion of the NE Pond (along the piping corridor) and near the northeast corner.	The 2017 CCR inspection occurred during an extended period of dry conditions. Current conditions suggest that previously observed wet areas or ponding near the toe of the embankment slope was likely related to poor drainage relief and seasonally wet surface conditions at the time of the 2015 CCR inspection.
Transfer piping impairs drainage relief near the embankment toe on the north side of the NE Pond. If removal of out-of-service piping is practicable, these areas should be re-graded to improve drainage. Otherwise wet soil conditions should be monitored to ensure the areas dry fully during seasonally dry periods. Growth of woody vegetation should also be controlled in these areas to ensure sufficient visibility for inspection and minimize potential impacts to slope stability.	Transfer piping remains in-place; however, surface conditions in these areas were dry during the 2017 CCR inspection. Continue to evaluate options for removal of out-of-service piping to improve drainage away from the toe of the embankment, as practicable. Woody vegetation has been eliminated from the previously noted area of concern.
Monitor areas of localized erosion under the influent pipe rack for the NE Pond.	Topsoil has been placed in these areas and revegetation is in progress. Monitor areas to ensure establishment of uniform grass coverage.
A temporary CCR transfer area has been designated near the southeast corner of the NE Pond, and transport trucks are currently backed into place to discharge loads of CCR in to the NE Pond. This temporary transfer area is underlain with a liner and surface runoff is towards the NE Pond. Concrete barriers are present to prevent haulage equipment from backing onto the revetment matting. Upon ceasing transfer of CCR in this area, the area should be restored and the revetment matting should be inspected for potential damage from vehicular traffic.	This area has been restored and revetment matting is intact. Rutting that was previously present on the crest of the embankment in the staging/truck unloading area has been repaired and drainage from the crest towards the NE Pond is restored.
<b>WEST ASH SETTLING POND</b>	
Repair erosion undermining the pipe rack footing on the north side of the West Pond.	Erosion persists but the area remains stable with no visual evidence of subsidence or failure of the pipe rack evident.

<b>Recommendation from Most Recent Annual CCR Inspection</b>	<b>Status at Time of 2017 Annual CCR Inspection</b>
<p>Transfer piping impairs drainage relief near the embankment toe on the west side of the West Pond. If removal of out-of-service piping is practicable, these areas should be re-graded to improve drainage. Otherwise wet soil conditions should be monitored to ensure the areas dry fully during seasonally dry periods. Growth of woody vegetation should also be controlled in these areas to ensure sufficient visibility for inspection and minimize potential impacts to slope stability.</p>	<p>Transfer piping remains in-place; however, dry surface conditions were observed in this area during the 2017 CCR inspection. Continue to evaluate options for removal of out-of-service piping to improve drainage away from the toe of the embankment, as practicable.</p>
<p>Continue monitoring an apparent slope failure near the northeast corner of the West Pond. This area of slope instability appears related to the presence of bottom ash placed on the original embankment slope as part of an extension of the embankment to allow for placement of a piping corridor. Hence, continued monitoring is sufficient to ensure current conditions remain stable and the underlying original embankment materials remain stable.</p>	<p>The apparent slope failure is present, but the area remains stable with no visual evidence of further slope movement or subsidence evident. Continue monitoring to ensure current conditions remain stable and the underlying original embankment materials remain stable.</p>
<b>SOUTHWEST ASH SETTLING POND</b>	
<p>Monitor wet conditions near the toe of the embankment at the south end of the SW Pond</p>	<p>The 2017 CCR inspection occurred during an extended period of dry conditions. Current conditions suggest that previously observed wet areas or ponding near the toe of the embankment slope was likely related to poor drainage relief and seasonally wet surface conditions at the time of the 2015 CCR inspection.</p>
<p>Transfer piping impairs drainage relief near the embankment toe on the west side of the SW Pond. If removal of out-of-service piping is practicable, these areas should be re-graded to improve drainage. Otherwise wet soil conditions should be monitored to ensure the areas dry fully during seasonally dry periods. Growth of woody vegetation should also be controlled in these areas to ensure sufficient visibility for inspection and minimize potential impacts to slope stability.</p>	<p>Transfer piping remains in-place; however, dry surface conditions were observed in this area during the 2017 CCR inspection. Continue to evaluate options for removal of out-of-service piping to improve drainage away from the toe of the embankment, as practicable.</p>

### 3.0 CCR SURFACE IMPOUNDMENT INSPECTION

The annual inspection of the MOSES CCR surface impoundments was performed on October 3, 2017. Brian Thomas, a registered professional engineer in the State of Texas, was accompanied by Luminant qualified persons (Walker Wendall) during the inspection. The inspection consisted of a walking visual survey of the downstream embankments, the embankment crest, and upstream embankments of the BAPs. Current observations were recorded in the field using a hand-held GPS in order to locate areas that require further monitoring and/or action to address potential areas of concern noted during the inspection (Figure 3). Photographs of the surface impoundments during the annual inspection are included as Appendix A and Figure 4 illustrates the location where each photograph was taken. The following sections summarize the results of the initial annual inspection, including specific observations related to the structural elements of the MOSES CCR surface impoundments.

#### 3.1 Surface Impoundments – Downstream Embankment

The downstream embankments of the BAPs were generally in good condition and no visual evidence of slope movement or misalignment was noted during the inspection. With exception of areas along the north and west sides of the West Pond, the embankments were well vegetated with grasses that are well maintained. The apparent beneficial use of bottom ash as fill was observed along the piping corridor along the northwest and northern portions of the West Pond. Although the relatively short slope lengths in this area have limited erosion of fill on the embankment, this portion of the embankment should be monitored to ensure adequate vegetative cover is maintained and erosion is not occurring. During the 2015 annual inspection, a former localized slope failure was noted on the surficial bottom ash placed on the slope in this area. No visual indication of slope instability or further slope movement was observed at the time of the inspection. The structural embankment materials (e.g. clayey fill) are not exposed in this area, and the localized feature does not pose a significant threat to the structural integrity of the embankment. Luminant has recently placed topsoil along the northern embankment for the NE and West Ponds to repair areas of surficial erosion/slope irregularities that do not affect structural stability of the embankment. These areas were recently seeded to reestablish vegetative cover. As indicated on Figure 3, the following areas were noted for future monitoring:

- Monitor minor burrowing animal activity on the northern and western embankment of the West Pond.
- Monitor areas where topsoil was recently placed to repair minor slope irregularities/surficial erosion to ensure the establishment of permanent vegetative in the affected areas shown on Figure 3.

- Monitor areas of localized erosion near the influent pipe rack to the West Pond, under the influent pipe rack for the NE Pond, and on the slope near the southwest corner of the NE Pond.

During the previous annual inspection performed by PBW in 2015, saturated soil conditions were observed south of the SW Pond, northwest of the NE Pond along the piping corridor, and near the northeast corner of the NE Pond. Wet conditions were not observed in these areas during the 2017 inspection, which suggests that the previously identified areas of saturated soil were likely associated with poor surface drainage relief and/or wet surface soil conditions resulting from rainfall that occurred prior to the 2015 inspection.

### **3.2 Surface Impoundments – Embankment Crest**

The majority of the embankment crest is improved with a crushed aggregate access road. Access roads are generally in good conditions with limited areas of surficial rutting along the roadways, as recent repairs have been made on the embankment crest to address surficial rutting in March 2017. Two shallow, concrete-lined open channels are present on the common embankment between the NE and West Ponds as well as between the West and SW Ponds. These concrete-lined channels are each equipped with a sluice gate to allow for equalization of the water level between the three ponds. No visual evidence of slope failures or misalignments were noted on the crest of the embankments or associated with the concrete-lined drainage channels.

### **3.3 Surface Impoundments – Upstream Embankment**

The upstream embankments of the NE and West Ponds are armored with concrete revetment matting, which is generally in good condition and prevents erosion of the interior slopes via either wave action or erosion from run-off. Rip rap provides similar protection of the interior slope of the SW Pond. Cattails and other aquatic vegetation are present in areas where solids have accumulated over the revetment matting in the NE and West Ponds. This vegetation does not limit inspection of the interior embankment during normal freeboard conditions and should be removed in conjunction with future removal of CCR. Limited accumulation of solids occurs in the SW Pond and aquatic vegetation present in this pond does not limit the inspection of the interior embankment during normal freeboard conditions. Management of aquatic vegetation may be considered in conjunction with lower water level conditions; however, current conditions do not warrant removal of aquatic vegetation in the West Pond.

### 3.4 CCR Surface Impoundment Volumes

The three CCR surface impoundments at MOSES are equipped with sluice gates that allow for each of the three ponds to be hydraulically connected such that the water level elevation can be allowed to equilibrate between the BAPs. A staff plate is affixed to the walk way on the pier on the south end of the SW Pond. The staff plate has been surveyed relative to the site-specific vertical datum and is used for daily monitoring of the water level within the BAPs. A water elevation of 383.2 feet above mean sea level (MSL) was observed within the BAPs during the annual inspection. The maximum impounded elevation of water in the BAPs within the past year was at an elevation of 385.2 feet above mean sea level (MSL), which represents a minimum freeboard of approximately 1.3 feet. The minimum observed water elevation during the past year was 382 feet-MSL. Based on available construction data, each of the BAPs were constructed to provide the following estimated storage capacities:

- NE Pond: 100 acre-feet
- West Pond: 130 acre-feet
- SW Pond: 145 acre-feet

A visual estimate of the quantity of impounded solids present in the BAPs at the time of the annual inspection suggests that the NE and West ponds contain approximately 85 and 70 percent of available capacity, respectively. Due to the limited volume of solids discharged to the SW Pond, it is reasonable to estimate that less than 10 percent of the available storage capacity of the SW Pond is occupied by impounded CCR. It should be noted that no soundings or other quantitative measurements were used to estimate the current volume of CCR stored within the BAPs or the volume of water currently impounded.

## 4.0 SUMMARY OF FINDINGS

The findings of the 2017 annual inspection of the MOSES CCR surface impoundments are summarized herein. Luminant qualified persons responsible for the weekly inspections accompanied PBW during the annual inspection to ensure that observed conditions do not represent a change in geometry of the impounding structure since previous inspection or have potential to disrupt operation and safety of the CCR unit.

### 4.1 Visual Observation of Embankment Alignments

Consistent with previous structural integrity evaluations, critical impoundment inspections performed on behalf of Luminant, and recently completed weekly inspections, no evidence of slope movements or misalignments that have potential to affect the structural integrity of the surface impoundment embankments were noted.

### 4.2 Surface Impoundment – Visual Observations of Structural Integrity

No conditions were observed during the annual inspection that indicate an actual or potential structural weakness of the CCR unit is present. In addition, conditions observed during the annual inspection indicate that a disruption or the potential for disruption of the operation and safety of the CCR unit is not currently anticipated. A review of weekly inspections completed to date by Luminant and the completion of the annual inspection suggest that no changes that may affect the stability or operation of impounding structure have been observed.

### 4.3 CCR Unit Volumes at Time of Inspection

- Northeast Ash Water Pond
  - Operating Capacity: 100 acre-feet
  - CCR Solids: 137,000 cubic yards
  
- West Ash Settling Pond
  - Operating Capacity: 130 acre-feet
  - CCR Solids: 147,000 cubic yards
  
- Southwest Ash Settling Pond
  - Operating Capacity: 145 acre-feet
  - CCR Solids: <25,000 cubic yards

## 5.0 RECOMMENDATIONS

The following recommendations are based on the results of the annual CCR inspection of the MOSES Ash Pond conducted October 3, 2017:

- Luminant should continue to monitor the areas of concern documented during the annual inspection and listed in Section of 3.0. However, based on a review of the slope stability assessment and the annual inspection activities presented herein, the recommended monitoring activities for the observed animal borrows and revegetation of recent surficial embankment repairs do not currently pose a significant risk to the structural stability of the embankments. Hence, the recommended actions should only be completed when surface conditions are sufficiently dry to allow for equipment access without causing further damage to the areas of concern.
- Cattails and other aquatic vegetation are present in areas where solids have accumulated over the revetment matting in the NE and West Ponds. This vegetation does not limit inspection of the interior embankment during normal freeboard conditions and should be removed in conjunction with future removal of CCR.
- Management of aquatic vegetation may be considered in conjunction with lower water level conditions; however, current conditions do not warrant removal of aquatic vegetation in the West Pond.
- This annual inspection report should be completed by filing the report in the operating record of the MOSES no later than January 18, 2018.
- The third annual inspection should be performed in October/November 2018 unless otherwise allowed by the rule.

## 6.0 REFERENCES

Burns & McDonnell, 2015. *CCR Study for Monticello Steam Electric Station, July 31.*

Pastor, Behling & Wheeler, LLC (PBW), 2016a. *CCR Closure Plan Monticello Steam Electric Station Bottom Ash Ponds, October.*

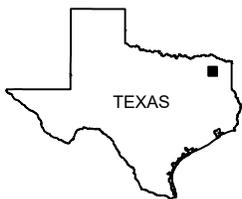
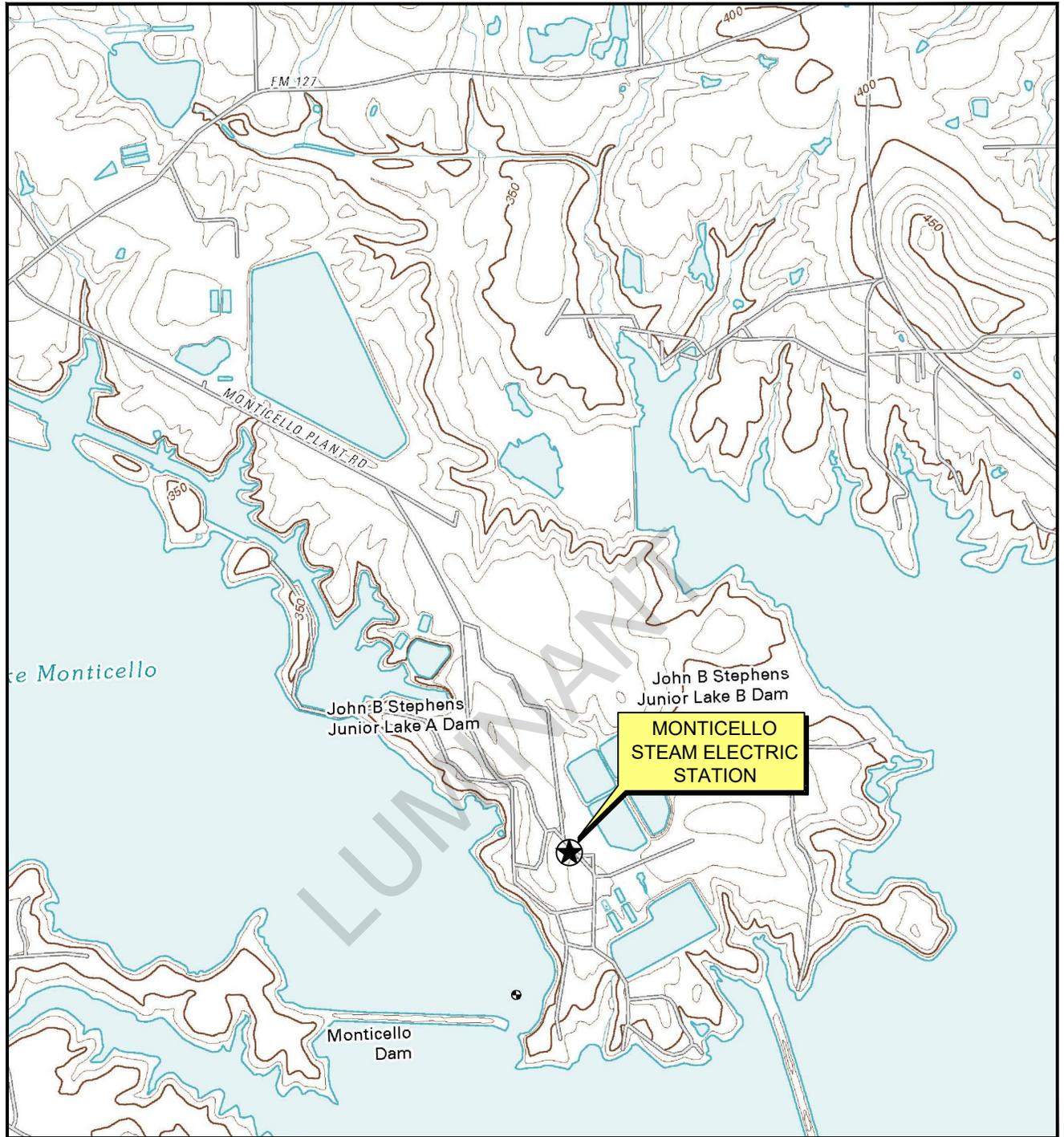
PBW, 2016b. *Annual Surface Impoundment Inspection Report Luminant Monticello Steam Electric Station Bottom Ash Ponds, January.*

Golder Associates Inc., 2016, *Structural Stability Assessment Report Monticello Steam Electric Station, October 2016.*

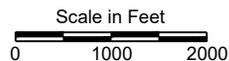
LUMINANT

LUMINANT

**FIGURES**



QUADRANGLE LOCATIONS



**MONTICELLO STEAM ELECTRIC STATION**  
MONTICELLO, TEXAS

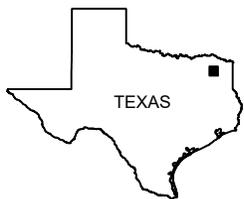
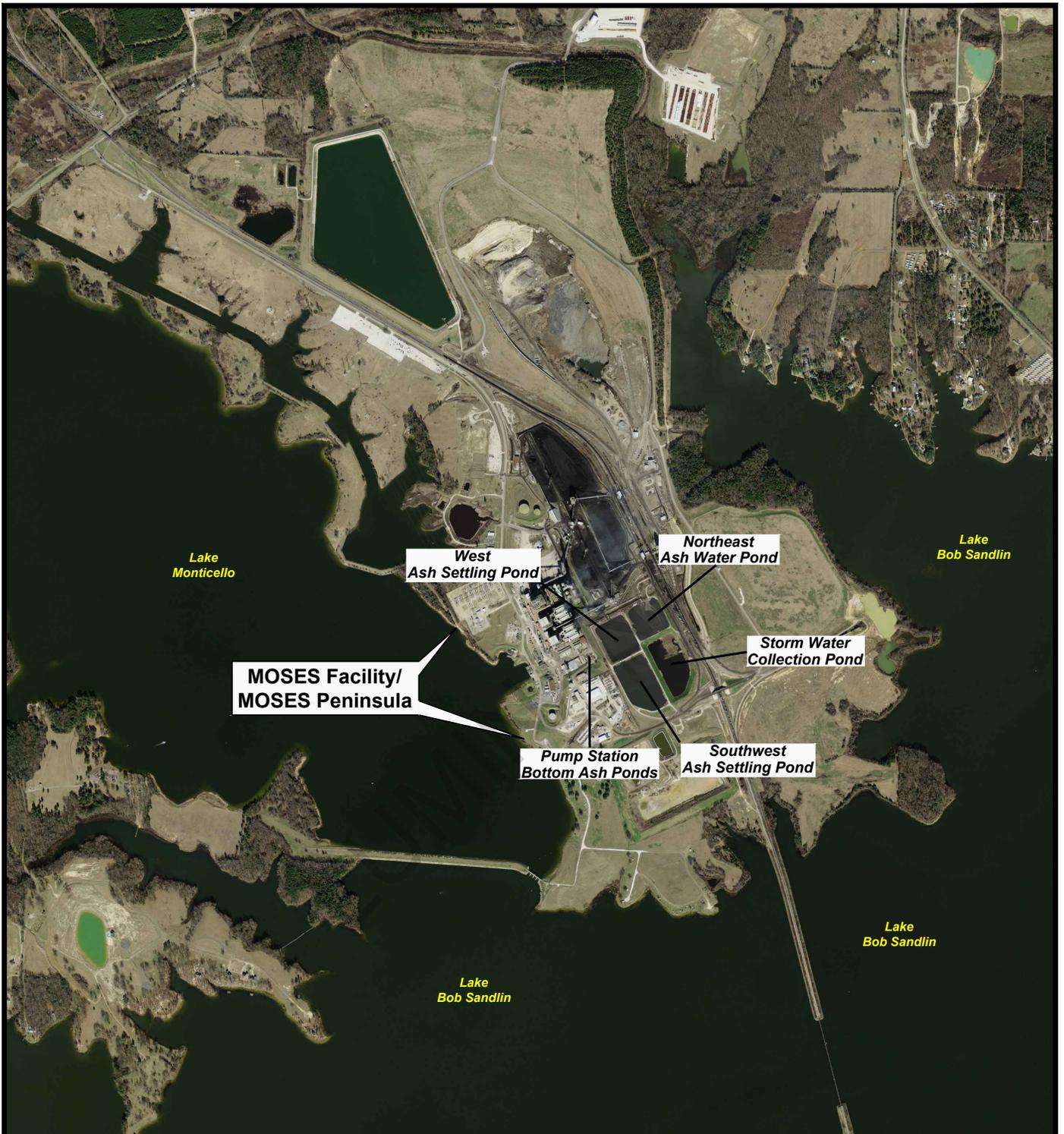
Figure 1

**SITE LOCATION MAP**

PROJECT: 5313-D	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: BDT	

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS

SOURCE:  
Base map from www.tnris.gov, Monticello, TX 7.5 min. USGS quadrangle dated 2010.



PHOTOGRAPH LOCATION



Scale in Feet  
 0 1000 2000

**MONTICELLO STEAM ELECTRIC STATION**  
 MONTICELLO, TEXAS

Figure 2

**SITE VICINITY MAP**

PROJECT: 5313-D	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: BDT	

**PASTOR, BEHLING & WHEELER, LLC**  
 CONSULTING ENGINEERS AND SCIENTISTS

Source of photo:  
<http://www.tnris.state.tx.us> Monticello NE, aerial photograph, 2009.



MONITOR EROSION OF FOOTING  
(PIPE SUPPORT TO BEYOND TOE)

Northeast Ash  
Water Pond

West Ash  
Settling Pond

Storm Water  
Collection Pond

Southwest Ash  
Settling Pond

**EXPLANATION**

- ✕ Monitor Minor Burrowing Animal Activity
- ↵ Monitor Recently Filled Areas for Establishment of Permanent Vegetative Cover



Scale in Feet  
0 100 200

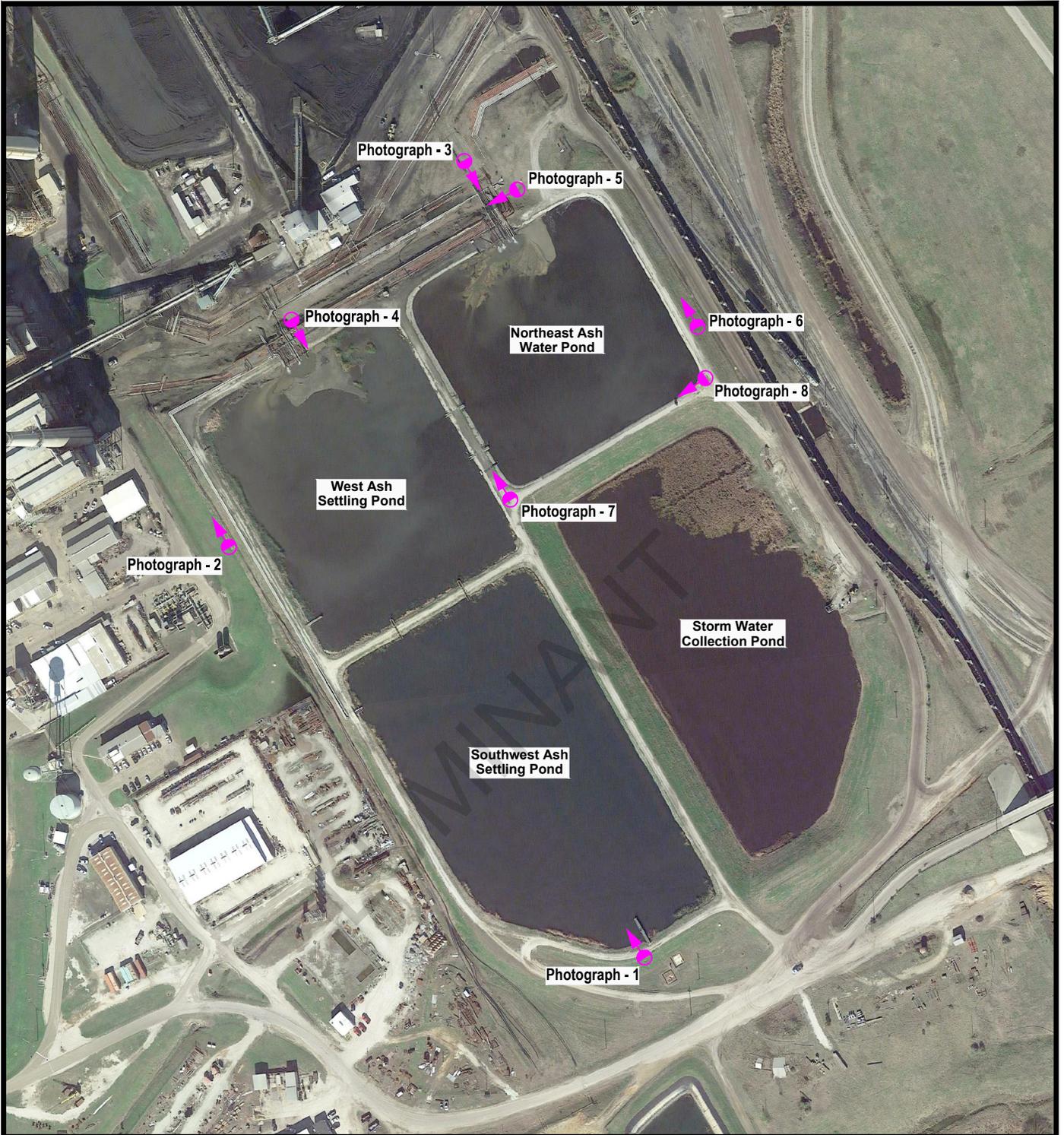
SOURCE:  
Imagery from Google Earth, photography dated 12/2/15.

**MONTICELLO STEAM ELECTRIC STATION**  
MONTICELLO, TEXAS

Figure 3  
**ANNUAL INSPECTION  
FINDINGS SUMMARY MAP**

PROJECT: 5313-D	BY: AJD	REVISIONS
DATE: DEC., 2017	CHECKED: BDT	

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS

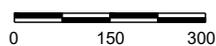


**EXPLANATION**

 Photograph Location and Direction



Scale in Feet



SOURCE:  
Imagery from Google Earth, photography dated 12/2/15.

**MONTICELLO STEAM ELECTRIC STATION**  
MONTICELLO, TEXAS

Figure 4

**ANNUAL INSPECTION  
PHOTOGRAPH MAP**

PROJECT: 5313-D

BY: AJD

REVISIONS

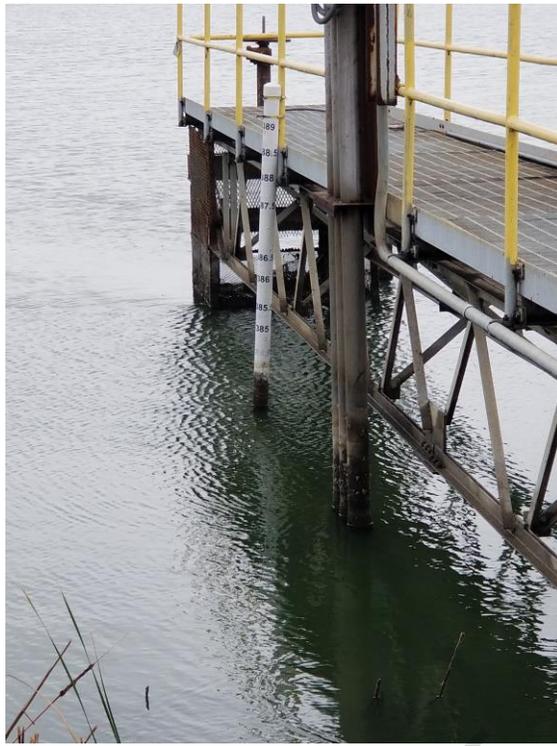
DATE: DEC., 2017

CHECKED: BDT

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LUMIVANT

**APPENDIX A**  
**INSPECTION PHOTOGRAPHS**



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 1</b> – (View NW) SW Pond pier/manway with sight gauge visible.	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 2</b> – (View NW) Downstream embankment of SW Pond with piping at toe.	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



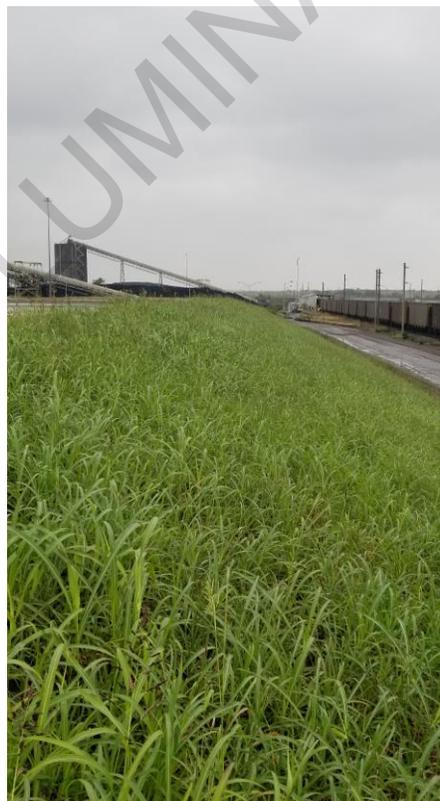
Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 3</b> – (View SE) Manifold area for NE Pond. Monitor recent erosion repair during revegetation.	
PROJECT NO. 5313-D	SITE NAE	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 4</b> – (View SE) Monitor erosion adjacent to a pipe rack footing on the north embankment of the West Ash Pond.	
PROJECT NO. 5313-D	SITE NAE	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 5</b> – (View SW) Piping corridor at toe of NE Pond embankment. Piping impedes toe drainage during wet periods.	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 6</b> – (View NW) View of Eastern embankment of NE Pond.	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 7</b> – (View NW) Embankment crest between NE Pond (right) and West Pond (left).	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017



Pastor, Behling & Wheeler	DESCRIPTION	<b>Photograph 8</b> – (View SW) Former CCR transfer area NE Pond (repaired).	
PROJECT NO. 5313-D	SITE NAME	Monticello Steam Electric Station– Annual Surface Impoundment Inspection	DATE 10/3/2017