Haley & Aldrich, Inc.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

15 January 2016
File No. 40616-300

Associated Electric Cooperative, Inc.
2814 South Golden Avenue
P.O. Box 754
Springfield, MO 65801-0754

Attention: Mr. Russ Weatherly
Supervisor, Land and Water Resources

Subject: Annual CCR Surface Impoundment PE Inspection
Pond 003
AECI New Madrid Power Plant
New Madrid, Missouri

Mr. Russ Weatherly:

Enclosed please find our Initial Annual Coal Combustion Residuals (CCR) Surface Impoundment Inspection Report for the Associated Electric Cooperative, Inc. (AECI) Pond 003 located at the New Madrid Power Plant near New Madrid, Missouri.

We completed our site visit for the inspection of the surface impoundment on 1 September 2015. This work was performed by Haley & Aldrich, Inc. (H&A) on behalf of Associated Electric Cooperative, Inc. in accordance with the US Environmental Protection Agency's (EPA's) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257.

The scope of our work was to complete 1) a review of available information on the surface impoundment, 2) a visual inspection of the surface impoundment, 3) prepare the enclosed report. Recommendations for remedial actions are provided in Section 4 of the report.

Thank you for inviting us to complete this inspection and please feel free to contact us if you wish to discuss the contents of the report.

Sincerely yours,
HALEY & ALDRICH, INC.

Steven F. Putrich, P.E.
Vice President

Enclosures

G:\40616_AECI-CCR ELG Management Support\300-NM Ponds Stability Assessments\Deliverables\003 Annual Inspection-FINAL\2016-0112-HAI-AECI-003-CCR Impoundment Annual PE Inspection rpt-F.docx

HALEY ALDRICH

www.haleyaldrich.com

REPORT ON

INITIAL ANNUAL CCR SURFACE IMPOUNDMENT PE INSPECTION POND 003 NEW MADRID POWER PLANT NEW MADRID, MISSOURI

by Haley & Aldrich, Inc.
Cleveland, OH

for Associated Electric Cooperative, Inc.
New Madrid, Missouri

File No. 40616-300
January 2016

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1. Description of Project

1.1 GENERAL

1.1.1 Authority

Haley & Aldrich, Inc. (H&A) has been contracted by Associated Electric Cooperative, Inc. (AECI, Owner) to perform an Initial Annual CCR Surface Impoundment Inspection for the Pond 003 located at the New Madrid Power Plant (NMPP) near New Madrid, Missouri. This work was completed in accordance with the US Environmental Protection Agency's (EPA's) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 40 CFR Part 257, specifically 257.83(b).

1.1.2 Purpose of Work

The purpose of this inspection was to visually observe and evaluate the present condition of the surface impoundment to evaluate the design, construction, operation, and maintenance of the Pond 003 for consistency with recognized and generally accepted good engineering standards. The visual inspection is intended to identify signs of distress or malfunction of the surface impoundment, should they exist. This report summarizes those findings and notes conditions observed that are disrupting or have the potential to disrupt the operation and safety of the surface impoundment.

The inspection is divided into three parts: 1) obtain and review readily available reports, investigations, and data pertaining to the surface impoundment; 2) perform a visual inspection of the site; 3) prepare this report presenting our observations and recommendations for any repairs or remedial actions.

1.2 DESCRIPTION OF PROJECT

1.2.1 Location

Pond 003 is located approximately one mile southeast of the NMPP in New Madrid, Missouri. Pond 003 is located adjacent to the power plant, which is located at North latitude 36° 30.4' and West longitude 89° 33.5', as shown on the attached Project Locus. The surface impoundment is accessed from the plant site along a gravel access road. Access to the plant and surface impoundment is restricted by full time security and barriers/fences at the plant.

1.2.2 Owner/Operator

Pond 003 is owned, operated and maintained by Associated Electric Cooperative, Inc.

	Surface Impoundment Owner	Surface Impoundment Operator (at Time of Inspection)
Name Mailing Address Town	AECI New Madrid Power Plant P.O. Box 156 New Madrid, Missouri 63869	AECI New Madrid Power Plant P.O. Box 156 New Madrid, Missouri 63869

1.2.3 Purpose of Pond 003

The NMPP is a two-unit coal-fired power plant, with a maximum generating capacity of approximately 1200 Megawatts. Unit 1 was constructed in 1972 and Unit 2 was constructed in 1977. As part of plant operations, two dikes were constructed for the purpose of storing Coal Combustion Residuals waste and plant wastewater. The dikes are known as Pond 003 and Pond 004. This inspection report is for Pond 003. This impoundment has been the primary settling pond for the plant receiving all process water and the impoundment has impounded fly ash and boiler slag primarily, along with coal fines, for sedimentation and storage.

1.2.4 Description of the Surface Impoundment

Pond 003 has an approximate design total capacity of 3.1 million cubic yards per the original surface impoundment design with an approximate footprint of 110 acres. Water and ash are discharged into the impoundment via two pipelines located at the northern end of the impoundment. The discharged water and ash flow through a channel in the stockpiled/settled ash. Discharges from the impoundment flow to a concrete drop inlet structure with concrete stoplogs. A discharge pipe directs water through the dike and into a discharge channel which flows to the Mississippi River. The impoundment embankment is approximately 10 to 20 feet in height and according to records, the embankment is constructed of locally available silty clay.

The surface impoundment is constructed on native soils. Based on the review of documents and observations from the site visit, Pond 003 does not receive drainage from the surrounding areas. Water is directed to the pond from direct precipitation and from the NMPP operations (i.e. discharge of process water).

Based on recent generation and disposal data, the surface impoundment receives approximately 110,000 tons of CCR per year.

1.3 REVIEW OF AVAILABLE INFORMATION

1.3.1 Design and Construction Records

Pond 003 dike was constructed in 1972 to create a sedimentation and storage basin for fly ash and boiler slag. AECI was not able to provide readily available construction drawings prior to the inspection.

We spoke with Mr. Dennis Cox, AECI NMPP Manager, and others concerning the operations and maintenance of the dike on 1 September 2015. Information provided by NMPP personnel has been incorporated into this report.

1.3.2 Operating Records

Written operational records are not historically maintained for the surface impoundment. We understand that AECI has commenced its 7-day inspections.

1.3.3 Description of Changes since Previous Annual Inspection

This was the first annual impoundment inspection conducted as a requirement of §257.83, thus there are no geometrical changes to report. Subsequent annual impoundment inspections will note any changes in design of the impounding structure.

2. Inspection

2.1 VISUAL INSPECTION

On 1 September 2015, Haley & Aldrich completed a visual inspection of the surface impoundment. The following subsections describe the conditions observed during the inspection. In addition, refer to the photographs and checklist forms included in Appendices A, and B, respectively for additional comments.

2.1.1 Description of Inspection

During the visual inspection, the impoundment perimeter was walked and the dike, downstream area, and outlet were examined for any deficiencies (e.g. cracking, ruts, woody and overgrown grassy vegetation, etc.) and for the presence of local instrumentation. Throughout the inspection, pictures were taken to document various physical conditions of the impoundment.

2.1.2 General Findings

2.1.2.1 *Impoundment Berms*

The crest of the western portion of the dike consists of a paved access road. This area of the dike crest also joins into the Mississippi River Levee crest. The crest of the eastern and southern portions of the dike consists of a gravel access road. The crest alignment appeared generally level, with no depressions, or irregularities observed. Minor rutting, less than 2 in. in depth, were observed on the gravel access road portion of the crest, likely from vehicle traffic. The crest elevation was generally at approximately El. 310 with minimum crest El. 307. Settlement or misalignment was not observed.

The downstream slope of the dike was generally graded to an estimated slope of about 3H:1V and healthy grass vegetation covered much of the slope. The western portion of the dike was also part of the Mississippi River Levee and was covered with grass about 6-10 in. in height. The grass appeared to be regularly mowed.

The downstream slope of the eastern and southern portion of the dike was graded to an approximate slope of 3H:1V, or flatter towards the north. Slope was cover in healthy grass cover about 8 to 12 in. in height and appeared to be regularly mowed. The downstream slope at the western portion of the south side shares a dike with the inactive Lined Pond at the facility. This area between the Pond 003 and the inactive Lined Pond was separated by an access road which is considered the western portion of the southern dike crest. The downstream slope at this section consists of the settled dry fly ash within the inactive Lined Pond. The inactive Lined Pond does have a geosynthetic liner system which was observed on the upper portion of the downstream side of the dike. Misalignments, depressions, ruts, bulging, erosion, burrows or other signs of distress were not observed.

Within Pond 003, CCR has been excavated from the inflow points and stockpiled to an elevation above the dike crest, and above the water level along the upstream slope but within the impoundment footprint. For these areas, the upstream slope was covered and not observed. At locations were the upstream slope was observed, the slope appeared uniform, at an approximate 3H:1V slope, or flatter and protected from erosion and wave action. The top half of the slope was covered by grassy vegetation, some of which was overgrown. The bottom half of the slope, including below the water line, consisted of riprap. Isolated areas of the riprap contained vegetation less than about 3 ft. in height. Misalignments, depressions, ruts, bulging, erosion, burrows or other signs of distress were not observed.

2.1.2.2 *Hydraulic Structures*

Two sets of double 12 in. metal pipes discharge CCR and process water into Pond 003. Water flows from north to south within the impoundment footprint, converging into a Clear Pond at the southeastern corner. Discharge from the impoundment is through a concrete drop outlet at the southern end of the Clear Pond. The water level in the pond is controlled by concrete stop logs. Water flows over the stoplogs and into an 18 in. diameter discharge pipe to an unlined discharge channel that flows to the Mississippi River. The concrete drop outlet spillway appeared to have minor, isolated, concrete chips and weathering. Minor, surficial rusting was observed on the stoplog removal winch and frame. The submerged discharge pipe was below the water level during the time of the site visit and was not visible.

2.1.2.3 *Downstream Toe Area*

Downstream of the eastern portion of the dike mature trees exist within about 25 ft. of the downstream toe of the dike. At the southern end of the eastern side, the trees exist within about 40 ft. of the downstream toe of the dike. Between the toe of the dike and the trees, approximately 12 in. to 36 in. well established grass is maintained. During our site visit, we observed two (2) trees, approximately 30 in. diameters, which were dead and closest to the dike. Wet or soft spots were not observed.

2.2 OPERATIONS AND MAINTENANCE

The impoundment is operated and maintained by New Madrid Power Plant personnel. Operation of the impoundment includes using the stop logs at the drop inlet structures to regulate the water levels and removal/recovery of settled CCR from the impoundment for processing and disposal or beneficial reuse.

Maintenance of the impoundment includes regular mowing of the downstream upstream and downstream slopes and removing vegetation from the riprap on upstream slopes.

2.3 STRUCTURAL STABILITY

The dike was visually observed to be stable with little or no ruts, sloughing, low areas except at specific locations noted above. AECI is performing an engineering Safety Factor stability analysis as a separate study in accordance with the CCR Rule.

3. Impoundment Geometry, Instrumentation Readings, and Capacity

3.1 CHANGES IN STRUCTURE GEOMETRY

This was the first annual impoundment inspection conducted as a requirement of §257.83, thus there are no geometrical changes to report. Subsequent annual impoundment inspections will note any changes in geometry of the impounding structure.

3.2 INSTRUMENTATION READINGS

Piezometers/monitoring wells are located along the crest of the dikes of Pond 003. The piezometers/groundwater monitoring wells were more recently installed for the purposes of monitoring groundwater quality and are not monitored for structural stability purposes. No readings were taken in the piezometer and historical documentation was not provided. No other instrumentation was identified as part of the inspection.

3.3 IMPOUNDED WATER AND CCR DEPTH AND ELEVATION

This was the first annual impoundment inspection, thus a maximum and minimum water and CCR reading since the previous annual inspection is not applicable. Below is a table with the maximum and minimum recorded water level readings as provided by AECI. It is understood that AECI has not adjusted the stop logs recently which were set at an approximate elevation of 302 ft. Based on that

Table 3.2 Water Level Readings

Description	Date	Pond Water Elevation	Depth[1]
Inspection Date	9/1/2015	302	
Maximum	9/1/2015	302	17 ft.
Minimum	9/1/2015	302	17 ft.

1. Depth as measured to the approximate lowest point in the existing impoundment (El. 295) based on pre-construction USGS topo. It is understood that depths vary throughout the impoundment footprint. CCR depths vary.

3.4 STORAGE CAPACITY

The remaining storage capacity of the impoundment was approximated to be 167 Acre-ft. As described in Figure 4, the remaining storage capacity was approximated by determining the volume of the impoundment as of the survey conducted 4-8 October 2014 below El. 307 ft., which is the low crest elevation of the dike.

3.5 VOLUMES

The impounded water volume was approximated to be 48 Acre-ft. As described on Figure 4, the volume of impounded water was approximated by determining the volume of the impoundment as of the survey conducted 4-8 October 2014 below El. 302 ft., the elevation of the pond on the inspection date. Since no bathymetric data was available, the bottom of the pond was approximated to be at El. 296 assuming some material being above the low elevation from the original USGS topo.

The impounded CCR volume was approximated to be 1,768 Acre-ft. As described on Figure 4, the volume of impounded CCR was approximated by determining the volume between the survey conducted 4-8 October 2014 and the topography provided by USGS 1971.

4. Assessments and Recommendations

4.1 ASSESSMENTS

The following deficiencies were observed at Pond 003:

- Vegetation exceeding 6 in. in height on the upstream slope.
- Vegetation exceeding 6 in. in height on the downstream slope.
- Vegetation exceeding 6 in. in height within the riprap on the upstream slope.
- Two (2) dead trees within 50 feet of toe of downstream slope of the dike.
- Mature trees in the downstream area of the dike.

4.2 RECOMMENDATIONS

We recommend the following remedial measures be undertaken:

- Cut/mow the embankments and routinely mow the embankment slopes (upstream and downstream) and downstream areas to maintain vegetation at a height of 6 in. or less.
- Cut the two (2) dead trees downstream of Pond 003.
- Monitor the mature trees downstream of Pond 003 for signs of decay and impact to the dike during the weekly and monthly inspections.
- Conduct a video inspection of outlet pipes from the drop inlet structures to confirm structural integrity.

5. Certification

The assessment of the general condition of the surface impoundment is based upon available data and visual observation. Detailed investigation and analyses involving topographic mapping, subsurface investigations, testing and detailed computational evaluations are beyond the scope of this report.

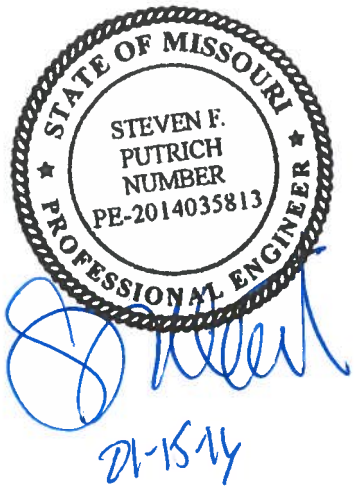
In reviewing this report, it should be realized that the described condition of the surface impoundment is based on observations of field conditions at the time of inspection, along with other data available to the inspection team.

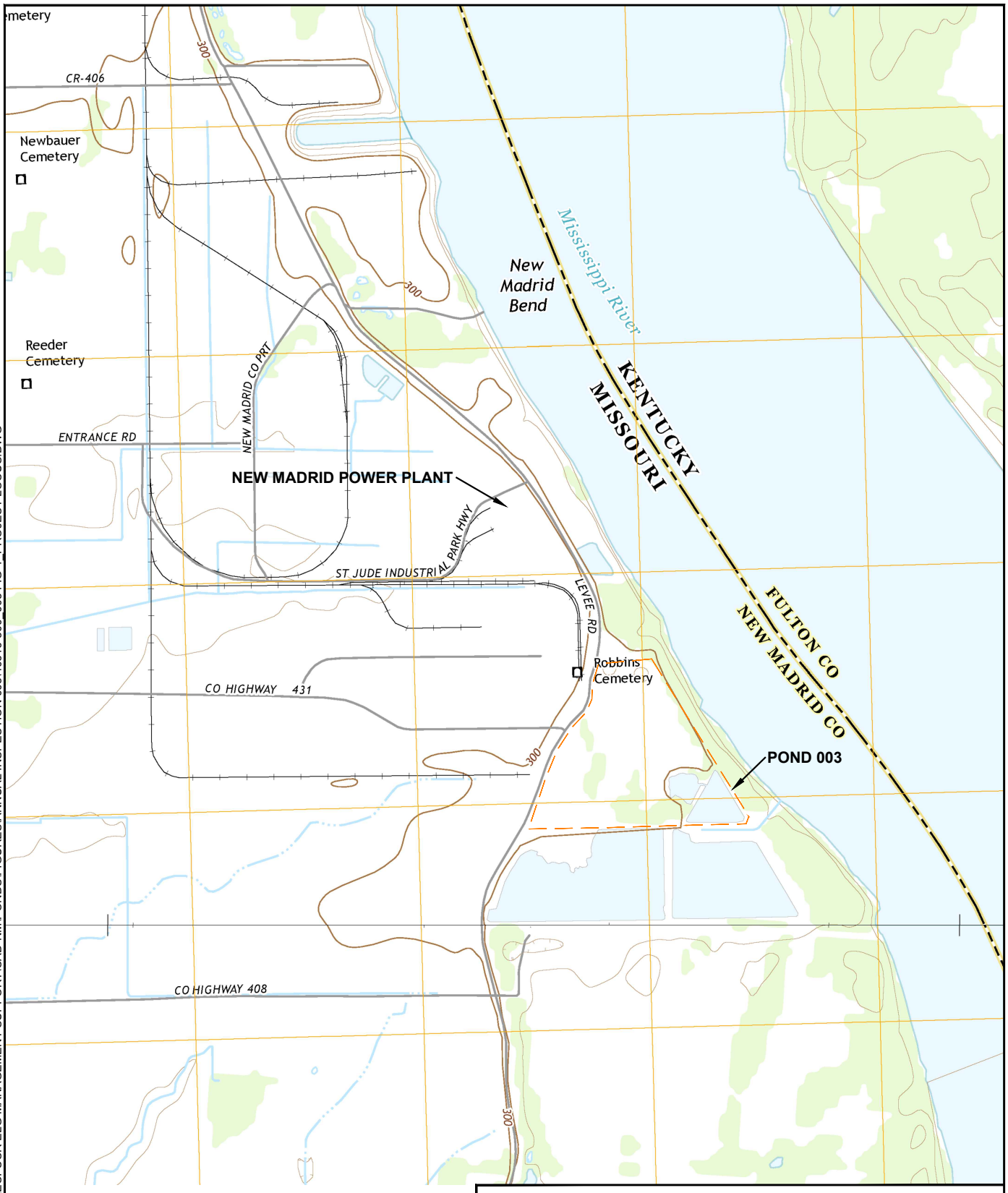
It is important to note that the condition of a surface impoundment depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the surface impoundment will continue to represent the condition of the surface impoundment at some point in the future.

Signed: _____
Consulting Engineer

Print Name: Steven F. Putrich
Missouri License No.: 2014035813
Title: Vice President
Company: Haley & Aldrich, Inc.

Professional Engineer's Seal and date:





MAPSOURCE: USGS
NEW MADRID, MO-KY
POINT PLEASANT, MO-TN-KY
2015

HALEY ALDRICH

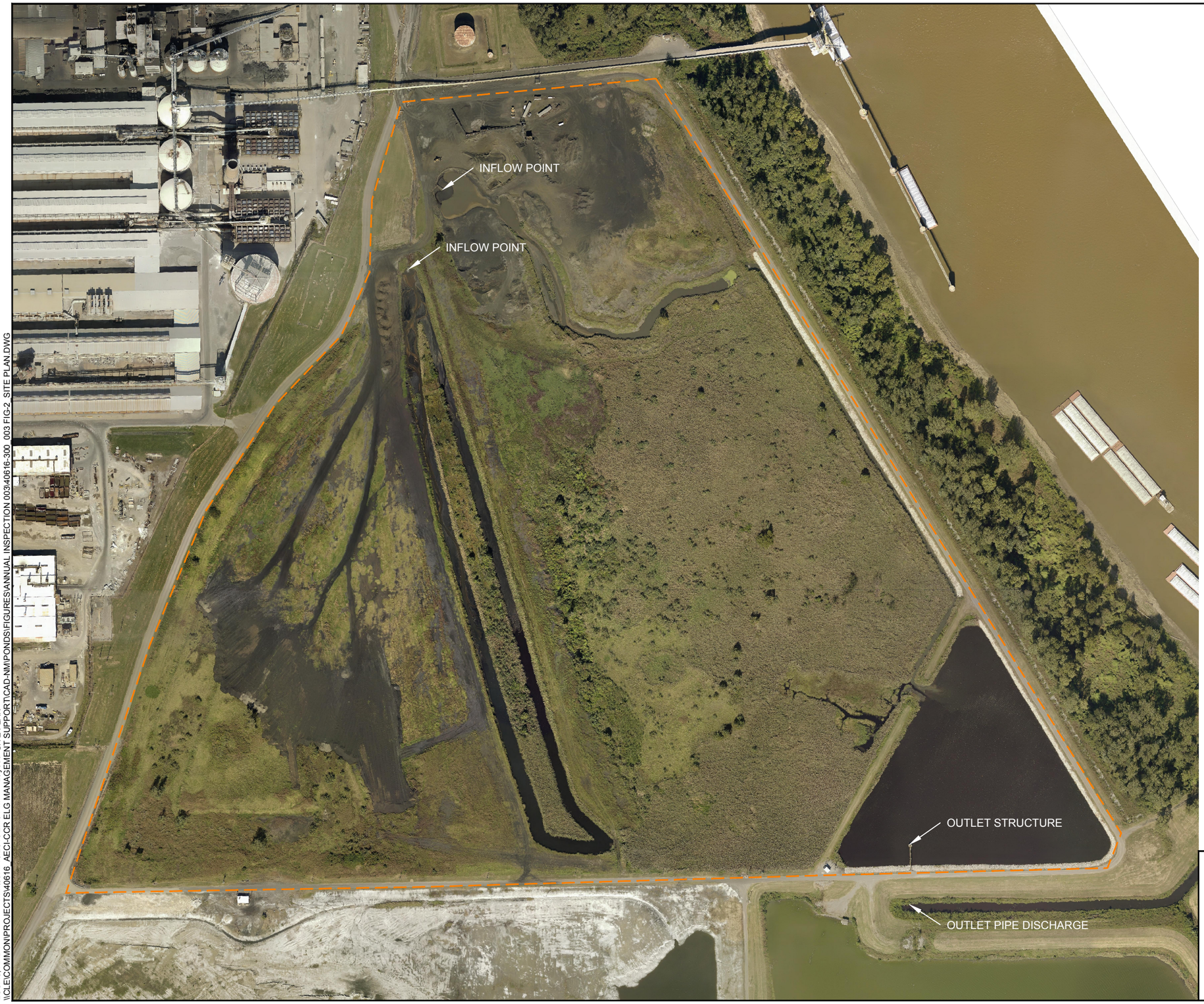
ANNUAL CCR SURFACE IMPOUNDMENT PE INSPECTION
POND 003
NEW MADRID POWER PLANT
NEW MADRID, MO

PROJECT LOCUS

APPROXIMATE SCALE: 1" = 2000'
JANUARY 2016

FIGURE 1

LUCAS, ANDY Printed: 1/15/2016 2:30 PM Layout: PROJECT LOCUS
\\CLE\COMMON\PROJECTS\40616 AECI-CCR ELG MANAGEMENT SUPPORT\CAD-NM\PONDS\FIGURES\ANNUAL INSPECTION 003\40616-300_003 FIG-1_PROJECT LOCUS.DWG



LEGEND

APPROXIMATE LIMITS OF POND 003

NOTES

1. AERIAL IMAGERY PROVIDED BY AECI AND WAS CONDUCTED BY PICTOMETRY INTERNATIONAL CORP BETWEEN 4-8 OCTOBER 2014.

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

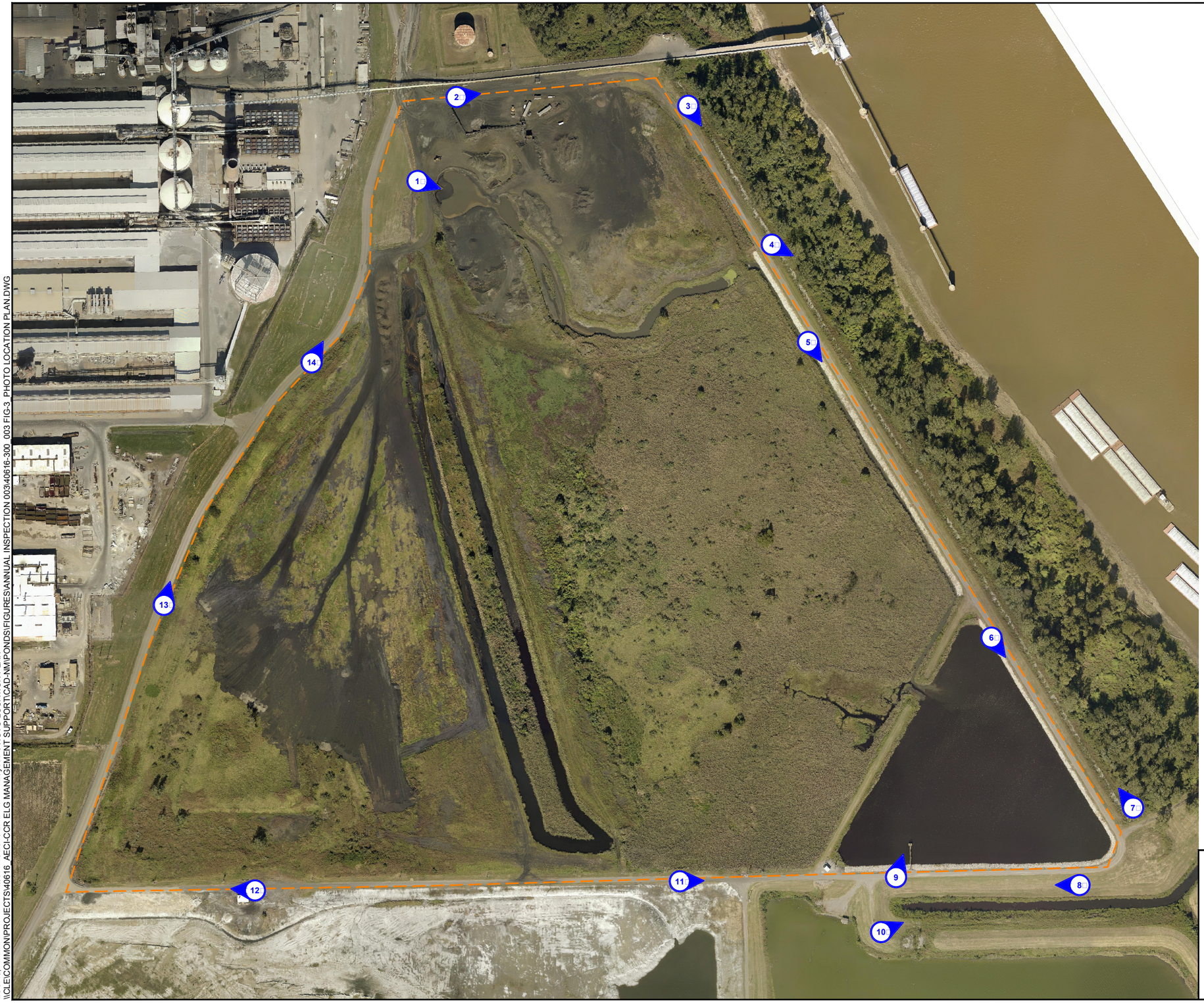
ANNUAL CCR SURFACE IMPOUNDMENT PE INSPECTION
POND 003
NEW MADRID POWER PLANT
NEW MADRID, MO

SITE PLAN

SCALE: AS SHOWN
JANUARY 2016

FIGURE 2

LUCAS, ANDY Printed: 1/15/2016 2:43 PM Layout: SITE PLAN
\\CLE\COMMON\PROJECTS\40616_AECI-CCR ELG MANAGEMENT SUPPORT\CAD-NM\PONDS\FIGURES\ANNUAL INSPECTION 003\40616-300_003 FIG-2_SITE PLAN.DWG



LEGEND

- APPROXIMATE LIMITS OF POND 003
- PHOTO LOCATION/DIRECTION

NOTES

1. AERIAL IMAGERY PROVIDED BY AECI AND WAS CONDUCTED BY PICTOMETRY INTERNATIONAL CORP BETWEEN 4-8 OCTOBER 2014.

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

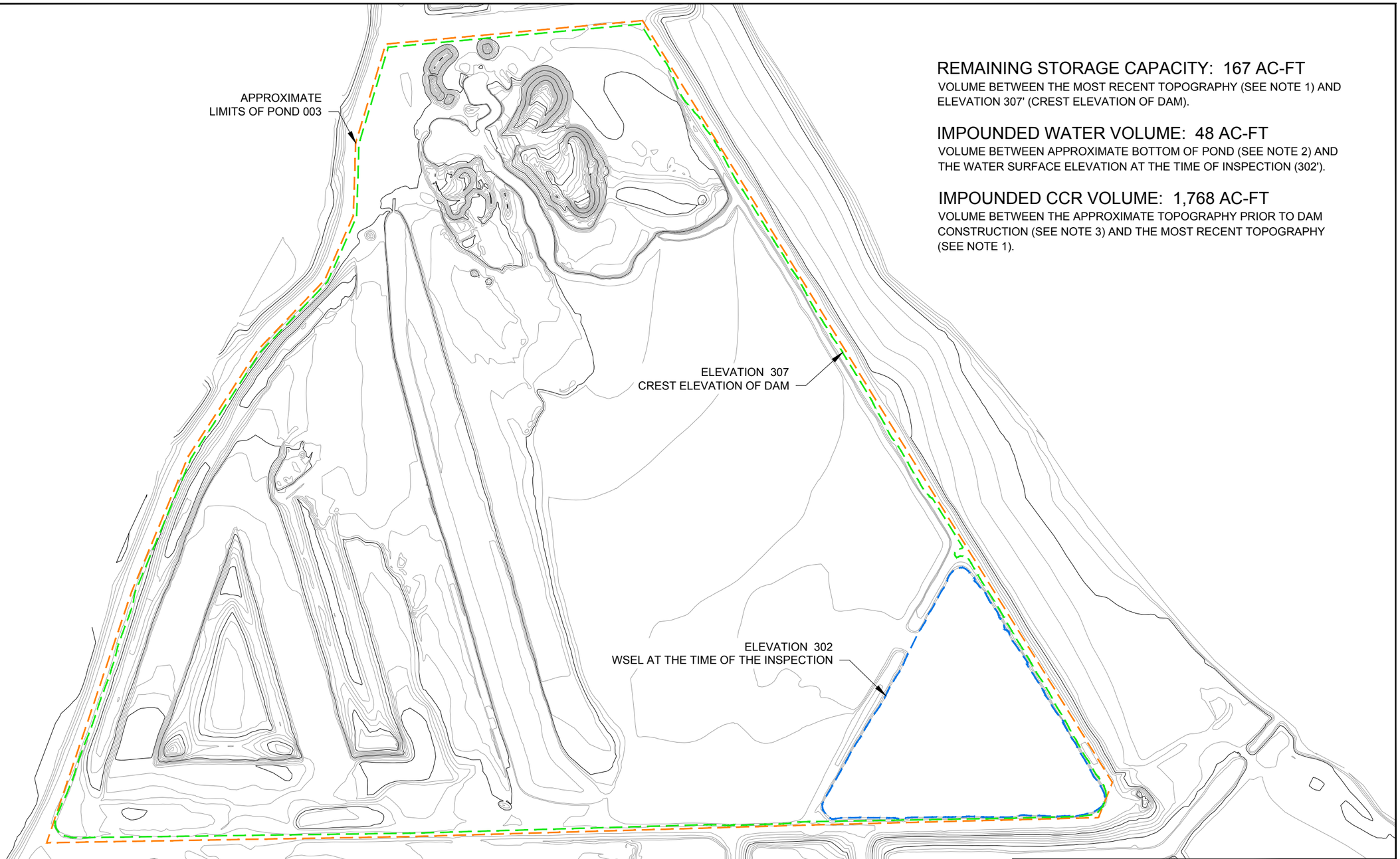
ANNUAL CCR SURFACE IMPOUNDMENT PE INSPECTION
POND 003
NEW MADRID POWER PLANT
NEW MADRID, MO

PHOTO LOCATION PLAN

SCALE: AS SHOWN
JANUARY 2016

FIGURE 3

LUCAS, ANDY Printed: 1/15/2016 2:42 PM Layout: PHOTO LOCATION PLAN
\\CLE\COMMON\PROJECTS\40616_AECI-CCR ELG MANAGEMENT SUPPORT\CAD-NM\PONDS\FIGURES\ANNUAL INSPECTION 003\40616-300_003 FIG-3_PHOTO LOCATION PLAN.DWG



REMAINING STORAGE CAPACITY: 167 AC-FT

VOLUME BETWEEN THE MOST RECENT TOPOGRAPHY (SEE NOTE 1) AND ELEVATION 307' (CREST ELEVATION OF DAM).

IMPOUNDED WATER VOLUME: 48 AC-FT

VOLUME BETWEEN APPROXIMATE BOTTOM OF POND (SEE NOTE 2) AND THE WATER SURFACE ELEVATION AT THE TIME OF INSPECTION (302').

IMPOUNDED CCR VOLUME: 1,768 AC-FT

VOLUME BETWEEN THE APPROXIMATE TOPOGRAPHY PRIOR TO DAM CONSTRUCTION (SEE NOTE 3) AND THE MOST RECENT TOPOGRAPHY (SEE NOTE 1).

LEGEND

- ELEVATION 302'
  WSEL DURING INSPECTION
- ELEVATION 307'
  CREST ELEVATION OF DAM
- APPROXIMATE LIMITS OF
  POND 003

NOTES

1. EXISTING TOPOGRAPHY BASED ON LIDAR DATA RECEIVED FROM AECI CONDUCTED BY PICTOMETRY INTERNATIONAL CORP. AERIAL SURVEY CONDUCTED BETWEEN 4-8 OCTOBER 2014.
2. CURRENT BATHYMETRIC DATA AND APPROXIMATE TOPOGRAPHY PRIOR TO TIME OF DAM CONSTRUCTION WAS UNAVAILABLE. BOTTOM OF POND APPROXIMATED AS ELEVATION 296.
3. APPROXIMATE TOPOGRAPHY PRIOR TO TIME OF DAM CONSTRUCTION WAS USED FOR THE IMPOUNDED CCR VOLUME CALCULATION. THE TOPOGRAPHY WAS PROVIDED BY USGS 1971.

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

ANNUAL CCR SURFACE IMPOUNDMENT PE INSPECTION
POND 003
NEW MADRID POWER PLANT
NEW MADRID, MO

STORAGE CAPACITY AND IMPOUNDED CCR AND WATER VOLUMES

SCALE: AS SHOWN
JANUARY 2016

FIGURE 4

LUCAS, ANDY Printed: 1/15/2016 2:42 PM Layout: HA-FIG-8-L-H
\\CLE\COMMON\PROJECTS\40616_AECI-CCR ELG MANAGEMENT SUPPORT\CAD-NM\PONDS\FIGURES\ANNUAL INSPECTION 003\40616-300_003_FIG-4_STORAGE CAPACITY AND VOLUMES.DWG

APPENDIX A

Photographs

Photograph No. 1
Pond 003 - two inlet pipes

Photograph No. 2
Pond 003
Crest and access road on northern embankment

Photograph No. 3
Pond 003
Downstream slope on eastern embankment

Photograph No. 4
Pond 003
Dead trees at downstream toe of eastern embankment

Photograph No. 5
Pond 003
Upstream slope with riprap and vegetation on eastern embankment

Photograph No. 6
Pond 003
Upstream slope of south end of eastern embankment with riprap and vegetation

Photograph No. 7
Pond 003
Vegetation at toe of downstream slope of south end of eastern embankment

Photograph No. 8
Pond 003
Downstream slope of southern embankment
Discharge channel at left

Photograph No. 9
Pond 003
Concrete drop inlet spillway with concrete stop logs

Photograph No. 10
Pond 003
Discharge Channel

Photograph No. 11
Pond 003
Crest on southern embankment

Photograph No. 12
Pond 003
Paved Crest on southern embankment

Photograph No. 13
Pond 003
Upstream slope on western embankment
Note vegetation growing on Ash stockpiled above water level to the right.

Photograph No. 14
Pond 003
Downstream slope of Mississippi River Levee/Unlined Ash Pond Dam

APPENDIX B

Inspection Forms

DAM SAFETY INSPECTION CHECKLIST

NAME OF DAM:	Pond 003	STATE ID #:	MO-0001171
REGISTERED: (YES/NO)	No	NID ID #:	N/A
STATE SIZE CLASSIFICATION:	N/A	STATE HAZARD CLASSIFICATION:	TBD
		CHANGE IN HAZARD CLASSIFICATION REQUESTED?: (YES/NO)	

DAM LOCATION INFORMATION

CITY/TOWN:	New Madrid	COUNTY/STATE:	*New Madrid/Missouri*
DAM LOCATION: (street address if known)	41 St. Jude Park, Marston, MO	ALTERNATE DAM NAME:	N/A
USGS QUAD.:	New Madrid, MO-KY	LAT.:	36° 30.4' N
		LONG.:	89° 33.5' W
DRAINAGE BASIN:	N/A	RIVER:	Mississippi River
IMPOUNDMENT NAME(S):	Unlined Ash Pond (003 Pond)		

GENERAL DAM INFORMATION

TYPE OF DAM:	Earthen Incised and Bermed	OVERALL LENGTH (FT):	9300
PURPOSE OF DAM:	Sedimentation and Storage Basin	NORMAL POOL STORAGE (ACRE-FT):	
YEAR BUILT:	1972	MAXIMUM POOL STORAGE (ACRE-FT):	1707
STRUCTURAL HEIGHT (FT):	20	EL. NORMAL POOL (FT):	302.0
HYDRAULIC HEIGHT (FT):	8	EL. MAXIMUM POOL (FT):	307.0 (minimum crest elevation)
RESERVOIR SURFACE AREA (ACRES):	110	WINTER DRAWDOWN (FT BELOW NORMAL POOL)	0.0
PUBLIC ROAD ON CREST:	No	DRAWDOWN VOL. (AC-FT)	0.0
PUBLIC BRIDGE OVER SPILLWAY:	No		

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

INSPECTION SUMMARY

DATE OF INSPECTION: September , 2015 DATE OF PREVIOUS INSPECTION: October 6, 2010

TEMPERATURE/WEATHER: Sunny, 88 ARMY CORPS PHASE I: No (YES/NO) If YES, date

CONSULTANT: Haley & Aldrich, Inc. PREVIOUS ALT. PHASE I: No (YES/NO) If YES, date

BENCHMARK/DATUM: NAVD88

OVERALL PHYSICAL CONDITION OF DAM: DATE OF LAST REHABILITATION: N/A

SPILLWAY CAPACITY:

EL. POOL DURING INSP.: 302 EL. TAILWATER DURING INSP.: 302

PERSONS PRESENT AT INSPECTION

NAME	TITLE/POSITION	REPRESENTING
Denis Bell	Senior Engineer	Haley & Aldrich, Inc
Andy Lucas	Staff Engineer	Haley & Aldrich, Inc
Dennis Cox		AECI

NAME OF DAM:	Pond 003		STATE ID #:	MO-0001171	
INSPECTION DATE:	September 1, 2015		NID ID #:	N/A	

OWNER:	ORGANIZATION	Associated Electric Cooperative, I	CARETAKER:	ORGANIZATION	Associated Electric Cooperative, Inc.
	NAME/TITLE	Mr. Dennis Cox		NAME/TITLE	Mr. Dennis Cox
	STREET	P.O. Box 156		STREET	P.O. Box 156
	TOWN, STATE, ZIP	New Madrid, MO 63869		TOWN, STATE, ZIP	New Madrid, MO 63869
	PHONE			PHONE	
	EMERGENCY PH. #			EMERGENCY PH. #	
	FAX			FAX	
	EMAIL			EMAIL	
	OWNER TYPE	Private			

PRIMARY SPILLWAY TYPE	Decant Structure		
SPILLWAY LENGTH (FT)	N/A	SPILLWAY CAPACITY (CFS)	N/A
AUXILIARY SPILLWAY TYPE	N/A	AUX. SPILLWAY CAPACITY (CFS)	N/A
NUMBER OF OUTLETS	One	OUTLET(S) CAPACITY (CFS)	Unknown
TYPE OF OUTLETS	One Decant	TOTAL DISCHARGE CAPACITY (CFS)	Unknown
DRAINAGE AREA (SQ MI)	0.17	SPILLWAY DESIGN FLOOD (PERIOD/CFS)	Unkown
HAS DAM BEEN BREACHED OR OVERTOPPED? (YES/NO):	No	IF YES, PROVIDE DATE(S)	
FISH LADDER (LIST TYPE IF PRESENT)	Unkown		
DOES CREST SUPPORT PUBLIC ROAD? (YES/NO)	No	IF YES, ROAD NAME:	
PUBLIC BRIDGE WITHIN 50' OF DAM? (YES/NO):	No	IF YES, ROAD/BRIDGE NAME:	
		MHD BRIDGE NO. (IF APPLICABLE)	

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

EMBANKMENT (U/S SLOPE)

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
U/S SLOPE	1. SLIDE, SLOUGH, SCARP	None observed	X		
	2. SLOPE PROTECTION TYPE AND COND.	None observed	X		
	3. SINKHOLE/ANIMAL BURROWS	None observed	X		
	4. EMB.-ABUTMENT CONTACT	None observed	X		
	5. EROSION	None observed	X		
	6. UNUSUAL MOVEMENT	None observed	X		
	7. VEGETATION (PRESENCE/CONDITION)	None observed	X		

ADDITIONAL COMMENTS: Ash has been stockpiled to an elevation equal to the embankment in the Northern portion of the Unlined Ash Pond. Therefore, the upstream slope was covered by ash and not visible for inspection.

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

EMBANKMENT (CREST)

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
CREST	1. SURFACE TYPE	Gravel access road, western crest was paved levee road	X		
	2. SURFACE CRACKING	None observed	X		
	3. SINKHOLES, ANIMAL BURROWS	None observed	X		
	4. VERTICAL ALIGNMENT (DEPRESSIONS)	None observed	X		
	5. HORIZONTAL ALIGNMENT	None observed	X		
	6. RUTS AND/OR PUDDLES	None observed	X		
	7. VEGETATION (PRESENCE/CONDITION)	Regularly mowed grass	X		
	8. ABUTMENT CONTACT	N/A	X		

ADDITIONAL COMMENTS:

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

EMBANKMENT (D/S SLOPE)

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S SLOPE	1. WET AREAS (NO FLOW)	None observed	X		
	2. SEEPAGE	None observed	X		
	3. SLIDE, SLOUGH, SCARP	None observed	X		
	4. EMB.-ABUTMENT CONTACT	N/A	X		
	5. SINKHOLE/ANIMAL BURROWS	None observed	X		
	6. EROSION	None observed	X		
	7. UNUSUAL MOVEMENT	None observed	X		
	8. VEGETATION (PRESENCE/CONDITION)	Woody vegetation near toe of embankment			X

ADDITIONAL COMMENTS: Two dead trees within 50 ft. of embankment.

NAME OF DAM: Pond 003 STATE ID #: MO-000171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

PRIMARY SPILLWAY

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
SPILLWAY	SPILLWAY TYPE	Decant structure	X		
	WEIR TYPE	Concrete stoplogs in decant structure	X		
	SPILLWAY CONDITION	Fair	X		
	TRAINING WALLS	None present	X		
	SPILLWAY CONTROLS AND CONDITION	None present	X		
	UNUSUAL MOVEMENT	None present	X		
	APPROACH AREA	Fair	X		
	DISCHARGE AREA	Fair	X		
	DEBRIS	None present	X		
	WATER LEVEL AT TIME OF INSPECTION	302	X		

ADDITIONAL COMMENTS:

NAME OF DAM: Pond 003 STATE ID #: MO-000171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

OUTLET WORKS

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
OUTLET WORKS	TYPE	Outlet unable to be inspected. Downstream submerged in unlined creek.	X		
	INTAKE STRUCTURE	Decant structure with stoplogs	X		
	TRASHRACK	N/A	X		
	PRIMARY CLOSURE	N/A	X		
	SECONDARY CLOSURE	N/A	X		
	CONDUIT	N/A	X		
	OUTLET STRUCTURE/HEADWALL	Fair	X		
	EROSION ALONG TOE OF DAM	None	X		
	SEEPAGE/LEAKAGE	None	X		
	DEBRIS/BLOCKAGE	None	X		
	UNUSUAL MOVEMENT	None	X		
	DOWNSTREAM AREA	Regularly mowed. Woody vegetation along unlined creek	X		
	MISCELLANEOUS				

ADDITIONAL COMMENTS:

NAME OF DAM: Pond 003 STATE ID #: MO-000171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

DOWNSTREAM AREA

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
D/S AREA	1. ABUTMENT LEAKAGE	None Present	X		
	2. FOUNDATION SEEPAGE	None Present	X		
	3. SLIDE, SLOUGH, SCARP	None Present	X		
	4. WEIRS	None Present	X		
	5. DRAINAGE SYSTEM	None Present	X		
	6. INSTRUMENTATION	None Present	X		
	7. VEGETATION	Grass less than 6"	X		
	8. ACCESSIBILITY	Gravel access road along crest. Full time security and fence	X		
	9. DOWNSTREAM HAZARD DESCRIPTION				
	10. DATE OF LAST EAP UPDATE				

ADDITIONAL COMMENTS:

NAME OF DAM: Pond 003 STATE ID #: MO-0001171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

INSTRUMENTATION

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
INSTR.	1. PIEZOMETERS	P-1 through P-3	X		
	2. OBSERVATION WELLS	None present	X		
	3. STAFF GAGE AND RECORDER	None present	X		
	4. WEIRS	None present	X		
	5. INCLINOMETERS	None present	X		
	6. SURVEY MONUMENTS	None present	X		
	7. DRAINS	None present	X		
	8. FREQUENCY OF READINGS	No measurements are taken	X		
	9. LOCATION OF READINGS	N/A	X		

ADDITIONAL COMMENTS:

NAME OF DAM: Pond 003 STATE ID #: MO-000171

INSPECTION DATE: September 1, 2015 NID ID #: N/A

UNDERLYING HYDRAULIC STRUCTURES/PIPES

AREA INSPECTED	CONDITION	OBSERVATIONS	NO ACTION	MONITOR	REPAIR
UNDERLYING HYDRAULIC STRUCTURES /PIPES	TYPE	Not observed	X		
	INLET				
	CONDUIT				
	OUTLET STRUCTURE/HEADWALL	Fair	X		
	EROSION ALONG STRUCTURE	None present	X		
	SEEPAGE/LEAKAGE	None present	X		
	DEBRIS/BLOCKAGE	None present	X		
	UNUSUAL MOVEMENT				
	DOWNSTREAM AREA				
	MISCELLANEOUS				

ADDITIONAL COMMENTS: Outlet pipe unable to be inspected. Downstream end of outlet was submerged in unlnied creek to Mississippi River.

Note: Use additional sheets for additional outlets.