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2020 – 2021 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

AREA 2 POND, AREA 3 POND, AND AREA 4 POND
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

by Haley & Aldrich, Inc.
Cleveland, Ohio

for Evergy Kansas Central, Inc.
Topeka, Kansas

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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Lawrence Energy Center Area 2 Pond (inactive), Area 3 Pond (inactive), and Area 4 Pond (inactive; collectively, Ash Ponds) consistent with applicable sections of Code of Federal Regulations Title 40 §§ 257.90 through 257.98, and describes activities conducted from July 2020 through June 2021 and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report for the LEC Ash Ponds is, to the best of my knowledge, accurate and complete.

Signed: 

Professional Geologist

Print Name:	Mark Nicholls
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Company:	Haley & Aldrich, Inc.

1. Introduction

This 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the Area 2 Pond (inactive), Area 3 Pond (inactive), and Area 4 Pond (inactive; collectively, Ash Ponds) at the Lawrence Energy Center (LEC), operated by Evergy Kansas Central, Inc. (Evergy). This Annual Report was developed in accordance with the U.S. Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule (Rule) effective October 19, 2015, including subsequent revisions, specifically Code of Federal Regulations Title 40 (40 CFR), § 257.90(e). The Annual Report documents the groundwater monitoring system for the Ash Ponds consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (July 2020 through June 2021) and documents compliance with the Rule. The specific requirements for the Annual Report listed in § 257.90(e) of the Rule are provided in Sections 1 and 2 of this Annual Report and are in bold italic font, followed by a narrative describing how each Rule requirement has been met.

Evergy prepared and placed in the facility's operating record a notification of intent to initiate closure of the Ash Ponds by December 17, 2015. Due to the USEPA Extension of Compliance Deadlines for Certain Inactive Surface Impoundments, Response to Partial Vacatur effective October 4, 2016, in accordance with the requirement under § 257.100(e)(1), the alternative reporting timeframes specified in § 257.100(e)(2) through (6) are applicable for the Ash Ponds.

1.1 40 CFR § 257.90(E)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 40 CFR § 257.90(e)(6)(i) – Initial Monitoring Program

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the start of the current annual reporting period (July 1, 2020), the Ash Ponds were operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Final Monitoring Program

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

At the end of the current annual reporting period (June 30, 2021), the Ash Ponds were operating under an assessment monitoring program in compliance with 40 CFR § 257.95 for all constituents except arsenic, lithium, and molybdenum. An assessment of corrective measures (CMA) was conducted in accordance with 40 CFR § 257.96 for arsenic, lithium, and molybdenum, which continue to be monitored under an assessment monitoring program in accordance with 40 CFR § 257.96(b).

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

If it was determined that there was a statistically significant increase over background for one or more constituents listed in appendix III to this part pursuant to § 257.94(e):

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(a)

Identify those constituents listed in appendix III to this part and the names of the monitoring wells associated with such an increase; and

The Ash Ponds are operating under an assessment monitoring program; therefore, no statistical evaluations were completed on Appendix III constituents from July 2020 through June 2021.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(b)

Provide the date when the assessment monitoring program was initiated for the CCR unit.

An assessment monitoring program was initiated on January 13, 2020 for the Ash Ponds with a notification establishing assessment monitoring provided on February 12, 2020 to meet the requirements of 40 CFR § 257.95. The Ash Ponds remained in assessment monitoring from July 2020 through June 2021, with a corrective measures program implemented for arsenic, lithium, and molybdenum in accordance with 40 CFR § 257.96.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in appendix IV to this part pursuant to § 257.95(g) include all of the following:

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

Identify those constituents listed in appendix IV to this part and the names of the monitoring wells associated with such an increase;

Statistically significant levels (SSL) above the groundwater protection standard (GWPS) identified from July 2020 through June 2021 for the March 2020 and September 2020 semi-annual assessment monitoring sampling events are listed in Table I.

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was initiated for the CCR unit;

A CMA was initiated on October 12, 2020 for arsenic, lithium, and molybdenum at the Ash Ponds.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

A public meeting was not held from July 2020 through June 2021. A public meeting to discuss the results of the CMA will be held at least 30 days prior to the selection of remedy in accordance with § 257.96(e).

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

Provide the date when the assessment of corrective measures was completed for the CCR unit.

The assessment of corrective measures was completed on March 11, 2021 for the Ash Ponds.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and

A remedy was not selected during the July 2020 through June 2021 reporting period for arsenic, lithium, and molybdenum at the Ash Ponds.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

No remedial activities have been initiated from July 2020 through June 2021; therefore, no demonstration or certification is applicable for this unit.

2. 40 CFR § 257.90 Applicability

2.1 40 CFR § 257.90(a)

All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.98, except as provided in paragraph (g) of this section.

Evergy has installed and certified a multi-unit groundwater monitoring system at the LEC Ash Ponds. The Ash Ponds are subject to the groundwater monitoring and corrective action requirements described under 40 CFR §§ 257.90 through 257.98. This document addresses the requirement for the Owner/Operator to prepare an Annual Report per § 257.90(e).

2.2 40 CFR § 257.90(e) – SUMMARY

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1).

This Annual Report describes monitoring completed and actions taken for the groundwater monitoring system at the LEC Ash Ponds as required by the Rule. Groundwater sampling and analysis was conducted per the requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.94 and § 257.95 is also provided in this report. This Annual Report documents the applicable groundwater-related activities completed from July 2020 through June 2021.

2.2.1 Status of the Groundwater Monitoring Program

Appendix IV SSLs were detected above the GWPS for arsenic, lithium, and molybdenum during the March 2020 and September 2020 semi-annual assessment monitoring sampling events. Therefore, a CMA was initiated. The selection of remedy required under § 257.97 was ongoing from July 2020 through June 2021. Evergy is currently implementing an assessment monitoring program for all other constituents.

2.2.2 Key Actions Completed

The 2019 – 2020 Annual Groundwater Monitoring and Corrective Action Report was completed in July 2020 for the period of July 2019 through June 2020. Statistical evaluation was completed in July 2020

on analytical data from the March 2020 semi-annual assessment monitoring sampling event. The statistical evaluation indicated Appendix IV SSLs above the GWPS for arsenic, fluoride, lithium, and molybdenum at select downgradient monitoring wells. Evergy pursued an alternate source demonstration (ASD) dated October 2020 to determine if a source other than the CCR units caused the SSLs, which was not successful for arsenic, lithium, and molybdenum. A successful ASD was completed for fluoride.

A semi-annual assessment monitoring sampling event was completed in September 2020 for detected Appendix IV constituents identified from the December 2019 annual assessment monitoring sampling event. Statistical evaluation was completed in January 2021 on analytical data from the September 2020 semi-annual assessment monitoring sampling event.

The determination of the nature and extent of Appendix IV SSLs has been initiated pursuant to §257.95(g). Eleven additional groundwater monitoring wells were installed in January and June 2021 to assist with collecting additional groundwater data to define the nature and extent. Groundwater characterization of the nature and extent groundwater wells is ongoing.

In March 2021, a CMA was completed consistent with the requirements of § 257.96.

An annual assessment monitoring sampling event was completed on December 1, 2020 to identify detected Appendix IV constituents for subsequent semi-annual sampling events in March 2021 and planned for September 2021. Semi-annual assessment monitoring sampling was completed in March 2021 for detected Appendix IV constituents identified during the December 2020 annual monitoring event. Statistical evaluation of the results from the March 2021 semi-annual assessment monitoring sampling event are due to be completed in July 2021 and will be reported in the next annual report.

2.2.3 Problems Encountered

No noteworthy problems (i.e., problems could include damaged wells, issues with sample collection or lack of sampling, or problems with analytical analysis) were encountered at the Ash Ponds from July 2020 through June 2021.

2.2.4 Actions to Resolve Problems

No problems were encountered at the Ash Ponds from July 2020 through June 2021; therefore, no actions to resolve the problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for July 2021 through June 2022 include the 2020 – 2021 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semi-annual assessment monitoring analytical data collected in March 2021, semi-annual assessment monitoring and subsequent statistical evaluations, and annual assessment monitoring. The continuation of the nature and extent investigation will continue into the next calendar year (July 2021 through June 2022). The next semi-annual status report for the CMA is due to be completed in September 2021. Evergy is also

completing additional steps to characterize the nature and extent of arsenic, lithium, and molybdenum in groundwater at the Ash Ponds and is working towards a selection of remedy.

2.3 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.3.1 40 CFR § 257.90(e)(1) – CCR Unit and Monitoring Well Network

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the LEC Ash Ponds is included in this report as Figure 1. As discussed in Section 2.3.2, monitoring wells installed to assist with the nature and extent at the Ash Ponds, along with historic monitoring wells at the site that have been utilized for the nature and extent of the Ash Ponds, are presented in Figure 2.

2.3.2 40 CFR § 257.90(e)(2) – Monitoring System Changes

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

Eleven monitoring wells were installed in January and June 2021 to assist with the nature and extent investigation into Appendix IV SSLs for the Ash Ponds. Installed nature and extent monitoring wells are presented in Figure 2. No monitoring wells were decommissioned from July 2020 through June 2021.

2.3.3 40 CFR § 257.90(e)(3) – Summary of Sampling Events

In addition to all the monitoring data obtained under § 257.90 through § 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

In accordance with § 257.95(b) and § 257.95(d)(1), three independent assessment monitoring samples from each background and downgradient monitoring well were collected from July 2020 through June 2021. A summary including sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the Ash Ponds is presented in Table II of this report. Groundwater potentiometric elevation contour maps associated with each groundwater monitoring sampling event from July 2020 through June 2021 are provided in Figures 3 through 5. A summary including sample names, dates of sample collection, field parameters, and validated groundwater monitoring data obtained for the nature and extent investigation for the Ash Ponds is provided in Table III of this report. Groundwater monitoring data from monitoring wells installed in June 2021 for the nature and extent investigation were not received and validated prior to this annual reporting period (July 2020 through June 2021); the data will be reported in the next annual report.

2.3.4 40 CFR § 257.90(e)(4) – Monitoring Transition Narrative

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to

identifying the constituent(s) detected at a statistically significant increase over background levels); and

The assessment monitoring program was initiated on January 13, 2020 with a notification establishing assessment monitoring provided on February 12, 2020 to meet the requirements of 40 CFR § 257.95. A CMA was implemented on October 12, 2020 for arsenic, lithium, and molybdenum in accordance with 40 CFR § 257.96. The Ash Ponds remained in assessment monitoring from July 2020 through June 2021 for all other constituents. Arsenic, lithium, and molybdenum continue to be monitored under the assessment monitoring program in accordance with 40 CFR § 257.96(b).

2.3.5 40 CFR § 257.90(e)(5) – Other Requirements

Other information required to be included in the annual report as specified in § 257.90 through § 257.98.

This Annual Report documents activities conducted to comply with 40 CFR §§ 257.90 through 257.95 of the Rule. It is understood that there are supplemental references in 40 CFR §§ 257.90 through 257.98 that must be placed in the Annual Report. The following requirements include relevant and required information in the Annual Report for activities completed from July 2020 through June 2021.

2.3.5.1 40 CFR § 257.94(d)(3) – Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An alternative groundwater detection monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.2 40 CFR § 257.94(e)(2) – Detection Monitoring Alternate Source Demonstration

The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional

engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

This unit is in assessment monitoring; therefore, no detection monitoring ASD or certification is applicable.

2.3.5.3 40 CFR § 257.95(c)(3) – Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An alternative groundwater assessment monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.4 40 CFR § 257.95(d)(3) – Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

An assessment monitoring program has been implemented at the CCR unit since January 13, 2020. Three rounds of assessment monitoring sampling were completed between July 2020 and June 2021. Analytical results for both downgradient and upgradient wells are provided in Table II. The background concentrations (upper tolerance limits) and GWPSs established for detected Appendix IV constituents for the Ash Ponds are included in Table IV. The background concentrations and GWPSs provided in Table IV were utilized for the statistical evaluations completed for the March 2020 and September 2020 semi-annual assessment monitoring sampling events.

2.3.5.5 40 CFR § 257.95(g)(3)(ii) – Assessment Monitoring Alternate Source Demonstration

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report

required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

A successful assessment monitoring ASD was completed in October 2020 for the March 2020 semi-annual sampling event SSL for fluoride and is included in this report as Attachment 1. The Ash Ponds remained in assessment monitoring during July 2020 through June 2021 for all constituents other than arsenic, lithium, and molybdenum, which continue to be monitored under an assessment monitoring program in accordance with 40 CFR § 257.96(b).

2.3.5.6 40 CFR § 257.96(a) – Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

On January 10, 2021, Evergy demonstrated the need for additional time beyond the regulatory timeline period of 90 days to complete the CMA. The Demonstration and Certification of Need for 60-Day Extension is provided in Attachment 2 of this report.

TABLES

TABLE I
STATISTICALLY SIGNIFICANT LEVELS OF APPENDIX IV CONSTITUENTS
MARCH AND SEPTEMBER 2020 SAMPLING EVENTS
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Constituent	Sampling Event	Well ID	Groundwater Protection Standard (mg/L)
Arsenic	March 2020	MW-38	0.010
		MW-39	
		MW-40	
		MW-K	
		MW-L	
	September 2020	MW-38	
		MW-39	
		MW-40	
		MW-K	
		MW-L	
Fluoride	March 2020	MW-38	4.0
Lithium	March 2020	MW-38	0.040
		MW-40	
		MW-K	
		MW-L	
	September 2020	MW-38	
		MW-K	
		MW-L	
Molybdenum	March 2020	MW-39	0.140
	September 2020	MW-39	

Notes:

mg/L = milligrams per liter

TABLE II
SUMMARY OF ANALYTICAL RESULTS - ASSESSMENT MONITORING
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	Upgradient			Downgradient								
	MW-37			MW-38			MW-39					
Measure Point (TOC)	833.290			832.626			830.615					
Sample Name	MW-37-091520	MW-37-120120	MW-37-030921	MW-38-091520	MW-38-120120	MW-38-030921	MW-39-091520	MW-39-101920	MW-39-120120	DUP-AP-120120	MW-39-030921	DUP-AP-030921
Sample Date	9/15/2020	12/1/2020	3/9/2021	9/15/2020	12/1/2020	3/9/2021	9/15/2020	10/19/2020	12/1/2020	12/1/2020	3/9/2021	3/9/2021
Final Lab Report Date	9/24/2020	12/7/2020	3/22/2021	9/24/2020	12/7/2020	3/22/2021	9/24/2020	10/21/2020	12/7/2020	12/7/2020	3/22/2021	3/22/2021
Final Lab Report Revision Date	N/A	12/11/2020	N/A	N/A	12/11/2020	N/A	N/A	N/A	12/11/2020	12/11/2020	N/A	N/A
Final Radiation Lab Report Date	10/7/2020	12/23/2020	4/2/2021	10/7/2020	12/23/2020	4/2/2021	10/7/2020	N/A	12/23/2020	12/23/2020	4/2/2021	4/2/2021
Final Radiation Lab Report Revision Date	N/A	1/19/2021	N/A	N/A	1/19/2021	N/A	N/A	N/A	1/19/2021	1/19/2021	N/A	N/A
Lab Data Reviewed and Accepted	10/29/2020	1/19/2021	4/16/2021	10/29/2020	1/19/2021	4/16/2021	10/29/2020	10/29/2020	1/19/2021	1/19/2021	4/16/2021	4/16/2021
Depth to Water (ft btoc)	11.60	13.36	12.53	16.53	16.61	16.8	15.50	15.65	15.38	-	15.64	-
Temperature (Deg C)	17.46	14.91	17.45	20.54	15.68	17.40	19.10	15.05	12.93	-	17.00	-
Conductivity (µS/cm)	1260	1200	3356	2700	2990	6264	3920	3980	4180	-	10.06	-
Turbidity (NTU)	0.0	0.0	7.43	0.0	0.0	7.56	0.0	0.0	22.2	-	140	-
Boron, Total (mg/L)	**2.1**	-	**1.9**	**5.5**	-	**5.2**	**4.9**	-	-	-	**4.4**	**4.4**
Calcium, Total (mg/L)	**195**	-	**194**	**315**	-	**289**	**588**	-	-	-	**535**	**548**
Chloride (mg/L)	**46.5**	-	**45.2**	**237**	-	**236**	**376**	-	-	-	**752**	**698**
Fluoride (mg/L)	< 0.20	< 0.20	**0.35**	**2.8**	**4.6**	**4.6**	**1.8**	-	**1.8**	**1.8**	**1.7**	**1.6**
Sulfate (mg/L)	**360**	-	**387**	**1380**	-	**1240**	**1870**	-	-	-	**1870**	**1890**
pH (su)	**7.1**	-	**6.8**	**7.5**	-	**7.2**	**7.2**	-	-	-	**7.1**	**7.1**
TDS (mg/L)	**930**	-	**977**	**2640**	-	**2610**	**3570**	-	-	-	**3560**	**3230**
Antimony, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-	-
Arsenic (mg/L)	**0.0086**	**0.0045**	**0.0057**	**0.029**	**0.019**	**0.017**	**0.011**	-	**0.013**	**0.014**	**0.011**	**0.012**
Barium, Total (mg/L)	**0.079**	**0.070**	**0.068**	**0.040**	**0.036**	**0.034**	**0.034**	-	**0.034**	**0.034**	**0.030**	**0.031**
Beryllium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-	-
Cadmium, Total (mg/L)	-	< 0.00050	-	-	< 0.00050	-	-	-	< 0.00050	< 0.00050	-	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	< 0.0050	-	-	-	< 0.0050	< 0.0050	-	-
Cobalt, Total (mg/L)	-	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	-	**0.0011**	**0.0011**	**0.0011**	**0.0011**
Lead, Total (mg/L)	-	< 0.010	-	-	< 0.010	-	-	-	< 0.010	< 0.010	-	-
Lithium, Total (mg/L)	**0.019**	**0.019**	**0.022**	**0.071**	**0.084**	**0.075**	**0.037**	-	**0.039**	**0.043**	**0.042**	**0.043**
Molybdenum, Total (mg/L)	**0.11**	**0.11**	**0.098**	**0.074**	**0.081**	**0.066**	**0.23**	**0.23**	**0.20**	**0.20**	**0.19**	**0.20**
Selenium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-	-
Thallium, Total (mg/L)	-	< 0.0010	-	-	< 0.0010	-	-	-	< 0.0010	< 0.0010	-	-
Mercury, Total (mg/L)	-	< 0.00020	-	-	< 0.00020	-	-	-	< 0.00020	< 0.00020	-	-
Fluoride (mg/L)	< 0.20	< 0.20	**0.35**	**2.8**	**4.6**	**4.6**	**1.8**	-	**1.8**	**1.8**	**1.7**	**1.6**
Radium-226 & 228 Combined (pCi/L)	**2.56 +/- 1.14 (1.18)**	0.935 ± 0.760 (1.27)	0.728 ± 0.634 (0.899)	0.656 +/- 0.534 (0.865)	**1.40 ± 0.686 (0.985)**	**0.959 ± 0.582 (0.881)**	0.923 +/- 0.562 (0.971)	-	**1.31 ± 0.702 (1.03)**	0.890 ± 0.715 (1.15)	0.480 ± 0.505 (0.822)	0.802 ± 0.778 (1.15)

Notes & Abbreviations:
Radiological results are presented as activity plus or minus uncertainty with minimum detectable concentration (MDC).
Bold value: *Detection above laboratory reporting limit or MDC.*
µS/cm = micro Siemens per centimeter
Deg C = degrees Celsius
ft btoc = feet below top of casing
mg/L = milligrams per liter
N/A = Not Applicable
NTU = Nephelometric Turbidity Unit
pCi/L = picoCuries per liter
su = standard unit
TDS = total dissolved solids
TOC = top of casing

TABLE II
SUMMARY OF ANALYTICAL RESULTS - ASSESSMENT MONITORING
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	Downgradient (continued)									
	MW-40			MW-K				MW-L		
Measure Point (TOC)	831.358			842.6				843.05		
Sample Name	MW-40-091520	MW-40-120120	MW-40-030921	MW-K-091520	DUP-AP-091520	MW-K-120120	MW-K-030921	MW-L-091520	MW-L-120120	MW-L-030921
Sample Date	9/15/2020	12/1/2020	3/9/2021	9/15/2020	9/15/2020	12/1/2020	3/9/2021	9/15/2020	12/1/2020	3/9/2021
Final Lab Report Date	9/24/2020	12/7/2020	3/22/2021	9/24/2020	9/24/2020	12/7/2020	3/22/2021	9/24/2020	12/7/2020	3/22/2021
Final Lab Report Revision Date	N/A	12/11/2020	N/A	N/A	N/A	12/11/2020	N/A	N/A	12/11/2020	N/A
Final Radiation Lab Report Date	10/7/2020	12/23/2020	4/2/2021	10/7/2020	10/7/2020	12/23/2020	4/2/2021	10/7/2020	12/23/2020	4/2/2021
Final Radiation Lab Report Revision Date	N/A	1/19/2021	N/A	N/A	N/A	1/19/2021	N/A	N/A	1/19/2021	N/A
Lab Data Reviewed and Accepted	10/29/2020	1/19/2021	4/16/2021	10/29/2020	10/29/2020	1/19/2021	4/16/2021	10/29/2020	1/19/2021	4/16/2021
Depth to Water (ft btoc)	15.96	15.95	16.22	27.11	-	27.05	27.26	27.93	27.79	27.05
Temperature (Deg C)	21.15	14.58	17.90	18.70	-	15.86	16.30	20.02	15.65	16.80
Conductivity (µS/cm)	3130	3140	7214	5030	-	5010	10810	4590	4570	1017
Turbidity (NTU)	0.0	5.0	6.98	0.8	-	0.0	3.3	0.0	0.0	52.9
Boron, Total (mg/L)	**5.1**	-	**4.8**	**2.4**	**2.4**	-	**2.7**	**2.9**	-	**2.4**
Calcium, Total (mg/L)	**458**	-	**426**	**480**	**476**	-	**447**	**585**	-	**497**
Chloride (mg/L)	**273**	-	**363**	**691**	**710**	-	**619**	**621**	-	**590**
Fluoride (mg/L)	< 0.20	**1.3**	**1.3**	**3.4**	**3.4**	**3.0**	**3.3**	**2.2**	**1.9**	**2.1**
Sulfate (mg/L)	**1750**	-	**1510**	**2040**	**2100**	-	**2010**	**1990**	-	**1950**
pH (su)	**7.2**	-	**7.0**	**7.3**	**7.3**	-	**7.1**	**7.2**	-	**7.0**
TDS (mg/L)	**2660**	-	**2750**	**4210**	**4380**	-	**3580**	**3990**	-	**3650**
Antimony, Total (mg/L)		< 0.0010	-	-	-	< 0.0010	-	-	< 0.0010	-
Arsenic (mg/L)	**0.014**	**0.014**	**0.015**	**0.076**	**0.077**	**0.067**	**0.066**	**0.026**	**0.024**	**0.026**
Barium, Total (mg/L)	**0.034**	**0.034**	**0.032**	**0.038**	**0.037**	**0.038**	**0.039**	**0.035**	**0.035**	**0.037**
Beryllium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-	< 0.0010	-
Cadmium, Total (mg/L)	-	< 0.00050	-	-	-	< 0.00050	-	-	< 0.00050	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	-	< 0.0050	-	-	< 0.0050	-
Cobalt, Total (mg/L)	-	< 0.0010	< 0.0010	-	-	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010
Lead, Total (mg/L)	-	< 0.010	-	-	-	< 0.010	-	-	< 0.010	-
Lithium, Total (mg/L)	**0.038**	**0.044**	**0.047**	**0.077**	**0.076**	**0.082**	**0.084**	**0.055**	**0.065**	**0.065**
Molybdenum, Total (mg/L)	**0.079**	**0.076**	**0.070**	**0.021**	**0.022**	**0.023**	**0.021**	**0.054**	**0.048**	**0.039**
Selenium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-	< 0.0010	-
Thallium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-	< 0.0010	-
Mercury, Total (mg/L)	-	< 0.00020	-	-	-	< 0.00020	-	-	< 0.00020	-
Fluoride (mg/L)	< 0.20	**1.3**	**1.3**	**3.4**	**3.4**	**3.0**	**3.3**	**2.2**	**1.9**	**2.1**
Radium-226 & 228 Combined (pCi/L)	**1.26 +/- 0.629 (0.970)**	**1.61 ± 0.716 (0.853)**	0.526 ± 0.579 (0.981)	**2.05 +/- 0.755 (1.12)**	0.901 +/- 0.722 (1.35)	**1.28 ± 0.727 (0.975)**	**1.43 ± 0.690 (0.943)**	**1.23 +/- 0.623 (0.962)**	1.01 ± 0.647 (1.02)	0.917 ± 0.677 (1.000)

Notes & Abbreviations:
Radiological results are presented as activity plus o
Bold value: *Detection above laboratory reporting l*
µS/cm = micro Siemens per centimeter
Deg C = degrees Celsius
ft btoc = feet below top of casing
mg/L = milligrams per liter
N/A = Not Applicable
NTU = Nephelometric Turbidity Unit
pCi/L = picoCuries per liter
su = standard unit
TDS = total dissolved solids
TOC = top of casing

TABLE III
SUMMARY OF NATURE & EXTENT ANALYTICAL RESULTS
JULY 2020 THROUGH JUNE 2021
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	MW-101		MW-102			MW-103			
Measure Point (TOC)	828.65		829.55			829.15			
Sample Name	MW-101-020121[1]	MW-101-030921	MW-102-020121[1]	MW-102-021821	MW-102-031021	MW-103-020121[1]	MW-103-021821	MW-103-030921	DUP-AP NE-030921
Sample Date	02/01/2021	03/09/2021	02/01/2021	02/18/2021	03/10/2021	02/01/2021	02/18/2021	03/09/2021	03/09/2021
Depth to Water (ft btoc)	13.18	13.33	14.33	14.42	14.57	14.57	14.57	14.78	-
Temperature (Deg C)	12.71	20.19	12.71	9.09	15.8	11.86	8.19	15.22	-
Conductivity, Field (uS/cm)	853	706	792	808	853	2890	2570	3140	-
Turbidity, Field (NTU)	39.8	9.3	23.6	14.4	22.3	24	16.2	22.7	-
Boron, Total (mg/L)	**0.12**	**0.46**	**0.61**	-	**1.2**	**3.9**	-	**5.5**	**5.6**
Calcium, Total (mg/L)	**129**	**104**	**108**	-	**106**	**328**	-	**389**	**398**
Chloride (mg/L)	**30.3**	**45.4**	**8.8**	-	**13.1**	**346**	-	**341**	**346**
Fluoride (mg/L)	**0.79**	**0.96**	**2.1**	-	**4.0**	**1.3**	-	**2.7**	**2.9**
Sulfate (mg/L)	**54.6**	**33.6**	**57**	-	**64.3**	**1190**	-	**1730**	**1680**
pH (lab) (SU)	**6.9**	**7.2**	**7.0**	-	**7.2**	**7.2**	-	**7.1**	**7.1**
Total Dissolved Solids (TDS) (mg/L)	**544**	**510**	**532**	-	**543**	**3050**	-	**3170**	**3290**
Arsenic, Total (mg/L)	**0.0044**	**0.0011**	**0.011**	-	**0.0099**	**0.0048**	-	**0.0038**	**0.0042**
Barium, Total (mg/L)	**0.23**	**0.15**	**0.13**	-	**0.12**	**0.067**	-	**0.045**	**0.044**
Cobalt, Total (mg/L)	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010
Fluoride (mg/L)	**0.79**	**0.96**	**2.1**	-	**4.0**	**1.3**	-	**2.7**	**2.9**
Lithium, Total (mg/L)	**0.025**	**0.022**	**0.032**	**0.025**	**0.038**	**0.045**	**0.040**	**0.052**	**0.050**
Molybdenum, Total (mg/L)	**0.021**	**0.035**	**0.050**	-	**0.066**	**0.16**	-	**0.20**	**0.20**
Radium-226 & 228 (pCi/L)	**1.49 ± 0.854 (1.19)**	0.829 ± 0.674 (1.16)	**1.01 ± 0.536 (0.832)**	-	0.754 ± 0.592 (0.886)	**1.89 ± 0.791 (0.849)**	-	1.16 ± 0.853 (1.26)	**1.61 ± 0.738 (0.927)**

Notes:

Bold value: *Detection above laboratory reporting limit or minimum detectable concentration (MDC).*

Radiological results are presented as activity plus or minus uncertainty with MDC.

[1] *Sampling completed following well development and may not be representative of concentrations in groundwater.*

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft btoc = feet below top of casing

mg/L = milligrams per liter

ug/L = micrograms per liter

N/A = Not Applicable

NTU = Nephelometric Turbidity Unit

pCi/L = picoCuries per liter

su = standard unit

TDS = total dissolved solids

TOC = top of casing

TABLE III
SUMMARY OF NATURE & EXTENT ANALYTICAL RESULTS
JULY 2020 THROUGH JUNE 2021
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	MW-104			MW-106		MW-B		
Measure Point (TOC)	824.81			877.81		830.11		
Sample Name	MW-104-020121[1]	MW-104-021821	MW-104-030921	MW-106-020121[1]	MW-106-031021	MW-B-020121	DUPLICATE-020121	MW-B-030921
Sample Date	02/01/2021	02/18/2021	03/09/2021	02/01/2021	03/10/2021	02/01/2021	02/01/2021	3/9/2021
Depth to Water (ft btoc)	10.13	10.22	10.39	37.63	37.21	14.14	-	14.3
Temperature (Deg C)	10.79	11.05	16.98	10.68	15.67	12.35	-	15.80
Conductivity, Field (uS/cm)	2060	1510	2010	523	407	10.5	-	908
Turbidity, Field (NTU)	25.8	9.4	23.1	11.7	0.0	0.0	-	0.0
Boron, Total (mg/L)	**2.5**	-	**1.9**	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Calcium, Total (mg/L)	**345**	-	**285**	**51.6**	**41.8**	**212**	**194**	**169**
Chloride (mg/L)	**185**	-	**231**	**14.5**	**3.0**	**21.5**	**20.7**	**13.4**
Fluoride (mg/L)	**0.36**	-	**0.89**	**0.23**	**0.30**	**0.59**	**0.60**	**0.59**
Sulfate (mg/L)	**557**	-	**478**	**24.3**	**6.0**	**83.5**	**86**	**110**
pH (lab) (SU)	**7.1**	-	**7.1**	**7.2**	**7.2**	**6.9**	**6.9**	**7.1**
Total Dissolved Solids (TDS) (mg/L)	**2230**	-	**1980**	**334**	**280**	**711**	**693**	**759**
Arsenic, Total (mg/L)	**0.0041**	-	**0.0036**	< 0.0010	< 0.0010	**0.0058**	**0.0052**	**0.0061**
Barium, Total (mg/L)	**0.064**	-	**0.064**	**0.21**	**0.16**	**0.41**	**0.37**	**0.20**
Cobalt, Total (mg/L)	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	**0.013**	**0.0074**	**0.0011**
Fluoride (mg/L)	**0.36**	-	**0.89**	**0.23**	**0.30**	**0.59**	**0.60**	**0.59**
Lithium, Total (mg/L)	**0.054**	**0.034**	**0.057**	< 0.010	**0.015**	**0.016**	**0.020**	**0.018**
Molybdenum, Total (mg/L)	**0.068**	-	**0.034**	**0.0054**	**0.0015**	**0.018**	**0.015**	**0.017**
Radium-226 & 228 (pCi/L)	**1.10 ± 0.671 (0.893)**	-	1.12 ± 0.730 (1.24)	**1.66 ± 0.851 (1.04)**	0.157 ± 0.551 (0.966)	**2.45 ± 0.897 (0.993)**	**2.94 ± 0.855 (0.957)**	**1.70 ± 0.729 (0.964)**

Notes:

Bold value: *Detection above laboratory reporting limit or minimum detectable*
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[1] *Sampling completed following well development and may not be representati*
µS/cm = micro Siemens per centimeter
Deg C = degrees Celsius
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TABLE III
SUMMARY OF NATURE & EXTENT ANALYTICAL RESULTS
JULY 2020 THROUGH JUNE 2021
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	MW-C		MW-D		MW-G		MW-M		
Measure Point (TOC)	827.63		829.43		843.21		828.93		
Sample Name	LEC MW-C 111820	MW-C-030921	LEC MW-D 111820	MW-D-030921	LEC MW-G 111820	MW-G-031021	LEC MW-M 111920	LEC DUPLICATE 111920	MW-M-030921
Sample Date	11/18/2020	03/09/2021	11/18/2020	03/09/2021	11/18/2020	03/10/2021	11/19/2020	11/19/2020	03/09/2021
Depth to Water (ft btoc)	12.39	12.43	14.13	13.96	26.75	26.5	14.2	-	34.23
Temperature (Deg C)	18.43	20.99	18.02	22.75	18.87	21.58	17.18	-	17.96
Conductivity, Field (uS/cm)	583	880	958	944	1530	1360	1780	-	1320
Turbidity, Field (NTU)	29.8	25.7	42.3	37.5	29.1	4.8	26.5	-	23.5
Boron, Total (mg/L)	**0.34**	**0.28**	**0.47**	**0.46**	**1.9**	**1.9**	**0.96**	**0.95**	**1.3**
Calcium, Total (mg/L)	**156**	**130**	**162**	**173**	**214**	**213**	**223**	**222**	**269**
Chloride (mg/L)	**28.0**	**28.9**	**6.5**	**6.5**	**29.6**	**27.9**	**50.3**	**41.7**	**69.3**
Fluoride (mg/L)	**0.45**	**0.39**	**0.60**	**0.42**	< 0.20	**0.28**	**0.55**	**0.44**	**0.97**
Sulfate (mg/L)	**130**	**118**	**79.5**	**61.6**	**485**	**543**	**335**	**292**	**442**
pH (lab) (SU)	**7.0**	**7.1**	**6.9**	**6.8**	**7.1**	**7.0**	**6.9**	**6.9**	**6.9**
Total Dissolved Solids (TDS) (mg/L)	**653**	**598**	**617**	**675**	**1130**	**1200**	**995**	**1070**	**1200**
Arsenic, Total (mg/L)	**0.0062**	**0.0033**	**0.031**	**0.0040**	**0.0081**	**0.015**	**0.0063**	**0.0065**	**0.0057**
Barium, Total (mg/L)	**0.16**	**0.086**	**0.57**	**0.16**	**0.046**	**0.041**	**0.20**	**0.20**	**0.16**
Cobalt, Total (mg/L)	-	< 0.0010	-	< 0.0010	-	**0.0022**	-	-	< 0.0010
Fluoride (mg/L)	**0.45**	**0.39**	**0.60**	**0.42**	< 0.20	**0.28**	**0.55**	**0.44**	**0.97**
Lithium, Total (mg/L)	**0.025**	**0.020**	< 0.010	< 0.010	< 0.010	< 0.010	**0.026**	**0.023**	**0.031**
Molybdenum, Total (mg/L)	**0.010**	**0.0094**	**0.0018**	< 0.0010	**0.0050**	**0.0050**	**0.0069**	**0.0080**	**0.0061**
Radium-226 & 228 (pCi/L)	**2.03 ± 1.19 (1.93)**	0.873 ± 0.657 (1.05)	**4.78 ± 1.67 (2.52)**	**1.62 ± 0.779 (1.09)**	1.23 ± 0.977 (1.75)	0.743 ± 0.624 (0.913)	0.186 ± 0.632 (1.35)	0.441 ± 1.02 (2.06)	0.356 ± 0.579 (0.980)

Notes:

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Radiological results are presented as activity plus or minus uncertainty with MD
[1] Sampling completed following well development and may not be representati
µS/cm = micro Siemens per centimeter
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TABLE III
SUMMARY OF NATURE & EXTENT ANALYTICAL RESULTS
JULY 2020 THROUGH JUNE 2021
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Location	MW-N		MW-O		MW-P	
Measure Point (TOC)	826.81		830.32		829.63	
Sample Name	LEC MW-N 111920	MW-N-031021	LEC MW-O 111920	MW-O-031021	LEC MW-P 111920	MW-P-030921
Sample Date	11/19/2020	03/10/2021	11/19/2020	03/10/2021	11/19/2020	03/09/2021
Depth to Water (ft btoc)	11.36	11.5	15.36	15.42	15.2	15.22
Temperature (Deg C)	20.26	17.13	19.85	16.88	18.69	15.60
Conductivity, Field (uS/cm)	1150	1120	4620	4430	1820	1320
Turbidity, Field (NTU)	31.5	23.6	41.2	79.4	36.7	32.2
Boron, Total (mg/L)	**1.5**	**1.3**	**3.0**	**2.9**	**2.2**	**1.5**
Calcium, Total (mg/L)	**116**	**119**	**513**	**510**	**209**	**172**
Chloride (mg/L)	**33.4**	**30.3**	**515**	**583**	**81.7**	**61.1**
Fluoride (mg/L)	**4.9**	**4.4**	**3.8**	**3.8**	**2.8**	**2.7**
Sulfate (mg/L)	**144**	**128**	**1810**	**2050**	**409**	**301**
pH (lab) (SU)	**7.6**	**7.3**	**7.2**	**7.1**	**7.1**	**7.2**
Total Dissolved Solids (TDS) (mg/L)	**708**	**722**	**5510**	**4350**	**1230**	**981**
Arsenic, Total (mg/L)	**0.070**	**0.039**	**0.015**	**0.015**	**0.022**	**0.0049**
Barium, Total (mg/L)	**0.18**	**0.14**	**0.047**	**0.043**	**0.039**	**0.036**
Cobalt, Total (mg/L)	-	**0.0011**	-	< 0.0010	-	**0.0014**
Fluoride (mg/L)	**4.9**	**4.4**	**3.8**	**3.8**	**2.8**	**2.7**
Lithium, Total (mg/L)	**0.058**	**0.052**	**0.084**	**0.096**	**0.028**	**0.028**
Molybdenum, Total (mg/L)	**0.036**	**0.026**	**0.055**	**0.049**	**0.054**	**0.048**
Radium-226 & 228 (pCi/L)	**1.77 ± 0.885 (1.40)**	**1.78 ± 0.834 (1.10)**	0.868 ± 0.888 (1.55)	**1.28 ± 0.674 (1.07)**	1.66 ± 1.02 (1.68)	**1.20 ± 0.586 (0.936)**

Notes:

Bold value: *Detection above laboratory reporting limit or minimum detectable*
Radiological results are presented as activity plus or minus uncertainty with MD
[1] Sampling completed following well development and may not be representati
µS/cm = micro Siemens per centimeter
Deg C = degrees Celsius
ft btoc = feet below top of casing
mg/L = milligrams per liter
ug/L = micrograms per liter
N/A = Not Applicable
NTU = Nephelometric Turbidity Unit
pCi/L = picoCuries per liter
su = standard unit
TDS = total dissolved solids
TOC = top of casing

TABLE IV
ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS
MARCH AND SEPTEMBER 2020 SAMPLING EVENTS
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Well Number	Background Value[1]	GWPS
CCR Appendix-IV Arsenic, Total (mg/L)		
MW-37 (upgradient)	0.00940	NA
MW-38		0.010
MW-39		0.010
MW-40		0.010
MW-K		0.010
MW-L		0.010
CCR Appendix-IV Barium, Total (mg/L)		
MW-37 (upgradient)	0.0601	NA
MW-38		2
MW-39		2
MW-40		2
MW-K		2
MW-L		2
CCR Appendix-IV Fluoride, Total (mg/L)		
MW-37 (upgradient)	0.455[2]	NA
MW-38		4.0
MW-39		4.0
MW-40		4.0
MW-K		4.0
MW-L		4.0
CCR Appendix-IV Lithium, Total (mg/L)		
MW-37 (upgradient)	0.0207	NA
MW-38		0.040
MW-39		0.040
MW-40		0.040
MW-K		0.040
MW-L		0.040
CCR Appendix-IV Molybdenum, Total (mg/L)		
MW-37 (upgradient)	0.140	NA
MW-38		0.140
MW-39		0.140
MW-40		0.140
MW-K		0.140
MW-L		0.140
CCR Appendix-IV Radium-226 & 228 Combined (pCi/L)		
MW-37 (upgradient)	1.608	NA
MW-38		5
MW-39		5
MW-40		5
MW-K		5
MW-L		5

Notes and Abbreviations:

[1] Interwell background value based on background data collected through March 2019.

[2] Interwell background value based on background data collected through September 2019.

CCR = Coal Combustion Residuals

GWPS = Groundwater Protection Standard

mg/L = milligrams per liter

NA = Not Applicable

pCi/L = picoCuries per Liter

FIGURES

LEGEND

MONITORING WELL

ASH PONDS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI, APRIL 17, 2018.

N

0 250 500

SCALE IN FEET

HALEY ALDRICH

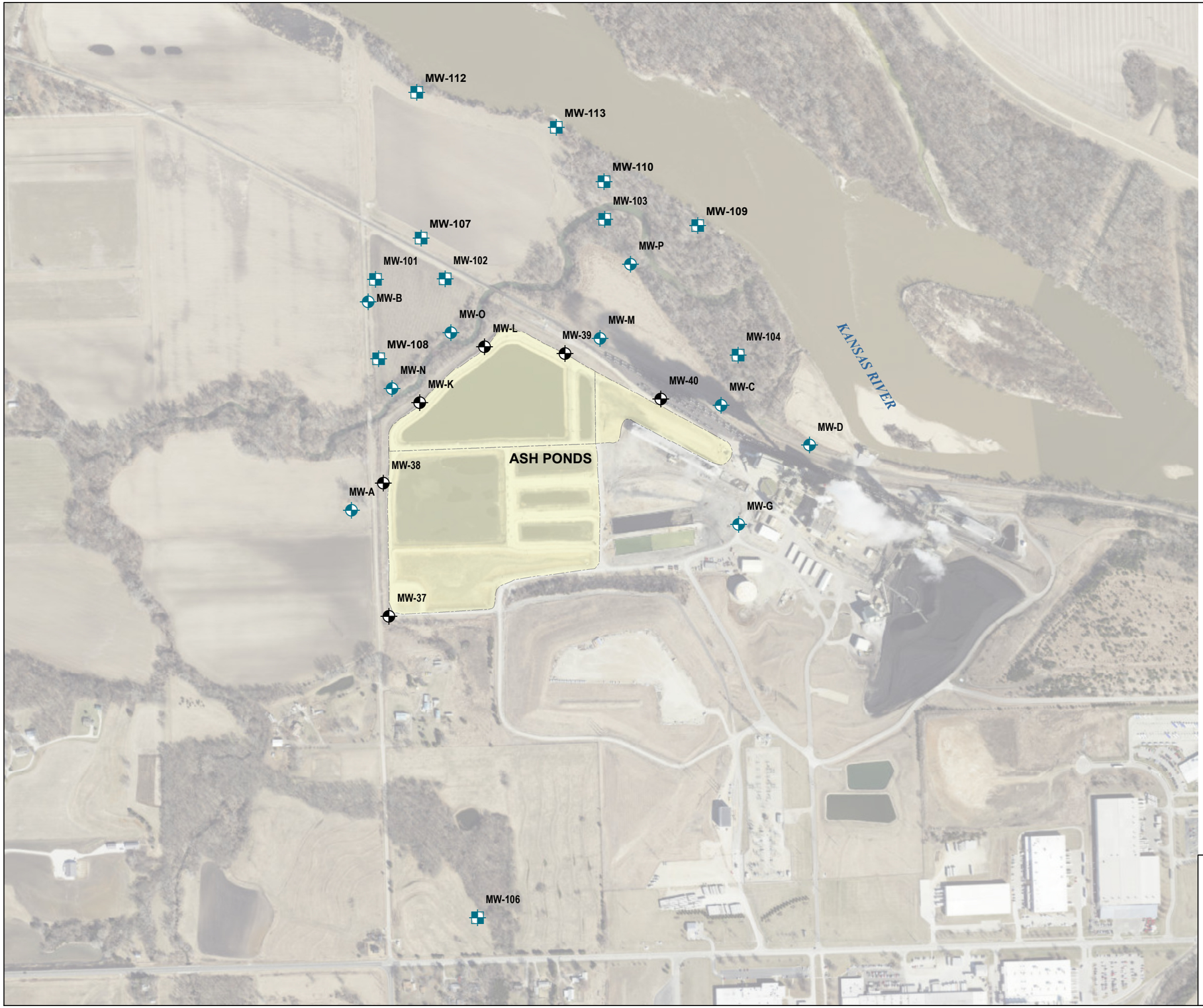
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

ASH PONDS (INACTIVE) LOCATION MAP

evergy

JULY 2021

FIGURE 1



LEGEND

- CCR COMPLIANCE MONITORING WELL
- N&E WELL - NEWLY INSTALLED MONITORING WELL
- N&E WELL - HISTORIC MONITORING WELL
- ASH PONDS (INACTIVE)

NOTES:

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. N&E WELL = HISTORIC MONITORING WELL
3. HISTORIC MONITORING WELLS INITIALLY INSTALLED IN 1998.
4. AERIAL IMAGERY SOURCE: ESRI, APRIL 17, 2018

N

0 620 1,240

SCALE IN FEET

HALEY ALDRICH

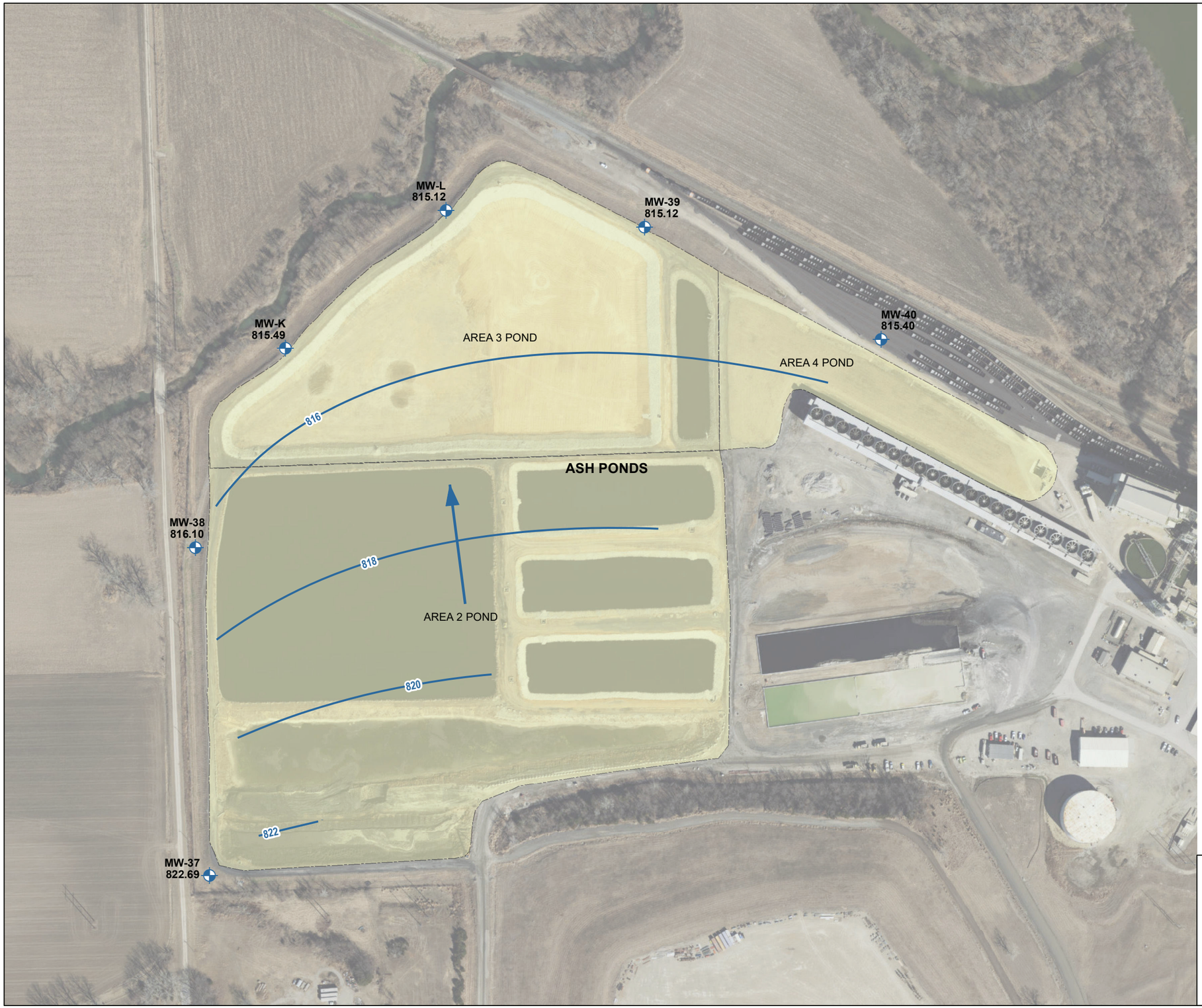
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

ASH PONDS (INACTIVE) NATURE AND EXTENT MONITORING WELL LOCATION MAP

evergy

JULY 2021

FIGURE 2



LEGEND

MW-L 816.12 WELL NAME AND GROUNDWATER ELEVATION (SEPTEMBER 2020)

MONITORING WELL

GROUNDWATER POTENTIOMETRIC OBSERVATION ESTIMATED ELEVATION CONTOUR, 2-FT INTERVAL

GROUNDWATER FLOW DIRECTION

ASH PONDS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 14 SEPTEMBER 2020.
3. AMSL = ABOVE MEAN SEA LEVEL
4. AERIAL IMAGERY SOURCE: ESRI, 17 APRIL 2018

N

0 250 500

SCALE IN FEET

HALEY ALDRICH

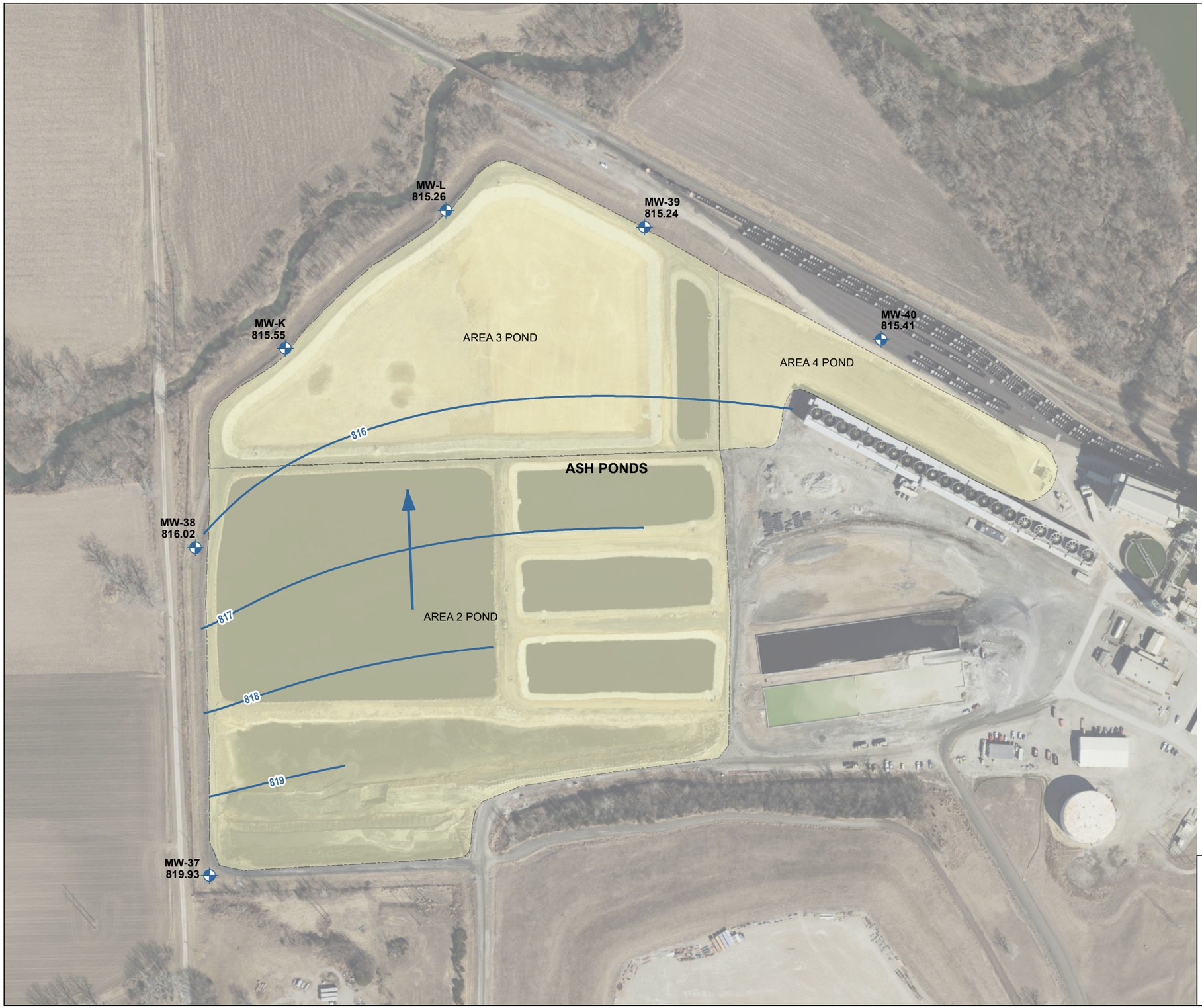
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

ASH PONDS (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 14, 2020

evergy

JULY 2021

FIGURE 3



LEGEND

MW-L 815.26 WELL NAME AND GROUNDWATER ELEVATION (DECEMBER 2020)

MONITORING WELL

GROUNDWATER POTENTIOMETRIC OBSERVATION ESTIMATED ELEVATION CONTOUR,1-FT INTERVAL

GROUNDWATER FLOW DIRECTION

ASH PONDS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 1 DECEMBER 2020.
3. AMSL = ABOVE MEAN SEA LEVEL
4. AERIAL IMAGERY SOURCE: ESRI, 17 APRIL 2018

N

0 250 500

SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

ASH PONDS (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP DECEMBER 1, 2020

evergy

JULY 2021

FIGURE 4

LEGEND

- **MW-L 815.26** — WELL NAME AND GROUNDWATER ELEVATION (MARCH 2021)
- MONITORING WELL
- GROUNDWATER POTENTIOMETRIC OBSERVATION ESTIMATED ELEVATION CONTOUR, 1-FT INTERVAL
- GROUNDWATER FLOW DIRECTION
- ASH PONDS

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 09 MARCH 2021.
3. AMSL = ABOVE MEAN SEA LEVEL
4. AERIAL IMAGERY SOURCE: ESRI, 17 APRIL 2018

N

0 250 500
SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

ASH PONDS (INACTIVE) GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 9, 2021

evergy

JULY 2021

FIGURE 5

ATTACHMENT 1

March 2020 Sampling Event
Appendix IV Statistically Significant Level
Alternate Source Demonstrations (ASD)
Inactive Ash Ponds

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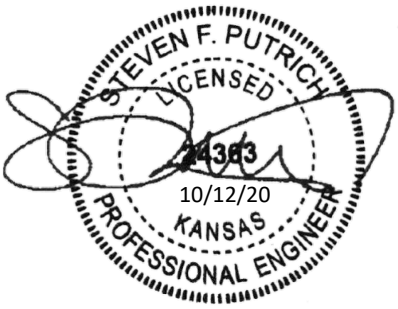
REPORT ON
MARCH 2020 SAMPLING EVENT
APPENDIX IV STATISTICALLY SIGNIFICANT LEVEL ALTERNATE SOURCE DEMONSTRATION (ASD)
FOR THE INACTIVE ASH PONDS
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS



By Haley & Aldrich, Inc.
Cleveland, Ohio

For Evergy Kansas Central, Inc.
Topeka, Kansas

File No. 129778-037
October 2020

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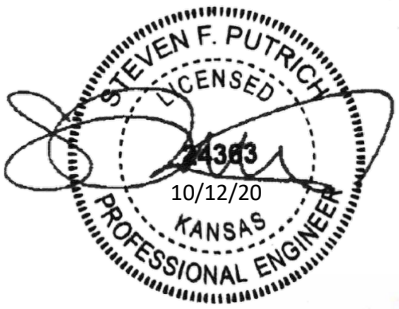

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HALEY ALDRICH

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III	Historical Topographic Map Review Summary
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1	Site Location
2	Inactive Ash Ponds Monitoring Well Location Map

Executive Summary

Pursuant to Code of Federal Regulations Title 40 (40 CFR) § 257.94(e)(2), Haley & Aldrich, Inc., on behalf of Evergy Kansas Central (Evergy; formerly Westar Energy, Inc.), conducted an alternate source evaluation at the Area 2 Pond (inactive), Area 3 Pond (inactive) and Area 4 Pond (inactive; collectively, inactive Ash Ponds) at the Lawrence Energy Center (LEC) located in Lawrence, Kansas, to demonstrate that a source other than the inactive Ash Ponds caused a statistically significant level (SSL) identified during coal combustion residual (CCR) assessment monitoring.

The purpose of the subject evaluation is to demonstrate whether a source other than the inactive Ash Ponds caused a SSL for fluoride in the March 2020 groundwater sample collected from monitoring well MW-38 located down gradient of the inactive Ash Ponds. As outlined in this report, additional SSLs were identified for the inactive Ash Ponds during the March 2020 sampling event which are not evaluated in this report but are undergoing additional consideration.

This demonstration and the underlying data support the conclusion that the naturally occurring presence of fluoride and its natural variability in groundwater is the likely source of the fluoride SSL seen at CCR monitoring well MW-38, and therefore the fluoride SSL is not attributed to the LEC inactive Ash Ponds.

1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) was retained by Evergy to perform an evaluation of groundwater quality at the inactive Ash Ponds at the LEC located in Lawrence, Kansas. The purpose of the evaluation was to demonstrate whether a source other than the inactive Ash Ponds caused a SSL for fluoride in the March 2020 groundwater sample collected from monitoring well MW-38 located down gradient of the inactive Ash Ponds. As outlined in Section 1.1, additional SSLs were identified for the inactive Ash Ponds during the March 2020 sampling event. The review of these SSLs is ongoing and will be outlined under another cover as applicable.

1.1 BACKGROUND

Consistent with 40 CFR § 257.90 through § 257.95, Evergy has installed and certified a groundwater monitoring network for the inactive Ash Ponds at the LEC and collected eight rounds of groundwater samples for the analysis of Appendix III and IV baseline constituents in accordance with the CCR Rule (Rule). Results of the detection monitoring statistical evaluations completed in March 2019 identified statistically significant increased (SSI) concentrations of Appendix III constituents in down gradient monitoring wells relative to concentrations observed in up gradient monitoring wells. To date, no alternative source has been identified for the Appendix III constituents with SSIs. Accordingly, the groundwater monitoring program transitioned to assessment monitoring in December 2019, and Evergy is currently implementing an assessment monitoring program.

In July 2020, Haley & Aldrich conducted a statistical evaluation of the groundwater quality results collected in March 2020 (round 1 of the semi-annual CCR groundwater monitoring events for 2020), with data reviewed and validated in April 2020, to determine if Appendix IV constituents were present in groundwater samples collected from down-gradient monitoring wells at concentrations at a SSL above the groundwater protection standard (GWPS). The statistical evaluation of the Appendix IV constituents detected potential SSLs above the GWPS for the following constituents:

- Arsenic (MW-38, MW-39, MW-40, MW-K, and MW-L);
- Fluoride (MW-38);
- Lithium (MW-38, MW-40, MW-K, and MW-L); and
- Molybdenum (MW-39).

Pursuant to 40 CFR § 257.95(g)(3)(ii), ***the owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality***. The Rule provides 90 days from determination that an SSL over background exists to complete an Alternate Source Demonstration (ASD) for Appendix IV constituents or pursuit of a corrective measures assessment (CMA) for the applicable SSLs must begin. If a successful ASD is completed and certified by a qualified professional engineer, the CCR unit is to continue in assessment monitoring. If, however, an alternate source of the Appendix IV SSL is not identified, the owner or operator must initiate a CMA. This report documents the findings and

conclusions of an ASD completed for fluoride at the inactive Ash Ponds at LEC. The CCR Rule, in accordance with § 257.96, allows for the ongoing consideration of an ASD for all SSLs after the 90-day period, and in the case of the LEC inactive ponds, the recently identified SSLs for arsenic, lithium, and molybdenum will continue to be considered in the further development of the ongoing CCR groundwater monitoring database for potential ASDs, as appropriate.

1.2 SITE SETTING

The LEC is located adjacent to the Kansas River, northwest of the City of Lawrence in Douglas County, Kansas (Figure 1). The site is located within the Central Lowland physiographic province which includes rolling hills overlying nearly horizontal thin beds of alternating shale and limestone. The inactive Ash Ponds are located to the west of the LEC plant site and are monitored by a multi-unit groundwater monitoring system. The LEC plant site and the inactive Ash Ponds are in an area characterized by natural ground surface elevations varying from 830 to 860 feet above mean sea level.

1.3 SITE DESCRIPTION

The inactive Ash Ponds consist of a series of settling ponds that were historically used to manage CCR material but have been replaced by a concrete tank system. The LEC inactive Ash Ponds and associated groundwater monitoring well network are shown on Figure 2.

2. Site Geology and Hydrogeology

Geologic and hydrogeologic conditions beneath the inactive Ash Ponds have been characterized based on information obtained during installation and testing of the monitoring wells installed as part of the CCR groundwater monitoring network.

2.1 SITE GEOLOGY

Geologic units that underlie the inactive Ash Ponds are roughly horizontal with a regional dip northwest and consist of poorly sorted terrace deposits consisting of reworked glacial till material that includes clay, sand, and gravel, and a shale member of the Tonganoxie member. The alluvium deposits represent Kansas River floodplain deposits and are underlain by interbedded shale and limestone strata representing transgression and regression of marine and near-shore depositional environments. The uppermost aquifer beneath the inactive Ash Ponds consists of unconsolidated alluvium.

2.2 SITE HYDROGEOLOGY AND HYDROLOGY

The terrace deposits underlying the inactive Ash Ponds are unconfined; unsaturated material above the uppermost aquifer are composed of the same terrace deposit materials as the saturated aquifer. The thickness of the unsaturated materials observed at the inactive Ash Ponds is based on the observed static water level and corresponds to the linear distance from ground surface to the uppermost aquifer. Haley & Aldrich has made direct observation of the unsaturated material overlying the uppermost aquifer based on drilling conducted at the inactive Ash Ponds. Based on direct observations made during groundwater monitoring conducted between March 2018 and September 2020, the unsaturated material overlying the uppermost aquifer at the site is up to 28 feet thick.

The water-bearing geologic formation nearest the natural ground surface at the inactive Ash Ponds that is capable of yielding groundwater to wells or springs is the terrace deposits which consist of reworked glacial till material that includes poorly sorted clay, sand, and gravel. The terrace deposits have a local maximum thickness of approximately 55 feet. The saturated thickness of the uppermost aquifer beneath the inactive Ash Ponds is approximately 21 to 38 feet based on observations made during drilling conducted at the inactive Ash Ponds in January 2019.

Review of the Kansas Geological Survey Water Well Completion Records (KGS WWC-5) Database indicates that the terrace deposit aquifer may be used for water supply in the vicinity of the inactive Ash Ponds. The nearest well (well #12107) listed in the KGS WWC-5 Database is a domestic well located approximately 0.6 mile to the southwest and is up gradient of the inactive Ash Ponds. Well #12107 is reported to be completed at a depth of 39 feet below ground surface, producing groundwater at a reported rate of 10 gallons per minute (gpm). The terrace deposit aquifer contains sufficient water to support low yield wells and springs and sufficient water to facilitate consistent groundwater monitoring of the saturated formation directly beneath the inactive Ash Ponds, and is therefore characterized as the uppermost aquifer beneath the inactive Ash Ponds.

The materials comprising the terrace deposits beneath the inactive Ash Ponds were observed directly during November 2017 drilling at monitoring wells MW-37 through MW-40. The drilling, completion, and testing of these monitoring wells yielded site-specific geologic data that were used in combination with other site-specific data developed during previous characterization activities and well installation activities to determine the appropriate number, depth, and spacing of the monitoring wells at the inactive Ash Ponds. Site-specific aquifer property values describing the alluvium and associated confining units developed during past and recent characterization activities are provided below.

Based on groundwater elevations measured between March 2018 and January 2019, the groundwater gradient in the upper aquifer unit is approximately 0.005 to 0.009 feet per foot and is unconfined. Groundwater flow direction is generally to the north/northwest.

Hydraulic conductivity of the uppermost aquifer was calculated using data generated from slug tests conducted on monitoring wells installed in the glacial deposits adjacent to the inactive Ash Ponds. The hydraulic conductivity of the clay deposits range from approximately $2.0x10^{-7}$ to $1.8x10^{-6}$ centimeters per second (cm/sec; Black & Veatch, 2005). In comparison, the hydraulic conductivity within the sand and gravel deposits range from approximately $1.5x10^{-3}$ to $4.2x10^{-3}$ cm/sec (Black & Veatch, 2005). The groundwater flow rate was calculated using hydraulic conductivity values and effective porosity obtained from published sources and groundwater elevation data measured between March 2018 and January 2019. Based on estimates for similar material, effective porosity of the alluvium is estimated to be 0.1 to 0.2 percent (Fetter, 1980). The calculated groundwater flow velocity ranges from 11.6 to 182 feet per year.

A shale unit of the Tonganoxie sandstone member comprises the confining unit underlying the uppermost aquifer at the inactive Ash Ponds. The reported thickness of the shale unit of the Tonganoxie sandstone member at other drill locations on the LEC site is between 55 and 65 feet. The results of packer tests conducted during previous studies indicate that the hydraulic conductivity in the shale unit of the Tonganoxie sandstone member is $1x10^{-6}$ cm/sec. The effective porosity is estimated to be 1 percent. Based on the reported hydraulic conductivity, the shale unit of the Tonganoxie sandstone member is characterized as an aquitard.

3. Alternate Source Demonstration

Haley & Aldrich conducted an evaluation of potential alternate sources that included review of sampling procedures, laboratory procedures, and statistical analyses to determine if potential errors may have been made that would result in the apparent SSL of fluoride down gradient of the inactive Ash Ponds. Haley & Aldrich also evaluated potential point and non-point sources of contamination in the immediate vicinity in the terrace deposits beneath the inactive Ash Ponds and evaluated natural geologic conditions and the effect of those conditions on native groundwater chemistry. Each of these analyses and the resulting findings are described below.

3.1 REVIEW OF FIELD SAMPLING, LABORATORY ANALYSIS, AND STATISTICAL PROCEDURES

3.1.1 Field Sampling Procedures

Evergy and Haley & Aldrich conducted the field sampling activities in accordance with the Groundwater Sampling and Analysis Plan (SAP; Haley & Aldrich, 2020) that was prepared in accordance with § 257.93 of the CCR Rule. The SAP prescribes the site-specific activities and methods for groundwater sampling and included procedures for field data collection, sample collection, sample preservation and shipment, interpretation, laboratory analytical methods, and reporting for groundwater sampling for the inactive Ash Ponds. The administrative procedures and frequency for collection of groundwater elevation measurements, determination of flow directions, and gradients were also provided in the SAP.

Haley & Aldrich reviewed the field sampling and the field indicator parameters and did not identify any apparent deviations or errors in sampling that would result in a potential SSL for fluoride downgradient of the inactive Ash Ponds.

3.1.2 Laboratory Analysis

The groundwater samples collected down gradient of the inactive Ash Ponds were analyzed by Pace Analytical Services using standard analytical methods. The data generated from these laboratory analyses are stored in a project database that incorporates hydrogeologic and groundwater quality data and was established to allow efficient management of chemical and physical data collected in the field and produced in the laboratory. The analytes, analytical methods, sample containers, field preservation, and maximum analytical holding times for monitoring are summarized in the SAP (Haley & Aldrich, 2020).

Haley & Aldrich conducted a quality assurance/quality control review of each groundwater quality dataset generated for the inactive Ash Ponds and has not identified any apparent errors that would result in a potential SSL for fluoride downgradient of the inactive Ash Ponds.

3.1.3 Analytical Data

Sixteen groundwater samples, including four duplicates, have been collected at MW-38 since March 2019. Fluoride concentrations at MW-38 have fluctuated over time, with concentrations ranging from 2.0 milligrams per liter (mg/L) to 5.5 mg/L. A summary of field parameters and fluoride results are provided in Table I.

During the March 2020 sampling event, the fluoride concentration at monitoring well MW-38 was detected at 4.6 mg/L, which was above the GWPS of 4.0 mg/L; therefore, a potential SSL was recorded. Subsequent groundwater sampling was completed at MW-38 after the March 2020 sampling event (September 2020) produced a fluoride concentration of 2.8 mg/L, which is below the fluoride GWPS.

3.1.4 Statistical Evaluation

Evergy and Haley & Aldrich collected groundwater samples from the up gradient (MW-37) and down gradient (MW-38, MW-39, MW-40, MW-K, and MW-L) monitoring wells at the inactive Ash Ponds in March 2020 for CCR Rule compliance. Haley & Aldrich has reviewed the statistical analysis of groundwater quality data for monitoring well MW-38 and has not identified apparent errors that would result in a potential SSL for fluoride at monitoring well MW-38. The March 2020 fluoride concentration at monitoring well MW-38 is not an outlier and the fluoride concentration at monitoring well MW-38 presents a stable trend. The statistical test method used met the performance standard established in the CCR Rule and statistical evaluation complies with the requirements of the Rule.

3.2 POTENTIAL POINT AND NON-POINT SOURCES

Haley & Aldrich conducted a review of potential point and non-point sources of elevated fluoride in the vicinity of the inactive Ash Ponds to determine if previous or adjacent site activities, land uses, or practices might have caused (or are currently causing) elevated fluoride concentrations to occur down gradient of the inactive Ash Ponds. Potential point sources would include discharging activities or other activities occurring at a discrete location in the vicinity of the observed SSL that may potentially concentrate fluoride in that area. Non-point sources would include diffuse discharging activities or practices that may result in a low level but wide-spread increase in concentrations of fluoride down gradient of the inactive Ash Ponds.

3.2.1 Point Sources

Prior to construction of the inactive Ash Ponds, the area and surrounding vicinity was used as agricultural land followed by light industrial. Buildings were constructed near the inactive Ash Ponds as early as 1991. No known industrial, agricultural, mining, or other activities were conducted at the inactive Ash Ponds prior to construction of the ponds that would potentially constitute a point source to concentrate fluoride in the vicinity of the observed SSL. No point sources have been identified as a potential ASD for the Appendix III SSL for fluoride at the inactive Ash Ponds.

3.2.2 Non-Point Sources

No mining or other activities have been documented in the immediate vicinity of the inactive Ash Ponds that might constitute a non-point source of fluoride at the location of the observed SSL. Historical agricultural land use was observed at the location of, adjacent to, and cross-gradient of the inactive Ash Ponds. No current agricultural activities have been identified up gradient of the inactive Ash Ponds. Records reviewed included historical aerial photographs and historical topographic maps. No current non-point sources have been identified that may constitute an alternate source of fluoride at the inactive Ash Ponds.

3.3 HISTORICAL LAND USE REVIEW

Haley & Aldrich assessed past usage of the site and adjoining properties through a review of the following records:

- Environmental Data Resources, Inc. (EDR) – Aerial Photographs dated 1948, 1950, 1967, 1970, 1977, 1985, 1991, 1996, 2002, 2006, 2010, 2014, and 2017 (Appendix A); and
- EDR – Topographic Maps dated 1886, 1888, 1894, 1949, 1950, 1951, 1967, 1978, 1994, and 2012 (Appendix B).

Unless otherwise noted below, sources were reviewed dating back to 1940 or first developed use, whichever was earlier, and at 5-year intervals if the use of the property had changed within the time period. Areas designated as 'unmapped' are areas that were not available from EDR for the listed year; however, available adjoining map areas were provided for review.

3.3.1 Historical Aerial Photographs

Haley & Aldrich reviewed aerial photographs depicting the development of the site and vicinity, as summarized in Table II. The historical aerial photograph search includes photographs from the United States Department of Agriculture, United States Geological Survey, National High-Altitude Photography, National Agriculture Information Program, Digital Orthophoto Quarter Quads, and National High Altitude Photography (EDR, 2020) and are included in Appendix A.

Photographs show that the site was undeveloped in 1948. Development of the inactive Ash Ponds started prior to 1967.

3.3.2 Historical Topographic Maps

Haley & Aldrich reviewed historical topographic maps depicting the development of the site and vicinity, as summarized in Table III, to determine historic site usage and development. The topographic maps were provided for review by EDR. Copies of the topographic maps are included in Appendix B.

3.4 REGIONAL WATER QUALITY AND NATURAL VARIABILITY IN GROUNDWATER

Haley & Aldrich conducted a search of recent available water quality reports produced by the City of Lawrence and a search of the National Water Quality Monitoring Council Water Quality Data for publicly available data to develop an understanding of local and regional fluoride levels observed in groundwater and surface water in the vicinity of the inactive Ash Ponds. Table IV shows reported dissolved fluoride values in groundwater that exceed the GWPS for fluoride reported by the National Water Quality Monitoring Council for select historical monitoring wells within the vicinity of the inactive Ash Ponds. Dissolved fluoride values range from 0.05 to 12 mg/L in the vicinity of the inactive Ash Ponds (National Water Quality Monitoring Council, 2020). The fluoride values are reported as dissolved fluoride, whereas fluoride values collected from the Evergy LEC compliance monitoring were analyzed as total fluoride. Based on this information, it is evident that regionally reported fluoride concentrations exist which are higher than the total fluoride values at monitoring well MW-38 reported in March 2020. Total fluoride concentrations from MW-38 have ranged from 2.0 to 5.5 mg/L, which are consistent with reported naturally occurring fluoride values in groundwater in the region.

4. Findings and Conclusions

Haley & Aldrich conducted an evaluation of groundwater quality at the LEC inactive Ash Ponds to identify the source of a potential SSL of fluoride observed in monitoring well MW-38 located down gradient of the inactive Ash Ponds. The evaluation included a review of sampling procedures, laboratory procedures, and statistical analyses to determine if potential errors may have been made that would result in the apparent SSL of fluoride down gradient of the inactive Ash Ponds. Haley & Aldrich also evaluated potential point and non-point sources of contamination in the vicinity of the inactive Ash Ponds.

Haley & Aldrich found no errors in sampling, laboratory analysis, data management, or statistical analysis that would result in a potential SSL for fluoride down gradient of the inactive Ash Ponds. Haley & Aldrich found no evidence of historical point or non-point sources of potential fluoride in the vicinity of the inactive Ash Ponds.

Haley & Aldrich evaluated data and information describing the historical regional water quality, reviewed the historical fluoride data of MW-38, and confirmed statistical analyses of fluoride concentrations at MW-38. Key findings regarding the fluoride in groundwater at MW-38 are summarized below:

- Fluctuating total fluoride values observed in MW-38 (average 4.6 mg/L) are lower than observed regional naturally occurring dissolved fluoride values (up to 12 mg/L).
- The fluoride concentrations observed in MW-38 are statistically stable and do not present an upward trend.

Based on these findings, it is evident that fluoride in the groundwater at the inactive Ash Ponds monitoring well MW-38 is within the range of natural variability of groundwater in the vicinity of the inactive Ash Ponds and presents a statistically stable concentration trend.

Based on the data, information, research, and analyses conducted to date and presented in this document, Haley & Aldrich concludes that the source of fluoride resulting in an SSL at MW-38, down gradient of the inactive Ash Ponds, is natural groundwater quality variability and is associated with natural background conditions rather than an indication of groundwater quality associated with the LEC inactive units.

5. Closing

Pursuant to 40 CFR § 257.94(e)(2), Evergy conducted an alternate source evaluation to demonstrate that a source other than the inactive Ash Ponds caused the SSL identified during CCR assessment monitoring. This demonstration and the underlying data support the conclusion that the naturally occurring presence of fluoride and its natural variability in groundwater is the likely source of the fluoride SSL seen at CCR monitoring well MW-38; therefore, the fluoride SSL is not attributed to the LEC inactive Ash Ponds.

The information contained in this evaluation is, to the best of our knowledge, true, accurate, and complete.

HALEY & ALDRICH, INC.

Steven F. Putrich, P.E.
Project Principal

Mark Nicholls, P.G.
Lead Hydrogeologist

6. References

1. Black & Veatch, 2005. Phase II Hydrogeologic Site Investigation, Volume 1. January.

2. Environmental Data Resources, Inc., 2020. Database Report, October 2020.

3. Fetter, C.W, Jr., 1980. Applied Hydrogeology: Columbus, Ohio, Charles E. Merrill Publishing Co.

4. Haley & Aldrich, 2020. Groundwater Sampling and Analysis Plan, Lawrence Energy Center. October 2017 (Revised August 2020).

5. USGS, 2020. National Water Quality Information System Database search, https://www.waterqualitydata.us/portal/#countrycode=US&within=20&lat=39.00972&long=-95.27639&mimeType=csv

TABLES

TABLE I
SUMMARY OF MW-38 FLUORIDE ANALYTICAL RESULTS
EVERGY KANSAS CENTRAL, INC.
LAWERENCE ENERGY CENTER - INACTIVE ASH PONDS
LAWRENCE, KANSAS

Sample ID	Sample Date	Depth to Water (ft btoc)	Groundwater Elevation (ft amsl)	Field Parameters				Fluoride, Total (mg/L)
				Temperature (Deg C)	Conductivity (µS/cm)	Turbidity (NTU)	pH (su)	
MW-38-030718	3/7/2018	16.11	816.516	14.00	2824	2.14	7.45	**5.0**
DUP-030718	3/7/2018	--	--	--	--	--	--	**5.1**
MW-38-050918	5/9/2018	15.98	816.646	16.84	3080	0.46	7.75	**5.0**
DUP-050918	5/9/2018	--	--	--	--	--	--	3.5
MW-38-070218	7/2/2018	16.43	816.196	17.88	2790	1.36	7.44	**5.1**
MW-38-081418	8/14/2018	16.84	815.786	17.49	2770	1.41	7.51	**5.5**
DUP-081418	8/14/2018	-	-	-	-	-	-	**5.5**
MW-38-100318	10/3/2018	16.69	815.936	18.50	2830	0.39	7.42	**5.3**
MW-38-111918	11/19/2018	14.56	818.066	14.38	2830	1.08	7.23	**4.8**
MW-38-011119	1/11/2019	14.14	818.486	13.56	2800	0.72	7.41	**4.7**
DUP-011119	1/11/2019	--	--	--	--	--	--	**5.0**
MW-38-031919	3/19/2019	14.29	818.336	13.70	2940	0.85	7.13	**4.7**
MW-38	9/4/2019	10.65	821.976	16.41	2352	0.62	7.74	2.0
MW-38-120619	12/6/2019	14.04	818.586	14.49	2834	0.96	7.43	**5.0**
MW-38-031020	3/10/2020	14.93	817.696	10.59	2476	0.44	7.19	**4.9**
MW-38-091520	9/15/2020	16.53	816.096	20.54	2700	0.0	7.33	2.8

Notes:

BOLD value: *Detection above Groundwater Protection Standard (GWP S) of 4.0 mg/L*

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft amsl = feet above mean sea level

ft btoc = feet below top of casing

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Unit

su = standard unit

TABLE II
HISTORICAL AERIAL PHOTOGRAPH REVIEW SUMMARY
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Dates	Description of Site	Sources
1948 – 1967	Development of buildings at plant site. Areas to west and south appear to be undeveloped and agricultural land.	Aerial photos – USGS
1970 – 1977	Development of plant site structures; development of the Ash Ponds. Areas to west and south appear to be undeveloped and agricultural land. Increase in structures to the south.	Aerial photos – USGS
1985 – 2017	Development of plant site structures; Ash Ponds appear to be active. Increase in structures to the south.	Aerial photos – NHAP; USGS; NAIP; USDA; DOQQ

Notes:
DOQQ = Digital Orthophoto Quarter Quads
NAIP = National Agriculture Information Program
NHAP = National High-Altitude Photography
USDA = United States Department of Agriculture
USGS = United States Geological Survey

TABLE III
HISTORICAL TOPOGRAPHIC MAP REVIEW SUMMARY
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

Dates	Description of Site and Adjacent Properties	Map Name
1886 – 1894	No apparent development at the site. Railroad present north-northeast of the site.	30-Minute Series, Oskaloosa Quadrangle
1949 – 1967	Power plant is depicted on the map. No development at Ash Ponds is depicted on the topographic map.	7.5-Minute Series, Williamstown, KS Quadrangle
1967 – 2012	The Ash Ponds are depicted on the topographic map.	7.5-Minute Series, Williamstown, KS Quadrangle

TABLE IV
HISTORICAL REGIONAL GROUNDWATER FLUORIDE DATA
EVERGY KANSAS CENTRAL, INC.
LAWERENCE ENERGY CENTER - INACTIVE ASH PONDS
LAWRENCE, KANSAS

Organization	Sample Media	Sample Date	Location Identifier	Latitude	Longitude	Dissolved Fluoride Results (mg/L)	Data Provider Name
USGS Kansas Water Science Center	Groundwater	6/22/1954	USGS-385003095064501	38.83417277	-95.1127475	**12**	NWIS
	Groundwater	5/26/1953	USGS-384544095265101	38.76222807	-95.4477558	**4.8**	NWIS
	Groundwater	5/26/1953	USGS-384728095265201	38.7911163	-95.4480333	**6**	NWIS
	Surface Water	5/15/1972	USGS-06890900	39.07500017	-95.4038634	**4**	NWIS
	Groundwater	5/26/1953	USGS-384702095242201	38.7838945	-95.4063657	**4.4**	NWIS
	Groundwater	4/20/1948	USGS-384649095211801	38.78028378	-95.3552534	**4.4**	NWIS
	Groundwater	6/21/1954	USGS-384858095143901	38.8161169	-95.2444173	**4.5**	NWIS
	Groundwater	6/9/1955	USGS-385722095020901	38.95611524	-95.0360798	**6**	NWIS
	Groundwater	5/12/1968	USGS-385204095174101	38.86778209	-95.2949738	**8**	NWIS

Notes:

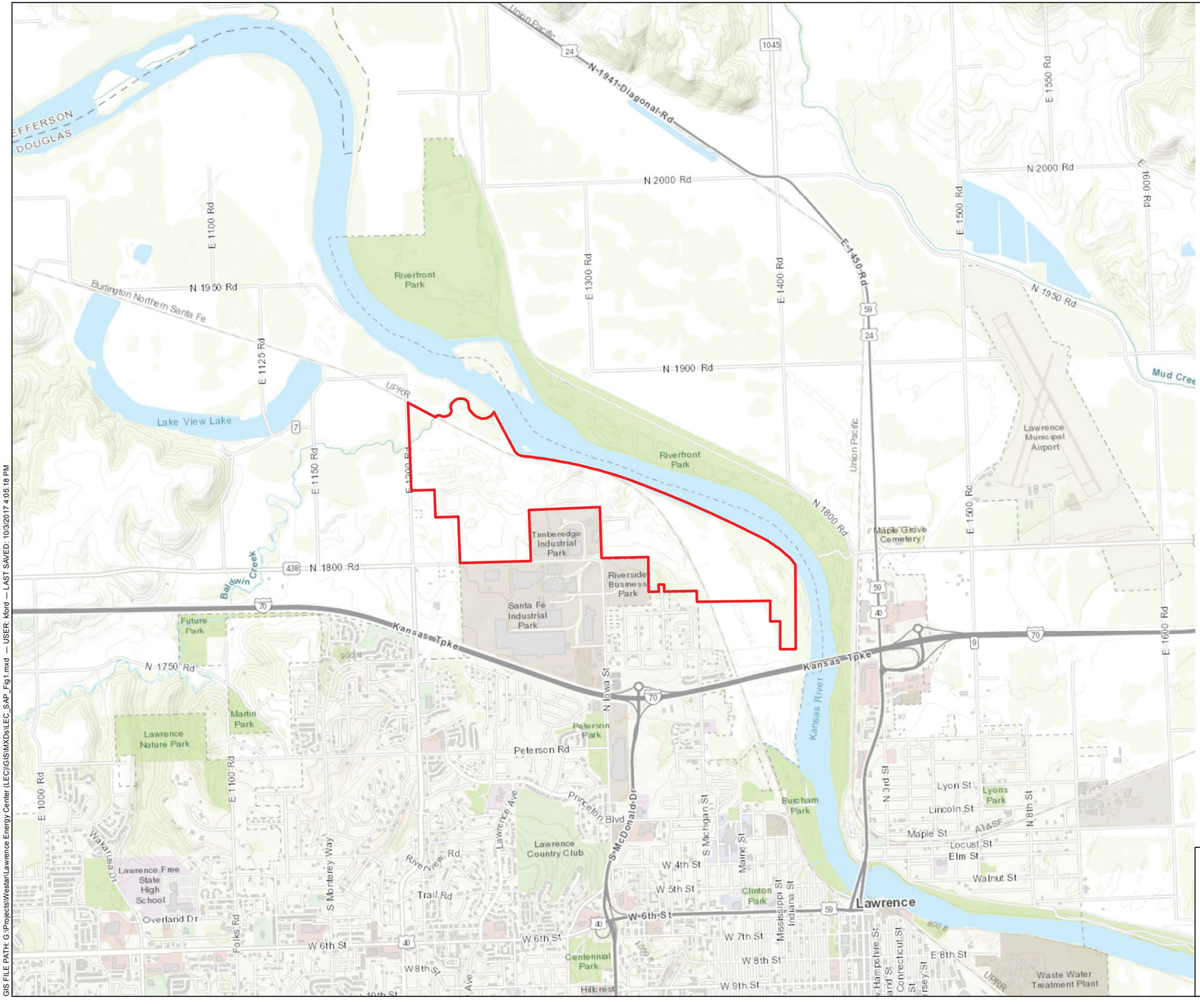
BOLD value *: Detection above Groundwater Protection Standard*

Data from the National Water Quality Monitoring Council, https://www.waterqualitydata.us/portal/#countrycode=US&within=20&lat=39.00972&long=-95.27639&mimeType=csv

mg/L = milligrams per liter

USGS = United States Geological Survey

FIGURES



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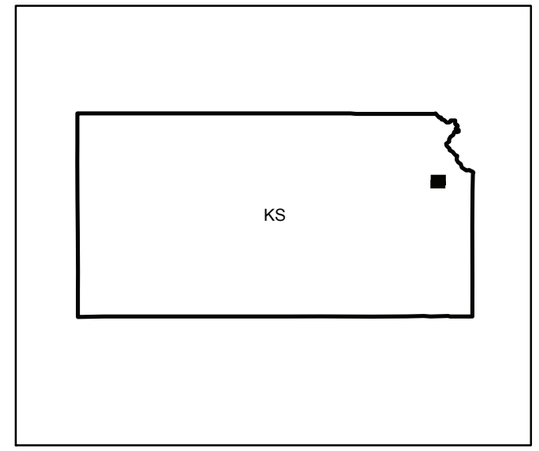
LEGEND

PROPERTY BOUNDARY



NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SITE COORDINATES: 39°0'25"N, 95°15'56"W
3. TOPOGRAPHIC IMAGERY SOURCE: ESRI

N

0 2,800 5,600

SCALE IN FEET

HALEY ALDRICH

WESTAR ENERGY
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

SITE LOCATION

OCTOBER 2020
SCALE: AS SHOWN

FIGURE 1

LEGEND

ASH PONDS

MONITORING WELL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. AERIAL IMAGERY SOURCE: ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE, APRIL 17, 2018.

3.AREA 2 POND (INACTIVE), AREA 3 POND (INACTIVE), AND AREA 4 POND (INCTIVE) ARE COLLECTIVELY KNOWN AS THE ASH PONDS.

N

0 250 500

SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

INACTIVE ASH PONDS MONITORING WELL LOCATION MAP

evergy

OCTOBER 2020
SCALE: AS SHOWN

FIGURE 2

APPENDIX A

EDR Historical Aerial Report

Evergy LEC

1250 N 1800 Road

Lawrence, KS 66044

Inquiry Number: 6216070.2

October 07, 2020

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

10/07/20

Site Name:

Evergy LEC
1250 N 1800 Road
Lawrence, KS 66044
EDR Inquiry # 6216070.2

Client Name:

Haley & Aldrich
600 South Meyer Ave Suite 100
Tucson, AZ 85701-0000
Contact: Samantha Kaney

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2017	1"=500'	Flight Year: 2017	USDA/NAIP
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=750'	Flight Date: February 16, 2002	USGS
1996	1"=750'	Flight Date: March 10, 1996	USGS
1991	1"=500'	Acquisition Date: October 06, 1991	USGS/DOQQ
1985	1"=500'	Flight Date: June 28, 1985	NHAP
1977	1"=750'	Flight Date: May 09, 1977	USGS
1970	1"=500'	Flight Date: June 07, 1970	USGS
1967	1"=500'	Flight Date: August 28, 1967	USGS
1950	1"=500'	Flight Date: April 19, 1950	USGS
1948	1"=500'	Flight Date: June 09, 1948	USGS

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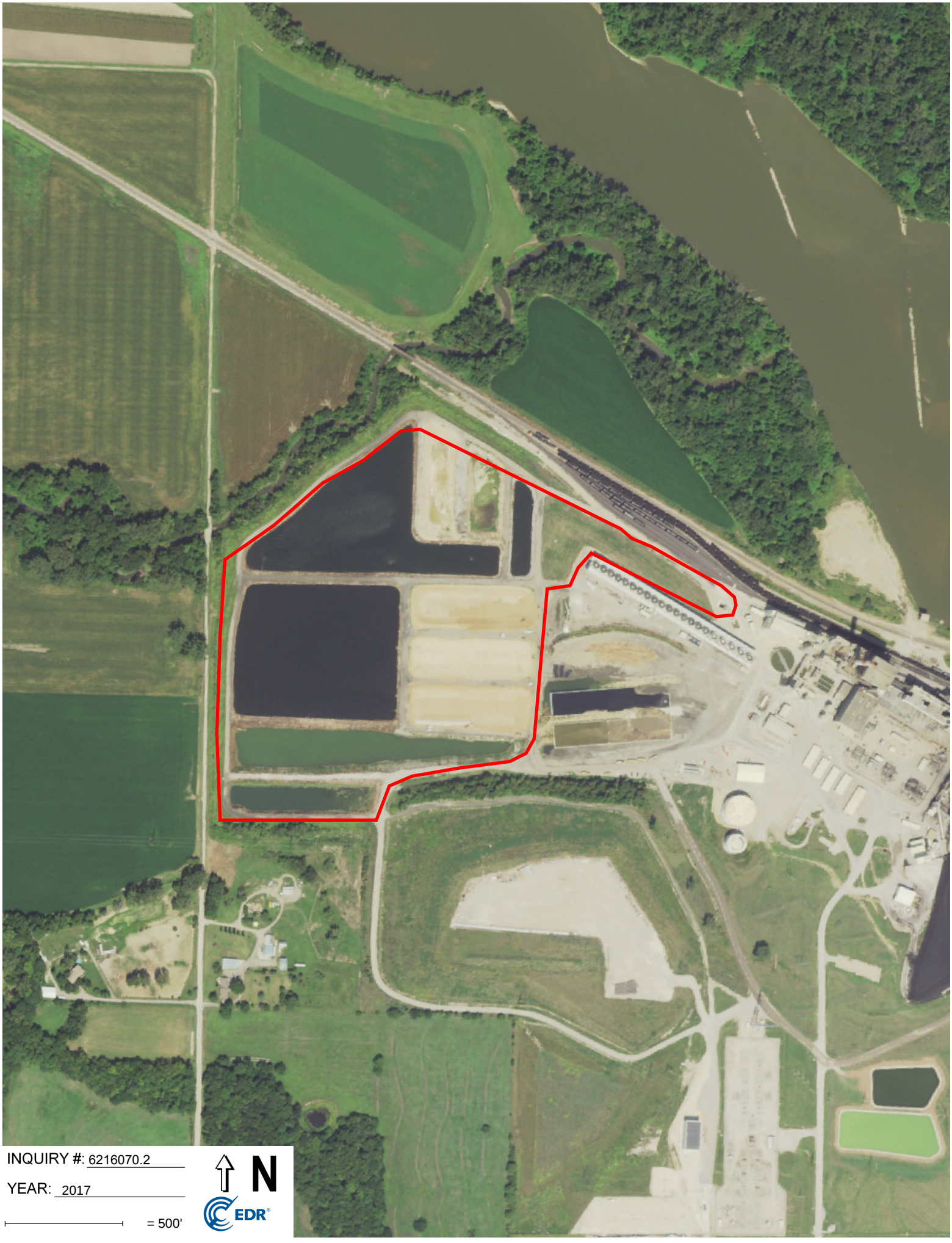
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EDR

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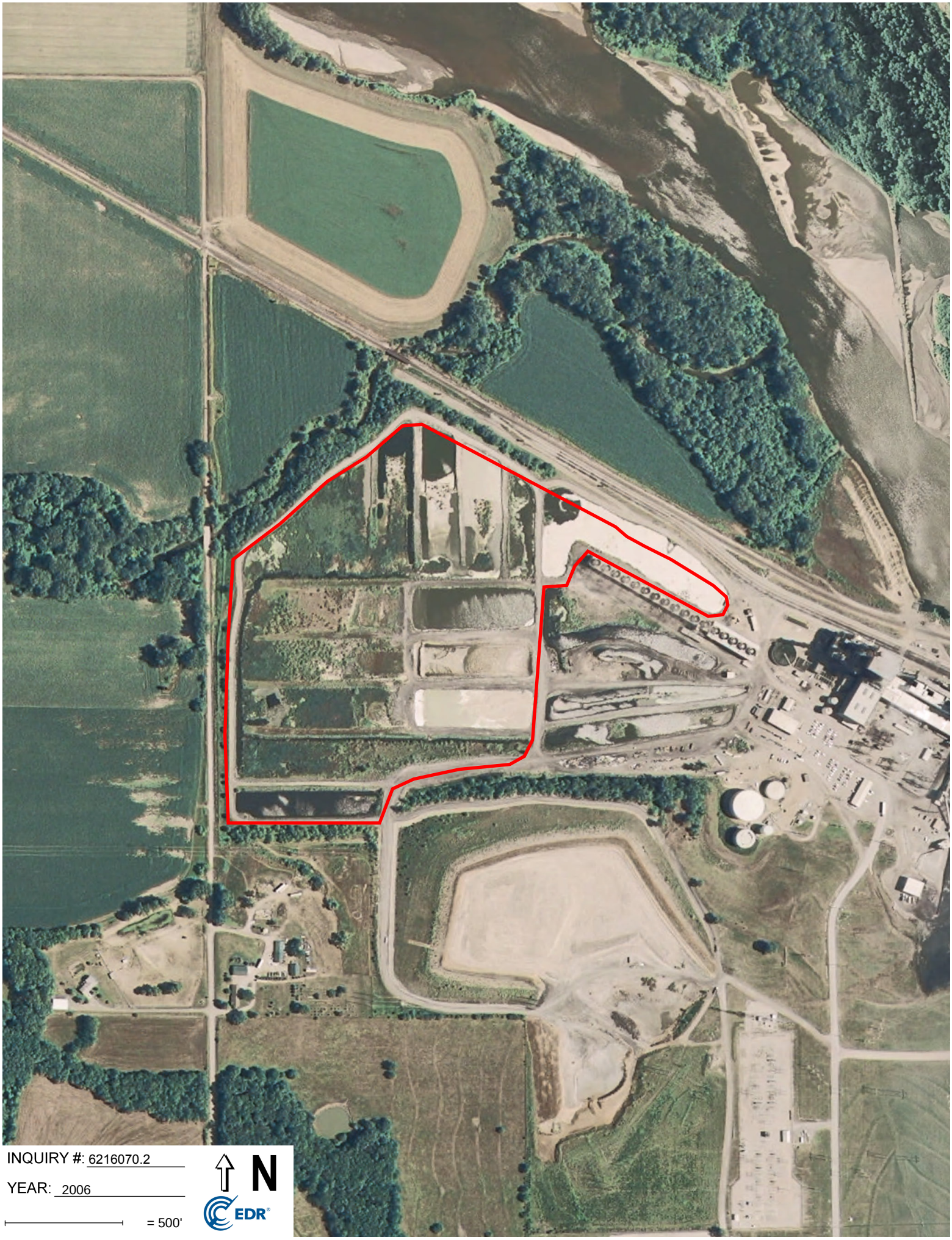
EDR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EDR

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YEAR: 1977

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YEAR: 1967

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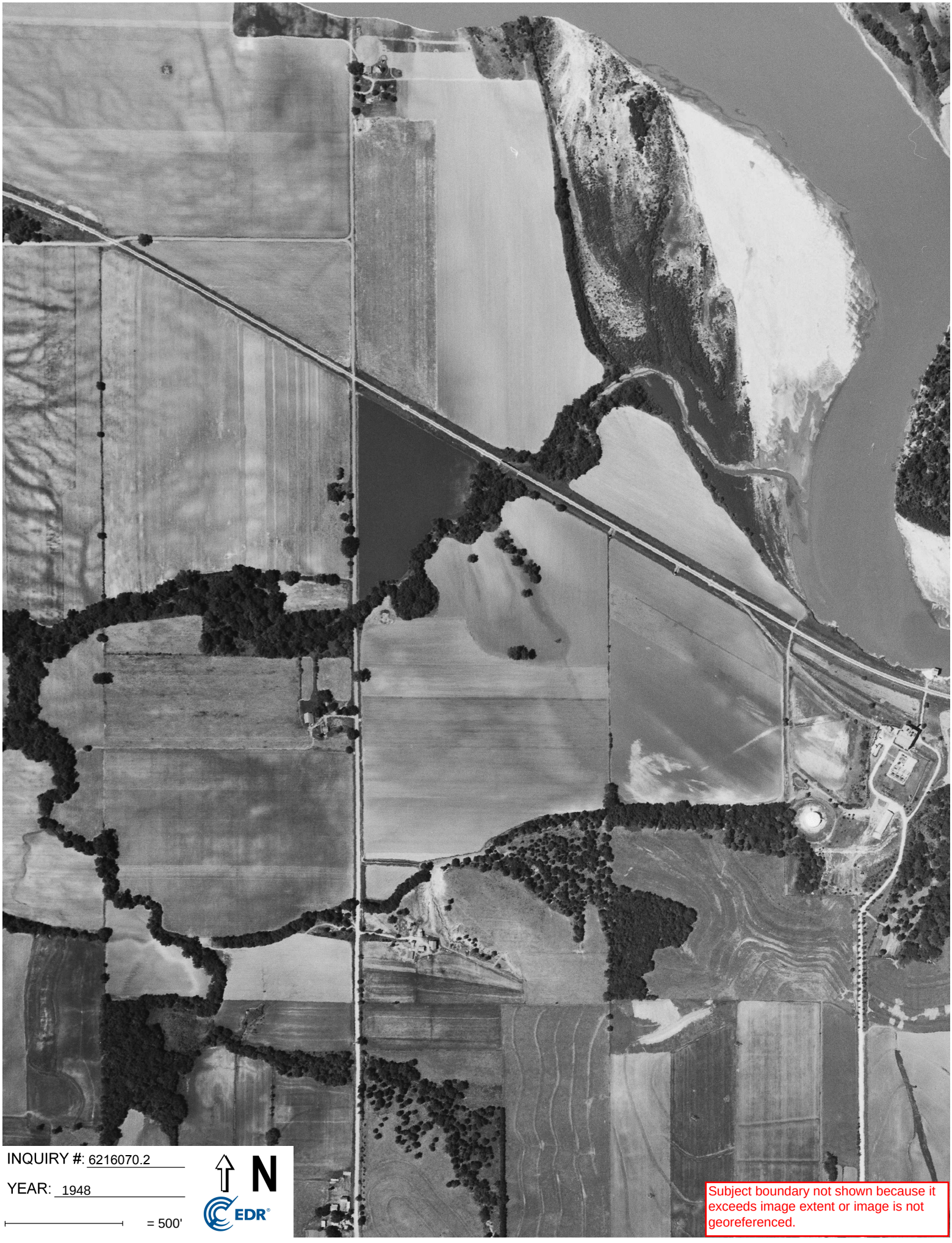
EDR



INQUIRY #: 6216070.2

YEAR: 1948

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EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

APPENDIX B

EDR Topographic Map Research Results

Evergy LEC
1250 N 1800 Road
Lawrence, KS 66044

Inquiry Number: 6216070.1
October 05, 2020

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

10/05/20

Site Name:

Evergy LEC
1250 N 1800 Road
Lawrence, KS 66044
EDR Inquiry # 6216070.1

Client Name:

Haley & Aldrich
600 South Meyer Ave Suite 100
Tucson, AZ 85701-0000
Contact: Samantha Kaney

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Haley & Aldrich were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 129778-037 SID5

Project: Evergy LEC

Coordinates:

Latitude:	39.009703 39° 0' 35" North
Longitude:	-95.27633 -95° 16' 35" West
UTM Zone:	Zone 15 North
UTM X Meters:	302904.64
UTM Y Meters:	4320318.52
Elevation:	830.00' above sea level

Maps Provided:

2012	1888, 1889
1994	1885, 1886
1978	
1967	
1951	
1950	
1949	
1894	

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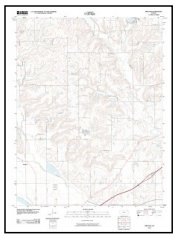
Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



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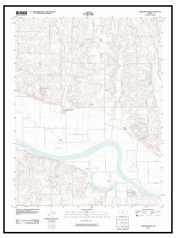
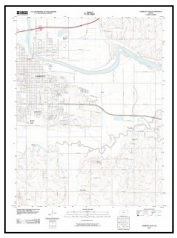


Williamstown
2012
7.5-minute, 24000



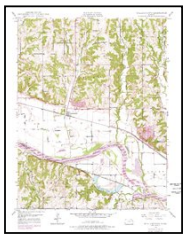
Lawrence East
2012
7.5-minute, 24000

Lawrence West
2012
7.5-minute, 24000

1994 Source Sheets

Lawrence West
1994
7.5-minute, 24000
Aerial Photo Revised 1991

1978 Source Sheets



Williamstown
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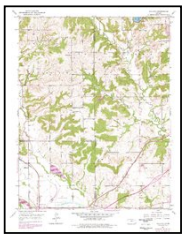
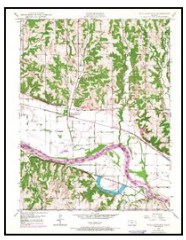


Midland
1978
7.5-minute, 24000
Aerial Photo Revised 1977

Lawrence East
1978
7.5-minute, 24000
Aerial Photo Revised 1977

Lawrence West
1978
7.5-minute, 24000
Aerial Photo Revised 1977

1967 Source Sheets



Williamstown
1967
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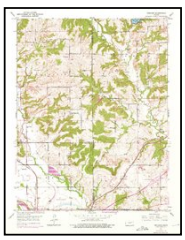
Aerial Photo Revised 1967



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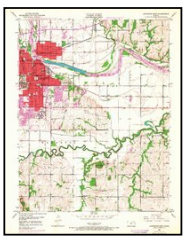
Aerial Photo Revised 1967



Lawrence East
1967
7.5-minute, 24000
Aerial Photo Revised 1967

Lawrence West
1967
7.5-minute, 24000
Aerial Photo Revised 1967

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

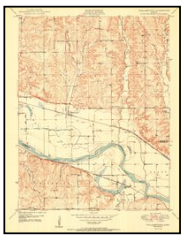
1951 Source Sheets

Midland
1951
7.5-minute, 24000
Aerial Photo Revised 1948

Lawrence West
1951
7.5-minute, 24000
Aerial Photo Revised 1948

1950 Source Sheets

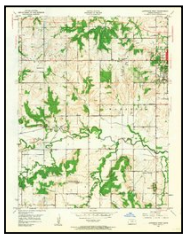
Willliamstown
1950
7.5-minute, 24000



Williamstown
1950
7.5-minute, 24000
Aerial Photo Revised 1948

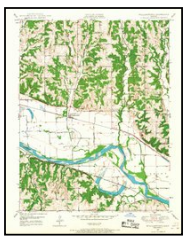
Lawrence East
1950
7.5-minute, 24000
Aerial Photo Revised 1948

Midland
1950
7.5-minute, 24000
Aerial Photo Revised 1948



Lawrence West
1950
7.5-minute, 24000
Aerial Photo Revised 1948

1949 Source Sheets



Williamstown
1949
7.5-minute, 24000
Aerial Photo Revised 1948

Topo Sheet Key

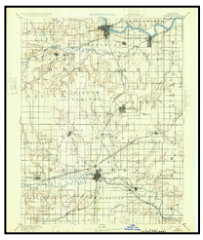
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1894 Source Sheets

Oskaloosa
1894
30-minute, 125000

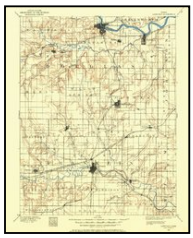
1888, 1889 Source Sheets

Oskaloosa
1888
30-minute, 125000



Lawrence
1889
30-minute, 125000

1885, 1886 Source Sheets

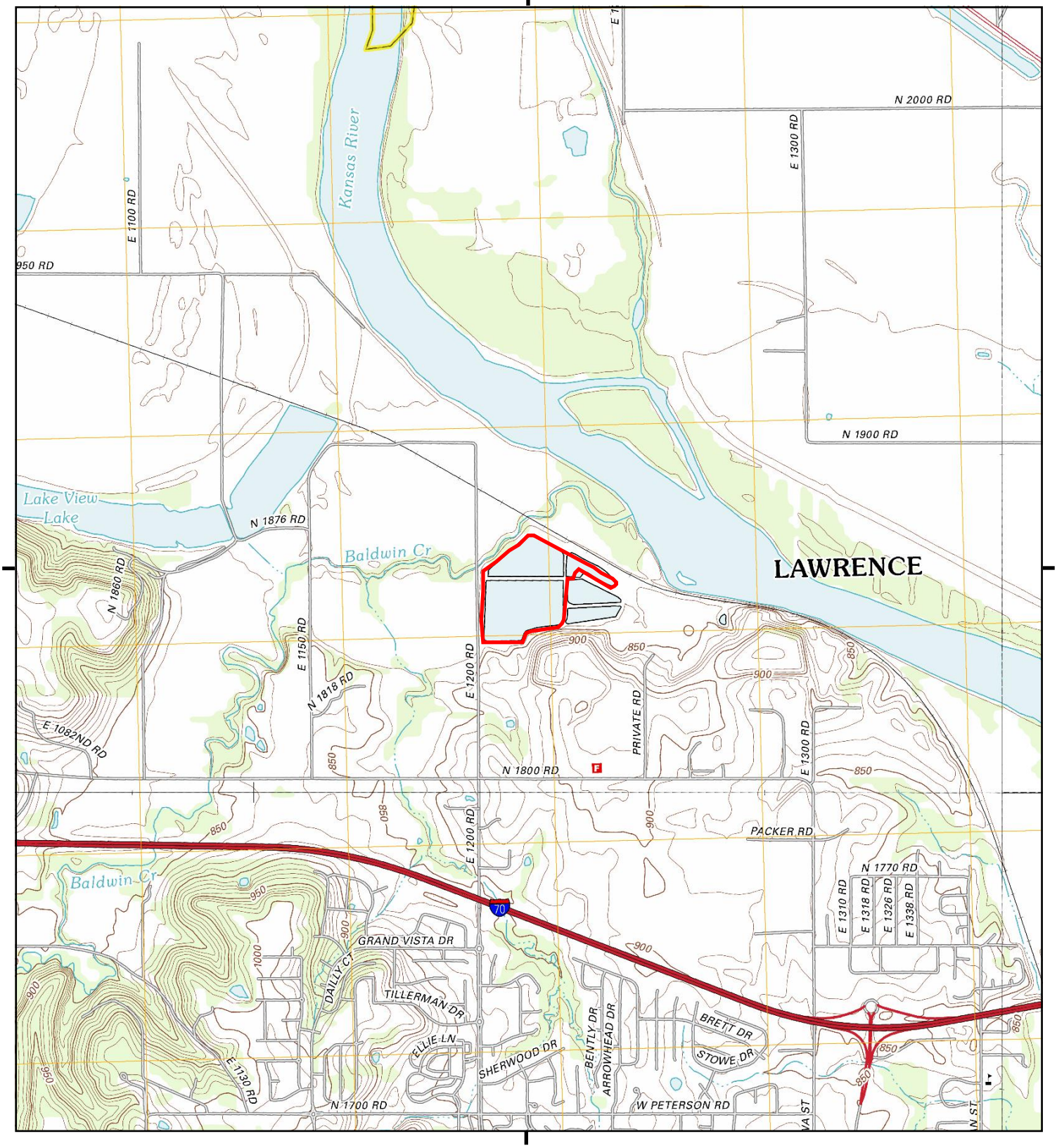


Lawrence
1885
30-minute, 125000

Oskaloosa
1886
30-minute, 125000

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

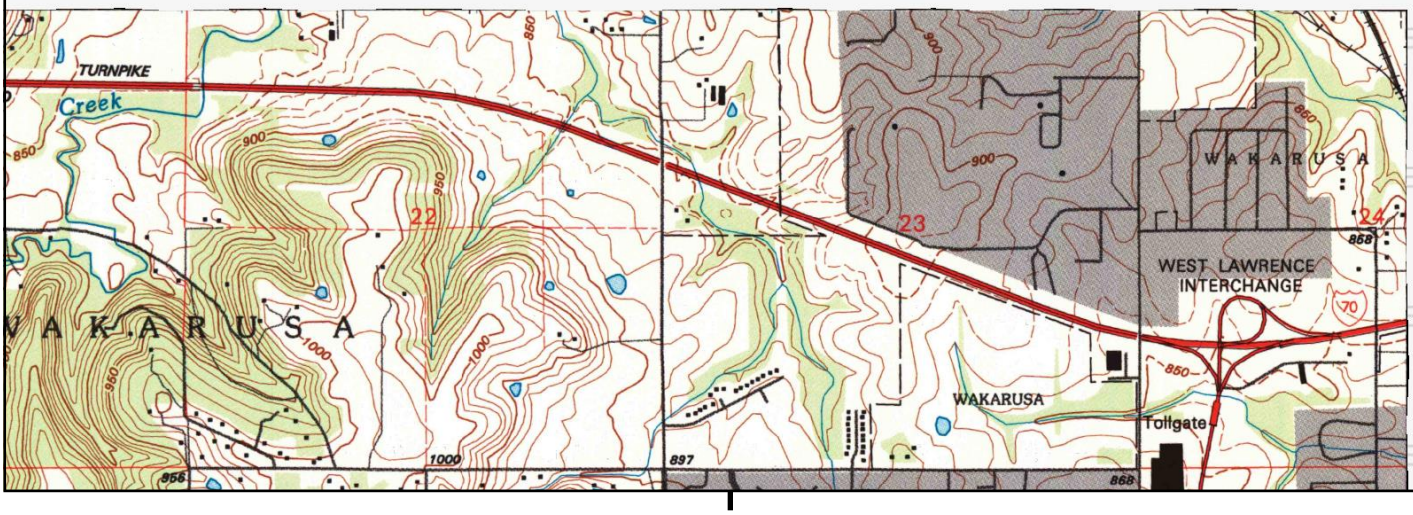
NW N NE
W E
SW S SE

TP, Williamstown, 2012, 7.5-minute
NE, Midland, 2012, 7.5-minute
SE, Lawrence East, 2012, 7.5-minute
S, Lawrence West, 2012, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N

UNMAPPED



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

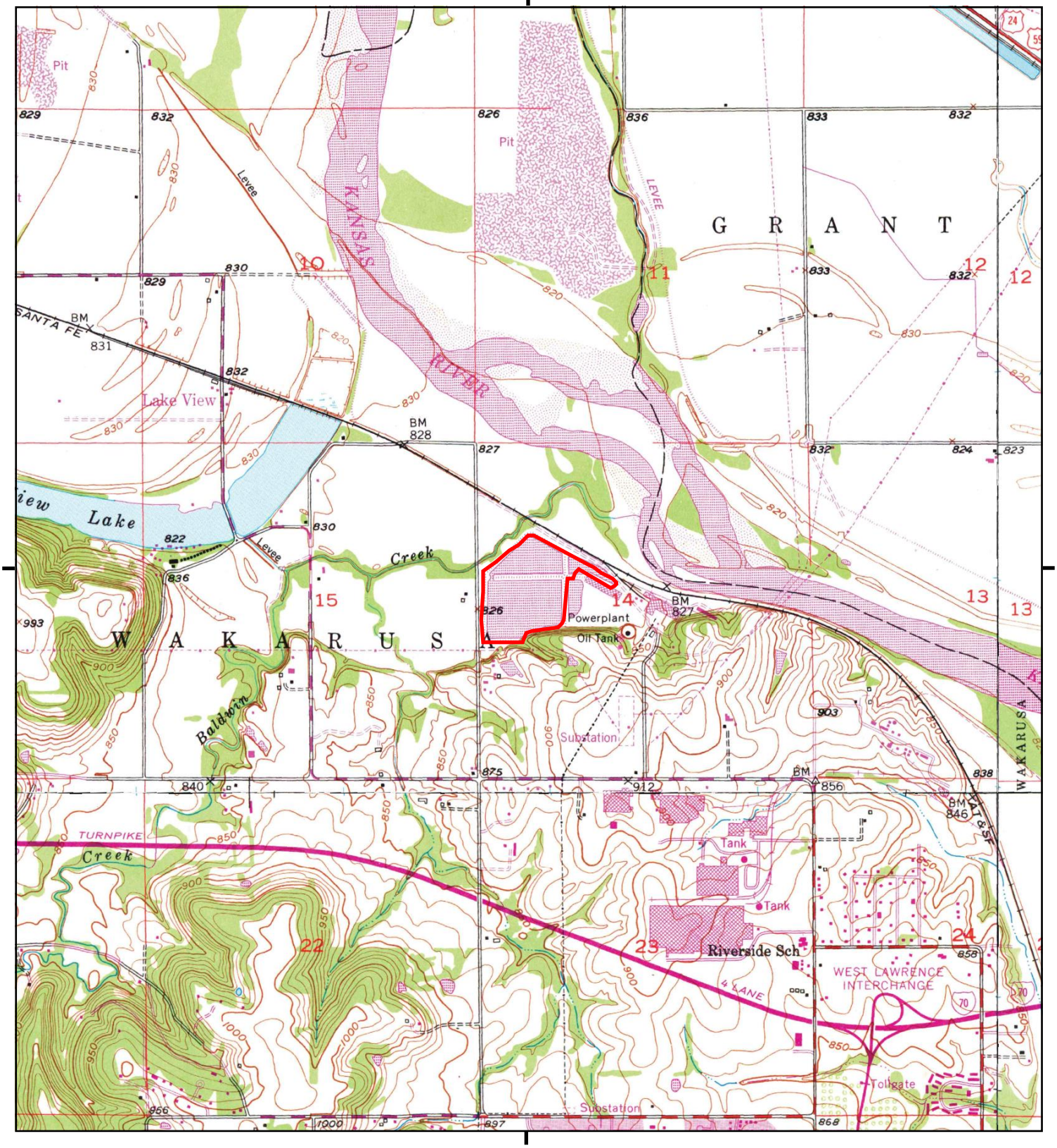
S, Lawrence West, 1994, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N

Historical Topo Map

1978



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

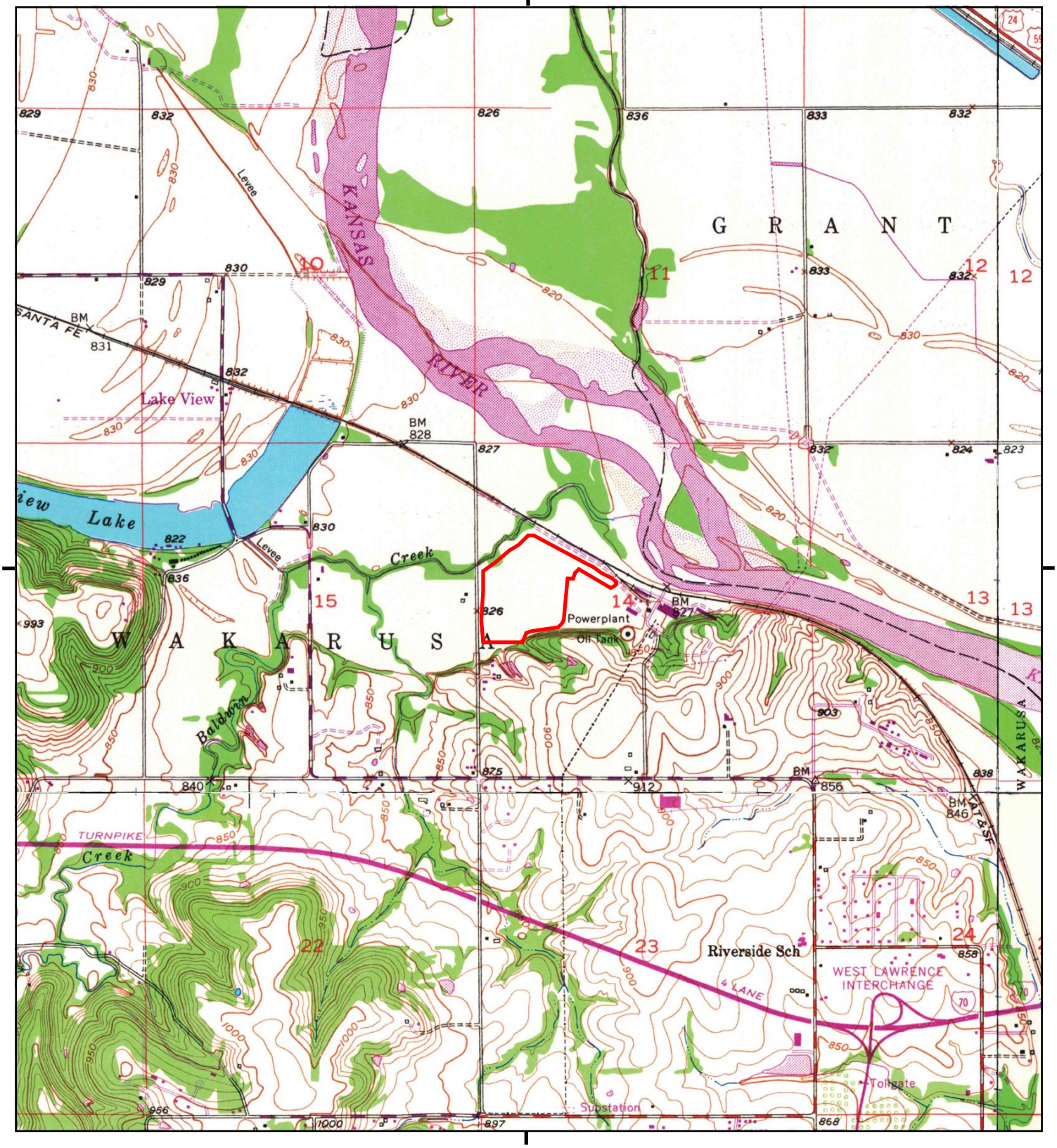
TP, Williamstown, 1978, 7.5-minute
NE, Midland, 1978, 7.5-minute
SE, Lawrence East, 1978, 7.5-minute
S, Lawrence West, 1978, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N

Historical Topo Map

1967



This report includes information from the following map sheet(s).

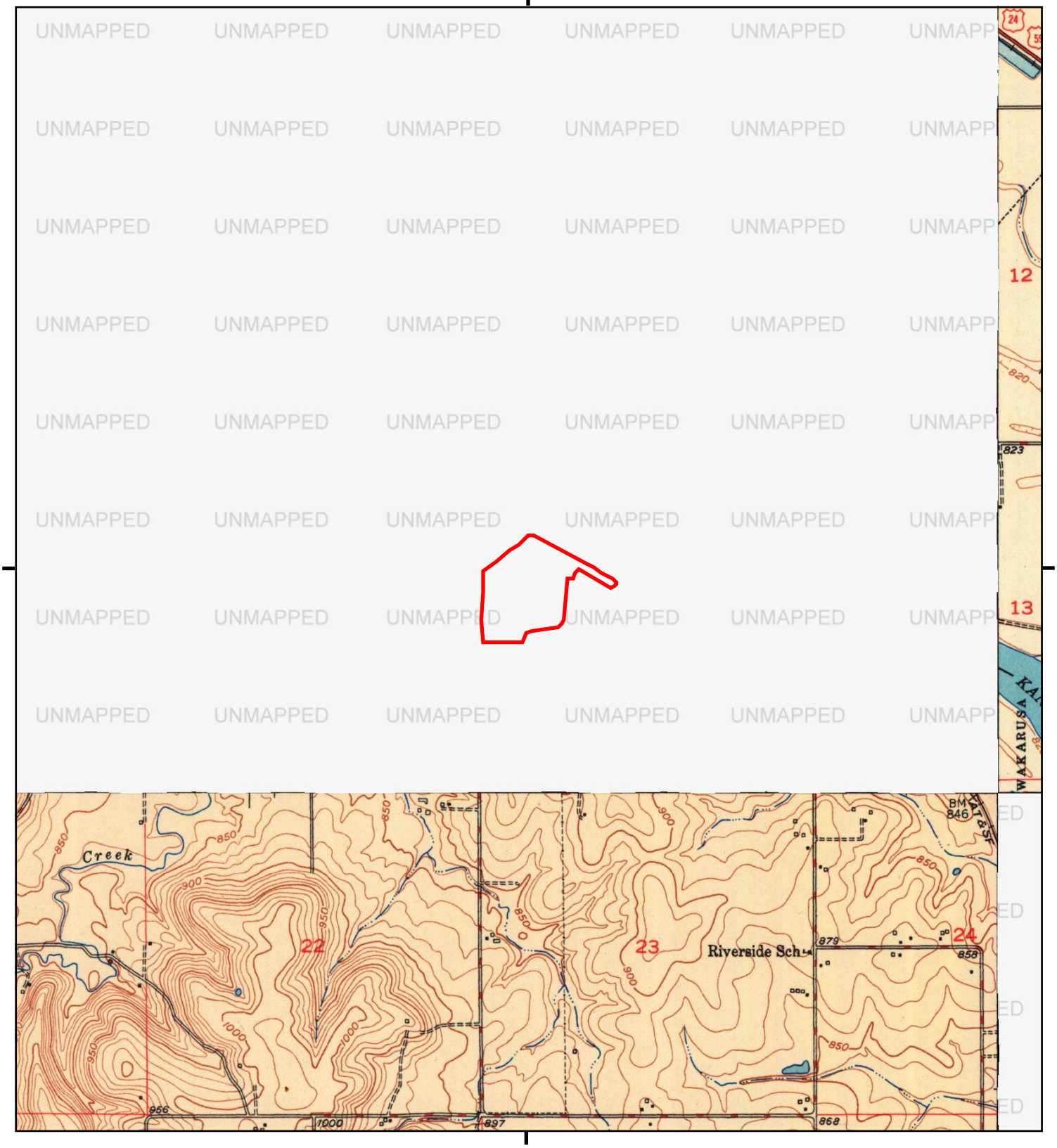
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Williamstown, 1967, 7.5-minute
NE, Midland, 1967, 7.5-minute
SE, Lawrence East, 1967, 7.5-minute
S, Lawrence West, 1967, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

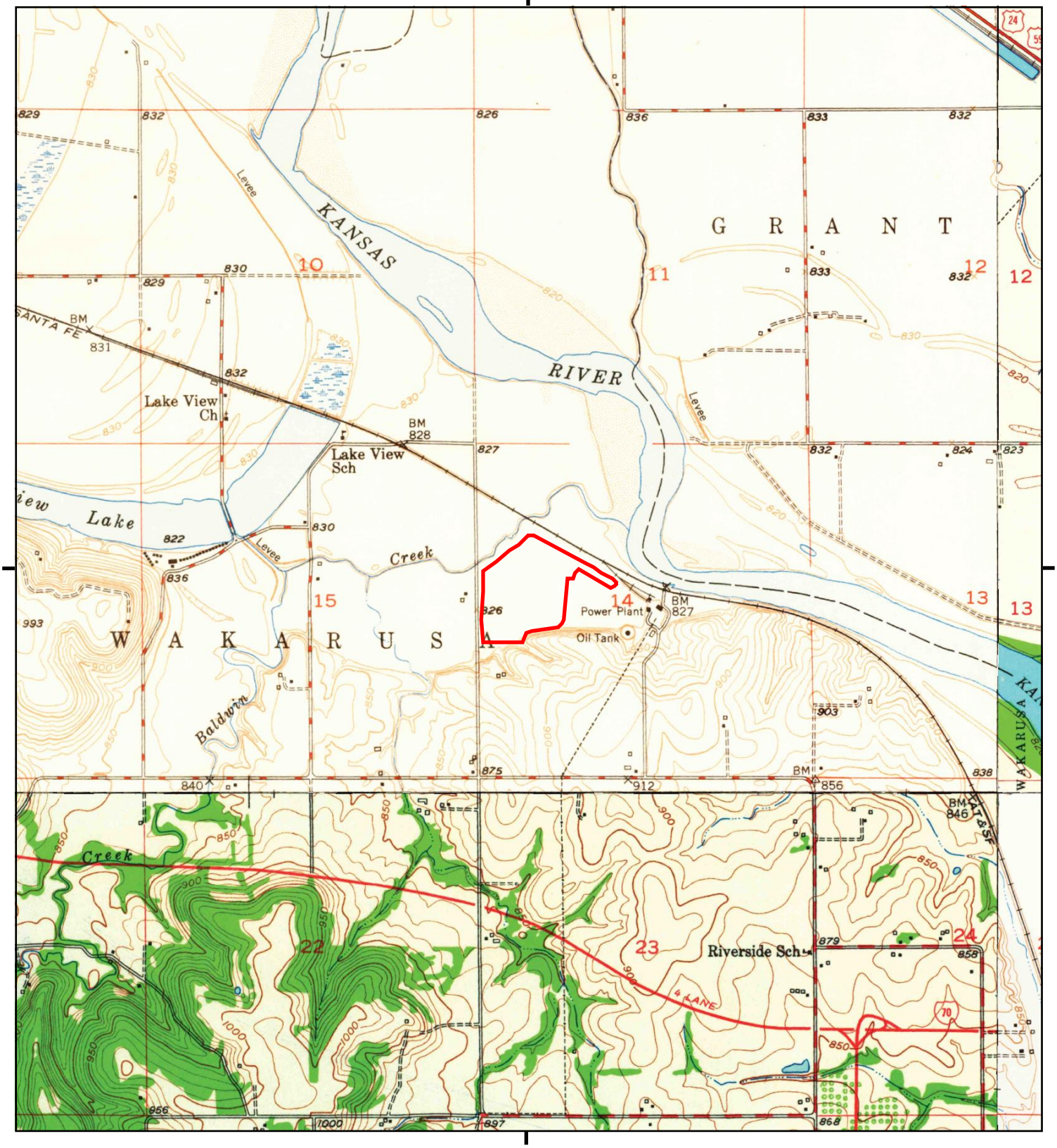
NE, Midland, 1951, 7.5-minute
S, Lawrence West, 1951, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N

Historical Topo Map

1950



This report includes information from the following map sheet(s).

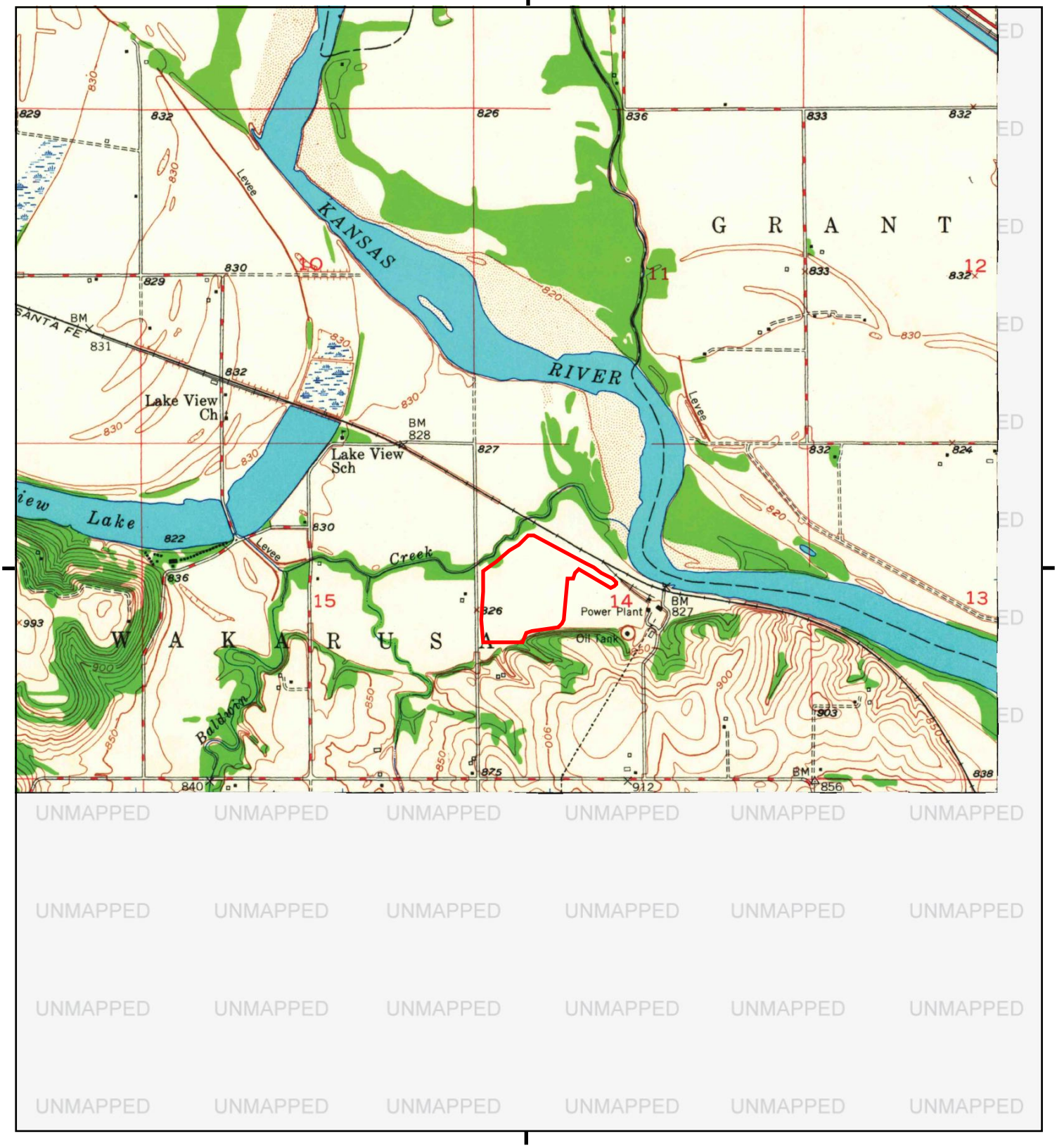
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Willliamstown, 1950, 7.5-minute
TP, Williamstown, 1950, 7.5-minute
NE, Midland, 1950, 7.5-minute
SE, Lawrence East, 1950, 7.5-minute
S, Lawrence West, 1950, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N



UNMAPPED

This report includes information from the following map sheet(s).

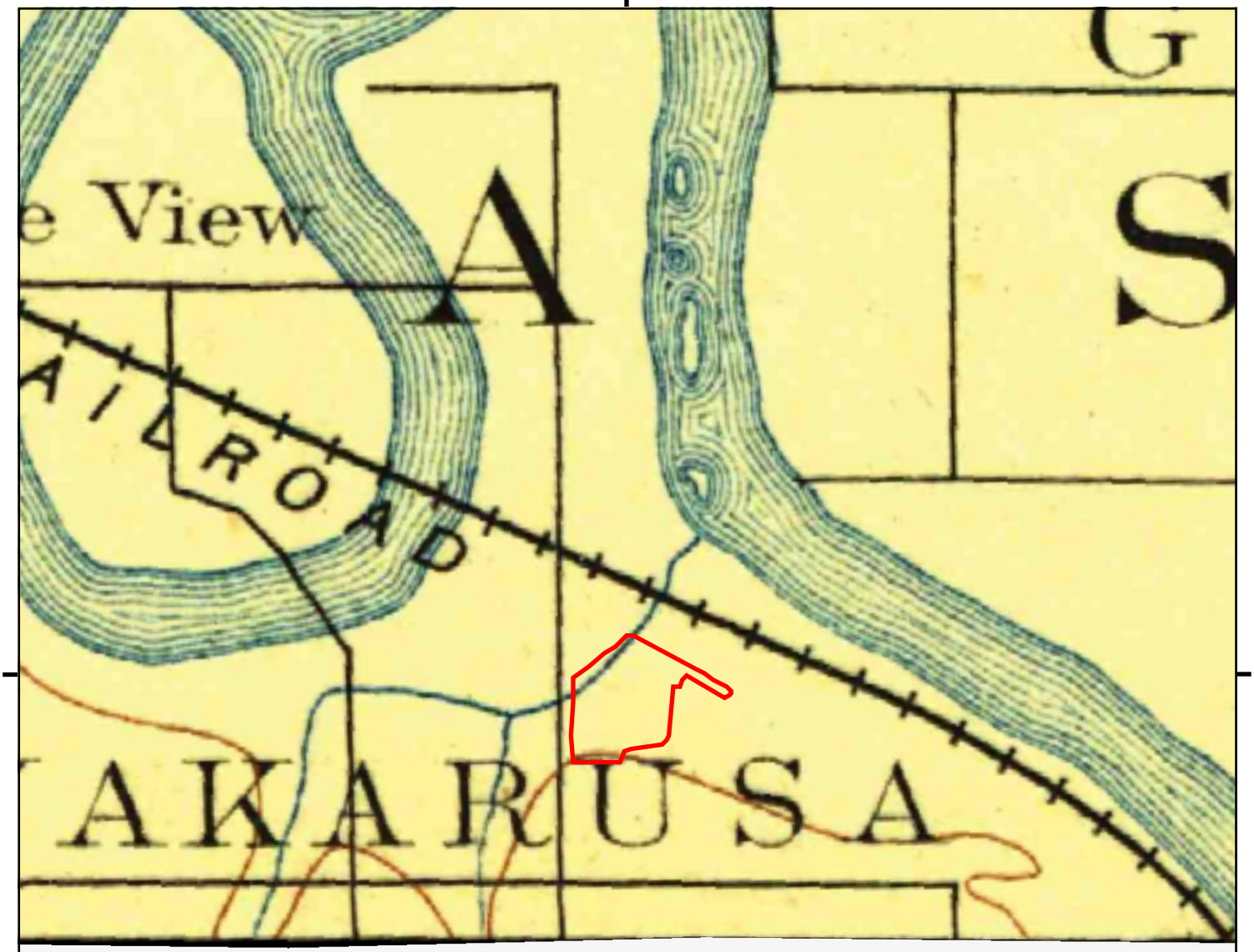
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Williamstown, 1949, 7.5-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N



UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED
UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED
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UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED UNMAPPED

This report includes information from the following map sheet(s).

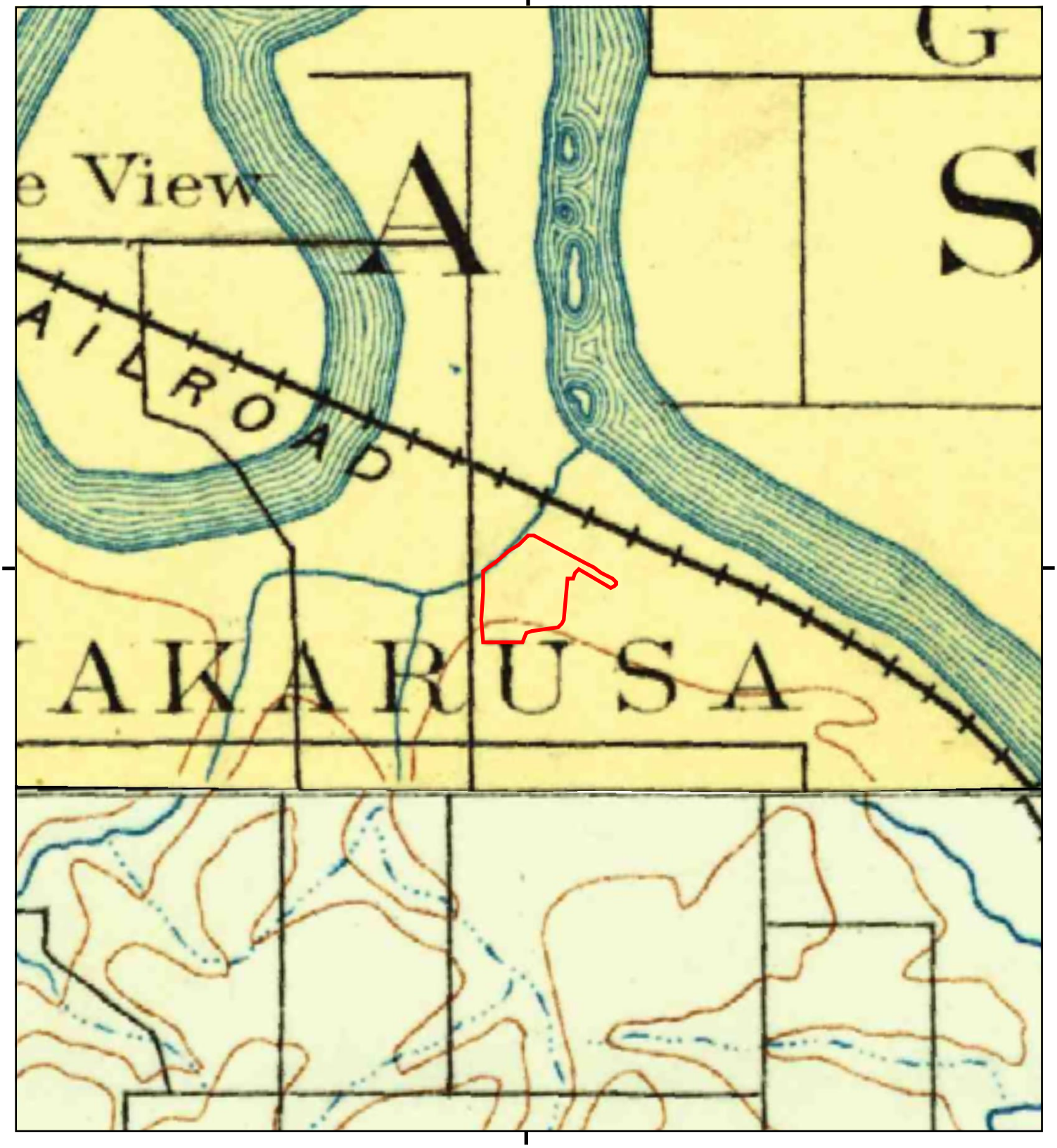
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oskaloosa, 1894, 30-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N



This report includes information from the following map sheet(s).

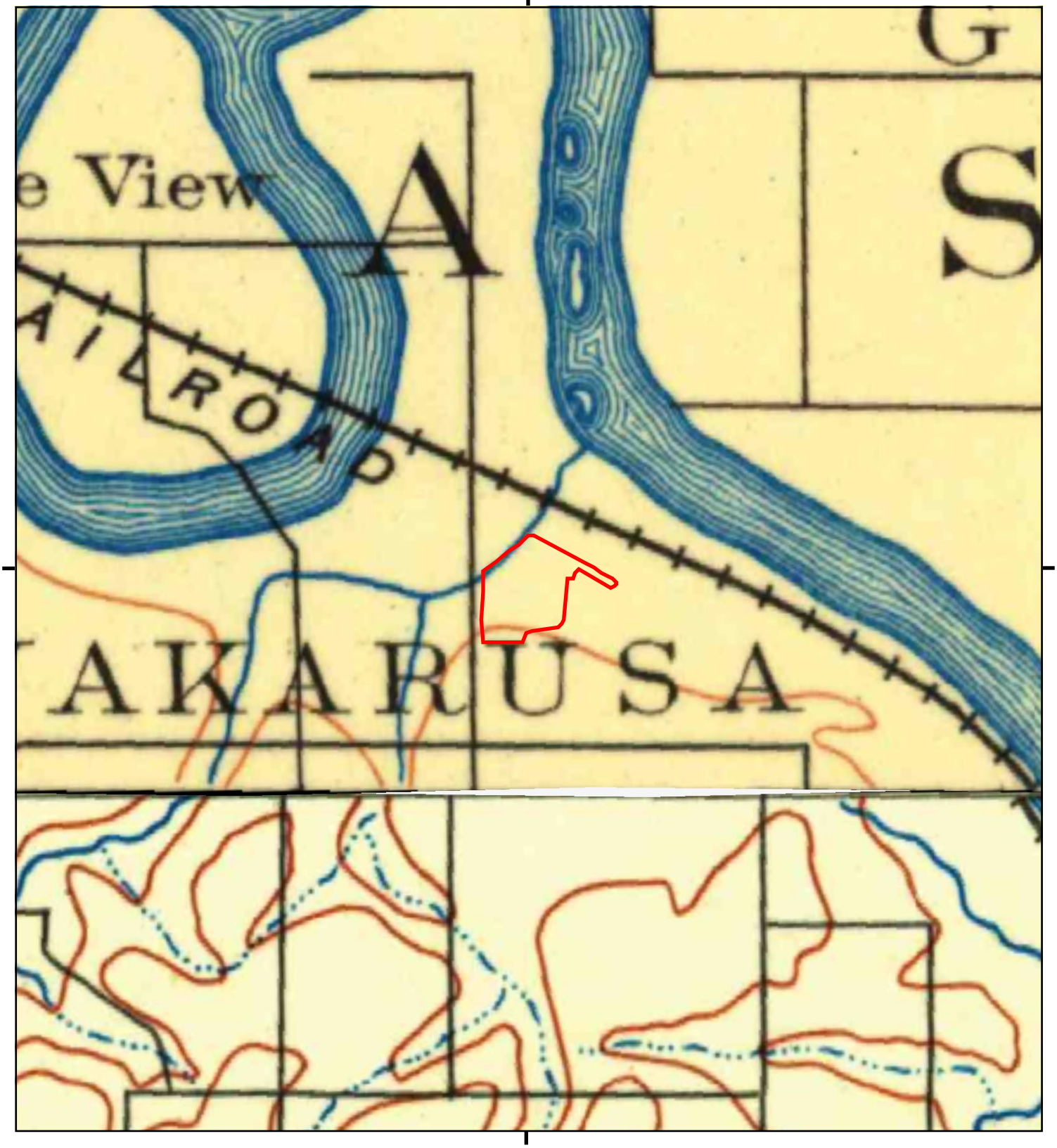
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oskaloosa, 1888, 30-minute
S, Lawrence, 1889, 30-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oskaloosa, 1886, 30-minute
S, Lawrence, 1885, 30-minute

SITE NAME: Evergy LEC
ADDRESS: 1250 N 1800 Road
Lawrence, KS 66044
CLIENT: Haley & Aldrich

N

ATTACHMENT 2

Demonstration and Certification of Need for 60-Day Extension – Corrective Measures Assessment (CMA)
Lawrence Energy Center
Area 2, Area 3, And Area 4 Ponds (Inactive)

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.706.1303

January 10, 2021
File No. 129778-043

Evergy Kansas Central, Inc. (f/k/a Westar Energy, Inc.)
818 South Kansas Avenue
Topeka, Kansas 66612

Attention: Jared Morrison – Director, Water and Waste Programs

Subject: Demonstration and Certification of Need for 60-Day Extension – Corrective Measures Assessment (CMA)
Lawrence Energy Center, Area 2, Area 3, and Area 4 Ponds (inactive)

Dear Mr. Morrison:

On behalf of Evergy Kansas Central, Inc. (Evergy; f/k/a Westar Energy, Inc.), in accordance with Title 40 Code of Federal Regulations (40 CFR) § 257.96(a) of the U.S. Environmental Protection Agency Federal Coal Combustion Residuals (CCR) Rule (40 CFR §§ 257 and 261) effective October 19, 2015, including subsequent revisions, I certify that Evergy has demonstrated the need for an additional 60 days beyond the regulatory time period of 90 days to complete the assessment of corrective measures for the multi-unit groundwater monitoring program for the referenced surface impoundments at the Lawrence Energy Center (LEC) due to site-specific conditions and the evaluation of remedial treatment alternatives in support of an informed CMA process.

In the case of the assessment for Area 2, Area 3, and Area 4 Ponds, the site has complex hydrogeology in the form of poorly sorted terrace deposits consisting of reworked glacial till material that includes clay, sand, and gravel, underlain by a shale member. Therefore, additional time is needed to conduct nature and extent (N&E) investigations which are ongoing in support of the CMA process. Nature and extent information is an important component of the CMA and will allow Evergy to refine the understanding of groundwater flow and solute transport. Remaining tasks in the N&E investigation includes installation of additional monitoring wells and collecting and evaluating groundwater data, which will require an estimated additional 30 to 45 days given winter weather conditions. Evergy is also in the process of completing groundwater modeling, evaluating human health and ecological risk, reviewing possible groundwater remedies as well as implementation of critical steps in the groundwater treatment and remedy assessment process, which will require an additional 45 to 60 days. Based on the above site-specific conditions and related groundwater treatment alternatives evaluations in support of the CMA by Evergy, the CCR Rule allows for a 60-day extension to complete the CMA process.

This certification as submitted is, to the best of my knowledge, accurate and complete.

Signed: _____

Certifying Engineer

Professional Engineer's Seal

Print Name:	Steven F. Putrich, P.E.
Kansas License No.:	PE24363
Title:	Project Principal
Company:	Haley & Aldrich, Inc.

HALEY ALDRICH