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UPDATED CORRECTIVE MEASURES ASSESSMENT
PETERSBURG GENERATING STATION
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PETERSBURG, INDIANA

by
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Cleveland, Ohio

for
AES Indiana
Indianapolis, Indiana

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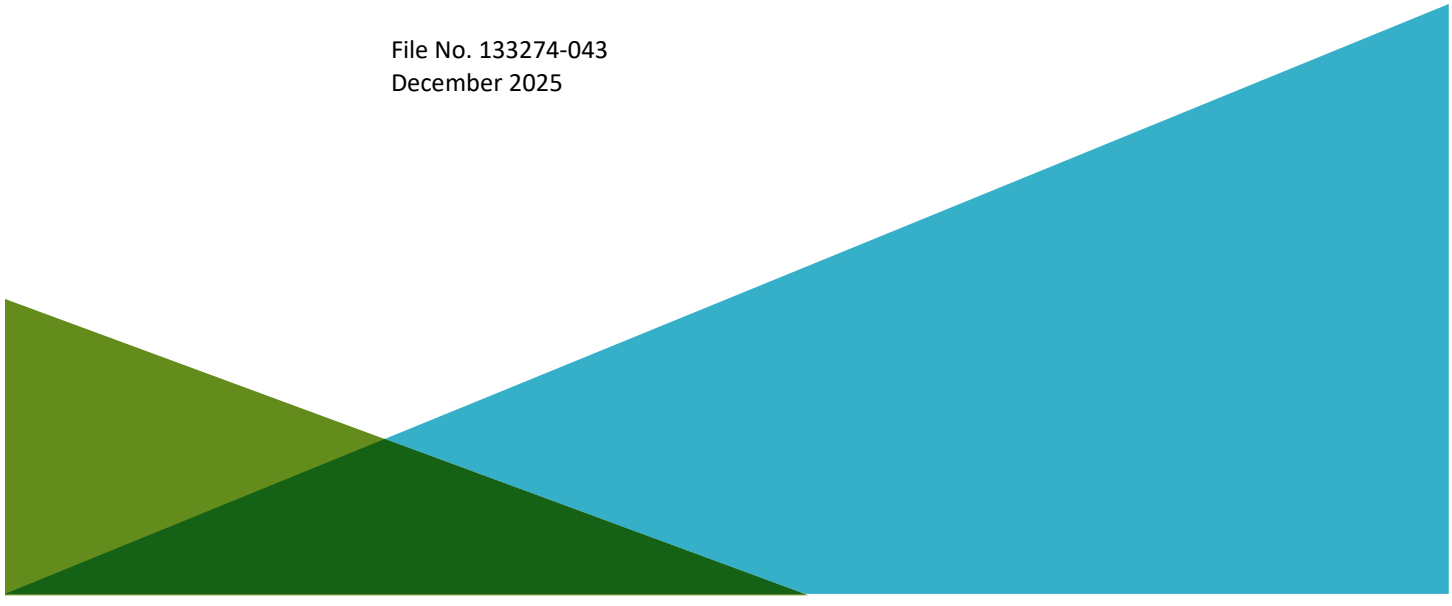


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List of Terms and Abbreviations

Abbreviation	Definition
40 CFR	Code of Federal Regulations Title 40
AESI	AES Indiana
AOI	area of interest
ASD	alternative source demonstration
Ash Pond System	Ponds A, A', C, and Former Ponds B and D, collectively
ATC	ATC Group Services LLC
bgs	below ground surface
BMP	best management practice
CBR	closure by removal
CCR	coal combustion residuals
CCRMU	CCR management unit
CCR Rule	USEPA's final rule for *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*, 80 Fed. Reg. 21302, and subsequent regulatory revisions
CIP	closure in place
CMA	Corrective Measures Assessment
EVO	emulsified vegetable oil
GWPS	groundwater protection standard
Haley & Aldrich	Haley & Aldrich, Inc.
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
ISRM	in-situ redox manipulation
Landfill	Type III Restricted Waste Landfill
Legacy CCR Rule	USEPA's final rule for *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments*, 89 Fed. Reg. 38950
MNA	monitored natural attenuation
N&E	nature and extent
NPDES	National Pollution Discharge Elimination System
O&M	operations and maintenance
PGS	Petersburg Generating Station, Petersburg, Pike County, Indiana
PPE	personal protective equipment
PRB	permeable reactive barrier
RO	reverse osmosis
Site	Petersburg Generating Station, Petersburg, Pike County, Indiana

List of Terms and Abbreviations (Continued)

SSI	statistically significant increase
SSL	statistically significant level
SWWF	significant water withdrawal facility
USEPA	United States Environmental Protection Agency

1. Introduction and Background Information

Haley & Aldrich, Inc. (Haley & Aldrich) was retained by AES Indiana (AESI) to prepare this updated Corrective Measures Assessment (CMA) for the regulated coal combustion residuals (CCR) units, Ponds A, A', and C and for the historically non-regulated Former Ponds B and D, and for the restricted waste site Type III Landfill (herein referred to as the Landfill) located at the Petersburg Generating Station (PGS or Site). Collectively, Ponds A, A', C, and Former Ponds B and D are considered the Ash Pond System. AESI has completed comprehensive geologic and hydrogeologic investigations in accordance with the United States Environmental Protection Agency's (USEPA's) final rule entitled *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21302* (effective October 19, 2015) and subsequent regulatory revisions (CCR Rule). These investigations have included ongoing semiannual compliance groundwater monitoring and supplemental nature and extent (N&E) investigations associated with the Code of Federal Regulations Title 40 (40 CFR) §257.95 of the CCR Rule.

This updated CMA report evaluates potential corrective measures for the Ash Pond System and Landfill to remediate the presence of Appendix IV constituents in groundwater that were previously determined to be above the groundwater protection standards (GWPSs) at statistically significant levels (SSLs). The initial CMA was prepared by Haley & Aldrich in September 2019 and was subsequently amended in October 2019. The initial CMA, along with the facility's annual groundwater monitoring and corrective action reports (that contain historical groundwater monitoring results for the CCR Rule Appendix III and Appendix IV constituents and relevant statistics for that annual period), are posted on the PGS public CCR website: https://www.aesindiana.com/petersburg-generating-station.

This updated CMA report has been prepared to account for the supplemental information collected since 2019 that was sourced from additional monitoring data, groundwater N&E investigations, conceptual site model development, geochemical and Site-specific investigations, groundwater modeling updates, and potential corrective measures evaluations. Based on an evaluation of this additional information, this updated CMA report evaluates six remedial alternatives that expand on the alternatives considered in the initial 2019 CMA report. The evaluation of remedial alternatives provided in this updated CMA report, along with the information and feedback from a CCR Rule public meeting, will form the basis for the final remedy selection for the Ash Pond System and Landfill in accordance with the CCR Rule.

1.1 FACILITY DESCRIPTION

AESI owns and operates the PGS, which is located approximately 4 miles to the northeast of the town of Petersburg in Pike County, Indiana. The Site is bounded to the north and west by the White River and to the south and east by wooded areas and farmland (**Figure 1-1**).

The Ash Pond System covers approximately 152 acres and consists of five impoundments (Ponds A, A', C, and Former Ponds B and D). The Ash Pond System historically treated CCR material, including fly ash, bottom ash, and flue gas desulfurization waste streams, in addition to various other wastewater streams that were produced at the PGS.

A 6.4-acre portion of Pond A was designated as Former Pond D in 2015 when that portion was closed in place by placing asphalt and concrete pavement over the area and a sheet pile wall was installed around

its perimeter. A wastewater treatment plant was then constructed within the footprint of Former Pond D. Closure of each pond was completed by closure in place in accordance with the Ash Pond System closure and post-closure plans[1] Closure of Former Pond B was completed in 2018; closure of Pond C was completed in 2021; and closure of Ponds A and A' was completed in 2023 (ATC, 2013).

CCR material produced by PGS was also historically sent to the Landfill, which is located to the east of the Ash Pond System and encompasses approximately 80 acres (**Figure 1-2**). In 2017, partial-closure certification from the Indiana Department of Environmental Management (IDEM) was received for approximately 34 acres along the northern and western slopes of the Landfill. On July 5, 2024, IDEM approved AESI's Solid Waste Land Disposal Facility Permit Renewal and Landfill Closure Design. Closure of the Landfill under the 2024 IDEM-approved closure plan is currently ongoing.

On May 8, 2024, USEPA issued final revisions to the CCR Rule expanding the scope of the CCR Rule to include CCR management units (CCRMUs), entitled *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments*. 89 Fed. Reg. 38950 (effective November 8, 2024), herein referred to as the 2024 "Legacy CCR Rule." Former Ponds B and D are CCRMUs as defined in these 2024 final revisions.

1.2 CCR RULE COMPLIANCE SUMMARY

CCR Rule groundwater monitoring has been performed in accordance with 40 CFR §257.90 through §257.95. The monitoring has been completed through a phased approach to allow for a graduated response (i.e., detection monitoring, followed by assessment monitoring, then the N&E investigation, as applicable):

- Detection monitoring per 40 CFR §257.94 consisted of nine sampling events completed between September 2016 and August 2017. Statistical evaluation determined that statistically significant increases (SSIs) of Appendix III constituent concentrations had occurred in monitoring wells downgradient from the Ash Pond System and Landfill. No alternative source was identified for the SSI constituents. Accordingly, the groundwater monitoring program transitioned to an assessment monitoring program.
- Assessment monitoring events per 40 CFR §257.95 began in May 2018 and has continued with semiannual assessment monitoring events to present. Samples were analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR §257.95(b) and §257.95(d)(1). Concurrent with the second assessment sampling round, and as required by 40 CFR §257.95(h), GWPSs were established for the detected Appendix IV constituents. Based on the established GWPSs, it was determined that cadmium, cobalt, and molybdenum were present in groundwater downgradient of the Ash Pond System and arsenic, lithium, and molybdenum were present in groundwater downgradient of the Landfill at SSLs above their respective GWPSs.
- Following development of GWPS and establishment of SSLs, a field investigation was initiated to demonstrate in accordance with 40 CFR §257.95(g)(3) that a source other than the Ash Pond System caused the cadmium and cobalt SSLs at monitoring well AP-8. The alternative source demonstration (ASD) completed in 2019 concluded that the GWPS exceedances for cadmium and cobalt in monitoring well AP-8 are not attributable to the Ash Pond System. Instead, the

[1] Proposed Closure and Post Closure Plans – Ash Pond System dated August 4, 2014, addendum No. 1 dated November 3, 2014 (Cardno ATC, 2014) were approved by IDEM on December 31, 2014. The Revised Closure/Post Closure Plan for the Ash Pond System dated April 28, 2017 (ATC, 2017), was approved by IDEM on July 14, 2017.

elevated cadmium and cobalt concentrations in AP-8 are the result of historical surface and underground coal mining drainage impacts to groundwater in upgradient areas to the monitoring well (ATC Group Services LLC [ATC], 2019).

- Similarly, an ASD completed in 2019 concluded that the GWPS exceedances for arsenic in monitoring well MW-10 downgradient of the Landfill are not attributable to the Landfill. Instead, the elevated arsenic concentrations in MW-10 are the result of naturally occurring sources of arsenic and the reducing geochemical conditions near the well from the historical surface mining activities conducted in that area of the Site (Haley & Aldrich, 2019). However, subsequent arsenic SSLs for monitoring well MW-3 downgradient of the Landfill were determined to be attributable to the Landfill.
- On May 9, 2025, arsenic was also detected at a SSL above the GWPS for the first time in groundwater downgradient of the Ash Pond System and attributable to the Ash Pond System.
- Groundwater sampling to investigate the N&E in accordance with 40 CFR §257.95(g) began in 2019 and has included sampling of the Ash Pond System and Landfill monitoring well network of CCR monitoring wells, background monitoring wells, and N&E monitoring wells.

Based on monitoring data available at the time, the initial CMA report was prepared in 2019 as described in Section 1.2.1 below. A comprehensive N&E investigation began in 2019 after completion of the initial CMA. Results of the N&E investigation have been documented in a comprehensive N&E report (**Appendix A**). The N&E investigation is summarized in Section 1.2.2, and the results of the N&E investigation are summarized in Section 1.3.

In accordance with 40 CFR §257.97(a), a semiannual report must be prepared to document progress toward the remedy selection and design. Since completion of the initial CMA report in 2019, semiannual reports have been prepared to document the progress toward the remedy selection and design. Once a remedy is selected, a final remedy selection report must be prepared to document details of the selected remedy and how the selected remedy meets 40 CFR §257.97(b) requirements. The final Selection of Remedy report will be certified by a qualified professional engineer and posted to the facility's publicly available CCR website.[2]

1.2.1 2019 CMA Report Summary

In accordance with 40 CFR §257.96(a), within 90 days of detecting Appendix IV SSLs, "*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 initial CMA report was completed on September 13, 2019, and an amended version was posted to the facility's publicly available CCR website on October 11, 2019.

The initial CMA report included five corrective measures alternatives based on information and the understanding of Site conditions at that time:

- Initial Alternative 1:
  - Closure in place (CIP) with in-situ stabilization and capping for the Ash Pond System;
  - capping for the Landfill; and
  - monitored natural attenuation (MNA).

[2] https://www.aesindiana.com/petersburg-generating-station

- Initial Alternative 2:
  - CIP with capping for the Ash Pond System and Landfill; and
  - hydraulic containment through groundwater pumping with ex-situ treatment.
- Initial Alternative 3:
  - CIP with capping for the Ash Pond System and Landfill;
  - hydraulic containment through groundwater pumping with ex-situ treatment; and
  - barrier wall west of the Ash Pond System.
- Initial Alternative 4:
  - CIP with capping and full perimeter barrier wall around the Ash Pond System;
  - capping for the Landfill; and
  - limited groundwater pumping (pressure relief) within the barrier wall with ex-situ treatment.
- Initial Alternative 5:
  - Closure by Removal (CBR) for the Ash Pond System;
  - capping for the Landfill; and
  - MNA.

The initial CMA report evaluated the five initial potential corrective measures alternatives with regard to each of the three balancing criteria: 1) long- and short-term effectiveness, protectiveness, and certainty of success; 2) effectiveness in controlling the source to reduce further releases; and 3) ease or difficulty of implementation.

The initial CMA report was prepared based on data available at the time (up to September 2019). Since preparation of the initial CMA report, additional sampling events, data evaluation, N&E investigation, risk evaluation, and groundwater modeling have been conducted and have been summarized in the N&E report (**Appendix A**). This supplemental information supports updating the CMA and alternatives to account for a more comprehensive understanding of Site conditions. This updated CMA is intended to more effectively address constituent concentrations detected at SSLs above GWPSs in groundwater near the Ash Pond System and Landfill based on the available supplemental information. For instance, results from the N&E investigation provided further delineation of affected groundwater which encompasses part of the Ash Pond System and Landfill and extends to the west toward the White River and updated groundwater modeling further refined the understanding of the influence of the White River on local groundwater. Based on the additional information, each of the alternatives outlined in this updated CMA report includes the implementation of source control measures to address CCR material contained in each of the Ash Pond System ponds and Landfill, as well as groundwater measures.

The updated CMA alternatives are presented and evaluated in Section 2.6.

1.2.2 N&E Investigation Activities Summary

Notifications identifying SSLs above the applicable GWPSs for Appendix IV constituents cadmium[3], cobalt[4], and molybdenum during assessment monitoring of Ponds A, A', and C, and for arsenic, lithium, and molybdenum during assessment monitoring of the Landfill were posted to the facility's publicly available CCR website on January 14, 2019, in accordance with 40 CFR §257.95(g). A supplemental notification identifying arsenic, cadmium[3], cobalt[4], and molybdenum as SSLs above the applicable GWPSs during assessment monitoring of Ponds A, A', and C was posted to the facility's publicly available CCR website in May 2025. Subsequently, pursuant to 40 CFR §257.95(g)(1) requirements, activities associated with the N&E investigation included:

- Installing additional N&E monitoring wells necessary to define the extent of affected groundwater;
- Collecting data regarding the nature and estimated quantity of material released;
- Installing and sampling at least one additional monitoring well at the facility boundary in the direction of constituent migration; and
- Sampling all background wells, CCR Rule groundwater monitoring system wells, and N&E monitoring wells for analysis of Appendix III and Appendix IV constituents to characterize the N&E of the release.

The N&E investigation, in accordance with 40 CFR §257.95(g)(1), was initiated in 2019 by installing N&E monitoring wells to the west of the Ash Pond System. Based on analytical results collected from those N&E monitoring wells and the CCR Rule groundwater monitoring system, additional N&E wells were installed at strategic locations and depths to the west and north of the Ash Pond System in 2021 and 2022.

An offsite investigation was completed as part of the N&E activities in 2023 to determine if groundwater or surface water had been affected west of the Ash Pond System. Nine temporary wells were installed by means of a barge within the White River corridor adjacent to the PGS. At each of the nine locations, replicate groundwater samples were collected from multiple depths beneath the White River. Analytical results from the groundwater samples collected showed a limited area beneath sampling location TMW-204 where affected groundwater required additional investigation (**Figure 1-4**). In October 2024, replicate groundwater samples (shallow, intermediate, and deep) were collected from temporary well location A-1 to the west of the White River near location TMW-204 (**Figure 1-4**). Analytical results from temporary well location A-1 indicated that there were no Appendix IV concentrations above the GWPSs, indicating that the molybdenum plume extends laterally to the White River but does not extend beyond. Additional information is provided in **Appendix A**.

As described in **Appendix A**, the Ash Pond System monitoring well network currently consists of 81 monitoring wells (including 14 CCR monitoring wells and 67 N&E monitoring wells). This includes 31 shallow zone wells (generally screened between 15 and 30 feet below ground surface [bgs]),

[3] An ASD was successfully completed pursuant to § 257.95(g)(3)(ii) in October 2019 for cadmium in monitoring well AP-8. The ASD report was provided as an attachment to the 2019 CCR Annual Groundwater Monitoring and Corrective Action Report dated January 30, 2020, for the AESI Petersburg Generating Station – Ash Pond System.
[4] An ASD was successfully completed pursuant to § 257.95(g)(3)(ii) in October 2019 for cobalt in monitoring well AP-8. The ASD report was provided as an attachment to the 2019 CCR Annual Groundwater Monitoring and Corrective Action Report dated January 30, 2020, for the AESI Petersburg Generating Station – Ash Pond System.

23 intermediate zone wells (generally screened between 30 and 50 feet bgs), and 27 deep zone wells (generally screened between 50 and 70 feet bgs).

The Landfill monitoring well network currently consists of 13 monitoring wells (including one background well, seven CCR monitoring wells, and five N&E monitoring wells). Of the 13 monitoring wells, eight are considered shallow zone wells (generally screened between 25 and 45 feet bgs), four are deep zone wells (generally screened between 35 and 100 feet bgs), and one well (MW-10) is screened at a depth that represents both the shallow and deep zones.

Groundwater samples from multiple rounds of CCR Rule groundwater sampling events have been collected from the Site's N&E monitoring wells to sufficiently characterize the N&E of groundwater affected by the Site's Ash Pond System and Landfill. Results of the N&E investigation have been documented in the N&E report (**Appendix A**), and a summary of N&E results is provided in Section 1.3.

1.3 N&E RESULTS SUMMARY

The N&E investigation activities performed at the Site (summarized in Section 1.2.2) have resulted in an enhanced understanding of the N&E of affected groundwater. The N&E report concluded that the nature and extent of affected groundwater at the Site has been sufficiently characterized to proceed with a review and update of the CMA. The results of the N&E investigation are summarized below and described further in the N&E report (**Appendix A**):

- Based on the evaluation of groundwater flow patterns and the chemical composition of groundwater the Ash Pond System has been identified as the source of arsenic and molybdenum SSLs above GWPSs detected in groundwater. The Landfill has been identified as the source of arsenic, lithium, and molybdenum SSLs above GWPSs detected in groundwater.
- The horizontal extent of affected groundwater covers approximately 370 acres, which encompasses part of areas beneath the Ash Pond System and Landfill and extends to the west and northwest of the Ash Pond System toward the White River. The vertical extent of affected groundwater is limited by relatively impermeable shale bedrock, which typically exists at approximately 65 feet bgs.
- At the Site, groundwater flow is driven by a high recharge zone near the Landfill, causing radial flow toward the north and west and discharging into the White River. Groundwater levels near the river generally rise and fall with the river but remain slightly higher, indicating groundwater flow into the river, though this can reverse during the wet season. Vertical gradients show more hydraulic connectivity to the west of the Ash Pond System and more separation near the Landfill due to a confining unit. The underlying bedrock constitutes an aquitard (or confining unit), which restricts downward constituent migration in groundwater.
- Evaluation of the N&E investigation results identified predominantly stable and decreasing constituent concentrations in affected groundwater over time.
- SSLs of arsenic, lithium, and molybdenum above GWPSs are confined within the PGS property boundaries.

1.4 GROUNDWATER RISK EVALUATION SUMMARY

The groundwater risk evaluation report (**Appendix B**) further describes the risk evaluation completed for the Site and the results of that evaluation. The completed groundwater risk evaluation demonstrates

that there are no adverse impacts to human health or the environment from constituents present in groundwater resulting from CCR material management practices at the Site's Ash Pond System and Landfill. Based on these conclusions, the remedies evaluated in this updated CMA report are considered protective of human health and the environment.

1.5 AREAS OF INTEREST FOR CORRECTIVE MEASURES

Based on results from the N&E investigation, the area of affected groundwater has been divided into five areas of interest (AOIs) to support assessment of tailored potential remedial alternatives that consider localized constituent concentrations, geochemical reactivity, and physical Site characteristics. Constituent reactivity, proximity to the Ash Pond System and Landfill, the hydrogeologic framework, and the geochemical environment were considered to develop these AOIs. AOIs are summarized in **Table 1-1** below and are presented on **Figure 1-4**. These AOIs are referenced throughout Section 2 in terms of evaluating and implementing potential corrective measures to address Appendix IV SSLs in groundwater.

Table 1-1: Area of Interest Summary

Area of Interest	Constituent (> GWPS)	Characteristics
AOI 1	Lithium and molybdenum	Encompasses areas beneath and immediately downgradient of the Landfill where SSLs of lithium and molybdenum have been identified.
AOI 2	Lithium and molybdenum	Encompasses areas within the Ash Pond System where SSLs of lithium and molybdenum have been identified.
AOI 3	Lithium and molybdenum	Encompasses areas downgradient to the west of Ponds A, A', and Former Pond D, and a portion of Former Pond B where SSLs of lithium and molybdenum have been identified at generally higher concentrations than in AOI 4.
AOI 4	Lithium and molybdenum	Encompasses areas downgradient to the west of portions of Former Pond B and Pond C where SSLs of lithium and molybdenum have been identified at generally lower concentrations than in AOI 3.
AOI 5	Arsenic	Three small areas in the vicinity of monitoring well locations MW-3, AP-2A, and MW-27B where isolated concentrations of arsenic exist above GWPS.

2. Updated Corrective Measures Assessment

As described in Section 1, this updated CMA report has been prepared to account for the supplemental information collected from comprehensive monitoring and investigations since preparation of the initial CMA report in 2019. This section outlines the CMA goals, summarizes conclusions from the initial 2019 CMA report, introduces the updated potential remedial alternatives, and evaluates those alternatives based on criteria outlined in the CCR Rule.

2.1 CORRECTIVE MEASURES ASSESSMENT GOALS

2.1.1 40 CFR §257.96(c) Assessment of Corrective Measures [CMA Criteria, as termed in this report]

In accordance with 40 CFR §257.96(c), a CMA is to be performed and must include an analysis of the effectiveness of potential corrective measures in meeting all the requirements and objectives of the remedy as described under 40 CFR §257.97 addressing at least the following:

> *(1) The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;*
>
> *(2) The time required to begin and complete the remedy;*
>
> *(3) The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).*

2.1.2 40 CFR §257.97(b) Selection of Remedy [Threshold Criteria, as termed in this report]

The evaluation of potential corrective measures is presented in Section 2.5. Based on the outcome of the potential corrective measures evaluation in Section 2.5, potential remedial alternatives (unique combinations of potential closure and groundwater measures) are identified and evaluated in Section 2.6 based on the requirements and objectives of 40 CFR §257.97(b):

> *(b) Remedies must:*
>
> *(1) Be protective of human health and the environment;*
>
> *(2) Attain the groundwater protection standard as specified pursuant to §257.95(h);*
>
> *(3) Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment;*
>
> *(4) Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems;*
>
> *(5) Comply with standards for management of wastes as specified in §257.98(d).*

2.1.3 40 CFR §257.97(c) Selection of Remedy [Balancing Criteria, as termed in this report]

Once these technologies are demonstrated to meet these Threshold Criteria, they are then further evaluated in Section 2.6 with respect to the following Balancing Criteria outlined in 40 CFR §257.97(c):

> *(c) In selecting a remedy that meets the standards of paragraph (b) of this section, the owner or operator of the CCR unit shall consider the following evaluation factors:*
>
> *(1) The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:*
>
> *(i) Magnitude of reduction of existing risks;*
>
> *(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy;*
>
> *(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;*
>
> *(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminant;*
>
> *(v) Time until full protection is achieved;*
>
> *(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;*
>
> *(vii) Long-term reliability of the engineering and institutional controls; and*
>
> *(viii) Potential need for replacement of the remedy.*
>
> *(2) The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:*
>
> *(i) The extent to which containment practices will reduce further releases; and*
>
> *(ii) The extent to which treatment technologies may be used.*
>
> *(3) The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:*
>
> *(i) Degree of difficulty associated with constructing the technology;*
>
> *(ii) Expected operational reliability of the technologies;*
>
> *(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;*
>
> *(iv) Availability of necessary equipment and specialists; and*
>
> *(v) Available capacity and location of needed treatment, storage, and disposal services.*
>
> *(4) The degree to which community concerns are addressed by a potential remedy(s).*

The CMA Criteria outlined in 40 CFR §257.96(c), Threshold Criteria outlined in 40 CFR §257.97(b), and Balancing Criteria outlined in 40 CFR §257.97(c) are evaluated in this report in terms of two primary categories of corrective measures (source control measures and groundwater measures):

- Source control measures pertain to methods of closing a CCR unit to provide a safe solution for CCR material management over time and to reduce the potential for future release of CCR material into the environment or CCR constituents into groundwater. Potential source control measures considered in this report for the Ash Pond System and Landfill are identified in Section 2.2.
- Groundwater measures pertain to methods of remediating constituent concentrations in groundwater with the objective of attaining GWPSs for Appendix IV constituents beyond the waste boundary of a CCR unit. Potential groundwater measures considered in this report for the Ash Pond System and Landfill are identified in Section 2.3.

Source control measures and groundwater measures identified in Section 2.2 and Section 2.3, respectively, are evaluated in Section 2.5 against the CMA Criteria. Unique combinations of potential source control measures and groundwater measures are then used to develop potential remedial alternatives that are evaluated against the Balancing Criteria in Section 2.6.

2.2 SOURCE CONTROL MEASURES

CCR material storage in the Ash Pond System and Landfill has resulted in leaching of CCR constituents into groundwater downgradient of the Ash Pond System and Landfill. Concentrations of arsenic, lithium, and molybdenum at SSLs above GWPSs have been and continue to be recorded in groundwater at and beyond the waste boundary of the Landfill, with arsenic and molybdenum also recorded at SSLs above GWPSs beyond the waste boundary of the Ash Pond System. CCR material historically stored in the Ash Pond System and Landfill have been identified as the source of those SSLs in groundwater based on the evaluation of groundwater flow patterns, the chemical composition of groundwater, and Site operational features, as summarized in the N&E report (**Appendix A**).

This report defines source control as a method or combination of methods to directly address the source of affected groundwater: the historical storage of CCR material in the Ash Pond System and Landfill. Closure of the Ash Pond System (which has already been completed by CIP) and the Landfill (which is underway by CIP) is the primary mechanism of source control to support the groundwater measures. The source control measures evaluated in this report consider CIP with the additional installation of a slurry wall and CBR of individual ponds within the Ash Pond System, as discussed below. Closure of the Landfill by capping in place began in May 2025 and is estimated to be completed in 2026. The source control measure being evaluated for the Landfill is CIP with a low-permeability landfill cover system, which is the closure approach currently being implemented for the Landfill. These source control measures are considered acceptable solutions to support CCR surface impoundment and CCR Landfill source control and closure required under the CCR Rule.

The source control measures under consideration for the Ash Pond System and Landfill are described in further detail in Section 2.2.1 through Section 2.2.3 below.

2.2.1 Closure in Place (CIP) with a Slurry Wall

The CIP with a slurry wall source control measure is under consideration for the Ash Pond System, which has already been closed by CIP. This source control measure considers the existing low-permeability

engineered cover system over Ponds A, A', C, and Former Pond B and additionally involves installing a low-permeability, cement-bentonite slurry wall around the perimeters of Ponds A, A', C, and Former Pond B and installing a low-capacity pumping system within the interior of the associate ponds to establish an inward hydraulic gradient of groundwater. These activities would occur in accordance with any required approval by IDEM of a new or modified Ash Pond Closure Plan. Former Pond D is currently overlain by asphalt and concrete pavement, which acts as a barrier layer that reduces infiltration into the underlying CCR material, and is surrounded by a sheet pile wall. A slurry wall would not be constructed around the southwest perimeter of Former Pond D due to the presence of multiple underground features that are necessary to the operation of the active wastewater treatment plant.

A low-permeability geomembrane and soil protective cap system is already installed for Ponds A, A', C, and Former Pond B, which restricts infiltration of precipitation into the underlying capped CCR, while the addition of a low-permeability slurry wall would limit potential post-closure interaction of CCR material with groundwater. The combination of limiting the CCR-groundwater interaction and capping the material with an engineered cap system would restrict the potential for leaching of CCR constituents into groundwater after installation of the slurry wall is complete. The existing cap is designed to meet the 1×10^{-5} centimeters per second permeability performance criterion required by the CCR Rule for CCR surface impoundment final cover systems (i.e., the cap is designed to be as permeable or less permeable than what is required under the CCR Rule, thereby further limiting the potential for post-closure leaching to occur from the closed pond[s]).

2.2.2 Closure by Removal (CBR)

The CBR source control measure is under consideration for Ponds A, A', C, and Former Pond B. This source control measure would involve the removal, offsite or onsite transportation, and beneficial use[5] or disposal of CCR material from Ponds A, A', C, and Former Pond B. An engineered CBR final grading plan would be prepared and adjusted in the field as needed to address the regrading of remaining onsite soil berm material and interior pond surfaces. The final grading would accommodate the backfill of as much of the excavated area as feasible, with a focus on eliminating steep and/or unsafe slopes and promoting drainage of stormwater runoff away from the excavated area post-closure. CBR would not include removal of CCR material from Former Pond D because the CCR material within Former Pond D is beneath the PGS wastewater treatment plant, which is active and necessary for PGS operation.

2.2.3 CIP with Low-Permeability Landfill Cover System

The CIP with a low-permeability landfill cover system source control measure considered for the Landfill is currently being implemented. This source control measure involves grading and compacting the CCR material, then installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) over the top of the CCR material.

The ClosureTurf® cover system encloses the CCR material and restricts infiltration of precipitation into the underlying CCR. The ClosureTurf® is designed to meet the 1×10^{-5} centimeters per second permeability performance criterion required by the CCR Rule for CCR landfill final cover systems (i.e., the cap is designed to be as permeable or less permeable than what is required under the CCR Rule, thereby further limiting the potential for post-closure leaching to occur from the closed Landfill).

[5] Beneficial use of the CCR material removed from the CCR units would meet the beneficial use criteria established by the USEPA in 40 CFR §257.53.

2.3 GROUNDWATER MEASURES

As summarized in previous sections, Appendix IV constituents arsenic, lithium, and molybdenum are detected at SSLs above GWPSs in one or more monitoring wells downgradient of the Ash Pond System and Landfill. This report defines a groundwater measure as a method or combination of methods to directly address the constituents in affected groundwater (in this case, Appendix IV SSLs above GWPSs downgradient of the Ash Pond System and Landfill). Based on the unique combination of constituent distribution, constituent reactivity, and hydrogeologic influences across the Site, the extent of affected groundwater has been grouped into five different AOIs (as discussed in Section 1.5 and as shown in **Figure 1-4**) for remedy evaluation. The description for each groundwater measure refers to one or more AOIs where the measure may be most favorable to apply; however, groundwater measures may be considered for supplemental application in other AOIs in the future.

Groundwater measures have been grouped into four groups based on their approach: hydraulic containment, MNA, in-situ treatment, and water infiltration. Although the groundwater measures of MNA and in-situ treatment through a PRB are not included in remedial alternatives identified and evaluated in Section 2.6, those groundwater measures are considered and evaluated in this section as potential supplementary groundwater measures that may be considered for implementation in the future.

The following terms are frequently used throughout the discussion of groundwater measures and remedial alternatives:

- In-situ – refers to a process in which a substance remains in its original location.
- Ex-situ – refers to a process in which a substance is temporarily or permanently transferred or relocated.

2.3.1 Hydraulic Containment

This section provides a description of four potential groundwater measures based on hydraulic containment that could be implemented at the Site to remediate affected groundwater:

- Hydraulic Containment through Groundwater Pumping;
- Hydraulic Containment through Groundwater Pumping and Ex-situ Treatment;
- Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells; and
- Hydraulic Containment through a Slurry Wall.

2.3.1.1 Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4)

This groundwater measure is primarily under consideration for addressing lithium and molybdenum SSLs above GWPSs in AOIs 1, 2, 3, and 4.

Hydraulic containment within AOI 2 would be limited to groundwater pumping within the interior of the Ash Pond System under a scenario of CIP with a slurry wall as described in Section 2.2.1.
Lithium and molybdenum within AOIs 1, 3, and 4 would be addressed via hydraulic containment through groundwater pumping from a series of extraction wells or interceptor trenches that could be installed

downgradient to the west of the Ash Pond System boundary and/or the Landfill boundary that would pump at a sufficient rate to hydraulically control the migration of the constituents downgradient. Based on the permeability of the soils in the area of affected groundwater, an interceptor trench may be more effective for capturing groundwater than a series of extraction wells.

With this measure, extracted groundwater would be characterized and appropriately managed.

2.3.1.2 Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4)

This groundwater measure is primarily under consideration for addressing lithium and molybdenum SSLs above GWPSs in AOIs 1, 2, 3, and 4. This measure would be similar to the groundwater pumping measure described above in Section 2.3.1.1, except that the extracted groundwater would be treated ex-situ, potentially with an ion exchange or a reverse osmosis (RO) treatment system prior to discharge in accordance with NPDES permit requirements or offsite disposal.

2.3.1.3 Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, -with Injection Wells (AOI 3)

This groundwater measure is primarily under consideration for addressing lithium and molybdenum SSLs above GWPSs in AOI 3. This measure would be similar to the measure described in Section 2.3.1.2, with the exception that this measure additionally includes injection of water (likely treated extraction system water) into groundwater immediately upgradient of the extraction well system to produce a recirculation process known as a closed-loop groundwater treatment system. The extraction and injection of water upgradient of the extraction system will reduce constituent concentrations by both removing and flushing constituents in groundwater within the closed-loop area of influence. Treatment of groundwater would be managed under an approved injection permit, including meeting constituent concentration limit requirements.

2.3.1.4 Hydraulic Containment through a Slurry Wall (AOI 2)

This groundwater measure is primarily under consideration for addressing lithium and molybdenum SSLs above GWPSs in AOI 2.

Under source control measures that do not involve CIP with a slurry wall for the Ash Pond System, a slurry wall could be installed as a supplemental measure farther downgradient to the west to limit the continued downgradient migration of affected groundwater.

2.3.2 Monitored Natural Attenuation

Although MNA is not included in the remedial alternatives identified and evaluated in Section 2.6, MNA is considered and evaluated in this section as a potential supplementary groundwater measure that may be considered for implementation in the future. MNA[6] is a groundwater measure that involves the evaluation of data collected from historical and ongoing groundwater monitoring to demonstrate that physical, chemical, and biological processes naturally occurring in the subsurface are sufficient to adequately remediate (or reduce the concentration of) a SSL to below the GWPS.

Data evaluation indicates natural processes of attenuation already active in the subsurface are anticipated to achieve the GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill. Therefore, additional active groundwater measures are necessary, and MNA is currently not included in the remedial alternatives evaluated in Section 2.6. As constituent concentrations reduce in the future in response to implementation of a selected remedy, MNA may supplement those measures to achieve GWPSs in certain areas of the Site.

2.3.3 In-situ Treatment

This section provides a description of two potential groundwater measures using in-situ treatment that could be implemented at the Site to remediate affected groundwater:

- In-situ Treatment through In-situ Redox Manipulation (ISRM); and
- In-situ Treatment through a Permeable Reactive Barrier (PRB).

2.3.3.1 In-situ Treatment through In-situ Redox Manipulation (AOI 4 and AOI 5)

This groundwater measure is primarily under consideration for addressing arsenic, lithium, and molybdenum SSLs above GWPSs in AOIs 4 and 5. ISRM could include air sparging or subsurface injection of a reagent, such as emulsified vegetable oil (EVO) or ferric chloride.

In-situ treatment through ISRM would involve spot treatment that can effectively immobilize the target constituents in groundwater. Although in-situ treatment could occur elsewhere at the Site, it is most favorably considered for potential implementation downgradient of the Ash Pond System boundary within AOI 4 or as targeted spot treatment within AOI 5. Although this measure may not effectively treat lithium SSLs in groundwater, effective treatment of arsenic and molybdenum SSLs would be the primary remedial objective.

[6] MNA is defined by the USEPA as "…the reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. The 'natural attenuation processes' that are at work in such a remediation approach include a variety of physical, chemical or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in-situ processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants." (USEPA, 1999, page 3)

2.3.3.2 In-situ Treatment through a Permeable Reactive Barrier

Although in-situ treatment through a PRB is not included in the remedial alternatives identified and evaluated in Section 2.6, this groundwater measure is considered and evaluated in this section as a potential supplementary groundwater measure that may be considered for implementation in the future. A PRB is a trench constructed in the subsurface that is filled with a combination of relatively porous material and reactive media. Although PRB dimensions can vary widely based on site conditions, a PRB is typically longer (generally tens to hundreds of feet) and deeper (generally 10 to 100 feet) relative to its width (generally a few to several feet). The purpose of a PRB is to provide in-situ treatment of target constituents in affected groundwater along a vertical plane that is typically aligned perpendicular to the direction of downgradient groundwater flow. The relatively porous (i.e., permeable) nature of a PRB promotes the flow of affected groundwater through the PRB, while the reactive media mixture is designed to promote precipitation and adsorption of constituents in groundwater onto the solid-phase materials of the PRB. The widespread geochemical reactivity along the PRB is designed to create an effective barrier to constituent migration downgradient from the PRB while continuing to allow groundwater flow through the PRB.

2.3.4 Water Infiltration through Injection Wells (AOI 3)

This groundwater measure is considered within AOI 3 as part of the Hydraulic Containment through Groundwater Pumping, Ex-Situ Treatment, with Injection Wells groundwater measure discussed in Section 2.3.1.3. In addition, water infiltration through injection wells could be used in the future as a stand-alone groundwater measure to supplement other implemented groundwater measures.

This groundwater measure would involve the injection of water into areas with affected groundwater to produce an ongoing water flushing effect, reducing constituent concentrations over time. Water infiltration through injection wells treats groundwater by increasing the rates of pore volume exchange and reducing the cleanup time frame.

2.4 OTHER CMA CONSIDERATIONS

The potential source control measures described in Section 2.2 and the groundwater measures described in Section 2.3 were developed based on consideration of the array of potential source control measures and groundwater measures available to address affected groundwater at the Site. Additional potential corrective measures beyond those listed in Sections 2.2 and 2.3 that were considered for preliminary evaluation in this CMA included:

- Other potential source control measures considered:
  - CBR of the Ash Pond System with onsite landfill disposal;
  - Hybrid CIP of the Ash Pond System; and
  - CBR of the Landfill.
- Other potential groundwater measures considered:
  - Phytoremediation.

The other potential corrective measures listed above were not retained for further consideration in this updated CMA due to Site-specific conditions and limitations, including but not limited to the Site hydrogeologic and geochemical framework, the Site land/infrastructure configuration and geospatial

disposition of the affected groundwater, and finally the relative impracticability of installing and/or limited remedial benefit of implementing the subject remedy elements.

CBR of Former Pond D and construction of a slurry wall around the perimeter of Former Pond D were excluded from consideration because the CCR material within Former Pond D is located beneath the PGS wastewater treatment plant, which is necessary for the continued generation of power at PGS. The wastewater treatment plant includes structures, buildings, and underground utilities that are not readily replaceable or able to being easily relocated.

In addition to source control measure(s) and groundwater measure(s), AESI would continue to implement post-closure care activities for the Ash Pond System and initiate post-closure care activities for the Landfill after the completion of Landfill closure, including compliance with applicable requirements for post-closure groundwater monitoring and maintenance for capped CCR material.

2.5 EVALUATION OF POTENTIAL CORRECTIVE MEASURES

This section presents an evaluation of the potential source control measures presented in Section 2.2 and the potential groundwater measures presented in Section 2.3 based on the CMA criteria specified in 40 CFR §257.96(c) and outlined in Section 2.1.1. A summary of this evaluation is presented in **Table 2-1A** for source control measures and **Table 2-1B** for groundwater measures.

2.5.1 Performance

This criterion evaluates the ability of each of the source control measures to effectively reduce the potential for future release of CCR material into the environment and the ability of each of the groundwater measures to remediate Appendix IV constituent concentrations in groundwater to below GWPSs beyond the waste boundaries of the Ash Pond System and Landfill.

- Source Control Measures:
  - CIP with a Slurry Wall – This measure would provide moderate to high performance for source control of the Ash Pond System. CIP with a Slurry Wall would provide an effective solution for onsite CCR material management. The low-permeability, cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B would limit the potential for CCR-groundwater interaction in those ponds. The existing engineered cover systems[7] were installed and enclose the CCR material and restrict infiltration. Implementation of a limited groundwater pumping system on the interior of Ponds A, A', C, and Former Pond B would maintain an inward gradient. Engineering design and construction may need to include a long-term solution for preventing potential CCR-groundwater interaction in Former Pond D, where slurry wall construction along the southwestern boundary of Former Pond D is impractical due to the presence of underground utilities.
  - CBR – This measure would provide high performance for source control of the Ash Pond System. CBR would entail removal of CCR material from Ponds A, A', C, and Former Pond B and disposal in an offsite lined, permitted landfill or beneficial use. Complete removal of the source from the Ponds A, A', C, and Former Pond B would eliminate the potential for future

[7] Low-permeability engineered cover systems have been installed over CCR material within Ponds A and A' in 2023, Former Pond B in 2018, and Pond C in 2021. CCR material within the Former Pond D footprint is overlain by asphalt and concrete pavement and surrounded by a sheet pile wall.

releases of CCR material to the environment or CCR constituents to groundwater from these ponds. Along the southern boundary of Pond A, adjacent to where a sheet pile wall was installed along the Former Pond D boundary, engineering design and construction for CBR of Pond A would need to include a long-term solution for continuing to effectively manage CCR material in Former Pond D in place and to prevent potential CCR-groundwater interaction in Former Pond D.

  - Low-permeability Landfill cover system – This measure would provide high performance for source control of the Landfill as a long-term solution for management of landfilled CCR material by installing a ClosureTurf® cover system that encloses the CCR material and restricts infiltration.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure would provide moderate to high performance for addressing SSLs in AOI 1, AOI 2, AOI 3, and AOI 4. Groundwater pumping is effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Groundwater extraction effluent would be appropriately managed, including potential discharge in accordance with a NPDES permit, offsite disposal, or other regulatory approved methods.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure would provide moderate to high performance for addressing SSLs in AOI 1, AOI 2, AOI 3, and AOI 4. Groundwater pumping is effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Ex-situ treatment of extracted groundwater would further treat constituents in the effluent prior to being discharged in accordance with a NPDES permit or offsite disposal, or other regulatory approved methods.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – This groundwater measure would provide high performance for addressing SSLs in AOI 3. Groundwater pumping is highly effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Injection of water upgradient of the extraction system would further increase the performance by increasing the rate of pore volume exchange, resulting in an increased rate of remediation compared to groundwater pumping alone.
  - Hydraulic Containment through a Slurry Wall (AOI 2) – This groundwater measure would provide moderate to high performance for addressing SSLs in AOI 2. Hydraulic containment through a slurry wall downgradient of the Ash Pond System would be effective at limiting the potential downgradient migration of constituents in groundwater.
  - MNA – This groundwater measure would provide low to moderate performance for addressing SSLs at the Site. A combination of physical, chemical, and biological attenuation processes is expected to help reduce arsenic and molybdenum concentrations over time. Lithium concentrations are expected to reduce over time via primarily physical processes. MNA effectiveness may be limited in areas where constituent concentrations are well above the GWPS, particularly immediately downgradient of the Landfill and Ash Pond System boundaries.

- In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure would provide moderate performance for addressing SSLs in AOI 4 and AOI 5 by limiting the migration and concentrations of geochemically reactive SSLs in groundwater in localized areas where the aquifer redox conditions will not be affected by oxygenated river water. ISRM is anticipated to be effective at treating arsenic, and to a lesser degree, molybdenum. ISRM is generally most useful for spot treatment in areas of limited lateral continuity of elevated SSLs in groundwater. Pilot and/or bench-scale laboratory testing would be necessary to identify suitable reagents and evaluate their treatment performance based on Site conditions. The main factor that affects the performance certainty is aquifer heterogeneity, which influences the effectiveness of reagent distribution in the affected zone.
- In-Situ Treatment through a PRB – This groundwater measure would provide moderate performance for addressing molybdenum SSLs at the Site. Use of a PRB is anticipated to limit the migration and concentrations of geochemically reactive constituents (arsenic, and to a lesser degree, molybdenum) in groundwater at targeted sections along the downgradient Ash Pond System boundary and/or Landfill boundary. Pilot and/or bench-scale laboratory testing would be required to identify suitable reagents and porous media and evaluate their treatment effectiveness based on Site conditions.
- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure would provide moderate performance for addressing SSLs in AOI 3. Water infiltration through injection wells is expected to augment natural attenuation processes that are already active in the subsurface. Water infiltration could also be coupled with other groundwater measures, such as groundwater pumping, to augment the benefits of those groundwater measures. This augmentation is expected to accelerate the rate of decrease of constituent concentrations over time by increasing the magnitude of physical dilution and dispersion attenuation processes and the rate of pore volume exchange, resulting in an increased rate of remediation.

2.5.2 Reliability

This criterion evaluates the degree to which source control and groundwater measures will consistently and reliably perform their intended functions over time. For source control measures, the time frame for evaluating reliability extends through the post-closure period and into the long term. For groundwater measures, the time frame for evaluating reliability extends from when the measures have been installed until the Appendix IV GWPSs are achieved and the applicable measures are removed from service.

- Source Control Measures:
  - CIP with a Slurry Wall – This measure would be moderately reliable for source control of the Ash Pond System. CIP with a slurry wall is a proven engineering method that provides an effective solution for CCR surface impoundment closure. Data are limited on the performance of slurry walls beyond 40 to 50 years because the implementation of slurry wall technology only began during the last few decades. The slurry wall may need to be maintained over time to continue limiting the potential for CCR-groundwater interaction, and the limited groundwater pumping system would need to be maintained over time to continue to maintain an inward gradient. A post-closure maintenance plan would be

implemented during the post-closure period to further ensure the performance of this source control measure over time.

- CBR – This measure would be highly reliable for source control of the Ash Pond System. CBR is a proven engineering method that provides an effective solution for CCR surface impoundment closure. After excavation is complete, no CCR material would remain within Ponds A, A', C, and Former Pond B and the excavation area within the former waste boundary of those ponds would be graded to optimize slopes and promote post-closure stormwater drainage. The removal of the CCR material from Ponds A, A', C, and Former Pond B would prevent the future release of CCR material into the environment. Excavated CCR material would either be disposed of offsite or beneficially used. Disposal of the excavated CCR material would take place at a permitted offsite landfill that would be designed to meet all applicable regulatory criteria and provide reliable storage for the excavated CCR material. Any beneficial use of the excavated CCR material would meet the beneficial use criteria established by the USEPA.
- Low-permeability Landfill cover system – This measure would provide high reliability and is a proven engineering method that provides an effective solution for CCR Landfill source control. A post-closure maintenance plan would be implemented during the post-closure period to further ensure the performance of this source control measure over time.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure would provide moderate to high reliability for addressing SSLs in AOI 1, AOI 2, AOI 3, and AOI 4 until GWPSs are achieved in those AOIs. Groundwater pumping is expected to be a reliable remedy, although occasional operations and maintenance (O&M) needs may require temporary system shutoff and maintenance to ensure reliable system operations. Preliminary analyses indicate that iron fouling/biofouling[8] may be a concern due to the general geochemistry of the groundwater at the Site, including the high dissolved and total iron levels, in downgradient groundwater.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure would provide moderate to high reliability for addressing SSLs in AOI 1, AOI 2, AOI 3, and AOI 4 until the GWPSs are achieved in those AOIs. Groundwater pumping and ex-situ treatment is expected to be a reliable remedy, although both systems would require occasional O&M activities that involve temporary system shutoff and maintenance to ensure reliable system operations. Preliminary analyses indicate that iron fouling/biofouling may be a concern due to the general geochemistry of the downgradient groundwater.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – This groundwater measure is expected to provide moderate to high reliability for addressing SSLs in AOI 3. Groundwater pumping, ex-situ treatment, and injection is expected to be a reliable remedy, although occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations. Preliminary analyses

[8] Iron fouling in groundwater wells refers to the buildup of iron-related deposits (primarily iron bacteria, iron oxides, or hydroxides) that clog or impair well infrastructure and reduce water flow and/or water quality. Iron fouling generally results from the interaction of ferrous iron (Fe^{2+}) in groundwater with oxygen or microorganisms, leading to the formation of insoluble ferric iron (Fe^{3+}) precipitates, like iron oxides or hydroxides.

indicate that biofouling may be a concern due to the general geochemistry of the downgradient groundwater.

- Hydraulic Containment through a Slurry Wall (AOI 2) – This groundwater measure is expected to provide moderate reliability for addressing SSLs in AOI 2. Use of a slurry wall is a proven engineering method to limit interaction between CCR material and groundwater and to limit the downgradient migration of constituents in groundwater. Data are limited on the performance beyond 40 to 50 years, and the slurry wall may need to be maintained over time to continue limiting the potential for interaction between CCR material and groundwater.
- MNA – This groundwater measure would provide high reliability for addressing SSLs at the farthest distance downgradient of the Ash Pond System until the GWPSs are achieved. MNA relies on natural processes of attenuation already active in the subsurface to effectively address the target constituent(s). MNA relies on processes that are naturally ongoing, source control would be complete, and geochemical conditions within the target AOIs are not expected to change significantly post-closure. Therefore, MNA is considered highly reliable for reducing SSL concentrations in portions of affected groundwater farthest from the Ash Pond System and where the concentrations are slightly greater than the GWPSs and not increasing, although modeling simulations indicate GWPSs may not be achieved within a reasonable time frame by MNA alone.
- In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure would provide moderate to high reliability for addressing SSLs in AOI 4 and AOI 5 until the GWPSs are achieved. ISRM is expected to be a reliable remedy, although its reliability is dependent on the stability of geochemical conditions over time to maintain the stability of precipitated molybdenum. Occasional O&M needs may also arise that require temporary system shutoff and maintenance to ensure system operational efficiency and effectiveness. The use of EVO, an acidic ferrous iron solution, or a combination of ferric oxide solids with air sparging are reliable remediation techniques that incorporate materials that are readily available.
- In-Situ Treatment through a PRB – This groundwater measure is expected to provide moderate reliability for addressing SSLs at the Site, although its reliability is dependent on the stability of geochemical conditions over time to maintain the stability of precipitated molybdenum. Replacement of reactive material within a PRB may be necessary over time if absorption and precipitation of constituents within the PRB (i.e., clogging) renders it ineffective at continuing to treat affected groundwater over time.
- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure is expected to provide moderate to high reliability for addressing SSLs in AOI 3. Water infiltration is expected to be reliable in treating the SSLs in the area downgradient of the injection wells, as it relies on enhanced dilution and dispersion and the natural processes of attenuation already active in the subsurface to effectively address the target constituent(s). Occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations.

2.5.3 Ease of Implementation

This criterion evaluates the degree of difficulty in implementing the source control and groundwater measures.

- Source Control Measures:

- CIP with a Slurry Wall – This source control measure is expected to require moderate difficulty to complete; therefore, it would be implemented with moderate ease. A slurry wall to the target depth (installed to the top of bedrock) would entail the use of heavy equipment. Activities to support O&M of the post-closure final cover system and limited pumping system would be required.
- CBR – This source control measure is expected to require a high level of difficulty to implement (low level of ease). CBR requires a significant amount of heavy equipment and large-scale construction activities, including large-scale dewatering, complete removal of CCR material, and Site regrading. In addition, substantial offsite transportation and disposal efforts would be required that would necessitate a large number of haul trucks, truck trips, and significant truck miles driven across public roads to dispose of the excavated CCR material in a permitted, offsite landfill. A substantial amount of available landfill space would also be necessary to dispose of the excavated CCR material, which may result in increased difficulty in identifying possible options for implementing CBR. If the CCR material is to be beneficially used, additional infrastructure may be required onsite to process the CCR material prior to beneficial use. Additional difficulty is presented by having to excavate material along the southern boundary of Pond A, adjacent to where a sheet pile wall was installed along the Former Pond D boundary.
- Low-permeability Landfill cover system – This source control measure is expected to require a low level of difficulty to implement. Installation of a low-permeability cover system over the Landfill would involve a minimal amount of soil handling via use of heavy equipment and large-scale construction activities and the CCR material would remain within the footprint of the Landfill throughout the closure process. Activities to support O&M of the post-closure cover system would be required; however, O&M activities are expected to be minimal due to the use of a ClosureTurf® cover system that is not subject to ongoing erosion and sedimentation issues.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure is expected to require a low to moderate level of difficulty to implement to address SSLs in AOI 1, AOI 2, AOI 3, and AOI 4. Groundwater extraction wells or interceptor trenches and associated infrastructure would be installed downgradient to the west of the Landfill and/or downgradient to the west of the Ash Pond System.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure is expected to require a moderate level of difficulty to implement to address SSLs in AOI 1, AOI 2, AOI 3, and AOI 4. Groundwater extraction wells, interceptor trenches, ex-situ treatment system, and associated infrastructure would be installed downgradient to the west of the Landfill and/or downgradient to the west of the Ash Pond System. The ex-situ treatment system would be sized to manage potential treatment flow rates and would involve additional construction and O&M activities.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – This groundwater measure would require moderate difficulty to implement to address SSLs in AOI 3. Installation of groundwater extraction wells, interceptor trenches, ex-situ treatment system, injection wells, and associated infrastructure would occur downgradient to the west of the Landfill and/or downgradient to the west of the Ash Pond

System. The ex-situ treatment system would be sized to manage potential treatment flow rates and involve additional construction and O&M activities.

- Hydraulic Containment through a Slurry Wall (AOI 2) – This groundwater measure would require moderate to high difficulty to implement to address the SSLs in AOI 2. Construction of a slurry wall to the target depth (installed to the top of bedrock) would entail the use of specialized heavy equipment. Slurry walls are typically installed up to 100 feet bgs. The approximate depth to bedrock downgradient of the Ash Pond System ranges from 65 to 75 feet bgs. The anticipated target depth is considered reasonable for implementation of slurry wall construction.
- MNA – This groundwater measure is expected to require a low level of difficulty to implement. Natural attenuation processes are already active in the subsurface, and a groundwater monitoring system already exists to continue evaluating MNA effectiveness. Therefore, continued groundwater monitoring is anticipated to be the primary implementation procedure for MNA. Data obtained from ongoing groundwater monitoring will continue to be evaluated to confirm if the existing CCR Rule groundwater monitoring system is sufficient or whether additional monitoring well installation may be needed to demonstrate the effectiveness of MNA.
- In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure is expected to require a moderate level of difficulty to implement. ISRM would be limited to spot-treat areas with arsenic in AOI 5 and within localized downgradient areas with molybdenum within AOI 4 where SSLs are elevated. In-situ injection of EVO or ferric chloride or generation of ferric oxides (with potential air sparging) would be limited in coverage to spot-treat areas with arsenic and/or molybdenum SSLs. Bench-scale and pilot testing and engineering design would likely be necessary for implementation of the treatment system. The materials needed for in-situ treatment are anticipated to be readily available.
- In-Situ Treatment through a PRB – This groundwater measure is expected to require a moderate to high level of difficulty to implement at the Site. Installation of a PRB or series of PRBs along portions of the downgradient Ash Pond System boundary and/or Landfill boundary would entail a moderate to high level of difficulty to implement due to the length of affected groundwater and existing infrastructure. Initial PRB construction would involve pilot testing, likely along a discrete portion of the Ash Pond System or Landfill boundary where constituent concentrations are highest, with results of the pilot test serving to inform potential full-scale implementation.
- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure would require moderate difficulty to implement to address SSLs in AOI 3. Installation of water injection wells would occur in select areas near the downgradient boundary of the Ash Pond System and/or Landfill where concentrations are highest. A reliable source of water for subsurface injection would need to be identified.

2.5.4 Potential Safety Impacts

This criterion evaluates potential safety impacts that could result from the implementation of the source control and groundwater measures. The following evaluation assumes adherence to applicable health and safety regulations and requirements, including health and safety and closure/post-closure plans, as well as implementation of proper best management practices (BMPs) and personal protective equipment (PPE) to help mitigate the potential for safety impacts.

- Source Control Measures:
  - CIP with a Slurry Wall – This source control measure has a moderate potential for safety impacts. Potential safety impacts could result from heavy equipment and large-scale construction activities for installing a limited groundwater pumping system and installing a slurry wall around the perimeter of Ponds A, A', C, and Former Pond B.
  - CBR – This source control measure has a high potential for safety impacts. Potential safety impacts associated with CBR could result from heavy equipment and large-scale construction activities over an extended time period for dewatering, excavating all CCR material from Ponds A, A', C, and Former Pond B; transporting the excavated CCR material over public roads, and disposing of the excavated CCR material in a permitted, offsite landfill or transporting the excavated CCR material offsite for beneficial use.
  - Low-permeability Landfill cover system – This source control measure has a low potential for safety impacts that could result from heavy equipment and large-scale construction activities over a period of less than one year for importing clean soil for fill, regrading, and capping.
- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a low to moderate potential for safety impacts. Potential safety impacts associated with groundwater pumping could result from clearing/grading, construction, and O&M of the groundwater extraction system.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a moderate potential for safety impacts. Potential safety impacts associated with groundwater pumping and ex-situ treatment could result from clearing/grading, construction, and O&M of the groundwater extraction system and the ex-situ groundwater treatment system.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, and with Injection Wells (AOI 3) – This groundwater measure has a moderate potential for safety impacts. Potential safety impacts could result from clearing/grading, construction, and O&M of the groundwater extraction, ex-situ treatment, and injection system.
  - Hydraulic Containment through a Slurry Wall (AOI 2) – This groundwater measure has a moderate potential for safety impacts. Potential safety impacts could result from clearing/grading and construction of the slurry wall system.
  - MNA – This groundwater measure has no anticipated potential for safety impacts since natural attenuation is occurring and will continue without external action/activity.
  - In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure has a low to moderate potential for safety impacts. Potential safety impacts associated with in-situ treatment could result from construction and O&M to implement the technologies associated with ISRM.
  - In-Situ Treatment through a PRB – This groundwater measure has a moderate potential for safety impacts. Potential safety impacts could result from trenching and construction of a PRB or series of PRBs along the downgradient boundary of the Ash Pond System and/or Landfill.

- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure has a moderate potential for safety impacts. Potential safety impacts could result from clearing/grading, construction, and O&M of the injection system.

2.5.5 Potential Cross-Media Impacts

This criterion evaluates potential impacts to other environmental media that could result from the implementation of the source control and groundwater measures. The following evaluation assumes adherence to applicable environmental regulations and requirements, including closure/post-closure and O&M plans, as well as implementation of proper BMPs to help mitigate the potential for cross-media impacts.

- Source Control Measures:
  - CIP with a Slurry Wall – This source control measure has low potential for cross-media impacts to additional areas onsite or offsite because closure activities have been completed and CCR material will remain within the existing boundaries of the Ash Pond System. There is also a low potential for cross-media impacts as a result of limited groundwater pumping on the interior of the Ash Pond System to maintain an inward gradient.
  - CBR – This source control measure has a moderate to high potential for cross-media impacts. CBR presents a moderate to high potential for cross-media impacts to additional areas onsite or offsite during closure activities associated with the transportation and disposal of CCR material offsite (e.g., potential impacts to soil, water, and air). The potential for cross-media impacts would be low post-closure because the CCR material would be disposed of and remain stored within a permitted, lined landfill, which would remove the CCR material from the Site and keep the CCR material isolated from the environment, or would be beneficially used in accordance with applicable regulations and requirements.
  - Low-permeability Landfill cover system – This source control measure has a very low potential for cross-media impacts to additional areas onsite or offsite during closure activities because CCR material would be kept within the existing boundaries of the Landfill. Presents a very low potential for post-closure cross-media impacts through the use of an engineered ClosureTurf® cover system.
- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a low to moderate potential for cross-media impacts because affected groundwater would be extracted from the subsurface and because the extracted groundwater would be characterized and appropriately managed (e.g., NPDES discharge or offsite disposal).
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a moderate potential for cross-media impacts as a result of extracting affected groundwater from the subsurface; discharging, disposing of, or managing the treated groundwater; and generating a secondary waste stream (e.g., ion exchange media and RO reject water).
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – This groundwater measure has a moderate potential for cross-media impacts as a result of extracting affected groundwater from the subsurface, treating the groundwater

ex-situ, injecting water (likely treated extraction system water), and generating a secondary waste stream (e.g., ion exchange media and RO reject water).

- Hydraulic Containment through a Slurry Wall (AOI 2) – This groundwater measure has a low potential for cross-media impacts since affected groundwater remains in-situ.
- MNA– This groundwater measure has a very low potential for cross-media impacts because affected groundwater remains in-situ, except for the minimal pumping required for groundwater monitoring.
- In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure has a low potential for cross-media impacts because affected groundwater remains in-situ.
- In-Situ Treatment through a PRB– This groundwater measure has a low potential for cross-media impacts because affected groundwater remains in-situ.
- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure has a low potential for cross-media impacts because affected groundwater remains in-situ.

2.5.6 Potential Exposure to Residual Contamination

This criterion evaluates the potential for exposure to any remaining contamination after the source control and groundwater measures have been implemented. Potential exposure pathways do not currently pose an adverse risk to human health or the environment (**Appendix B**), and potential future exposures to affected groundwater would also not be anticipated to present an adverse risk to human health or the environment under any of the source control or groundwater measures that entail potential exposure to affected groundwater. The following evaluation assumes adherence to applicable environmental, health, and safety regulations and requirements, including health and safety and closure/post-closure plans, as well as implementation of proper BMPs and PPE to help mitigate the potential for exposure to residual contamination.

- Source Control Measures:
  - CIP with a Slurry Wall – This source control measure has a low potential for post-closure exposure to residual contamination impacts through use of the existing engineered final cover systems, which act as an engineering control to mitigate the potential for exposure of humans or environmental receptors to CCR material. Limited groundwater pumping to maintain an inward gradient in the Ash Pond System would introduce a low potential for additional exposure to residual contamination because the affected groundwater in that area of the Site would be pumped from the subsurface and conveyed above the ground where accidental release to the environment with potential for Site worker exposure could occur; however, direct exposure to affected groundwater would not be likely.
  - CBR – This source control measure has a very low potential for exposure to residual contamination after closure is complete because CCR material would be removed from the Site and stored in a permitted offsite landfill or beneficially used. Removal of CCR material from the Site would eliminate the potential for exposure of humans or environmental receptors to CCR material after closure is complete.
  - Low-permeability Landfill cover system – This source control measure has a low potential for exposure to residual contamination impacts through use of a ClosureTurf® cover system, which would act as an engineering control to mitigate the potential for exposure of humans or environmental receptors to CCR material after closure is complete.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a low potential for exposure to residual contamination because extracted groundwater would be characterized and appropriately managed (e.g., NPDES discharge and/or offsite disposal). Pumping affected groundwater from the extraction wells would introduce a limited potential for additional exposure to residual contamination because the affected groundwater in that area of the Site would be pumped from the subsurface and conveyed above the ground where accidental release to the environment with potential for Site worker exposure could occur; however, direct exposure to affected groundwater would not be likely.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – This groundwater measure has a moderate potential for exposure to residual contamination due to the generation of a secondary waste stream (e.g., ion exchange media and RO reject water) during the ex-situ treatment process, in addition to the limited potential for exposure resulting from the extracted groundwater. Also, pumping affected groundwater from the extraction wells would introduce a limited potential for additional exposure to residual contamination because the affected groundwater in that area of the Site would be pumped from the subsurface and conveyed above the ground where accidental release to the environment with potential for Site worker exposure could occur; however, direct exposure to affected groundwater would not be likely.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – This groundwater measure has a moderate potential for exposure to residual contamination due to the generation of a secondary waste stream (e.g., ion exchange media and RO reject water) during the ex-situ treatment process, in addition to the limited potential for exposure resulting from the extracted groundwater. Also, pumping affected groundwater from the extraction wells would introduce a limited potential for additional exposure to residual contamination because the affected groundwater in that area of the Site would be pumped from the subsurface and conveyed above the ground where accidental release to the environment with potential for Site worker exposure could occur; however, direct exposure to affected groundwater would not be likely.
  - Hydraulic Containment through a Slurry Wall (AOI 2) –This groundwater measure has a low to very low potential for exposure to residual contamination because the affected groundwater remains in-situ and no secondary waste streams would be generated during the slurry walls installation process.
  - MNA– This groundwater measure has a very low potential for exposure to residual contamination because the affected groundwater remains in-situ, except for the minimal pumping required for groundwater monitoring.
  - In-Situ Treatment through ISRM (AOI 4 and AOI 5) – This groundwater measure has a very low potential for exposure to residual contamination because the affected groundwater remains in the subsurface. Although subsurface injection of a reagent (e.g., EVO, acidic ferric iron solution, or ferrous iron with air sparging) is required, no secondary waste streams would be generated during the treatment process.
  - In-Situ Treatment through a PRB– This groundwater measure has a low to very low potential for exposure to residual contamination because the affected groundwater remains in-situ

and no secondary waste streams would be generated during the treatment process, except in the event that reactive media within a PRB requires excavation and replacement.

- Water Infiltration through Injection Wells (AOI 3) – This groundwater measure has a very low potential for exposure to residual contamination because the affected groundwater remains in-situ and no secondary waste streams would be generated during the injection process.

2.5.7 Time Required to Begin the Remedy

This criterion evaluates the time required after the remedy is selected to initiate construction activities for the source control measures or to begin the operation of groundwater measures. For source control measures, this is the time to plan, design, permit, and engage a contractor prior to beginning the initial construction activities. For groundwater measures, this is the time to plan, design, permit, mobilize, install the system (if necessary), and perform testing (if necessary) prior to beginning the initial operation of the system. This evaluation assumes that groundwater measures can be installed and begin operating independently of closure activities, unless otherwise noted in the descriptions below.

- Source Control Measures:
  - CIP with a Slurry Wall – Construction of a slurry wall around Ponds A, A', C, and Former Pond B may require approval by IDEM because the slurry wall would supplement closure of the ponds, which has already been completed by CIP. An estimated minimum of one to one and one-half years would be expected to perform a pre-design investigation, prepare design drawings and technical specifications (design package), obtain IDEM approval of the design package, obtain applicable permits, retain and mobilize a qualified contractor (including the necessary personnel and equipment), and begin implementing the installation of the slurry wall.
  - CBR – This source control measure would require the development of a new closure and post-closure plan, which would be subject to approval by IDEM. An estimated minimum of one to one and one-half years would be expected to develop the plan, obtain IDEM approval of the plan, obtain applicable permits, arrange large-volume, offsite disposal agreements, retain and mobilize a qualified contractor (including the necessary personnel and equipment), and begin implementing the CBR closure activities.
  - Low-permeability Landfill cover system – The IDEM Solid Waste Permit Section has approved the permit renewal (SW Program ID 63-02) that includes activities associated with implementing Landfill closure activities, and Landfill cover system installation activities began in May 2025.
- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – Groundwater pumping would require an estimated one and one-half to two and one-half years to perform testing, prepare the design, receive approvals, install the equipment, and begin operating the groundwater extraction system.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – Groundwater pumping and ex-situ treatment would require an estimated one and one-half to three years to perform testing, prepare the design, receive approvals, install the equipment, and begin operating the groundwater extraction system and ex-situ treatment system.

- Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, and with Injection Wells (AOI 3) – Groundwater pumping and injection would require an estimated two to three and one-half years to perform testing, prepare the design, receive approvals, install the equipment, and begin operating the groundwater extraction system, ex-situ treatment system, and injection well system.
- Hydraulic Containment through a Slurry Wall (AOI 2) – Hydraulic containment through installation of a slurry wall would require an estimated minimum of two to three years to perform a pre-design investigation, prepare design drawings and technical specifications (design package), obtain IDEM approval of the design package, obtain applicable permits, retain and mobilize a qualified contractor (including the necessary personnel and equipment), and begin implementing slurry wall construction.
- MNA– Natural attenuation is already ongoing at the Site, and a groundwater monitoring system exists to continue monitoring conditions and evaluate MNA effectiveness.
- In-Situ Treatment through ISRM (AOI 4 and AOI 5) – In-situ treatment through ISRM would require an estimated one to two years to perform bench-scale and pilot testing, prepare the design, obtain permits/approvals, install the equipment, and begin the initial distribution of reagents (and potential air sparging) to promote in-situ treatment.
- In-Situ Treatment through a PRB– In-situ treatment through installation of a PRB or series of PRBs would require an estimated one to two years to perform bench-scale and pilot testing, prepare the design, receive permits/approvals, install the equipment, and begin the installation of a PRB to promote in-situ treatment.
- Water Infiltration through Injection Wells (AOI 3) – Water infiltration through the use of injection wells would require an estimated one to one and one-half years to prepare the design, receive approvals, install the equipment, and begin operating the injection well system.

2.5.8 Time Required to Complete the Remedy

This criterion evaluates the timing required to complete the implementation of the source control and groundwater measures. For source control measures, this is the time to perform the closure construction activities. For groundwater measures, this is the time from when initial operation of the measure begins to when all Appendix IV constituent concentrations have achieved the GWPSs.

- Source Control Measures:
  - CIP with a Slurry Wall – Once initiated, it would take an estimated one to one and one-half years to complete the installation of a cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B.
  - CBR – Once initiated, CBR would require an estimated 10 to 15 years to complete removal of CCR material from Ponds A, A', C, and Former Pond B. This estimate includes completing CCR material removal and disposal at an offsite permitted landfill. If the removed CCR material is transported offsite for beneficial use, the removal rates would be dependent on the beneficial use processing rate, which could result in longer durations.
  - Low-permeability Landfill cover system – Installation of the Landfill cover system, which began in May 2025, is anticipated to take approximately 18 months to complete. This estimate includes completing regrading and installation of the ClosureTurf® cover system.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – Based on preliminary groundwater modeling, active groundwater pumping of extraction wells or an interceptor trench is anticipated to achieve GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – Based on preliminary groundwater modeling, groundwater pumping of extraction wells or an interceptor trench is anticipated to achieve GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – Based on preliminary groundwater modeling, groundwater pumping of extraction wells or an interceptor trench with upgradient injection of treated groundwater is anticipated to achieve GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - Hydraulic Containment through a Slurry Wall (AOI 2) – Based on preliminary groundwater modeling, slurry wall construction with low-capacity pumping on the interior of the Ash Pond system is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill. Similar results are anticipated for a downgradient slurry wall.
  - MNA – Based on preliminary data evaluation, natural processes of attenuation already active in the subsurface are anticipated to achieve the GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - In-Situ Treatment through ISRM (AOI 4 and AOI 5) – Based on groundwater modeling for other groundwater measures, ISRM is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - In-Situ Treatment through a PRB – Based on groundwater modeling for other groundwater measures, in-situ treatment through use of PRBs is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
  - Water Infiltration through Injection Wells (AOI 3) – Based on groundwater modeling for other groundwater measures, this groundwater measure is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.

2.5.9 Institutional Requirements (State or Local Permit Requirements) or other Environmental or Public Health Requirements that may Substantially Affect Implementation

This criterion evaluates the level of potential requirements associated with the source control and groundwater measures, including the need to obtain permits and approvals that may affect implementation. This section provides a high-level review of potential requirements. AESI would conduct a complete evaluation of the source control and groundwater measures based on the project details and information prior to implementation to determine the actual requirements.

- Source Control Measures:

- CIP with a Slurry Wall – Construction of a slurry wall around Ponds A, A', C, and Former Pond B may require IDEM approval as a supplement to completed closure by CIP, a stormwater construction permit, and a construction in floodway permit. It may also require a modification to the NPDES permit depending on discharge practices.
- CBR – This source control measure may require IDEM ash pond closure plan approval, a stormwater construction permit, and a construction in floodway permit. It may also require a modification to the NPDES permit depending on dewatering practices. Studies and evaluations may be required to determine whether additional approvals would be required related to offsite disposal or transportation for beneficial use of the CCR material. Depending on the results of such studies/evaluations, roadway improvements (e.g., additional turn lane(s) or stop signs), approvals (e.g., for new driveway(s) and/or easement(s)), or permits (e.g., for operation of a new landfill cell) could be required.
- Low-permeability Landfill cover system – The IDEM Solid Waste Permit Section has approved the permit renewal (SW Program ID 63-02) that includes activities associated with implementing Landfill closure activities, and Landfill cover system installation is currently ongoing. A construction stormwater general permit was obtained prior to the start of Landfill closure activities.

- Groundwater Measures:
  - Hydraulic Containment through Groundwater Pumping (AOI 1, AOI 2, AOI 3, and AOI 4) – Groundwater pumping could require an extraction well permit, stormwater construction permit, and a construction in floodway permit. It could also require a modification to the NPDES permit depending on various factors.
  - Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment (AOI 1, AOI 2, AOI 3, and AOI 4) – Groundwater pumping and ex-situ treatment could require an extraction well permit, a Class 1 structural permit for construction of the ex-situ treatment system, a stormwater construction permit, and a construction in floodway permit. It could also require a modification to the NPDES permit depending on various factors.
  - Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells (AOI 3) – Groundwater pumping and injection could require an extraction well permit, a Class 1 structural permit for construction of the ex-situ treatment system, a stormwater construction permit, and a construction in floodway permit. It could also require a Class V underground injection well permit.
  - Hydraulic Containment through a Slurry Wall (AOI 2) – Hydraulic containment through installation of a slurry wall would require a stormwater construction permit and construction in floodway permit.
  - MNA – With MNA, no permitting or approvals are anticipated, with the exception of a potential concurrence review/approval by IDEM of the groundwater performance monitoring program to support MNA.
  - In-Situ Treatment through ISRM (AOI 4 and AOI 5) – In-situ treatment through ISRM could require an injection permit, a stormwater construction permit, and a construction in floodway permit.
  - In-Situ Treatment through a PRB – In-situ treatment through installation of a PRB or series of PRBs could require an injection permit, a stormwater construction permit, and a construction in floodway permit.

- Water Infiltration through Injection Wells (AOI 3) – Water infiltration through the use of injection wells could require an injection permit, a stormwater construction permit, and a construction in floodway permit. Registration with the Indiana Department of Natural Resources (IDNR) as a significant water withdrawal facility (SWWF) could be required if more than 100,000 gallons of water per day is withdrawn as source water, depending on the source of water identified (e.g., surface water from the White River and/or groundwater).

2.6 POTENTIAL REMEDIAL ALTERNATIVES

Potential remedial alternatives have been identified by developing unique combinations of the potential source control measures presented in Section 2.2 and the potential groundwater measures presented in Section 2.3. As outlined in Section 2.3, groundwater measures have been grouped into four groups based on their approach: hydraulic containment, MNA, in-situ treatment, and water infiltration. Specific corrective measures (e.g., groundwater pumping with extraction wells versus groundwater pumping with an interceptor trench) will be determined through further evaluation during the Selection of Remedy process. Outcomes from the evaluation of potential source control and groundwater measures summarized in Section 2.5, **Table 2-1A**, and **Table 2-1B** have been used to conduct a preliminary evaluation of the potential remedial alternatives based on the criteria from 40 CFR §257.97.

Three primary source control measure combinations are considered:

- Source Control Scenario 1:
  - CIP with a slurry wall for Ponds A, A', C, and Former Pond B with limited pumping within Ponds A, A', C, and Former Pond B.
  - Low-permeability landfill cover system for the Landfill.
- Source Control Scenario 2:
  - CBR for Ponds A, A', C, and Former Pond B.
  - Low-permeability landfill cover system for the Landfill.

Considering the two source control scenarios in combination with potential groundwater measures, six potential remedial alternatives have been identified:

- Alternative 1A – Source Control Scenario 1 with the following groundwater measures:
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1 and AOI 3).
  - Slurry wall around and limited pumping within the Ash Pond System (AOI 2).
  - Targeted in-situ treatment through ISRM (AOI 4 and AOI 5).
- Alternative 1B – Source Control Scenario 1 with the following groundwater measures:
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1 and AOI 3) with ex-situ treatment of extracted groundwater.
  - Slurry wall around and limited pumping within the Ash Pond System (AOI 2) with ex-situ treatment of extracted groundwater.
  - Targeted in-situ treatment through ISRM (AOI 4 and AOI 5).
- Alternative 1C – Source Control Scenario 1 with the following groundwater measures:

  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1 and AOI 4).
  - Slurry wall around and limited pumping within the Ash Pond System (AOI 2).
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench with injection wells along the boundary of Ponds A and A' (AOI 3) with ex-situ treatment of extracted groundwater.
  - Targeted in-situ treatment through ISRM (AOI 5).
- Alternative 1D – Source Control Scenario 1 with the following groundwater measures:
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1 and AOI 4) with ex-situ treatment of extracted groundwater.
  - Slurry wall around and limited pumping within Ash Pond System (AOI 2) with ex-situ treatment of extracted groundwater.
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench with injection wells along the boundary of Ponds A and A' (AOI 3) with ex-situ treatment of extracted groundwater.
  - Targeted in-situ treatment through ISRM (AOI 5).
- Alternative 2A – Source Control Scenario 2 with the following groundwater measures:
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1, AOI 3, and AOI 4).
  - Targeted in-situ treatment through ISRM (AOI 5).
- Alternative 2B – Source Control Scenario 2 with the following groundwater measures:
  - Hydraulic containment (groundwater pumping) via extraction wells or interceptor trench (AOI 1, AOI 3, and AOI 4) with ex-situ treatment of extracted groundwater.
  - Targeted in-situ treatment through ISRM (AOI 5).

The corrective measures that comprise each alternative are as described in Section 2.2 (source control measures) and Section 2.3 (groundwater measures). A summary of each alternative is also presented in **Table 2-2**.

Each of the six remedial alternatives meets the requirements for Threshold Criteria (as outlined in Section 2.1) and are preliminarily evaluated in Section 2.6.1.1 through Section 2.6.1.4 against the Balancing Criteria prescribed in 40 CFR §257.97(c).

2.6.1 Preliminary Evaluation of Potential Remedial Alternatives

This section provides a preliminary evaluation of the six potential remedial alternatives introduced in Section 2.6 based on the evaluation of the Balancing Criteria outlined in 40 CFR §257.97(c) and summarized in Section 2.1. The four primary Balancing Criteria and their respective subcriteria are separated into individual evaluations in Section 2.6.1.1 through Section 2.6.1.4 below. A summary of this evaluation is presented in **Table 2-3**.

2.6.1.1 Balancing Criterion 1 - The Long- and Short-term Effectiveness and Protectiveness of the Potential Remedy(S), Along With the Degree of Certainty That the Remedy Will Prove Successful.

This criterion considers eight subcriteria related to the long- and short-term effectiveness and protectiveness of the remedy, along with the anticipated success of the remedy. Following a summary of the Balancing Criterion 1 evaluation, individual evaluations for each of the eight subcriteria are provided below in Section 2.6.1.1.1 through Section 2.6.1.1.8.

Balancing Criterion 1 – Summary
Each of the alternatives includes a combination of source control measures and groundwater measures that are effective and protective in both the short term and long term. Alternatives 1A, 1B, 1C, and 1D use hydraulic containment, which has been demonstrated to be effective and is expected to be effective in the long term to address SSLs. If ex-situ treatment of extracted groundwater is required (Alternatives 1B, 1D, and 2B), a secondary waste stream (e.g., spent ion exchange media or reject water from an ex-situ treatment system) could be produced that would need to be handled and disposed, creating a potential for exposure and required additional O&M activities over time. Each alternative includes in-situ treatment for AOI 5, which is anticipated to be effective at treating reactive constituents, such as arsenic. Bench-scale and pilot testing would be performed to evaluate potential in-situ treatment methods and their effectiveness. Alternatives 1C and 1D also include targeted water infiltration via injection wells, which would enhance constituent attenuation. Alternatives 2A and 2B (with CBR) could entail increased potential exposure during the construction period and potential community impacts during transportation of material offsite relative to alternatives that involve leaving CCR material onsite under CIP with a slurry wall.

2.6.1.1.1 Magnitude of Reduction of Existing Risks

As concluded by the groundwater risk evaluation included as **Appendix B** and summarized in Section 1.4, affected groundwater associated with the Ash Pond System and Landfill does not pose an adverse risk to human health or the environment. Therefore, the remedial alternatives considered are not necessary to reduce potential risk posed by the Appendix IV constituents detected at SSLs in groundwater (arsenic, lithium, and molybdenum) because no such adverse risk exists. Each remedial alternative is also protective of groundwater quality. Through source control by CIP with a slurry wall, Alternatives 1A, 1B, 1C, and 1D keep CCR material onsite but result in the engineered containment or isolation of CCR material that may be in potential contact with groundwater (during seasonal high groundwater conditions). Through CBR of the Ash Pond System, Alternatives 2A and 2B result in the removal of CCR material from Ponds A, A', C, and Former Pond B and the management of CCR material offsite within an engineered (e.g., lined landfill) or beneficial use solution (e.g., within an encapsulated byproduct). All alternatives effectively manage CCR material in the Landfill in the long term by installing a ClosureTurf® cover system. All alternatives also involve a combination of constituent mass removal through hydraulic containment and constituent immobilization through in-situ treatment, with Alternatives 1C and 1D also including enhanced constituent attenuation through targeted water infiltration via injection wells.

2.6.1.1.2 Magnitude of Residual Risks in Terms of Likelihood of Further Releases Due to CCR Remaining Following Implementation of a Remedy

Following implementation of the remedy, all alternatives are projected to achieve a near-equal magnitude of residual risks in terms of likelihood of further releases due to CCR material remaining. This is because full remedy implementation would result in achieving the GWPSs as a Threshold Criterion. CCR material would also be permanently removed (under CBR), isolated (under CIP with a slurry wall) where it may be in potential contact with groundwater (during seasonal high groundwater conditions), or capped (with installation of the Landfill ClosureTurf® cover system) based on the source control measures for each alternative. CCR material would remain onsite and capped in the Ash Pond System under Alternatives 1A, 1B, 1C and 1D and in the Landfill under all alternatives. The magnitude of residual risk of potential further release from CCR material remaining in place is considered to be low because CCR material would be isolated from groundwater (under CIP with a slurry wall) within the Ash Pond System footprint, and the Ash Pond System and Landfill would be capped and graded to ensure proper drainage to prevent rainfall infiltration. For Alternatives 2A and 2B, CCR material would be removed from the Ponds A, A', C, and Former Pond B and disposed of offsite in a lined, permitted landfill or beneficially used offsite; no onsite residual risk of further releases due to CCR material remaining in Ponds A, A', C, and Former Pond B would exist under Alternatives 2A and 2B, because no CCR material would remain onsite.

2.6.1.1.3 The Type and Degree of Long-Term Management Required, Including Monitoring, Operations, and Maintenance

A robust CCR Rule groundwater monitoring system, including a combination of hydraulic containment, in-situ treatment system, and/or targeted water infiltration system and associated O&M would be included under all alternatives. Therefore, a moderate to high degree of long-term management would be required for each of these alternatives. Alternatives 1B, 1D, and 2B, which include ex-situ treatment of groundwater, may also involve long-term management and O&M of an ex-situ groundwater treatment system. Additionally, Alternatives 1A, 1B, 1C, and 1D would involve potential monitoring and maintenance of the slurry wall(s).

2.6.1.1.4 Short-term Risks That Might be Posed to the Community or the Environment During Implementation of Such a Remedy

The short-term community risks posed by CBR with offsite disposal (Alternatives 2A and 2B) include potential risks to the community due to increased truck traffic on public roads during construction activities, along with truck emissions and noise. The increased offsite truck traffic also entails an increased possibility of vehicular accidents, roadway damage, or incidental release of CCR material into the environment. Alternatives 1A, 1B, 1C, and 1D would involve limited onsite CCR material handling within the Ash Pond System and Landfill given the Ash Pond System is already closed by CIP and the Landfill is in the process of being capped. Therefore, the potential for risk to the community or environment would be limited for those alternatives given the limited potential offsite traffic and lack of offsite CCR material transportation.

Groundwater-related risks are not expected for any of the alternatives because there are already no adverse risks.

2.6.1.1.5 Time Until Full Protection is Achieved

As detailed in the risk evaluation report (**Appendix B**), there is currently no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and

molybdenum associated with the Ash Pond System and Landfill; therefore, protection of human and environmental receptors is already achieved. A groundwater flow and solute transport model was constructed as a tool to evaluate the anticipated effects that implementing each potential corrective measure would have on constituent concentrations in groundwater (refer to **Appendix C**). Based on the predictive modeling results, the anticipated time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill for Alternatives 1A, 1B, 1C, 1D, 2A, and 2B.

2.6.1.1.6 Potential For Exposure of Humans and Environmental Receptors to Remaining Wastes, Considering the Potential Threat to Human Health and the Environment Associated With Excavation, Transportation, Re-Disposal, or Containment

The potential for human or environmental exposure to remaining wastes is greater for activities related to closure than for activities related to groundwater pumping or treatment.

Alternatives 2A and 2B involve offsite transportation and disposal or beneficial use of excavated CCR material, which would entail the potential for exposure of humans and environmental receptors to remaining wastes during CCR material excavation, transportation (including offsite), re-disposal (offsite), or beneficial use. The potential for incidental CCR material release into the environment during transportation would also exist. Alternatives 2A and 2B would involve CCR material handling both onsite and offsite. Alternatives 1A, 1B, 1C, and 1D include limited potential exposure of humans and environmental receptors to remaining wastes during additional source control activities. Although the majority of the slurry wall would be constructed outside the Ash Pond System boundary, a small portion of the slurry wall would have to be constructed through CCR material near the interface boundary between Pond A and Former Pond D. Given this small area of slurry wall construction through CCR material, a limited risk for incidental CCR material release exists during slurry wall construction; however, CCR material handling would remain onsite, limiting the potential for exposure of humans and environmental receptors to CCR material.

Alternatives 1A, 1C, and 2A do not include treatment of extracted groundwater; therefore, they do not involve generation of a secondary waste stream. If ex-situ treatment of extracted groundwater is required, Alternatives 1B, 1D, and 2B could result in a secondary waste stream generated from the groundwater treatment process (e.g., spent ion exchange media or reject water from an ex-situ treatment system). Thus, there could be a potential for exposure to waste or wastewater associated with the groundwater treatment system. Any extracted groundwater associated with the alternatives would be characterized and appropriately managed (e.g., NPDES discharge and offsite disposal).

2.6.1.1.7 Long-term Reliability of the Engineering and Institutional Controls

The source control-related and groundwater-related engineering and institutional controls included with each alternative are proven and provide a high degree of certainty that the remedy would be effective in the long term.

CIP with a slurry wall and CBR methodologies are accepted and proven closure engineering solutions that allow for safe and effective final disposition of the CCR material. Therefore, closure-related considerations for the alternatives are considered reliable in the long term. Data are limited on the performance of slurry walls (included in Alternatives 1A, 1B, 1C, and 1D) beyond 40 to 50 years, and slurry walls may need to be monitored and maintained over time.

Each alternative includes a combination of hydraulic containment, in-situ treatment, and/or targeted water infiltration, each of which is considered a reliable method of groundwater remediation. Alternatives 1B, 1D, and 2B also include ex-situ treatment of the extracted groundwater. Treatment systems (whether ex-situ or in-situ) are generally highly adaptable, allowing operational modifications or system retrofits over time as necessary. Therefore, all alternatives are considered reliable in the long term.

2.6.1.1.8 Potential Need for Replacement of the Remedy

The potential need for replacing each alternative's closure methodology in the future is unlikely because each alternative involves CCR material ultimately transported offsite for disposal in an offsite lined landfill or managed for beneficial use (Alternatives 2A and 2B) or managed onsite through CIP with a slurry wall and capped with an engineered cover system (Alternatives 1A, 1B, 1C, and 1D). Due to the limited data on the performance of slurry walls beyond 40 to 50 years, a relatively greater potential for replacement of slurry walls associated with Alternatives 1A, 1B, 1C, and 1D exists.

All alternatives involve hydraulic containment, and Alternatives 1B, 1D, and 2B include ex-situ treatment of extracted groundwater. If required, pilot testing for an ex-situ groundwater treatment system may be performed to support the system design. Once operational, the ex-situ groundwater treatment system would be highly adaptable, allowing operational modifications or system retrofits over time if needed.

2.6.1.2 Balancing Criterion 2 – The Effectiveness of the Remedy in Controlling the Source to Reduce Further Releases

This balancing criterion considers two subcriteria related to the ability and effectiveness of the remedy to control the source and reduce further releases, including the extent to which treatment technologies will be used. Following a summary of the Balancing Criterion 2 evaluation, individual evaluations for each of the two subcriteria for Criterion 2 are provided below in Section 2.6.1.2.1 and Section 2.6.1.2.2.

Balancing Criterion 2 – Summary
Each alternative provides a high degree of effectiveness in reducing the potential for further releases through reliable closure methodologies that either isolate the CCR material in the Ash Pond System onsite through use of a cement-bentonite slurry wall (Alternatives 1A, 1B, 1C, and 1D) or manage the CCR material offsite within an offsite lined landfill or through beneficial use application (Alternatives 2A and 2B), in addition to capping the CCR material in the Landfill with a ClosureTurf® cover system. All alternatives employ the use of in-situ treatment within AOI 5. Alternatives 1C and 1D involve targeted water infiltration within AOI 3, which could include treatment of the water used for infiltration, if required. Alternatives 1B, 1D, and 2B also employ the use of treatment technologies through ex-situ treatment of extracted groundwater.

2.6.1.2.1 The Extent to Which Containment Practices Will Reduce Further Releases

Each alternative involves a closure methodology that has proven to be successful at reducing further releases through containment. Alternatives 2A and 2B, involving a solution for CCR material management offsite in a permitted, lined landfill or in a beneficial use application, would provide effective containment of the CCR material. Alternatives 1A, 1B, 1C, and 1D involve a combination of capping the CCR material within the Ash Pond System and Landfill and installing a low-permeability,

cement-bentonite slurry wall around Ponds A, A', C, and Former Pond B that would be effective at isolating the CCR material in those ponds from groundwater. Therefore, each alternative is considered to have a limited likelihood of additional releases. Additional groundwater measures common to all alternatives include hydraulic containment through groundwater pumping, which would be effective at containing affected groundwater, and in-situ treatment, which would limit the magnitude of potential further migration of constituents in affected groundwater.

2.6.1.2.2 The Extent to Which Treatment Technologies May Be Used

All six alternatives include in-situ treatment to address SSLs in groundwater in AOI 5. Alternatives 1A, 1B, 1C, and 1D also include limited pumping on the interior of Ponds A, A', C, and Former Pond B under CIP with a slurry wall, which could involve limited ex-situ treatment depending on the management of extracted groundwater. Ex-situ treatment of extracted groundwater is also included for Alternatives 1B, 1D, and 2B.

2.6.1.3 Balancing Criterion 3 – The Ease or Difficulty of Implementing a Potential Remedy

This balancing criterion considers five subcriteria related to the technical and logistical aspects associated with implementation of a potential remedy, including practical considerations, such as resource availability and capacity at the disposal or beneficial use facility. Following a summary of the Balancing Criterion 3 evaluation, individual evaluations for each of the five subcriteria for Balancing Criterion 3 are provided below in Section 2.6.1.3.1 through Section 2.6.1.3.5.

Balancing Criterion 3 – Summary
For implementation of Alternatives 1A, 1B, 1C, and 1D, although the final cover system for the Ash Pond System and Landfill will require ongoing O&M, the equipment for closure completion is readily available, and the final disposition of the CCR material is onsite and without additional treatment or disposal requirements. Alternatives 2A and 2B involve large-scale construction activities and permits and approvals are required for complete CCR material excavation and offsite transport and disposal or beneficial use for the Ash Pond System. All alternatives involve a combination of hydraulic containment and in-situ treatment, with Alternatives 1C and 1D additionally including targeted water infiltration systems to supplement hydraulic containment in AOI 3.

2.6.1.3.1 Degree of Difficulty Associated With Constructing the Technology

All alternatives involve substantial construction operations primarily related to additional source control of the Ash Pond System, which entails a significant degree of difficulty. Although CCR material within Ponds A, A', C, and Former Pond B has already been closed by CIP, Alternatives 1A, 1B, 1C, and 1D also involve large-scale construction activities to install a cement-bentonite slurry wall to the top of bedrock around the perimeter of Ponds A, A', C, and Former Pond B. CBR under Alternatives 2A and 2B requires very large-scale construction activities to remove CCR material from the Site, transport the CCR material offsite, and manage the CCR material in an offsite permitted landfill or beneficial use application. Alternatives would include construction activities for installation of a ClosureTurf® cover system at the Landfill, construction of a groundwater extraction system, and construction of an in-situ treatment system for AOI 5. Alternatives 1C and 1D would include construction of a groundwater injection system. Alternatives 1B, 1D, and 2B would also include construction activities for construction of an ex-situ groundwater treatment system that could require treatment tanks, pumps, valves, piping, and other

infrastructure necessary for conveying and treating the extracted groundwater, which entails a moderate degree of difficulty.

2.6.1.3.2 Expected Operational Reliability of the Technologies

Each alternative involves source control measures and groundwater measures that are operationally reliable. Because of the scale of the closure operations, construction and transportation equipment may occasionally be placed out of service temporarily for routine or non-routine maintenance, repair, or replacement. Construction operations may also temporarily cease during periods of inclement weather or other adverse conditions. However, project planning and scheduling typically account for such variables, and the activities would ultimately achieve the closure objectives.

All alternatives include a combination of hydraulic containment, in-situ treatment, and/or targeted water infiltration, each of which may experience equipment placed out of service for routine or non-routine maintenance, repair, or replacement of system components or treatment media.

Alternatives 1B, 1D, and 2B include ex-situ treatment of extracted groundwater. The use of ex-situ treatment technologies would involve additional O&M requirements that could present increased operational and maintenance challenges (e.g., system downtime to performance routine or non-routine maintenance, repair, or replacement of system components or treatment media) that could affect system performance and effectiveness.

2.6.1.3.3 Need to Coordinate With and Obtain Necessary Approvals and Permits From Other Agencies

Each alternative is expected to require permitting and approvals from applicable regulatory agencies based on closure activities and construction and operation of a hydraulic containment, in-situ treatment, and/or targeted water infiltration system.

Given the additional source control activities for the Ash Pond System, modifications to the closure and post-closure plans may be necessary under any alternative, which would require IDEM approval. Additionally, a construction in floodway permit, stormwater construction permit, and potential NPDES permit modifications (depending on dewatering/discharge practices) may be required. While Alternatives 1A, 1B, 1C, and 1D would likely involve permitting and approvals related to onsite activities, Alternatives 2A and 2B involve offsite transportation and disposal under CBR, which could require additional approvals. Studies and evaluations could be required to determine whether additional permits or approvals would be required related to transportation or disposal. Depending on the results of such studies/evaluations, roadway improvements (e.g., turn lane additions and stop signs), approvals (e.g., for new driveway(s) and/or easement(s)), or permits (e.g., for operation of a new landfill cell) could be required.

From a groundwater treatment perspective, an injection permit may be required for in-situ treatment, which is included for all alternatives, and for targeted water infiltration, which is included for Alternatives 1C and 1D. For Alternatives 1B, 1D, and 2B, the addition of ex-situ groundwater treatment and related infrastructure may require building and electrical permits, permitting related to discharge, injection, or disposal of treated water, and/or permits or permit modifications related to stormwater pollution prevention control. An in-situ treatment, ex-situ treatment, or targeted water infiltration system would also require O&M plans and monitoring programs that may be subject to initial and

routine regulatory review and approval. Regulatory approvals or oversight of the system(s) may also be required during system testing and operations.

2.6.1.3.4 Availability of Necessary Equipment and Specialists

Each alternative requires equipment and specialists to complete ash pond closure and to construct and operate the groundwater extraction, in-situ treatment, and/or targeted water infiltration systems. The inclusion of groundwater treatment under Alternatives 1B, 1D, and 2B would require additional equipment and specialists to construct and operate the ex-situ treatment system.

Installation of perimeter slurry walls and the grading of ash within Ponds A, A', C, and Former Pond B would also be necessary under Alternatives 1A, 1B, 1C, and 1D. Alternatives 2A and 2B would require significant resources for CBR completion. The amount of equipment and resources for all alternatives is expected to be similar, with the exception that a significant amount of haul trucks would also be required to transport excavated CCR material offsite for completing the CBR under Alternatives 2A and 2B.

2.6.1.3.5 Available Capacity and Location of Needed Treatment, Storage, and Disposal Services

Alternatives 1A, 1B, 1C, and 1D involve final CCR material placement onsite within the current footprint of the Ash Pond System (via CIP with a slurry wall). Alternatives 2A and 2B involve final CCR material management offsite through disposal in a lined landfill or beneficial use application. It is possible that the final destination for offsite management of excavated CCR material under Alternatives 2A and 2B would be 20 to 100 miles from the Site. If CCR material is not being beneficially used, a substantial amount of available offsite landfill space would also be necessary to dispose of the excavated CCR material, which may result in increased difficulty in identifying possible options for implementing CBR. Alternatives 1B, 1D, and 2B include ex-situ treatment of extracted groundwater, which would require construction, operations, and maintenance of an onsite treatment system and disposal of secondary waste streams (e.g., spent ion exchange media and reject water from an ex-situ treatment system) generated as a result of the treatment process. The in-situ treatment system included for AOI 5 with all alternatives and the targeted water infiltration system included to supplement hydraulic containment in AOI 3 with Alternatives 1C and 1D are not anticipated to require treatment, storage, or disposal services because the treatment or infiltration will occur in-situ.

2.6.1.4 Criterion 4 – The Degree to which Community Concerns are Addressed by a Potential Remedy

The fourth Balancing Criterion involves input from the community regarding the proposed corrective measures. This criterion will be addressed by discussing the results of the corrective measures assessment and presenting the corrective measures at a public meeting and soliciting comments. In accordance with 40 CFR §257.96(e), that meeting will be held at least 30 days prior to remedy selection.

References

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2. ATC Group Services LLC, 2019. Alternative Source Demonstration Cadmium & Cobalt at Monitoring Well AP-8 Ash Pond A, A', and C, Indianapolis Power & Light Company, Petersburg Generating Station, Petersburg, Indiana.

3. ATC Group Services LLC, 2023. Closure Certification Report Ash Ponds A/A' Phase 2 and 3 Final Cover Construction, Petersburg Generating Station, Petersburg, Indiana. November 21.

4. Cardno ATC, 2014a. Proposed Closure and Post Closure Plans Ash Pond system Petersburg Generating Station Petersburg, IN, 47567.

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6. Haley & Aldrich, 2019. Report on Petersburg Generating Station Restricted Waste Landfill – Alternate Source Demonstration – Petersburg, Indiana.

7. United States Environmental Protection Agency (USEPA), 1999. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites. OSWER Directive 9200.1-17P.

8. United States Environmental Protection Agency (USEPA), 2015. Final Rule: Disposal of Coal Combustion Residuals (CCRs) for Electric Utilities. 80 CFR 21301-21501. Unites States Environmental Protection Agency, Washington, D.C. Available at: https://www.govinfo.gov/content/pkg/FR-2015-04-17/pdf/2015-00257.pdf

TABLES

TABLE 2-1A
SOURCE CONTROL MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	SOURCE CONTROL MEASURES		
	ASH POND SYSTEM SOURCE CONTROL MEASURES[1]		*LANDFILL SOURCE CONTROL MEASURE*
	Closure in Place (CIP) with Slurry Wall	***Closure by Removal (CBR)***	***Low-Permeability Landfill Cover System***
	This source control measure is under consideration for the Ash Pond System, which has already been closed by CIP. This source control measure would involve installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B,[1] and installing a low-capacity pumping system within the interior of the associated pond(s) to establish an inward hydraulic gradient of groundwater. A slurry wall would not be constructed around the southwestern perimeter of Former Pond D due to multiple underground utilities that are critical to the operation of the active wastewater treatment plant.	*This source control measure is under consideration for the Ash Pond System, which has already been closed by CIP. This source control measure would involve the removal, offsite or onsite transportation, and disposal or beneficial use of CCR material from Ponds A, A', C, and Former Pond B followed by regrading with a focus on eliminating steep and/or unsafe slopes. CBR would not include removal of CCR material from Former Pond D because the CCR material within Former Pond D is beneath the PGS wastewater treatment plant, which is active and necessary for PGS operation.*	*This source control measure is under consideration for the Landfill and includes grading, compacting, and installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®).*
§257.96(c)(1)			
Performance	**Moderate to High Performance** Provides an effective solution for onsite CCR material management by installing a slurry wall around the perimeter of Ponds A, A', C, and Former Pond B that would limit the potential for CCR-groundwater interaction in those ponds. The existing engineered cover systems enclose the CCR material and restrict infiltration. Implementation of a limited groundwater pumping system on the interior of Ponds A, A', C, and Former Pond B would maintain an inward gradient. The engineering design and construction may need to include a long-term solution for preventing potential CCR-groundwater interaction in Former Pond D, where slurry wall construction along the southwestern boundary of Former Pond D is impractical due to the presence of underground utilities.	**High Performance** Provides complete removal of CCR material from Ponds A, A', C, and Former Pond B and eliminates potential for future releases of CCR material to the environment or CCR constituents to groundwater from those ponds. Along the southern boundary of Pond A, adjacent to where a sheet pile wall was installed along the Former Pond D boundary, engineering design and construction for CBR of Pond A would need to include a long-term solution for continuing to effectively manage CCR material in Former Pond D in place and to prevent potential CCR-groundwater interaction in Former Pond D.	**High Performance** Provides a long-term solution for management of landfilled CCR material onsite by installing a ClosureTurf® cover system that encloses the CCR material and restricts infiltration.
Reliability	**Moderate Reliability** A proven engineering method that provides an effective solution for CCR surface impoundment closure. Data are limited on the performance of slurry walls beyond 40 to 50 years. The slurry wall may need to be maintained over time to continue limiting the potential for CCR-groundwater interaction, and the limited groundwater pumping system would need to be maintained over time to continue to maintain an inward gradient.	**High Reliability** A proven engineering method that provides an effective solution for CCR surface impoundment closure.	**High Reliability** A proven engineering method that provides an effective solution for CCR Landfill closure.
Ease of implementation	**Moderate Difficulty** A slurry wall to the target depth (installed to the top of bedrock) would entail the use of heavy equipment. Activities to support O&M of the post-closure final cover system and limited pumping system would be required.	**High Difficulty** A significant amount of heavy equipment and large-scale construction activities, including large-scale dewatering and complete removal of CCR material, Site regrading, and substantial offsite transportation and/or disposal efforts would be required. If the CCR material is to be beneficially used, additional infrastructure might be necessary onsite to process the CCR material prior to beneficial use. Additional difficulty is presented by having to excavate material along the southern boundary of Pond A adjacent to where a sheet pile wall was installed along the Former Pond D boundary.	**Low Difficulty** A minimal amount of soil handling via use of heavy equipment and large-scale construction activities would be needed to install the cover system, and the CCR material will remain within the footprint of the Landfill throughout the closure process. Activities to support O&M of the post-closure cover system would be required; however, O&M activities are expected to be minimal due to the use of a ClosureTurf® cover system which is not subject to ongoing erosion and sedimentation issues.
Potential impacts - safety impacts	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from heavy equipment and large-scale construction activities over a period of approximately 1 to 1.5 years for installing a limited groundwater pumping system and slurry wall around the perimeter of Ponds A, A', C, and Former Pond B.	**High Potential Impact** Presents a high potential for safety impacts that could result from heavy equipment and large-scale construction activities over an extended period for dewatering; excavating CCR material from Ponds A, A', C, and Former Pond B, transporting the excavated CCR material over public roads, and disposing of the excavated CCR material in a permitted, offsite landfill or transporting the excavated CCR material offsite for beneficial use.	**Low Potential Impact** Presents a low potential for safety impacts that could result from heavy equipment and large-scale construction activities over a period of approximately 18 months for importing clean soil for fill, regrading, and capping.
Potential impacts - cross-media impacts	**Low Potential Impact** Presents a low potential for cross-media impacts to additional areas onsite or offsite because closure activities have been completed and CCR material will remain within the existing boundaries of the Ash Pond System. There is also a low potential for cross-media impacts as a result of limited groundwater pumping on the interior of Ponds A, A', C, and Former Pond B to maintain an inward gradient.	**Moderate to High Potential Impact** Presents a moderate to high potential for cross-media impacts to additional areas onsite or offsite during closure activities associated with transportation and placement of CCR material offsite (e.g., potential impacts to soil, water, and air). Presents a low potential for post-closure cross-media impacts through offsite disposal at a permitted, lined landfill or beneficial use in accordance with applicable regulations and requirements.	**Very Low Potential Impact** Presents a very low potential for cross-media impacts to additional areas onsite or offsite during closure activities because the CCR material would be kept within the existing boundaries of the Landfill. Presents a very low potential for post-closure cross-media impacts through the use of an engineered ClosureTurf® cover system.
Potential impacts - exposure to residual contamination	**Low Potential Impact** Presents a low potential for post-closure residual contamination impacts through use of the existing engineered final cover systems, which act as an engineering control to mitigate the potential for exposure of humans or environmental receptors to CCR material. Although limited groundwater pumping to maintain an inward gradient in Ponds A, A', C, and Former Pond B would occur, direct exposure to affected groundwater would not be likely.	**Very Low Potential Impact** Presents a very low potential for post-closure residual contamination impacts because CCR material would be removed from the Site and disposed of in a permitted offsite landfill or beneficially used.	**Low Potential Impact** Presents a low potential for post-closure residual contamination impacts through use of a ClosureTurf® cover system, which would act as an engineering control to mitigate the potential for exposure of humans or environmental receptors to CCR material after closure is complete.

[1] Low-permeability engineered cover systems have been installed over CCR material within Ponds A, A', C, and Former Pond B. CCR material within the Former Pond D footprint is overlain by asphalt and concrete pavement and surrounded by a sheet pile wall.

TABLE 2-1A
SOURCE CONTROL MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

	SOURCE CONTROL MEASURES		
	ASH POND SYSTEM SOURCE CONTROL MEASURES[1]		***LANDFILL SOURCE CONTROL MEASURE***
	Closure in Place (CIP) with Slurry Wall[2]	***Closure by Removal (CBR)[3]***	***Low-Permeability Landfill Cover System***
General Description	*This source control measure is under consideration for the Ash Pond System, which has already been closed by CIP. This source control measure would involve installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B and installing a low-capacity pumping system within the interior of the associated pond(s) to establish an inward groundwater hydraulic gradient. A slurry wall would not be constructed around the southwestern perimeter of Former Pond D due to multiple underground utilities that are critical to the operation of the active wastewater treatment plant.*	*This source control measure is under consideration for the Ash Pond System[3]. This source control measure would involve the removal, offsite or onsite transportation, and disposal or beneficial use of CCR material from Ponds A, A', C, and Former Pond B, followed by regrading with a focus on eliminating steep and/or unsafe slopes. CBR would not include removal of CCR material from Former Pond D because the CCR material within Former Pond D is beneath the PGS wastewater treatment plant, which is active and necessary for PGS operation.*	*This source control measure is under consideration for the Landfill and includes grading, compacting, and installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®).*
§257.96(c)(2)			
Time required to begin the remedy	An estimated minimum of 1 to 1.5 years would be expected to perform a pre-design investigation, prepare design drawings and technical specifications (design package), obtain IDEM approval of the design package, obtain applicable permits, retain and mobilize a qualified contractor (including necessary personnel and equipment), and begin implementing the installation of the slurry wall.	An estimated minimum of 1 to 1.5 years would be expected to develop the plan, obtain IDEM approval of the plan, obtain applicable permits, arrange large-volume offsite disposal or beneficial use agreements, retain and mobilize a qualified contractor (including necessary personnel and equipment), and begin implementing CBR closure activities.	IDEM Solid Waste Permit Section has approved the permit renewal (SW Program ID 63-02) that includes activities associated with implementing closure activities and the Landfill cover system installation activities began in May 2025.
Time required to complete the remedy	Once initiated, it would take an estimated 1 to 1.5 years to complete the installation of a cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B.	Once initiated, it will take an estimated 10 to 15 years to complete removal of CCR material from Ponds A, A', C, and Former Pond B, and C. This estimate includes completing CCR material removal and disposal at an offsite permitted landfill. If the removed CCR material is transported offsite for beneficial use, the removal rates would be dependent on the beneficial use processing rate, which could result in longer durations.	Installation of the Landfill cover system, which began in May 2025, is anticipated to take approximately 18 months to complete. This estimate includes completing regrading and constructing the ClosureTurf® cover system.
§257.96(c)(3)			
State or local permitting requirements or other environmental or public health requirements	May require IDEM approval for slurry wall construction as a supplement to completed closure by CIP of Ponds A, A', C, and Former Pond B, a stormwater construction permit, and a construction in floodway permit. May also require a NPDES discharge permit modification depending on discharge practices.	May require IDEM ash pond closure plan approval, a stormwater construction permit, and a construction in floodway permit. May also require a NPDES discharge permit modification, development of a new closure plan for IDEM approval, and studies and evaluations for offsite disposal or transportation for beneficial use of the CCR material to determine whether additional approvals would be required related to transportation or disposal. Roadway improvements, approvals, or permits could be required.	The IDEM Solid Waste Permit Section has approved the permit renewal (SW Program ID 63-02) that includes activities associated with implementing Landfill closure activities and Landfill cover system installation is currently ongoing. A construction stormwater general permit was obtained prior to the start of Landfill closure activities.

Notes:
CBR - closure by removal
CCR - coal combustion residuals
CFR - Code of Federal Regulations
CIP - closure in place
PGS - Petersburg Generating Station
IDEM - Indiana Department of Environmental Management
NPDES - National Pollutant Discharge Elimination System
O&M - operations and maintenance

TABLE 2-1B
GROUNDWATER MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

	GROUNDWATER MEASURES				
	HYDRAULIC CONTAINMENT				***MONITORED NATURAL ATTENUATION (MNA)***
	Hydraulic Containment through Groundwater Pumping	***Hydraulic Containment through Groundwater Pumping with Ex-situ Treatment***	***Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells***	***Hydraulic Containment through Slurry Wall***	
General Description	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 1, 2, 3, and 4. For AOIs 1, 3 and 4, constituents of concern would be addressed via hydraulic containment through groundwater pumping from a series of extraction wells or an interceptor trenches that could be installed downgradient to the west of the Ash Pond System boundary and/or the Landfill boundary that would pump at a sufficient rate to hydraulically control the migration of constituents downgradient. For AOI 2, hydraulic containment would be limited to groundwater pumping within the interior of the Ash Pond System under a scenario of closure by CIP with a slurry wall (see Table 2-1A). Extracted groundwater would be characterized and appropriately managed.*	*This groundwater measure is similar to the "Hydraulic Containment through Groundwater Pumping" measure, with the exception that this measure additionally includes ex-situ treatment of extracted groundwater. Possible treatment technologies could include ion exchange and RO treatment.*	*This groundwater measure is similar to the "Hydraulic Containment through Groundwater Pumping with Ex-situ Treatment", with the exception that this measure additionally includes injection of water (likely treated extraction system water) into groundwater immediately upgradient of the extraction well system (AOI 3), in order to produce a recirculation process known as a closed-loop groundwater treatment system. The closed-loop system would help reduce constituent concentrations in downgradient groundwater by extracting affected groundwater and injecting water upgradient of the extraction system, thereby both removing and flushing constituent concentrations within the closed-loop system area of influence. Treatment of extracted groundwater would need to satisfy requirements under an approved injection permit, including meeting constituent concentration limitations.*	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 2. Under source control measures that do not involve CIP with a slurry wall for the Ash Pond System, a low-permeability cement-bentonite slurry wall could be installed as a supplemental measure farther downgradient to the west to limit continued downgradient migration of constituents in groundwater.*	*MNA is considered and evaluated as a potential supplementary groundwater measure that may be considered for implementation in the future. MNA is a groundwater measure that involves the evaluation of data collected from historical and ongoing groundwater monitoring to demonstrate that physical, chemical, and biological processes naturally occurring in the subsurface are sufficient to adequately remediate (or attenuate) SSLs to the GWPS.*
§257.96(c)(1)					
Performance	**Moderate to High Performance** Hydraulic containment through groundwater pumping is effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Groundwater extraction effluent would be appropriately managed, including potential discharge in accordance with an approved NPDES permit, offsite disposal or other appropriate methods.	**Moderate to High Performance** Hydraulic containment through groundwater pumping is effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Ex-situ treatment of extracted groundwater would treat constituents in the effluent which would be appropriately managed, including potential discharge in accordance with an approved NPDES permit, offsite disposal, or other appropriate methods.	**High Performance** Hydraulic containment through groundwater pumping is highly effective at controlling the migration of constituents in groundwater, removing constituent mass from groundwater, and reducing constituent concentrations in groundwater. Injection of water upgradient of the extraction system would increase the rate of pore volume exchange, thereby resulting in an increased rate of remediation compared to groundwater pumping alone.	**Moderate to High Performance** Hydraulic containment through a slurry wall downgradient of the Ash Pond System would be effective at limiting the potential downgradient migration of constituents in groundwater.	**Low to Moderate Performance** Natural attenuation processes that are already active in the subsurface are expected to result in decreased constituent concentrations over time. A combination of physical, chemical, and biological attenuation processes is expected to help reduce arsenic and molybdenum concentrations over time, while physical processes are expected to help reduce lithium concentrations over time. MNA effectiveness may be limited in areas where constituent concentrations are well above the GWPS, particularly immediately downgradient of the Ash Pond System and Landfill boundaries.
Reliability	**Moderate to High Reliability** Groundwater pumping is expected to be a reliable remedy, although occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations.	**Moderate to High Reliability** Groundwater pumping and ex-situ treatment is expected to be a reliable remedy, although occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations.	**Moderate to High Reliability** Groundwater pumping, ex-situ treatment, and injection is expected to be a reliable remedy, although occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations	**Moderate Reliability** Use of a slurry wall is a proven engineering method to limit interaction between CCR material and groundwater and to limit the downgradient migration of constituents in groundwater. Data are limited on the performance beyond 40 to 50 years, and the slurry wall may need to be maintained over time to continue limiting the potential for interaction between CCR material and groundwater.	**High Reliability** MNA is expected to be reliable in treating the SSLs farthest downgradient of the Ash Pond System, as it relies on natural processes of attenuation already active in the subsurface to effectively address the target constituent(s).
Ease of implementation	**Low to Moderate Difficulty** Installation of groundwater extraction wells or interceptor trenches and associated infrastructure would occur downgradient of the Landfill and/or downgradient of the Ash Pond System.	**Moderate Difficulty** Installation of groundwater extraction wells, interceptor trenches, ex-situ treatment system, and associated infrastructure would occur downgradient to the west of the Landfill and/or downgradient to the west of the Ash Pond System. The ex-situ treatment system would be sized to manage potential treatment flow rates and involve additional construction and O&M activities.	**Moderate Difficulty** Installation of groundwater extraction wells, interceptor trench, ex-situ treatment system, injection wells, and associated infrastructure would occur downgradient to the west of the Landfill and/or downgradient to the west of the Ash Pond System. The ex-situ treatment system would be sized to manage potential treatment flow rates and involve additional construction and O&M activities.	**Moderate to High Difficulty** Construction of a slurry wall to the target depth (installed to the top of bedrock) would entail the use of specialized heavy equipment. Slurry walls can be installed up to 100 feet below ground surface (bgs). The approximate depth to bedrock downgradient of the Ash Pond System ranges from 65 to 75 feet bgs. The anticipated target depth is considered reasonable for implementation of slurry wall construction.	**Easy** Natural attenuation processes are already active in the subsurface, and a groundwater monitoring system already exists to continue evaluating MNA effectiveness. Data obtained from ongoing groundwater monitoring would continue to be evaluated to confirm if the existing CCR Rule groundwater monitoring system is sufficient or whether additional monitoring well installation may be needed to demonstrate the effectiveness of MNA.
Potential impacts - safety impacts	**Low to Moderate Potential Impact** Presents a low to moderate potential for safety impacts that could result from clearing/grading, construction, and O&M of the groundwater extraction system.	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from clearing/grading, construction, and O&M of the groundwater extraction and ex-situ treatment system.	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from clearing/grading, construction, and O&M of the groundwater extraction, ex-situ treatment, and injection system.	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from clearing/grading and construction of the slurry wall system.	**No Potential Impact** Presents no anticipated potential for safety impacts since natural attenuation is occurring and will continue without external action/activity.
Potential impacts - cross-media impacts	**Low to Moderate Potential Impact** Presents a low to moderate potential for cross-media impacts because affected groundwater would be extracted from the subsurface and because the extracted groundwater would be characterized and appropriately managed (e.g., NPDES discharge or offsite disposal).	**Moderate Potential Impact** Presents a moderate potential for cross-media impacts as a result of extracting affected groundwater from the subsurface; discharging, disposing of, or managing the treated groundwater and generating a secondary waste stream (e.g., ion exchange media and RO reject water).	**Moderate Potential Impact** Presents a moderate potential for cross-media impacts as a result of extracting affected groundwater from the subsurface, injecting water (likely treated extraction system water), and generating a secondary waste stream (e.g., ion exchange media and RO reject water).	**Low Potential Impact** Presents a low potential for cross-media impacts since affected groundwater remains in-situ.	**Very Low Potential Impact** Presents a very low potential for cross-media impacts because affected groundwater remains in-situ, except for the minimal pumping required for groundwater monitoring.
Potential impacts - exposure to residual contamination	**Low Potential Impact** Presents a low potential for exposure to residual contamination because extracted groundwater would be characterized and appropriately managed (e.g., NPDES discharge, offsite disposal), and direct exposure to pumped groundwater is unlikely.	**Moderate Potential Impact** Presents a moderate potential for exposure to residual contamination as a result of generating a secondary waste stream (e.g., ion exchange media and RO reject water), in addition to a limited potential for exposure resulting from the extracted groundwater.	**Moderate Potential Impact** Presents a moderate potential for exposure to residual contamination as a result of generating a secondary waste stream (e.g., ion exchange media and RO reject water), in addition to a limited potential for exposure resulting from the extracted groundwater.	**Low to Very Low Potential Impact** Presents a low potential for exposure to residual contamination because affected groundwater remains in-situ.	**Very Low Potential Impact** Presents a very low potential for exposure to residual contamination because affected groundwater remains in-situ, except for the minimal pumping required for groundwater monitoring.

TABLE 2-1B
GROUNDWATER MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

	GROUNDWATER MEASURES				
	HYDRAULIC CONTAINMENT				***MONITORED NATURAL ATTENUATION (MNA)***
	Hydraulic Containment through Groundwater Pumping	***Hydraulic Containment through Groundwater Pumping with Ex-situ Treatment***	***Hydraulic Containment through Groundwater Pumping, Ex-situ Treatment, with Injection Wells***	***Hydraulic Containment through Slurry Wall***	
General Description	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 1, 2, 3, and 4. For AOIs 1, 3 and 4, constituents of concern would be addressed via hydraulic containment through groundwater pumping from a series of extraction wells or interceptor trenches that could be installed downgradient to the west of the Ash Pond System boundary and/or Landfill boundary that would pump at a sufficient rate to hydraulically control the migration of constituents downgradient. For AOI 2, hydraulic containment would be limited to groundwater pumping within the interior of the Ash Pond System under a scenario of closure by CIP with a slurry wall (see Table 2-1A). Extracted groundwater would be characterized and appropriately managed.*	*This groundwater measure is similar to the "Hydraulic Containment through Groundwater Pumping" measure, with the exception that this measure additionally includes ex-situ treatment of extracted groundwater. Possible treatment technologies could include ion exchange and RO treatment.*	*This groundwater measure is similar to the "Hydraulic Containment through Groundwater Pumping with Ex-situ Treatment", with the exception that this measure additionally includes injection of water (likely treated extraction system water) into groundwater immediately upgradient of the extraction well system (AOI 3), in order to produce a recirculation process known as a closed-loop groundwater treatment system. The closed-loop system would help reduce constituent concentrations in downgradient groundwater by extracting affected groundwater and injecting water upgradient of the extraction system, thereby both removing and flushing constituent concentrations within the closed-loop system area of influence. Treatment of extracted groundwater would need to satisfy requirements under an approved injection permit, including meeting constituent concentration limitations.*	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 2, 3 and 4. Under source control measures that do not involve CIP with a slurry wall for the Ash Pond System, a low-permeability cement-bentonite slurry wall could be installed as a supplemental measure farther downgradient to the west to limit continued downgradient migration of constituents in groundwater.*	*This groundwater measure is considered and evaluated as a potential supplementary groundwater measure that may be considered for implementation in the future. MNA is a groundwater measure that involves the evaluation of data collected from historical and ongoing groundwater monitoring to demonstrate that physical, chemical, and biological processes naturally occurring in the subsurface are sufficient to adequately remediate (or attenuate) SSLs to the GWPS.*
§257.96(c)(2)					
Time required to begin the remedy	An estimated 1.5 to 2.5 years to perform testing, prepare the design, receive approvals, install, and begin operating the groundwater extraction system.	An estimated 1.5 to 3 years to perform testing, prepare the design, receive approvals, install, and begin operating the groundwater extraction system and ex-situ treatment system.	An estimated 2 to 3.5 years to perform testing, prepare the design, receive approvals, install, and begin operating the groundwater extraction system, ex-situ treatment system, and injection well system.	An estimated minimum of 2 to 3 years would be expected to perform a pre-design investigation, prepare design drawings and technical specifications (design package), obtain IDEM approval of the design package, obtain applicable permits, retain and mobilize a qualified contractor (including necessary personnel and equipment), and begin implementing slurry wall construction.	Natural attenuation is already ongoing at the Site, and a groundwater monitoring system exists to continue monitoring conditions and evaluate MNA effectiveness.
Time required to complete the remedy	Based on groundwater modeling, groundwater pumping of extraction wells or interceptor trench is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.	Based on groundwater modeling, groundwater pumping of extraction wells or interceptor trench is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.	Based on groundwater modeling, groundwater pumping of extraction wells with upgradient injection of treated groundwater is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.	Based on groundwater modeling, slurry wall construction with low-capacity groundwater extraction on the interior of the Ash Pond System is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill. Similar results are anticipated for a downgradient slurry wall.	Based on preliminary data evaluation, natural processes of attenuation already active in the subsurface are anticipated to achieve GWPSs beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
§257.96(c)(3)					
State or local permitting requirements or other environmental or public health requirements	Could require an extraction well permit, a stormwater construction permit, and a construction in floodway permit. Could also require a NPDES permit modification.	Could require an extraction well permit, a Class 1 structural permit for construction of the ex-situ treatment system, a stormwater construction permit, and a construction in floodway permit. Could also require a NPDES permit modification.	Could require an extraction well permit, a Class 1 structural permit for construction of the ex-situ treatment system, a stormwater construction permit, and a construction in floodway permit. Could also require a Class V underground injection well permit.	Could require stormwater construction permit, construction in floodway permit.	No permitting or approvals are anticipated, with the exception of a potential concurrence review/approval by IDEM of the groundwater performance monitoring program to support MNA.

TABLE 2-1B
GROUNDWATER MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

	GROUNDWATER MEASURES		
	IN-SITU TREATMENT		***WATER INFILTRATION***
	In-Situ Treatment through Redox Manipulation (ISRM)	***In-Situ Treatment through a Permeable Reactive Barrier (PRB)***	***Water Infiltration through Injection Wells***
General Description	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 4, and 5. In-situ treatment through in-situ redox manipulation (ISRM) could involve air sparging or subsurface injection of a reagent (e.g., emulsified vegetable oil [EVO], ferric chloride). Although in-situ treatment through ISRM could occur elsewhere at the Site, it is most favorably considered for potential implementation downgradient of the Ash Pond System boundary within AOI 4 or as targeted spot treatment within AOI 5.*	*This groundwater measure is considered and evaluated as a potential supplementary groundwater measure that may be considered for implementation in the future. In-situ treatment would involve installation of a PRB to effectively immobilize the target constituents in groundwater. A PRB would be constructed along a vertical plane perpendicular to groundwater flow and contain a combination of relatively highly porous (i.e., permeable) media and reactive media mixture for effective treatment.*	*This groundwater measure is considered within AOI 3 as part of the Hydraulic Containment through Groundwater Pumping, Ex-Situ Treatment, with the Injection Wells groundwater measure discussed in Section 2.3.1.3. In addition, water infiltration through injection wells could be used in the future as a stand-alone groundwater measure to supplement other implemented groundwater measures. This groundwater measure would involve injection of water into areas of affected groundwater to produce an ongoing flushing effect, which would reduce constituent concentrations in groundwater over time. Water infiltration through injection wells treats groundwater by increasing the rates of pore volume exchange and reducing the cleanup time frame.*
§257.96(c)(1)			
Performance	**Moderate Performance** ISRM is anticipated to limit the migration and concentrations of geochemically reactive SSLs in groundwater in localized areas where the aquifer redox conditions will not be affected by oxygenated river water. ISRM is anticipated to be effective at treating arsenic and to a lesser degree molybdenum. Pilot and/or bench-scale laboratory testing would be necessary to identify suitable reagent(s) and evaluate treatment performance based on Site conditions.	**Moderate Performance** Use of a PRB is anticipated to limit the migration and concentrations of geochemically reactive SSLs in groundwater at targeted sections along the downgradient Ash Pond System boundary and/or Landfill boundary. Use of a PRB is anticipated to be effective at treating arsenic and (to a lesser degree) molybdenum. Pilot and/or bench-scale laboratory testing would be necessary to identify suitable reagent(s) and evaluate treatment effectiveness based on Site conditions.	**Moderate Performance** Water infiltration through injection wells is expected to augment natural attenuation processes that are already active in the subsurface and/or other groundwater measures, such as groundwater pumping, to accelerate the rate of decrease of constituent concentrations over time. Water infiltration would increase the magnitude of physical dilution and dispersion attenuation processes and the rate of pore volume exchange, thereby resulting in an increased rate of remediation.
Reliability	**Moderate to High Reliability** ISRM is expected to be a moderately reliable remedy, although its reliability is dependent on the stability of geochemical conditions over time to maintain the stability of precipitated molybdenum. Occasional O&M needs may arise for an ISRM treatment system that requires temporary system shutoff and maintenance to ensure reliable system operations.	**Moderate Reliability** In-situ treatment with a PRB is expected to provide moderate reliability for addressing SSLs at the Site, although its reliability is dependent on the stability of geochemical conditions over time to maintain the stability of precipitated molybdenum. Replacement of reactive material within a PRB may be necessary over time if absorption and precipitation of constituents within the PRB (i.e., clogging) renders it ineffective at continuing to treat affected groundwater over time.	**Moderate to High Reliability** Water infiltration is expected to be reliable in treating the SSLs in the area downgradient of the injection wells, as it relies on enhanced dilution and dispersion and natural processes of attenuation already active in the subsurface to effectively address the target constituent(s). Occasional O&M needs may require temporary system shutoff and maintenance to ensure reliable system operations.
Ease of implementation	**Moderate Difficulty** ISRM would be limited to spot-treat areas with arsenic in AOI 5 and within localized downgradient areas with molybdenum within AOI 4 where SSLs are elevated. Bench-scale and pilot testing and engineering design would likely be necessary for implementation.	**Moderate to High Difficulty** Installation of a PRB or series of PRBs along portions of the downgradient Ash Pond System boundary and/or Landfill boundary would entail a moderate to high level of difficulty to implement due to the length of affected groundwater and existing infrastructure. Initial PRB construction would involve pilot testing, likely along a discrete portion of the Ash Pond System or Landfill boundary where constituent concentrations are highest, with results of the pilot test serving to inform potential full-scale implementation.	**Moderate Difficulty** Installation of water injection wells would occur in select areas near the downgradient boundary of the Ash Pond System and/or Landfill where constituent concentrations area highest. A reliable source of water for subsurface injection would need to be identified.
Potential impacts - safety impacts	**Low to Moderate Potential Impact** Presents a low to moderate potential for safety impacts that could result from construction and O&M of ISRM treatment.	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from trenching and construction of a PRB or series of PRBs along portions of the downgradient boundary of the Ash Pond System and/or Landfill.	**Moderate Potential Impact** Presents a moderate potential for safety impacts that could result from clearing/grading, construction, and O&M of the injection system.
Potential impacts - cross-media impacts	**Low Potential Impact** Presents a low potential for cross-media impacts because affected groundwater remains in-situ.	**Low Potential Impact** Presents a low potential for cross-media impacts because affected groundwater remains in-situ.	**Low Potential Impact** Presents a low potential for cross-media impacts because affected groundwater remains in-situ.
Potential impacts - exposure to residual contamination	**Very Low Potential Impact** Presents a very low potential for exposure to residual contamination because the affected groundwater remains in-situ and no secondary waste streams would be generated during the treatment process.	**Low to Very Low Potential Impact** Presents a low to very low potential for exposure to residual contamination because the affected groundwater remains in-situ and no secondary waste streams would be generated during the treatment process except in the event that reactive media within a PRB requires excavation and replacement.	**Very Low Potential Impact** Presents a very low potential for exposure to residual contamination because the affected groundwater remains in-situ and no secondary waste streams would be generated during the injection process.

TABLE 2-1B
GROUNDWATER MEASURES SCREENING MATRIX - 40 CFR §257.96(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

	GROUNDWATER MEASURES		
	IN-SITU TREATMENT		***WATER INFILTRATION***
	In-Situ Treatment through Redox Manipulation (ISRM)	***In-Situ Treatment through a Permeable Reactive Barrier (PRB)***	***Water Infiltration through Injection Wells***
General Description	*This groundwater measure is primarily under consideration for addressing SSLs in AOIs 4 and 5. In-situ treatment through in-situ redox manipulation (ISRM) could involve air sparging or subsurface injection of a reagent (e.g., emulsified vegetable oil [EVO], ferric chloride). Although in-situ treatment through ISRM could occur elsewhere at the Site, it is most favorably considered for potential implementation downgradient of the Ash Pond System boundary within AOI 4 or as targeted spot treatment within AOI 5.*	*This groundwater measure is considered and evaluated as a potential supplementary groundwater measure that may be considered for implementation in the future. In-situ treatment would involve installation of a PRB to effectively immobilize the target constituents in groundwater. A PRB would be constructed along a vertical plane perpendicular to groundwater flow and contain a combination of relatively highly porous (i.e., permeable) media and reactive media mixture for effective treatment.*	*This groundwater measure is considered within AOI 3 as part of the Hydraulic Containment through Groundwater Pumping, Ex-Situ Treatment, with the Injection Wells groundwater measure discussed in Section 2.3.1.3. In addition, water infiltration through injection wells could be used in the future as a stand-alone groundwater measure to supplement other implemented groundwater measures. This groundwater measure would involve injection of water into areas of affected groundwater to produce an ongoing flushing effect, which would reduce constituent concentrations in groundwater over time. Water infiltration through injection wells treats groundwater by increasing the rates of pore volume exchange and reducing the cleanup time frame.*
§257.96(c)(2)			
Time required to begin the remedy	An estimated 1 to 2 years to perform bench-scale and pilot testing, prepare the design, obtain permits and approvals, install, and begin the initial distribution of reagents (and potential air sparging) to promote in-situ treatment.	An estimated 1 to 2 years to perform bench-scale and pilot testing, prepare the design, receive permits and approvals, install, and begin installation of a PRB to promote in-situ treatment.	An estimated 1 to 1.5 years to prepare the design, receive approvals, install, and begin operating the injection well system.
Time required to complete the remedy	Based on groundwater modeling for other groundwater measures, ISRM is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.	Based on groundwater modeling for other groundwater measures, in-situ treatment through the use of PRBs is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.	Based on groundwater modeling for other groundwater measures, this groundwater measure is anticipated to achieve GWPSs in a time frame beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill.
§257.96(c)(3)			
State or local permitting requirements or other environmental or public health requirements	Could require an injection permit, a stormwater construction permit, and a construction in floodway permit.	Could require an injection permit, a stormwater construction permit, and a construction in floodway permit.	Could require an injection permit, a stormwater construction permit, and a construction in floodway permit. Could require registration with IDNR as a SWWF if more than 100,000 gallons of water per day is withdrawn as source water, depending on the source of water identified (e.g. surface water from the White River and/or groundwater).

Notes:
*AOI - Area of Interest (refer to **Figure 1-4** for locations of AOIs)*
CBR - closure by removal
CCR - coal combustion residuals
CFR - Code of Federal Regulations
CIP - closure in place
EVO - emulsified vegetable oil
GWPS - groundwater protection standard
IDEM - Indiana Department of Environmental Management
IDNR - Indiana Department of Natural Resources
ISRM - in-situ redox manipulation
MNA - monitored natural attenuation
NPDES - National Pollutant Discharge Elimination System
O&M - operations and maintenance
RO - reverse osmosis
SSL - statistically significant level
SWWF - significant water withdrawal facility

TABLE 2-2
SUMMARY OF REMEDIAL ALTERNATIVES
CORRECTIVE MEASURES ASSESSMENT - ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

Alternative Number	Remedial Alternative Description	Source Control Description		Groundwater Measures per Area of Interest (AOI)				
		Ash Pond System	Landfill	AOI 1	AOI 2	AOI 3	AOI 4	AOI 5
1A	**Ash Pond System Closure in Place (CIP) with Capping, Slurry Wall, Hydraulic Containment through Groundwater Pumping, and Geochemical Control, Cap Landfill**	**CIP with Capping and Slurry Wall[2]**	**Low Permeability Cap**	**Hydraulic Containment (Groundwater Pumping)** No Active Treatment Technologies	**Hydraulic Containment (Slurry Wall)** [Limited Pumping] No Active Treatment Technologies	**Hydraulic Containment (Groundwater Pumping)** No Active Treatment Technologies	**Targeted Geochemical Control** In-Situ redox manipulation (ISRM)	**ISRM Arsenic Treatment** (AP-2A, MW-3, MW-27B)
1B	**Ash Pond System CIP with Capping, Slurry Wall, Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment, and Geochemical Control, Cap Landfill**			**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]	**Hydraulic Containment (Slurry Wall)** [Limited Pumping] with Ex-Situ Treatment System[1]	**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]		
1C	**Ash Pond System CIP with Capping, Slurry Wall, Hydraulic Containment through Groundwater Pumping, Cap Landfill**			**Hydraulic Containment (Groundwater Pumping)** No Active Treatment Technologies	**Hydraulic Containment (Slurry Wall)** [Limited Pumping] No Active Treatment Technologies	**Hydraulic Containment (Groundwater Pumping with Injection Wells)** with Ex-Situ Treatment System[1]	**Hydraulic Containment (Groundwater Pumping)** No Active Treatment Technologies	
1D	**Ash Pond System CIP with Capping, Slurry Wall, Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment, Cap Landfill**			**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]	**Hydraulic Containment (Slurry Wall)** [Limited Pumping] with Ex-Situ Treatment System[1]		**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]	
2A	**Ash Pond System Closure by Removal (CBR), Hydraulic Containment through Groundwater Pumping, Cap Landfill**	**Closure by Removal**	**Low Permeability Cap**	**Hydraulic Containment (Groundwater Pumping)** No Active Treatment Technologies	**N/A[3]**	**Hydraulic Containment (Groundwater Pumping)** No Active Treatment System		
2B	**Ash Pond System CBR, Hydraulic Containment through Groundwater Pumping with Ex-Situ Treatment, Cap Landfill**			**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]	**N/A[3]**	**Hydraulic Containment (Groundwater Pumping)** with Ex-Situ Treatment System[1]		

Notes:

[1] Ex-situ Treatment System (e.g., ion exchange or reverse osmosis).

[2] Perimeter slurry wall is defined as a full-depth slurry wall installed around the footprint of Ponds A, A', C, and Former Pond B installed to the top of bedrock with limited pumping within the ponds to establish an inward hydraulic gradient.

[3] Source material will be removed, eliminating the potential for ongoing constituent contribution to groundwater. Flushing and other attenuation mechanisms beneath AOI 2 will reduce constituent concentrations in groundwater over time.

HALEY ALDRICH

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1A	**Alternative 1B**
	Source Control Measures: Closure in Place (CIP) with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (area of interest [AOI] 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted In-situ Treatment (IST) through In-situ Redox Manipulation (ISRM) downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, and 3).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[1], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) or the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted IST through ISRM downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). Ex-situ treatment of extracted groundwater (AOIs 1, 2, and 3).
§257.97(c)(1) The long- and short-term effectiveness and protectiveness of the remedy(s), along with the degree of certainty that the remedy will prove successful		
(i) Magnitude of reduction of existing risk	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the engineered containment of CCR material through construction of a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B, long-term management of CCR material within the existing Ash Pond System and Landfill engineered capping systems, constituent mass removal through hydraulic containment through groundwater pumping within and downgradient of the Ash Pond System and Landfill, and constituent immobilization through ISRM downgradient of the Ash Pond System.	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the engineered containment of CCR material through construction of a low-permeability cement-bentonite slurry wall around the perimeter of the Ponds A, A', C, and Former Pond B, long-term management of CCR material within the existing Ash Pond System and Landfill engineered capping systems, constituent mass removal through hydraulic containment through groundwater pumping within and downgradient of the Ash Pond System and Landfill, and constituent immobilization through ISRM downgradient of the Ash Pond System.
(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy	CIP results in CCR material managed onsite within the existing boundaries of the Ash Pond System and Landfill, which have been capped and graded to ensure proper drainage to prevent rainfall infiltration. CCR material remaining in Ponds A, A', C, and Former Pond B would be contained within a low-permeability cement-bentonite slurry wall constructed around the perimeter of Ponds A, A', C, and Former Pond B. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining onsite is considered low.	CIP results in CCR material managed onsite within the existing boundaries of the Ash Pond System and Landfill, which have been capped and graded to ensure proper drainage to prevent rainfall infiltration. CCR material remaining in Ponds A, A', C, and Former Pond B would be contained within a low-permeability cement-bentonite slurry wall constructed around the perimeter of Ponds A, A', C, and Former Pond B. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining onsite is considered low.
(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance (O&M)	A moderate degree of long-term management would be required. Long-term management would be necessary for the groundwater monitoring system, hydraulic containment (i.e., groundwater pumping and slurry wall), ISRM system, and associated O&M. Additionally, ongoing maintenance for the post-closure existing engineered cap systems would be necessary. The ClosureTurf® cover system for the Landfill requires minimal maintenance. The slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time to continue limiting the potential for CCR-groundwater interaction.	A moderate to high degree of long-term management would be required. Long-term management would be necessary for the groundwater monitoring system, hydraulic containment (i.e., groundwater pumping and slurry wall), ex-situ groundwater treatment system, ISRM system, and associated O&M. Additionally, ongoing maintenance for the post-closure existing engineered cap systems would be necessary. The ClosureTurf® cover system for the Landfill requires minimal maintenance. The slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time to continue limiting the potential for CCR-groundwater interaction.
(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy	Truck traffic on public roads would be limited to local delivery of materials (dry Portland cement and powdered bentonite) needed to construct the slurry wall. The potential for risk to the community or environment would be limited given the limited potential offsite traffic and lack of offsite CCR material transportation.	Truck traffic on public roads would be limited to local delivery of materials (dry Portland cement and powdered bentonite) needed to construct the slurry wall. The potential for risk to the community or environment would be limited given the limited potential offsite traffic and lack of offsite CCR material transportation.
(v) Time until full protection is achieved	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.

[1] Low-permeability engineered cover systems have been installed over CCR material within Ponds A, A', C, and Former Pond B. CCR material within the Former Pond D footprint is overlain by asphalt pavement and a wastewater treatment plant (critical infrastructure) and surrounded by a sheet pile wall.
[2] A slurry wall would not be constructed around the southwest perimeter of Former Pond D due to multiple underground utilities that are critical to the operation of the active wastewater treatment plant.

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1A	**Alternative 1B**
	Source Control Measures: Closure in Place (CIP) with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (area of interest [AOI] 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted In-situ Treatment (IST) through In-situ Redox Manipulation (ISRM) downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, and 3).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[1], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) or the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted IST through ISRM downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). Ex-situ treatment of extracted groundwater (AOIs 1, 2, and 3).
(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment	The potential exposure to CCR material during construction of the slurry wall is limited because the majority of the slurry wall alignment is outside the Ash Pond System. Potential for exposure to CCR material exists during excavation, transportation, re-disposal and potential for incidental CCR material release into the environment during slurry wall installation around the perimeter of Former Pond D, which would result in Former Pond D remaining outside the slurry wall. CCR material handling would occur onsite, with a limited amount of offsite CCR material handling for disposal of CCR material removed as a result of slurry wall installation around the perimeter of Former Pond D.	The potential exposure to CCR material during construction of the slurry wall is limited because the majority of the slurry wall alignment is outside the Ash Pond System. Potential for exposure to CCR material exists during excavation, transportation, re-disposal and potential for incidental CCR material release into the environment during slurry wall installation around the perimeter of Former Pond D. CCR material handling would occur onsite, with a limited amount of offsite CCR material handling for disposal of CCR material removed as a result of slurry wall installation around the perimeter of Former Pond D. With ex-situ groundwater treatment, a secondary waste stream (e.g., spent resins or reject water) would be generated that could introduce additional potential for exposure.
(vii) Long-term reliability of the engineering and institutional controls	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long-term. Data are limited on the performance of slurry walls beyond 40 to 50 years, and the slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time.	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long term. Data are limited on the performance of slurry walls beyond 40 to 50 years, and the slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time.
(viii) Potential need for replacement of the remedy	Replacement of the source control-related and groundwater-related components of the alternative is unlikely. Potential for replacement of the slurry walls exists due to limited data on the performance of slurry walls beyond 40 to 50 years.	Replacement of the source control-related and groundwater-related components of the alternative is unlikely. Potential for replacement of the slurry walls exists due to limited data on the performance of slurry walls beyond 40 to 50 years.
§257.97(c)(2) The Effectiveness of the Remedy in Controlling the Source to Reduce Further Releases		
(i) The extent to which containment practices will reduce further releases	The existing low permeability cover system of Ponds A, A', C, and Former Pond B would effectively isolate the CCR material by managing it within a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B. The ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.	The existing low permeability cover system of Ponds A, A', C, and Former Pond B would effectively isolate the CCR material by managing it within a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B. The ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.
(ii) The extent to which treatment technologies may be used	ISRM would be implemented for areas downgradient of the Ash Pond System (AOI 4) and near AP-2A, MW-3 and MW-27B (AOI 5).	ISRM would be implemented for areas downgradient of the Ash Pond System (AOI 4) and near AP-2A, MW-3 and MW-27B (AOI 5). Ex-situ treatment of groundwater would be used to treat groundwater pumped from extraction wells and/or interceptor trenches.
§257.97(c)(3) The Ease or Difficulty of Implementing a Potential Remedy		
(i) Degree of difficulty associated with constructing the technology	Large-scale construction activities would be required to install a cement-bentonite slurry wall to the top of bedrock around the perimeter of Ponds A, A', C, and Former Pond B. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of a groundwater extraction system and ISRM system.	CIP with slurry wall involves large-scale construction activities to install a cement-bentonite slurry wall to the top of bedrock around the perimeter of Ponds A, A', C, and Former Pond B. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of groundwater extraction system, ISRM system, and ex-situ groundwater treatment system.
(ii) Expected operational reliability of the technologies	Closure and hydraulic containment related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM treatment system involves additional O&M requirements.	Closure and hydraulic containment related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM and ex-situ groundwater treatment systems involve additional O&M requirements.

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1A	**Alternative 1B**
	Source Control Measures: Closure in Place (CIP) with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low-permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (area of interest [AOI] 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted In-situ Treatment (IST) through In-situ Redox Manipulation (ISRM) downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, and 3).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[1], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) or the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3); Targeted IST through ISRM downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). Ex-situ treatment of extracted groundwater (AOIs 1, 2, and 3).
(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies	Various permits and approvals would be anticipated to implement slurry wall construction (e.g., IDEM design package approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA § 404, IDEM § 401 Water Quality Certification, and potential NPDES permit modifications). Groundwater-related permitting and approvals would be required for installing extraction wells or interceptor trenches, and injection permits would also be required for the ISRM systems.	Various permits and approvals would be anticipated to implement slurry wall construction (e.g., IDEM design package approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA § 404, IDEM § 401 Water Quality Certification, and potential NPDES permit modifications). Groundwater-related permitting and approvals would be required for installing extraction wells or interceptor trenches, and injection permits would also be required for the ISRM systems. Additionally, permitting and approvals would be required for implementation of the ex-situ groundwater treatment system.
(iv) Availability of necessary equipment and specialists	A significant amount of equipment and specialists would be needed to complete installation of the slurry wall and construct and operate the groundwater extraction and ISRM systems.	A significant amount of equipment and specialists would be needed to complete the installation of the slurry wall and construct and operate the groundwater extraction and ISRM systems. Additional equipment and specialists may be required to construct and operate the ex-situ groundwater treatment system.
(v) Available capacity and location of needed treatment, storage, and disposal services	Treatment, storage or disposal of extracted groundwater or the ISRM systems would not be required for this alternative.	Extracted groundwater would be treated for this alternative, requiring construction and O&M of an onsite treatment system and disposal of secondary waste streams generated as a result of the treatment process. Treatment, storage or disposal would not be required for the ISRM systems.

Notes:
CBR - closure by removal
CCR - coal combustion residuals
CIP - closure in place
GWPS - groundwater protection standard
IDEM - Indiana Department of Environmental Management
ISRM - in-situ redox manipulation
NPDES - National Pollutant Discharge Elimination System
O&M - operations and maintenance
SSL - statistically significant level

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1C	**Alternative 1D**
	Source Control Measures: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, 3, and 4).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5).Ex-situ treatment of extracted groundwater (AOIs 1, 2, 3, and 4).
§257.97(c)(1) The long- and short-term effectiveness and protectiveness of the remedy(s), along with the degree of certainty that the remedy will prove successful		
(i) Magnitude of reduction of existing risk	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the engineered containment of CCR material through construction of a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B, long-term management of CCR material within the existing Ash Pond System and Landfill engineered capping systems, constituent mass removal through hydraulic containment through groundwater pumping within and downgradient of the Ash Pond System and Landfill, and enhanced attenuation through targeted water infiltration via injection wells along the boundary of Ponds A and A'.	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the engineered containment of CCR material through construction of a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B, long-term management of CCR material within the existing Ash Pond System and Landfill engineered capping systems, constituent mass removal through hydraulic containment through groundwater pumping within and downgradient of the Ash Pond System and Landfill, and enhanced attenuation through targeted water infiltration via injection wells along the boundary of Ponds A and A'.
(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy	CIP results in CCR material managed onsite within the existing boundaries of the Ash Pond System and Landfill, which have been capped and graded to ensure proper drainage to prevent rainfall infiltration. CCR material remaining in Ponds A, A', C, and Former Pond B would be contained within a low-permeability cement-bentonite slurry wall constructed around the perimeter of Ponds A, A', C, and Former Pond B. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining onsite is considered low.	CIP results in CCR material managed onsite within the existing boundaries of the Ash Pond System and Landfill, which have been capped and graded to ensure proper drainage to prevent rainfall infiltration. CCR material remaining in Ponds A, A', C, and Former Pond B would be contained within a low-permeability cement-bentonite slurry wall constructed around the perimeter of Ponds A, A', C, and Former Pond B. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining onsite is considered low.
(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance (O&M)	A moderate degree of long-term management would be required. Long-term management would be necessary for the groundwater monitoring system, hydraulic containment (i.e., groundwater pumping and slurry wall), injection system, ISRM system, and associated O&M. Additionally, ongoing maintenance for the post-closure existing engineered cap systems would be necessary. The ClosureTurf® cover system for the Landfill requires minimal maintenance. The slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time to continue limiting the potential for CCR-groundwater interaction.	A moderate to high degree of long-term management would be required. Long-term management would be necessary for the groundwater monitoring system, hydraulic containment (i.e., groundwater pumping and slurry wall), ex-situ groundwater treatment system, injection system, ISRM system, and associated O&M. Additionally, ongoing maintenance for the existing post-closure engineered cap systems would be necessary. The ClosureTurf® cover system for the Landfill requires minimal maintenance. The slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time to continue limiting the potential for CCR-groundwater interaction.
(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy	Truck traffic on public roads would be limited to local delivery of materials (dry Portland cement and powdered bentonite) needed to construct the slurry wall. The potential for risk to the community or environment would be limited given the limited potential offsite traffic and lack of offsite CCR material transportation.	Truck traffic on public roads would be limited to local delivery of materials (dry Portland cement and powdered bentonite) needed to construct the slurry wall. The potential for risk to the community or environment would be limited given the limited potential offsite traffic and lack of offsite CCR material transportation.
(v) Time until full protection is achieved	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.
(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment	The potential exposure to CCR material during construction of the slurry wall is limited because the majority of the slurry wall alignment is outside the Ash Pond System. Potential for exposure to CCR material exists during excavation, transportation, re-disposal and potential for incidental CCR material release into the environment during slurry wall installation around the perimeter of Former Pond D. CCR material handling would occur onsite, with a limited amount of offsite CCR material handling for disposal of CCR material removed as a result of slurry wall installation around the perimeter of Former Pond D.	The potential exposure to CCR material during construction of the slurry wall is limited because the majority of the slurry wall alignment is outside the Ash Pond System. Potential for exposure to CCR material exists during excavation, transportation, re-disposal and potential for incidental CCR material release into the environment during slurry wall installation around the perimeter of Former Pond D. CCR material handling would occur onsite, with a limited amount of offsite CCR material handling for disposal of CCR material removed as a result of slurry wall installation around the perimeter of Former Pond D. CCR material handling would occur both onsite and offsite. With ex-situ groundwater treatment, a secondary waste stream (e.g., spent resins or reject water) would be generated that could introduce additional potential for exposure.

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1C	**Alternative 1D**
	Source Control Measures: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, 3, and 4).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5).Ex-situ treatment of extracted groundwater (AOIs 1, 2, 3, and 4).
(vii) Long-term reliability of the engineering and institutional controls	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long-term. Data are limited on the performance of slurry walls beyond 40 to 50 years, and the slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time.	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long term. Data are limited on the performance of slurry walls beyond 40 to 50 years, and the slurry wall around the perimeter of Ponds A, A', C, and Former Pond B may need to be monitored and maintained over time.
(viii) Potential need for replacement of the remedy	Replacement of the source control-related and groundwater-related components of the alternative is unlikely. Potential for replacement of the slurry walls exists due to limited data on the performance of slurry walls beyond 40 to 50 years.	Replacement of the source control-related and groundwater-related components of the alternative is unlikely. Potential for replacement of the slurry walls exists due to limited data on the performance of slurry walls beyond 40 to 50 years.
§257.97(c)(2) The Effectiveness of the Remedy in Controlling the Source to Reduce Further Releases		
(i) The extent to which containment practices will reduce further releases	The existing low permeability cover system of Ponds A, A', C, and Former Pond B would effectively isolate the CCR material by managing it within a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B. The ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.	The existing low permeability cover system of Ponds A, A', C, and Former Pond B would effectively isolate the CCR material by managing it within a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B. The l ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.
(ii) The extent to which treatment technologies may be used	ISRM would be implemented near AP-2A, MW-3, MW-27B (AOI 5). Additionally, treatment of the water used for targeted injection wells along the boundary of Ponds A and A' (AOI 3) may be necessary.	ISRM would be implemented for areas near AP-2A, MW-3, MW-27B (AOI 5). Additionally, treatment of the water used for targeted injection wells along the boundary of Ponds A and A' (AOI 3) may be necessary. Ex-situ treatment of groundwater would be used to treat groundwater pumped from extraction wells and or interceptor trenches
§257.97(c)(3) The Ease or Difficulty of Implementing a Potential Remedy		
(i) Degree of difficulty associated with constructing the technology	Large-scale construction activities would be required to install a cement-bentonite slurry wall to the top of bedrock around the perimeter of Ponds A, A', C, and Former Pond B. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of groundwater extraction system, injection system, and ISRM system.	Large-scale construction activities would be required to install a cement-bentonite slurry wall to the top of bedrock around the perimeter of the Ponds A, A', C, and Former Pond B. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of a groundwater extraction system, ex-situ groundwater treatment system, injection system, and ISRM system.
(ii) Expected operational reliability of the technologies	Closure and hydraulic containment related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM system involves additional O&M requirements.	Closure and hydraulic containment related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM and ex-situ groundwater treatment systems involve additional O&M requirements.
(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies	Various permits and approvals would be anticipated to implement slurry wall construction (e.g., IDEM design package approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA § 404, IDEM § 401 Water Quality Certification, and potential NPDES permit modifications). Groundwater-related permitting and approvals would be required for installing extraction wells or interceptor trenches, and injection permits would also be required for the injection and ISRM systems.	Various permits and approvals would be anticipated to implement slurry wall construction (e.g., IDEM design package approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA § 404, IDEM § 401 Water Quality Certification, and potential NPDES permit modifications). Injection permits would also be required for the injection and ISRM systems. Additionally, permitting and approvals would be required for implementation of the ex-situ groundwater treatment system.
(iv) Availability of necessary equipment and specialists	A significant amount of equipment and specialists would be needed to complete the installation of the slurry wall and construct and operate the groundwater extraction, injection, and ISRM systems.	A significant amount of equipment and specialists would be needed to complete the installation of the slurry wall and construct and operate the groundwater extraction, injection, and ISRM systems. Additional equipment and specialists may be required to construct and operate the ex-situ groundwater treatment system.

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 1	
	Alternative 1C	**Alternative 1D**
	Source Control Measures: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 2, 3, and 4).	**Source Control Measures**: CIP with Capping[1] and installing a low-permeability cement-bentonite slurry wall around the perimeter of Ponds A, A', C, and Former Pond B[2], and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill (AOI 1); Slurry Wall around and Limited Pumping within Ponds A, A', C, and Former Pond B (AOI 2); Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Ash Pond System (AOI 3) with injection wells along the boundary of Ponds A and A' (AOI 3); Hydraulic Containment (groundwater pumping) via extraction wells downgradient of Ash Pond System (AOI 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5).Ex-situ treatment of extracted groundwater (AOIs 1, 2, 3, and 4).
(v) Available capacity and location of needed treatment, storage, and disposal services	Treatment, storage or disposal of extracted groundwater or the ISRM systems would not be required for this alternative. Treatment of the source of water used for injection may be necessary.	Extracted groundwater would be treated for this alternative, requiring construction and O&M of an onsite treatment system and disposal of secondary waste streams generated as a result of the treatment process. Treatment, storage or disposal would not be required for the ISRM systems. Treatment of the source of water used for injection may be necessary.

Notes:
CCR - coal combustion residuals
CBR - closure by removal
CIP - closure in place
GWPS - groundwater protection standard
IDEM - Indiana Department of Environmental Management
ISRM - in-situ redox manipulation
NPDES - National Pollutant Discharge Elimination System
O&M - operations and maintenance
SSL - statistically significant level

TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 2	
	Alternative 2A	**Alternative 2B**
	Source Control Measure: Closure by Removal (CBR) for Ponds A, A' C, and Former Pond B[3] and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill and Ash Pond System (AOIs 1, 3, and 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 3, and 4).	**Source Control Measure**: CBR for Ponds A, A', C, and Former Pond B[1] and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill and Ash Pond System (AOIs 1, 3, and 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). Ex-situ treatment of extracted groundwater (AOIs 1, 3, and 4).
§257.97(c)(1) The long- and short-term effectiveness and protectiveness of the remedy(s), along with the degree of certainty that the remedy will prove successful		
(i) Magnitude of reduction of existing risk	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the removal of CCR material in Ponds A, A', C, and Former Pond B, long-term management of the removed CCR material from Ponds A, A', C, and Former Pond B within an engineered or beneficial use solution and engineered capping system for the Landfill, constituent mass removal through hydraulic containment downgradient of the Ash Pond System and Landfill, and constituent immobilization through ISRM downgradient of the Ash Pond System.	The risk evaluation concluded that no adverse risk currently exists for human health or the environment. The alternative results in the removal of CCR material in Ponds A, A', C, and Former Pond B, long-term management of the removed CCR material from Ponds A, A', C, and Former Pond B within an engineered or beneficial use solution and engineered capping system for the Landfill, constituent mass removal through hydraulic containment downgradient of the Ash Pond System and Landfill, and constituent immobilization through ISRM downgradient of the Ash Pond System
(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy	CBR for Ponds A, A', C, and Former Pond B would result in removed CCR material transported offsite for disposal in a lined, permitted landfill or managed for beneficial use. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining in the Landfill is considered low.	CBR for Ponds A, A', C, and Former Pond B would result in removed CCR material transported offsite for disposal in a lined, permitted landfill or managed for beneficial use. CCR material within the Landfill will be graded to ensure proper drainage and managed onsite through the installation of the ClosureTurf® cover system to prevent rainfall infiltration. The magnitude of residual risk of potential further releases associated with CCR material remaining in the Landfill is considered low.
(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance	A moderate degree of long-term management would be required. Long-term management would be necessary for a groundwater monitoring system, hydraulic containment (i.e., groundwater pumping), ISRM systems, and associated O&M. The ClosureTurf® cover system for the Landfill requires minimal maintenance.	A moderate to high degree of long-term management would be required. Long-term management would be necessary for a groundwater monitoring system, hydraulic containment (i.e., groundwater pumping), ex-situ groundwater treatment system, ISRM systems, and associated O&M. The ClosureTurf® cover system for the Landfill requires minimal maintenance.
(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy	CBR would include potential risks due to increased truck traffic on public roads (along with increased possibility of vehicular accidents, roadway damage, or incidental release of CCR material into the environment), truck emissions, and noise.	CBR would include potential risks due to increased truck traffic on public roads (along with increased possibility of vehicular accidents, roadway damage, or incidental release of CCR material into the environment), truck emissions, and noise.
(v) Time until full protection is achieved	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.	The risk evaluation concluded no adverse risk of exposure for potential human or environmental receptors to groundwater with SSLs of arsenic, lithium, and molybdenum associated with the Ash Pond System and Landfill. As such, full protection of human health and the environment is already achieved. The model-predicted time frames to achieve GWPSs at or beyond the waste boundary are beyond the minimum 30-year post-closure period for the Ash Pond System and Landfill under similar simulation scenarios.
(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment	With CBR for Ponds A, A', C, and Former Pond B, the potential for exposure to remaining wastes exists during CCR material excavation, transportation, re-disposal or beneficial use, and potential for incidental CCR material release into the environment. CCR material handling would occur both onsite and offsite.	With CBR for Ponds A, A', C, and Former Pond B, the potential for exposure to remaining wastes exists during CCR material excavation, transportation, re-disposal or beneficial use, and potential for incidental CCR material release into the environment. CCR material handling would occur both onsite and offsite. With ex-situ groundwater treatment, a secondary waste stream (e.g., spent resins or reject water) would be generated that could introduce additional potential for exposure.
(vii) Long-term reliability of the engineering and institutional controls	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long term.	The source control-related and groundwater-related components of the alternative are proven reliable and provide a high degree of certainty that the remedy would be effective in the long term.
(viii) Potential need for replacement of the remedy	Replacement of the source control-related and groundwater-related components of the alternative is unlikely.	Replacement of the source control-related and groundwater-related components of the alternative is unlikely.

[3] Closure by removal for the Ash Pond System excludes Former Pond D since any remaining CCR material within the Former Pond D footprint is beneath critical infrastructure.

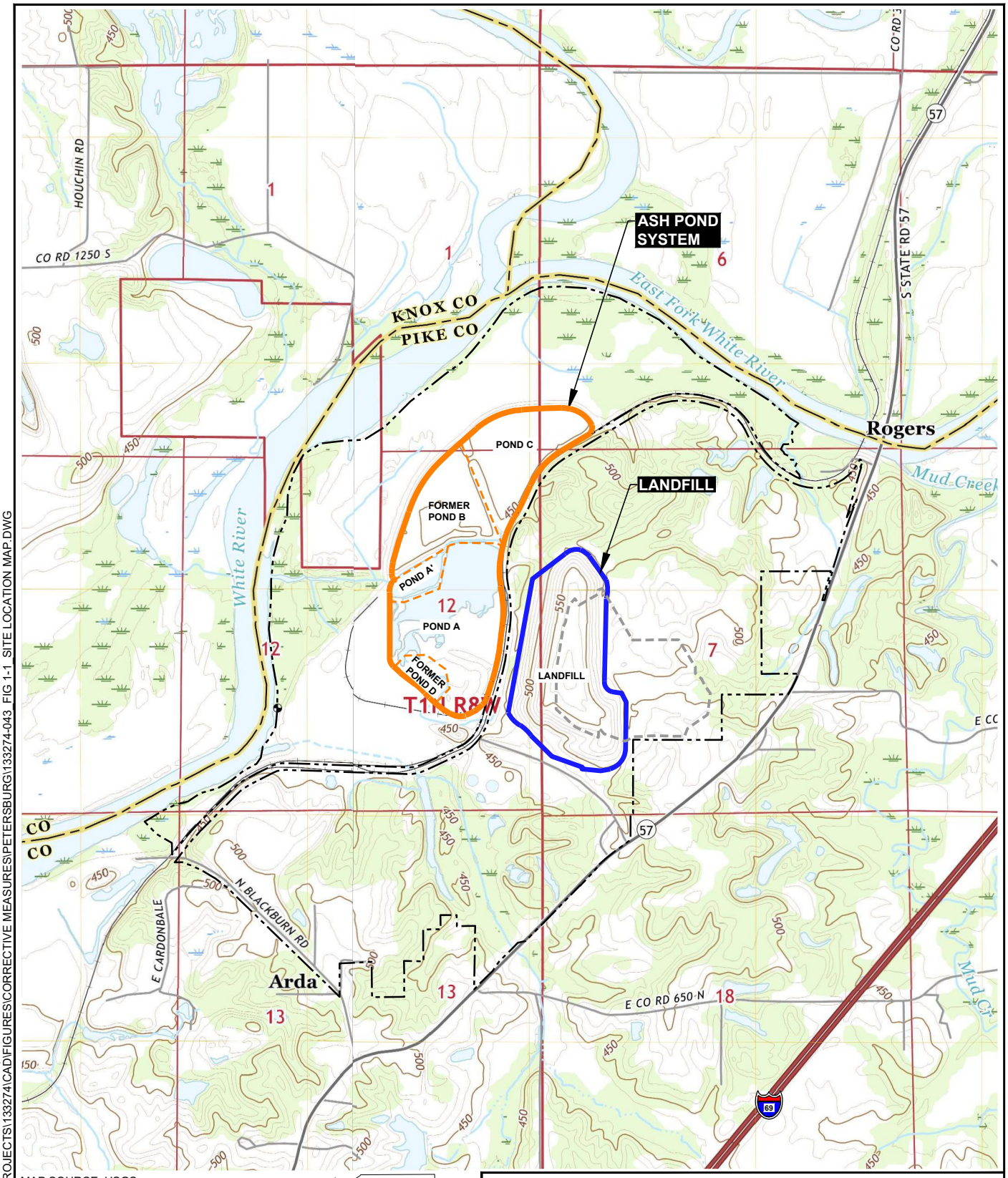
TABLE 2-3
SUMMARY OF PRELIMINARY EVALUATION OF REMEDIAL ALTERNATIVES - 40 CFR §257.97(c) REQUIREMENTS
CORRECTIVE MEASURES ASSESSMENT – ASH POND SYSTEM AND LANDFILL
PETERSBURG GENERATING STATION - PETERSBURG, INDIANA

General Description	Source Control Scenario 2	
	Alternative 2A	**Alternative 2B**
	Source Control Measure: Closure by Removal (CBR) for Ponds A, A' C, and Former Pond B[3] and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill and Ash Pond System (AOIs 1, 3, and 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). No active treatment of extracted groundwater (AOIs 1, 3, and 4).	**Source Control Measure**: CBR for Ponds A, A', C, and Former Pond B[1] and installing a low permeability engineered synthetic turf and structured membrane composite cover system (ClosureTurf®) for the Landfill. **Groundwater Measures**: Hydraulic Containment (groundwater pumping) via extraction wells or interceptor trenches downgradient of Landfill and Ash Pond System (AOIs 1, 3, and 4); Targeted ISRM near AP-2A, MW-3, and MW-27B (AOI 5). Ex-situ treatment of extracted groundwater (AOIs 1, 3, and 4).
§257.97(c)(2) The Effectiveness of the Remedy in Controlling the Source to Reduce Further Releases		
(i) The extent to which containment practices will reduce further releases	CBR for Ponds A, A', C, and Former Pond B would provide an effective long-term management solution for the CCR material offsite in a lined landfill or beneficial use applications. CBR and the ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.	CBR for Ponds A, A', C, and Former Pond B would provide an effective long-term management solution for the CCR material offsite in a lined landfill or beneficial use applications. CBR and the ClosureTurf® cover system for the Landfill would limit the potential for further releases of CCR constituents into groundwater. Therefore, the likelihood for further releases is limited.
(ii) The extent to which treatment technologies may be used	ISRM would be implemented near AP-2A, MW-3 and MW-27B (AOI 5).	ISRM would be implemented near AP-2A, MW-3 and MW-27B (AOI 5). Ex-situ treatment of groundwater would be used to treat groundwater pumped from extraction wells and/or interceptor trenches. Additionally, treatment of the water used for targeted water infiltration may be necessary.
§257.97(c)(3) The Ease or Difficulty of Implementing a Potential Remedy		
(i) Degree of difficulty associated with constructing the technology	CBR involves very large-scale construction activities to remove CCR material from the Site, potentially treat the removed CCR material (if designated for beneficial use), transport the CCR material offsite, and dispose of the CCR material in an offsite permitted landfill or manage it offsite for beneficial use. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of groundwater extraction system and ISRM system.	CBR involves very large-scale construction activities to remove CCR material from the Site, transport the CCR material offsite, and dispose of the CCR material in an offsite, permitted landfill or manage it offsite for beneficial use. Additional construction activities include installation of the ClosureTurf® cover system for the Landfill and construction of groundwater extraction system, ISRM system and ex-situ groundwater treatment system.
(ii) Expected operational reliability of the technologies	Closure and hydraulic containment related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM treatment system involves additional O&M requirements.	Closure and hydraulic containment-related operations are generally reliable, with temporary shutdowns for routine or non-routine maintenance, repair, or replacement or for inclement weather or other adverse conditions. Also, the ISRM and ex-situ groundwater treatment systems involve additional O&M requirements.
(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies	Various permits and approvals would be anticipated to implement CBR closure construction (e.g., state ash pond closure/post-closure plan approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA §404, IDEM §401 Water Quality Certification, and potential NPDES permit modifications). Studies and evaluations could be required to determine whether additional approvals would be required related to offsite transportation, disposal, or beneficial use. Groundwater-related permitting and approvals would be required for installing extraction wells or interceptor trenches, and an injection permit would also be required for the ISRM systems.	Various permits and approvals would be anticipated to implement CBR closure construction (e.g., state ash pond closure/post-closure plan approval, construction in floodway permit, stormwater construction permit, county drainage permit, CWA §404, IDEM §401 Water Quality Certification, and potential NPDES permit modifications). Studies and evaluations could be required to determine whether additional approvals would be required related to offsite transportation, disposal, or beneficial use. Groundwater-related permitting and approvals would be required for installing extraction wells or interceptor trenches, and injection permits would also be required for the ISRM system. Additionally, permitting and approvals would be required for implementation of the ex-situ groundwater treatment system.
(iv) Availability of necessary equipment and specialists	A significant amount of equipment and specialists would be needed to complete ash pond closure and construct and operate the groundwater extraction and ISRM systems. CBR for Ponds A, A', C, and Former Pond B would also require haul trucks to transport excavated CCR material to the offsite landfill or beneficial use destination.	A significant amount of equipment and specialists would be needed to complete ash pond closure and construct and operate the groundwater extraction and ISRM systems. Additional equipment and specialists may be required to construct and operate the ex-situ groundwater treatment system. CBR would also require haul trucks to transport excavated CCR material to the offsite landfill or beneficial use destination.
(v) Available capacity and location of needed treatment, storage, and disposal services	CBR involves final CCR material placement offsite, either disposed of in a landfill that would likely be 20 to 100 miles from the Site or managed for beneficial use. If CCR material is not being beneficially used, a substantial amount of available landfill space or beneficial use capacity would also be necessary to handle the excavated CCR material, which may result in increased difficulty in identifying possible options for implementing CBR. Treatment, storage, or disposal of extracted groundwater or the ISRM systems would not be required for this alternative	CBR involves final CCR material placement offsite, either disposed of in a landfill that would likely be 20 to 95 miles from the Site or managed for beneficial use. If CCR material is not being beneficially used, a substantial amount of available landfill space or beneficial use capacity would also be necessary to handle the excavated CCR material, which may result in increased difficulty in identifying possible options for implementing CBR. Extracted groundwater would be treated for this alternative, requiring construction and O&M of an onsite treatment system and disposal of secondary waste streams generated as a result of the treatment process. Treatment, storage, or disposal would not be required for the ISRM system.

Notes:

CBR - closure by removal
CCR - coal combustion residuals
CIP - closure in place
GWPS - groundwater protection standard
IDEM - Indiana Department of Environmental Management
IST - in-situ treatment
MNA - monitored natural attenuation
NPDES - National Pollutant Discharge Elimination System
O&M - operations and maintenance
SSL - statistically significant level

FIGURES



MAP SOURCE: USGS
QUADRANGLES: SANDY HOOK, IN 2019
MONROE CITY, IN 2019



HALEY ALDRICH

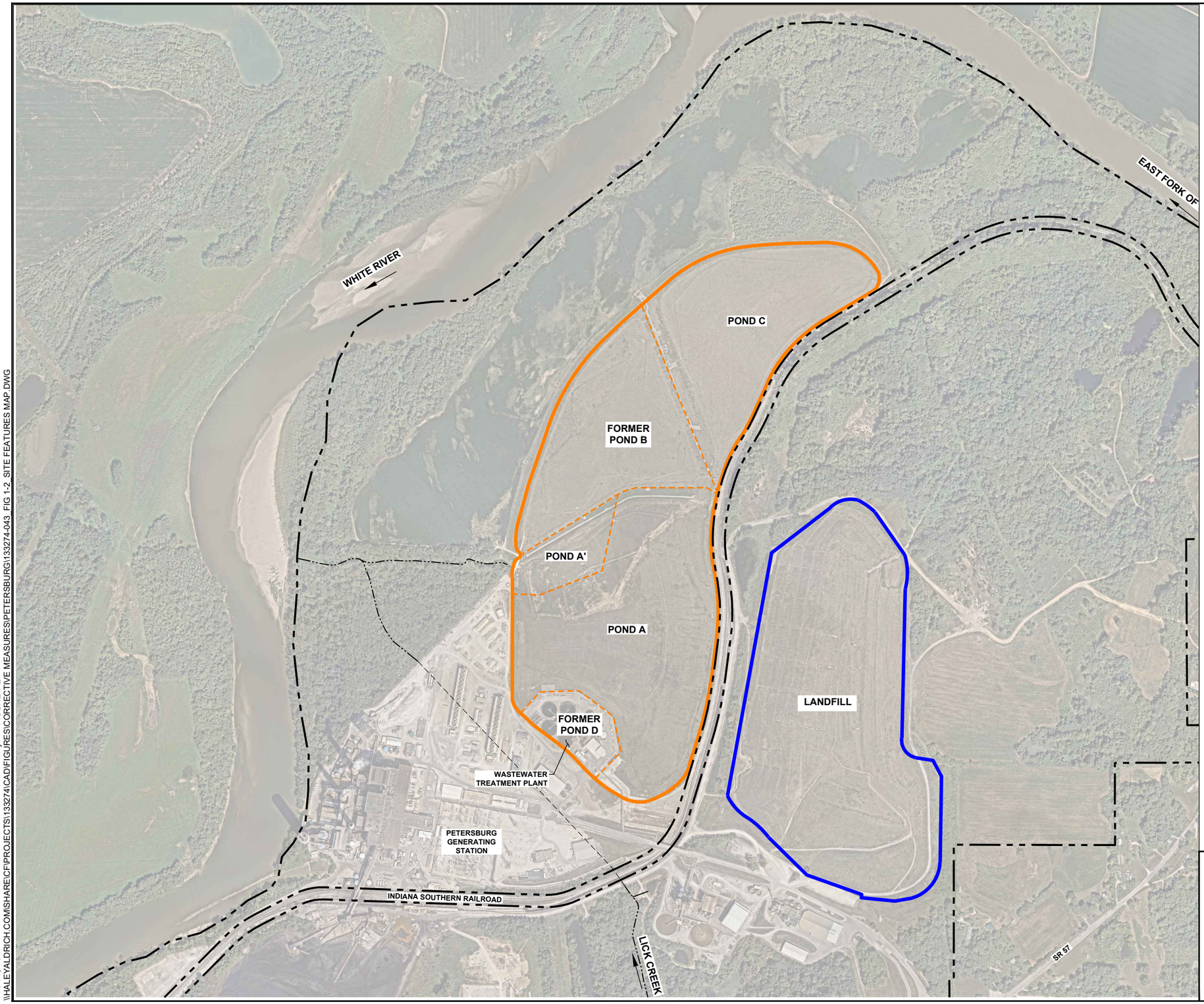
CORRECTIVE MEASURES ASSESSMENT
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE LOCATION MAP

APPROXIMATE SCALE: 1IN = 2000 FT
DECEMBER 2025

FIGURE 1-1

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\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\133274-043_FIG 1-1_SITE LOCATION MAP.DWG
Layout: FIGURE 1-1



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. IMAGE SOURCE: NEARMAP.COM, DATES 23 AUGUST 2024.

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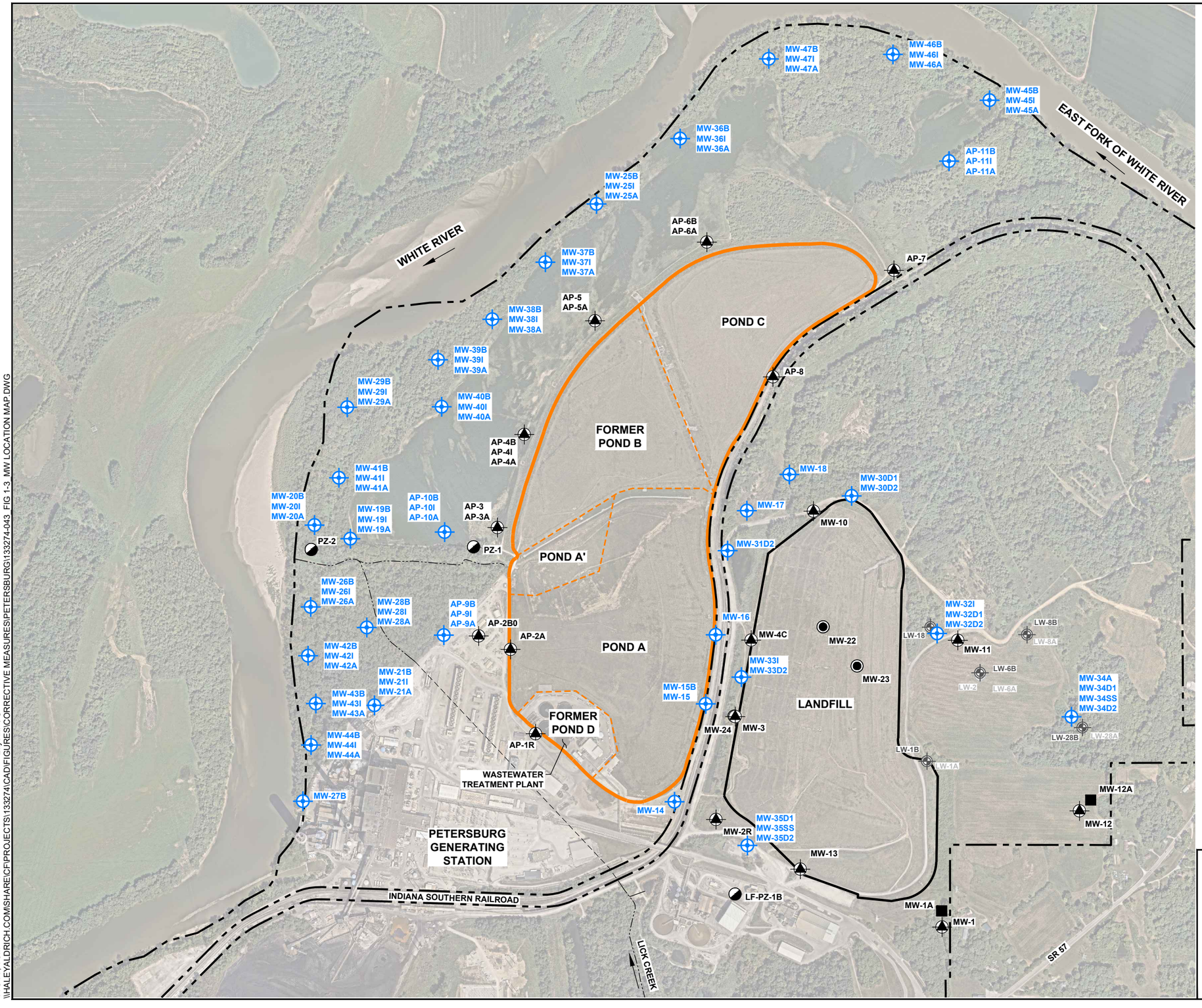
CORRECTIVE MEASURES ASSESSMENT
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE FEATURES MAP

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 1-2

STOSS, TOM Saved: 3/31/2025 12:31 PM Layout: FIGURE 1-2
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\133274-043 FIG 1-2 SITE FEATURES MAP.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

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HALEY ALDRICH

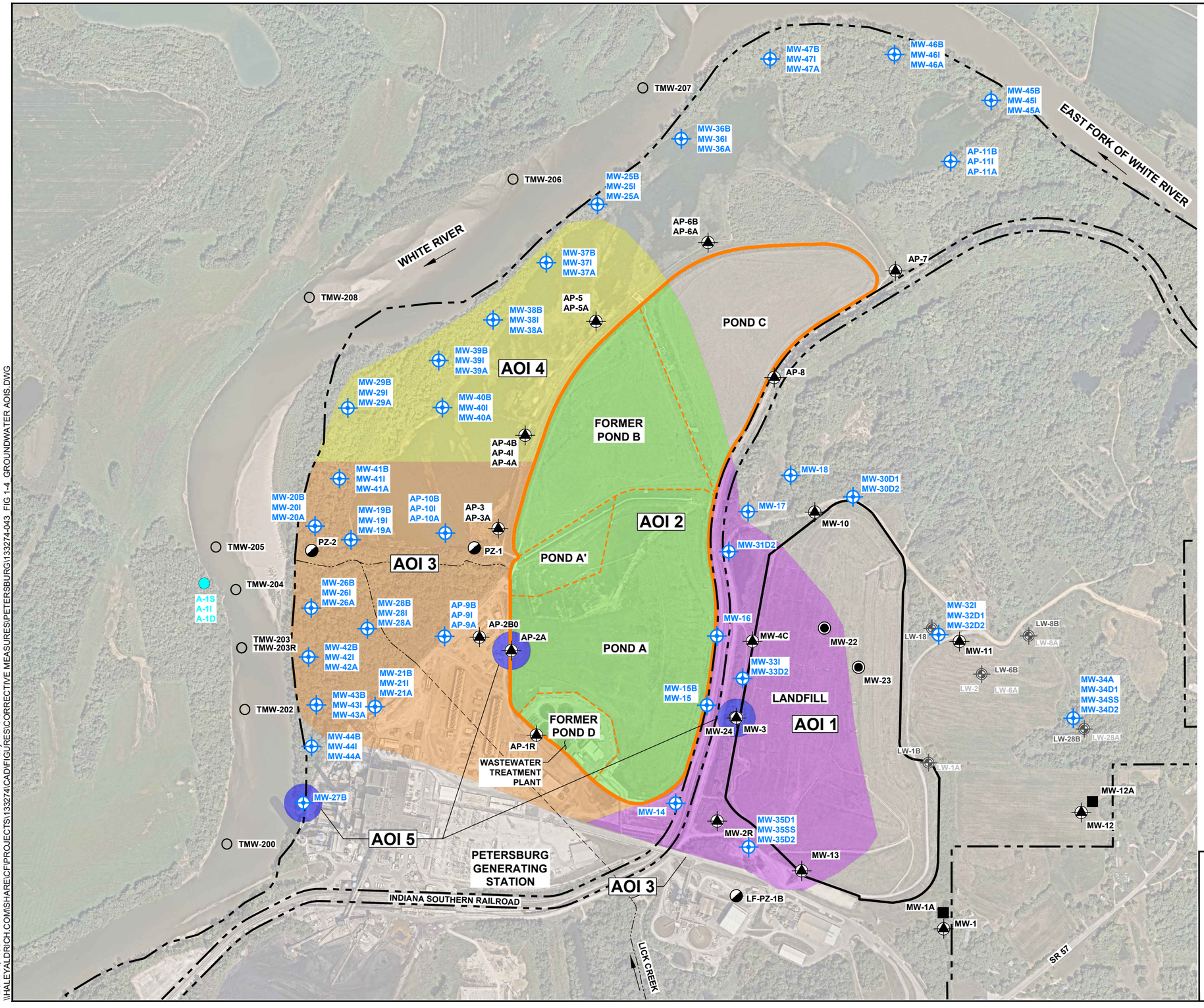
CORRECTIVE MEASURES ASSESSMENT
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

MONITORING WELL AND PIEZOMETER LOCATIONS

SCALE AS SHOWN
DECEMBER 2025

FIGURE 1-3

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\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\133274-043_FIG 1-3_MW LOCATION MAP.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL
- AOI 1: GROUNDWATER BENEATH AND DOWNGRADIENT OF LANDFILL WITH LITHIUM AND MOLYBDENUM CONCENTRATIONS ABOVE GWPS
- AOI 2: GROUNDWATER WITH CONCENTRATIONS OF LITHIUM AND MOLYBDENUM ABOVE GWPS
- AOI 3: GROUNDWATER DOWNGRADIENT OF ASH POND SYSTEM WITH LITHIUM AND MOLYBDENUM CONCENTRATIONS ABOVE GWPS
- AOI 4: GROUNDWATER DOWNGRADIENT OF ASH POND SYSTEM WITH LITHIUM AND MOLYBDENUM CONCENTRATIONS ABOVE GWPS
- AOI 5: GROUNDWATER WITH ARSENIC CONCENTRATIONS ABOVE GWPS
- GROUNDWATER SAMPLING LOCATION BENEATH WHITE RIVER
- TEMPORARY WELL LOCATION

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS
4. GWPS = GROUNDWATER PROTECTION STANDARD

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HALEY ALDRICH

CORRECTIVE MEASURES ASSESSMENT
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GROUNDWATER AREAS OF INTEREST (AOIs)

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 1-4

YEOMAN, ROB Saved: 10/30/2025 1:07 PM Layout: 1-4
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\133274-043_FIG 1-4_GROUNDWATER AOIS.DWG

APPENDIX A
Nature and Extent Report

HALEY ALDRICH

www.haleyaldrich.com

NATURE AND EXTENT REPORT
PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA

by
Haley & Aldrich, Inc.
Cleveland, Ohio

for
AES Indiana
Indianapolis, Indiana

File No. 0133274-043
December 2025



HALEY & ALDRICH, INC.
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CLEVELAND, OH 44131
216.739.0555

SIGNATURE PAGE FOR

NATURE AND EXTENT REPORT
PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD
PETERSBURG, INDIANA

PREPARED FOR
AES INDIANA
INDIANAPOLIS, INDIANA

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Senior Geologist
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REVIEWED AND APPROVED BY:

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Project Principal
Haley & Aldrich, Inc.

Executive Summary

In accordance with requirements of the coal combustion residuals (CCR) Rule, AES Indiana (AESI) has completed comprehensive site investigation activities to sufficiently characterize the nature and extent of groundwater affected by the Ash Pond System located at the Petersburg Generating Station (PGS or "Site"). Findings from the Site investigation activities are as follows:

- Statistical analysis has identified three Appendix IV constituents present in groundwater samples collected from the CCR Rule groundwater monitoring system at statistically significant levels (SSLs): arsenic[1], lithium, and molybdenum.
- Based on an evaluation of groundwater flow patterns and the chemical composition of the groundwater, the Ash Pond System has been identified as the source of arsenic and molybdenum SSLs above the groundwater protection standards (GWPSs). The Landfill has been identified as the source of arsenic, lithium, and molybdenum SSLs above GWPSs detected in groundwater.
- The horizontal extent of the affected groundwater covers approximately 370 acres, which encompasses part of the Ash Pond System and Landfill; it also extends westward to the White River (**Figure ES-1**). The vertical extent of impacted groundwater is limited by relatively impermeable shale bedrock that is approximately 65 feet below ground surface.
- SSLs of arsenic, lithium, and molybdenum above GWPSs are confined within the PGS property boundaries.

In conclusion, the nature and extent of CCR-affected groundwater at the Site has been sufficiently characterized to proceed with a review of the previous Corrective Measures Assessment (CMA) and perform updates to the CMA, as appropriate.

[1] There is an existing alternative source demonstration (ASD) for the arsenic SSL at Landfill monitoring well MW-10 (Haley & Aldrich, 2019)

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List of Terms and Abbreviations

Abbreviation	Definition
40 CFR	Code of Federal Regulations Title 40
AESI	AES Indiana
ASD	alternative source demonstration
Ash Pond System	Ponds A, A', C, and Former Ponds B and D, collectively
ATC	ATC Group Services, LLC
Atlas	Atlas Technical Consultants LLC
bgs	below ground surface
BRL	eelow reporting limit
CCR	coal combustion residual(s)
CCR Rule	USEPA's final rule for *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*, 80 Fed. Reg. 21302, and subsequent regulatory revisions
cm/sec	centimeters per second
CMA	Corrective Measures Assessment
ft/day	feet per day
ft/ft	feet per foot
ft/yr	feet per year
gpm	gallons per minute
GWPS	groundwater protection standard
Haley & Aldrich	Haley & Aldrich, Inc.
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
Landfill	Type III Restricted Waste Landfill
Legacy CCR Rule	USEPA's final rule for *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments*, 89 Fed. Reg. 38950
LMWL	local meteoric water line
MCL	Maximum Contaminant Level
µg/L	micrograms per liter
mg/L	milligrams per liter
N&E	nature and extent
N/A	not applicable
NA	not analyzed
NPDES	National Pollutant Discharge Elimination System
pCi/L	picocuries per liter
PGS	Petersburg Generating Station, Petersburg, Pike County, Indiana

List of Terms and Abbreviations (Continued)

Site	Petersburg Generating Station, Petersburg, Pike County, Indiana
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency

1. Introduction

Haley & Aldrich, Inc. (Haley & Aldrich) was retained by AES Indiana (AESI) to prepare this Nature and Extent (N&E) Report for the Ash Pond System and Landfill at the Petersburg Generating Station located in Petersburg, Indiana (PGS or "Site"; **Figure 1**). The Ash Pond System consists of Ponds A, A', C, and Former Ponds B and D.[2] The Landfill is a Type III Restricted Waste Landfill permitted by the Indiana Department of Environmental Management (IDEM), as well as a regulated coal combustion residual(s) (CCR) unit. AESI has conducted detailed geologic and hydrogeologic investigations under the United States Environmental Protection Agency's (USEPA's) final rule for *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21302* (effective October 19, 2015) and subsequent regulatory revisions (CCR Rule). These investigations have included ongoing groundwater monitoring and N&E investigations associated with Code of Federal Regulations Title 40 (40 CFR) §257.95 of the CCR Rule.

Analytical results from an extensive network of groundwater monitoring wells have been evaluated to sufficiently characterize the N&E of constituents associated with the Ash Pond System and Landfill operations in accordance with 40 CFR §257.95(g)(1). This report characterizes the N&E of groundwater affected by CCR and relevant Site conditions to support the Corrective Measures Assessment (CMA) completed in accordance with 40 CFR §257.96 and associated CMA updates.

This N&E Report provides a comprehensive data evaluation summary. This evaluation includes characteristics of the source of impacts, groundwater quality conditions and geochemical factors that define the "nature" of the release, as well as the groundwater flow conditions, constituent distribution, and migration pathways that define the "extent" of the release. Results from the semiannual compliance monitoring and N&E investigations have identified arsenic, lithium, and molybdenum in groundwater at statistically significant levels (SSLs) greater than the respective groundwater protection standards (GWPSs). Affected groundwater is observed over an approximate 370-acre area, which encompasses portions of the Landfill, Ash Pond System, and area that extends to the west toward the White River.

Although cadmium and cobalt were initially identified as SSLs for monitoring well AP-8, a successful alternative source demonstration (ASD; ATC Group Services, LLC [ATC], 2019) has been completed for AP-8. Based on the investigative activities performed, the source of the cadmium and cobalt concentrations at AP-8 are due to historical surface and underground coal mining activities conducted in this area of the Site.

1.1 FACILITY DESCRIPTION

AESI owns and operates the PGS, which is located approximately 4 miles to the northeast of the town of Petersburg in Pike County, Indiana. The address of the PGS is 6925 North State Road 57, Petersburg, Indiana. The facility is bounded to the north and west by the east fork of the White River and to the south and east by wooded areas and farmland. Lick Creek enters the Site from the south and flows beneath the generating station before discharging to the White River (**Figure 2**).

[2] Former Ponds B and D are considered CCR management units (CCRMUs), as defined in the 2024 Legacy CCR Rule at Code of Federal Regulations Title 40 (40 CFR) §257.53 and are thereby regulated by this rule.

Information regarding the size and volume of each of the ash ponds and Landfill is presented in the in-text **Table 1-1** below.

Table 1-1: Ash Pond and Landfill Information

CCR Unit	Surface Area (acres)	Approximate Volume of Impounded CCR (cubic yards)
Pond A	58	1,560,000[1]
Pond A'	8	150,000 [1]
Former Pond B	35	NA[3]
Pond C	40	2,040,000[1]
Former Pond D	6.4	NA[3]
Landfill	124	16,300,000[2]

Notes:

1. *Approximate volume of impounded CCR for Ponds A, A', and C are from ATC, 2022a. Amended Closure Plan for Ash Ponds A, A' and C at the AESI Petersburg Generating Station. June 20.*
2. *Landfill estimates taken from AECOM, 2024. Closure Plan for Petersburg Generating Station Restricted Waste Landfill Type III (Permit No. FP 63-02). July 31.*
3. *Volume information is not provided for Former Ponds B and D, which are considered CCRMUs as defined in USEPA's final rule for Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments, 89 Fed. Reg. 38950 (Legacy CCR Rule).*

1.1.1 Ash Pond System

The Ash Pond System covers approximately 152 acres and consists of Ponds A, A', C, and Former Ponds B and D that were constructed with natural soil bottom liners. The Ash Pond System historically treated CCR material, including fly ash, bottom ash, and flue gas desulfurization waste streams, in addition to various other wastewater streams that were produced at the PGS. The Ash Pond System is bordered to the south by the PGS and to the east by the Indiana Southern Railroad. Site features are illustrated on **Figure 2**.

A 6.4-acre portion of Pond A was designated as Former Pond D in 2015 when that portion was closed in place by placing asphalt and concrete pavement over the area and installing a sheet pile wall around its perimeter. A wastewater treatment plant was then constructed within the footprint of Former Pond B which was closed in place in 2018. Pond C was closed in place in 2021, and Ponds A and A' were closed in place in 2023 (ATC, 2023). The closure of each pond was completed by closure in place in accordance with the Ash Pond System closure and post-closure plans[3].

According to information presented in the History of Construction of CCR Surface Impoundments by Sargent & Lundy, dated October 14, 2016 (Sargent & Lundy, 2016), in 1967, the PGS commissioned an ash pond that covered the area now known as Ponds A, A', and Former Pond D. Several upgrades were completed throughout the 1980s. In 1986, the second ash pond to the northeast of PGS's power block was commissioned and encompassed the present-day footprints of Former Pond B and Pond C. In 1999, a diversion dike within the ash pond was extended southeasterly, effectively bisecting the pond and creating the present-day Pond C. In 2016, two emergency spillways were installed (Pond A spillway and Pond A' spillway). These modifications aimed to enhance the stability and functionality of the ash pond dikes over time.

[3] Proposed Closure and Post Closure Plans – Ash Pond System dated August 4, 2014, addendum No. 1 dated November 3, 2014 (Cardno ATC, 2014) were approved by IDEM on December 31, 2014. The Revised Closure/Post Closure Plan for the Ash Pond System dated April 28, 2017 (ATC, 2017), was approved by IDEM on July 14, 2017.

1.1.2 Landfill

CCR material produced by PGS was also historically sent to the Landfill, which is located to the east of the Ash Pond System and encompasses a total area of approximately 80.1 acres inside the currently permitted Solid Waste Boundary. The original 80.1-acre footprint of the Landfill was permitted by IDEM in 1983. An additional 43.6 acres were permitted as an expansion to the Landfill in 1996 and an expansion revision approved by IDEM in 2018. The expansion was never constructed, and in 2024, AESI submitted a minor permit modification request to IDEM to eliminate the 43.6-acre landfill expansion area and to re-establish the original 80.1-acre permitted landfill footprint.

The Landfill is not currently operating, and no waste has been placed in the Landfill since 2009. In 2016, approximately 34 acres along the northern and western slope of the Landfill were capped and closed with a soil cover system approved by IDEM. An interim soil cover was placed over approximately 48 acres of the Landfill's eastern side in 2017. The Landfill operates under IDEM Permit Number FP63-2. Closure of the Landfill under the IDEM-approved 2024 closure plan is currently ongoing.

1.2 ENVIRONMENTAL SETTING

1.2.1 Geology

The Site is located within the area of Indiana affected by Pleistocene continental glacial episodes. A review of subsurface explorations indicates that the Site can generally be split into two distinct areas, including the upland area and the White River floodplain area.

The Ash Pond System is constructed in the White River floodplain. Most of the footprint overlies unconsolidated valley fill deposits that consist of roughly 10 to 15 feet of relatively fine-grained loamy deposits on top of outwash sand and gravel. The loamy deposits are differentiated by an upper alluvium, consisting of floodplain deposits (fine-grained silts, clays, and sands) and a lower loess, consisting of wind-blown deposits (very fine-grained, well-sorted sands and silts). The outwash sand and gravel are up to 70 feet thick depending on the elevation of the buried bedrock erosional surface and are generally fine- to coarse-grained. The eastern side of the Ash Pond System is roughly aligned with the former eastern edge of the floodplain.

The Landfill is located within the upland area adjacent to the White River floodplain (AECOM, 2024). The unconsolidated soils (overburden) consisting of fine-grained sediments in the vicinity of the Landfill are characterized as silt, clayey silt, loam, silt loam, clay loam, sandy loam, and sandy clay, while the coarse-grained material consists of sand and loamy sand. Some of the deeper sandy loam and sand units may in part represent a highly weathered bedrock zone above more intact bedrock. The weathered bedrock is identified between approximately 22.5 feet and 36 feet below ground surface (bgs). More resistant bedrock is present between approximately 63 and 93 feet bgs.

Bedrock in the Site area is Pennsylvanian age sandstone, limestone, shale, and coal of the Carbondale Group. Two formations, the Petersburg and Dugger formations, underlie the unconsolidated outwash, floodplain, and wind-blown deposits. The Petersburg Formation ranges from 40 to 120 feet thick and consists of shale, sandstone, and coal. The Dugger Formation overlies the Petersburg Formation and consists of limestone, coal, sandstone, and shale; it is generally 73 to 185 feet thick (Wier, 1965).

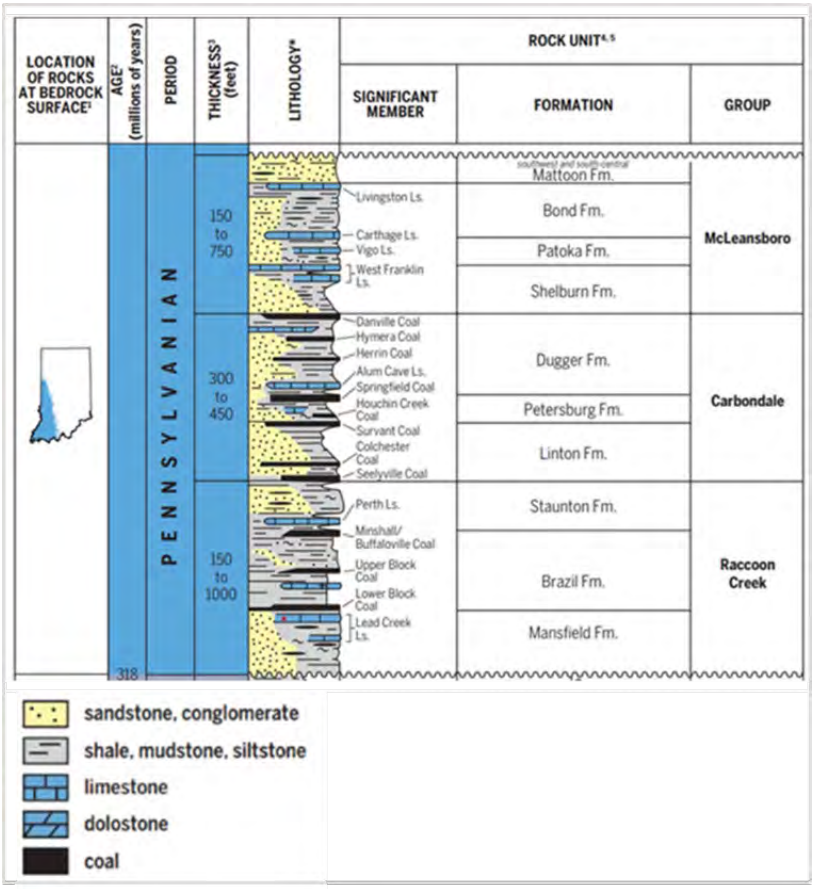


Figure 1-1: *Generalized Stratigraphic Column (igws.indiana.edu/research/energy)*

1.2.2 Historical Coal Mining

In Pike County, various coal seams, mainly within the Carbondale Group, have been extracted using surface and underground mining methods. These operations typically extract around 50 percent of the coal, leaving behind voids that can serve as reservoirs for groundwater. As a result, significant volumes of groundwater are stored within these previously mined seams. However, due to mineralization, the usability of this groundwater is generally limited.

Several underground mines have been identified within the Site boundary and the immediate surrounding areas. Named underground mines include the Rogers Mine (mined from 1890 to 1924) and the Gladstone Mine (mined from 1920 to 1930). Surface mines include the Miracle #1 Pit (1979 to 1981), Redman #1 Pit (1980 to 1981), Regal #7 (1978 to 1979), Redman # 2 (1979 to 1980), Redman #3 (1979 to 1980), and Unknown Mine #63 (1970 to 1971). Note borrow area activities in this time frame may have been mistaken for surface mining and Unknown Mine # 63 (1970 to 1971; Indiana Department of Natural Resources [IDNR], 2019). Select mine names are shown on **Figure 3**.

Several hydrogeologic and geotechnical studies have been conducted at the Site. Work was completed between 1993 through 1995 as part of the Permit Application for Major Modification to Operating Permit No 63-2: Construction Permit SW 280, which includes additional discussions of historical coal mining in the area (Stone & Webster, 1994; Stone & Webster, 1995; New, 1993). The available

information described above was considered while interpreting the geology and hydrogeology of the Site and during characterization of the N&E of CCR-affected groundwater at the Site.

1.2.3 Hydrogeology

1.2.3.1 Regional Hydrogeology

The Carbondale Group is considered a minor groundwater source in Pike County, with most wells producing from the thicker sandstone and coal units. Wells for homes, irrigation, and livestock generally produce between 1 and 13 gallons per minute (gpm), with localized yields up to 25 gpm (IDNR, 2003).

Water quality in this aquifer system is generally good and not highly susceptible to contamination from the land surface. Groundwater in this region typically has elevated levels of dissolved solids, such as calcium, magnesium, sulfate, bicarbonate, and iron that are related to historical coal mining in the area (IDNR, 2019). As wells are drilled deeper than ~200 to ~300 feet and the rock strata dip beneath younger rocks to the southwest, the natural quality of well water becomes more mineralized, often changing from a calcium-magnesium-bicarbonate type to a sodium bicarbonate or sodium chloride type (IDNR, 2003).

1.2.3.2 Local Hydrogeology

The PGS is located in the floodplain of the White River. The White River flows to the south and forms the northern and western boundaries of the Site. Historical and modern floodplain deposits are primarily composed of silt/clay loamy deposits less than 10 feet thick, overlying sand and gravel outwash deposited during the early and late Pleistocene periods.

Evaluation of historical groundwater elevations across the Site determined that groundwater flow in the uppermost aquifer is dominantly to the west toward the White River. Additionally, review of the groundwater elevations over this time period indicates that groundwater passing under the Landfill is weakly connected to the outwash deposits underlying the Ash Pond System, further informing groundwater flow dynamics at the Site.

The outwash deposits underlying the Ash Pond System appear to be hydraulically connected to the White River. The finer-grained loamy deposits that overlie the coarser-grained outwash deposits that immediately underlie the Ash Pond System appear to be transmissive. The underlying coarser-grained outwash deposits, and ultimately the White River, hydraulically controls the entire unconsolidated groundwater flow system. Hydraulic conductivity values are consistent with the expected values for wells screened in outwash sands and range from 1×10^{-3} to 1×10^{-2} centimeters per second (cm/sec). Lower hydraulic conductivities were measured in finer-grained, unconsolidated soils consisting of sandy loam, loam, silty clay, sandy clay, sand, and sandy loam. The hydraulic conductivities from slug tests range from 1×10^{-4} to 1×10^{-3} cm/sec.

The White River system has played a significant role in the development of the alluvial setting surrounding the PGS. The image below (in-text **Figure 1-2**) shows the location of the generating station within the floodplain, the White River channel, upland area, and historical meander scars and generalized groundwater flow direction that are present within the floodplain.

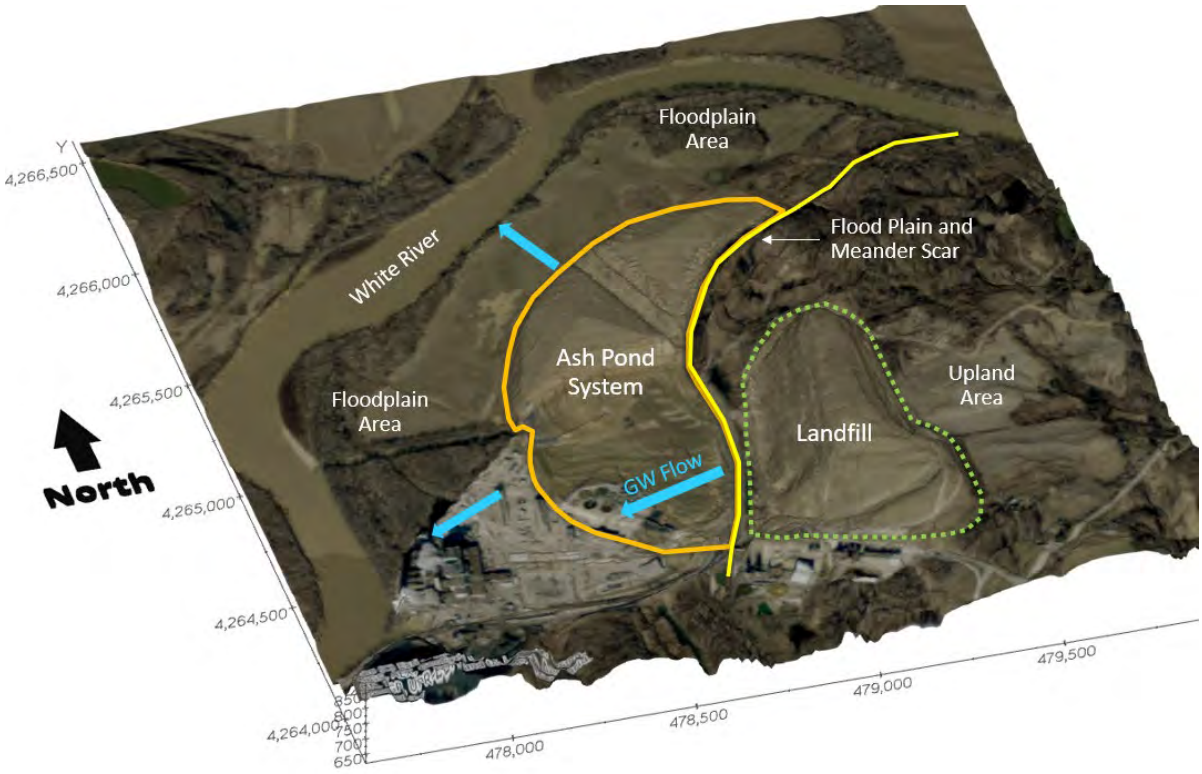


Figure 1-2: *Digital Elevation Model of Topography near PGS (with 10x vertical exaggeration)*

In the floodplain area, the saturated zone underlying and west of the Ash Pond System includes sand and gravel outwash deposits overlying the shale bedrock. East toward the Landfill, in the upland area, the hydrostratigraphy is dominated by sandy clay and silt. These hydrostratigraphic units are presented in the in-text **Table 1-2** below, with details regarding the approximate extent, thickness, and hydraulic conductivity.

Table 1-2: Hydrostratigraphic Unit Summary		
Hydrostratigraphic Unit	**Approximate Extent and Thickness**	**Calculated Hydraulic Conductivity[2] (feet/day)**
Sand or Sand and Gravel (Floodplain Area Deposits)	Continuous sand with horizontal stratification and varying amounts of gravel. Average thickness of approximately 70 feet depending on the elevation of the buried bedrock erosional surface. The thicknesses of gravel and sand are consistent across the western part of the Site between the Ash Pond System and the White River. The sediments in the vicinity of the Ash Pond System are generally fine to coarse outwash sands with thicker granular deposits in bedrock valleys. Finer-grained silts and clays are present near the surface and represent younger floodplain, alluvial, and loess deposits.	(S/B) 1.9 – 630 (I) 0.02 – 269.25 (D/A) 11.95 – 851.92
Fill, Clay, Silt, Sand, and Gravel (Upland Area Deposits)	Fill (typically silt, clayey sand, and/or lean clay) is present beneath the Landfill and east of the Landfill where native materials were removed and backfilled; they are up to 50 feet thick. Naturally occurring unconsolidated materials consist of sand with interbedded clay and silt that are 50 feet to 100 feet thick. Some gravel is also present, primarily in discontinuous layers near the perimeter of the Landfill. Some of the deeper sandy loam and sand units may in part represent a highly weathered bedrock zone above more intact bedrock. The weathered bedrock is identified between approximately 22.5 and 36 feet bgs.	(S/B) 0.27 – 8.3 (D/A) 0.05 – 19.35
Sandstone, Limestone, Shale, and Coal (Bedrock)	The Carbondale Group is up to ~450 feet thick in Indiana.[1] Onsite borings intercept bedrock at ~430 feet above sea level (60 to 90 feet bgs).	0.0005 – 0.01

Notes:

[1] GeneralizedStratigraphicColumn.pdf (igws.indiana.edu/research/energy)

[2] Hydraulic conductivity values are calculated based on Site-specific measurements described in Section 3.

(S/B): indicates shallow flow zone of the uppermost aquifer

(I): indicates intermediate flow zone of the uppermost aquifer

(D/A): indicates deep flow zone of the uppermost aquifer

Cross-sections were generated to depict the subsurface geology at the Site. Cross-section transect lines are shown on **Figure 4A**. Generalized geologic cross-sections depicting Site subsurface conditions are included on **Figures 4B** through **4E**.

2. Groundwater Monitoring

Groundwater monitoring is performed in accordance with the Groundwater Monitoring and Corrective Action requirements of the CCR Rule per 40 CFR §257.90 through 40 CFR §257.95. Monitoring is completed through a phased approach to allow for a graduated response (i.e., detection monitoring, followed by assessment monitoring, then N&E investigation, as applicable). After identification of SSLs greater than the GWPSs are identified, 40 CFR §257.95(g)(1) of the CCR Rule requires the operator to:

> *"Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization must be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the CCR unit pursuant to §257.96. Characterization of the release includes the following minimum measures:*
>
> *I. Install additional monitoring wells necessary to define the contaminant plume(s);*
>
> *II. Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in appendix IV of this part and the levels at which they are present in the material released;*
>
> *III. Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with paragraph (d)(1) of this section; and*
>
> *IV. Sample all wells in accordance with paragraph (d)(1) of this section to characterize the nature and extent of the release."*

The following sections provide an overview of monitoring well installation and sampling events for the different phases of groundwater monitoring at the PGS. Key terminology used in this report that pertain to the CCR Rule groundwater monitoring phases include:

- CCR Rule groundwater monitoring system – the combination of CCR monitoring wells and background monitoring wells certified as part of the CCR Rule for detection monitoring and assessment monitoring (not including N&E monitoring wells).
- Background monitoring wells – monitoring wells included in the CCR Rule groundwater monitoring system and located in an area of the Site not influenced by constituent migration in groundwater from the Landfill. Additionally, background monitoring wells for the Ash Pond System are located downgradient of the Landfill and may exhibit impacts from the Landfill.
- CCR monitoring wells – monitoring wells included in the CCR Rule groundwater monitoring system and located along the perimeter of the Ash Pond System or Landfill.
- N&E monitoring wells – monitoring wells installed to further delineate the horizontal and vertical extent of constituents in groundwater downgradient of the Ash Pond System or Landfill.
- Well cluster – a group of two or more monitoring wells installed proximate to each other but screened in groundwater at differing depths; for instance, AP-4B (shallow), AP-4I (intermediate), and AP-4A (deep) comprise the AP-4 well cluster.
- Site monitoring well networks – the comprehensive collection of all monitoring wells at the Site:
  - Ash Pond System monitoring well network – monitoring wells associated with the Ash Pond System.

  - Landfill monitoring well network – monitoring wells associated with the Landfill.

- Appendix III constituents – indicator constituents that are generally prevalent in CCR, transport readily (i.e., are relatively mobile) in groundwater, and provide an early indication that leaching of constituents from a CCR unit to groundwater has occurred if downgradient concentrations are statistically greater than background concentrations. The USEPA includes seven Appendix III constituents in the CCR Rule (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids [TDS]).
- Appendix IV constituents – constituents that are generally prevalent in CCR and that the USEPA determined may pose a risk if recorded in groundwater above GWPSs. The USEPA includes 15 Appendix IV constituents in the CCR Rule (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and total radium [radium-226 and -228 combined]).
- Groundwater protection standard (GWPS) – established under the CCR Rule as either:
  - The Maximum Contaminant Level (MCL) established by USEPA or alternative GWPS established by the CCR Rule Amendments to the National Minimum Criteria Finalized in 2018 (Phase One, Part One) in the Federal Register on July 30, 2018, for constituents without a MCL (i.e., cobalt, lead, lithium, and molybdenum), or
  - The Site-specific background concentration if greater than the MCL or alternative GWPS.
- Statistically significant increase (SSI) – a concentration of an Appendix III constituent that is recorded at a statistically significant increase above the established background concentration for that constituent in a CCR monitoring well;
- Statistically significant level (SSL) – a concentration of an Appendix IV constituent that is recorded at a statistically significant level above the established GWPS for that constituent in a CCR monitoring well.

2.1 INVESTIGATION APPROACH AND TIMELINE – FEDERAL CCR RULE

CCR Rule groundwater monitoring has been performed in accordance with 40 CFR §257.90 through 40 CFR §257.95. Groundwater monitoring under the CCR Rule occurs through a phased approach to allow for a graduated response (i.e., baseline, detection, and assessment monitoring, as applicable) and evaluation of the steps to address groundwater quality associated with a CCR unit. The Ash Pond System and Landfill each have its own groundwater monitoring programs that are described in the following sections. Monitoring well and piezometer locations are presented in **Figure 5A**.

2.1.1 Ash Pond System

The CCR Rule groundwater monitoring system at the Ash Pond System consists of 17 monitoring wells (three upgradient monitoring wells MW-2R, MW-3, and MW-4C and 14 downgradient monitoring wells AP-1R, AP-2A, AP-2BO, AP-3, AP-3A, AP-4A, AP-4B, AP-4I, AP-5, AP-5A, AP-6A, AP-6B, AP-7, and AP-8):

- Background monitoring:
  - Background monitoring (per 40 CFR §257.94(b)) has been performed in accordance with CCR Rule requirements. Nine independent (baseline) sampling events were completed for the initial network of background monitoring wells between September 2016 and

August 2017 for Appendix III and Appendix IV constituents concurrently with detection monitoring.

- Detection monitoring:
  - Detection monitoring (per 40 CFR §257.94) took place in accordance with the CCR Rule requirements, with nine independent (baseline) sampling events completed between September 2016 and August 2017 for Appendix III and Appendix IV constituents in background monitoring wells and CCR monitoring wells.
  - A statistical evaluation of detection monitoring results indicated that SSIs of Appendix III constituent concentrations above background concentrations had occurred in CCR monitoring wells located downgradient of the Ash Pond System. No alternative source was identified for the SSI of Appendix III constituents. Based on the Appendix III SSIs above background levels and in accordance with CCR Rule requirements, the groundwater monitoring program transitioned from detection monitoring to assessment monitoring in 2018.
- Assessment monitoring:
  - Assessment monitoring (per 40 CFR §257.95), which includes CCR monitoring wells and background monitoring wells, began in May 2018 and has continued with semiannual assessment monitoring events to present. Samples are analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR §257.95(b) and 40 CFR §257.95(d)(1). Concurrently with the second assessment sampling round, and as required by 40 CFR §257.95(h), GWPSs were established for the detected Appendix IV constituents.
  - A statistical evaluation of assessment monitoring results indicated that cadmium, cobalt (AP-8[4]), and molybdenum (AP-2A and AP-3) were present in groundwater at SSLs above their respective GWPSs. On May 9, 2025, arsenic was also detected at a SSL above the GWPS for the first time in groundwater downgradient of the Ash Pond System and is attributable to the Ash Pond System. A N&E investigation was initiated in accordance with CCR Rule requirements.
- N&E Investigation:
  - Groundwater sampling to characterize the N&E of Appendix IV constituents in groundwater downgradient of the Ash Pond System and relevant Site conditions, in accordance with 40 CFR §257.95(g), began in 2019. As described in Section 2.5, the N&E investigation includes sampling of the Ash Pond System monitoring well network of CCR monitoring wells, background monitoring wells, and N&E monitoring wells installed to further delineate the horizontal and vertical extent of Appendix IV constituents identified at SSLs above GWPSs downgradient of the Ash Pond System. This report focuses on the outcome of the N&E investigation.

Monitoring wells were installed to monitor groundwater at various depths within the uppermost aquifer (sand and gravel outwash deposits) below the base of the Ash Pond System. The Ash Pond System monitoring well network currently consists of 81 monitoring wells, including 14 CCR Rule monitoring wells around the perimeter of the Ash Pond System and 67 N&E monitoring wells installed to the west

[4] There is an existing ASD for the cadmium and cobalt SSLs in monitoring well AP-8. The ASD report was provided as an attachment to the 2019 CCR Annual Groundwater Monitoring and Corrective Action Report for the Ash Pond System (ATC, 2019)

and northwest of the Ash Pond System. These 81 wells include 31 shallow zone wells (generally screened between 15 and 30 feet bgs), 23 intermediate zone wells (generally screened between 30 and 50 feet bgs), and 27 deep zone wells (screened between 55 and 70 feet bgs). The three background monitoring wells (MW-2R, MW-3, and MW-4C) are also part of the CCR Rule groundwater monitoring system for the Landfill.

In-text **Table 2-1** (below) summarizes the monitoring well and piezometer installation activities, and **Figure 5B** correlates the timing and location of monitoring well installations.

Table 2-1: Ash Pond Monitoring Well and Piezometer Installation Timeline

Year	Description	Number of Wells or Piezometers Installed
2014	Initial monitoring wells installed for groundwater monitoring per the CCR Rule §257.91, including AP-1, AP-2B, AP-3, AP-4B, AP-5, AP-6B, AP-7, and AP-8 installed in the shallow aquifer, AP-4I installed in the intermediate aquifer, and AP-2A, AP-3A, AP-4A, AP-5A, and AP-6A installed in the deep aquifer.	14
2016	Monitoring Wells AP-1R and AP-2BO were installed as replacements to original shallow wells AP-1 and AP-2B, respectively.	2+
2019	Installed N&E monitoring well MW-19B in the shallow aquifer, MW-19I in the intermediate aquifer, and AP-9A, AP-10A, AP-11A, and MW-19A in the deeper aquifer.	6
2020	N&E monitoring well cluster MW-20A/I/B was installed farther west toward the White River. Installed two piezometers clusters PZ-1A/I/B and PZ-2A/I/B along the Discharge Canal.	3 6*
2021	Installed N&E monitoring well clusters MW-21A/I/B, MW-25A/I/B, MW-26A/I/B, MW-28A/I/B, and MW-29A/I/B, as well as shallow well MW-27B west of the Ash Pond System to provide horizontal and vertical delineation of SSLs.	16
2022	Installed supplemental N&E monitoring well clusters MW-36A/I/B through MW-47A/I/B to further define the horizontal and vertical extent of SSLs to the west and north of the Ash Pond System. Installed AP-9B/I, AP-10B/I, and AP-11B/I to provide additional vertical analytical data.	42
	Total	87*

Notes:
+ Indicates replacement monitoring well (not included in total well/piezometer count)
** Total includes 81 wells in the monitoring well network and six piezometers*

Sections 2.2 through Section 2.5 provide additional details regarding background monitoring, detection monitoring, assessment monitoring, and the N&E investigation.

2.1.2 Landfill

The CCR Rule groundwater monitoring system at the Landfill consists of eight monitoring wells, including one upgradient monitoring well MW-1 and seven downgradient monitoring wells MW-2R, MW-3, MW-4C, MW-10, MW-11, MW-12, and MW-13.

- Background monitoring:
  - Background monitoring (per 40 CFR §257.94(b)) has been performed in accordance with CCR Rule requirements. Nine independent (baseline) sampling events were completed for the background monitoring well between September 2016 and August 2017 for Appendix III and Appendix IV constituents, concurrently with detection monitoring per 40 CFR §257.94(b).
- Detection monitoring:
  - Detection monitoring (per 40 CFR §257.94) took place in accordance with the CCR Rule requirements, with nine independent (baseline) sampling events completed between September 2016 and August 2017 for Appendix III and Appendix IV constituents in background monitoring wells and CCR monitoring wells.
  - A statistical evaluation of detection monitoring results identified SSIs of Appendix III constituent concentrations above background concentrations in CCR monitoring wells downgradient of the Landfill. No alternative source was identified for the SSIs of Appendix III constituents. The groundwater monitoring program transitioned from detection monitoring to assessment monitoring in 2018 in accordance with CCR Rule requirements.
- Assessment monitoring:
  - Assessment monitoring (per 40 CFR §257.95), which includes CCR monitoring wells and background monitoring wells, began in May 2018 and has continued with semiannual assessment monitoring events. Samples are analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR §257.95(b) and 40 CFR §257.95(d)(1). Concurrently with the second assessment sampling round, and as required by 40 CFR §257.95(h), GWPSs were established for the detected Appendix IV constituents.
  - A statistical evaluation of assessment monitoring results indicated that arsenic (MW-10), lithium (MW-2R, MW-3, MW-4C), and molybdenum (MW-3) were present in groundwater at SSLs above the GWPSs. A N&E investigation was initiated in accordance with CCR Rule requirements.
- N&E investigation:
  - Groundwater sampling to characterize the N&E of Appendix IV constituents in groundwater downgradient of the Landfill and relevant Site conditions in accordance with 40 CFR §257.95(g) began in 2019. As described in Section 2.5, the N&E investigation includes the sampling of the Landfill monitoring well network of CCR monitoring wells, background monitoring wells, and N&E monitoring wells installed to further delineate the horizontal and vertical extent of Appendix IV constituents identified at SSLs above GWPSs downgradient of the Landfill. This report focuses on the outcome of the N&E investigation.

Monitoring wells were installed to monitor groundwater at various depths within the uppermost aquifer (sandy silt/clay unconsolidated deposits) below the base of the Landfill. The Landfill monitoring well network currently consists of 13 monitoring wells, including one background well, seven CCR monitoring wells around the perimeter of the Landfill, and five monitoring wells installed for the N&E investigation downgradient of the Landfill. Of the 13 wells, eight are considered shallow zone wells (generally screened between 25 and 45 feet bgs) and four are deep zone wells (generally screened between 35 and 100 feet bgs). One location (MW-10) is screened at a depth that represents both the shallow and deep zones.

In 2021, 15 supplemental monitoring wells were installed at six locations (MW-30 through MW-35) to characterize groundwater conditions near the Landfill. These wells are screened within the upper black shale/coal unit, lower black shale unit, and one well is screened within the sandstone unit. In March 2023, bedrock monitoring wells MW-1A and MW-12A were installed in the deeper aquifer system upgradient of the Landfill to be used as potential background monitoring wells.

In-text **Table 2-2** (below) summarizes the monitoring well and piezometer installation activities, and **Figure 5C** correlates the timing and location of monitoring well installations.

Table 2-2: Landfill Monitoring Well and Piezometer Installation Timeline

Year	Description	Number of Wells or Piezometers Installed
1986	Original monitoring wells MW-1, MW-2, and MW-3 were installed	3*
1991	Landfill observation wells LW-1A/B, LW-2, LW-6A/B, LW-8A/B, LW-18, and LW-28A/B currently serve as piezometers to monitoring groundwater elevations around the Landfill.	10
1992	Downgradient monitoring well MW-4C was installed.	1*
2017	Monitoring well MW-2 was replaced by monitoring well MW-2R+; MW-10, MW-11, MW-12, and MW-13 were installed to monitor shallow flow zones.	4*
2019	N&E monitoring wells MW-14, MW-15, and MW-16 were installed downgradient of the Landfill to delineate the horizontal extent of lithium and molybdenum detected in samples collected from monitoring wells MW-2R, MW-3, and MW-4C. MW-17 and MW-18 were installed on the northwestern side of the Landfill and are used as piezometers to provide additional control points to define the groundwater flow direction.	3* 2
2020	Temporary monitoring wells MW-22 through MW-24 were installed in the shallow zone. Monitoring well MW-24 is currently being used as a N&E well.	3 1*
2021	At six locations, monitoring wells were installed in the upper and lower shale units (MW-30 through MW-35 series) to characterize groundwater conditions near the Landfill.	15
2022	Installed downgradient N&E monitoring well MW-15B in the shallow aquifer system.	1*

Table 2-2: Landfill Monitoring Well and Piezometer Installation Timeline		
Year	**Description**	**Number of Wells or Piezometers Installed**
2023	Installed bedrock monitoring wells MW-1A and MW-12A in the deeper aquifer system. Piezometer LF-PZ-1B was installed to better define shallow groundwater flow to the south of the Landfill.	2 1
	Total	**45**
Notes: ** 13 wells included in the Landfill monitoring well network* *+ Replacement monitoring well MW-2R (not included in total well/piezometer count)*		

2.2 BACKGROUND MONITORING

Background monitoring has been performed in accordance with CCR Rule requirements to accurately represent the quality of background groundwater that has not been affected by the Ash Pond System and Landfill.

2.2.1 Ash Pond System

The CCR groundwater monitoring network for the Ash Pond System includes three background wells (MW-2R, MW-3, and MW-4C) installed in the unconsolidated deposits overlying bedrock (**Figure 5A**). Those monitoring wells were initially selected to represent background groundwater quality because they are located hydraulically upgradient of the Ash Pond System. Data from those background monitoring wells were used to establish statistically derived background concentrations for each Appendix III and Appendix IV constituent.

2.2.2 Landfill

The CCR groundwater monitoring network for the Landfill includes background monitoring well MW-1 that is located to the southeast of the Landfill and screened in the unconsolidated deposits. In March 2023, two bedrock monitoring wells (MW-1A and MW-12A) were installed to provide supplemental background data upgradient of the Landfill.

2.3 DETECTION MONITORING

2.3.1 Ash Pond System

Fourteen monitoring wells were installed in 2014 and incorporated into the CCR Rule groundwater monitoring system to support detection monitoring requirements of the CCR Rule, including AP-1R, AP-2BO[5], AP-2A, AP-3, AP-3A, AP-4B, AP-4I, AP-4A, AP-5, AP-5A, AP-6, AP-6A, AP-7, and AP-8. Detection monitoring of the CCR Rule groundwater monitoring system per 40 CFR §257.94 consisted of nine sampling events between September 2016 and August 2017 for Appendix III and Appendix IV constituents. Results from these nine sampling events were compared to statistically derived

[5] In 2016, monitoring wells AP-1R and AP-2BO were installed as replacements to original monitoring wells AP-1 and AP-2B.

background concentrations from the initial network of background monitoring wells described in Section 2.2.1. The statistical method chosen to evaluate the groundwater monitoring analytical results was certified by ATC in accordance with 40 CFR §257.93(f)(6) and is described in Certification of Selected Statistical Method for Groundwater Monitoring Data Evaluation (ATC, 2017). Statistical evaluations completed to evaluate the groundwater sample results meet the performance standard of 40 CFR §257.93 and have been used to develop Site-specific background concentrations for Appendix III and Appendix IV constituents. Reports prepared by ATC are publicly available on the PGS CCR website.

Based on a statistical evaluation of the detection monitoring results, SSIs above background concentrations for Appendix III constituents boron and pH were identified in CCR monitoring wells downgradient of the Ash Pond System, indicating the possibility of leaching of CCR constituents from the Ash Pond System into groundwater. The detection monitoring program transitioned to an assessment monitoring program in 2018 after no alternative source was identified for the SSI constituents.

2.3.2 Landfill

Eight monitoring wells were installed between 1986 and 2017 and incorporated into the CCR Rule groundwater monitoring system to support detection monitoring requirements of the CCR Rule, including MW-1, MW-2R[6], MW-3, MW-4C, MW-10, MW-11, MW-12, and MW-13.

Detection monitoring of the CCR Rule groundwater monitoring system per 40 CFR §257.94 consisted of nine sampling events between September 2016 and August 2017 for Appendix III and Appendix IV constituents. Results from these nine sampling events were compared to statistically derived background concentrations from the initial network of background monitoring wells described in Section 2.2.2. The statistical method chosen to evaluate the groundwater monitoring analytical results was certified by ATC in accordance with 40 CFR §257.93(f)(6) and is described in Certification of Selected Statistical Method for Groundwater Monitoring Data Evaluation (ATC, 2017). Statistical evaluations completed to evaluate the groundwater sample results meet the performance standard of 40 CFR §257.93 and have been used to develop Site-specific background concentrations for Appendix III and Appendix IV constituents. Reports prepared by ATC are publicly available on the PGS CCR website.

Based on a statistical evaluation of the detection monitoring results, SSIs above background concentrations for Appendix III constituents boron, calcium, chloride, sulfate, and TDS were identified in CCR monitoring wells downgradient of the Landfill, indicating the possibility of leaching of CCR constituents from the Landfill into groundwater. The detection monitoring program transitioned to an assessment monitoring program in 2018 after no alternative source was identified for the SSI constituents.

2.4 ASSESSMENT MONITORING

2.4.1 Ash Pond System

Assessment monitoring events began in May 2018, and samples were analyzed for Appendix III and Appendix IV constituents in accordance with 40 CFR §257.95(b) and 40 CFR §257.95(d)(1). Concurrently with the second assessment monitoring event (September 2018) and in accordance with 40 CFR §257.95(h), GWPSs were established for Appendix IV constituents. As previously described in Section 2.1.1, cadmium, cobalt, and molybdenum were identified as present in groundwater at SSLs above their

[6] In 2017, monitoring well MW-2R was installed as a replacement to original monitoring well MW-2.

respective GWPSs. GWPS exceedance notices were made publicly available on the PGS CCR website on January 14, 2019.

A potential source other than the Ash Pond System was identified for cadmium and cobalt; therefore, in accordance with 40 CFR §257.95(g)(3)(ii), a field investigation was initiated to demonstrate that the elevated concentrations of cadmium and cobalt in groundwater that exceeded the GWPSs was a source other than the Ash Pond System. Based on the results of investigation, the source of the elevated concentrations of cadmium and cobalt in groundwater at AP-8 is due to historical surface and underground coal mining activities conducted in this area of the Site. As a result, a successful ASD report for cadmium and cobalt was completed and certified as accurate by a qualified Professional Engineer (ATC, 2019).

Assessment monitoring has continued semiannually since September 2019. (AESI, 2025). A prediction interval statistical analysis performed on the results from each of the semiannual assessment monitoring events per 40 CFR §257.90(b) has determined that arsenic and molybdenum continue to be present in groundwater at CCR monitoring wells at SSLs above the GWPS.

2.4.2 Landfill

During the assessment monitoring phase, CCR groundwater monitoring well samples were collected during May and September 2018 and subsequently analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR §257.95(b) and 40 CFR §257.95(d)(1). Concurrently with the second assessment sampling round (September 2018), and as required by 40 CFR §257.95(h), GWPSs were established for the detected Appendix IV constituents. As previously described in Section 2.1.2 arsenic, lithium, and molybdenum were identified as present in groundwater at SSLs above their respective GWPSs. GWPS exceedance notices were made publicly available on the PGS CCR website on January 14, 2019.

A potential source other than the Landfill was identified for arsenic; therefore, in accordance with 40 CFR §257.95(g)(3)(ii), a field investigation was initiated to demonstrate that this source (and not the Landfill) had caused the elevated arsenic concentrations in groundwater. Based on the investigation, the source of the elevated arsenic concentrations in groundwater at MW-10 is due to the presence of naturally occurring sources of arsenic and the reducing geochemical conditions near the well from the historical surface mining activities conducted in this area of the Site. As a result, a successful ASD for arsenic at MW-10 was completed and certified by a qualified Professional Engineer.

Assessment monitoring has continued semiannually since September 2019 (AESI, 2025). A prediction interval statistical analysis performed on the results from each of the semiannual assessment monitoring events per 40 CFR §257.90(b) has determined that lithium and molybdenum continue to be present in groundwater at CCR monitoring wells at SSLs above the GWPSs.

2.5 NATURE AND EXTENT INVESTIGATION

After the January 2019 notice of GWPS exceedances was posted, a N&E investigation in accordance with 40 CFR §257.95(g) was initiated to characterize the N&E of Appendix IV constituent concentrations greater than GWPSs at the Site.

In 2024, the N&E of Appendix IV constituent concentrations at SSLs above GWPS at PGS was considered sufficiently characterized to proceed with an assessment of corrective measures to support the final remedy selection, as required by the CCR Rule. The extent of affected groundwater at the Site, as determined by the N&E investigation, is discussed in Section 5.

2.5.1 Ash Pond System

N&E monitoring well clusters MW-19 and MW-20 were installed downgradient of the Ash Pond System near the White River as part of the N&E investigation as shown on **Figure 5B**. Based on analytical results collected from these initial wells, additional monitoring wells were installed to the west and north of the Ash Pond System. In total, 67 N&E monitoring wells and six piezometers have been installed for the purpose of further delineating the horizontal and vertical extent of Appendix IV constituent concentrations greater than GWPSs downgradient from the Ash Pond System. A summary of N&E monitoring is provided in the in-text **Table 2-3** below.

Table 2-3: Nature and Extent Monitoring Summary (Ash Pond System)

Sampling Event Date	Wells Sampled
August and November 2019	AP-9A, AP-10A, and MW-19B/I/A
May through November 2020	AP-9A, AP-10A, and MW-19B/I/A were sampled in May and November 2020. Newly installed wells MW-20B/I/A were sampled in June and November 2020. Piezometers PZ-1B/I/A were sampled in September and November 2020.
January through November 2021	AP-9A, AP-10A, and MW-19B/I/A were sampled in May and November 2021; MW-20B/I/A were sampled in May, September, and November 2021. Newly installed N&E wells MW-21B/I/A were sampled January, April, and November 2021; MW-25B/I/A, MW-26B/I/A, MW-27B, MW-28B/I/A, and MW-29B/I/A were sampled in September and November 2021.
May through December 2022	AP-9A, AP-10A, MW-19B/I/A, MW-20B/I/A, MW-21B/I/A, MW-25B/I/A, and MW-29B/I/A were sampled in May and November 2022; MW-26B/I/A and MW-28B/I/A were sampled in June and November 2022; MW-27B was sampled in June and December 2022; AP-11A was sampled in August and December 2022; AP-9B/I and AP-10I were sampled in December 2022. Newly installed N&E wells MW-36B/I/A,MW-37B/I/A, and MW-40B/I/A were sampled in September and November 2022; MW-42B/I/A, MW-43B/I/A, MW-44B/I/A, and MW-45B/I/A were sampled in September and December 2022; MW-38B/I/A, MW-39B/I/A, MW-41B/I/A, MW-46B/I/A, and MW-47B/I/A were sampled in November 2022.
January through November 2023	AP-10B was sampled in January, June, and November 2023; AP-9B/A, AP-10/I/A, AP-11B/I/A, MW-19B/I/A, MW-20B/I/A, MW-21B/I/A, MW-25B/I/A, MW-29B/I/A, and MW-36B/I/A through MW-47B/I/A were sampled in May and November 2023; AP-9I, MW-26B/I/A, MW-27B, and MW-28B/I/A were sampled in June and November 2023.
May and November 2024	Generally, all N&E monitoring wells were sampled in May and November 2024.

2.5.2 Landfill

The N&E investigation was initiated in 2019 by installing N&E monitoring wells to further delineate the area of affected groundwater, primarily west of the Landfill as shown on **Figure 5C**. A total of five N&E monitoring wells have been installed for the purpose of further delineating the horizontal and vertical

extent of Appendix IV constituent concentrations greater than GWPSs downgradient from the Landfill (**Figure 5C**). A summary of N&E monitoring is provided in the in-text **Table 2-4** below.

Table 2-4: Nature and Extent Monitoring Summary (Landfill)	
Sampling Event Date	**Wells Sampled**
May and November 2019	MW-14, MW-15, and MW-16 were sampled in May and November 2019.
May through December 2020	MW-14, MW-15, and MW-16 were sampled in May and November 2020. MW-24 was sampled in November and December 2020.
May through December 2021	MW-14, MW-15, MW-16, and MW-24 were sampled in May/June and November 2021.
May through December 2022	MW-14, MW-15, MW-16, and MW-24 were sampled in May and November 2022. Newly installed well MW-15B was sampled in December 2022.
May and November 2023	MW-14, MW-15, MW-15B, MW-16, and MW-24 were sampled in May and November 2023.
May and November 2024	MW-15B was sampled in February 2024. MW-14, MW-15, MW-15B, MW-16, and MW-24 were sampled in May and November 2024.

2.5.3 Offsite Investigation

A N&E investigation was completed offsite to determine if groundwater or surface water has been affected west of the Site (**Figure 5D**). Between January and March 2023, nine temporary wells were installed by means of a barge within the White River corridor adjacent to the PGS. At each of the nine locations, replicate[7] groundwater samples were collected from multiple corresponding depth intervals beneath the White River. Analytical results from the groundwater samples collected showed a limited area beneath sampling location TMW-204 where affected groundwater required additional investigation. Surface water samples were also collected from the White River in August 2024; see Section 4.4 for additional details.

In October 2024, replicate groundwater samples (shallow, intermediate, and deep) were collected from temporary well location A-1 to the west of the White River near location TMW-204. A summary of offsite N&E investigation activities is provided in the in-text **Table 2-5** below.

Table 2-5: Nature and Extent Offsite Summary	
Sampling Event Date	**Samples Collected**
January through March 2023[1]	TMW-202 sampled in January 2023; TMW-200, TMW-203, TMW-204, TMW-205, and TMW-206 were sampled in February 2023; TMW-203R, TMW-207, and TMW-208 were sampled in March 2023.
August 2024	Riverbank samples (SB-1, SB-2, and SB-3) and River centerline samples (SC-1, SC-2, and SC-3) were collected in August 2024.
October 2024[1]	A-1 was sampled in October 2024.
Notes: *[1] Temporary wells were used to collect one round of replicate groundwater samples beneath the White River. TMW = Temporary monitoring well; SB = Riverbank sample; SC = river center line sample*	

[7] Replicate refers to three or four groundwater samples that were collected consecutively from a specific depth interval to assess the precision and consistency of the results.

3. Groundwater Flow Characteristics

Groundwater flow at the Site is well understood due to the comprehensive network of monitoring wells and piezometers that have been installed and monitored for many years. Groundwater flow characteristics present at the Site are summarized in the following sections.

3.1 GROUNDWATER FLOW

Site-wide groundwater level gauging events occur as part of each of the semiannual groundwater monitoring events. Groundwater level measurements are recorded from all monitoring wells within a 24-hour period, as described in the Revised Groundwater Sampling and Analysis Plan (ATC, 2022b), and prior to the start of monitoring well sampling. Monitoring well construction details are summarized in **Table 1A** and **Table 1B**. Recorded water level measurements are provided in annual groundwater monitoring and corrective action reports required by the CCR Rule (AESI, 2025).

3.1.1 Groundwater Elevation and Flow Direction

Groundwater elevation and flow direction at the PGS is influenced by seasonal variation in rainfall and White River stage fluctuations.

The influence of seasonal variations in rainfall and White River stage fluctuations on surrounding groundwater was evaluated through Site-wide synoptic gauging events conducted in April and November 2024 (**Figures 6A through 6D**), as well as the installation of several pressure transducers in monitoring wells along the floodplain of the White River between August 2022 and November 2023. A technical memorandum discussing the results of the seasonal groundwater variability evaluation in detail is provided in **Appendix A.** The following is a summary of the evaluation findings:

- The evaluation of Site-wide groundwater level measurements indicates higher groundwater elevations in the spring than in the fall, corresponding with periods of higher (spring) and lower (fall) precipitation and associated recharge to the aquifer. However, the general flow direction of groundwater is toward the White River to the west and north of the Site.
- The evaluation of transducer data indicates the White River is hydraulically connected with nearby groundwater and that groundwater rises and falls with the stage of the White River at comparable magnitudes. The data also shows that groundwater levels near the river are typically slightly higher than the river levels, indicating gaining stream behavior where groundwater feeds into the river. However, during the wet season when the river level rises enough to create flooding conditions, the river elevations rise above nearby groundwater elevations and temporarily reverse the direction of flow so that the river becomes a losing stream. During the 15 months of transducer records, a reversed flow condition was observed on approximately 13 days.

3.1.2 Hydraulic Gradients

Hydraulic gradients were calculated based on differences in groundwater elevations among monitoring wells screened in the same flow zone but laterally separated along the groundwater flow zone (horizontal hydraulic gradient) or among wells located within the same well cluster but screened at different depths (to determine vertical hydraulic gradients). Horizontal hydraulic gradients provide a

general understanding of the magnitude of lateral (downgradient) groundwater flow. Vertical hydraulic gradients provide a general understanding of the magnitude and direction (upward or downward) of vertical groundwater flow. Together, these calculations support understanding of the magnitude and direction of groundwater flow at the Site.

Horizontal hydraulic gradients for PGS were calculated using data collected during the April 2024 and November 2024 groundwater gauging events at select locations for the shallow and deep zones (see **Table 2A** and **Table 2B)**. The calculated gradients are relatively flat for each zone near the Ash Pond System but are more than an order of magnitude steeper in the upland areas near the Landfill. The geometric means of the horizontal hydraulic gradients for each zone are summarized in the in-text **Table 3-1** below:

Table 3-1: Geometric Mean of Horizontal Hydraulic Gradients

Area	Zone	April 2024	November 2024
Ash Pond System	Shallow	0.0012 ft/ft	0.0003 ft/ft
	Deep	0.0010 ft/ft	0.0004 ft/ft
Landfill	Shallow	0.0192 ft/ft	0.0196 ft/ft
	Deep	0.0127 ft/ft	0.0127 ft/ft

Notes:
ft/ft = feet per foot

Vertical gradients at well clusters were calculated between shallow and intermediate zone wells and between intermediate and deep zone wells, or if intermediate wells were not present, gradients were calculated between the shallow and deep zones. The shallow, intermediate, and deep wells are hydraulically connected near the Ash Pond System where outwash sand deposits are present and no continuous confining zone was identified. However, upgradient near the Landfill, the water level data indicates a more vertically separated groundwater flow system with a confining unit present between the shallow and deep zones. Vertical gradients are presented in **Table 3A** and **Table 3B.** They are summarized in the in-text **Table 3-2** below.

Table 3-2: Summary of Vertical Hydraulic Gradients			
Area	**Calculated Vertical Gradients**	**April 2024**	**November 2024**
Ash Pond System	Average	0.00121↓	0.00065↓
	Maximum Upward	0.0357↑	0.0369↑
	Maximum Downward	0.0606↓	0.0405↓
Landfill	Average	0.3641↓	0.4154↓
	Maximum Upward	N/A↑	N/A↑
	Maximum Downward	0.7265↓	0.9031↓
Notes: *MW-30 series wells screened in rock were not used in the calculation of the statistical results above.*			

3.1.3 Hydraulic Conductivity

Hydraulic conductivity refers to how easily water can flow through a material, such as a rock or soil matrix, under a hydraulic gradient. Estimates of hydraulic conductivity are helpful for understanding the potential for an aquifer to allow or restrict groundwater flow under differing conditions. Hydraulic conductivity at the Site was calculated based on in-field slug testing of subsurface material to determine the relative ease with which water can flow through the material. Slug tests were performed by rapidly changing the water level within a monitoring well and measuring the rate of response to the water level change in order to calculate the hydraulic conductivity.

Horizontal hydraulic conductivity data for the Site's shallow, intermediate, and deep wells were derived from slug tests completed by ATC from 2014 through 2020, Atlas Technical Consultants LLC (Atlas) from 2021 through early 2022, and Haley & Aldrich from late 2022 through 2023. This data is presented in **Table 4**. Overall, the horizontal hydraulic conductivity is relatively consistent with depth based on the geometric means of the results. However, individually there are some well clusters with hydraulic conductivities that vary more with depth. Slug test results are included in **Appendix B**.

The mean, minimum, and maximum hydraulic conductivity values for the Site's shallow, intermediate, and deep wells are presented in the in-text **Table 3-3** below.

Table 3-3: Hydraulic Conductivity Based on Field Testing				
Area	**Zone**	**Geometric Mean (ft/day)**	**Minimum (ft/day)**	**Maximum (ft/day)**
Ash Pond System	Shallow	54.13	0.63 (AP-7)	629.65 (MW-42B)
	Intermediate	71.36	6.30 (MW-45I)	269.25 (MW-37I)
	Deep	62.02	11.95 (AP-5A)	851.92 (MW-42A)
	Bedrock	0.004	0.0005	0.051
Landfill	Shallow	2.08	0.22 (MW-17)	8.29 (MW-14)
	Intermediate	0.2	0.2 (MW-33I)	0.2 (MW-33I)
	Deep	0.59	0.05 (MW-18)	19.34 (MW-15)
	Bedrock	0.004	0.0005	0.051
Notes: *ft/day = feet per day*				

The horizontal hydraulic conductivity of a discrete zone of the localized bedrock was estimated from a series of packer tests completed by Atlas in 2022 in bedrock borings completed at monitoring wells MW-37, MW-42, MW-42B, MW-44, and MW-47. Packer tests were performed by pumping water from an isolated bedrock zone within the borehole and measuring the rate of response of the water level over time (**Appendix B**). Hydraulic conductivity results for the shale bedrock packer testing ranged from 0.0005 to 0.051 feet per day (ft/day).[8] The range of values from packer testing in the shale bedrock is substantially lower than for the unconsolidated deposits above bedrock. The relative difference between hydraulic conductivity values (as presented in in-text **Table 3-3** above) compared to the shale indicates that the potential for downward vertical groundwater flow and constituent migration into the bedrock is limited (i.e., the shale bedrock is a confining layer). These results also support the conclusion that groundwater flow is predominantly horizontal and that the potential for affected groundwater is limited to the shallow and deep flow zones above bedrock.

Rock cores from borings MW-37 (74.5 to 75 feet bgs) and MW-40 (70.5 to 71 feet bgs) were also submitted for laboratory vertical hydraulic conductivity testing by ASTM International D5084 Method C. The resulting vertical hydraulic conductivity, representative of the underlying bedrock at the Site, ranged from 2.83 x 10^{-3} to 2.83 x 10^{-4} ft/day. The results at MW-37 are similar to the localized bedrock hydraulic conductivity determined by packer tests in the same monitoring well. The vertical hydraulic conductivity laboratory analytical reports are provided in **Appendix B**.

3.1.4 Seepage Velocity

Seepage velocity refers to the rate at which groundwater moves through porous aquifer material (i.e., sediments). Seepage velocities are determined based on a calculation that considers various aquifer property measurements from the Site (i.e., hydraulic conductivity, effective porosity, the change in groundwater elevations between two points along a flow path, and the horizontal distance between those points):

$$V_{gw} = K\ i\ (1/n_e)$$

Where: V_{gw} = seepage velocity
K = hydraulic conductivity
i = hydraulic gradient
n_e = effective porosity

Seepage velocity calculations for PGS using data from April and November 2024 are presented in **Table 3A** and **Table 3B**, respectively. Seepage velocities are also shown on the flow maps included in **Figure 6A** through **Figure 6D**. The seepage velocities near the Ash Pond System vary substantially between the different gauging events, indicating that the, the river stage conditions, and the amount of precipitation and associated recharge to the aquifer can have a strong effect on the flow of groundwater downgradient of the Ash Pond System. However, seepage velocities near the Landfill do not exhibit large differences between gauging events but they do indicate a reduction in seepage velocity with depth (in-text **Table 3-4**).

[8] MW-47 packer test result is an outlier with a value of 4.812 ft/day and may indicate a faulty test result (i.e., the packer did not seal correctly). Results were omitted from the discussion.

Table 3-4: Geometric Mean of Seepage Velocities			
Area	**Zone**	**April 2024**	**November 2024**
Ash Pond System	Shallow	117 ft/yr	29 ft/yr
	Deep	85 ft/yr	35 ft/yr
Landfill	Shallow	69 ft/yr	70 ft/yr
	Deep	11 ft/yr	11 ft/yr
Notes: *ft/yr = feet per year*			

Seepage velocities generally increase within the shallow and deep zones from the Landfill system (11 to 70 feet per year [ft/yr]) toward the Ash Pond System (29 to 117 ft/yr). This increase is consistent with the higher hydraulic conductivity outwash sands encountered beneath and to the west of the Ash Pond System.

4. Results

Site investigation activities were completed to sufficiently characterize the N&E of groundwater affected by the Ash Pond System and Landfill and identify any relevant Site conditions that may affect the remedy ultimately selected per 40 CFR §257.95(g)(1). Additionally, information from these activities will be used as described in 40 CFR §257.97(d)(5) when considering the selection of remedy, in particular the N&E of affected groundwater, potential risks to human health and the environment, current and future aquifer use, proximity and withdrawal rates of adjacent groundwater users, groundwater quantity and quality, and the hydrogeologic characteristics near the Site. Site investigation results are summarized in the following sections.

4.1 ASH POND SYSTEM

4.1.1 Groundwater Analytical Results

As described in Section 2.3.1, the analytical results from the detection monitoring events completed in 2016 and 2017 were compared to background (unaffected by the Ash Pond System) concentrations. This comparison used statistical evaluations to determine whether SSIs of Appendix III constituents above background concentrations in groundwater had occurred. This evaluation was completed in January 2018 and identified SSIs of Appendix III constituents (boron and pH) in CCR monitoring wells located along the perimeter of the Ash Pond System relative to concentrations observed in background monitoring wells. Subsequently, assessment monitoring identified Appendix IV SSLs in two CCR monitoring wells located along the perimeter of the Ash Pond System. A N&E investigation began in 2019.

Historical groundwater monitoring results for the CCR Rule Appendix III and Appendix IV constituents, including Appendix III SSIs and Appendix IV SSLs, can be found in the Site's annual groundwater monitoring and corrective action reports located at the PGS publicly available CCR website.[9]

Appendix IV to 40 CFR §257 lists 15 constituents for assessment monitoring. Ten of those constituents have been historically detected at concentrations greater than the GWPSs. Statistical analysis determined that two constituents are present at SSLs, including:

- Arsenic; and
- Molybdenum.

In-text **Table 4-1** below summarizes constituents from groundwater monitoring wells exceeding the applicable GWPSs, SSLs, and maximum concentrations from the May and November 2024 sampling events, which were the two most recent sampling events.

[9] Groundwater analytical results are provided in annual groundwater monitoring and corrective action reports required by the CCR Rule, which are posted on the publicly available website for PGS: https://www.aesindiana.com/petersburg-generating-station.

Table 4-1: Summary of Constituent Concentrations Greater than the GWPSs						
Constituent	**GWPS**	**# Detections >GWPS 2016-November 2024**	**Current SSL?**	**Historical Maximum Concentration (µg/L[1]) & Well ID**	**May/June 2024 Maximum Concentration (µg/L[1]) & Well ID**	**November 2024 Maximum Concentration (µg/L[1]) & Well ID**
Antimony	6 ug/L	1	No	7.4 (AP-4B)	BRL (all wells)	BRL (all wells)
Arsenic	**10 µg/L**	**22**	**Yes**	**2,080 (AP-2A)**	**1,560 (AP-2A)**	**1,000 (AP-2A)**
Beryllium	4 µg/L	4	No	6.8 (AP-8)	2.1 (AP-8)	NA
Boron	-	-	N/A	36,600 (AP-9A)	35,400 (AP-9A)	36,600 (AP-9A)
Cadmium[2]	5 ug/L	20	No	18 (AP-8)	6.2 (AP-8)	4.7 (AP-8)
Cobalt[2]	6 µg/L	33	No	901 (AP-8)	415 (AP-8)	368 (AP-8)
Lead	15 µg/L	1	No	28.1 (MW-19I)	BRL (all wells)	NA
Lithium	40 µg/L	66	No	322 (MW-28B)	163 (MW-28B)	322 (MW-28B)
Molybdenum	**100 µg/L**	**337**	**Yes**	**3,000 (AP-2A)**	**2,020 (MW-42A)**	**2,160(MW-42A)**
Radium (total)	5 pCi/L	2	No	6.89 (AP-5A)	4.53 (MW-19I)	2.9 (MW-27B)

Notes:

[1] – Concentrations are in micrograms per liter (µg/L) for each constituent, except for total radium, which is in picocuries per liter (pCi/L).

[2] A successful ASD for cadmium and cobalt has been completed for AP-8 (ATC, 2019).

Bold indicates a SSL has been identified for that constituent.

Historical dataset includes data from September 2016 to November 2024.

Non-detect analytical results (with reporting limits above GWPSs) are excluded.

Background wells (MW-2R, MW-3, and MW-4C) are excluded from this table since they are included in Table 4-3.

Duplicate concentrations are excluded.

BRL: Below laboratory reporting limit.

N/A: Not applicable – boron is an Appendix III constituent and SSLs only apply to Appendix IV constituents.

NA: Not Analyzed.

Molybdenum concentrations are highest in the deep zone and extend from the Ash Pond System west to the White River and northwest to MW-37A. Molybdenum in the intermediate zone has a similar geometry but is smaller in spatial extent to that of the deep zone, with slightly less concentrations. Molybdenum concentrations in the shallow zone follow a similar special distribution to the deeper and intermediate zones, but at much lower concentrations and smaller in spatial extent. Maximum concentrations of molybdenum have been detected near the western boundary of the Site, downgradient from the Ash Pond System and Landfill (in monitoring well AP-9A), with the White River acting as the constraint farther west.

Arsenic concentrations exceeding the GWPS have only been detected in one monitoring well, AP-2A, that is screened within the deeper groundwater zone. The elevated levels are confined to this localized area, with no significant exceedances observed in the shallow or intermediate zones. The spatial extent of the arsenic-affected groundwater in the deeper zone appears to be restricted to the vicinity of AP-2A, which is supported by non-detect or compliant arsenic results from adjacent monitoring wells AP-9A, AP-3A, and AP-10A, which serve to laterally constrain the affected area. These findings suggest that the arsenic affected groundwater is not widespread and remains hydrogeologically isolated within the deeper zone near AP-2A.

To further evaluate if constituent concentrations in groundwater are related to CCR leaching from the Ash Pond System, a bivariate analysis of co-occurring constituents was completed. The analysis was completed to determine if a relationship exists between the Appendix III constituent boron (a primary

indicator of CCR leaching to groundwater from the Ash Pond System) and Appendix IV constituents with SSLs above GWPSs. Results from this analysis indicate:

- A generally positive relationship exists between boron and Appendix IV constituent molybdenum (**Figure 7A**). These results indicate a likely contribution of those constituents to groundwater from the Ash Pond System.
- No clear relationship is generally evident between boron and the Appendix IV constituent arsenic. There are other constituents for which an exceedance of its GWPS but without a SSL have been historically identified (beryllium, cadmium, cobalt, fluoride, lead, thallium, and radium-total; **Figure 7B**).

4.1.2 Water Type Analysis

Geochemical signatures can be used to evaluate groundwater recharge sources, discharge zones, and other inputs to constituent concentrations in groundwater, which assist in characterizing the N&E of affected groundwater. Distinct geochemical signatures identified via water type analysis at the PGS include groundwater upgradient of the Ash Pond System, affected groundwater downgradient of the Ash Pond System, and White River surface water. The geochemical signature of each water type aids in understanding the groundwater flow paths and mixing zones. Geochemical characteristics of each water type are as follows:

- Background groundwater (groundwater that has not been affected by the Ash Pond System) is monitored at MW-2R, MW-3, and MW-4C. Analysis of major ions measured in groundwater at these locations indicates groundwater is a high-ionic-strength (TDS at ~2,000 to 3,000 milligrams per liter [mg/L]), calcium sulfate water type. Note that these wells are located downgradient of and are affected by the Landfill. Hydraulicly upgradient of both the Ash Pond System and the Landfill, the Landfill background wells are analyzed as a calcium carbonate water type (see Section 4.3.2).
- Groundwater affected by the Ash Pond System is also a high-ionic-strength (TDS at ~2,000 to 3,000 mg/L) calcium sulfate water type. The observed compositional variation of groundwater downgradient of the Ash Pond System likely reflects a variation in mixing between calcium bicarbonate background water (Landfill background wells) and/or White River surface water with groundwater that has been affected by the Ash Pond System and/or Landfill.
- White River surface water samples collected as part of the White River Mainstem Project from approximately 6.5 miles downriver of the Site provide an approximation of the river's geochemical signature, and they plot as a calcium-magnesium-bicarbonate water type.
- Therefore, groundwater affected by the Ash Pond System is generally represented as a calcium sulfate water type and likely represents a mixture with calcium bicarbonate background water or river water.

Piper plots are graphical representations of the major ionic composition of a water sample and were created to illustrate the water chemistry and the origin of dissolved constituents in water. Piper plots were created for the shallow, intermediate, and deep zones of the CCR compliance monitoring and N&E wells and are included as **Figures 8A** through **8C**. The most recent (November 2024) groundwater quality data for the CCR compliance monitoring and N&E wells are included as **Figure 8D**. Piper plots were also used to evaluate shifts in water type over time at single locations to demonstrate how changing Site conditions can influence groundwater flow and constituent migration. The Piper plots in **Figure 8E**, **Figure 8F**, and **Figure 8G** depict analytical results collected from 2019 through 2024 from monitoring

wells AP-3, AP-4B, and AP-5, respectively, located to the northwest of the Ash Pond System. Evaluation of these Piper plots indicates that groundwater affected by the Ash Pond System is found in the shallow, intermediate, and deep flow zones downgradient of the Ash Pond System and that the area of affected groundwater is decreasing through time. Observations from these plots include:

- In the shallow flow zone, groundwater increasingly trends toward a lower-ion-strength (TDS ~500 mg/L) calcium bicarbonate type groundwater in areas to the north and west of the Ash Pond System (AP-3, AP-4B, and AP-5) through time, which may reflect an increasing contribution from background groundwater from the Landfill and/or White River surface water following pond closures activities completed to date.
- In the intermediate and deep flow zones, there is generally less compositional variation through time and the major ionic composition of groundwater is generally a high-ionic-strength calcium sulfate type groundwater, similar to Ash Pond System affected groundwater and/or background groundwater affected by the Landfill.

4.1.3 Ash Pond System Trend Analysis

A temporal trend analysis is a type of statistical evaluation conducted to visualize the behavior of a variable over time. For this Site, the trends were evaluated using Mann-Kendall and Sen's Slope statistics for constituents exhibiting SSLs over GWPSs (arsenic, lithium, and molybdenum). Results of the temporal trend analysis conducted indicate that concentrations of these constituents in the area of affected groundwater generally exhibit no trend or stable trends and limited monitoring wells exhibit increasing or potentially increasing trends. Time-series plots and statistical output results are included in **Appendix C.** A summary of each well trend for the Ash Pond System is provided in **Table 5,** and overall trend values are summarized in the in-text **Table 4-2** below.

Table 4-2: Temporal Trend Summary by Constituent for the Ash Pond System

Temporal Trend	Arsenic	Lithium	Molybdenum
Decreasing	3	2	7
Probably decreasing	*0*	*0*	2
Stable	6	11	6
Probably increasing	1	*0*	*0*
Increasing	1	1	2
No trend	15	1	14

Note:
Excludes monitoring wells that have an insufficient number of sampling events to evaluate a trend.
No trend = data points are independent and identically distributed and are not serially correlated over time.

As previously indicated, most trends for arsenic and molybdenum indicate no trend, while lithium exhibited a clear stable plume. Limited increasing trends were identified at:

- AP-2A – arsenic (**Appendix C – Figure D2**) – trending above GWPS.
- MW-26A – arsenic (**Appendix C – Figure D32**) – trending below GWPS.
- MW-28B – lithium (**Appendix C – Figure D78**) – trending above GWPS.
- AP-5A – molybdenum (**Appendix C – Figure D92**) – trending above GWPS.

- MW-25I – molybdenum (**Appendix C – Figure D113**) – trending below GWPS.

An increasing trend of arsenic concentrations exceeding the GWPS was identified at monitoring well AP-2A. This well is situated immediately to the west and hydraulically downgradient of the Ash Pond System within the deeper zone. However, the rising arsenic concentrations at AP-2A do not suggest a migrating plume, as no similar increasing trends were observed in the surrounding monitoring wells (AP-3A, AP-9A, AP-10, and MW-21A) during the monitoring period from 2016 to 2024. Additionally, the increasing arsenic trend in MW-26A, which is also installed in the deeper zone but trends below the GWPS, does not indicate an expanding plume mass or geometry. This conclusion is supported by the fact that nearly all arsenic concentrations in the surrounding wells are below the GWPS. The spatial distribution of arsenic further supports this trend analysis, indicating that arsenic is present in isolated areas of the Site.

Increasing trends for molybdenum above the GWPS are present at one deep monitoring well (AP-5A), and an increasing trend was identified in intermediate well (MW-25I) below the GWPS. Similarly, increasing trends for lithium above the GWPS are limited to one shallow N&E monitoring well (MW-28B). All these locations are to the west and downgradient of the Ash Pond System.

To further assess groundwater trends, a concentration versus distance plot (**Figure 9**) was developed to illustrate how arsenic, lithium, and molybdenum concentrations change with distance from the Ash Pond System. Spatial trends associated with constituent concentrations in the direction of groundwater flow downgradient of the Ash Pond System are shown in **Figure 9**. Spatial trend observations include:

- Arsenic concentrations decrease rapidly over a short distance (less than 150 feet) from the Ash Pond System. This is consistent with the relatively high affinity for arsenic to adsorb to aquifer solids, thereby reducing its mobility (USEPA, 2007).
- Lithium concentrations decrease to less than the GWPS over a greater distance compared to arsenic and at a similar distance compared to molybdenum. Concentrations are reduced to less than the GWPS approximately 1,800 feet from the Ash Pond System boundary. Evaluation of the lithium concentration spatial distribution indicates lithium SSLs downgradient of the Ash Pond System are sourced from the Landfill.
- Molybdenum concentrations decrease below the GWPS approximately 2,000 feet from the Ash Pond System boundary. Evaluation of molybdenum concentration spatial distribution indicates molybdenum SSLs are sourced both from the Ash Pond System and Landfill, indicating a co-mingled plume.

These three constituents demonstrate a spectrum of reactivity (mobility) with arsenic representing the most reactive (least mobile) constituent, followed by molybdenum and lithium (most mobile). Geochemical processes can reduce arsenic concentrations over a short distance. Physical processes, such as dilution and dispersion, are likely the primary mechanisms of lithium attenuation. Molybdenum is likely attenuated by a combination of physical and geochemical processes.

4.2 LANDFILL

4.2.1 Groundwater Analytical Results

As discussed in Section 4.1.1, statistical analysis was completed and determined the following SSLs are present at the Landfill:

- Arsenic;
- Lithium; and
- Molybdenum.

In-text **Table 4-3** below summarizes constituents from groundwater monitoring wells exceeding the applicable GWPSs, SSLs, and maximum concentrations from the May and October 2024 sampling events, which were the two most recent sampling events for which statistical evaluation was documented in the 2024 CCR Annual Groundwater Monitoring and Corrective Action Report.

Table 4-3: Summary of Constituent Concentrations Greater than the GWPSs

Constituent	GWPS	# Detections >GWPS 2016-November 2024	Current SSL?	Historical Maximum Concentration (µg/L[1]) & Well ID	May 2024 Maximum Concentration (µg/L[1]) & Well ID	November 2024 Maximum Concentration (µg/L[1]) & Well ID
Antimony	6 µg/L	1	No	6.4 (MW-30D2)	2.1 (MW-3)	BRL (all wells)
Arsenic[3]	**10 µg/L**	**72**	**Yes**	**263[2] (MW-3)**	**263[2] (MW-3)**	**61.3 (MW-10)**
Boron	-	-	N/A	46,000 (MW-10)	34,400 (MW-10)	23,400 (MW-10)
Chromium	100 µg/L	1	No	173 (MW-30D2)	BRL (all wells)	BRL (all wells)
Cobalt	6 µg/L	8	No	24 (MW-35D2)	3.3 (MW-2R)	6.6 (MW-12)
Fluoride	4,000 µg/L	2	No	15,900[2] (MW-12)	2,900 (MW-33D2)	3,500 (MW-33D2)
Lead	15 µg/L	7	No	47.8 (MW-3)	BRL (all wells)	BRL (all wells)
Lithium	**40 µg/L**	**189**	**Yes**	**4,880 (MW-22)**	**1,620 (MW-3)**	**1,420 (MW-3)**
Molybdenum	**100 µg/L**	**61**	**Yes**	**1,010 (MW-22)**	**426 (MW-3)**	**314 (MW-16)**
Thallium	2	2	No	2.8 (MW-12)	BRL (all wells)	BRL (all wells)
Radium (total)	5 pCi/L	1	No	6.38 (MW-11)	3.12 (MW-1A)	3.77 (MW-1A)

Notes:
[1] Concentrations are in micrograms per liter (µg/L) for each constituent except for total radium, which is in picocuries per liter (pCi/L).
[2] Analytical result from the IDEM compliance sampling event.
[3] A successful ASD for arsenic has been completed for MW-10 (Haley & Aldrich, 2019).
Bold indicates a SSL has been identified for that constituent.
Historical dataset includes data from September 2016 to November 2024.
Non-detect analytical results (with reporting limits above GWPS) are excluded.
Duplicate concentrations are excluded.
BRL: Below laboratory reporting limit
NA: Not Analyzed
N/A: Not applicable – boron is an Appendix III constituent, and SSLs only apply to Appendix IV constituents.

Similar to the Ash Pond System, to further evaluate if constituent concentrations in groundwater are related to CCR leaching from the Landfill, a bivariate analysis of co-occurring constituents was completed. The analysis was completed to determine if a relationship exists between the Appendix III constituent boron (a primary indicator of CCR leaching to groundwater from the Landfill) and Appendix IV constituents with SSLs above the GWPSs. Results from this analysis indicate:

- A generally positive relationship exists between boron and Appendix IV constituents arsenic, lithium, and molybdenum (**Figure 10A**). These results indicate a likely contribution of those constituents to groundwater from the Landfill.

- No clear relationship is generally evident between boron and the other five Appendix IV constituents for which an exceedance of its GWPS but without a SSL have been historically identified (cadmium, chromium, cobalt, fluoride, lead, lithium, molybdenum, thallium, and radium [total]) (**Figure 10B**), as well as constituents versus TDS (**Figure 10C**).

4.2.2 Water Type Analysis

Geochemical signatures can be used to evaluate groundwater recharge sources, discharge zones, and other inputs to constituent concentrations in groundwater, which assist in characterizing the N&E of affected groundwater. Distinct geochemical signatures identified via water type analysis at the Site include unaffected groundwater upgradient of the Landfill, affected groundwater downgradient of the Landfill, and groundwater within the underlying bedrock units (upper shale, sandstone, and lower shale). The geochemical signature of each water type is useful for understanding groundwater flow paths and mixing zones. Geochemical characteristics of each water type are as follows:

- Background groundwater (groundwater that has not been affected by the Landfill) is monitored at MW-1. Analysis of major ions measured in groundwater at this location indicates background groundwater is a relatively low-ionic-strength (TDS at ~500 to 700 mg/L) calcium bicarbonate water type.
- Groundwater affected by the Landfill is generally categorized as a higher-ionic-strength (TDS at ~2,000 to 3,000 mg/L) calcium sulfate water type. The observed compositional variation of groundwater downgradient of the Landfill likely reflects a variation in mixing between calcium bicarbonate background water with groundwater that has been affected by the Landfill.
- Groundwater within the underlying bedrock units (upper shale, sandstone, and lower shale) trends toward a sodium bicarbonate water type, typically of regional bedrock water quality (see Section 1.2.3.2).

Piper plots were created for the CCR compliance monitoring wells and are included as **Figures 11A** and Figure **11B**. Groundwater quality within the underlying bedrock units (upper shale, sandstone, and lower shale) is included as **Figure 11C**. The most recent (November 2024) groundwater quality data for the CCR compliance monitoring and N&E wells is included as **Figure 11D**. Evaluation of these Piper plots indicates that groundwater affected by the Landfill is generally restricted to the shallow and deep flow zones above the bedrock units, downgradient and to the west of the Landfill (affected groundwater extent is further discussed in Section 5). Observations from these plots include:

- Groundwater quality signatures are generally consistent throughout time for CCR monitoring wells MW-2R, MW-3, and MW-4C, whereas MW-10 indicates some degree of mixing between background groundwater quality and groundwater affected by the Landfill through time (**Figures 11E and 11F**). Higher TDS values and a shift away from a bicarbonate type water and toward a sulfate type water in these wells relative to background groundwater indicates that the Landfill is a likely primary source for sulfate in groundwater. A comparison of shallow and deep CCR monitoring wells indicates that groundwater quality signatures are generally similar.
- CCR monitoring wells MW-11 and MW-12, which are located side-gradient to the Landfill, have groundwater quality signatures similar to background groundwater, which indicates that groundwater at these locations is not affected by the Landfill.
- Groundwater within the upper shale unit is a calcium bicarbonate (MW-34D1) and calcium sulfate (MW-32D1 and MW-34D1) water type and likely represents a mixture between

background groundwater and an alternative source for sulfate, which may reflect historical mining impacts (see Section 1.2.3).

- Groundwater within the sandstone and lower shale units is generally defined as a sodium bicarbonate groundwater type, as is typically for the region (see Section 1.2.3.2).

4.2.3 Landfill Trend Analysis

Similar to the Ash Pond System, a temporal trend analysis was conducted using Mann-Kendall and Sen's Slope statistics for constituents exhibiting SSLs over GWPSs (arsenic, lithium, and molybdenum). Results of the temporal trend analysis conducted indicate that concentrations of these constituents in the area of affected groundwater are generally stable with decreasing trends observed at numerous locations. Time-series plots and statistical output results are included in **Appendix C.** A summary of each well trend for the Landfill is provided in **Table 6**, and overall trend values are summarized in the in-text **Table 4-4** below.

Table 4-4: Temporal Trend Summary by Constituent for the Landfill

Temporal Trend	Arsenic	Lithium	Molybdenum
Decreasing	1	1	2
Probably decreasing	*0*	*0*	0
Stable	4	7	3
Probably increasing	0	*0*	*0*
Increasing	1	2	1
No trend	5	1	8

Note:
Excludes monitoring wells that have an insufficient number of sampling events to evaluate a trend.
No trend = data points are independent and identically distributed and are not serially correlated over time.

Most trends indicate a stable to decreasing plume. However, molybdenum has exhibited more instances of having no trend when compared to stable or decreasing trends within the dataset. Limited increasing trends were identified at:

- MW-3 – arsenic (**Appendix C – Figure D3**) – trending above GWPS.
- MW-13 – lithium (**Appendix C – Figure D23**) – trending above GWPS.
- MW-33D2 – lithium (**Appendix C – Figure D28**) – trending above GWPS.
- MW-15 – molybdenum (**Appendix C – Figure D40**) – trending above GWPS.

Increasing trends identified for arsenic in monitoring well MW-3 do not appear to be representative of increasing plume mass or an expanded plume geometry. Nearly all arsenic concentrations are less than the GWPS from wells directly downgradient and proximate to MW-3 and exhibit no increasing trends (MW-15 and MW-24). Groundwater analytical results are provided in annual groundwater monitoring and corrective action reports required by the CCR Rule.

Increasing trends for molybdenum above the GWPS are present at one deep monitoring well (AP-5A) and an increasing trend was identified in intermediate well MW-25I below the GWPS. Similarly, increasing

trends for lithium above the GWPS are limited to one shallow N&E monitoring well (MW-28B). These locations are west and downgradient of the Landfill.

Similarly to the Ash Pond System, spatial trends for the Landfill indicate reducing constituent concentrations in the direction of groundwater flow downgradient of the Landfill (**Figure 12**). Spatial trend observations include:

- Arsenic concentrations decrease rapidly over a short distance (less than 50 feet) from the Landfill, resulting in isolated area of elevated concentrations. This is consistent with the relatively high affinity for arsenic to adsorb to aquifer solids, thereby reducing its mobility (USEPA, 2007).
- Evaluation of lithium concentration spatial distribution indicates lithium SSLs sourced from the Landfill have migrated west and downgradient of the Ash Pond System. Lithium concentrations decrease over distance downgradient from the Landfill and remain greater than the GWPS beyond the Ash Pond System boundary to the west. As shown on **Figure 9**, lithium concentrations decrease below the GWPS approximately 1,800 feet from the Ash Pond System boundary and approximately 3,800 feet from the Landfill boundary.
- Evaluation of molybdenum concentration spatial distribution indicates molybdenum SSLs are sourced both from the Landfill and Ash Pond System, indicating a co-mingled plume. Concentrations are reduced to less than the GWPS approximately 4,000 feet from the Landfill boundary.

These three constituents demonstrate a spectrum of reactivity (mobility) with arsenic representing the most reactive (least mobile) constituent, followed by molybdenum and lithium (most mobile). Geochemical processes can reduce arsenic concentrations over a short distance. Physical processes, such as dilution and dispersion, are likely the primary mechanisms of lithium attenuation. Molybdenum is likely attenuated by a combination of physical and geochemical processes.

4.3 SURFACE WATER SAMPLING

In March 2024, IDEM requested that surface water samples be collected to address potential impacts to the White River. Groundwater analytical results from monitoring wells located along the property line indicated that molybdenum concentrations were detected above the GWPS and the Surface Water Quality Standard.

In August 2024, Atlas collected surface water samples within the White River corridor. Sampling was performed at three locations, consisting of three samples from the riverbank (SB-1, SB-2, and SB-3) and grouped with a corresponding river centerline sample (SC-1, SC-2, and SC-3). Samples were collected and analyzed in accordance with the IDEM-approved Groundwater Nature and Extent Investigation Surface Water Sampling and Analysis Plan (Atlas, 2024a). The results of the investigation concluded that groundwater at the Site has not adversely affected the White River. Analytical results are provided in the August 2024 Surface Water Sampling Report (Atlas, 2024b).

4.4 ISOTOPE ANALYSIS

In February 2023, the stable isotopic composition (oxygen-18 and deuterium) of groundwater and White River surface water samples were analyzed. Stable isotopes are routinely used as a conservative tracer for characterizing distinct groundwater sources and mixing processes (Diamond, 2022).

The following trends characterize the isotopic composition of surface and groundwater at the Site (**Figure 13**):

- White River surface water samples generally plot along and near the local meteoric water line (LMWL), which represents the average isotopic signature of local precipitation (i.e., rain and snow).
- Shallow groundwater samples are isotopically heavier than the White River surface water samples and also plot along and near the LMWL, which indicates that local precipitation is also a significant source for shallow groundwater. Generally:
  - Shallow wells located closer to the White River (e.g., MW-41B and AP-6B) are isotopically lighter (closer to the White River signature) and plot above the LMWL, which may reflect nitrogen cycling driven by periodic river flooding.
  - Shallow wells located adjacent to former mine works (e.g., MW-10, MW-2R, MW-15B, and MW-24) are enriched in oxygen-18 (heavier) relative to the LMWL, which may reflect a contribution from mining-related impacts (i.e., acid mine drainage) and/or mixing with an isotopically heavier endmember (e.g., deeper regional recharge associated with the bedrock aquifer).
- Intermediate and deep groundwater samples tend to be isotopically heavier than shallow groundwater and fall along an evaporation trend (shallower slope than LMWL). This pattern reflects a contribution from an evaporatively enriched (heavier) source (e.g., former ash pond water).
- White River temporary wells have an isotopic composition that matches the deep and intermediate wells more than the White River itself.

The isotopic analysis of water samples from the White River and surrounding groundwater sources reveals insights into the hydrological processes. Variations in isotopic signatures among shallow wells, particularly those near the river and former mine works, highlight the influence of periodic flooding and potential mining impacts. Meanwhile, the isotopic trends observed in intermediate and deep groundwater samples suggest contributions from evaporatively enriched (heavier) sources, such as former ash pond water. These observations are consistent with findings of the previously discussed analyses, specifically the water type analysis, and further assist in characterizing the N&E of affected groundwater.

4.5 SOIL SAMPLING RESULTS

Soil samples were collected at the Site during two separate events:

- In July and August 2021, soil samples were collected from the borings for monitoring wells clusters (shallow/intermediate/deep) MW-25, MW-26, MW-28, and MW-29 and one sample from MW-27B.
- In August 2022, soil samples were collected from MW-36 through MW-47 (shallow/ intermediate/deep) and presented in the 2022 Annual Groundwater Monitoring Corrective Action Report (Atlas, 2022).

Soil Samples were then compared to corresponding groundwater monitoring well analytical results (**Table 7**) to evaluate potential relationships between aqueous and solid-phase concentrations. No relationships are apparent for arsenic, lithium, or molybdenum (**Figure 14**).

5. Extent of Affected Groundwater

The spatial distribution of groundwater analytical results for both the Landfill and the Ash Pond System was reviewed to evaluate the extent of affected groundwater and whether horizontal and vertical delineation is complete. Findings regarding the horizontal and vertical extents are discussed below.

5.1 HORIZONTAL EXTENT

Maps showing concentration distribution for arsenic, lithium, and molybdenum in the shallow, intermediate, and deep zones for the November 2024 sampling event are included on **Figures 15A** through **Figure 15I**. The horizontal extent of affected groundwater has been sufficiently characterized to evaluate corrective measures and covers approximately 370 acres, which encompasses parts of area beneath the Ash Pond System and Landfill and extends to the west and northwest of the Ash Pond System toward the White River as shown on **Figure 16**. Molybdenum concentrations represent the largest area of affected groundwater downgradient of the Ash Pond System while lithium concentrations are predominantly observed beneath the Landfill, Pond A, and a portion of Former Pond B. Arsenic concentrations greater than the GWPS are limited to the vicinity of monitoring well locations MW-3, MW-10, AP-2A, and MW-27B.

5.1.1 North

The northern extent of lithium and molybdenum is delineated by monitoring wells AP-8, and MW-10, along with monitoring well cluster AP-6 and MW-25.

5.1.2 South

The southern extent of affected groundwater is delineated by monitoring well clusters MW-44 and MW-1, along with monitoring wells AP-1R and MW-14, which do not exhibit concentrations of arsenic, lithium, and molybdenum greater than the GWPSs.

5.1.3 East

Groundwater to the east is upgradient of the Ash Pond System and Landfill and the eastern extent of affected groundwater is delineated by monitoring well clusters MW-1 and MW-12 and monitoring well MW-11 (**Figure 16**).

5.1.4 West

Multiple well clusters were installed along the eastern boundary of the White River, extending from the western edge of the Ash Pond System to the White River north of the Site. The delineation of arsenic, lithium, and molybdenum west of the Landfill and Ash Pond System is complete. This conclusion is supported by surface water sampling results from the White River, analytical data from groundwater samples collected beneath the White River, and groundwater samples collected west of the White River at location A-1 (**Figure 5D**). No concentrations above the GWPS were detected at location A-1, indicating that the molybdenum plume extends laterally to the White River but does not extend beyond.

5.2 VERTICAL EXTENT

Lithium and molybdenum have been detected above their GWPSs in the shallow, intermediate, and deep zones. In November 2024, the highest lithium concentrations were detected in the shallow zone, while the highest arsenic and molybdenum concentrations were detected in the deep zone.

The extent of affected groundwater is bounded vertically by the underlying shale bedrock, which is laterally continuous and competent across the complete Site monitoring well network area, as illustrated on **Figures 3B** through **3E.** The United States Geological Survey defines a no-flow boundary as one in which groundwater flow does not cross the boundary (Heath, 1983). Such boundaries exist where aquifers terminate against less permeable materials, such as a sand aquifer adjacent to clay beds or shale bedrock. The same publication (Heath, 1983) provides hydraulic conductivity values for these materials that have an approximate difference of three orders of magnitude or more. Accordingly, since more than three orders of magnitude difference in hydraulic conductivity is observed in the overlying alluvium (geometric mean of 62 ft/day in the deep zone proximate to the Ash Pond System and 0.6 ft/day in the deep zone in proximity to the Landfill) compared to the vertical hydraulic conductivity of the bedrock (3.0×10^{4} to 2.8×10^{3} ft/day), the shale bedrock represents a no-flow boundary defining the bottom of the plume (**Table 4**). The shale bedrock is the confining layer that restricts downward vertical groundwater flow and constituent migration into the bedrock formation.

6. Summary of N&E Results

An evaluation of the N&E of affected groundwater has been completed using a combination of knowledge of historical Site operations (Section 1.1), published information relevant to Site geologic and hydrogeologic conditions (Section 1.2), and data and conclusions from Site investigations (Section 2 through Section 5). The results of this N&E evaluation indicate:

- Based on the evaluation of groundwater flow patterns and the chemical composition of groundwater, the Ash Pond System has been identified as the source of arsenic and molybdenum SSLs above the GWPSs. The Landfill has been identified as the source of arsenic, lithium, and molybdenum SSLs above GWPSs detected in groundwater.
- The horizontal extent of affected groundwater covers approximately 370 acres, which encompasses part of areas beneath the Ash Pond System and Landfill and extends to the west and northwest of the Ash Pond System toward the White River. The vertical extent of affected groundwater is limited by relatively impermeable shale bedrock, which typically exists at approximately 65 feet bgs.
- At the Site, groundwater flow is driven by a high recharge zone near the Landfill, causing radial flow toward the north and west and discharging into the White River. Groundwater levels near the river generally rise and fall with the river but remain slightly higher, indicating groundwater flow into the river, though this can reverse during the wet season. Vertical gradients show more hydraulic connectivity to the west of the Ash Pond System and more separation near the Landfill due to a confining unit. The underlying bedrock constitutes an aquitard (or confining unit), which restricts downward constituent migration in groundwater.
- Evaluation of the N&E investigation results identified predominantly stable and decreasing constituent concentrations in affected groundwater over time.
- SSLs of arsenic, lithium, and molybdenum above GWPSs are confined within the PGS property boundaries.

In conclusion, the N&E of CCR-affected groundwater has been sufficiently characterized to proceed with a review of the previous CMA and perform updates to the CMA, as appropriate.

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TABLES

TABLE 1A
ASH POND SYSTEM MONITORING WELL AND PIEZOMETER CONSTRUCTION DETAILS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Type of Well	Monitoring Well/ Piezometer Location	Flow Zone	Date Completed	Ground Surface Elevation (ft MSL)	Top of Casing (TOC) (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Length of Screen (ft)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Northing (ft)	Easting (ft)
CCR Rule Monitoring Wells	AP-1R	Shallow	4/5/2016	438.6	443.08	34.0	44.0	10.0	404.60	394.60	1195234.10	2905824.50
	AP-2A	Deep	6/11/2014	438.7	437.87	55.0	65.0	10.0	383.70	373.70	1195914.88	2905616.85
	AP-2B0	Shallow	4/15/2016	433.9	436.86	30.0	40.0	10.0	403.92	393.92	1196012.60	2905487.70
	AP-3	Shallow	6/9/2014	419.6	421.59	13.5	23.5	10.0	406.10	396.10	1196893.34	2905511.77
	AP-3A	Deep	6/9/2014	420.0	421.56	53.5	63.5	10.0	366.46	356.46	1196903.76	2905514.03
	AP-4B	Shallow	6/17/2014	420.0	421.72	12.0	22.0	10.0	408.00	398.00	1197631.74	2905722.88
	AP-4I	Intermediate	6/16/2014	420.1	421.82	30.0	40.0	10.0	390.10	380.10	1197636.78	2905724.94
	AP-4A	Deep	6/16/2014	420.1	421.69	49.7	59.7	10.0	370.40	360.40	1197641.77	2905727.58
	AP-5	Shallow	6/17/2014	420.2	422.01	19.9	29.9	10.0	400.30	390.30	1198554.94	2906295.19
	AP-5A	Deep	6/17/2014	420.1	422.52	60.0	70.0	10.0	360.14	350.14	1198559.67	2906301.77
	AP-6B	Shallow	6/18/2014	421.9	424.40	15.5	25.5	10.0	406.40	396.40	1199189.10	2907198.04
	AP-6A	Deep	6/17/2014	421.9	424.33	55.1	65.1	10.0	366.80	356.80	1199186.68	2907194.00
	AP-7	Shallow	6/10/2014	432.3	434.62	17.0	27.0	10.0	415.30	405.30	1198960.01	2908696.70
	AP-8	Shallow	6/10/2014	442.0	444.20	8.0	18.0	10.0	434.00	424.00	1198104.84	2907725.15
Nature & Extent Moitoring Wells	AP-9B	Shallow	10/24/2022	434.2	437.24	30.5	35.5	5.0	403.71	398.71	1196034.31	2905083.59
	AP-9I	Intermediate	10/24/2022	434.3	437.54	44.9	54.9	10.0	389.40	379.40	1196029.40	2905080.09
	AP-9A	Deep	5/30/2019	434.0	436.83	68.0	78.0	10.0	366.00	356.00	1196022.54	2905076.02
	AP-10B	Shallow	9/7/2022	419.3	422.24	9.9	19.9	10.0	409.41	399.41	1196757.89	2905032.38
	AP-10I	Intermediate	9/7/2022	419.3	422.25	30.1	40.1	10.0	389.19	379.19	1196756.28	2905037.46
	AP-10A	Deep	8/2/2019	419.8	422.41	53.6	63.6	10.0	366.20	356.20	1196725.97	2905036.12
	AP-11B	Shallow	9/7/2022	422.4	425.35	21.1	26.1	5.0	401.32	396.32	1199833.38	2909135.13
	AP-11I	Intermediate	9/8/2022	422.4	425.48	30.1	40.1	10.0	392.30	382.30	1199837.37	2909138.59
	AP-11A	Deep	7/30/2019	421.1	424.64	53.9	63.9	10.0	367.16	357.16	1199837.78	2909146.23
	MW-19B	Shallow	8/1/2019	418.3	421.51	8.0	18.0	10.0	410.28	400.28	1196810.43	2904328.52
	MA-19I	Intermediate	8/1/2019	417.9	421.28	27.9	37.9	10.0	390.01	380.01	1196804.77	2904329.84
	MW-19A	Deep	8/1/2019	418.0	421.41	53.7	63.7	10.0	364.31	354.31	1196798.56	2904331.47
	MW-20B	Shallow	4/21/2020	421.0	423.97	20.0	30.0	10.0	400.95	390.95	1196913.35	2904042.21
	MW-20I	Intermediate	4/21/2020	421.1	424.00	30.0	40.0	10.0	391.10	381.10	1196920.40	2904044.87
	MW-20A	Deep	4/22/2020	421.0	424.23	54.5	64.5	10.0	366.48	356.48	1196927.16	2904047.36
	MW-21B	Shallow	1/6/2021	434.4	437.24	25.8	35.8	10.0	408.59	398.59	1195469.95	2904526.04
	MW-21I	Intermediate	1/6/2021	434.3	437.33	45.1	55.1	10.0	389.15	379.15	1195466.54	2904522.47
	MW-21A	Deep	1/5/2021	434.3	437.09	69.0	79.0	10.0	365.34	355.34	1195460.64	2904516.12
	MW-25B	Shallow	8/24/2021	424.4	427.43	24.7	34.7	10.0	399.68	389.68	1199486.60	2906311.70
	MW-25I	Intermediate	8/24/2021	424.2	427.43	44.8	54.8	10.0	379.41	369.41	1199493.50	2906306.90
	MW-25A	Deep	8/23/2021	424.5	427.59	63.8	73.8	10.0	360.66	350.66	1199501.40	2906301.30
	MW-26B	Shallow	8/26/2021	420.1	423.13	19.9	29.9	10.0	400.17	390.17	1196251.20	2904018.60
	MW-26I	Intermediate	8/26/2021	420.0	423.25	34.9	44.9	10.0	385.06	375.06	1196255.40	2904011.80
	MW-26A	Deep	8/26/2021	419.9	423.03	50.8	60.8	10.0	369.14	359.14	1196258.90	2904005.70
	MW-27B	Shallow	8/31/2021	417.2	420.46	25.3	30.3	5.0	391.94	386.94	1194694.00	2903948.20
	MW-28B	Shallow	8/25/2021	421.1	424.43	20.0	30.0	10.0	401.15	391.15	1196098.70	2904464.00
	MW-28I	Intermediate	8/25/2021	421.2	424.26	40.6	50.6	10.0	380.56	370.56	1196091.10	2904462.40
	MW-28A	Deep	8/25/2021	421.4	424.68	51.8	61.8	10.0	369.63	359.63	1196084.60	2904460.60
	MW-29B	Shallow	8/19/2021	425.2	428.17	24.9	34.9	10.0	400.34	390.34	1197854.60	2904300.50
	MW-29I	Intermediate	8/19/2021	424.8	427.78	39.9	49.9	10.0	384.95	374.95	1197860.00	2904305.00
	MW-29A	Deep	8/25/2021	424.0	427.13	54.8	64.8	10.0	369.20	359.20	1197866.20	2904310.10
	MW-36B	Shallow	8/19/2022	424.4	427.25	19.9	29.9	10.0	404.53	394.53	1200014.75	2906971.75
	MW-36I	Intermediate	8/19/2022	424.4	427.20	40.1	50.1	10.0	384.29	374.29	1200017.42	2906975.47
	MW-36A	Deep	8/18/2022	424.2	426.94	58.1	68.1	10.0	366.16	356.16	1200019.50	2906979.88

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Nature & Extent Moitoring Wells	MW-37B	Shallow	8/22/2022	421.0	423.49	20.2	30.2	10.0	400.86	390.86	1199019.14	2905890.01
	MW-37I	Intermediate	8/22/2022	421.1	423.64	40.3	50.3	10.0	380.75	370.75	1199021.95	2905894.13
	MW-37A	Deep	8/22/2022	421.0	423.56	57.8	67.8	10.0	363.16	353.16	1199025.76	2905897.20
	MW-38B	Shallow	10/19/2022	422.5	425.34	20.1	30.1	10.0	402.35	392.35	1198563.88	2905475.09
	MW-38I	Intermediate	10/19/2022	422.3	425.13	39.7	49.7	10.0	382.64	372.64	1198568.57	2905471.18
	MW-38A	Deep	10/18/2022	422.3	425.20	58.5	68.5	10.0	363.80	353.80	1198570.34	2905466.11
	MW-39B	Shallow	10/19/2022	423.5	426.58	23.3	33.3	10.0	400.29	390.29	1198245.87	2905029.79
	MW-39I	Intermediate	10/20/2022	423.8	426.81	40.0	50.0	10.0	383.85	373.85	1198241.44	2905034.24
	MW-39A	Deep	10/20/2022	424.2	426.94	56.7	66.7	10.0	367.50	357.50	1198237.59	2905038.69
	MW-40B	Shallow	8/24/2022	421.1	423.69	20.1	30.1	10.0	401.07	391.07	1197864.79	2905063.05
	MW-40I	Intermediate	8/23/2022	421.0	423.73	39.3	49.3	10.0	381.73	371.73	1197861.03	2905059.95
	MW-40A	Deep	8/23/2022	421.2	423.62	56.8	66.8	10.0	364.32	354.32	1197857.13	2905057.71
	MW-41B	Shallow	10/20/2022	422.6	425.31	20.6	30.6	10.0	402.03	392.03	1197299.74	2904245.80
	MW-41I	Intermediate	10/19/2022	422.8	425.66	40.8	50.8	10.0	382.07	372.07	1197296.28	2904242.16
	MW-41A	Deep	10/19/2022	422.9	425.82	57.0	67.0	10.0	365.95	355.95	1197292.97	2904238.51
	MW-42B	Shallow	8/31/2022	419.3	422.18	18.4	28.4	10.0	400.93	390.93	1195869.55	2903994.29
	MW-42I	Intermediate	8/31/2022	419.1	421.88	34.9	44.9	10.0	384.25	374.25	1195864.96	2903993.05
	MW-42A	Deep	8/31/2022	419.2	421.71	49.0	59.0	10.0	370.11	360.11	1195861.19	2903990.91
	MW-43B	Shallow	8/31/2022	417.2	419.84	20.1	30.1	10.0	397.14	387.14	1195479.98	2904052.28
	MW-43I	Intermediate	8/30/2022	417.3	419.96	35.2	45.2	10.0	382.07	372.07	1195484.20	2904055.41
	MW-43A	Deep	8/30/2022	417.2	419.88	49.3	59.3	10.0	367.98	357.98	1195488.90	2904056.37
	MW-44B	Shallow	8/25/2022	415.4	418.79	21.9	31.9	10.0	393.49	383.49	1195150.82	2904014.43
	MW-44I	Intermediate	8/25/2022	415.6	418.08	37.7	47.7	10.0	377.88	367.88	1195146.46	2904014.02
	MW-44A	Deep	8/25/2022	415.9	418.22	48.3	58.3	10.0	367.62	357.62	1195141.45	2904013.37
	MW-45B	Shallow	9/14/2022	425.7	428.34	36.2	41.2	5.0	389.44	384.44	1200327.21	2909463.97
	MW-45I	Intermediate	9/14/2022	425.6	428.58	43.0	48.0	5.0	382.63	377.63	1200329.49	2909458.83
	MW-45A	Deep	9/13/2022	425.6	428.37	56.1	66.1	10.0	369.51	359.51	1200330.26	2909453.84
	MW-46B	Shallow	10/6/2022	421.8	424.75	19.9	29.9	10.0	401.90	391.90	1200694.95	2908693.08
	MW-46I	Intermediate	10/6/2022	421.9	424.71	39.9	49.9	10.0	382.00	372.00	1200695.14	2908687.91
	MW-46A	Deep	10/5/2022	421.9	424.52	59.0	69.0	10.0	362.94	352.94	1200696.55	2908682.90
	MW-47B	Shallow	10/17/2022	424.5	427.31	19.5	29.5	10.0	404.99	394.99	1200658.95	2907691.61
	MW-47I	Intermediate	10/17/2022	424.5	427.54	42.0	52.0	10.0	382.51	372.51	1200654.43	2907689.43
	MW-47A	Deep	10/14/2022	424.2	427.50	61.8	71.8	10.0	362.45	352.45	1200649.92	2907688.03
Piezometer (For Water Level only)	PZ-1B	Shallow	4/29/2020	419.2	422.54	10.0	20.0	10.0	409.15	399.15	1196739.25	2905319.45
	PZ-1I	Intermediate	4/29/2020	419.2	423.69	30.0	40.0	10.0	389.21	379.21	1196738.95	2905325.08
	PZ-1A	Deep	4/28/2020	419.0	423.63	54.0	64.0	10.0	365.03	355.03	1196738.55	2905331.72
	PZ-2B	Shallow	4/28/2020	420.5	423.50	10.0	20.0	10.0	410.47	400.47	1196717.58	2904015.64
	PZ-2I	Intermediate	4/28/2020	420.0	423.02	30.0	40.0	10.0	390.02	380.02	1196719.17	2904008.26
	PZ-2A	Deep	4/22/2020	419.7	422.55	54.5	64.5	10.0	365.24	355.24	1196720.39	2904003.14
	Pond A Piezometers (Screened in Outwash) - Abandoned 2/25/2021											
	P-4-2019	Shallow	4/1/2019	448.1	450.77	49.9	59.9	10.0	398.25	388.20	1195700.44	2906686.64
	PW-1B	Shallow	1/9/2020	445.6	448.19	47.7	57.7	10.0	397.92	387.92	1196206.24	2906581.24
	PW-2B	Shallow	1/8/2020	438.7	441.09	37.7	47.7	10.0	400.99	390.99	1196321.57	2906070.78
	PW-3B	Shallow	1/7/2020	437.3	438.80	38.5	48.5	10.0	398.81	388.81	1196053.21	2906154.49
	PW-4B	Shallow	1/3/2020	440.3	442.45	52.2	57.2	10.0	388.10	383.10	1195246.12	2906756.48

Notes:

Coordinates: Indiana State Plane West (NAD83, feet)

Vertical datum: NAVD88

All elevations in feet above mean sea level.

TABLE 1B
LANDFILL MONITORING WELL AND PIEZOMETER CONSTRUCTION DETAILS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Type of Well	Monitoring Well/ Piezometer Location	Flow Zone	Date Completed	Ground Surface Elevation (ft MSL)	Top of Casing (TOC) (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Length of Screen (ft)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Northing (ft)	Easting (ft)
CCR Rule Monitoring Wells	MW-1	Shallow	11/21/1986	526.1	528.11	28.5	38.5	10.0	497.61	487.61	1193684.02	2909082.68
	MW-2R	Deep	2/1/2017	452.0	455.00	16.9	26.9	10.0	435.10	425.10	1194547.27	2907260.91
	MW-3	Shallow	11/21/1986	448.2	450.71	8.0	18.0	10.0	440.20	430.20	1195375.25	2907421.44
	MW-4C	Deep	9/29/1992	453.6	454.44	14.8	24.8	10.0	438.85	428.85	1195989.49	2907549.58
	MW-10	Shallow/Deep	1/30/2017	499.8	502.38	38.0	48.0	10.0	461.80	451.80	1197025.25	2908050.25
	MW-11	Shallow	1/25/2017	514.6	517.51	34.2	44.2	10.0	480.40	470.40	1195988.20	2909120.17
	MW-12	Shallow	1/26/2017	514.7	517.64	34.1	44.1	10.0	480.60	470.60	1194617.51	2910187.49
	MW-13	Deep	1/31/2017	478.0	480.97	12.0	22.0	10.0	466.00	456.00	1194148.79	2907944.97
Nature & Extent Monitoring Wells	MW-14	Shallow	4/3/2019	440.3	443.37	9.0	14.0	5.0	431.30	426.30	1194690.70	2906934.86
	MW-15B	Shallow	9/6/2022	441.8	444.69	18.4	28.4	10.0	423.37	413.37	1195476.41	2907191.84
	MW-15	Deep	4/2/2019	440.9	444.11	36.8	41.8	5.0	404.15	399.15	1195477.41	2907184.67
	MW-16	Shallow	4/1/2019	440.1	442.78	13.8	18.8	5.0	426.30	421.30	1196031.73	2907264.43
	MW-24	Shallow	10/28/2020	450.2	452.70	25.0	30.0	5.0	425.20	420.20	1195378.00	2907413.00
Bedrock Monitoring Wells	MW-1A	Deep	3/14/2023	526.5	529.36	92.9	102.9	10.0	433.61	423.61	1193694.49	2909105.44
	MW-12A	Deep	3/16/2023	513.7	516.97	63.3	73.3	10.0	450.37	440.37	1194630.81	2910190.53
Temporary Wells	MW-22	Shallow	10/26/2020	559.5	561.61	88.0	98.0	10.0	471.50	461.50	1196095.00	2908127.00
	MW-23	Shallow	10/25/2020	562.1	564.59	87.0	97.0	10.0	475.10	465.10	1195782.00	2908400.00
Supplemental Monitoring Wells	MW-30D1	Upper Shale	10/27/2021	499.9	502.83	46.9	56.9	10.0	453.03	443.03	1197148.10	2908356.40
	MW-30D2	Lower Shale	10/26/2021	499.8	502.82	140.2	150.2	10.0	359.62	349.62	1197149.00	2908351.40
	MW-31D2	Lower Shale	10/25/2021	450.7	453.91	89.4	99.4	10.0	361.29	351.29	1196707.80	2907361.10
	MW-32I	Intermediate	10/19/2021	513.3	516.33	40.0	50.0	10.0	473.30	463.30	1196742.50	2909043.40
	MW-32D1	Upper Shale	10/19/2021	513.3	516.22	88.8	98.8	10.0	424.50	414.50	1196037.80	2909044.30
	MW-32D2	Lower Shale	10/15/2021	513.5	516.29	138.0	148.0	10.0	375.53	365.53	1196032.50	2909045.00
	MW-33I	Intermediate	10/21/2021	451.7	454.81	25.9	35.9	10.0	425.81	415.81	1195697.00	2907471.50
	MW-33D2	Lower Shale	10/21/2021	451.7	454.58	79.6	89.6	10.0	372.09	362.09	1195692.00	2907470.90
	MW-34A	Deep	10/14/2021	495.5	498.25	50.1	60.1	10.0	445.38	435.38	1195377.50	2910124.50
	MW-34D1	Upper Shale	10/13/2021	495.7	498.82	72.1	82.1	10.0	423.60	413.60	1195373.20	2910122.60
	MW-34SS	Sandstone	10/12/2021	496.1	498.95	91.4	96.4	5.0	404.74	399.74	1195367.90	2910120.70
	MW-34D2	Lower Shale	10/28/2021	496.3	499.31	114.8	129.8	15.0	381.54	366.54	1195363.20	2910120.20
	MW-35D1	Upper Shale	10/20/2021	467.0	470.09	24.9	34.9	10.0	442.09	432.09	1194344.60	2907518.30
	MW-35SS	Sandstone	10/20/2021	467.2	470.12	60.0	65.0	5.0	407.18	402.18	1194339.50	2907519.20
	MW-35D2	Lower Shale	10/20/2021	467.3	470.54	78.1	88.1	10.0	389.19	379.19	1194334.50	2907519.90
Piezometers (For Water Levels Only)	LW-1B	Shallow	9/20/1991	502.0	504.40	20.0	25.0	5.0	482.00	477.00	1195015.96	2908962.14
	LW-1A	Deep	9/20/1991	502.4	504.40	60.0	65.0	5.0	442.40	437.40	1195015.92	2908962.24
	LW-2	Upper Shale	9/25/1991	516.9	518.90	93.0	98.0	5.0	423.90	418.90	1195703.96	2909390.24
	LW-6B	Shallow	9/25/1991	516.9	518.90	17.0	22.0	5.0	499.90	494.90	1195726.70	2909387.83
	LW-6A	Deep	9/25/1991	516.9	518.90	52.0	57.0	5.0	464.90	459.90	1195726.70	2909387.83
	LW-8B	Shallow	9/23/1991	522.9	524.90	25.0	30.0	5.0	497.90	492.90	1196033.26	2909765.54
	LW-8A	Deep	9/23/1991	522.9	524.90	71.0	76.0	5.0	451.90	446.90	1196033.26	2909765.54
	LW-18	Deep	8/12/1991	508.7	510.70	44.0	54.0	10.0	464.70	454.70	1196093.00	2908989.83
	LW-28B	Shallow	9/30/1991	502.4	504.40	18.0	23.0	5.0	484.40	479.40	1195286.76	2910211.24
	LW-28A	Deep	9/30/1991	502.4	504.40	50.0	55.0	5.0	452.40	447.40	1195286.72	2910211.29
	MW-17	Shallow/Deep	5/22/2019	469.7	472.33	5.5	15.5	10.0	464.15	454.15	1197029.12	2907515.28
	MW-18	Deep	5/21/2019	455.7	458.27	20.2	25.2	5.0	435.46	430.46	1197320.02	2907856.61
	LF-PZ-1B	Shallow	8/1/2023	461.6	464.09	24.7	34.7	10.0	436.96	426.96	1193926.83	2907407.50

Notes:

Coordinates: Indiana State Plane West (NAD83, feet)

Vertical datum: NAVD88

All elevations in feet above mean sea level.

TABLE 2A
HORIZONTAL GRADIENT AND SEEPAGE VELOCITY CALCULATIONS - APRIL 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Points for Calculation	Area for Calculation	Flow Zone	Gauging Date	Horizontal Distance - Δ L (ft)	Upgradient Water Elevation (ft MSL)	Downgradient Water Elevation (ft MSL)	Head Difference - Δ H (Ft)	K Upgradient Well (ft/day)	K Downgradient Well (ft/day)	K Average (ft/day)	n_e	Hydraulic Gradient - Δ H / Δ L (ft/ft)	Seepage Velocity - V (ft/yr)
MW-11 to MW-10	Landfill	Shallow	4/30/2024	1540	483.61	462.21	21.4	0.63	1.46	1	0.3	0.0139	18
MW-3 to MW-15B	Landfill	Shallow	4/30/2024	270	440.48	434.09	6.39	6.92	5.58	6	0.3	0.0237	180
MW-10 to AP-8	Landfill	Shallow	4/30/2024	1130	462.21	437.97	24.24	1.46	6.32	4	0.3	0.0215	102
AP-5 to MW-37B	Ash Pond	Shallow	4/30/2024	630	411.36	410.59	0.77	94	260.26	177	0.3	0.0012	263
AP-9B to MW-28B	Ash Pond	Shallow	4/30/2024	620	410.98	410.43	0.55	32.78	129.15	81	0.3	0.0009	87
AP-11B to MW-46B	Ash Pond	Shallow	4/30/2024	970	412.83	411.21	1.62	52.13	16.23	34	0.3	0.0017	69
											Shallow Geometric Mean (Landfill)	**0.0192**	**69**
											Shallow Geometric Mean (Ash Pond)	**0.0012**	**117**
LW-1A to MW-13	Landfill	Deep	4/30/2024	1340	485.38	464.8	20.58	0.1	1.14	1	0.3	0.0154	12
LW-1A to MW-10	Landfill	Deep	4/30/2024	2190	485.38	462.21	23.17	0.1	1.46	1	0.3	0.0106	10
AP-5A to MW-37A	Ash Pond	Deep	4/30/2024	620	411.46	410.61	0.85	11.95	119.73	66	0.3	0.0014	110
AP-11A to MW-46A	Ash Pond	Deep	4/30/2025	970	412.06	411.27	0.79	34.62	134.99	85	0.3	0.0008	84
AP-9A to MW-28A	Ash Pond	Deep	4/30/2024	620	410.92	410.41	0.51	27.04	108.03	68	0.3	0.0008	68
											Deep Geometric Mean (Landfill)	**0.0127**	**11**
											Deep Geometric Mean (Ash Pond)	**0.0010**	**85**
											Geometric Mean (All Data)	**0.0037**	**60**

Notes:

Seepage velocity calculation:

$$V = \frac{K(\Delta H / \Delta L)}{n_e} \times 365 \text{ days}$$

Where:

'V = Groundwater flow velocity (ft/year)

'K= Horizontal hydraulic conductivity (ft/day; K Average used for calculation)

'n_e = Assumed effective porosity

ΔH = Head difference

ΔL = Horizontal distance

**See groundwater elevation contours on Groundwater Flow Maps*

Hydraulic conductivity derived from on-Site measurements (see "Summary of Hydraulic Conductivity Results" table)

Effective porosity derived from literature values (Woessner and Poeter, 2020)

ft/yr = feet per year

ft MSL = feet above mean sea level

ft/day = feet per day

"-" indicates not measured

Reference for n_e :

Woessner, W., Poeter, E, 2020, Hydrogeologic properties of earth materials and principles of groundwater flow. The Groundwater Project, Guelph, Ontario, Canada.

TABLE 2B
HORIZONTAL GRADIENT AND SEEPAGE VELOCITY CALCULATIONS - NOVEMBER 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Points for Calculation	Area for Calculation	Flow Zone	Gauging Date	Horizontal Distance - Δ L (ft)	Upgradient Water Elevation (ft MSL)	Downgradient Water Elevation (ft MSL)	Head Difference - Δ H (Ft)	K Upgradient Well (ft/day)	K Downgradient Well (ft/day)	K Average (ft/day)	n_e	Hydraulic Gradient - Δ H / Δ L (ft/ft)	Seepage Velocity - V (ft/yr)
MW-11 to MW-10	Landfill	Shallow	11/01/2024	1540	483.11	459.89	23.22	0.63	1.46	1	0.3	0.0151	19
MW-3 to MW-15B	Landfill	Shallow	11/01/2024	270	439.7	433.46	6.24	6.92	5.58	6	0.3	0.0231	176
MW-10 to AP-8	Landfill	Shallow	11/01/2024	1130	459.89	435.33	24.56	1.46	6.32	4	0.3	0.0217	103
AP-5 to MW-37B	Ash Pond	Shallow	11/01/2024	630	402.59	402.50	0.09	94	260.26	177	0.3	0.0001	31
AP-9B to MW-28B	Ash Pond	Shallow	11/01/2024	620	402.92	402.63	0.29	32.78	129.15	81	0.3	0.0005	46
AP-11B to MW-46B	Ash Pond	Shallow	11/01/2024	970	403.36	402.94	0.42	52.13	16.23	34	0.3	0.0004	18
										Shallow Geometric Mean (Landfill)		**0.0196**	**70**
										Shallow Geometric Mean (Ash Pond)		**0.0003**	**29**
LW-1A to MW-13	Landfill	Deep	11/01/2024	1340	482.68	461.79	20.89	0.1	1.14	1	0.3	0.0156	12
LW-1A to MW-10	Landfill	Deep	11/01/2024	2190	482.68	459.89	22.79	0.1	1.46	1	0.3	0.0104	10
AP-5A to MW-37A	Ash Pond	Deep	11/01/2024	620	402.75	402.51	0.24	11.95	119.73	66	0.3	0.0004	31
AP-9A to MW-28A	Ash Pond	Deep	11/01/2024	620	402.89	402.6	0.29	27.04	108.03	68	0.3	0.0005	38
										Deep Geometric Mean (Landfill)		**0.0127**	**11**
										Deep Geometric Mean (Ash Pond)		**0.0004**	**35**
										Geometric Mean (All Data)		**0.0024**	**32**

Notes:

Seepage velocity calculation:

$$V = \frac{K(\Delta H / \Delta L)}{n_e} \times 365 \text{ days}$$

Where:

'V = Groundwater flow velocity (ft/year)

'K= Horizontal hydraulic conductivity (ft/day; K Average used for calculation)

'n_e = Assumed effective porosity

Δ H = Head difference

Δ L = Horizontal distance

**See groundwater elevation contours on Groundwater Flow Maps*

Hydraulic conductivity derived from on-Site measurements (see "Summary of Hydraulic Conductivity Results" table)

Effective porosity derived from literature values (Woessner and Poeter, 2020)

ft/yr = feet per year

ft MSL = feet above mean sea level

ft/day = feet per day

"-" indicates not measured

Reference for n_e :

Woessner, W., Poeter, E, 2020, Hydrogeologic properties of earth materials and principles of groundwater flow. The Groundwater Project, Guelph, Ontario, Canada.

TABLE 3A
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - APRIL 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
AP-3	Ash Pond	Shallow	04/30/24	13.5	23.5	419.60	406.1	396.1	401.1	9.39	421.59	412.20	-	-	-	-
AP-3A	Ash Pond	Deep		53.5	63.5	419.96	366.5	356.5	361.5	10.23	421.56	411.33	0.87	39.64	0.0219	down
AP-4B	Ash Pond	Shallow	04/30/24	12.0	22.0	420.00	408.0	398.0	403.0	10.06	421.72	411.66	-	-	-	-
AP-4I	Ash Pond	Intermediate		30.0	40.0	420.10	390.1	380.1	385.1	10.15	421.82	411.67	-0.01	17.90	-0.0006	up
AP-A	Ash Pond	Deep		49.7	59.7	420.10	370.4	360.4	365.4	10.07	421.69	411.62	0.05	19.70	0.0025	down
AP-5	Ash Pond	Shallow	04/30/24	19.9	29.9	420.20	400.3	390.3	395.3	10.65	422.01	411.36	-	-	-	-
AP-5A	Ash Pond	Deep		60.0	70.0	420.14	360.1	350.1	355.1	11.06	422.52	411.46	-0.10	40.16	-0.0025	up
AP-6B	Ash Pond	Shallow	04/30/24	15.5	25.5	421.90	406.4	396.4	401.4	12.30	424.40	412.10	-	-	-	-
AP-6A	Ash Pond	Deep		55.1	65.1	421.90	366.8	356.8	361.8	12.34	424.33	411.99	0.11	39.60	0.0028	down
AP-9B	Ash Pond	Shallow	04/30/24	30.5	35.5	434.19	403.7	398.7	401.2	26.26	437.24	410.98	-	-	-	-
AP-9I	Ash Pond	Intermediate		44.9	54.9	434.31	389.4	379.4	384.4	25.96	437.54	411.58	-0.60	16.81	-0.0357	up
AP-9A	Ash Pond	Deep		68.0	78.0	434.00	366.0	356.0	361.0	25.91	436.83	410.92	0.66	23.40	0.0282	down
AP-10B	Ash Pond	Shallow	04/30/24	9.9	19.87	419.3	409.4	399.4	409.3	10.82	422.24	411.42	-	-	-	-
AP-10I	Ash Pond	Intermediate		30.1	40.06	419.3	389.2	379.2	399.2	10.94	422.25	411.31	0.11	10.12	0.0109	down
AP-10A	Ash Pond	Deep		53.6	63.60	419.8	366.2	356.2	388.0	11.78	422.41	410.63	0.68	11.22	0.0606	down
AP-11B	Ash Pond	Shallow	04/30/24	21.1	26.1	422.43	401.3	396.3	398.8	12.52	425.35	412.83	-	-	-	-
AP-11I	Ash Pond	Intermediate		30.1	40.1	422.40	392.3	382.3	387.3	12.66	425.48	412.82	0.01	11.52	0.0009	down
AP-11A	Ash Pond	Deep		53.9	63.9	421.06	367.2	357.2	362.2	12.58	424.64	412.06	0.76	25.14	0.0302	down
MW-19B	Ash Pond	Shallow	04/30/24	8.0	18.0	418.28	410.3	400.3	405.3	10.95	421.51	410.56	-	-	-	-
MA-19I	Ash Pond	Intermediate		27.9	37.9	417.91	390.0	380.0	385.0	10.94	421.28	410.34	0.22	20.27	0.0109	down
MW-19A	Ash Pond	Deep		53.7	63.7	418.01	364.3	354.3	359.3	11.07	421.41	410.34	0.00	25.70	0.0000	up
MW-20B	Ash Pond	Shallow	04/30/24	20.0	30.0	420.95	401.0	391.0	396.0	13.47	423.97	410.50	-	-	-	-
MW-20I	Ash Pond	Intermediate		30.0	40.0	421.10	391.1	381.1	386.1	13.49	424.00	410.51	-0.01	9.85	-0.0010	up
MW-20A	Ash Pond	Deep		54.5	64.5	420.98	366.5	356.5	361.5	13.73	424.23	410.50	0.01	24.62	0.0004	down
MW-21B	Ash Pond	Shallow	04/30/24	25.8	35.8	434.38	408.6	398.6	403.6	26.47	437.24	410.77	-	-	-	-
MW-21I	Ash Pond	Intermediate		45.1	55.1	434.28	389.2	379.2	384.2	26.58	437.33	410.75	0.02	19.44	0.0010	down
MW-21A	Ash Pond	Deep		69.0	79.0	434.31	365.3	355.3	360.3	26.42	437.09	410.67	0.08	23.81	0.0034	down
MW-25B	Ash Pond	Shallow	04/30/24	24.7	34.7	424.40	399.7	389.7	394.7	16.79	427.43	410.64	-	-	-	-
MW-25I	Ash Pond	Intermediate		44.8	54.8	424.20	379.4	369.4	374.4	16.69	427.43	410.74	-0.10	20.27	-0.0049	up
MW-25A	Ash Pond	Deep		63.8	73.8	424.50	360.7	350.7	355.7	16.84	427.59	410.75	-0.01	18.75	-0.0005	up

TABLE 3A
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - APRIL 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
MW-26B	Ash Pond	Shallow	04/30/24	19.9	29.9	420.10	400.2	390.2	395.2	13.12	423.13	410.01	-	-	-	-
MW-26I	Ash Pond	Intermediate		34.9	44.9	420.00	385.1	375.1	380.1	13.25	423.25	410.00	0.01	15.11	0.0007	down
MW-26A	Ash Pond	Deep		50.8	60.8	419.90	369.1	359.1	364.1	13.07	423.03	409.96	0.04	15.92	0.0025	down
MW-28B	Ash Pond	Shallow	04/30/24	20.0	30.0	421.10	401.2	391.2	396.2	14.00	424.43	410.43	-	-	-	-
MW-28I	Ash Pond	Intermediate		40.6	50.6	421.20	380.6	370.6	375.6	14.02	424.26	410.24	0.19	20.59	0.0092	down
MW-28A	Ash Pond	Deep		51.8	61.8	421.40	369.6	359.6	364.6	14.27	424.68	410.41	-0.17	10.93	-0.0156	up
MW-29B	Ash Pond	Shallow	04/30/24	24.9	34.9	425.20	400.3	390.3	395.3	16.70	428.17	411.47	-	-	-	-
MW-29I	Ash Pond	Intermediate		39.9	49.9	424.80	385.0	375.0	380.0	16.33	427.78	411.45	0.02	15.39	0.0013	down
MW-29A	Ash Pond	Deep		54.8	64.8	424.00	369.2	359.2	364.2	15.67	427.13	411.46	-0.01	15.75	-0.0006	up
MW-36B	Ash Pond	Shallow	04/30/24	19.9	29.9	424.44	404.5	394.5	399.5	16.18	427.25	411.07	-	-	-	-
MW-36I	Ash Pond	Intermediate		40.1	50.1	424.39	384.3	374.3	379.3	16.08	427.20	411.12	-0.05	20.24	-0.0025	up
MW-36A	Ash Pond	Deep		58.1	68.1	424.23	366.2	356.2	361.2	15.81	426.94	411.13	-0.01	18.13	-0.0003	up
MW-37B	Ash Pond	Shallow	04/30/24	20.2	30.2	421.03	400.9	390.9	395.9	12.90	423.49	410.59	-	-	-	-
MW-37I	Ash Pond	Intermediate		40.3	50.3	421.05	380.8	370.8	375.8	13.00	423.64	410.64	-0.05	20.11	-0.0025	up
MW-37A	Ash Pond	Deep		57.8	67.8	420.97	363.2	353.2	358.2	12.95	423.56	410.61	0.03	17.59	0.0017	down
MW-38B	Ash Pond	Shallow	04/30/24	20.1	30.1	422.46	402.4	392.4	397.4	14.31	425.34	411.03	-	-	-	-
MW-38I	Ash Pond	Intermediate		39.7	49.7	422.31	382.6	372.6	377.6	14.11	425.13	411.02	0.01	19.72	0.0003	down
MW-38A	Ash Pond	Deep		58.5	68.5	422.33	363.8	353.8	358.8	14.16	425.20	411.04	-0.02	18.84	-0.0009	up
MW-39B	Ash Pond	Shallow	04/30/24	23.3	33.3	423.54	400.3	390.3	395.3	15.72	426.58	410.86	-	-	-	-
MW-39I	Ash Pond	Intermediate		40.0	50.0	423.80	383.9	373.9	378.9	15.53	426.81	411.28	-0.43	16.44	-0.0260	up
MW-39A	Ash Pond	Deep		56.7	66.7	424.17	367.5	357.5	362.5	15.31	426.94	411.63	-0.35	16.36	-0.0212	up
MW-40B	Ash Pond	Shallow	04/30/24	20.1	30.1	421.13	401.1	391.1	396.1	11.70	423.69	411.99	-	-	-	-
MW-40I	Ash Pond	Intermediate		39.3	49.3	421.04	381.7	371.7	376.7	11.75	423.73	411.98	0.01	19.35	0.0005	down
MW-40A	Ash Pond	Deep		56.8	66.8	421.16	364.3	354.3	359.3	11.67	423.62	411.95	0.03	17.41	0.0018	down
MW-41B	Ash Pond	Shallow	04/30/24	20.6	30.6	422.58	402.0	392.0	397.0	14.22	425.31	411.09	-	-	-	-
MW-41I	Ash Pond	Intermediate		40.8	50.8	422.83	382.1	372.1	377.1	14.69	425.66	410.97	0.12	19.95	0.0060	down
MW-41A	Ash Pond	Deep		57.0	67.0	422.94	365.9	355.9	360.9	14.90	425.82	410.92	0.05	16.13	0.0032	down
MW-42B	Ash Pond	Shallow	04/30/24	18.4	28.4	419.31	400.9	390.9	395.9	12.15	422.18	410.03	-	-	-	-
MW-42I	Ash Pond	Intermediate		34.9	44.9	419.12	384.2	374.2	379.2	11.76	421.88	410.12	-0.09	16.69	-0.0057	up
MW-42A	Ash Pond	Deep		49.0	59.0	419.15	370.1	360.1	365.1	11.65	421.71	410.06	0.06	14.13	0.0045	down
MW-43B	Ash Pond	Shallow	04/30/24	20.1	30.1	417.23	397.1	387.1	392.1	9.88	419.84	409.96	-	-	-	-
MW-43I	Ash Pond	Intermediate		35.2	45.2	417.27	382.1	372.1	377.1	9.94	419.96	410.02	-0.06	15.07	-0.0037	up
MW-43A	Ash Pond	Deep		49.3	59.3	417.25	368.0	358.0	363.0	9.90	419.88	409.98	0.03	14.10	0.0024	down

TABLE 3A
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - APRIL 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
MW-44B	Ash Pond	Shallow	04/30/24	21.9	31.9	415.38	393.5	383.5	388.5	8.88	418.79	409.91	-	-	-	-
MW-44I	Ash Pond	Intermediate		37.7	47.7	415.59	377.9	367.9	372.9	8.17	418.08	409.91	0.00	15.61	-0.0001	up
MW-44A	Ash Pond	Deep		48.3	58.3	415.95	367.6	357.6	362.6	8.27	418.22	409.95	-0.04	10.27	-0.0036	up
MW-45B	Ash Pond	Shallow	04/30/24	36.2	41.2	425.67	389.4	384.4	386.9	16.84	428.34	411.50	-	-	-	-
MW-45I	Ash Pond	Intermediate		43.0	48.0	425.65	382.6	377.6	380.1	17.12	428.58	411.46	0.04	6.82	0.0063	down
MW-45A	Ash Pond	Deep		56.1	66.1	425.56	369.5	359.5	364.5	16.70	428.37	411.67	-0.22	15.62	-0.0138	up
MW-46B	Ash Pond	Shallow	04/30/24	19.9	29.9	421.81	401.9	391.9	396.9	13.54	424.75	411.21	-	-	-	-
MW-46I	Ash Pond	Intermediate		39.9	49.9	421.86	382.0	372.0	377.0	13.47	424.71	411.24	-0.03	19.90	-0.0015	up
MW-46A	Ash Pond	Deep		59.0	69.0	421.91	362.9	352.9	357.9	13.25	424.52	411.27	-0.03	19.06	-0.0015	up
MW-47B	Ash Pond	Shallow	04/30/24	19.5	29.5	424.52	405.0	395.0	400.0	16.09	427.31	411.22	-	-	-	-
MW-47I	Ash Pond	Intermediate		42.0	52.0	424.53	382.5	372.5	377.5	16.33	427.54	411.21	0.02	22.49	0.0007	down
MW-47A	Ash Pond	Deep		61.8	71.8	424.24	362.5	352.5	357.5	16.16	427.50	411.34	-0.13	20.05	-0.0065	up
PZ-1B	Ash Pond	Shallow	04/30/24	10.0	20.0	419.15	409.2	399.2	404.2	10.93	422.54	411.61	-	-	-	-
PZ-1A	Ash Pond	Deep		54.0	64.0	419.03	365.0	355.0	360.0	11.93	423.63	411.70	-0.09	44.12	-0.0020	up
PZ-2B	Ash Pond	Shallow	04/30/24	10.0	20.0	420.47	410.5	400.5	405.5	13.21	423.50	410.29	-	-	-	-
PZ-2I	Ash Pond	Intermediate		30.0	40.0	420.02	390.0	380.0	385.0	12.75	423.02	410.27	0.02	20.45	0.0010	down
PZ-2A	Ash Pond	Deep		54.5	64.5	419.74	365.2	355.2	360.2	12.29	422.55	410.26	0.01	24.78	0.0004	down
MW-1	Landfill	Shallow	04/30/24	28.5	38.5	526.11	497.6	487.6	492.6	33.43	528.11	494.68	-	-	-	-
MW-1A	Landfill	Deep		92.9	102.9	526.46	433.6	423.6	428.6	71.08	529.36	458.28	36.40	64.00	0.5688	down
MW-12	Landfill	Shallow	04/30/24	34.1	44.1	514.70	480.6	470.6	475.6	35.00	517.64	482.64	-	-	-	-
MW-12A	Landfill	Deep		63.3	73.3	513.65	450.4	440.4	445.4	35.81	516.97	481.16	1.48	30.23	0.0490	down
MW-15B	Landfill	Shallow	04/30/24	18.4	28.4	441.77	423.4	413.4	418.4	10.60	444.69	434.09	-	-	-	-
MW-15	Landfill	Deep		36.8	41.8	440.90	404.2	399.2	401.7	20.99	444.11	423.12	10.97	16.72	0.6561	down
MW-30D1	Landfill	Upper Shale	04/30/24	46.9	56.9	499.90	453.0	443.0	448.0	-	502.83	N/A	-	-	-	-
MW-30D2	Landfill	Lower Shale		140.2	150.2	499.80	359.6	349.6	354.6	87.21	502.82	415.61	N/A	93.41	N/A	N/A
MW-32I	Landfill	Intermediate	04/30/24	89.4	99.4	450.70	361.3	351.3	356.3	53.11	516.33	463.22	-	-	-	-
MW-32D1	Landfill	Upper Shale		40.0	50.0	513.30	473.3	463.3	468.3	74.00	516.22	442.22	21.00	112.01	0.1875	down
MW-32D2	Landfill	Lower Shale		88.8	98.8	513.30	424.5	414.5	419.5	100.40	516.29	415.89	26.33	48.80	0.5395	down
MW-33I	Landfill	Intermediate	04/30/24	25.9	35.9	451.70	425.8	415.8	420.8	-	454.81	N/A	-	-	-	-
MW-33D2	Landfill	Lower Shale		79.6	89.6	451.70	372.1	362.1	367.1	59.04	454.58	395.54	N/A	53.72	N/A	N/A
MW-34A	Landfill	Deep	04/30/24	50.1	60.1	495.50	445.4	435.4	440.4	24.16	498.25	474.09	-	-	-	-
MW-34D1	Landfill	Upper Shale		72.1	82.1	495.70	423.6	413.6	418.6	32.87	498.82	465.95	8.14	21.78	0.3737	down
MW-34SS	Landfill	Sandstone		91.4	96.4	496.10	404.7	399.7	402.2	33.28	498.95	465.67	0.28	16.36	0.0171	down
MW-34D2	Landfill	Lower Shale		114.8	129.8	496.30	381.5	366.5	374.0	81.70	499.31	417.61	48.34	44.56	1.0848	down

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TABLE 3A
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - APRIL 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
MW-35D1	Landfill	Upper Shale	04/30/24	24.9	34.9	467.00	442.1	432.1	437.1	16.38	470.09	453.71	-	-	-	-
MW-35SS	Landfill	Sandstone		60.0	65.0	467.20	407.2	402.2	404.7	19.39	470.12	450.73	2.98	32.41	0.0919	down
MW-35D2	Landfill	Lower Shale		78.1	88.1	467.30	389.2	379.2	384.2	52.25	470.54	418.29	32.44	20.49	1.5832	down
LW-1B	Landfill	Shallow	04/30/24	20.0	25.0	502.00	482.0	477.0	479.5	16.88	504.40	487.52	-	-	-	-
LW-1A	Landfill	Deep		60.0	65.0	502.40	442.4	437.4	439.9	19.02	504.40	485.38	2.14	39.60	0.0540	down
LW-6B	Landfill	Shallow	04/30/24	17.0	22.0	516.90	499.9	494.9	497.4	-	518.90	N/A	-	-	-	-
LW-6A	Landfill	Deep		52.0	57.0	516.90	464.9	459.9	462.4	47.91	518.90	470.99	N/A	35.00	N/A	N/A
LW-8B	Landfill	Shallow	04/30/24	25.0	30.0	522.90	497.9	492.9	495.4	31.80	524.90	493.10	-	-	-	-
LW-8A	Landfill	Deep		71.0	76.0	522.90	451.9	446.9	449.4	65.22	524.90	459.68	33.42	46.00	0.7265	down
LW-28B	Landfill	Shallow	04/30/24	18.0	23.0	502.40	484.4	479.4	481.9	18.07	504.40	486.33	-	-	-	-
LW-28A	Landfill	Deep		50.0	55.0	502.40	452.4	447.4	449.9	22.24	504.40	482.16	4.17	32.00	0.1303	down

Notes:
"-" indicates not applicable or not measured
ft bgs = feet below ground surface
ft BTOC= feet below top of casing
ft MSL = feet below mean sea level
TOC = top of casing
Gradient calculated for "B" and "I" wells and "I" and "A" wells

TABLE 3B
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - NOVEMBER 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
AP-3	Ash Pond	Shallow	11/01/24	13.5	23.5	419.60	406.1	396.1	401.1	-	421.59	N/A	-	-	-	-
AP-3A	Ash Pond	Deep		53.5	63.5	419.96	366.5	356.5	361.5	18.80	421.56	402.76	N/A	39.64	N/A	N/A
AP-4B	Ash Pond	Shallow	11/01/24	12.0	22.0	420.00	408.0	398.0	403.0	-	421.72	N/A	-	-	-	-
AP-4I	Ash Pond	Intermediate		30.0	40.0	420.10	390.1	380.1	385.1	19.15	421.82	402.67	N/A	17.90	N/A	N/A
AP-A	Ash Pond	Deep		49.7	59.7	420.10	370.4	360.4	365.4	19.08	421.69	402.61	0.06	19.70	0.0030	down
AP-5	Ash Pond	Shallow	11/01/24	19.9	29.9	420.20	400.3	390.3	395.3	19.42	422.01	402.59	-	-	-	-
AP-5A	Ash Pond	Deep		60.0	70.0	420.14	360.1	350.1	355.1	19.77	422.52	402.75	-0.16	40.16	-0.0040	up
AP-6B	Ash Pond	Shallow	11/01/24	15.5	25.5	421.90	406.4	396.4	401.4	-	424.40	N/A	-	-	-	-
AP-6A	Ash Pond	Deep		55.1	65.1	421.90	366.8	356.8	361.8	21.45	424.33	402.88	N/A	39.60	N/A	N/A
AP-9B	Ash Pond	Shallow	11/01/24	30.5	35.5	434.19	403.7	398.7	401.2	34.32	437.24	402.92	-	-	-	-
AP-9I	Ash Pond	Intermediate		44.9	54.9	434.31	389.4	379.4	384.4	34.00	437.54	403.54	-0.62	16.81	-0.0369	up
AP-9A	Ash Pond	Deep		68.0	78.0	434.00	366.0	356.0	361.0	33.94	436.83	402.89	0.65	23.40	0.0278	down
AP-10B	Ash Pond	Shallow	11/01/24	9.9	19.87	419.3	409.4	399.4	404.4	19.04	422.24	403.20	-	-	-	-
AP-10I	Ash Pond	Intermediate		30.1	40.06	419.3	389.2	379.2	384.2	19.12	422.25	403.13	0.07	20.22	0.0035	down
AP-10A	Ash Pond	Deep		53.6	63.60	419.8	366.2	356.2	361.2	19.89	422.41	402.52	0.61	22.99	0.0265	down
AP-11B	Ash Pond	Shallow	11/01/24	21.1	26.1	422.43	401.3	396.3	398.8	21.99	425.35	403.36	-	-	-	-
AP-11I	Ash Pond	Intermediate		30.1	40.1	422.40	392.3	382.3	387.3	22.15	425.48	403.33	0.03	11.52	0.0026	down
AP-11A	Ash Pond	Deep		53.9	63.9	421.06	367.2	357.2	362.2	22.03	424.64	402.61	0.72	25.14	0.0286	down
MW-19B	Ash Pond	Shallow	11/01/24	8.0	18.0	418.28	410.3	400.3	405.3	-	421.51	N/A	-	-	-	-
MA-19I	Ash Pond	Intermediate		27.9	37.9	417.91	390.0	380.0	385.0	19.08	421.28	402.20	N/A	20.27	N/A	N/A
MW-19A	Ash Pond	Deep		53.7	63.7	418.01	364.3	354.3	359.3	19.18	421.41	402.23	-0.03	25.70	-0.0012	up
MW-20B	Ash Pond	Shallow	11/01/24	20.0	30.0	420.95	401.0	391.0	396.0	-	423.97	N/A	-	-	-	-
MW-20I	Ash Pond	Intermediate		30.0	40.0	421.10	391.1	381.1	386.1	21.57	424.00	402.43	N/A	9.85	N/A	N/A
MW-20A	Ash Pond	Deep		54.5	64.5	420.98	366.5	356.5	361.5	21.81	424.23	402.42	0.01	24.62	0.0004	down
MW-21B	Ash Pond	Shallow	11/01/24	25.8	35.8	434.38	408.6	398.6	403.6	34.52	437.24	402.72	-	-	-	-
MW-21I	Ash Pond	Intermediate		45.1	55.1	434.28	389.2	379.2	384.2	34.61	437.33	402.72	0.00	19.44	0.0000	up
MW-21A	Ash Pond	Deep		69.0	79.0	434.31	365.3	355.3	360.3	34.46	437.09	402.63	0.09	23.81	0.0038	down
MW-25B	Ash Pond	Shallow	11/01/24	24.7	34.7	424.40	399.7	389.7	394.7	24.79	427.43	402.64	-	-	-	-
MW-25I	Ash Pond	Intermediate		44.8	54.8	424.20	379.4	369.4	374.4	24.75	427.43	402.68	-0.04	20.27	-0.0020	up
MW-25A	Ash Pond	Deep		63.8	73.8	424.50	360.7	350.7	355.7	24.90	427.59	402.69	-0.01	18.75	-0.0005	up
MW-26B	Ash Pond	Shallow	11/01/24	19.9	29.9	420.10	400.2	390.2	395.2	20.89	423.13	402.24	-	-	-	-
MW-26I	Ash Pond	Intermediate		34.9	44.9	420.00	385.1	375.1	380.1	20.99	423.25	402.26	-0.02	15.11	-0.0013	up
MW-26A	Ash Pond	Deep		50.8	60.8	419.90	369.1	359.1	364.1	20.82	423.03	402.21	0.05	15.92	0.0031	down

TABLE 3B
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - NOVEMBER 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
MW-28B	Ash Pond	Shallow	11/01/24	20.0	30.0	421.10	401.2	391.2	396.2	21.80	424.43	402.63	-	-	-	-
MW-28I	Ash Pond	Intermediate		40.6	50.6	421.20	380.6	370.6	375.6	21.83	424.26	402.43	0.20	20.59	0.0097	down
MW-28A	Ash Pond	Deep		51.8	61.8	421.40	369.6	359.6	364.6	22.08	424.68	402.60	-0.17	10.93	-0.0156	up
MW-29B	Ash Pond	Shallow	11/01/24	24.9	34.9	425.20	400.3	390.3	395.3	25.21	428.17	402.96	-	-	-	-
MW-29I	Ash Pond	Intermediate		39.9	49.9	424.80	385.0	375.0	380.0	24.81	427.78	402.97	-0.01	15.39	-0.0006	up
MW-29A	Ash Pond	Deep		54.8	64.8	424.00	369.2	359.2	364.2	24.12	427.13	403.01	-0.04	15.75	-0.0025	up
MW-36B	Ash Pond	Shallow	11/01/24	19.9	29.9	424.44	404.5	394.5	399.5	24.47	427.25	402.78	-	-	-	-
MW-36I	Ash Pond	Intermediate		40.1	50.1	424.39	384.3	374.3	379.3	24.40	427.20	402.80	-0.02	20.24	-0.0010	up
MW-36A	Ash Pond	Deep		58.1	68.1	424.23	366.2	356.2	361.2	24.14	426.94	402.80	0.00	18.13	0.0002	down
MW-37B	Ash Pond	Shallow	11/01/24	20.2	30.2	421.03	400.9	390.9	395.9	20.99	423.49	402.50	-	-	-	-
MW-37I	Ash Pond	Intermediate		40.3	50.3	421.05	380.8	370.8	375.8	21.10	423.64	402.54	-0.04	20.11	-0.0020	up
MW-37A	Ash Pond	Deep		57.8	67.8	420.97	363.2	353.2	358.2	21.05	423.56	402.51	0.03	17.59	0.0017	down
MW-38B	Ash Pond	Shallow	11/01/24	20.1	30.1	422.46	402.4	392.4	397.4	22.65	425.34	402.69	-	-	-	-
MW-38I	Ash Pond	Intermediate		39.7	49.7	422.31	382.6	372.6	377.6	22.44	425.13	402.69	0.00	19.72	-0.0003	up
MW-38A	Ash Pond	Deep		58.5	68.5	422.33	363.8	353.8	358.8	22.46	425.20	402.74	-0.05	18.84	-0.0025	up
MW-39B	Ash Pond	Shallow	11/01/24	23.3	33.3	423.54	400.3	390.3	395.3	24.36	426.58	402.22	-	-	-	-
MW-39I	Ash Pond	Intermediate		40.0	50.0	423.80	383.9	373.9	378.9	24.15	426.81	402.66	-0.45	16.44	-0.0273	up
MW-39A	Ash Pond	Deep		56.7	66.7	424.17	367.5	357.5	362.5	23.90	426.94	403.04	-0.38	16.36	-0.0231	up
MW-40B	Ash Pond	Shallow	11/01/24	20.1	30.1	421.13	401.1	391.1	396.1	20.84	423.69	402.85	-	-	-	-
MW-40I	Ash Pond	Intermediate		39.3	49.3	421.04	381.7	371.7	376.7	20.89	423.73	402.84	0.01	19.35	0.0005	down
MW-40A	Ash Pond	Deep		56.8	66.8	421.16	364.3	354.3	359.3	20.81	423.62	402.81	0.03	17.41	0.0018	down
MW-41B	Ash Pond	Shallow	11/01/24	20.6	30.6	422.58	402.0	392.0	397.0	22.83	425.31	402.48	-	-	-	-
MW-41I	Ash Pond	Intermediate		40.8	50.8	422.83	382.1	372.1	377.1	23.16	425.66	402.50	-0.02	19.95	-0.0010	up
MW-41A	Ash Pond	Deep		57.0	67.0	422.94	365.9	355.9	360.9	23.34	425.82	402.48	0.02	16.13	0.0014	down
MW-42B	Ash Pond	Shallow	11/01/24	18.4	28.4	419.31	400.9	390.9	395.9	19.45	422.18	402.73	-	-	-	-
MW-42I	Ash Pond	Intermediate		34.9	44.9	419.12	384.2	374.2	379.2	19.56	421.88	402.32	0.41	16.69	0.0243	down
MW-42A	Ash Pond	Deep		49.0	59.0	419.15	370.1	360.1	365.1	19.96	421.71	401.75	0.57	14.13	0.0405	down
MW-43B	Ash Pond	Shallow	11/01/24	20.1	30.1	417.23	397.1	387.1	392.1	17.78	419.84	402.06	-	-	-	-
MW-43I	Ash Pond	Intermediate		35.2	45.2	417.27	382.1	372.1	377.1	17.84	419.96	402.12	-0.06	15.07	-0.0037	up
MW-43A	Ash Pond	Deep		49.3	59.3	417.25	368.0	358.0	363.0	17.76	419.88	402.12	-0.01	14.10	-0.0004	up
MW-44B	Ash Pond	Shallow	11/01/24	21.9	31.9	415.38	393.5	383.5	388.5	16.72	418.79	402.07	-	-	-	-
MW-44I	Ash Pond	Intermediate		37.7	47.7	415.59	377.9	367.9	372.9	16.02	418.08	402.06	0.01	15.61	0.0006	down
MW-44A	Ash Pond	Deep		48.3	58.3	415.95	367.6	357.6	362.6	16.10	418.22	402.12	-0.06	10.27	-0.0056	up

TABLE 3B
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - NOVEMBER 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
MW-45B	Ash Pond	Shallow	11/01/24	36.2	41.2	425.67	389.4	384.4	386.9	25.20	428.34	403.14	-	-	-	-
MW-45I	Ash Pond	Intermediate		43.0	48.0	425.65	382.6	377.6	380.1	25.46	428.58	403.12	0.02	6.82	0.0034	down
MW-45A	Ash Pond	Deep		56.1	66.1	425.56	369.5	359.5	364.5	25.13	428.37	403.24	-0.13	15.62	-0.0080	up
MW-46B	Ash Pond	Shallow	11/01/24	19.9	29.9	421.81	401.9	391.9	396.9	21.81	424.75	402.94	-	-	-	-
MW-46I	Ash Pond	Intermediate		39.9	49.9	421.86	382.0	372.0	377.0	21.75	424.71	402.96	-0.02	19.90	-0.0010	up
MW-46A	Ash Pond	Deep		59.0	69.0	421.91	362.9	352.9	357.9	21.50	424.52	403.02	-0.06	19.06	-0.0031	up
MW-47B	Ash Pond	Shallow	11/01/24	19.5	29.5	424.52	405.0	395.0	400.0	24.50	427.31	402.81	-	-	-	-
MW-47I	Ash Pond	Intermediate		42.0	52.0	424.53	382.5	372.5	377.5	24.64	427.54	402.90	-0.08	22.49	-0.0038	up
MW-47A	Ash Pond	Deep		61.8	71.8	424.24	362.5	352.5	357.5	24.49	427.50	403.01	-0.11	20.05	-0.0055	up
PZ-1B	Ash Pond	Shallow	11/01/24	10.0	20.0	419.15	409.2	399.2	404.2	19.18	422.54	403.36	-	-	-	-
PZ-1A	Ash Pond	Deep		54.0	64.0	419.03	365.0	355.0	360.0	20.19	423.63	403.44	-0.08	44.12	-0.0018	up
PZ-2B	Ash Pond	Shallow	11/01/24	10.0	20.0	420.47	410.5	400.5	405.5	21.12	423.50	402.38	-	-	-	-
PZ-2A	Ash Pond	Deep		54.5	64.5	419.74	365.2	355.2	360.2	20.21	422.55	402.34	0.04	45.23	0.0009	down
MW-1	Landfill	Shallow	11/01/24	28.5	38.5	526.11	497.6	487.6	492.6	32.65	528.11	495.46	-	-	-	-
MW-1A	Landfill	Deep		92.9	102.9	526.46	433.6	423.6	428.6	72.30	529.36	457.06	38.40	64.00	0.6000	down
MW-12	Landfill	Shallow	11/01/24	34.1	44.1	514.70	480.6	470.6	475.6	37.03	517.64	480.61	-	-	-	-
MW-12A	Landfill	Deep		63.3	73.3	513.65	450.4	440.4	445.4	37.80	516.97	479.17	1.44	30.23	0.0476	down
MW-15B	Landfill	Shallow	11/01/24	18.4	28.4	441.77	423.4	413.4	418.4	11.23	444.69	433.46	-	-	-	-
MW-15	Landfill	Deep		36.8	41.8	440.90	404.2	399.2	401.7	25.75	444.11	418.36	15.10	16.72	0.9031	down
MW-30D1	Landfill	Upper Shale	11/01/24	46.9	56.9	499.90	453.0	443.0	448.0	-	502.83	N/A	-	-	-	-
MW-30D2	Landfill	Lower Shale		140.2	150.2	499.80	359.6	349.6	354.6	93.94	502.82	408.88	N/A	93.41	N/A	N/A
MW-32I	Landfill	Intermediate	11/01/24	89.4	99.4	450.70	361.3	351.3	356.3	53.13	516.33	463.20	-	-	-	-
MW-32D1	Landfill	Upper Shale		40.0	50.0	513.30	473.3	463.3	468.3	74.32	516.22	441.90	21.30	112.01	0.1902	down
MW-32D2	Landfill	Lower Shale		88.8	98.8	513.30	424.5	414.5	419.5	106.69	516.29	409.60	32.30	48.80	0.6619	down
MW-33I	Landfill	Intermediate	11/01/24	25.9	35.9	451.70	425.8	415.8	420.8	13.21	454.81	441.60	-	-	-	-
MW-33D2	Landfill	Lower Shale		79.6	89.6	451.70	372.1	362.1	367.1	45.70	454.58	408.88	32.72	53.72	0.6091	down
MW-34A	Landfill	Deep	11/01/24	50.1	60.1	495.50	445.4	435.4	440.4	26.79	498.25	471.46	-	-	-	-
MW-34D1	Landfill	Upper Shale		72.1	82.1	495.70	423.6	413.6	418.6	34.39	498.82	464.43	7.03	21.78	0.3228	down
MW-34SS	Landfill	Sandstone		91.4	96.4	496.10	404.7	399.7	402.2	34.35	498.95	464.60	-0.17	16.36	-0.0104	up
MW-34D2	Landfill	Lower Shale		114.8	129.8	496.30	381.5	366.5	374.0	84.34	499.31	414.97	49.46	44.56	1.1100	down
MW-35D1	Landfill	Upper Shale	11/01/24	24.9	34.9	467.00	442.1	432.1	437.1	17.50	470.09	452.59	-	-	-	-
MW-35SS	Landfill	Sandstone		60.0	65.0	467.20	407.2	402.2	404.7	20.53	470.12	449.59	3.00	32.41	0.0926	down
MW-35D2	Landfill	Lower Shale		78.1	88.1	467.30	389.2	379.2	384.2	57.07	470.54	413.47	36.12	20.49	1.7628	down

TABLE 3B
VERTICAL HYDRAULIC GRADIENT CALCULATIONS - NOVEMBER 2024
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Area	Screened Zone	Water Level Gauging Date	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Ground Surface Elevation (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Screen Mid Point Elevation (ft MSL)	Depth to Water (ft BTOC)	TOC Elevation (ft MSL)	Water Elevation	Head Difference (Δ H)	Length btw Screen Mid-Points (Δ L)	Vertical Gradient (Δ H / Δ L)	Upward/ Downward Vertical Gradient
LW-1B	Landfill	Shallow	11/01/24	20.0	25.0	502.00	482.0	477.0	479.5	20.68	504.40	483.72	-	-	-	-
LW-1A	Landfill	Deep		60.0	65.0	502.40	442.4	437.4	439.9	21.72	504.40	482.68	1.04	39.60	0.0263	down
LW-6B	Landfill	Shallow	11/01/24	17.0	22.0	516.90	499.9	494.9	497.4	-	518.90	N/A	-	-	-	-
LW-6A	Landfill	Deep		52.0	57.0	516.90	464.9	459.9	462.4	48.17	518.90	470.73	N/A	35.00	N/A	N/A
LW-8B	Landfill	Shallow	11/01/24	25.0	30.0	522.90	497.9	492.9	495.4	31.86	524.90	493.04	-	-	-	-
LW-8A	Landfill	Deep		71.0	76.0	522.90	451.9	446.9	449.4	66.20	524.90	458.70	34.34	46.00	0.7465	down
LW-28B	Landfill	Shallow	11/01/24	18.0	23.0	502.40	484.4	479.4	481.9	19.20	504.40	485.20	-	-	-	-
LW-28A	Landfill	Deep		50.0	55.0	502.40	452.4	447.4	449.9	24.60	504.40	479.80	5.40	32.00	0.1688	down

Notes:

"-" indicates not applicable or not measured
ft bgs = feet below ground surface
ft BTOC= feet below top of casing
ft MSL = feet below mean sea level
TOC = top of casing
Gradient calculated for "B" and "I" wells and "I" and "A" wells

TABLE 4
HYDRAULIC CONDUCTIVITY DATA
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Slug Test Results						
Well ID	**Area**	**Date of Slug Test**	**Aquifer Model**	**Solution Method**	**Horizontal Hydraulic Conductivity (cm/s)**	**Horizontal Hydraulic Conductivity (ft/day)**
ASH POND A PIEZOMETER (Screened in Ash)						
IAPZ-1	Ash Pond	8/12/2019	Unconfined	Bouwer-Rice	5.85E-04	1.66
ASH POND A PIEZOMETER (Screened in Aluvium)						
P-4-2019	Ash Pond	4/15/2019	Confined	Bouwer-Rice	2.79E-03	7.90
SHALLOW WELLS AND PIEZOMETERS						
SHALLOW WELLS						
AP-1R	Ash Pond	7/2/2014	Confined	Bouwer-Rice	4.39E-04	1.25
AP-2B0	Ash Pond	4/8/2016	Confined	Bouwer-Rice	9.52E-03	26.97
AP-3	Ash Pond	7/2/2014	Unconfined	Bouwer-Rice	2.86E-02	81.17
AP-4B	Ash Pond	7/2/2014	Confined	Bouwer-Rice	2.96E-02	83.88
AP-5	Ash Pond	7/3/2014	Confined	Bouwer-Rice	3.32E-02	94.00
AP-6B	Ash Pond	7/3/2014	Unconfined	Bouwer-Rice	1.83E-02	51.90
AP-7	Ash Pond	7/2/2014	Confined	Bouwer-Rice	2.22E-04	0.63
AP-8	Ash Pond	7/2/2014	Confined	Bouwer-Rice	2.23E-03	6.32
AP-9B	Ash Pond	2/22/2022	Unconfined	Bouwer-Rice	1.16E-02	32.78
AP-10B	Ash Pond	2/22/2022	Unconfined	Bouwer-Rice	3.55E-02	100.54
AP-11B	Ash Pond	2/21/2022	Unconfined	Bouwer-Rice	1.84E-02	52.13
MW-19B	Ash Pond	8/12/2019	Unconfined	Bouwer-Rice	2.19E-02	62.13
MW-20B	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	1.70E-02	48.19
MW-21B	Ash Pond	3/28/2022	Unconfined	Bouwer-Rice	1.10E-02	31.04
MW-25B	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	2.38E-02	67.34
MW-26B	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	3.97E-02	112.59
MW-27B	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	3.09E-02	87.72
MW-28B	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	4.56E-02	129.15
MW-29B	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	2.71E-02	76.79
MW-36B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	1.48E-02	41.88
MW-37B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	9.18E-02	260.26
MW-38B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	1.74E-01	492.78
MW-39B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	5.13E-02	145.37
MW-40B	Ash Pond	12/20/2022	Unconfined	Bouwer-Rice	5.44E-02	154.30
MW-41B	Ash Pond	12/20/2022	Unconfined	Bouwer-Rice	2.87E-02	81.30
MW-42B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	2.22E-01	629.65
MW-43B	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	6.70E-02	189.95
MW-44B	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	6.59E-02	186.70
MW-45B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	4.62E-03	13.09
MW-46B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	5.73E-03	16.23
MW-47B	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	2.23E-02	63.20
MW-3	Landfill	1/19/2021	Unconfined	Bouwer-Rice	2.44E-03	6.92
MW-10	Landfill	2/8/2017	Unconfined	Bouwer-Rice	5.15E-04	1.46
MW-11	Landfill	2/8/2017	Unconfined	Bouwer-Rice	2.23E-04	0.63
MW-12	Landfill	2/8/2017	Unconfined	Bouwer-Rice	6.36E-04	1.80
MW-14	Landfill	4/15/2019	Unconfined	Bouwer-Rice	2.92E-03	8.29
MW-15B	Landfill	2/22/2022	Unconfined	Bouwer-Rice	1.97E-03	5.58
MW-16	Landfill	4/15/2019	Confined	Bouwer-Rice	2.76E-03	7.84
MW-22	Landfill	11/9/2020	Confined	Bouwer-Rice	9.60E-05	0.27
MW-23	Landfill	11/9/2020	Confined	Bouwer-Rice	6.96E-04	1.97
MW-24	Landfill	11/9/2020	Unconfined	Bouwer-Rice	2.24E-03	6.35
SHALLOW PIEZOMETERS						
PZ-1B	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	5.35E-03	15.16
PZ-2B	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	2.70E-02	76.52
MW-17	Landfill	7/10/2019	Unconfined	Bouwer-Rice	7.72E-05	0.22
SHALLOW GEOMETRIC MEAN (ASH POND):					**1.91E-02**	**54.13**
SHALLOW GEOMETRIC MEAN (LANDFILL):					**7.33E-04**	**2.08**
SHALLOW GEOMETRIC MEAN:					**8.45E-03**	**23.96**
INTERMEDIATE WELLS AND PIEZOMETERS						
INTERMEDIATE WELLS						
AP-4I	Ash Pond	7/3/2014	Confined	Bouwer-Rice	1.73E-02	49.07
AP-9I	Ash Pond	2/22/2022	Unconfined	Bouwer-Rice	2.94E-02	83.42
AP-10I	Ash Pond	2/22/2022	Unconfined	Bouwer-Rice	2.11E-02	59.69
AP-11I	Ash Pond	2/21/2022	Unconfined	Bouwer-Rice	3.05E-02	86.40
MW-19I	Ash Pond	8/12/2019	Unconfined	Bouwer-Rice	1.86E-02	52.72
MW-20I	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	4.24E-03	12.01
MW-21I	Ash Pond	3/28/2022	Unconfined	Bouwer-Rice	1.31E-02	37.16
MW-25I	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	2.85E-02	80.92
MW-26I	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	2.73E-02	77.50
MW-28I	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	9.41E-03	26.67
MW-29I	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	1.76E-02	49.75
MW-36I	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	3.87E-02	109.69

TABLE 4
HYDRAULIC CONDUCTIVITY DATA
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Slug Test Results						
Well ID	**Area**	**Date of Slug Test**	**Aquifer Model**	**Solution Method**	**Horizontal Hydraulic Conductivity (cm/s)**	**Horizontal Hydraulic Conductivity (ft/day)**
MW-37I	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	9.50E-02	269.25
MW-38I	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	3.96E-02	112.38
MW-39I	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	4.83E-02	137.01
MW-40I	Ash Pond	12/20/2022	Unconfined	Springer-Gelhar	4.16E-02	117.94
MW-41I	Ash Pond	12/20/2022	Unconfined	Springer-Gelhar	3.86E-02	109.45
MW-42I	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	3.80E-02	107.66
MW-43I	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	6.63E-02	187.91
MW-44I	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	4.09E-02	115.91
MW-45I	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	2.22E-03	6.30
MW-46I	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	2.48E-02	70.34
MW-47I	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	5.86E-02	166.03
MW-33I	Landfill	1/18/2022	Unconfined	Bouwer-Rice	7.08E-05	0.20
INTERMEDIATE PIEZOMETERS						
PZ-1I	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	2.27E-02	64.48
PZ-2I	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	2.84E-02	80.55
INTERMEDIATE GEOMETRIC MEAN (ASH POND):					**2.52E-02**	**71.36**
INTERMEDIATE GEOMETRIC MEAN (LANDFILL):					**7.08E-05**	**0.20**
INTERMEDIATE GEOMETRIC MEAN:					**2.01E-02**	**56.93**
DEEP WELLS AND PIEZOMETERS						
Deep Wells						
AP-2A	Ash Pond	7/2/2014	Confined	Bouwer-Rice	2.15E-02	60.87
AP-3A	Ash Pond	6/12/2015	Unconfined	Bouwer-Rice	7.38E-03	20.91
AP-4A	Ash Pond	7/2/2014	Confined	Bouwer-Rice	7.78E-03	22.06
AP-5A	Ash Pond	6/12/2015	Unconfined	Bouwer-Rice	4.21E-03	11.95
AP-6A	Ash Pond	7/3/2014	Unconfined	Bouwer-Rice	9.33E-03	26.44
AP-9A	Ash Pond	6/7/2019	Unconfined	Bouwer-Rice	9.54E-03	27.04
AP-10A	Ash Pond	8/12/2019	Unconfined	Bouwer-Rice	1.10E-02	31.10
AP-11A	Ash Pond	8/12/2019	Confined	Bouwer-Rice	1.22E-02	34.62
MW-19A	Ash Pond	8/12/2019	Unconfined	Bouwer-Rice	5.64E-03	16.00
MW-20A	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	7.82E-03	22.17
MW-21A	Ash Pond	3/28/2022	Unconfined	Bouwer-Rice	1.58E-02	44.70
MW-25A	Ash Pond	9/2/2021	Unconfined	Bouwer-Rice	7.24E-03	20.52
MW-26A	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	2.35E-02	66.51
MW-28A	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	3.81E-02	108.03
MW-29A	Ash Pond	9/3/2021	Unconfined	Bouwer-Rice	2.31E-02	65.61
MW-36A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	4.91E-02	139.07
MW-37A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	4.22E-02	119.73
MW-38A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	7.16E-02	202.83
MW-39A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	6.22E-02	176.41
MW-40A	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	2.14E-02	60.78
MW-41A	Ash Pond	12/20/2021	Unconfined	Springer-Gelhar	4.41E-02	124.88
MW-42A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	3.01E-01	851.92
MW-43A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	1.07E-01	303.07
MW-44A	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	3.18E-02	90.10
MW-45A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	5.93E-02	168.09
MW-46A	Ash Pond	12/21/2022	Unconfined	Springer-Gelhar	4.76E-02	134.99
MW-47A	Ash Pond	12/21/2022	Unconfined	Bouwer-Rice	3.07E-02	87.03
MW-1A	Landfill	6/9/2023	Unconfined	Bouwer-Rice	1.85E-04	0.52
MW-2R	Landfill	2/8/2017	Unconfined	Bouwer-Rice	3.97E-04	1.13
MW-4C	Landfill	1/19/2021	Unconfined	Bouwer-Rice	4.10E-04	1.16
MW-10	Landfill	2/8/2017	Unconfined	Bouwer-Rice	5.15E-04	1.46
MW-12A	Landfill	6/8/2023	Confined	Bouwer-Rice	7.91E-04	2.24
MW-13	Landfill	2/8/2017	Unconfined	Bouwer-Rice	4.02E-04	1.14
MW-15	Landfill	4/15/2019	Confined	Bouwer-Rice	6.82E-03	19.34
MW-34A	Landfill	1/17/2022	Unconfined	Bouwer-Rice	1.51E-04	0.43
DEEP PIEZOMETERS						
PZ-1A	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	1.38E-02	39.01
PZ-2A	Ash Pond	5/5/2020	Unconfined	Bouwer-Rice	1.06E-02	30.00
MW-17	Landfill	7/10/2019	Unconfined	Bouwer-Rice	7.72E-05	0.22
MW-18	Landfill	7/10/2019	Confined	Bouwer-Rice	1.80E-05	0.05
LW-1A	Landfill	7/23/2019	Confined	Bouwer-Rice	3.63E-05	0.10
LW-8A	Landfill	7/23/2019	Confined	Bouwer-Rice	2.71E-05	0.08
DEEP GEOMETRIC MEAN (ASH POND):					**2.19E-02**	**62.02**
DEEP GEOMETRIC MEAN (LANDFILL):					**2.09E-04**	**0.59**
DEEP GEOMETRIC MEAN:					**5.61E-03**	**15.90**

TABLE 4
HYDRAULIC CONDUCTIVITY DATA
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Slug Test Results						
Well ID	**Area**	**Date of Slug Test**	**Aquifer Model**	**Solution Method**	**Horizontal Hydraulic Conductivity (cm/s)**	**Horizontal Hydraulic Conductivity (ft/day)**
UPPER SHALE WELLS						
MW-32D1	Landfill	1/19/2022	Confined	Bouwer-Rice	7.63E-04	2.16
MW-34D1	Landfill	1/18/2022	Confined	Bouwer-Rice	1.79E-03	5.08
MW-35D1	Landfill	1/19/2022	Confined	Bouwer-Rice	2.12E-02	60.02
UPPER SHALE GEOMETRIC MEAN (Excluding MW-35D1):					**1.17E-03**	**3.31**
UPPER SHALE GEOMETRIC MEAN (LANDFILL):					**3.07E-03**	**8.70**
SANDSTONE WELLS						
MW-34SS	Landfill	1/20/2022	Confined	Bouwer-Rice	4.96E-05	0.14
MW-35SS	Landfill	1/20/2022	Confined	Bouwer-Rice	1.96E-05	0.06
SANDSTONE GEOMETRIC MEAN (LANDFILL):					**3.12E-05**	**0.09**
LOWER SHALE WELLS						
MW-30D2	Landfill	1/18/2022	Confined	Bouwer-Rice	6.01E-06	0.02
MW-31D2	Landfill	1/18/2022	Confined	Bouwer-Rice	1.95E-04	0.55
MW-32D2	Landfill	1/19/2022	Confined	Bouwer-Rice	1.65E-05	0.05
MW-33D2	Landfill	1/18/2022	Confined	Bouwer-Rice	1.88E-05	0.05
MW-34D2	Landfill	1/18/2022	Confined	Bouwer-Rice	4.34E-06	0.01
MW-35D2	Landfill	1/19/2022	Confined	Bouwer-Rice	1.26E-05	0.04
LOWER SHALE GEOMETRIC MEAN (LANDFILL):					**1.65E-05**	**0.05**
Packer Test Results						
Well ID	**Area**	**Depth Packer Place (ft BGS)**	**Test Interval (ft BGS)**	**Boring Depth (ft BGS)**	**Hydraulic Conductivity (cm/s)**	**Hydraulic Conductivity (ft/day)**
MW-37	Ash Pond	70-72	72-79	89	1.80E-05	0.051
MW-42	Ash Pond	68-70	70-75	80.5	4.03E-07	0.001
MW-42B	Ash Pond	70-72	72-78	80.5	1.72E-07	0.0005
MW-44	Ash Pond	67-69	69-74	81.4	2.26E-06	0.006
MW-47	Ash Pond	77-79	79-84	86	1.70E-03	4.812
PACKER TESTS GEOMETRIC MEAN (Excluding MW-47)					**1.30E-06**	**0.004**
Geotechnical Test Results (ASTM D 5084: Method C)						
Well ID	**Area**	**Date of Testing**	**Core Depth Interval**	**Material**	**Vertical Hydraulic Conductivity (cm/s)**	**Vertical Hydraulic Conductivity (ft/day)**
MW-37	Ash Pond	5/6/2023	74.5-75	Dark Gray Rock	1.00E-07	0.0003
MW-40	Ash Pond	5/6/2023	70.5-71	Dark Gray Rock	1.00E-06	0.0028
GEOTECHNICAL TESTS GEOMETRIC MEAN					**3.16E-07**	**0.0009**

Notes:

cm/s = centimeter per second

ft BGS = feet below ground surface

ft/day = feet per day

Geometric mean is shown where both rising head and falling head slug test data was reported

TABLE 5
TREND ANALYSIS SUMMARY - ASH POND SYSTEM
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well	Constitent		
	Arsenic	Lithium	Molybdenum
AP-1R	No Trend	-	Decreasing
AP-2A	Increasing	Stable	Decreasing
AP-2BO	No Trend	Stable	No Trend
AP-3	-	-	No Trend
AP-3A	No Trend	-	Decreasing
AP-4A	-	Stable	No Trend
AP-4B	-	-	No Trend
AP-4I	-	-	Stable
AP-5	-	-	Stable
AP-5A	Stable	-	Increasing
AP-6A	Stable	-	No Trend
AP-6B	-	-	No Trend
AP-7	Stable	-	No Trend
AP-8	No Trend	Stable	No Trend
AP-9A	No Trend	Decreasing	Probably Decreasing
AP-10A	No Trend	Stable	Decreasing
MW-2R	No Trend	Stable	Stable
MW-3	No Trend	Stable	Decreasing
MW-4C	-	Stable	No Trend
MW-19A	Decreasing	-	Probably Decreasing
MW-19B	-	-	-
MW-19I	-	-	-
MW-20A	Decreasing	-	Stable
MW-20B	Decreasing	-	-
MW-20I	-	-	-
MW-21A	No Trend	Stable	Decreasing
MW-21B	-	-	-
MW-21I	Stable	No Trend	Stable
MW-25A	Stable	-	No Trend
MW-25B	-	-	-
MW-25I	Stable	-	Increasing
MW-26A	Probably Increasing	Stable	No Trend
MW-26B	-	Stable	-
MW-26I	No Trend	Decreasing	No Trend
MW-27B	No Trend	-	-
MW-28A	No Trend	-	Decreasing
MW-28B	No Trend	Increasing	No Trend
MW-28I	No Trend	-	Stable
MW-29A	No Trend	-	No Trend
MW-29B	-	-	-
MW-29I	-	-	-

Stable	6	11	6
Decreasing	3	2	9
Increasing	2	1	2
No Trend	15	1	14
NA	15	26	10

TABLE 6
TREND ANALYSIS SUMMARY - LANDFILL
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well	Constitent		
	Arsenic	**Lithium**	**Molybdenum**
MW-1	-	-	No Trend
MW-2R	No Trend	Stable	No Trend
MW-3	Increasing	Stable	Stable
MW-4C	-	Stable	No Trend
MW-10	Stable	Stable	Decreasing
MW-11	No Trend	-	No Trend
MW-12	No Trend	-	No Trend
MW-13	No Trend	Increasing	No Trend
MW-14	Stable	-	-
MW-15	-	Stable	Increasing
MW-16	Stable	Decreasing	Decreasing
MW-24	-	Stable	No Trend
MW-33D2	Stable	Increasing	Stable
MW-35D2	Decreasing	Stable	Stable
MW-35SS	No Trend	No Trend	No Trend

Stable	4	7	3
Decreasing	1	1	2
Increasing	1	2	1
No Trend	5	1	8
NA	4	4	1

TABLE 7
SUMMARY OF MONITORING WELL SOIL AND GROUNDWATER ANALYTICAL RESULTS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Soil Sample Date	Groundwater Sample Date	Soil Total Lithium (mg/kg)	Lithium (µg/L)	Soil Total Molybdenum (mg/kg)	Molybdenum (µg/L)	Soil Total Arsenic (mg/kg)	Arsenic (µg/L)
MW-25B	8/27/2021	9/15/2021	5.4	BDL	1.1	BDL	4.2	BDL
MW-25I	8/27/2021	9/15/2021	10.5	BDL	1	16	5.1	1.1
MW-25A	8/27/2021	9/15/2021	24.5	BDL	0.98	13	3.2	1.2
MW-26B	8/27/2021	9/16/2021	5.2	20.6	1	BDL	8.7	BDL
MW-26I	8/27/2021	9/16/2021	9.9	49.7	0.99	52.2	2.4	1.5
MW-26A	8/27/2021	9/16/2021	11.2	24.7	1.5	806	2.5	BDL
MW-27B	8/27/2021	9/17/2021	5.9	BDL	1.2	BDL	3.1	34.9
MW-28B	8/27/2021	9/17/2021	5.4	41.4	3.4	211	3.2	BDL
MW-28I	8/27/2021	9/17/2021	10.9	BDL	1.8	1610	3.7	1.1
MW-28A	8/27/2021	9/17/2021	25.2	BDL	1.7	2990	5	1.3
MW-29B	8/27/2021	9/15/2021	11.7	BDL	1.2	BDL	4.5	BDL
MW-29I	8/29/2021	9/15/2021	5.2	BDL	1	BDL	2.3	BDL
MW-29A	8/29/2021	9/15/2021	4.9	BDL	0.99	89.1	3.6	BDL
MW-36B	8/30/2022	11/14/2022	10.8	BDL	1.2	4.6	2.4	BDL
MW-36A	8/30/2022	11/15/2022	5.4	BDL	0.67	BDL	1.6	BDL
MW-37B	8/30/2022	11/16/2022	5.7	BDL	0.59	BDL	3.1	BDL
MW-37I	8/30/2022	11/15/2022	5.4	BDL	0.57	102	2.5	BDL
MW-37A	8/30/2022	11/15/2022	4.9	BDL	0.96	225	2.1	BDL
MW-38B	10/19/2022	11/10/2022	5	BDL	0.22	BDL	2.5	BDL
MW-38I	10/19/2022	11/10/2022	5.5	BDL	0.59	142	2.2	1.5
MW-38A	10/18/2022	11/10/2022	5.6	BDL	0.6	151	1.1	BDL
MW-39B	10/20/2022	11/17/2022	5.3	BDL	0.24	BDL	7	BDL
MW-39I	10/20/2022	11/17/2022	6	BDL	0.53	92.3	2.8	BDL
MW-39A	10/19/2022	11/17/2022	5.4	BDL	0.85	278	1.3	BDL
MW-40B	8/30/2022	9/6/2022	5.5	BDL	2.2	BDL	3.3	BDL
MW-40I	8/30/2022	9/6/2022	5.5	BDL	0.57	203	1.5	BDL
MW-40A	8/30/2022	9/6/2022	4.8	22.1	0.71	142	1.2	BDL
MW-41B	10/28/2022	12/1/2022	5.2	BDL	0.22	BDL	1.9	BDL
MW-41I	10/28/2022	12/2/2022	4.7	BDL	0.37	BDL	0.77	1.5
MW-41A	10/28/2022	12/2/2022	6.3	BDL	0.49	212	1.4	BDL
MW-42B	9/1/2022	9/13/2022	5.4	BDL	0.58	1.1	2.6	BDL
MW-42I	9/1/2022	9/12/2022	5.4	73.9	0.83	197	1.8	2.2
MW-42A	9/1/2022	9/13/2022	5.5	BDL	1.3	1240	1.5	BDL
MW-43B	9/1/2022	9/8/2022	5.3	BDL	0.56	10.3	2	BDL
MW-43I	9/1/2022	9/9/2022	5.1	BDL	0.58	77.3	1.6	1.9
MW-43A	9/1/2022	9/9/2022	5.3	BDL	0.76	182	2.1	BDL
MW-44B	9/1/2022	9/7/2022	5.3	BDL	0.54	8.1	1.8	1.7
MW-44I	9/1/2022	9/8/2022	5.6	BDL	0.71	27.3	2.3	BDL
MW-44A	8/30/2022	9/8/2022	5.4	BDL	0.57	62.3	1.2	1.1
MW-45B	9/14/2022	10/3/2022	5.2	BDL	0.53	2.4	3.2	1.7
MW-45I	9/13/2022	10/3/2022	5.5	BDL	0.58	4	1.9	2.1
MW-45A	9/13/2022	10/3/2022	5.3	32	0.69	5.2	4.9	2.5
MW-46B	10/17/2022	11/11/2022	6.1	BDL	0.64	BDL	2.5	BDL
MW-46I	10/17/2022	11/9/2022	5.1	BDL	0.56	BDL	2	1.2
MW-46A	10/17/2022	11/9/2022	5.1	BDL	0.52	BDL	5.8	1.9
MW-47B	10/28/2022	11/8/2022	5.3	BDL	0.23	BDL	1.5	2.7
MW-47I	10/28/2022	11/8/2022	5.2	BDL	0.31	BDL	4	BDL
MW-47A	10/17/2022	11/11/2022	4.9	26.2	0.81	BDL	3	BDL

Notes:

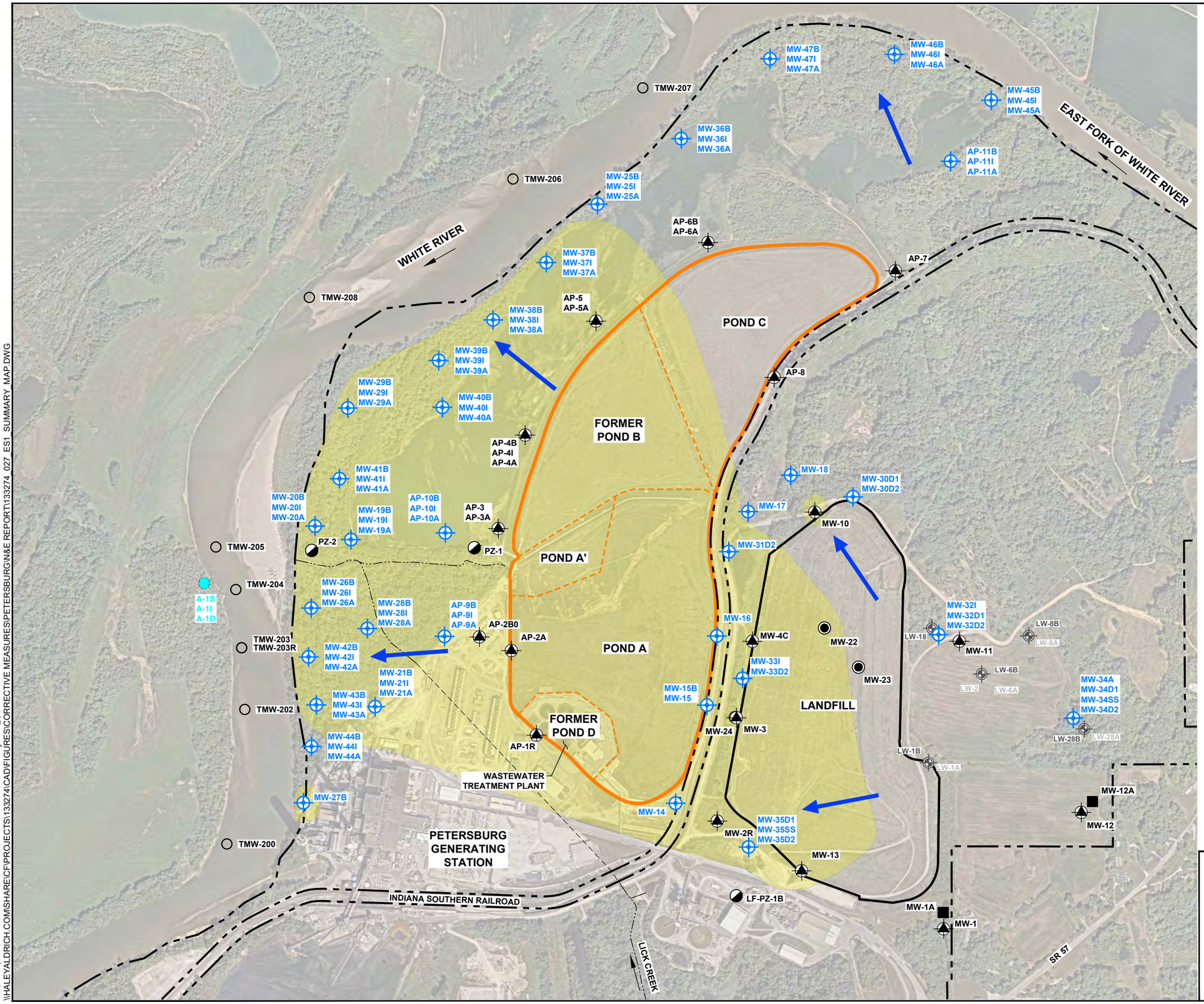
Soil Data presented in the 2022 Annual Groundwater Monitoring Corrective Action Report.

Groundwater analytical results are provided in annual groundwater monitoring and corrective action reports required by the CCR Rule, which are posted on the publicly available website for PGS: https://www.aesindiana.com/petersburg-generating-station

mg/kg = milligrams per kilogram

µg/L = micrograms per liter

FIGURES



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- APPROXIMATE AREA WITH GROUNDWATER CONCENTRATIONS ABOVE GWPS
- GROUNDWATER SAMPLING LOCATION BENEATH WHITE RIVER
- TEMPORARY WELL LOCATION

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

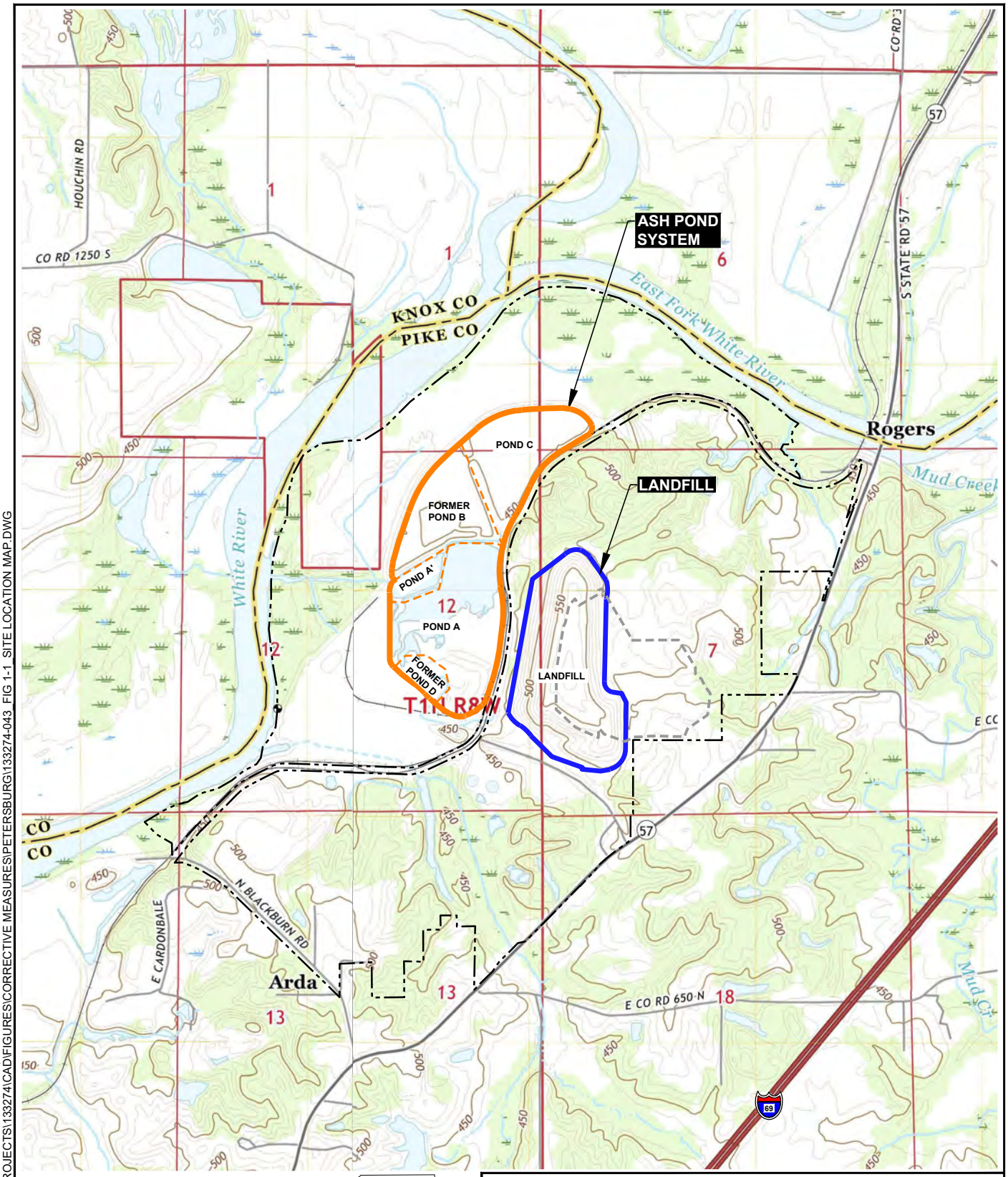
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE CONCEPTUAL MODEL SUMMARY MAP

SCALE: AS SHOWN
DECEMBER 2025

FIGURE ES-1

YEOMAN, ROB Saved: 12/2/2025 1:55 PM Layout: ES1
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_ES1_SUMMARY_MAP.DWG



MAP SOURCE: USGS
QUADRANGLES: SANDY HOOK, IN 2019
MONROE CITY, IN 2019



HALEY ALDRICH

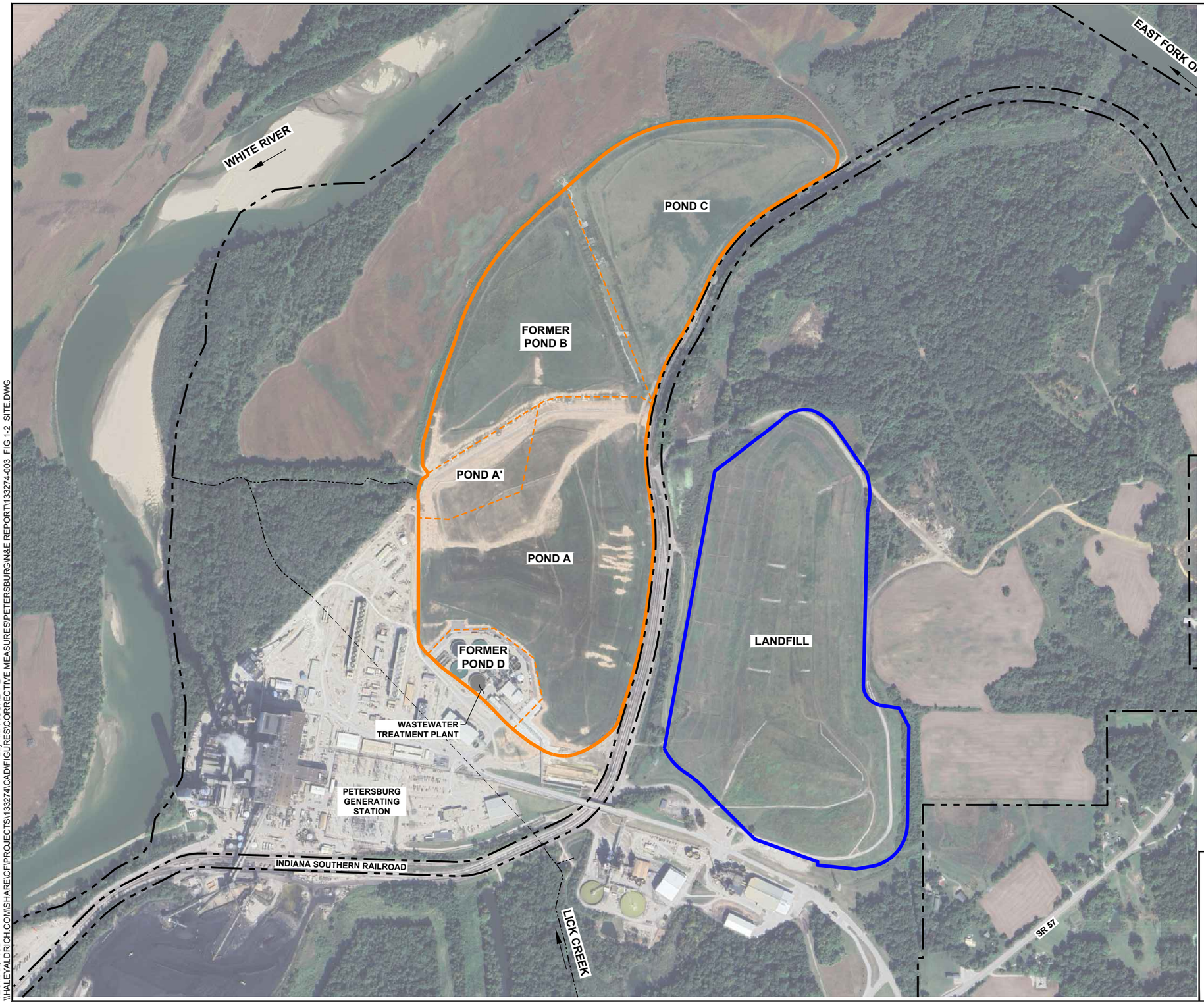
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE LOCATION MAP

APPROXIMATE SCALE: 1IN = 2000 FT
DECEMBER 2025

FIGURE 1

STOSS, TOM
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\133274-043 FIG 1-1 SITE LOCATION MAP.DWG
Printed: 3/31/2025 9:55 AM
Layout: FIGURE 1-1



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. AERIAL IMAGE FROM GOOGLE EARTH.

N

0 700 1400
SCALE IN FEET

HALEY ALDRICH

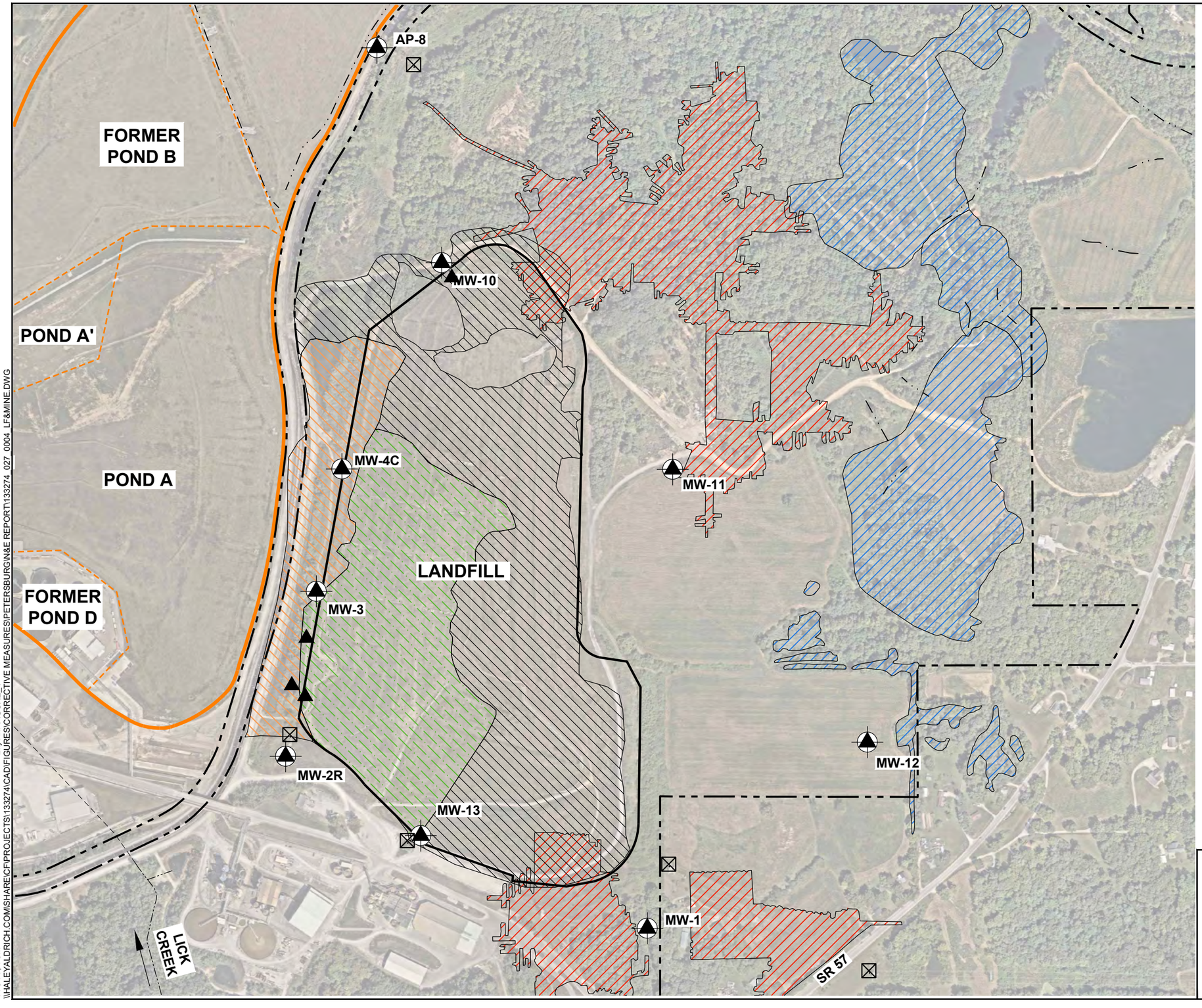
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE FEATURES

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 2

YEOMAN, ROB Saved: 9/4/2024 8:54 AM Layout: FIGURE 1-2
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274-003_FIG 1-2_SITE.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- STRIP MINE (SEE NOTE 4)
- UNDERGROUND MINE (SEE NOTE 3)
- MINE OUTCROP (SEE NOTE 3)
- OLD MINE ENTRANCE (SEE NOTE 3)
- STRIP MINE (SEE NOTE 4)
- STRIP MINE (SEE NOTE 5)
- SUSPECTED UNDERGROUND MINE (SEE NOTE 6)

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. CCR = COAL COMBUSTION RESIDUALS
3. MINES AND OTHER ITEMS IDENTIFIED USING "FIGURE 7 - LANDFILL SITE PLAN" FROM STONE & WEBSTER 2 FEBRUARY 1996 DATED REPORT AND AERIAL IMAGERY FROM GOOGLE EARTH DATED 1986.
4. MINES IDENTIFIED USING AERIAL IMAGERY FROM GOOGLE EARTH DATED 1977 AND GROUND-TRUTHED USING CONVENTIONAL DRILLING METHODS.
5. MINES IDENTIFIED USING AERIAL IMAGERY FROM GOOGLE EARTH DATED 1982 AND GROUND-TRUTHED USING CONVENTIONAL DRILLING METHODS AND GEOPHYSICAL SURVEY.
6. SUSPECTED MINE BASED ON OUTCROPS, ENTRANCES, AND OTHER KNOWN KEY CHARACTERISTICS OF PAST SURROUNDINGS
7. ALL OUTLINED MINE LOCATIONS ARE APPROXIMATE AND BASED ON PROXIMITY OF OUTCROPS AND SUSPECTED LIMITS.

N

0 500 1000
SCALE IN FEET

HALEY ALDRICH

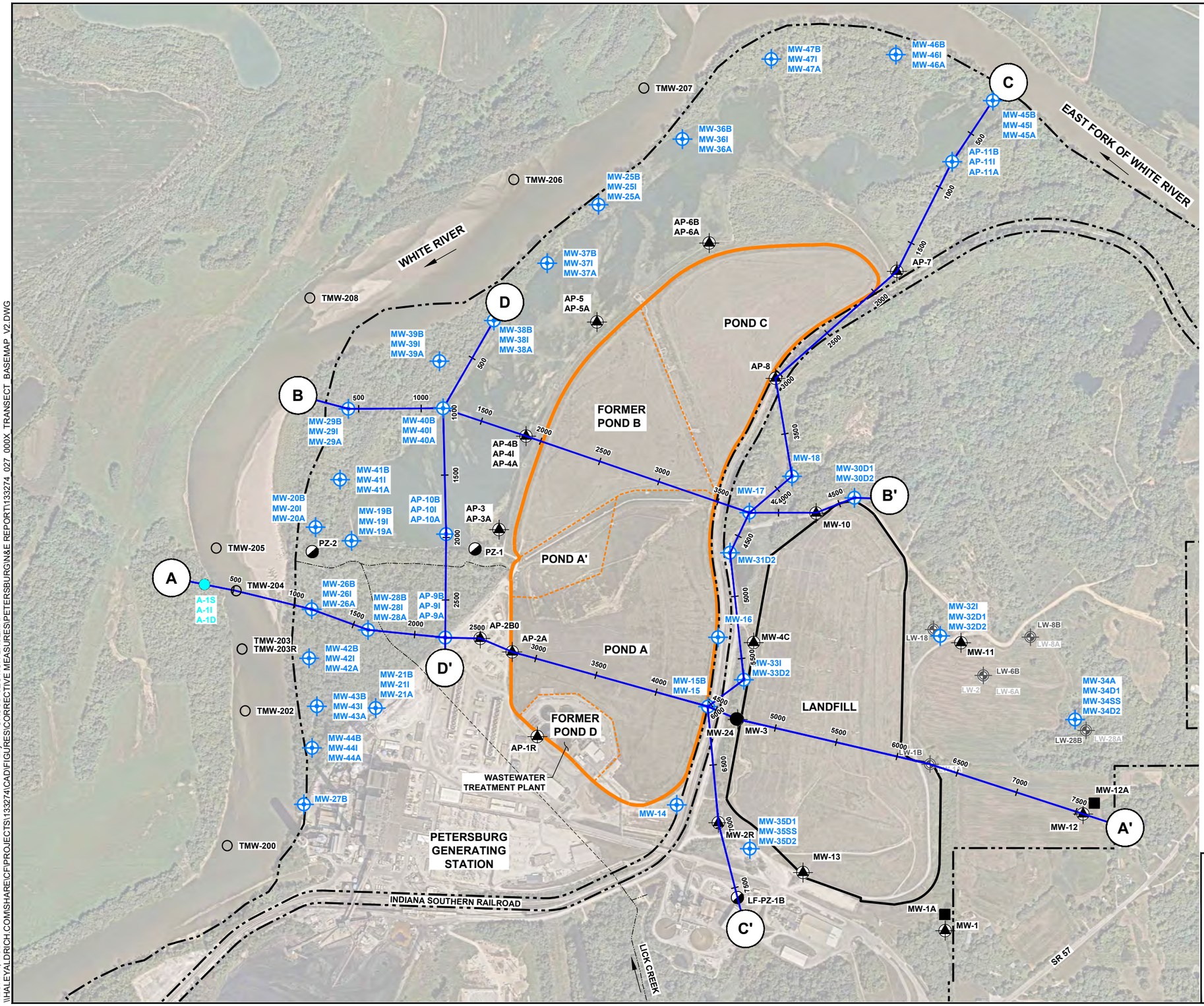
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

LANDFILL EXTENTS AND MINEWORKS INVESTIGATION LOCATIONS

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 3

STOSS, TOM
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Layout: FIGURE_4
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\M&E REPORT\133274_027_0004_LF&MINE.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- 1991 LANDFILL OBSERVATION WELL
- BEDROCK MONITORING WELL
- GROUNDWATER SAMPLING LOCATION BENEATH WHITE RIVER
- TEMPORARY WELL LOCATION
- CROSS SECTION LOCATION WITH STATIONS (B — 7000 — B')

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

CROSS-SECTION TRANSECT MAP

AS SHOWN
DECEMBER 2025

FIGURE 4A

YEOMAN, ROB Saved: 11/17/2025 12:03 PM Layout: CROSS-SECTION BASEMAP
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_000X_TRANSECT_BASEMAP_V2.DWG

A

WEST

A'

EAST

POND A

LANDFILL

ELEVATION IN FEET

560
510
460
410
360
310

PROPERTY LINE

LICK CREEK

D-D'

C-C'

WHITE RIVER

A-1

TMW-204

MW-26B,I,A

MW-28B,I,A

AP-9A

AP-2B0

AP-2A

PZ-4

MW-15,B

MW-24

LW-1A

MW-12,A

< 1 | < 20 | < 10

2.1 | < 20 | 660

2.0 | < 20 | 1570

2.2 | 322 | 493

1.1 | < 20 | 609

1.4 | < 20 | 1280

2.2 | < 20 | 127

11.5 | 49.1 | 1430

1.3 | 24.6 | 1700

3.0 | < 20 | 459

1000 | 59.2 | 943

1.6 | 588 | < 20

< 1 | 665 | 106

< 1 | 1230 | 383

10.2 | < 20 | < 10

< 1 | < 20 | < 10

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000

DISTANCE IN FEET

Vertical exaggeration: 10x

LEGEND

- Landfill Material
- CCR Material
- Fill
- Fine-Grained Alluvium
- Upper Outwash Sand & Gravel
- Lower Outwash Sand & Gravel
- Fine-Grained Sediments
- Weathered Bedrock
- Bedrock
- Black Shale
- Coal

SUBSURFACE PROFILES DEPICT GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE CROSS SECTION ARE BASED UPON INTERPOLATION BETWEEN ADJACENT BORINGS.

ARSENIC CONCENTRATION

LITHIUM CONCENTRATION

MOLYBDENUM CONCENTRATION

10 | 40 | 100

ORANGE SHADING INDICATES CONCENTRATION ABOVE GROUNDWATER PROTECTION STANDARD

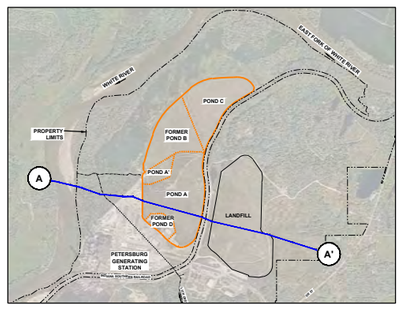
NOVEMBER 2024 ANALYTICAL RESULTS REPORTED IN (µg/L)

AP-2B0 ← WELL NAME

BORING LOCATION

SCREEN INTERVAL

INTERPRETED SHALLOW WATER TABLE 11/1/2024



CROSS SECTION KEY PLAN
LEGEND FOUND ON FIGURE 3A
SCALE: 1" = 4000'

HORIZ. 0 500 1,000

VERT. 0 50 100

SCALE IN FEET

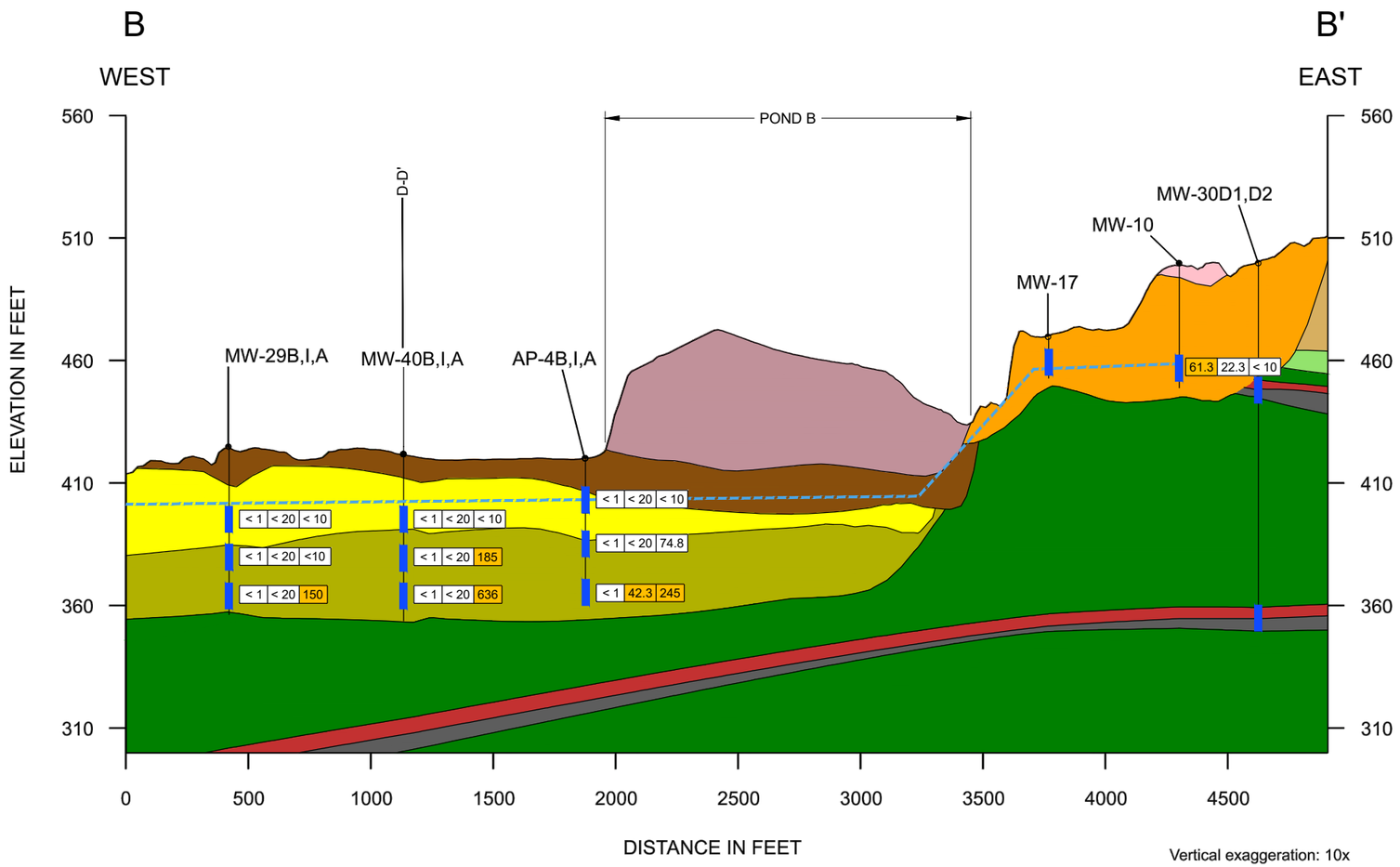
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GENERALIZED GEOLOGIC CROSS-SECTION A-A'

SCALE: AS SHOWN
DECEMBER 2025

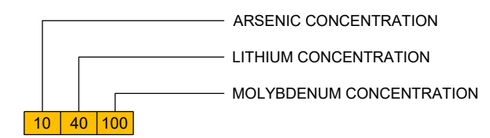
FIGURE 4B



LEGEND

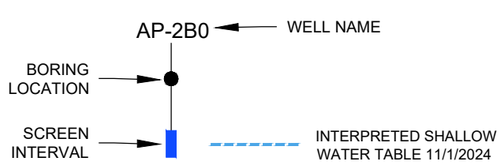
- Landfill Material
- CCR Material
- Fill
- Fine-Grained Alluvium
- Upper Outwash Sand & Gravel
- Lower Outwash Sand & Gravel
- Fine-Grained Sediments
- Weathered Bedrock
- Bedrock
- Black Shale
- Coal

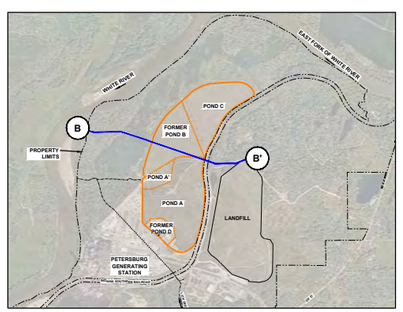
SUBSURFACE PROFILES DEPICT GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE CROSS SECTION ARE BASED UPON INTERPOLATION BETWEEN ADJACENT BORINGS.



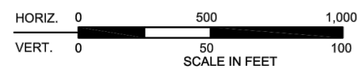
ORANGE SHADING INDICATES CONCENTRATION ABOVE GROUNDWATER PROTECTION STANDARD

NOVEMBER 2024 ANALYTICAL RESULTS REPORTED IN (µg/L)





CROSS SECTION KEY PLAN
LEGEND FOUND ON FIGURE 3A
SCALE: 1" = 4000'



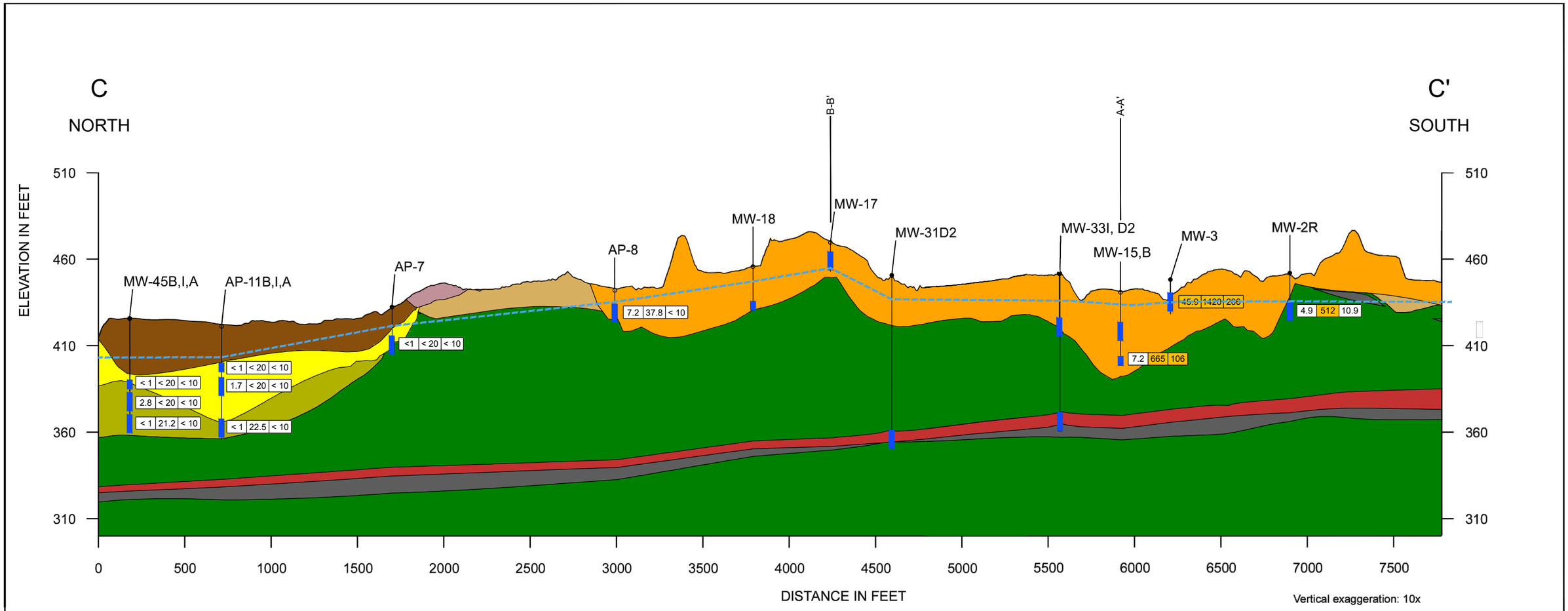
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GENERALIZED GEOLOGIC CROSS-SECTION B-B'

SCALE: AS SHOWN
DECEMBER 2025

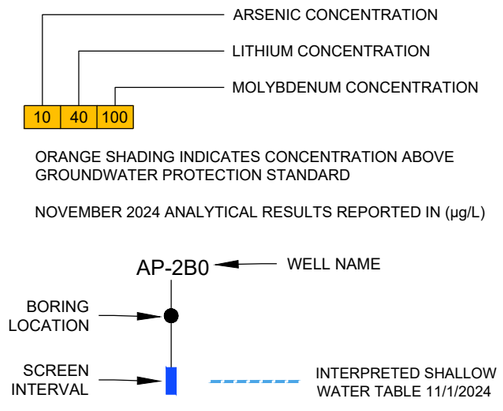
FIGURE 4C

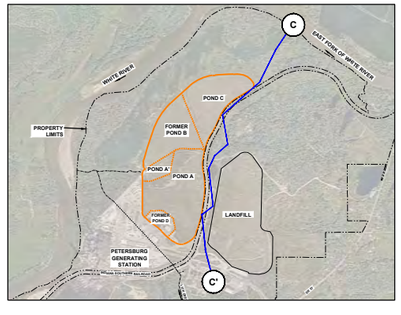


LEGEND

- CCR Material
- Fill
- Fine-Grained Alluvium
- Upper Outwash Sand & Gravel
- Lower Outwash Sand & Gravel
- Fine-Grained Sediments
- Bedrock
- Black Shale
- Coal

SUBSURFACE PROFILES DEPICT GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE CROSS SECTION ARE BASED UPON INTERPOLATION BETWEEN ADJACENT BORINGS.





CROSS SECTION KEY PLAN
LEGEND FOUND ON FIGURE 3A
SCALE: 1" = 4000'

HORIZ. 0 500 1,000
VERT. 0 50 100
SCALE IN FEET

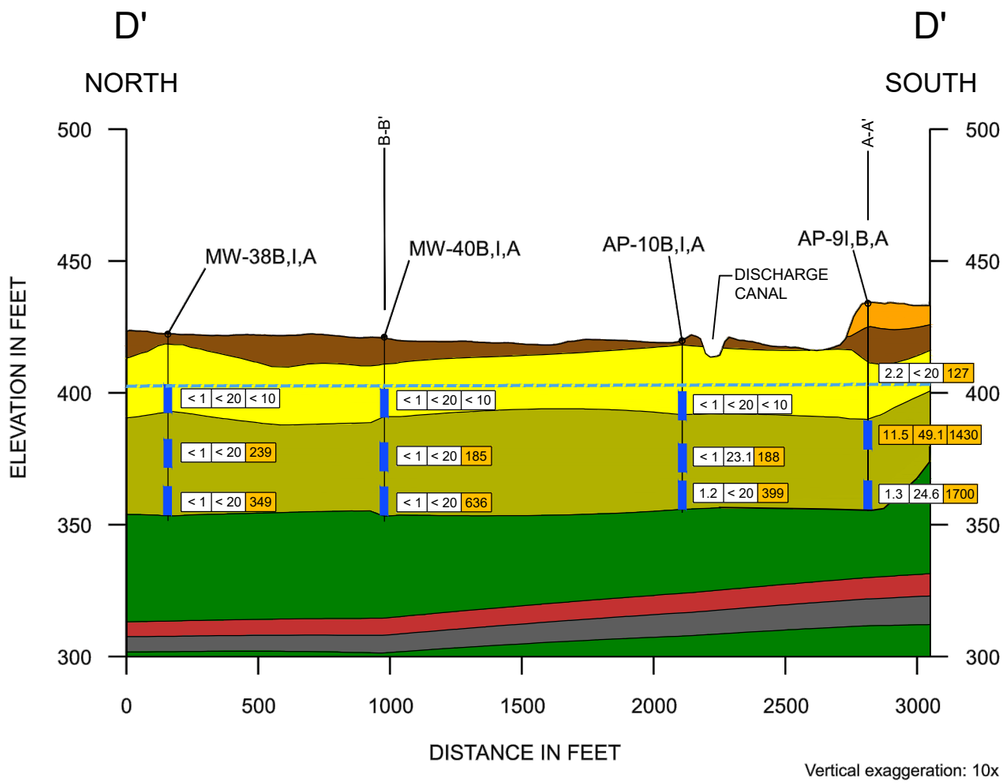
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GENERALIZED GEOLOGIC CROSS-SECTION C-C'

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 4D

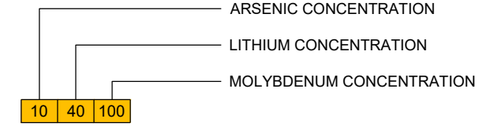


Vertical exaggeration: 10x

LEGEND

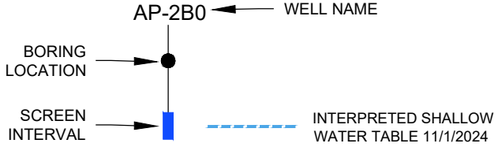
- Fill
- Fine-Grained Alluvium
- Upper Outwash Sand & Gravel
- Lower Outwash Sand & Gravel
- Bedrock
- Black Shale
- Coal

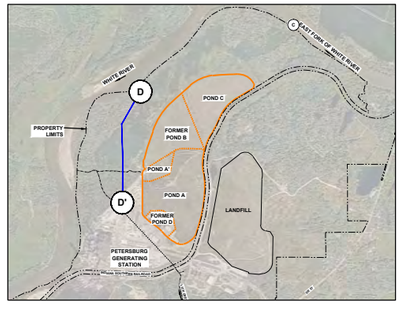
SUBSURFACE PROFILES DEPICT GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE CROSS SECTION ARE BASED UPON INTERPOLATION BETWEEN ADJACENT BORINGS.



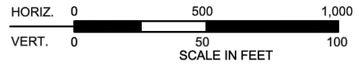
ORANGE SHADING INDICATES CONCENTRATION ABOVE GROUNDWATER PROTECTION STANDARD

NOVEMBER 2024 ANALYTICAL RESULTS REPORTED IN (µg/L)





CROSS SECTION KEY PLAN
LEGEND FOUND ON FIGURE 3A
SCALE: 1" = 4000'



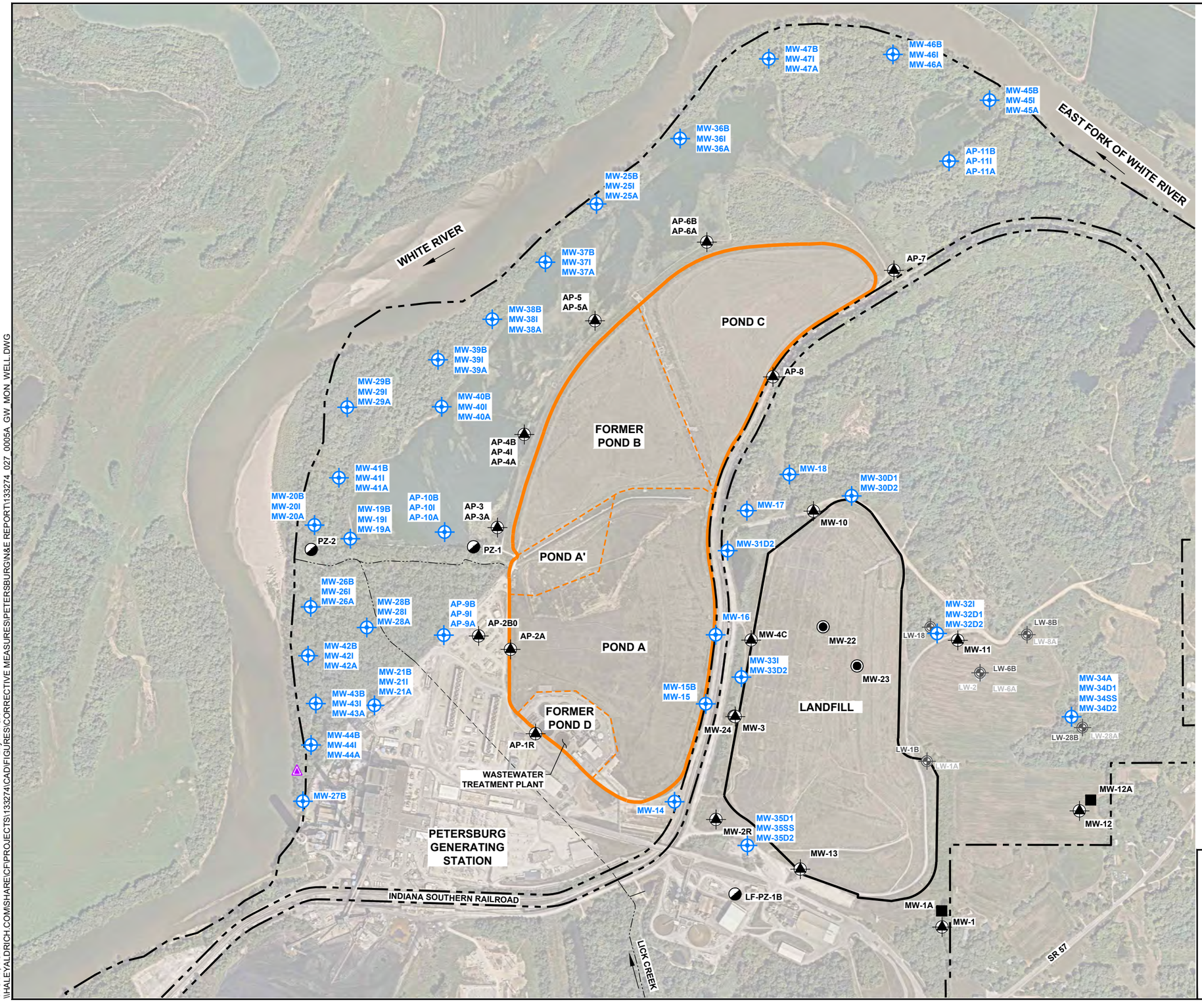
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GENERALIZED GEOLOGIC CROSS-SECTION D-D'

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 4E



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- USGS STAFF GAUGE
- 1991 LANDFILL OBSERVATION WELL
- TEMPORARY MONITORING WELL
- BEDROCK MONITORING WELL

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

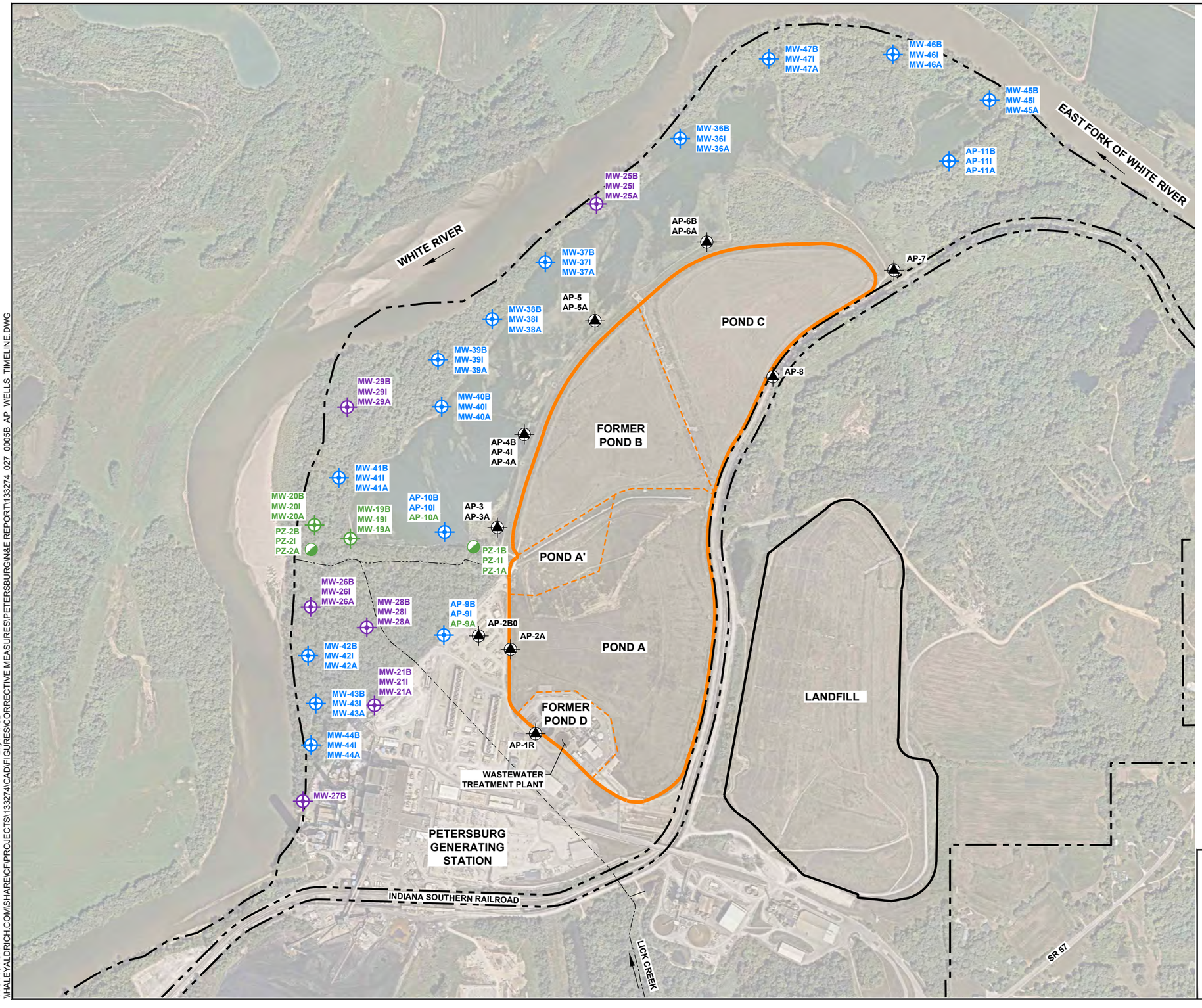
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

MONITORING WELL AND PIEZOMETER LOCATIONS

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 5A

STOSS, TOM
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Layout: 5A
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_0005A_GW_MON_WELL.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- AP-7 — CCR MONITORING WELL LOCATION INSTALLED IN 2014, 2016
- PZ-1 — PIEZOMETER LOCATION, INSTALLED IN 2020
- MW-20 — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2019, 2020
- MW-25 — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2021
- MW-36 — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2022

NOTE: AP-9A, AP-10A, AND AP-11A WERE INSTALLED IN 2020.

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

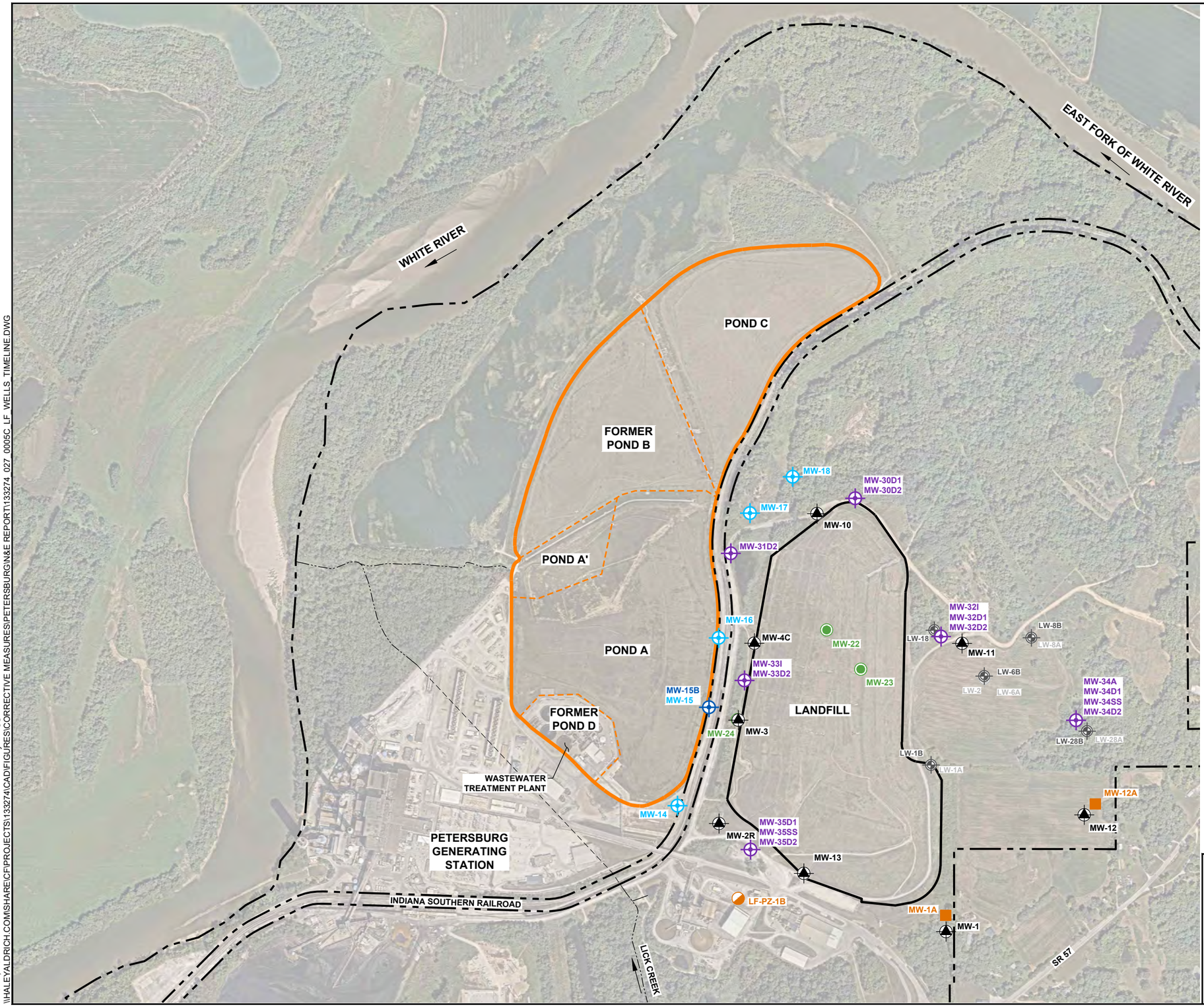
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

ASH POND SYSTEM GROUNDWATER MONITORING WELL INSTALLATION TIMELINE

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 5B

STOSS, TOM
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Layout: 5B
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_0005B AP_WELLS_TIMELINE.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL INSTALLED 1986 TO 2017
- LW-18 — LANDFILL OBSERVATION WELL, INSTALLED IN 1991
- MW-14 — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2019
- MW-22 — TEMPORARY MONITORING WELL, INSTALLED IN 2020
- MW-30D1 — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2021
- MW-15B — NATURE AND EXTENT MONITORING WELL INSTALLED IN 2022
- MW-1A — BEDROCK MONITORING WELL, INSTALLED IN 2023
- LF-PZ-1B — PIEZOMETER LOCATION, INSTALLED IN 2023

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

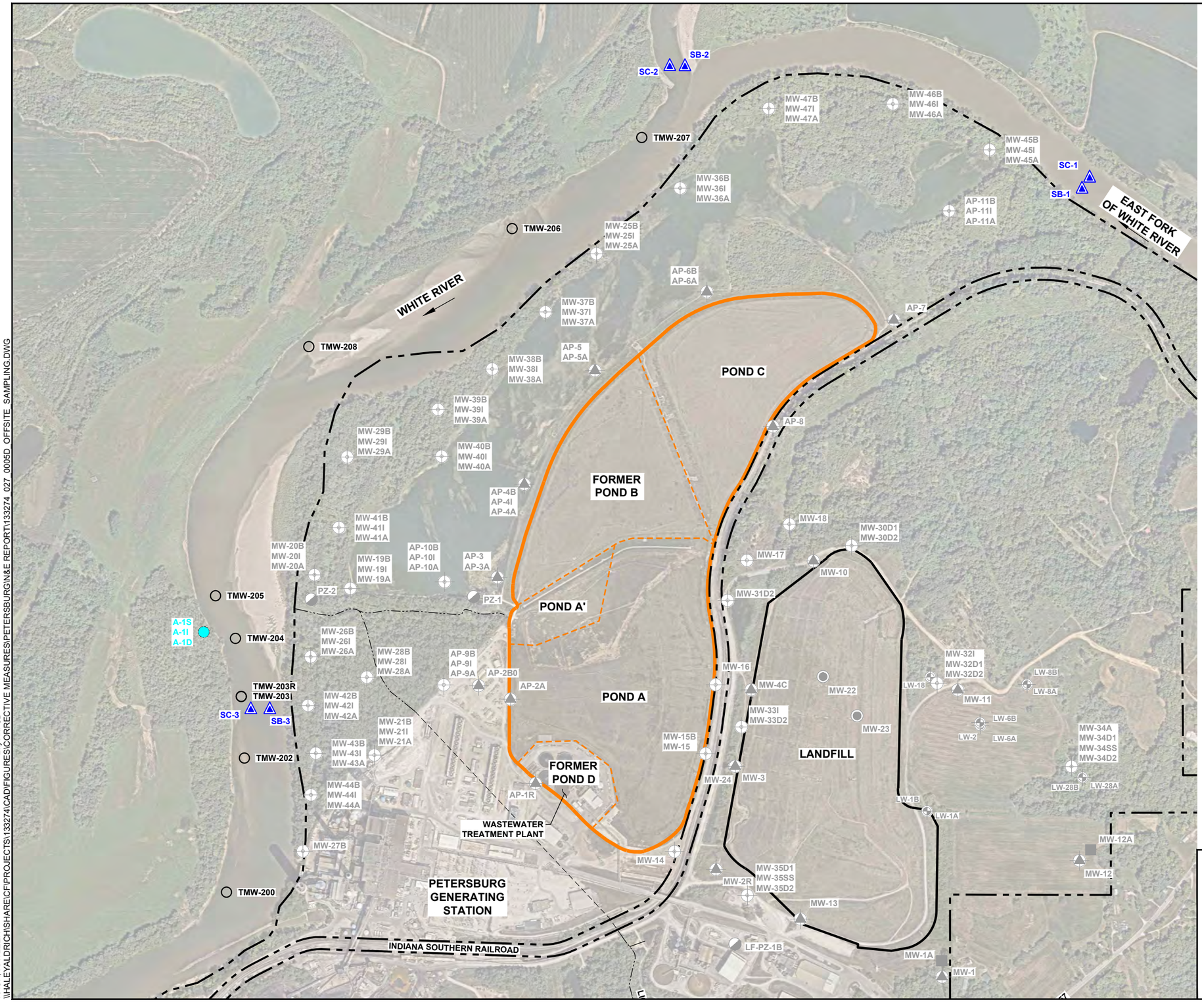
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

LANDFILL GROUNDWATER MONITORING WELL INSTALLATION TIMELINE

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 5C

STOSS, TOM
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Layout: 5C
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_0005C_LF_WELLS_TIMELINE.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL
- TMW-200 — GROUNDWATER SAMPLING LOCATION BENEATH WHITE RIVER
- SC-1 — SURFACE WATER SAMPLING LOCATION
- A-1 — TEMPORARY WELL LOCATION

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

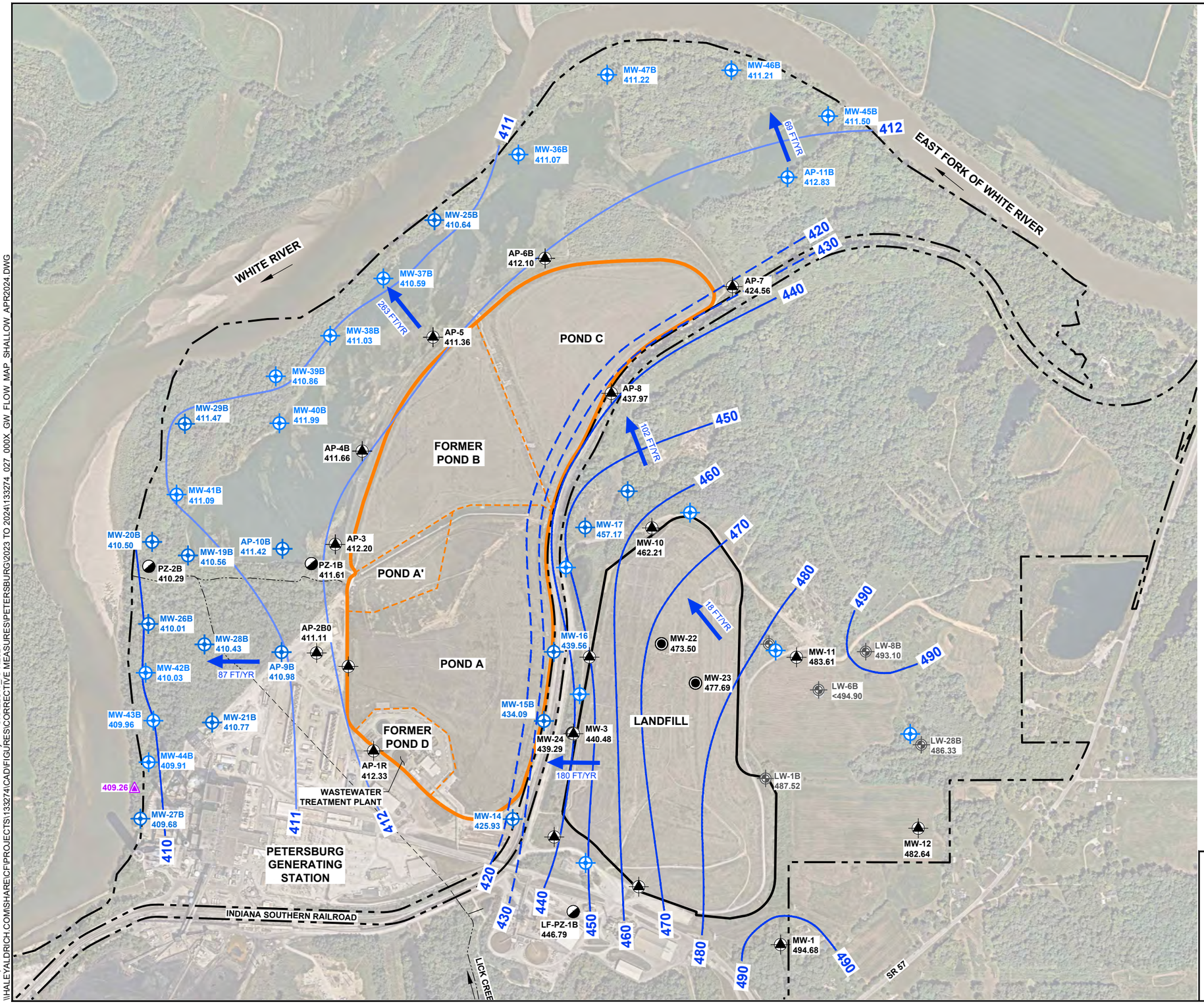
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

OFFSITE SAMPLING LOCATIONS

AS SHOWN
OCTOBER 2025

FIGURE 5D

KAUR, RAVLEEN Saved: 10/29/2025 1:25 PM Layout: 5D
\\HALEYALDRICH\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\N&E REPORT\133274_027_0005D_OFFSITE_SAMPLING.DWG



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- USGS STAFF GAUGE
- 1991 LANDFILL OBSERVATION WELL
- TEMPORARY MONITORING WELL
- 470 — 10-FT GROUNDWATER CONTOURS (DASHED WHERE INFERRED)
- 409 — 1-FT GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- 423.19 — GROUNDWATER ELEVATION IN FEET
- GROUNDWATER FLOW DIRECTION

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. AERIAL IMAGE FROM BING MAPS.
3. WELL DESIGNATION:
   - B = SHALLOW WELL
3. CCR = COAL COMBUSTION RESIDUALS
4. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024

0 800 1600
SCALE IN FEET

HALEY ALDRICH

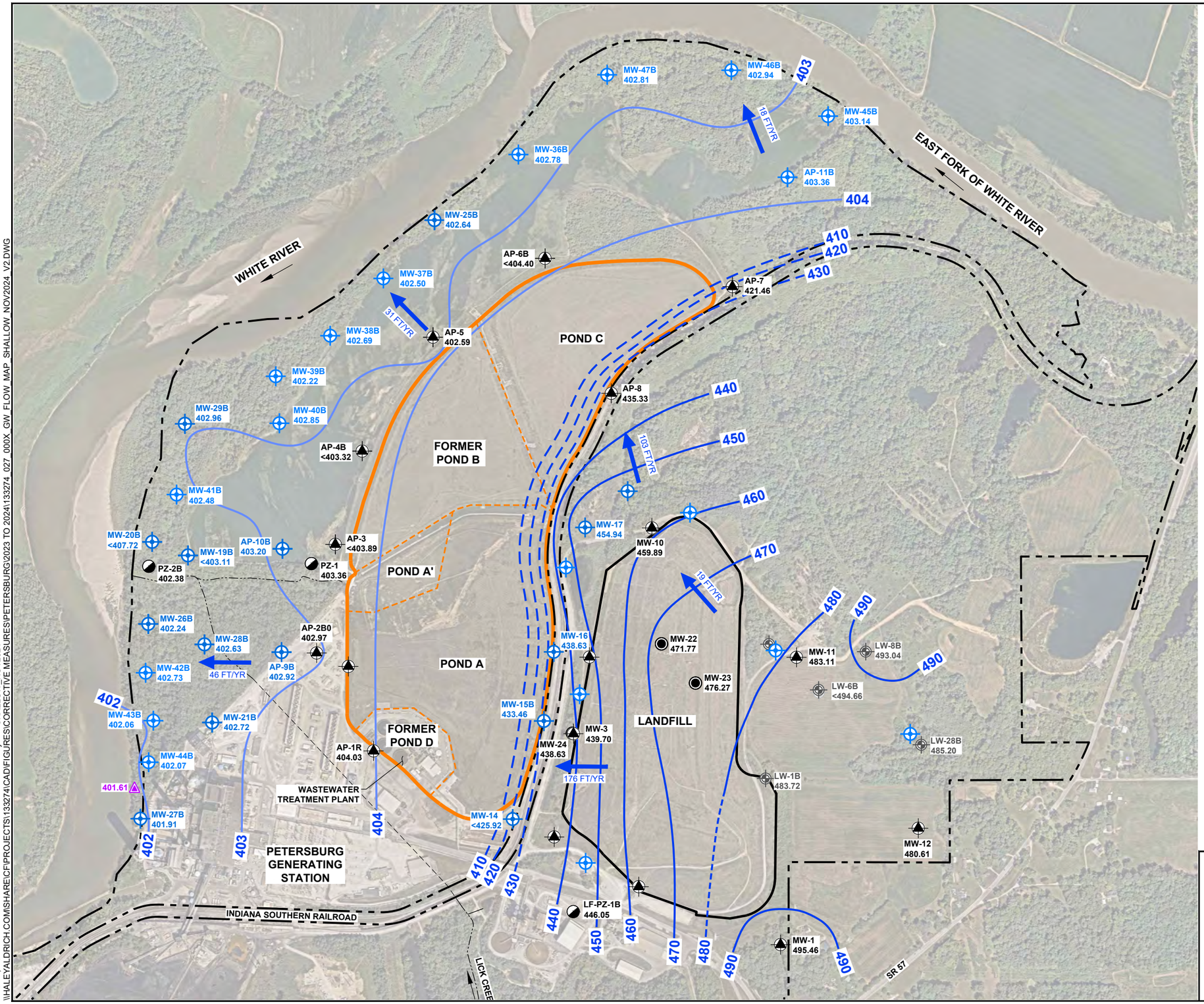
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GROUNDWATER FLOW MAP SHALLOW ZONE (APRIL 30, 2024)

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 6A

STOSS, TOM
Saved: 3/3/2025 12:49 PM
Layout: SHALLOW_APR2024
\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\133274\CADFIGURES\CORRECTIVE MEASURES\PETERSBURG\2023 TO 2024\133274_027_000X_GW_FLOW_MAP_SHALLOW_APR2024.DWG



LEGEND

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- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
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3. WELL DESIGNATION:
   - B = SHALLOW WELL
3. CCR = COAL COMBUSTION RESIDUALS
4. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

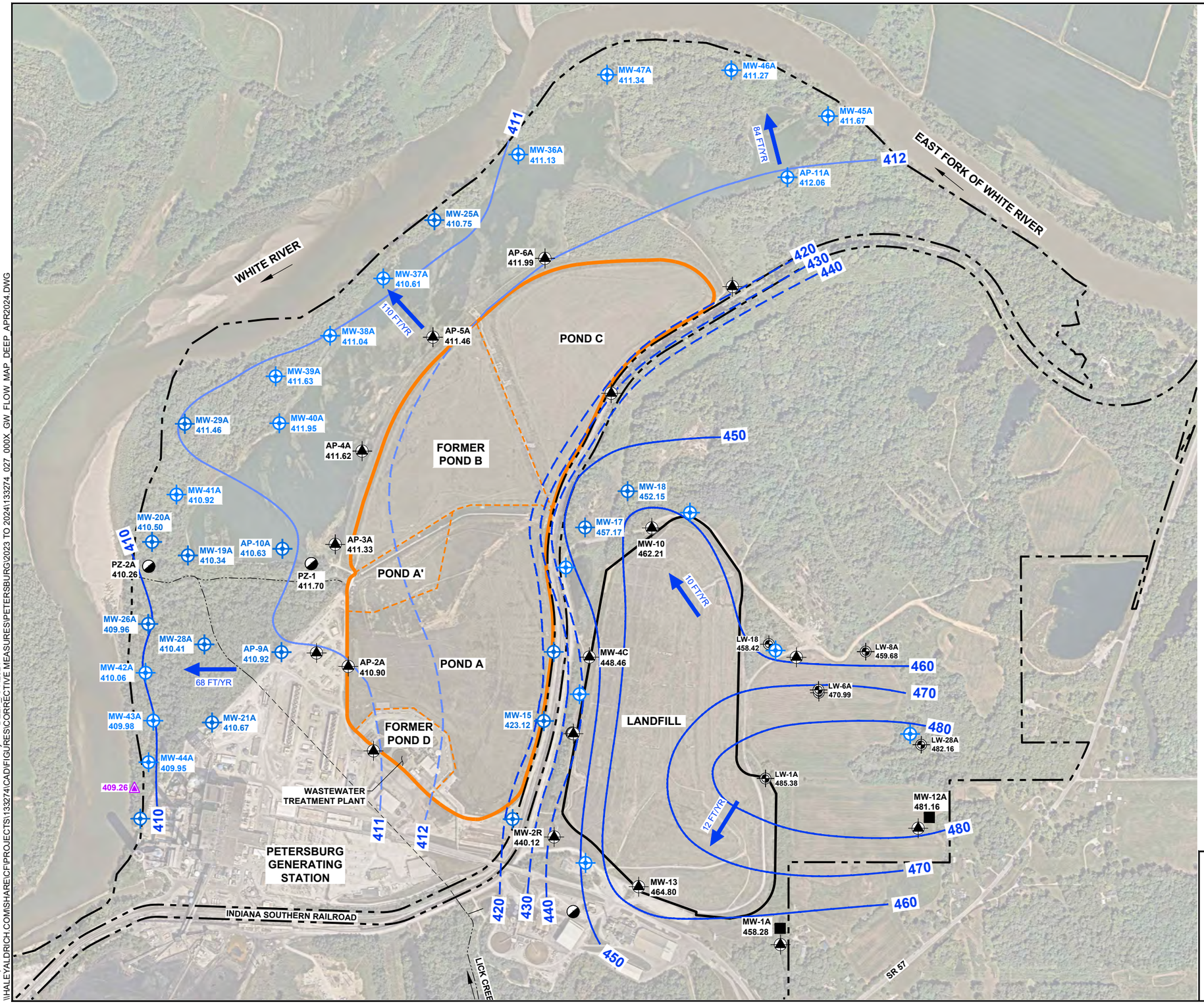
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GROUNDWATER FLOW MAP SHALLOW ZONE (NOVEMBER 1, 2024)

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 6B

STOSS, TOM
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADFIGURES\CORRECTIVE MEASURES\PETERSBURG\2023 TO 2024\133274_027_000X_GW_FLOW_MAP_SHALLOW_NOV2024_V2.DWG
Layout: SHALLOW_NOV2024
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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
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- 423.19 — GROUNDWATER ELEVATION IN FEET
- GROUNDWATER FLOW DIRECTION

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. AERIAL IMAGE FROM MICROSOFT BING MAPS.
3. WELL DESIGNATION:
   - A = DEEP WELL
3. CCR = COAL COMBUSTION RESIDUALS
4. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

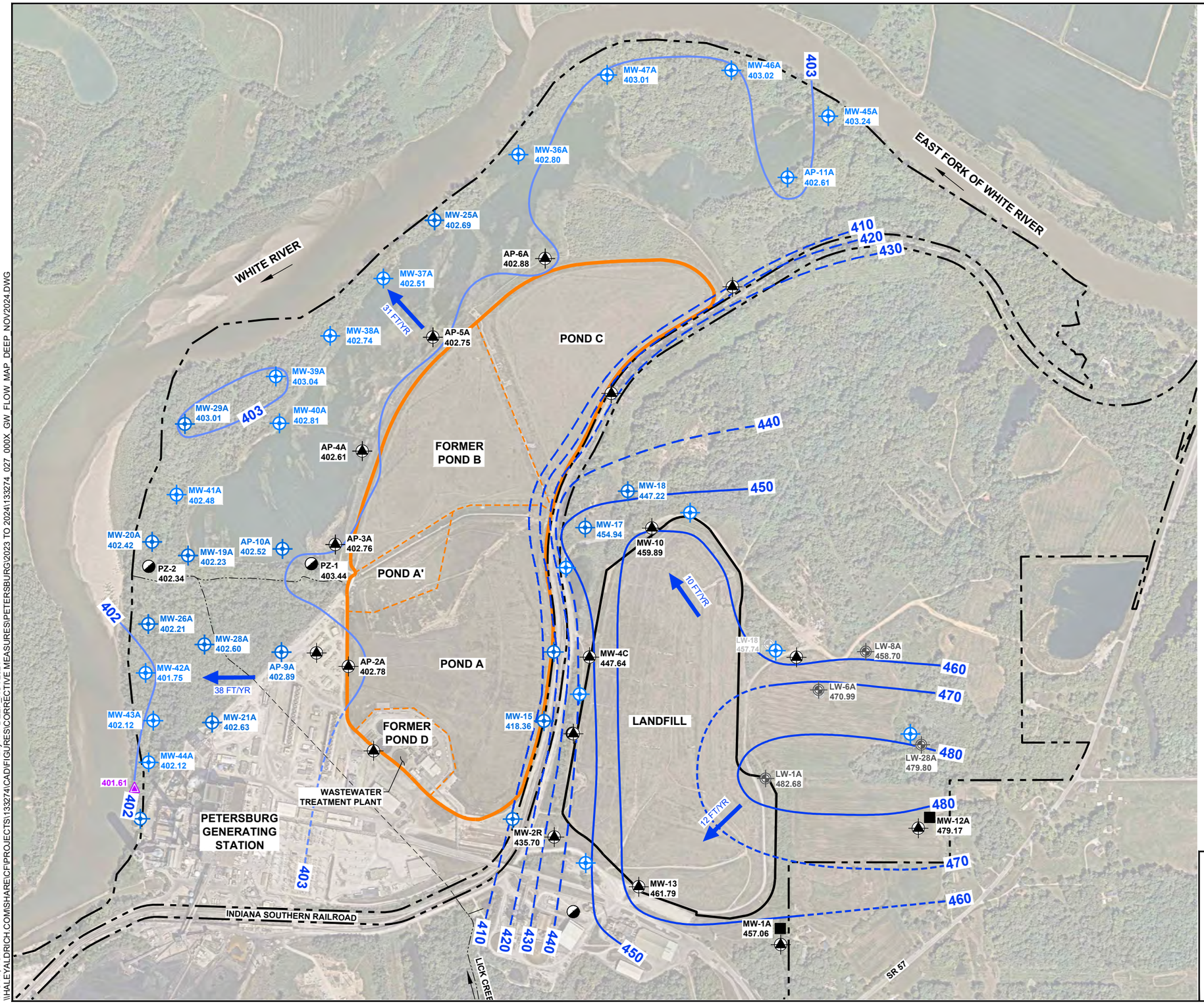
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GROUNDWATER FLOW MAP DEEP ZONE (APRIL 30, 2024)

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 6C

STOSS, TOM
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\2023 TO 2024\133274_027_000X_GW_FLOW_MAP_DEEP_APR2024.DWG
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Layout: DEEP_APR2024



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- USGS STAFF GAUGE
- 1991 LANDFILL OBSERVATION WELL
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- 423.19 — GROUNDWATER ELEVATION IN FEET
- GROUNDWATER FLOW DIRECTION

NOTES

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3. WELL DESIGNATION:
   - A = DEEP WELL
3. CCR = COAL COMBUSTION RESIDUALS
4. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

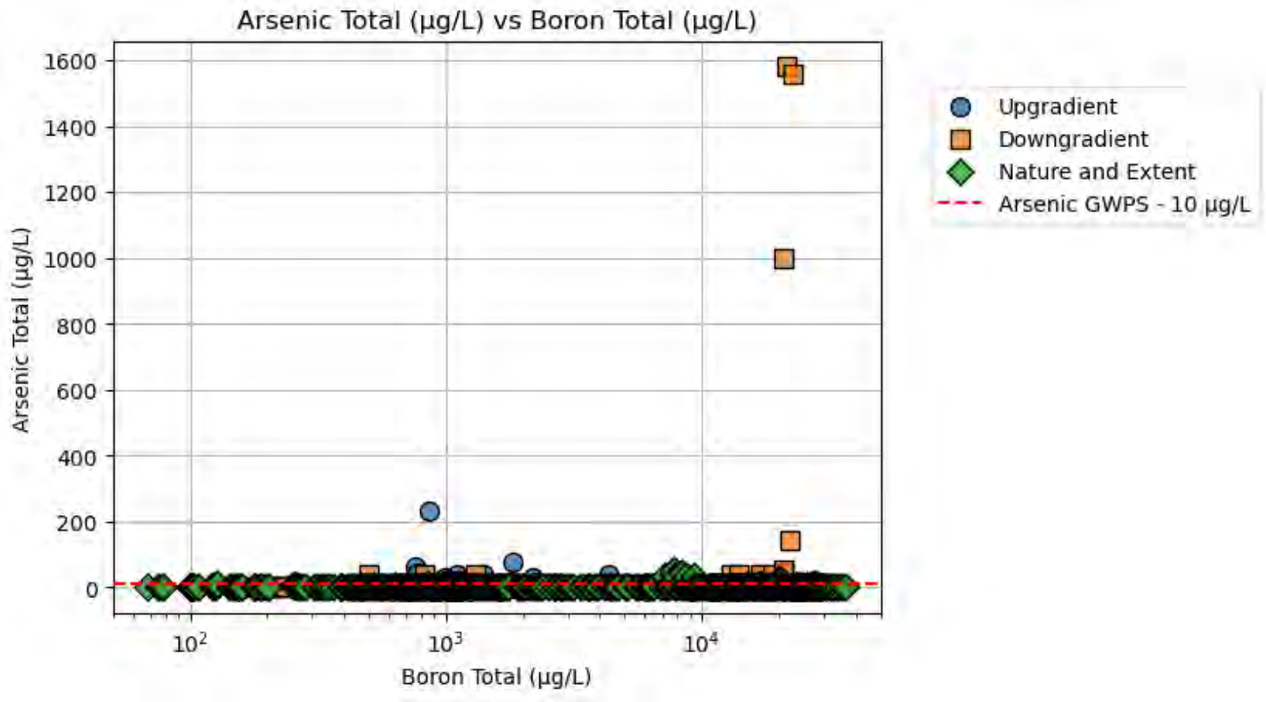
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

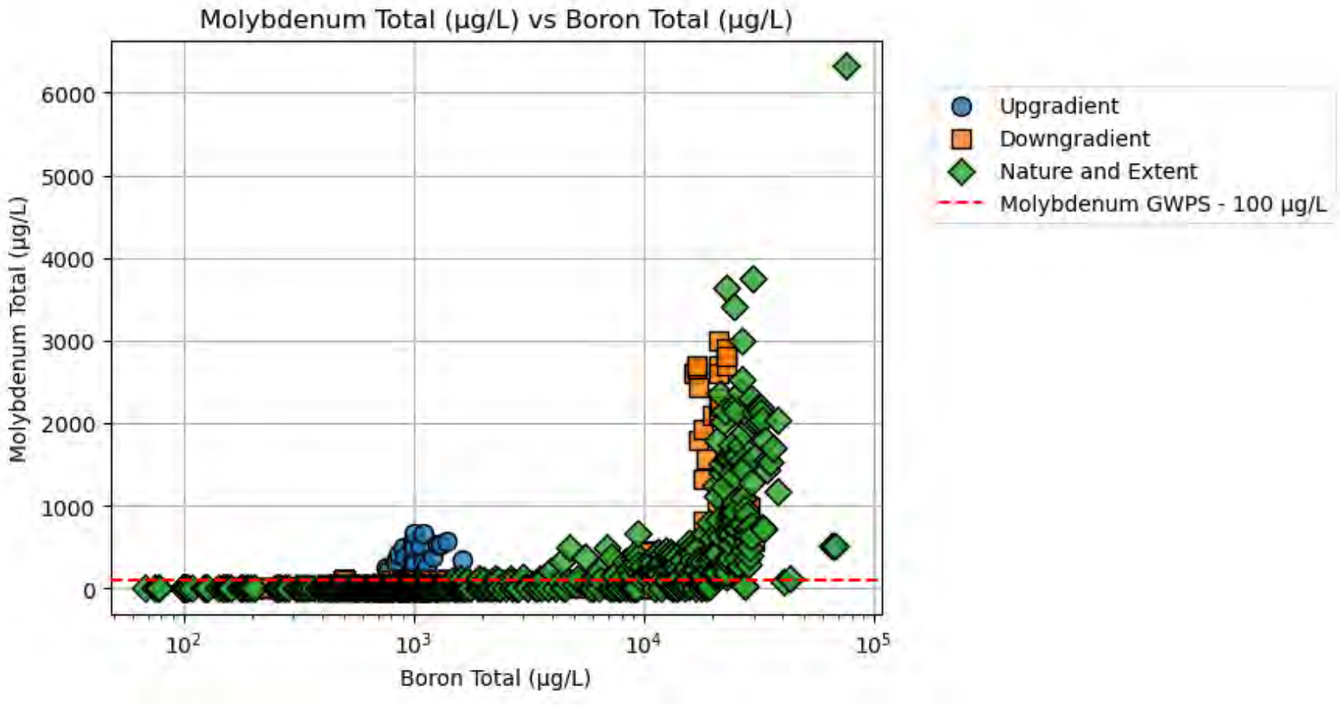
GROUNDWATER FLOW MAP DEEP ZONE (NOVEMBER 1, 2024)

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 6D

STOSS, TOM
Saved: 3/3/2025 12:51 PM
Layout: DEEP_NOV2024
\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\2023 TO 2024\133274_027_000X_GW_FLOW_MAP_DEEP_NOV2024.DWG





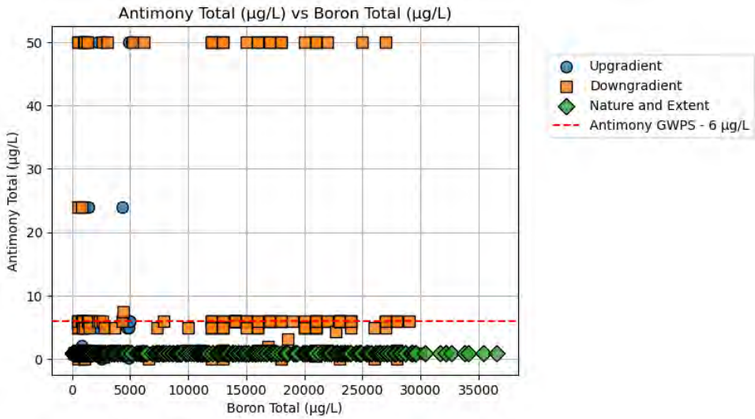
HALEY ALDRICH

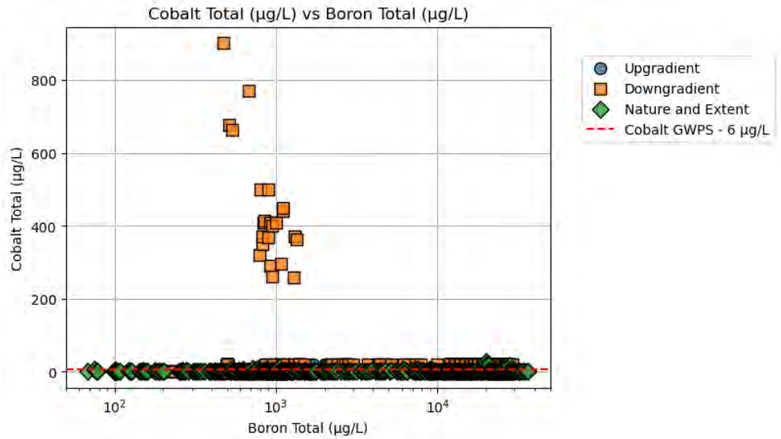
PETERSBURG GENERATING STATION
PETERBURG, INDIANA

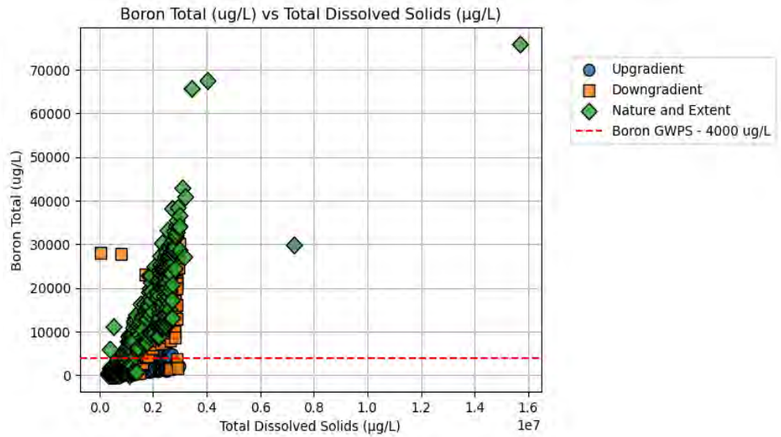
BIVARIATE PLOT
CONSTITUENTS WITH
STATISTICALLY SIGNIFICANT
LEVELS

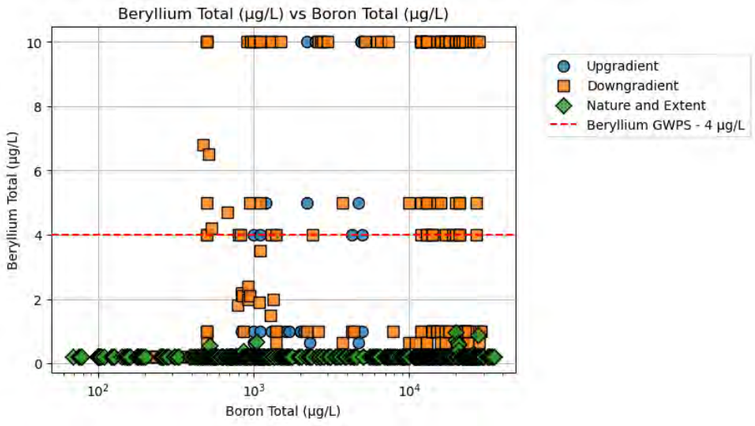
DECEMBER 2025

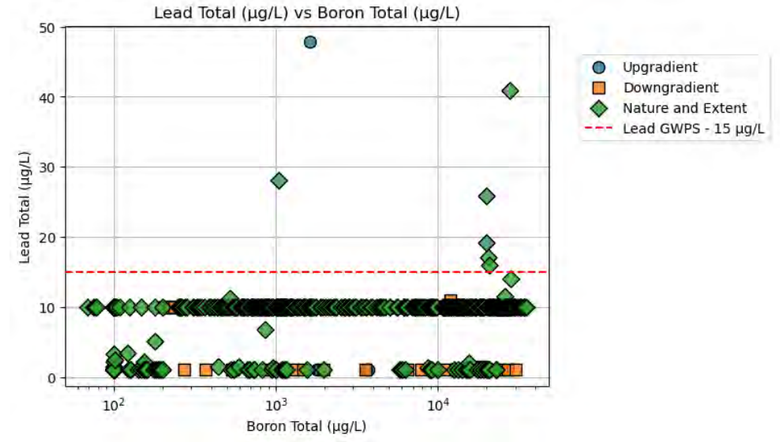
FIGURE 7A

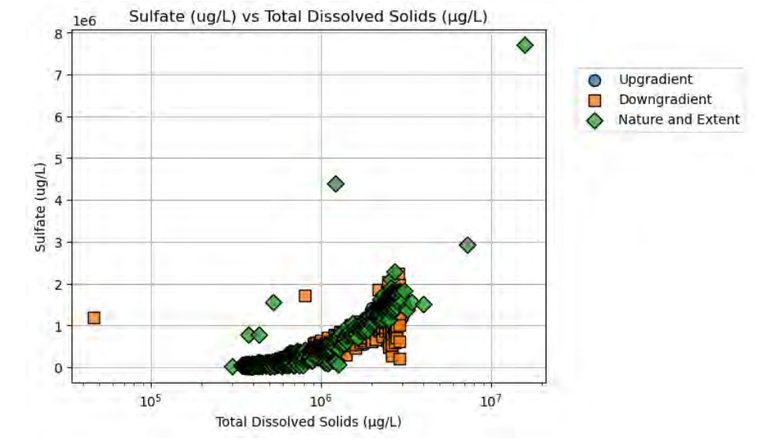


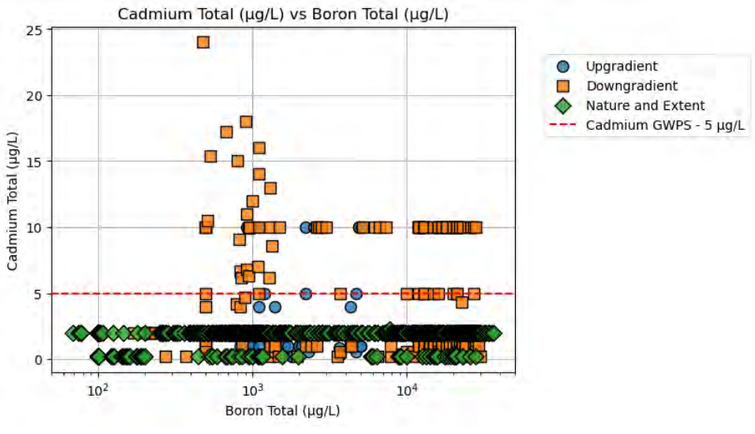


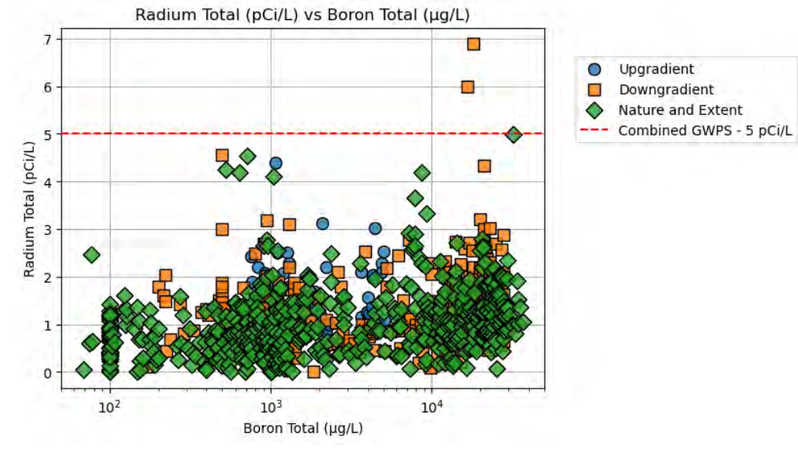












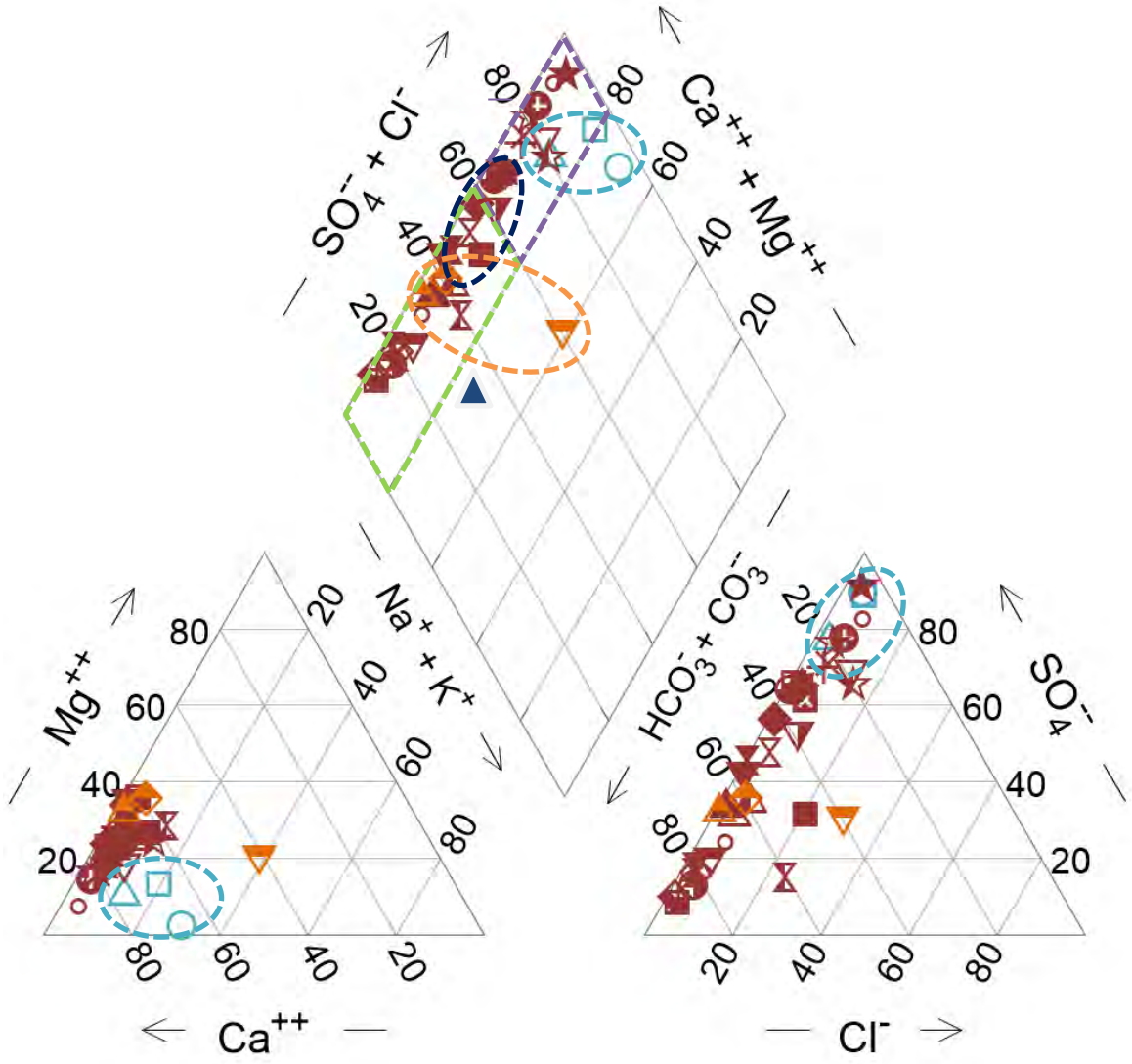
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERBURG, INDIANA

BIVARIATE PLOT CONSTITUENTS WITH CONCENTRATIONS GREATER THAN THE GWPS

DECEMBER 2025

FIGURE 7B



% meq/kg

WHITE RIVER

White River 04/18/2022

BACKGROUND

- MW–2R 5/2/2024
- MW–3 5/12/2024
- MW–4C 5/12/2024

LANDFILL BACKGROUND

- MW–1 5/1/2024
- MW–1A 5/2/2024
- MW–12A 5/3/2024

Ash Pond System Background Wells (calcium-sulfate water type)

Landfill Background Wells (calcium-bicarbonate water type)

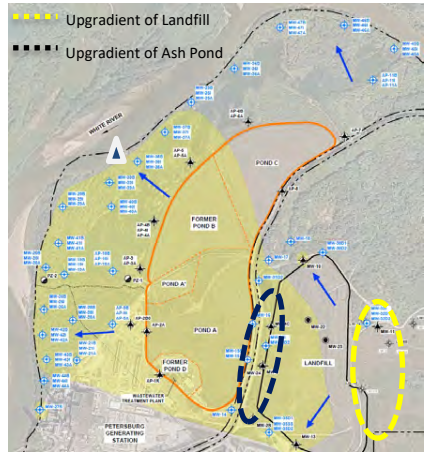
Calcium-sulfate water type (Affected water)

Mixing between calcium bicarbonate and calcium sulfate water types

Calcium-bicarbonate water type (Typically, unaffected water)

SHALLOW ZONE

- AP–2BO 5/7/2024
- AP–1R 5/5/2024
- AP–3 5/5/2024
- AP–5 5/8/2024
- AP–6B 5/12/2024
- AP–7 5/9/2024
- AP–8 5/9/2024
- AP–9B 2/15/2024
- AP–9B 5/7/2024
- AP–10B 5/10/2024
- AP–11B 2/14/2024
- AP–11B 5/20/2024
- MW–19B 5/8/2024
- MW–20B 5/24/2024
- MW–21B 5/9/2024
- MW–25B 5/20/2024
- MW–26B 6/11/2024
- MW–27B 6/11/2024
- MW–28B 6/11/2024
- MW–29B 5/10/2024
- MW–36B 5/23/2024
- MW–37B 5/13/2024
- MW–38B 5/15/2024
- MW–39B 5/15/2024
- MW–41B 5/2/2024
- MW–42B 6/7/2024
- MW–43B 6/6/2024
- MW–44B 6/5/2024
- MW–45B 5/21/2024
- MW–46B 5/21/2024
- MW–47B 5/22/2024



***Note**: Landfill background wells are included as they are upgradient of the Ash Pond System and the Landfill and are more represented of an unaffected water type.*

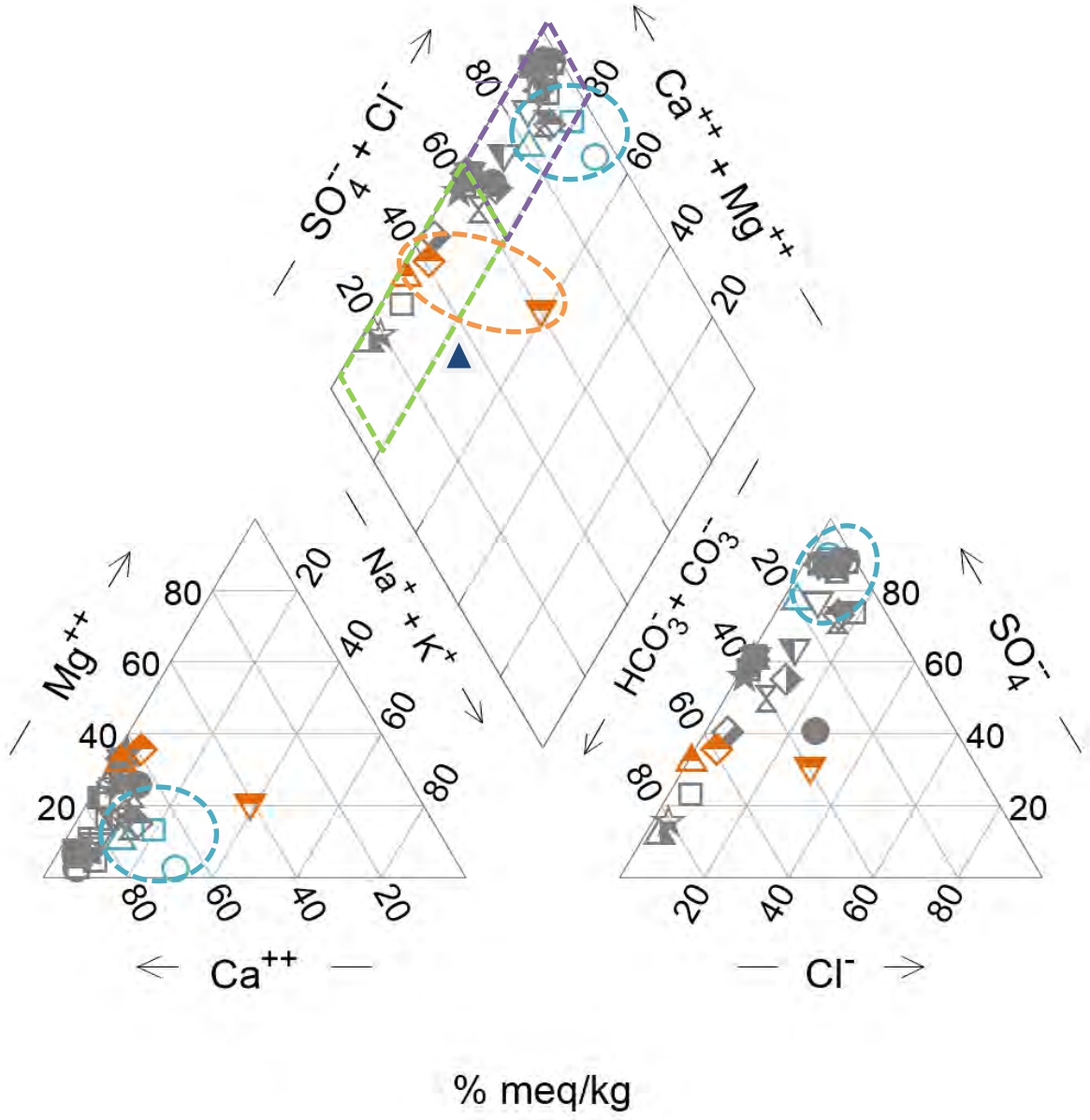
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM - SHALLOW

DECEMBER 2025

FIGURE 8A



WHITE RIVER

White River 04/18/2022

BACKGROUND

- MW–2R 5/2/2024
- MW–3 5/12/2024
- MW–4C 5/12/2024

LANDFILL BACKGROUND

- MW–1 5/1/2024
- MW–1A 5/2/2024
- MW–12A 5/3/2024

Ash Pond System Background Wells (calcium-sulfate water type)

Landfill Background Wells (calcium-bicarbonate water type)

Ash Pond Intermediate Wells dominated by a calcium-sulfate water type

Calcium-bicarbonate water type (Typically, unaffected Water)

INTERMEDIATE ZONE

- AP–4I 5/6/2024
- AP–9I 2/15/2024
- AP–9I 5/7/2024
- AP–10I 2/13/2024
- AP–10I 5/9/2024
- AP–11I 2/14/2024
- AP–11I 5/13/2024
- MW–19I 5/8/2024
- MW–20I 5/24/2024
- MW–21I 5/9/2024
- MW–38I 5/15/2024
- MW–39I 5/15/2024
- MW–41I 5/2/2024
- MW–42I 6/7/2024
- MW–43I 6/6/2024
- MW–44I 6/5/2024
- MW–45I 5/21/2024
- MW–46I 5/22/2024
- MW–47I 5/22/2024
- MW–25I 5/21/2024
- MW–26I 6/10/2024
- MW–28I 6/12/2024
- MW–29I 5/10/2024
- MW–36I 5/23/2024
- MW–37I 5/13/2024
- MW–40I 5/13/2024

***Note**: Landfill background wells are included as they are upgradient of the Ash Pond System and the Landfill and are more represented of an unaffected water type.*

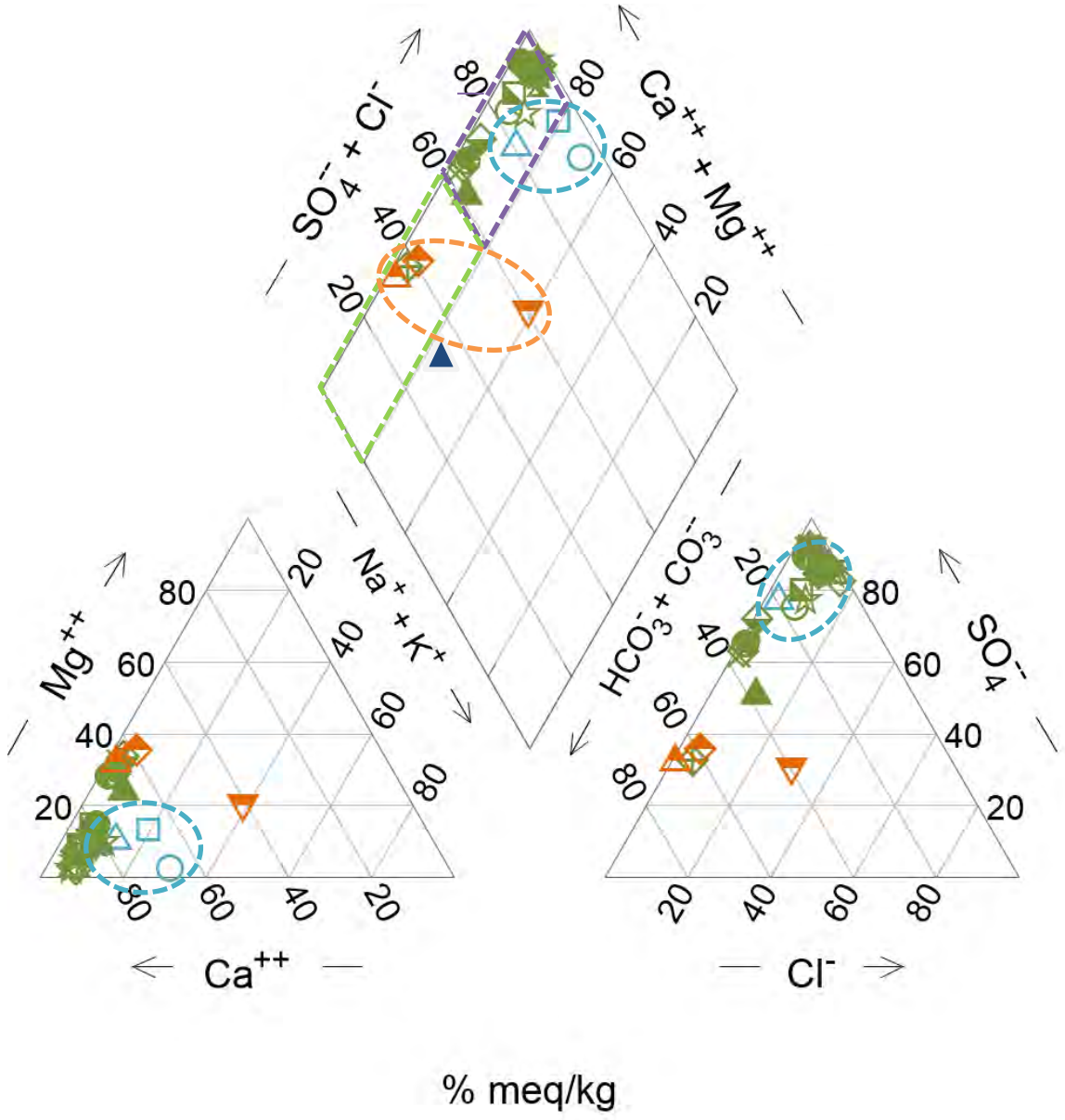
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM - INTERMEDIATE

DECEMBER 2025

FIGURE 8B



WHITE RIVER

White River 04/18/2022

BACKGROUND

- MW–2R 5/2/2024
- MW–3 5/12/2024
- MW–4C 5/12/2024

LANDFILL BACKGROUND

- MW–1 5/1/2024
- MW–1A 5/2/2024
- MW–12A 5/3/2024

DEEP ZONE

- AP–2A 5/7/2024
- AP–3A 5/6/2024
- AP–4A 5/6/2024
- AP–5A 5/8/2024
- AP–6A 5/8/2024
- AP–9A 5/8/2024
- AP–10A 5/9/2024
- AP–11A 5/13/2024
- MW–19A 5/8/2024
- MW–21A 5/9/2024
- MW–25A 5/20/2024
- MW–26A 6/10/2024
- MW–28A 6/11/2024
- MW–29A 5/10/2024
- MW–36A 5/23/2024
- MW–37A 5/13/2024
- MW–38A 5/15/2024
- MW–39A 5/15/2024
- MW–39A 5/14/2024
- MW–40A 5/13/2024
- MW–41A 5/2/2024
- MW–42A 6/7/2024
- MW–43A 6/6/2024
- MW–44A 6/5/2024
- MW–45A 5/20/2024
- MW–46A 5/22/2024
- MW–47A 5/22/2024

Ash Pond System Background Wells (calcium-sulfate water type)

Landfill Background Wells (calcium-bicarbonate water type)

Ash Pond Deep Wells dominated by a calcium-sulfate water type

Calcium-bicarbonate water type

***Note**: Landfill background wells are included as they are upgradient of the Ash Pond System and the Landfill and are more represented of an unaffected water type.*

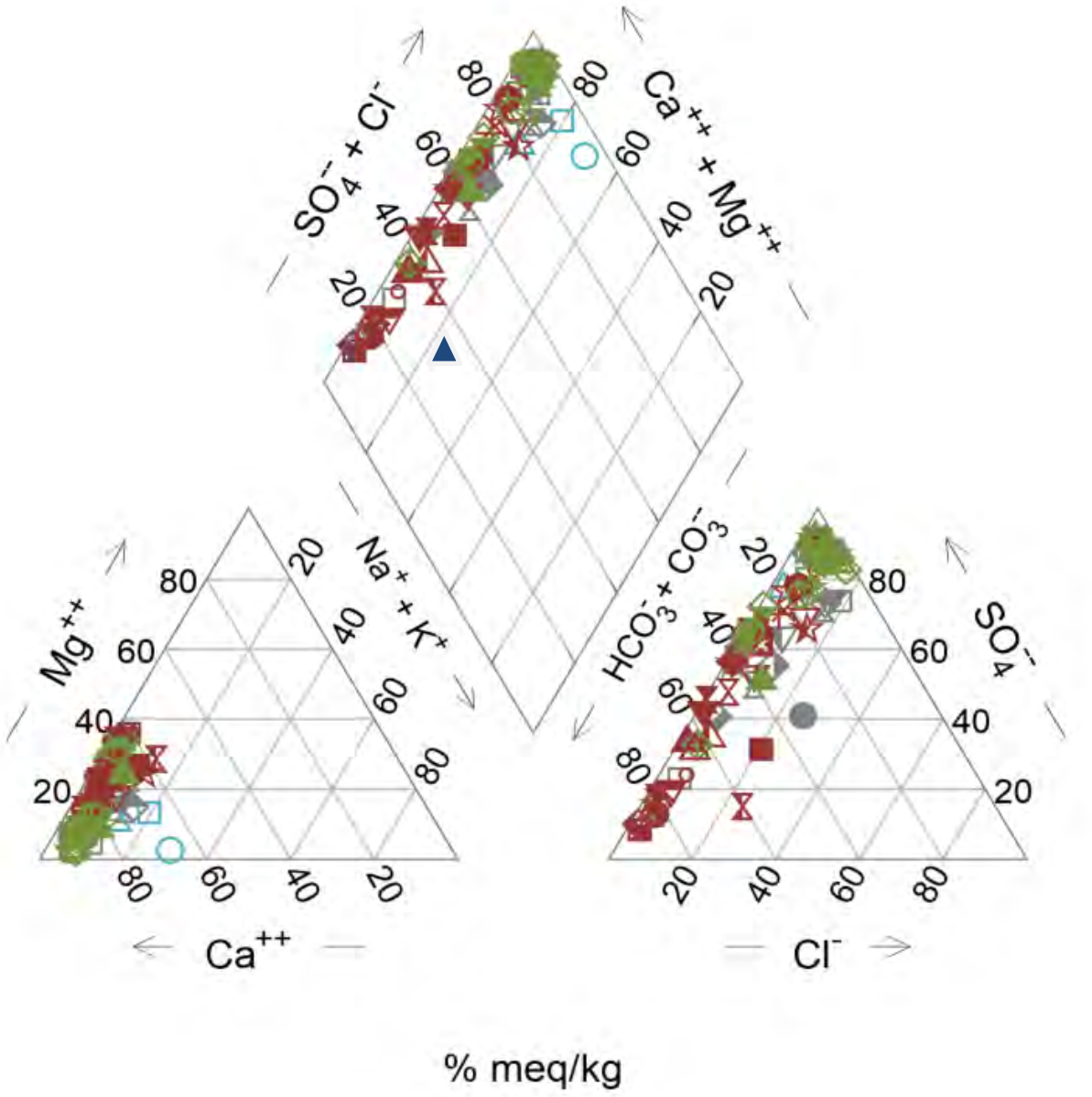
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM - DEEP

SEPTEMBER 2025

FIGURE 8C



BACKGROUND

SHALLOW

INTERMEDIATE

DEEP

▲ WHITE RIVER
04/18/2022

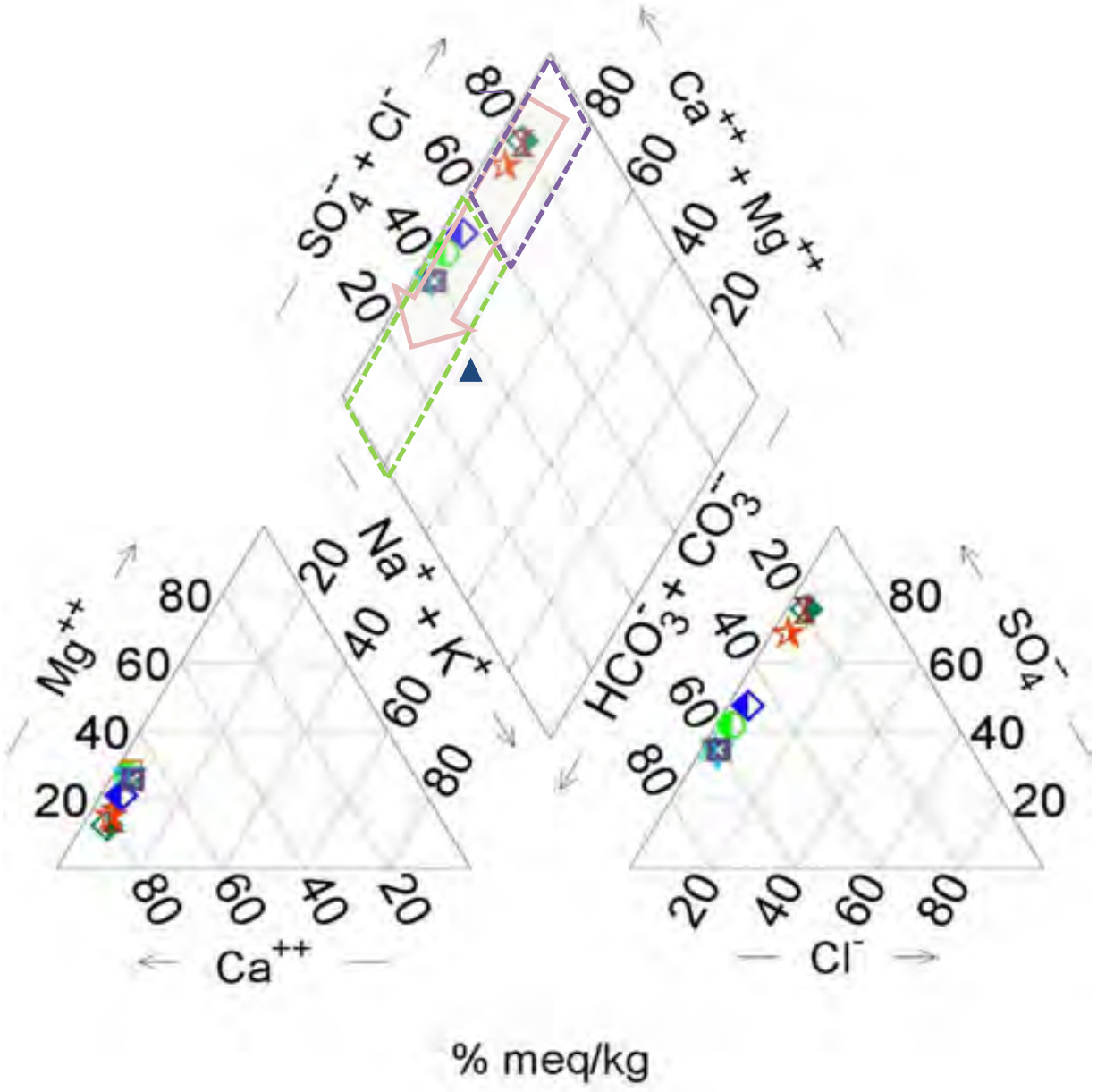
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM – NOVEMBER 2024

DECEMBER 2025

FIGURE 8D



LEGEND AP-3

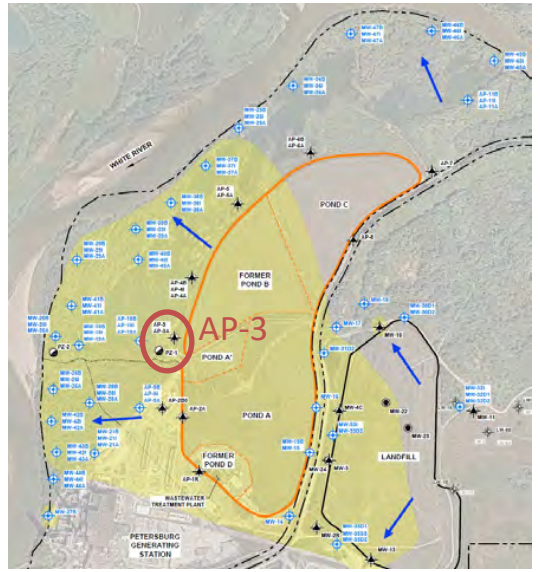
- AP–3 5/8/2021
- AP–3 11/7/2021
- AP–3 5/15/2022
- AP–3 11/2/2022
- AP–3 5/3/2023
- AP–3 11/15/2023
- AP–3 5/5/2024
- AP–3 11/04/2024

White River 04/18/2022

AP-3: Calcium-sulfate water type 2019 - 2021.

AP-3: Calcium-bicarbonate water type 2022 – 2024.

Temporal Trend



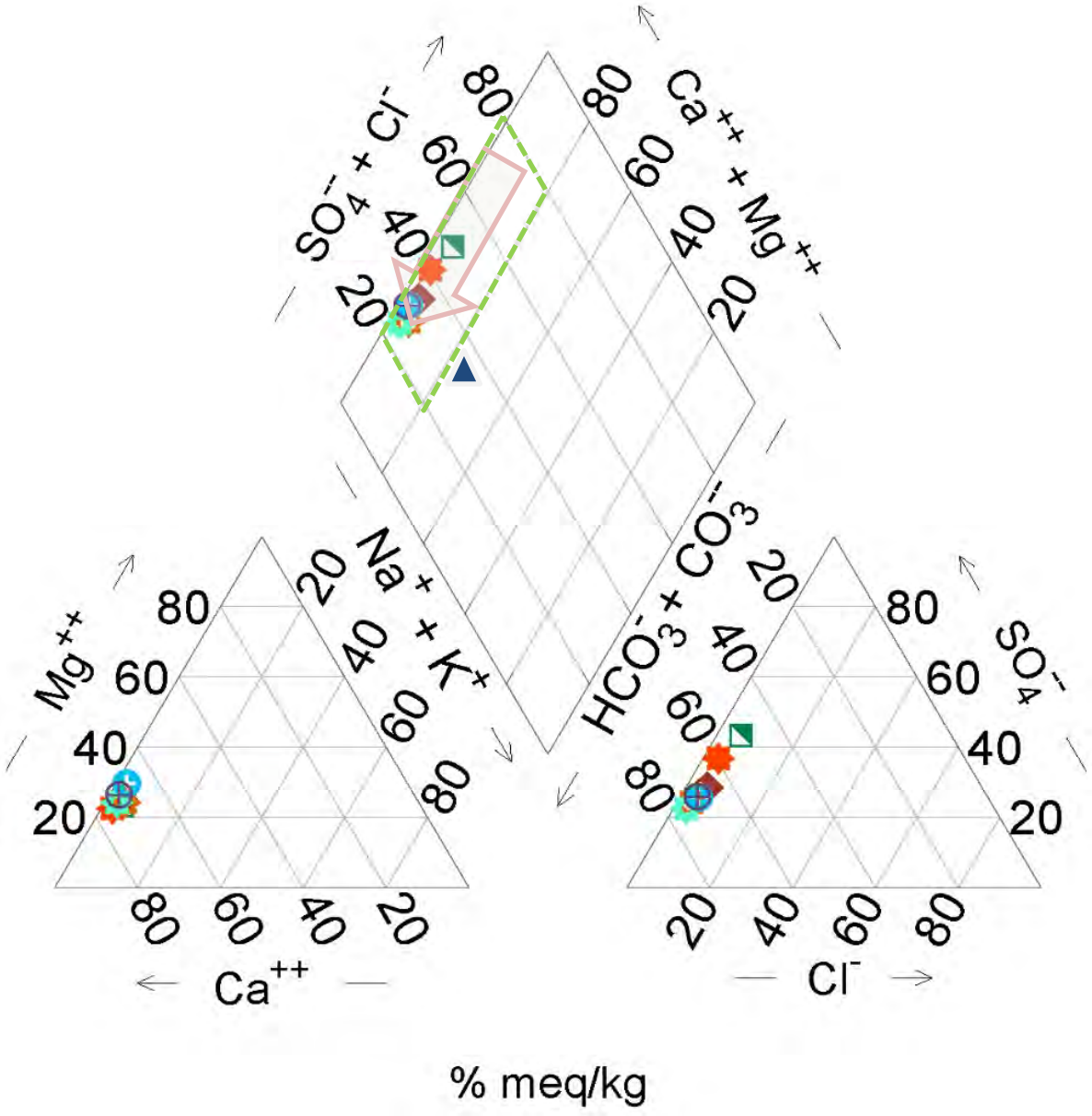
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM - OVER TIME AP-3

DECEMBER 2025

FIGURE 8E



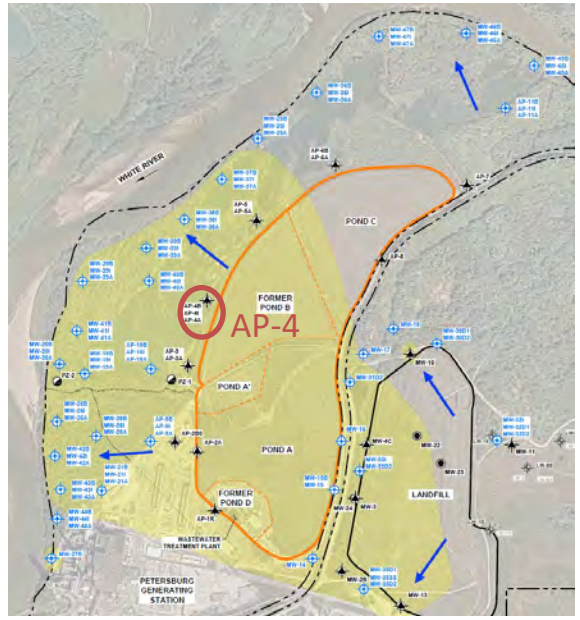
LEGEND AP-4

- AP–4B 5/14/2019
- AP–4B 5/10/2021
- AP–4B 11/7/2021
- AP–4B 5/15/2022
- AP–4B 5/3/2023
- AP–4B 11/15/2023
- AP–4B 11/05/2024

WHITE RIVER 04/18/2022

AP-4: Calcium-bicarbonate water type

Temporal Trend



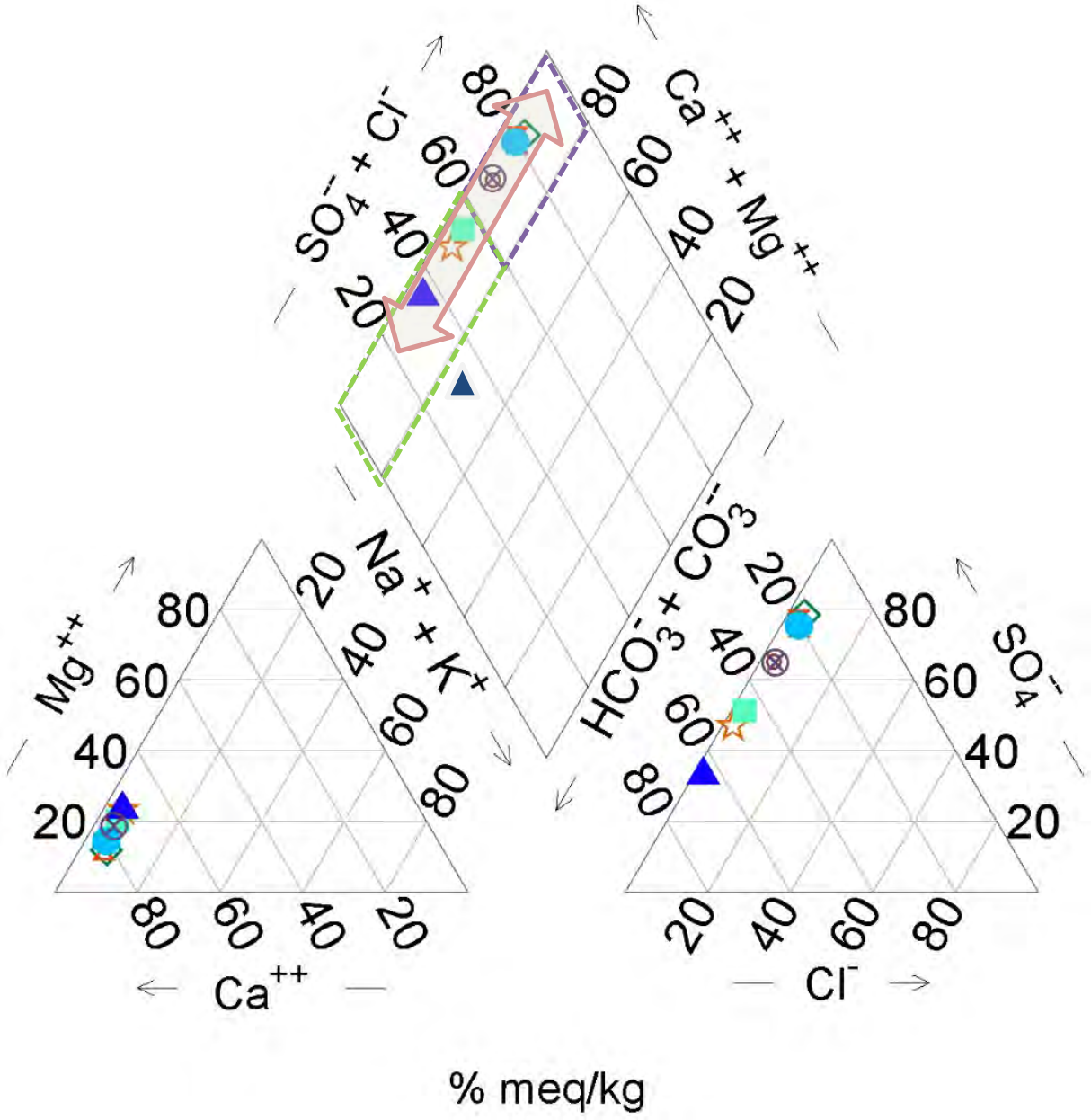
HALEY ALDRICH

PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR ASH POND SYSTEM - OVER TIME AP-4

DECEMBER 2025

FIGURE 8F



LEGEND AP-5

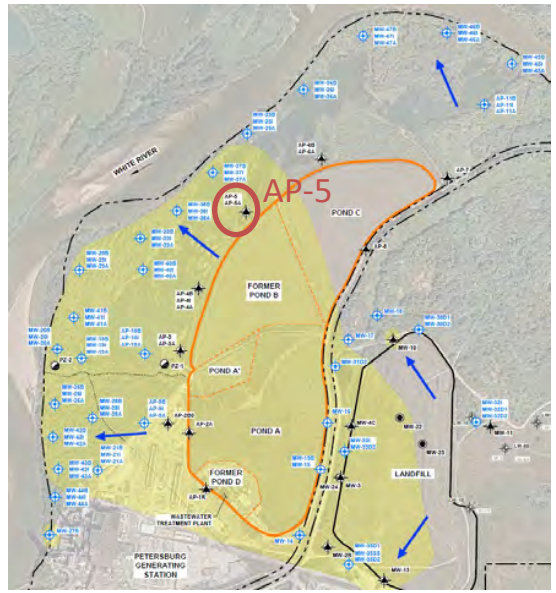
- AP–5 5/14/2019
- AP–5 5/10/2021
- AP–5 11/7/2021
- AP–5 5/15/2022
- AP–5 5/3/2023
- AP–5 11/9/2023
- AP–5 5/8/2024
- AP–5 11/05/2024

WHITE RIVER 04/18/2022

AP-5: Calcium-sulfate water type

AP-5: Calcium-bicarbonate water

Temporal Trend



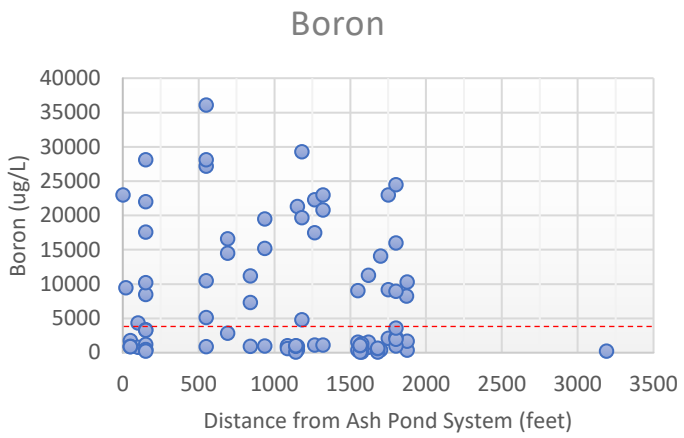
HALEY ALDRICH

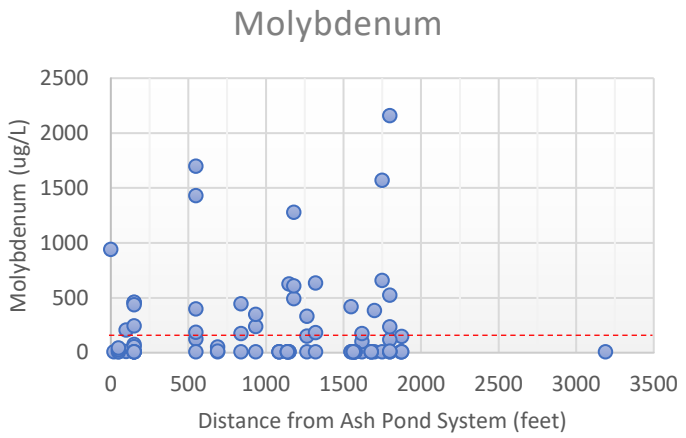
PETERBURG GENERATING STATION
PETERSBURG, INDIANA

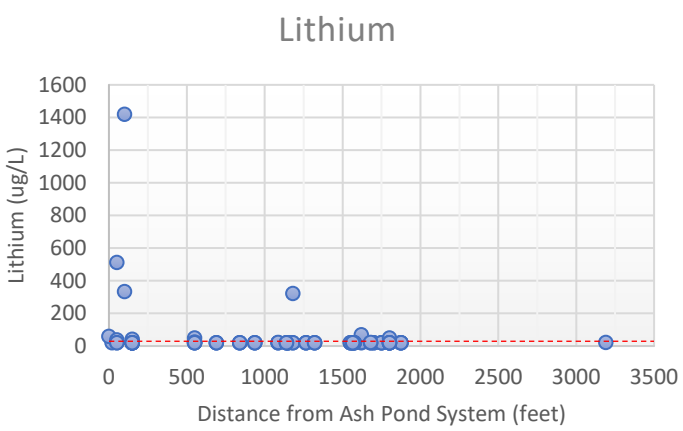
PIPER PLOT FOR ASH POND SYSTEM - OVER TIME AP-5

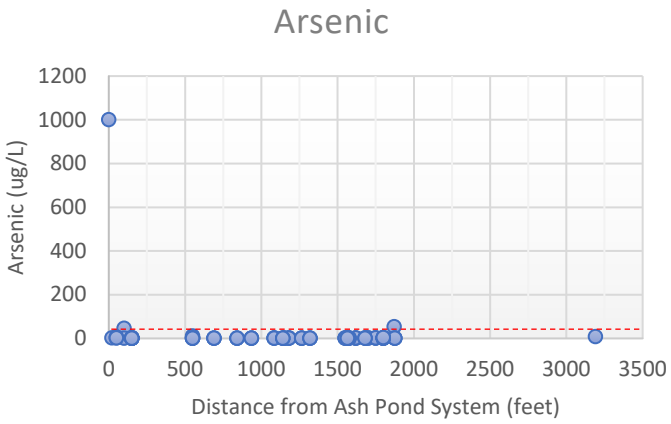
DECEMBER 2025

FIGURE 8G









Groundwater Protective Standards (GWPS)

Note: Analytical results include the November 2024 monitoring event

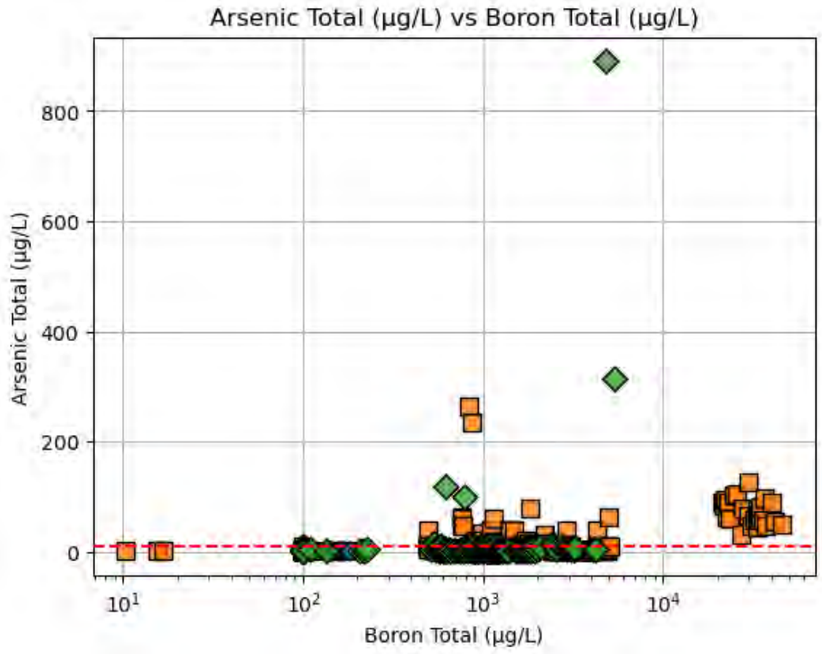
HALEY ALDRICH

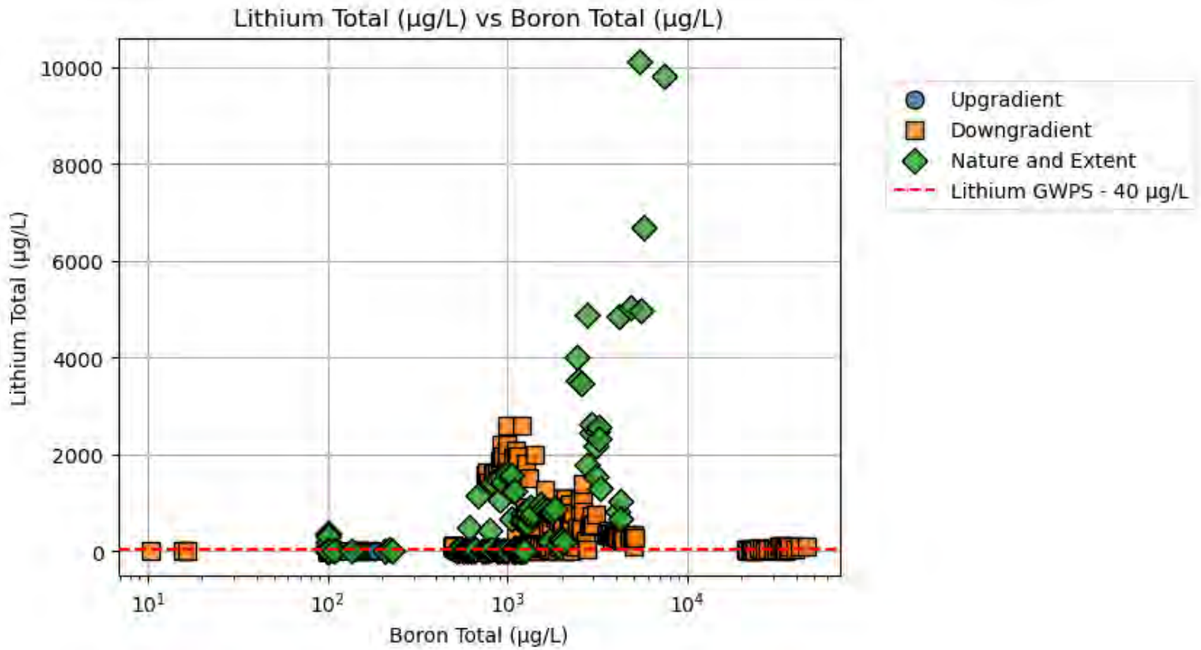
PETERSBURG GENERATING STATION
PETERBURG, INDIANA

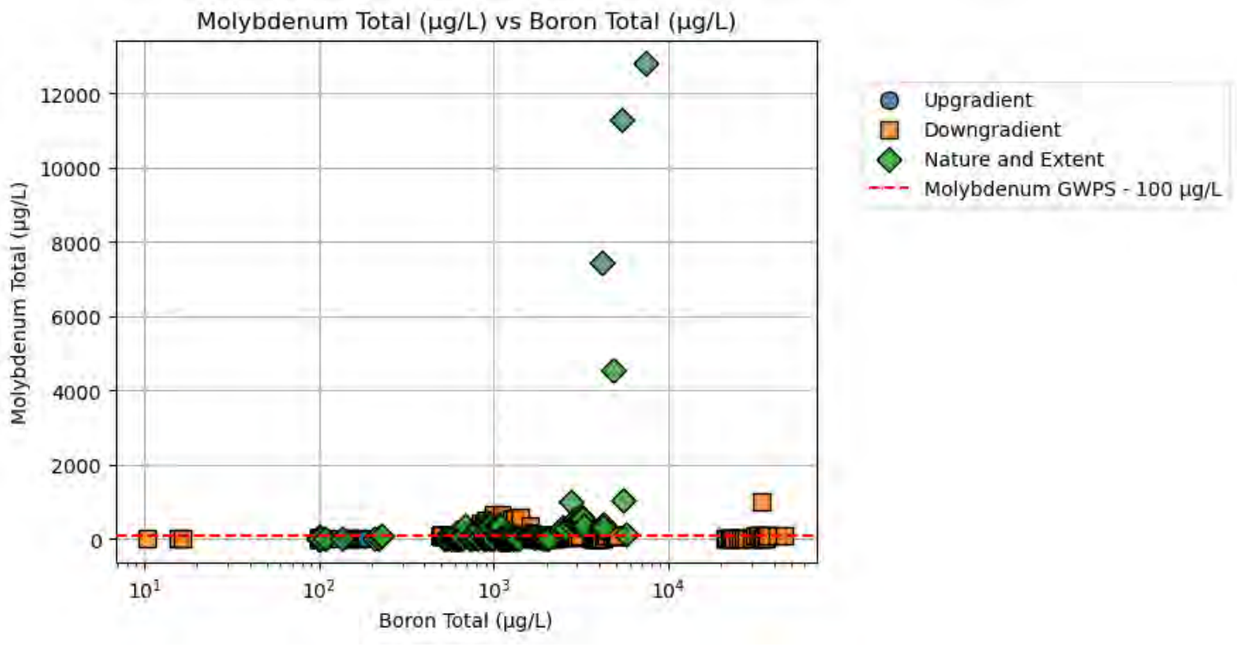
CONCENTRATION VERSUS DISTANCE PLOT – ASH POND SYSTEM

DECEMBER 2025

FIGURE 9







--------- GWPS

Note: Analytical results include the comprehensive dataset from 2016 through November 2024

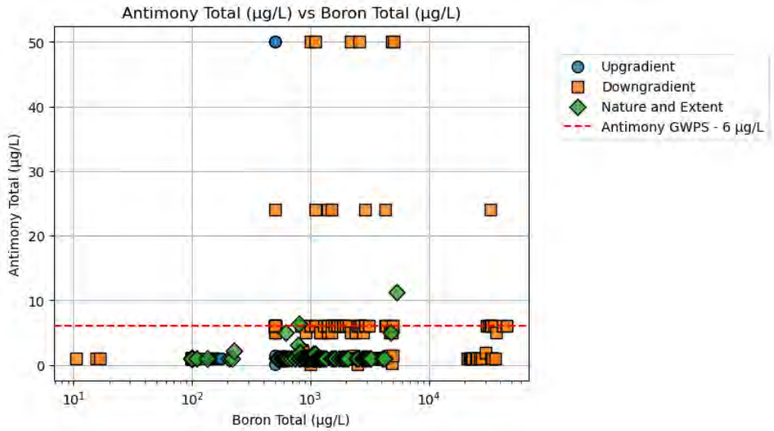
HALEY ALDRICH

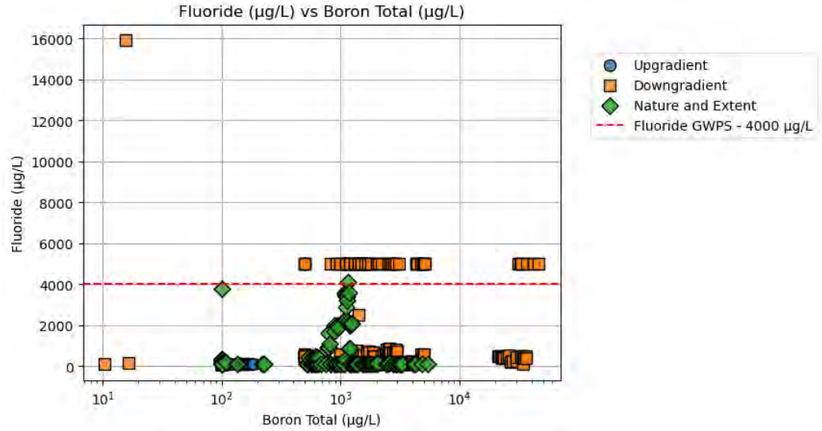
PETERSBURG GENERATING STATION
PETERBURG, INDIANA

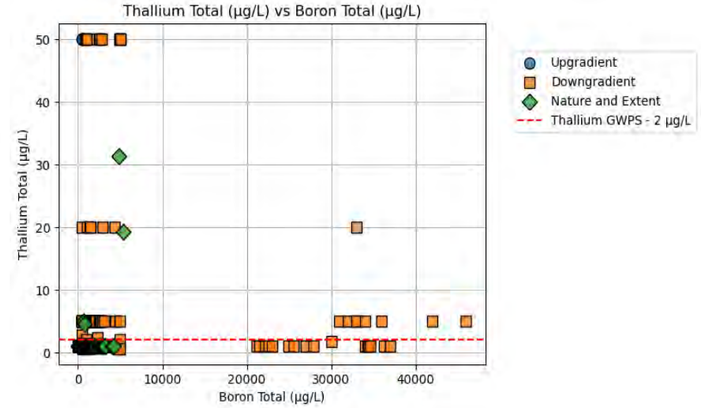
BIVARIATE PLOT
CONSTITUENTS WITH STATISTICALLY SIGNIFICANT LEVELS – LANDFILL WELLS

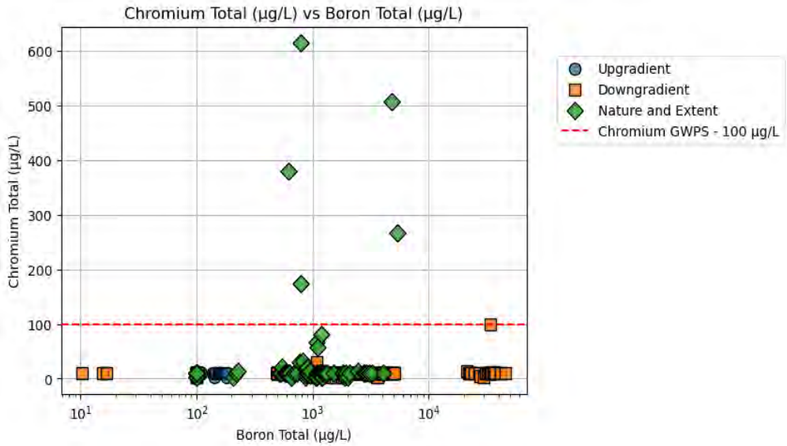
DECEMBER 2025

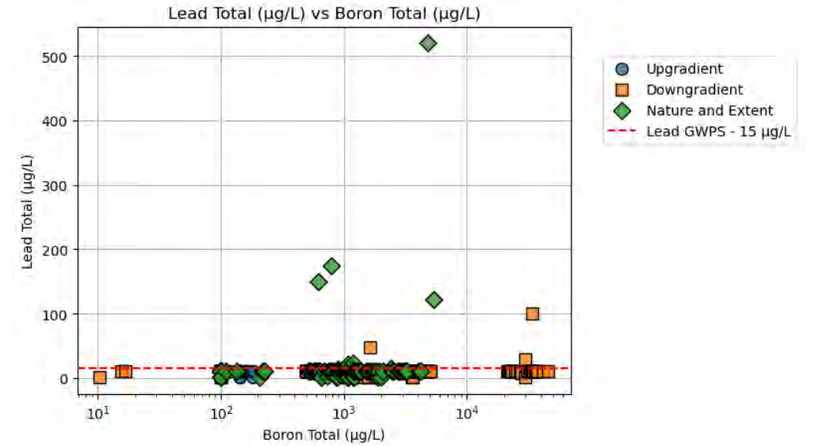
FIGURE 10A

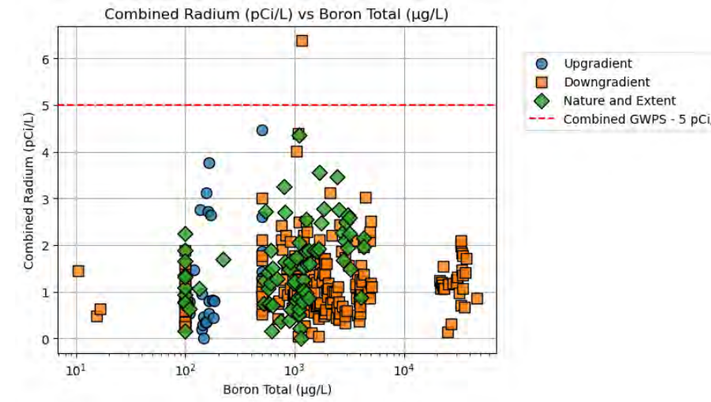


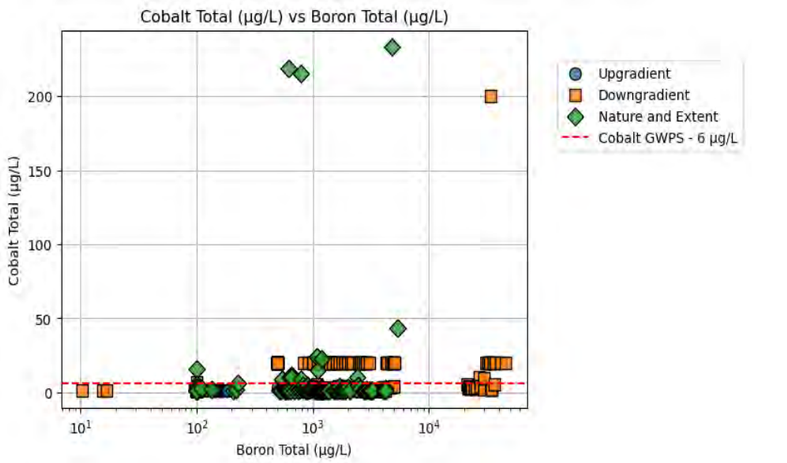


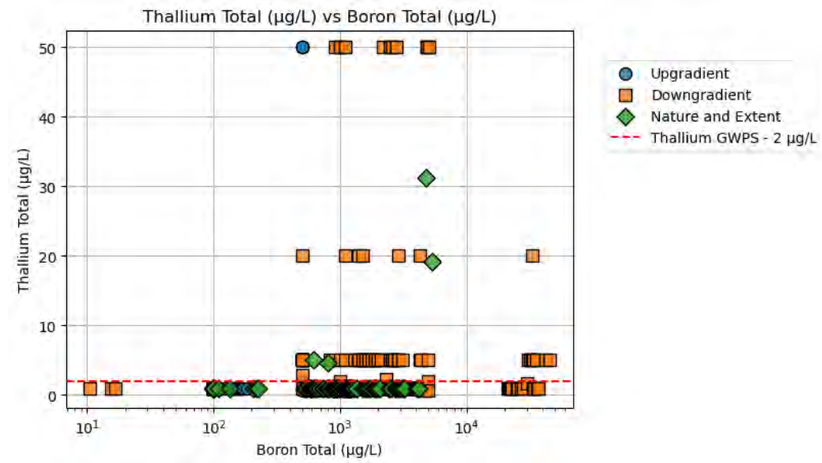












GWPS

Note: Analytical results include the comprehensive dataset from 2016 through November 2024

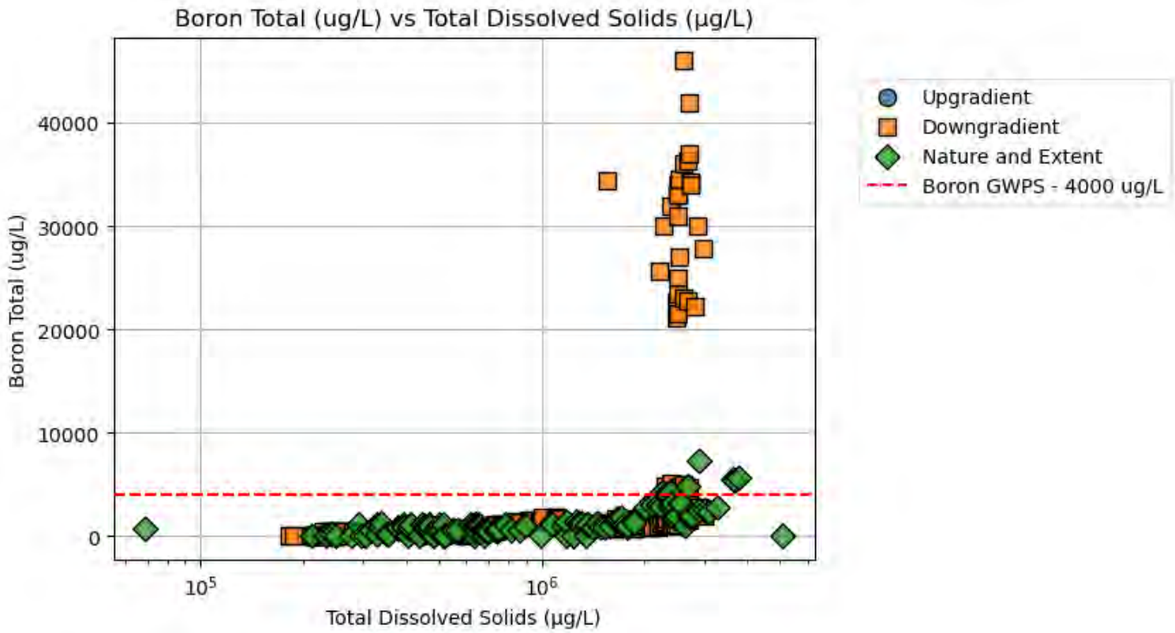
HALEY ALDRICH

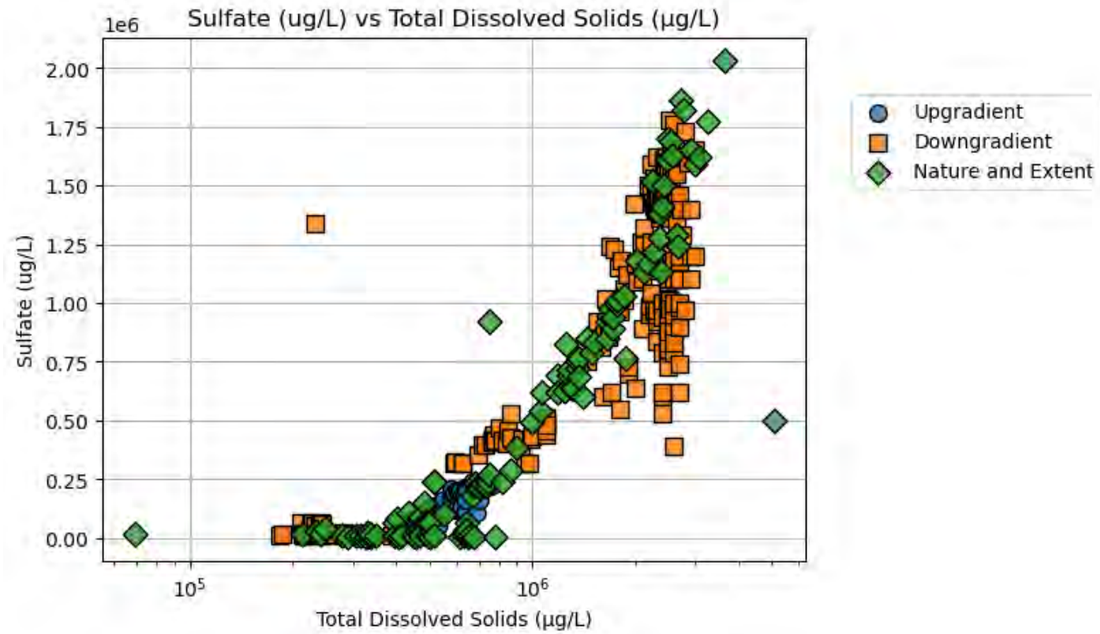
PETERSBURG GENERATING STATION
PETERBURG, INDIANA

BIVARIATE PLOT
CONSTITUENTS WITH
CONCENTRATIONS GREATER
THAN THE GWPS

DECEMBER 2025

FIGURE 10B





--------- GWPS

Note: Analytical results include the comprehensive dataset from 2016 through November 2024

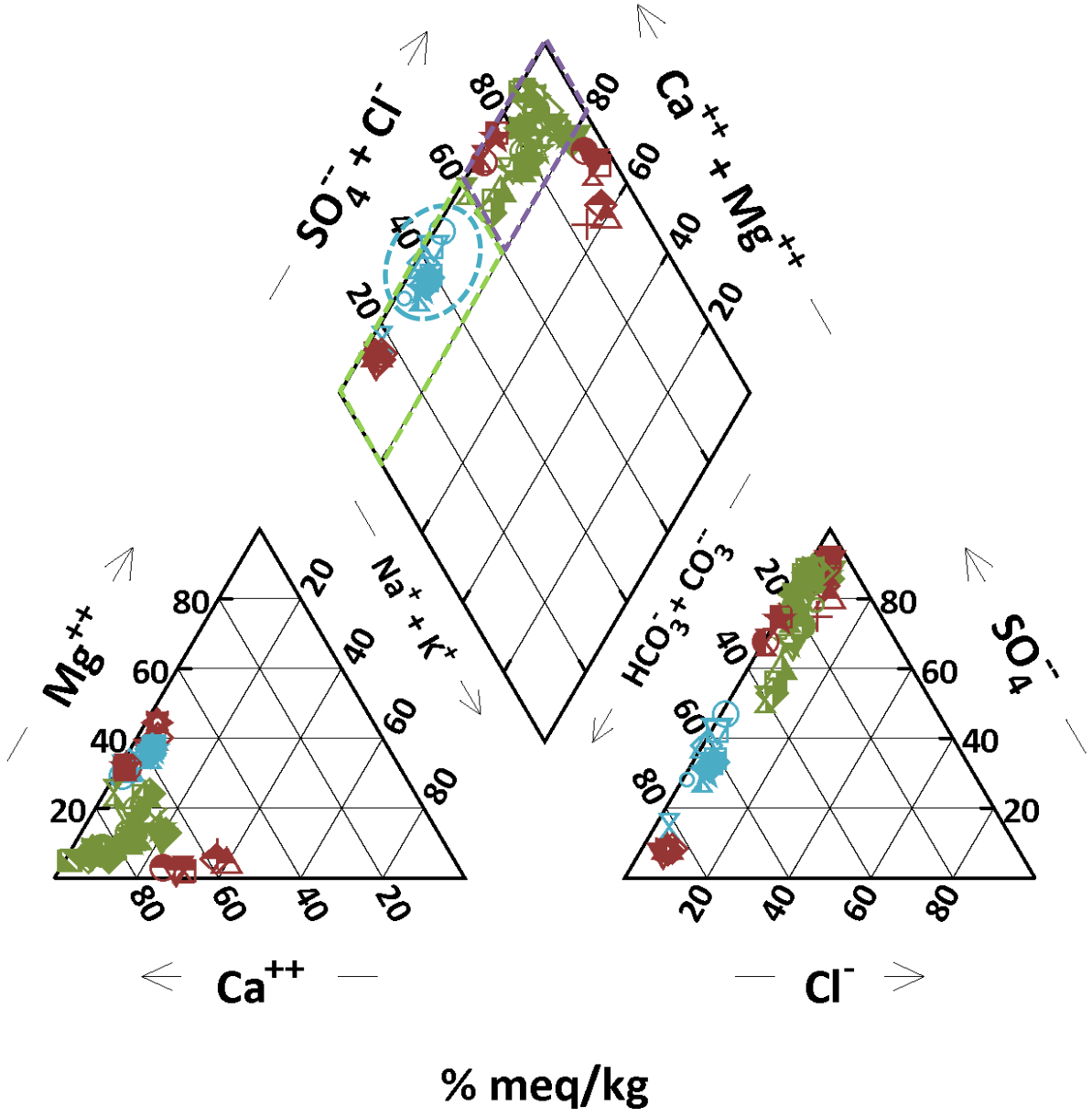
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PETERSBURG GENERATING STATION
PETERBURG, INDIANA

BIVARIATE PLOT
CONSTITUENTS VS TOTAL
DISSOLVED SOLIDS

DECEMBER 2025

FIGURE 10C



LEGEND

BACKGROUND

SHALLOW ZONE

DEEP ZONE

Landfill Background Wells
(calcium-bicarbonate water type)

Calcium-sulfate water type

Calcium-bicarbonate water type

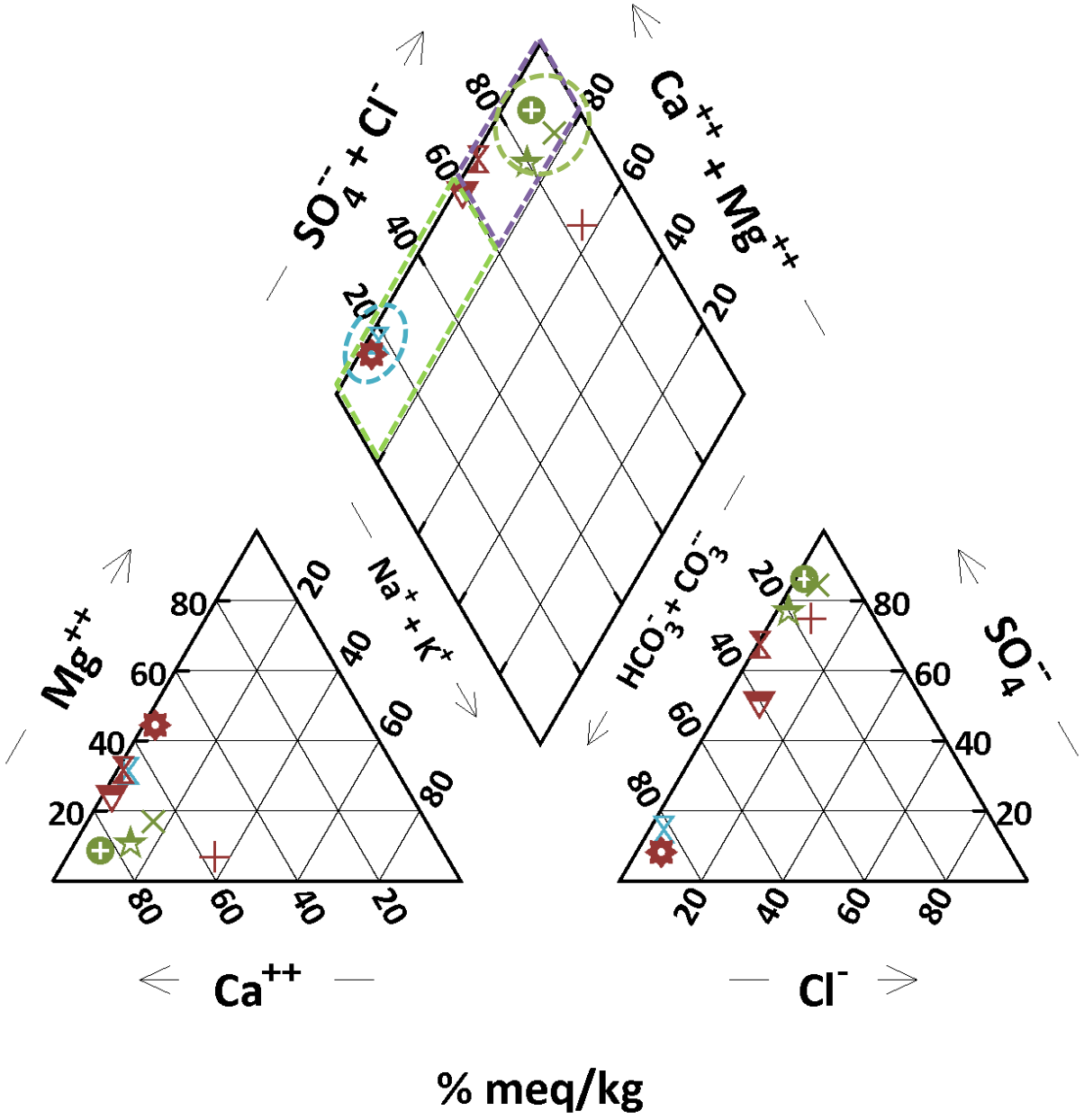
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PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR THE
LANDFILL – ALL SAMPLES
2016 - 2024

DECEMBER 2025

FIGURE 11A



LEGEND

BACKGROUND

SHALLOW ZONE

DEEP ZONE

- MW–1 11/3/2024
- MW–2R 11/7/2024
- MW–3 11/11/2024
- MW–4C 11/10/2024
- MW–10 11/4/2024
- MW–11 11/3/2024
- MW–12 11/4/2024
- MW–13 11/7/2024

Landfill Background Wells (calcium-bicarbonate water type)

Calcium-sulfate water type

Calcium-bicarbonate water type

Deeper Zone dominated by a Calcium-sulfate water type

Shallow Zone dominated by both Calcium-bicarbonate and Calcium-sulfate water type

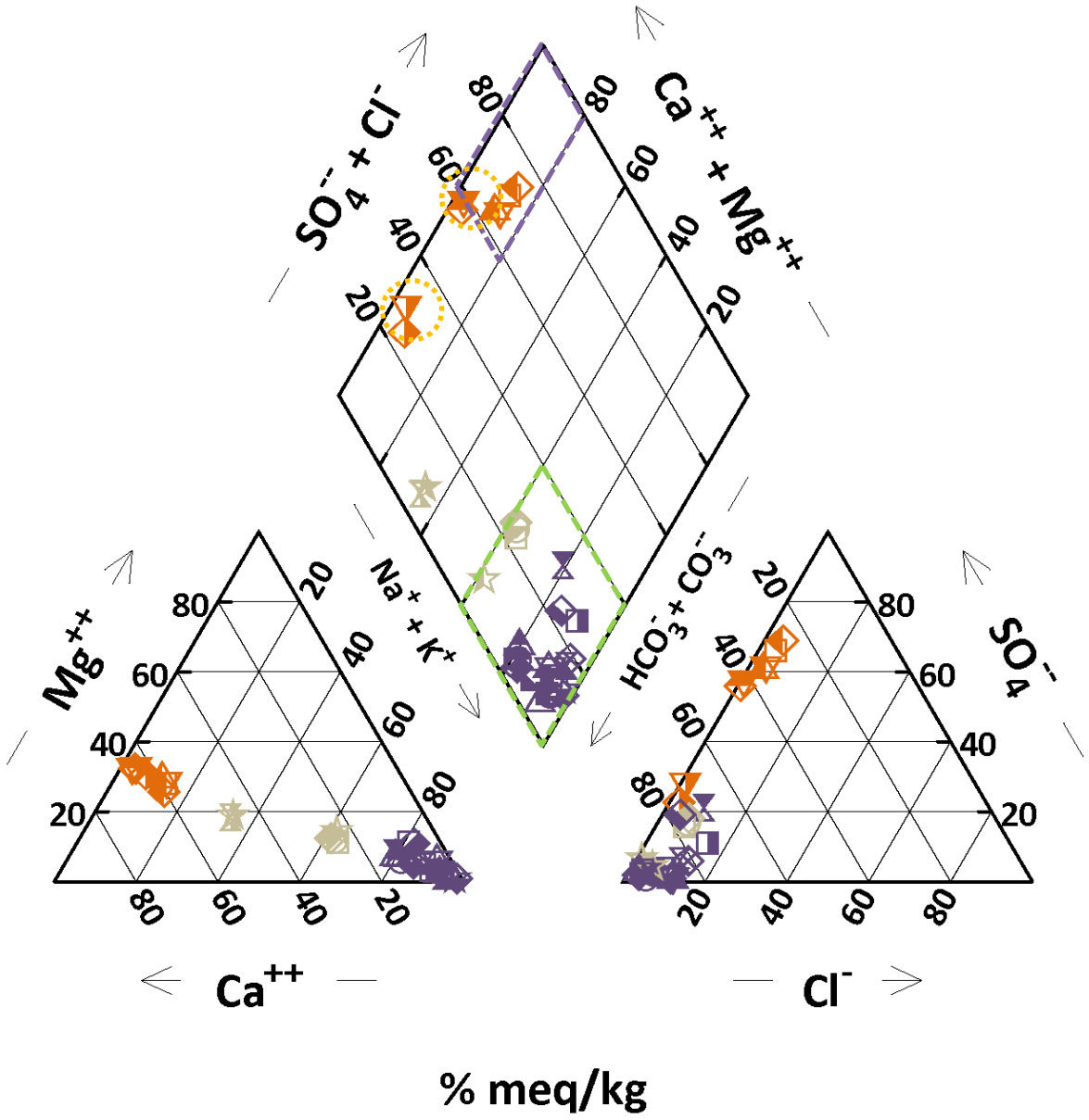
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PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR THE
LANDFILL – NOVEMBER 2024

DECEMBER 2025

FIGURE 11B



LEGEND

UPPER SHALE

LOWER SHALE

SANDSTONE

The Upper Shale Units is dominated calcium-sulfate water type

The Lower Shale Units is dominated by a sodium-bicarbonate water type

Upper Shale: MW-32D1 and MW-34D1 : Calcium-bicarbonate and sodium-bicarbonate water type

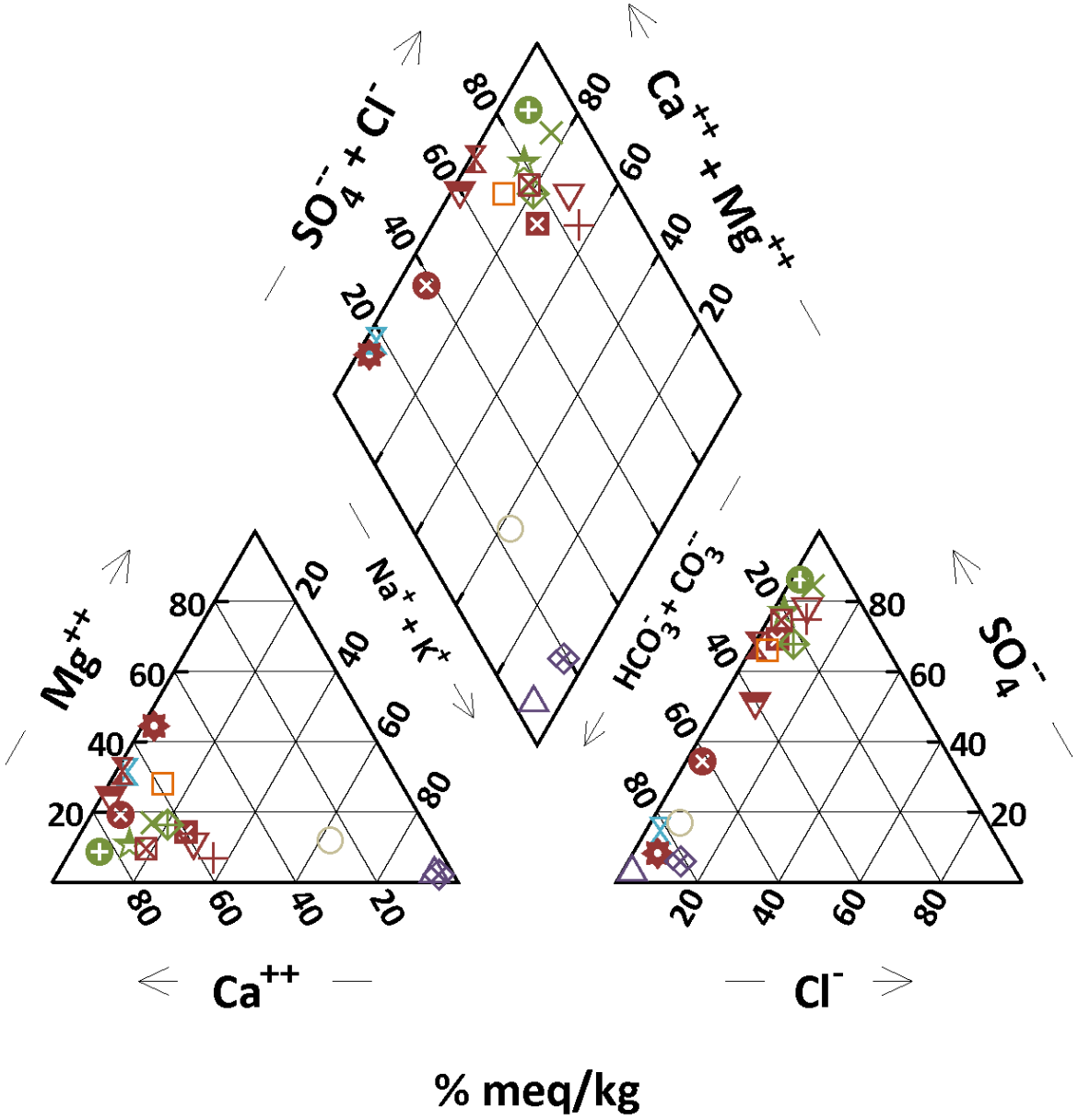
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PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR THE LANDFILL – SHALE AND SANDSTONE

DECEMBER 2025

FIGURE 11C



LEGEND

BACKGROUND

SHALLOW ZONE

DEEP ZONE

UPPER SHALE

LOWE SHALE

SANDSTONE

- MW–1 11/3/2024
- MW–2R 11/7/2024
- MW–3 11/11/2024
- MW–4C 11/10/2024
- MW–10 11/4/2024
- MW–11 11/3/2024
- MW–12 11/4/2024
- MW–13 11/7/2024
- MW–14 11/10/2024
- MW–15B 11/14/2024
- MW–15 11/10/2024
- MW–16 11/10/2024
- MW–33D2 11/7/2024
- MW–35D1 11/7/2024
- MW–35SS 11/7/2024
- MW–35D2 11/7/2024
- MW–24 11/14/2024

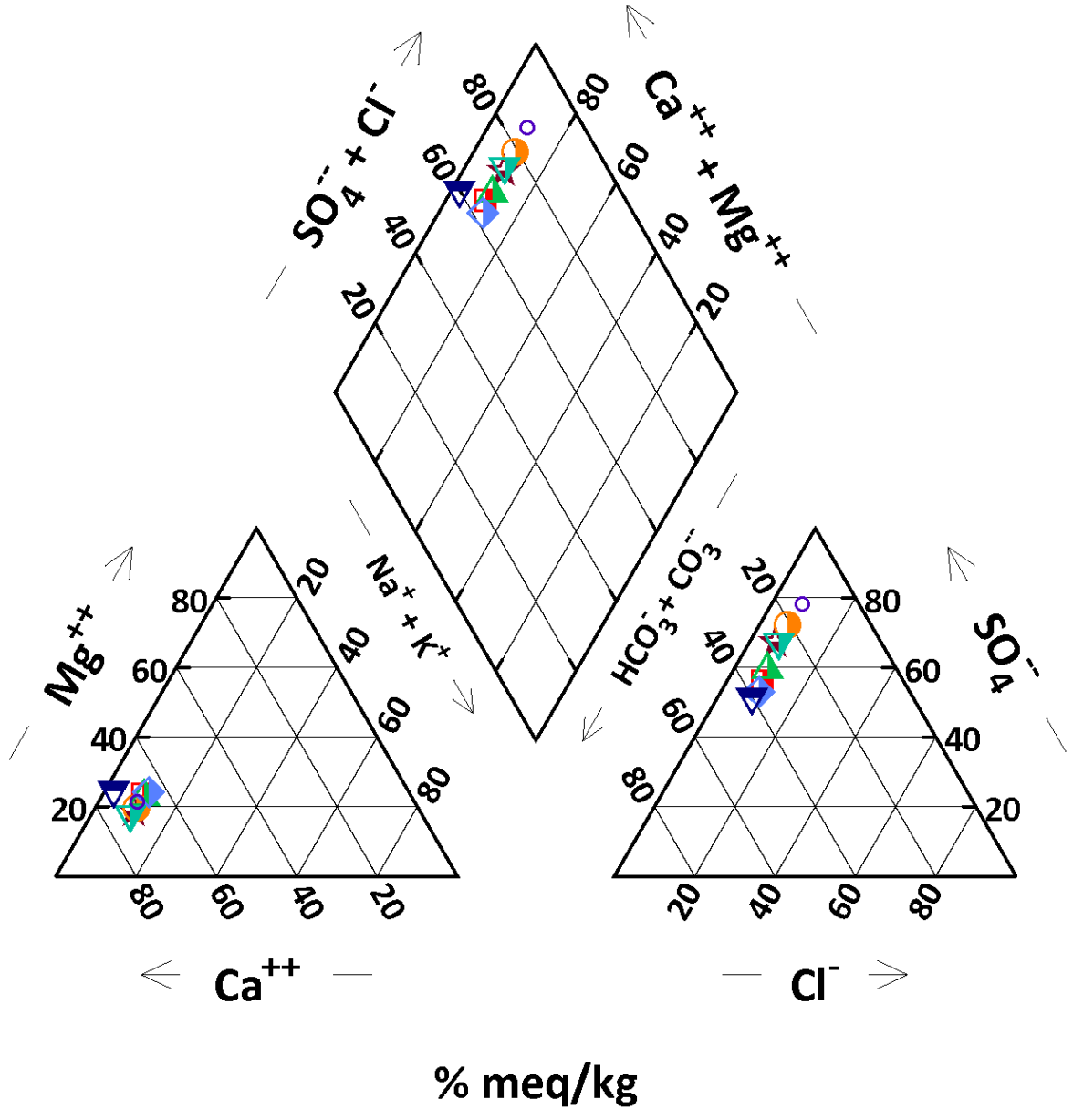
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PETERSBURG, INDIANA

PIPER PLOT FOR THE
LANDFILL – NOVEMBER 2024
ALL FORMATIONS

DECEMBER 2025

FIGURE 11D



LEGEND

- MW–10 5/5/2021
- MW–10 11/2/2021
- MW–10 5/4/2022
- MW–10 11/7/2022
- MW–10 5/2/2023
- MW–10 11/6/2023
- MW–10 5/6/2024
- MW–10 11/4/2024

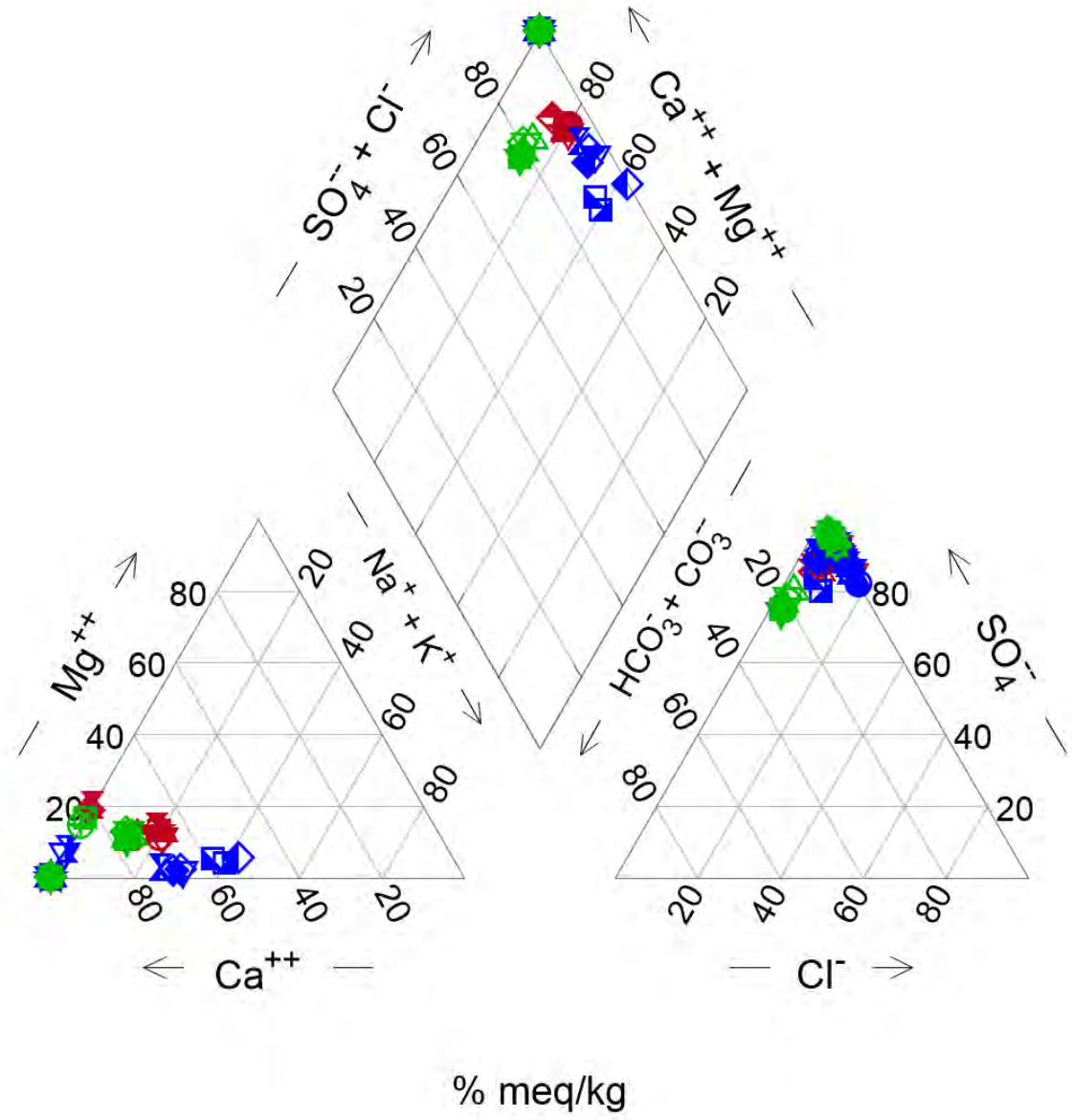
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PETERBURG GENERATING STATION
PETERSBURG, INDIANA

PIPER PLOT FOR THE LANDFILL – OVER TIME MW-10

DECEMBER 2025

FIGURE 11E



% meq/kg

LEGEND

- MW–2R 28/09/2016
- MW–2R 19/10/2016
- MW–2R 09/11/2016
- MW–2R 12/12/2016
- MW–2R 16/03/2017
- MW–2R 17/03/2017
- MW–2R 24/03/2017
- MW–2R 20/04/2017
- MW–2R 24/04/2017
- MW–2R 16/05/2017
- MW–2R 20/06/2017
- MW–2R 08/08/2017
- MW–2R 09/05/2018
- MW–2R 12/09/2018
- MW–2R 07/11/2018
- MW–2R 16/05/2019
- MW–2R 06/11/2019
- MW–2R 13/05/2020
- MW–2R 03/11/2020
- MW–2R 05/05/2021
- MW–2R 01/11/2021
- MW–2R 08/05/2022
- MW–2R 07/11/2022
- MW–2R 09/05/2023
- MW–2R 08/11/2023
- MW–2R 02/05/2024
- MW–3 28/09/2016
- MW–3 19/10/2016
- MW–3 09/11/2016
- MW–3 12/12/2016
- MW–3 05/02/2017
- MW–3 24/03/2017
- MW–3 25/05/2017
- MW–3 20/06/2017
- MW–3 08/08/2017
- MW–3 09/05/2018
- MW–3 12/09/2018
- MW–3 07/11/2018
- MW–3 16/05/2019
- MW–3 06/11/2019
- MW–3 13/05/2020
- MW–3 03/11/2020
- MW–3 05/05/2021
- MW–3 01/11/2021
- MW–3 08/05/2022
- MW–3 08/05/2022
- MW–3 07/11/2022
- MW–3 07/05/2023
- MW–3 08/11/2023
- MW–3 12/05/2024
- MW–4C 28/09/2016
- MW–4C 19/10/2016
- MW–4C 09/11/2016
- MW–4C 12/12/2016
- MW–4C 05/02/2017
- MW–4C 25/03/2017
- MW–4C 25/05/2017
- MW–4C 20/06/2017
- MW–4C 08/08/2017
- MW–4C 09/05/2018
- MW–4C 12/09/2018
- MW–4C 07/11/2018
- MW–4C 16/05/2019
- MW–4C 06/11/2019
- MW–4C 13/05/2020
- MW–4C 03/11/2020
- MW–4C 05/05/2021
- MW–4C 01/11/2021
- MW–4C 08/05/2022
- MW–4C 08/05/2022
- MW–4C 08/11/2022
- MW–4C 09/05/2023
- MW–4C 08/11/2023
- MW–4C 12/05/2024

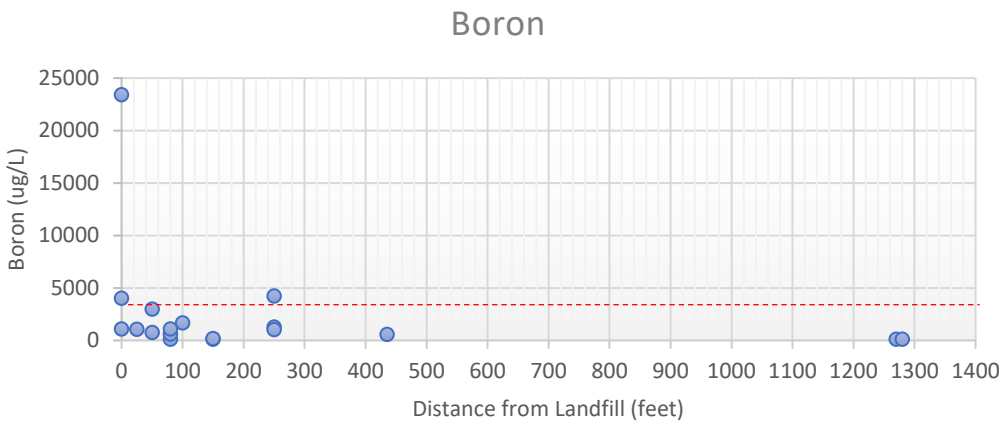
HALEY ALDRICH

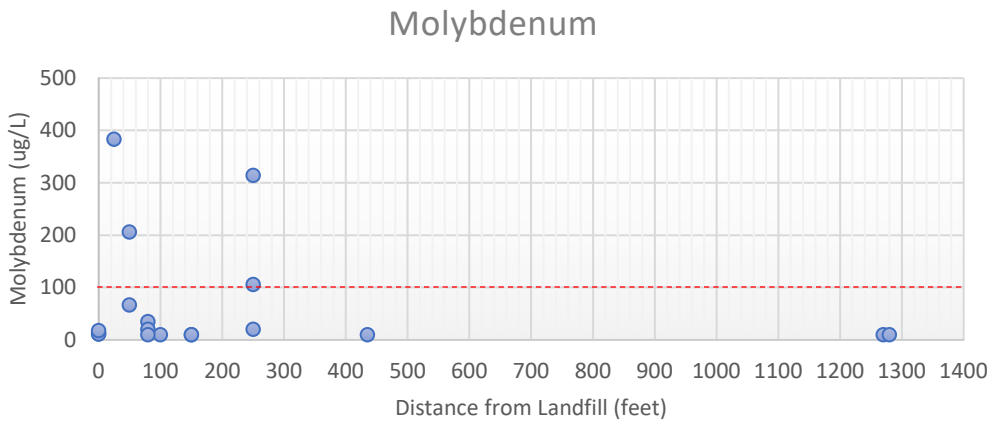
PETERBURG GENERATING STATION
PETERSBURG, INDIANA

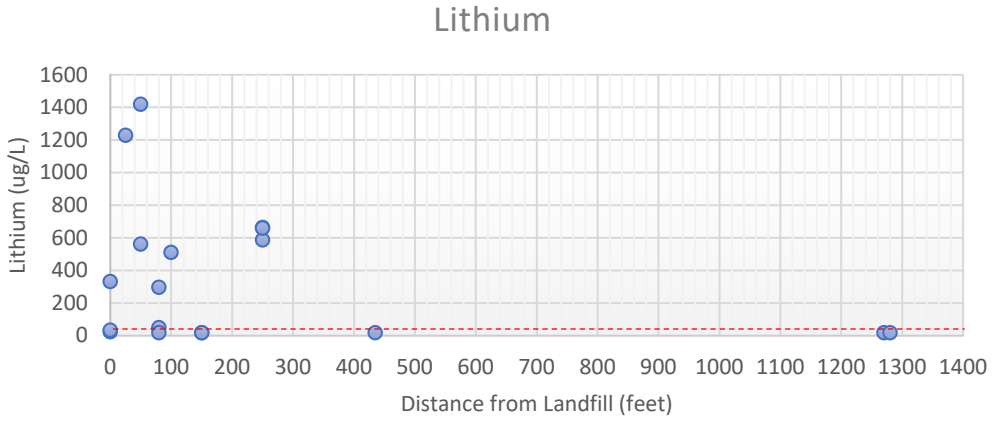
PIPER PLOT FOR THE LANDFILL – OVER TIME MW-2R, MW-3, and MW-4C

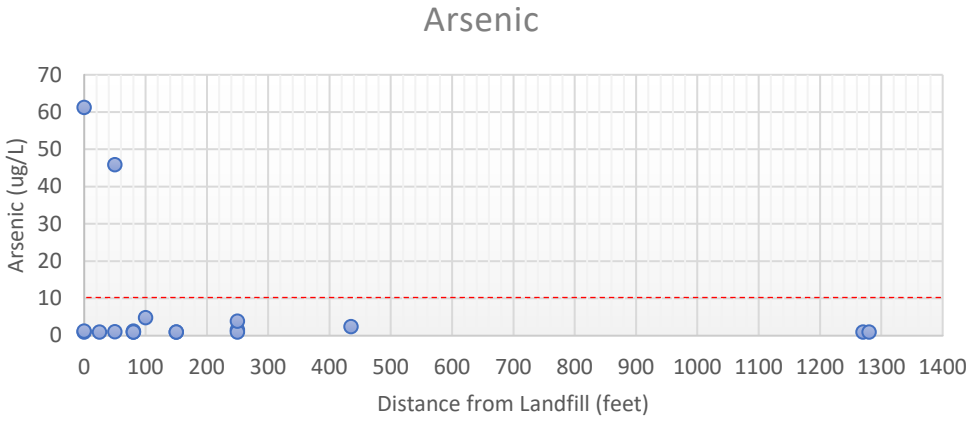
DECEMBER 2025

FIGURE 11F









Groundwater Protective Standards (GWPS)

Note: Analytical results include the November 2024 monitoring event for CCR monitoring wells associated with the Landfill

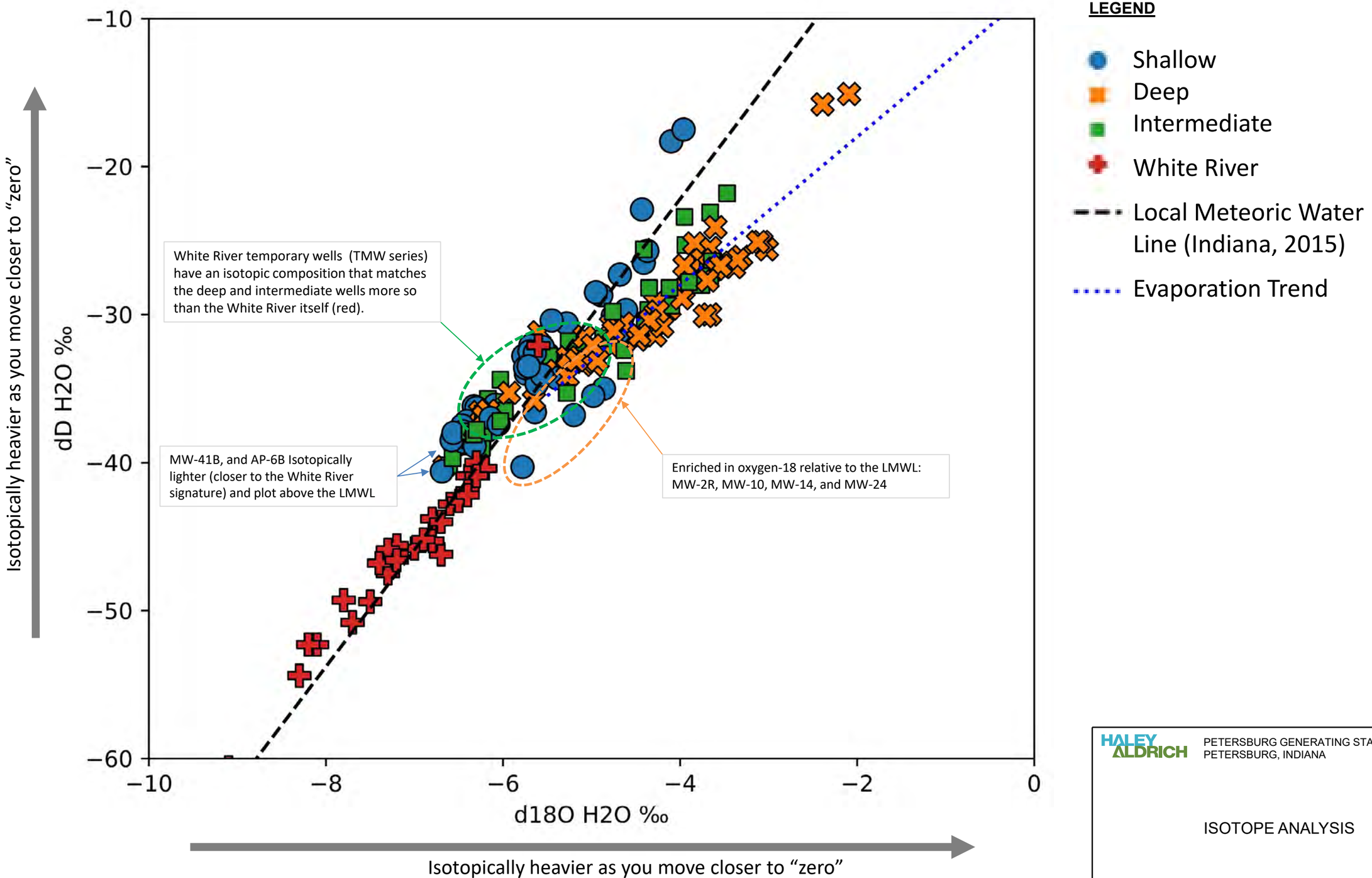
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PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

CONCENTRATION VERSUS DISTANCE PLOT - LANDFILL

DECEMBER 2025

FIGURE 12



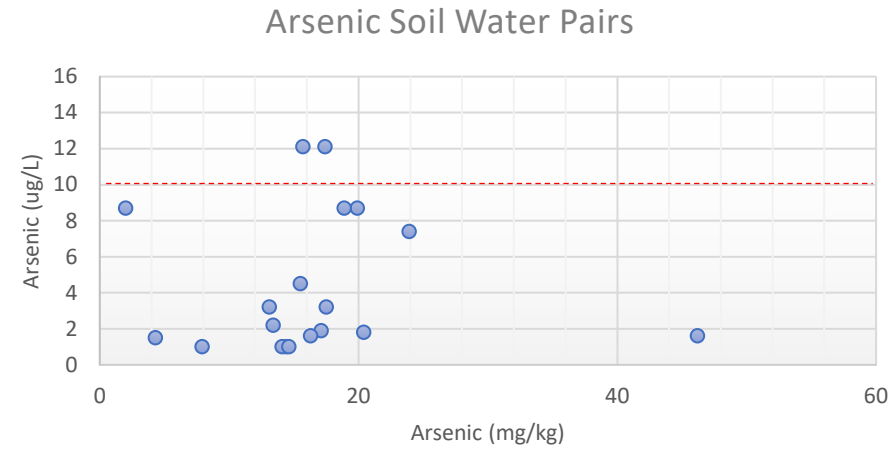
HALEY ALDRICH

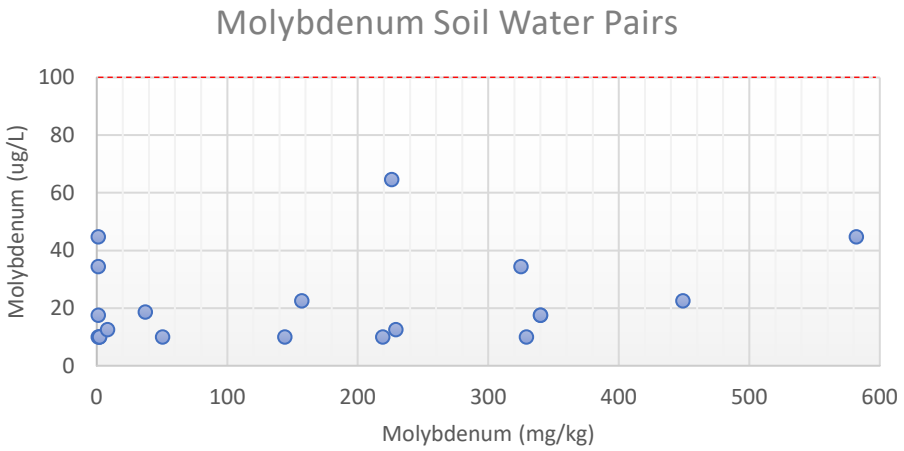
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

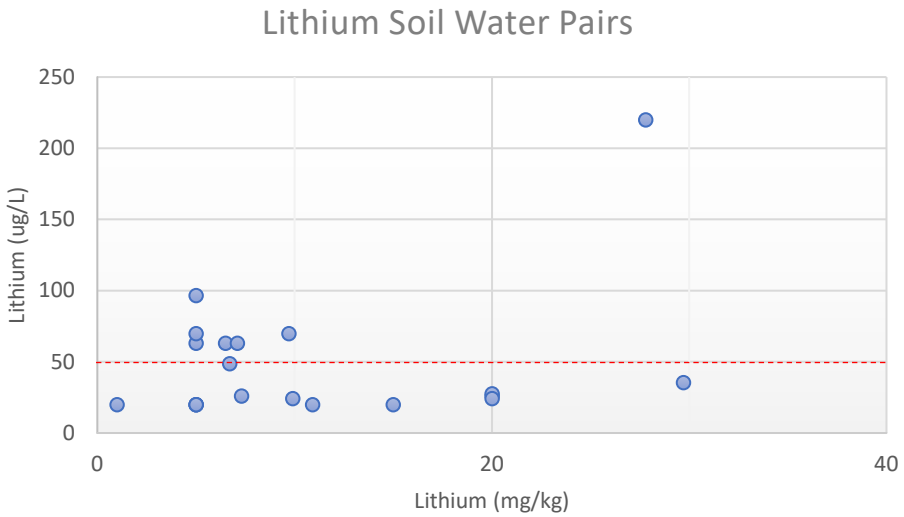
ISOTOPE ANALYSIS

DECEMBER 2025

FIGURE 13







GWPS

Note: Analytical results include soil and groundwater data from August 2021 through October 2022 for MW-25 through MW-47 (shallow, intermediate and deep wells).

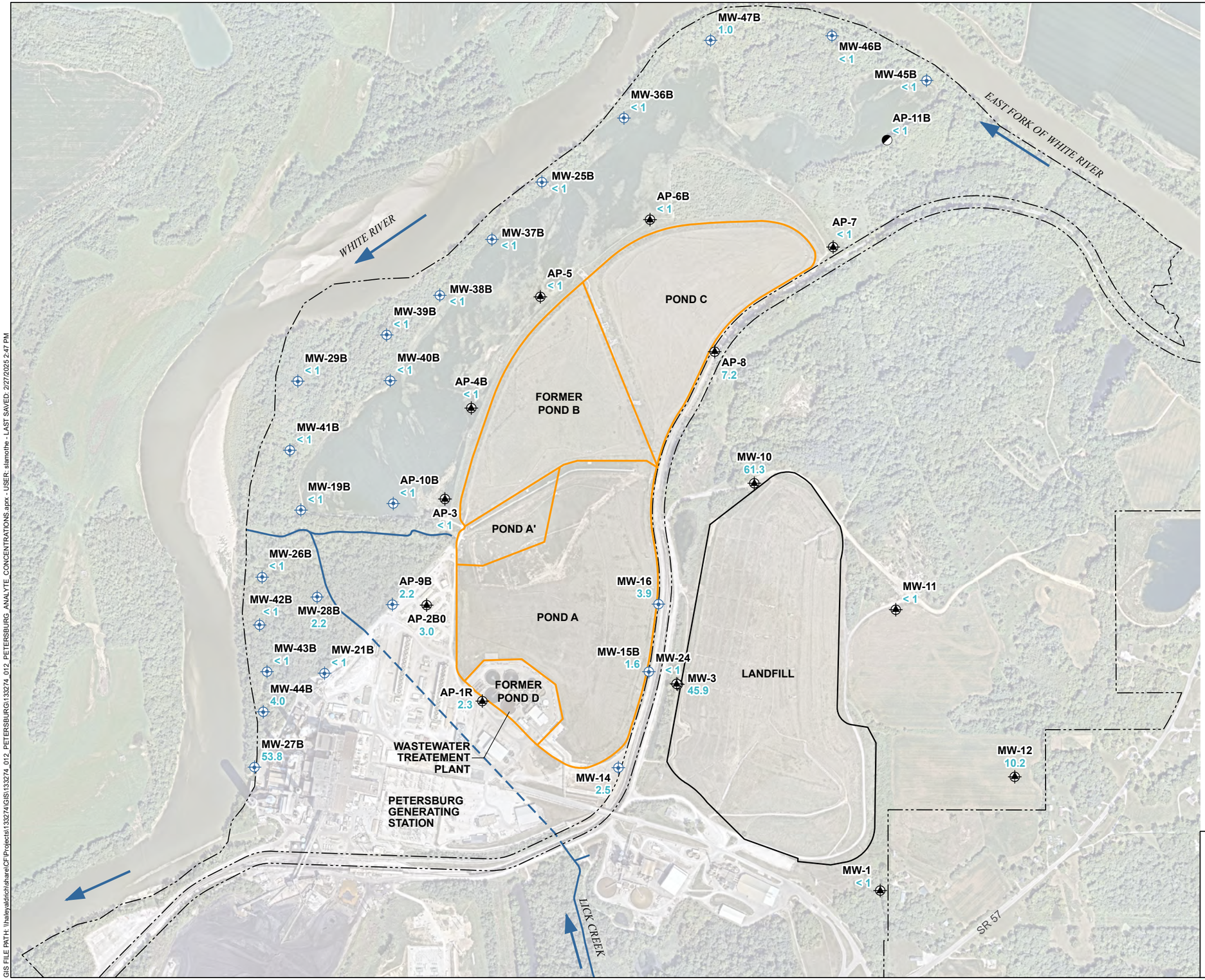
HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SOIL WATER PAIRS

DECEMBER 2025

FIGURE 14



LEGEND

- CCR MONITORING WELL WITH ARSENIC CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH ARSENIC CONCENTRATION IN ug/L
- PIEZOMETER WITH ARSENIC CONCENTRATION IN ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SAMPLES COLLECTED 4 TO 13 NOVEMBER 2024
3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

ARSENIC CONCENTRATIONS SHALLOW ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15A

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.apx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM

MW-47I
< 1
MW-46I
< 1
MW-45I
2.8
MW-36I
< 1
AP-11I
1.7
EAST FORK OF WHITE RIVER
MW-25I
< 1
WHITE RIVER
MW-37I
< 1
MW-38I
< 1
MW-39I
< 1
POND C
MW-29I
< 1
MW-40I
< 1
AP-4I
< 1
FORMER
POND B
MW-41I
1.8
MW-20I
< 1
MW-19I
< 1
AP-10I
< 1
POND A'
MW-26I
2.1
MW-28I
1.1
AP-9I
11.5
MW-42I
< 1
POND A
MW-43I
3.7
MW-21I
< 1
LANDFILL
FORMER
POND D
MW-44I
2.1
WASTEWATER
TREATEMENT
PLANT
PETERSBURG
GENERATING
STATION
LICK CREEK
SR 57

LEGEND

- CCR MONITORING WELL WITH ARSENIC CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH ARSENIC CONCENTRATION IN ug/L
- PIEZOMETER WITH ARSENIC CONCENTRATION IN ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. SAMPLES COLLECTED 4 TO 13 NOVEMBER 2024
3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

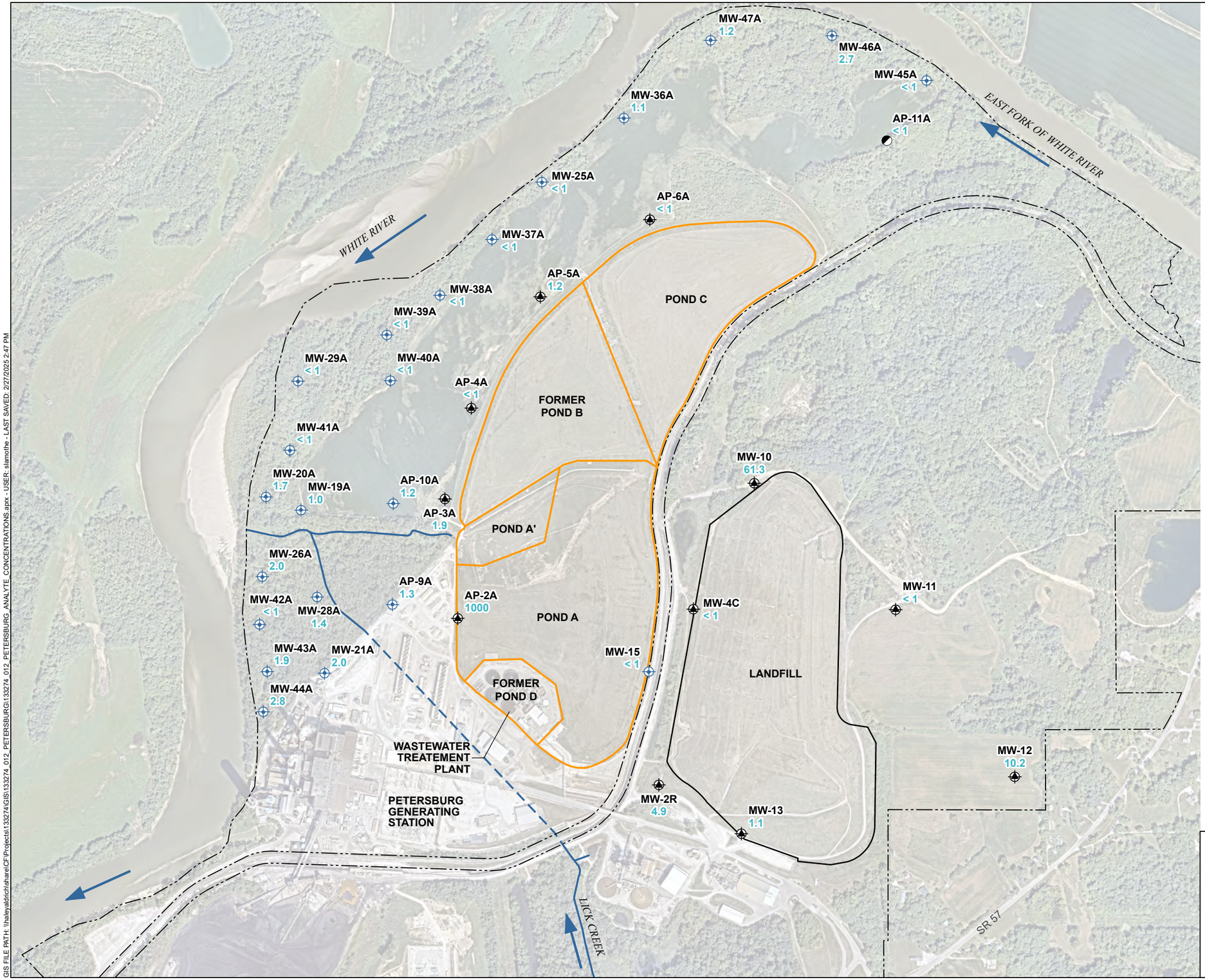
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

ARSENIC CONCENTRATIONS INTERMEDIATE ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15B

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- CCR MONITORING WELL WITH ARSENIC CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH ARSENIC CONCENTRATION IN ug/L
- PIEZOMETER WITH ARSENIC CONCENTRATION IN ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

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4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

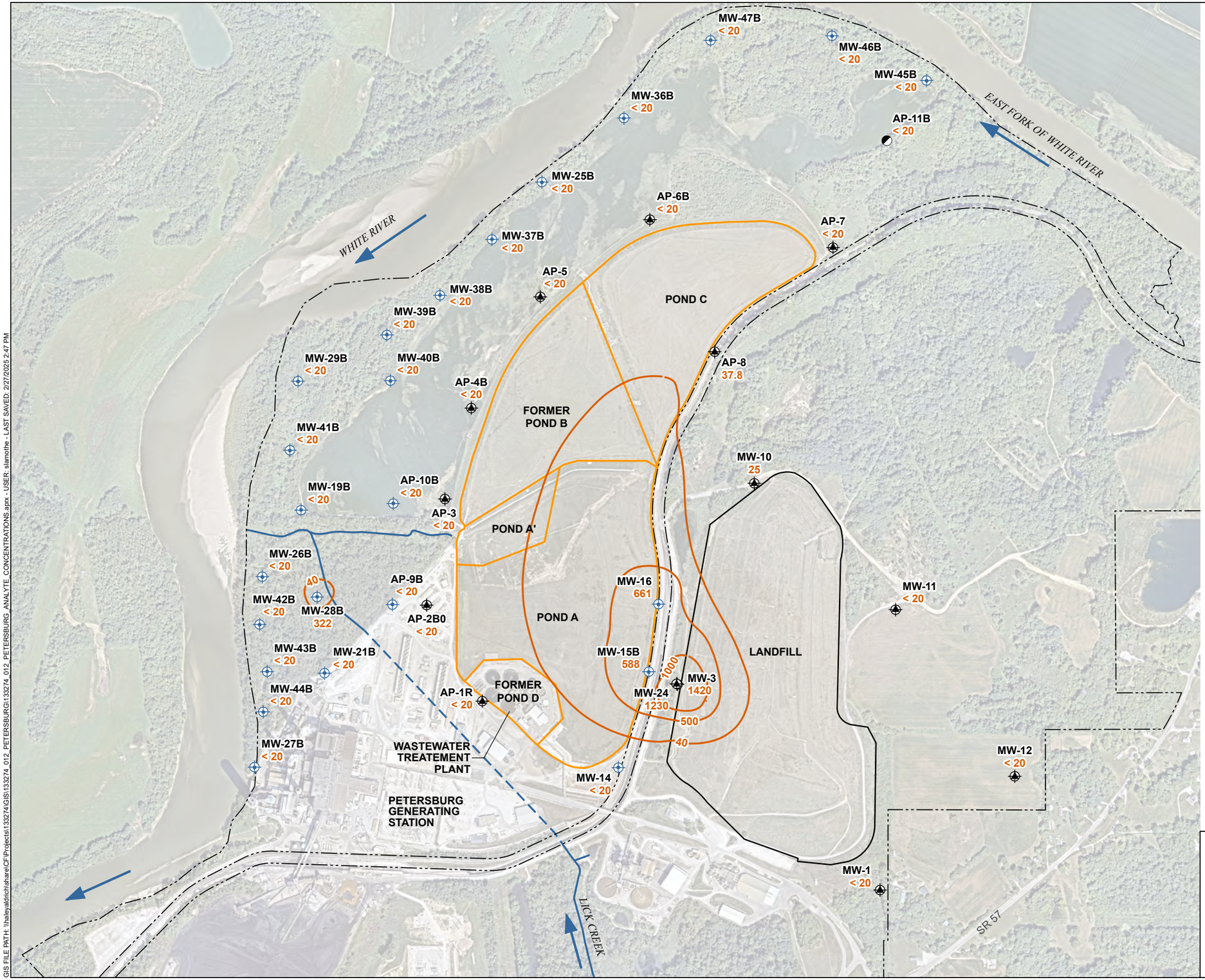
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

ARSENIC CONCENTRATIONS DEEP ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15C

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- CCR MONITORING WELL WITH LITHIUM CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH LITHIUM CONCENTRATION IN ug/L
- PIEZOMETER WITH LITHIUM CONCENTRATION IN ug/L
- LITHIUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

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3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

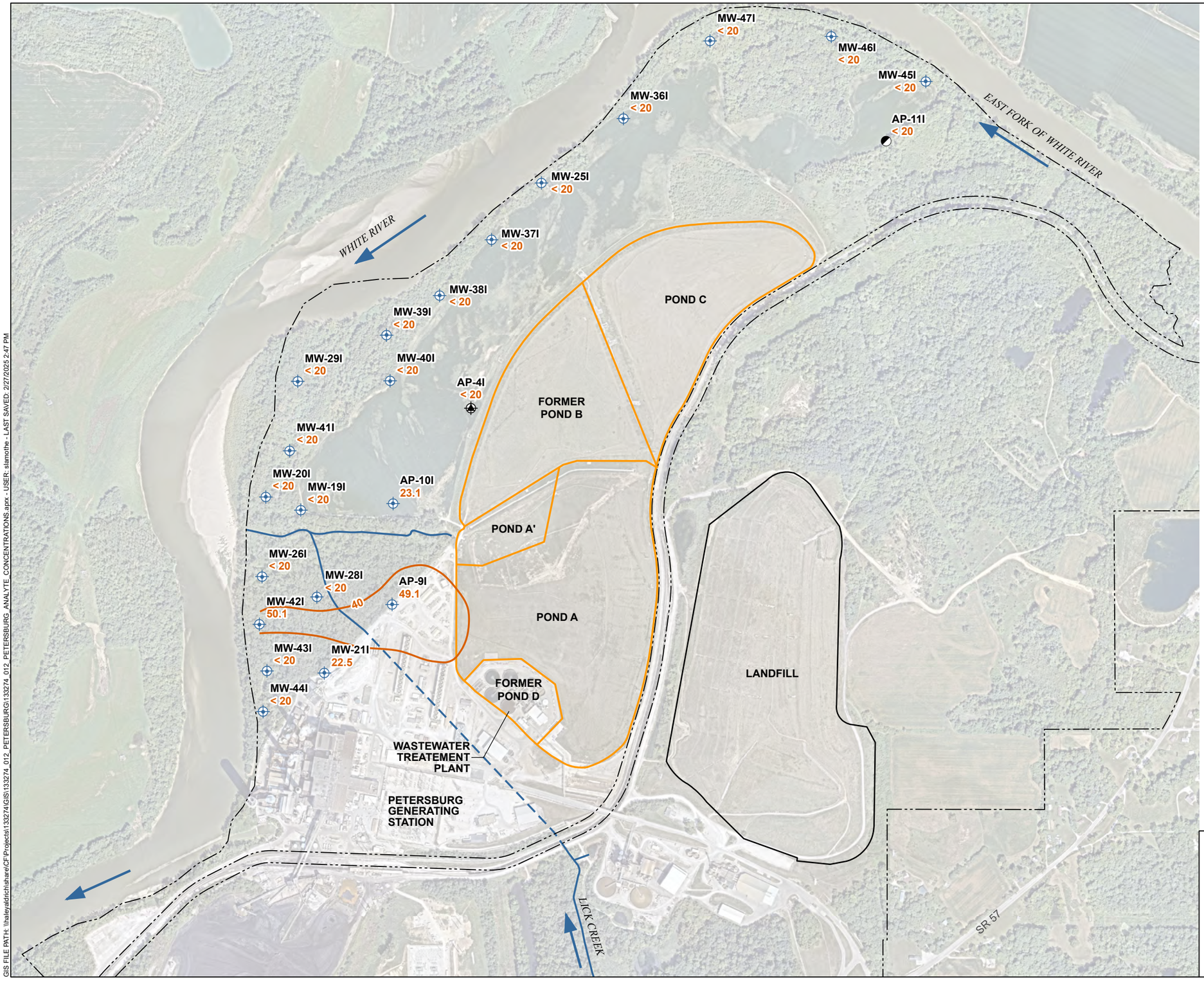
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

LITHIUM CONCENTRATIONS SHALLOW ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15D

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- CCR MONITORING WELL WITH LITHIUM CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH LITHIUM CONCENTRATION IN ug/L
- PIEZOMETER WITH LITHIUM CONCENTRATION IN ug/L
- LITHIUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

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3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

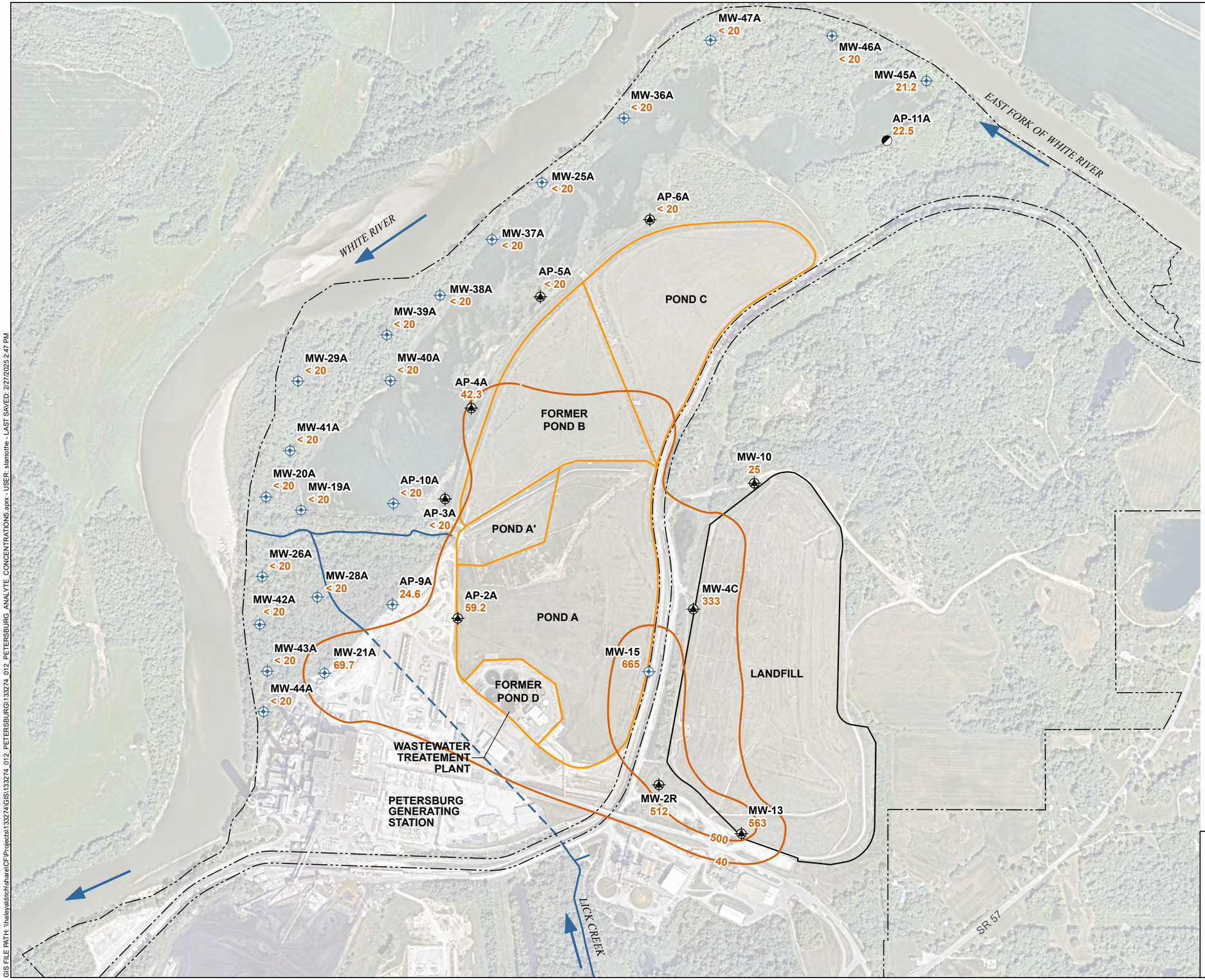
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

LITHIUM CONCENTRATIONS INTERMEDIATE ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15E

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- CCR MONITORING WELL WITH LITHIUM CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH LITHIUM CONCENTRATION IN ug/L
- PIEZOMETER WITH LITHIUM CONCENTRATION IN ug/L
- LITHIUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

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3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

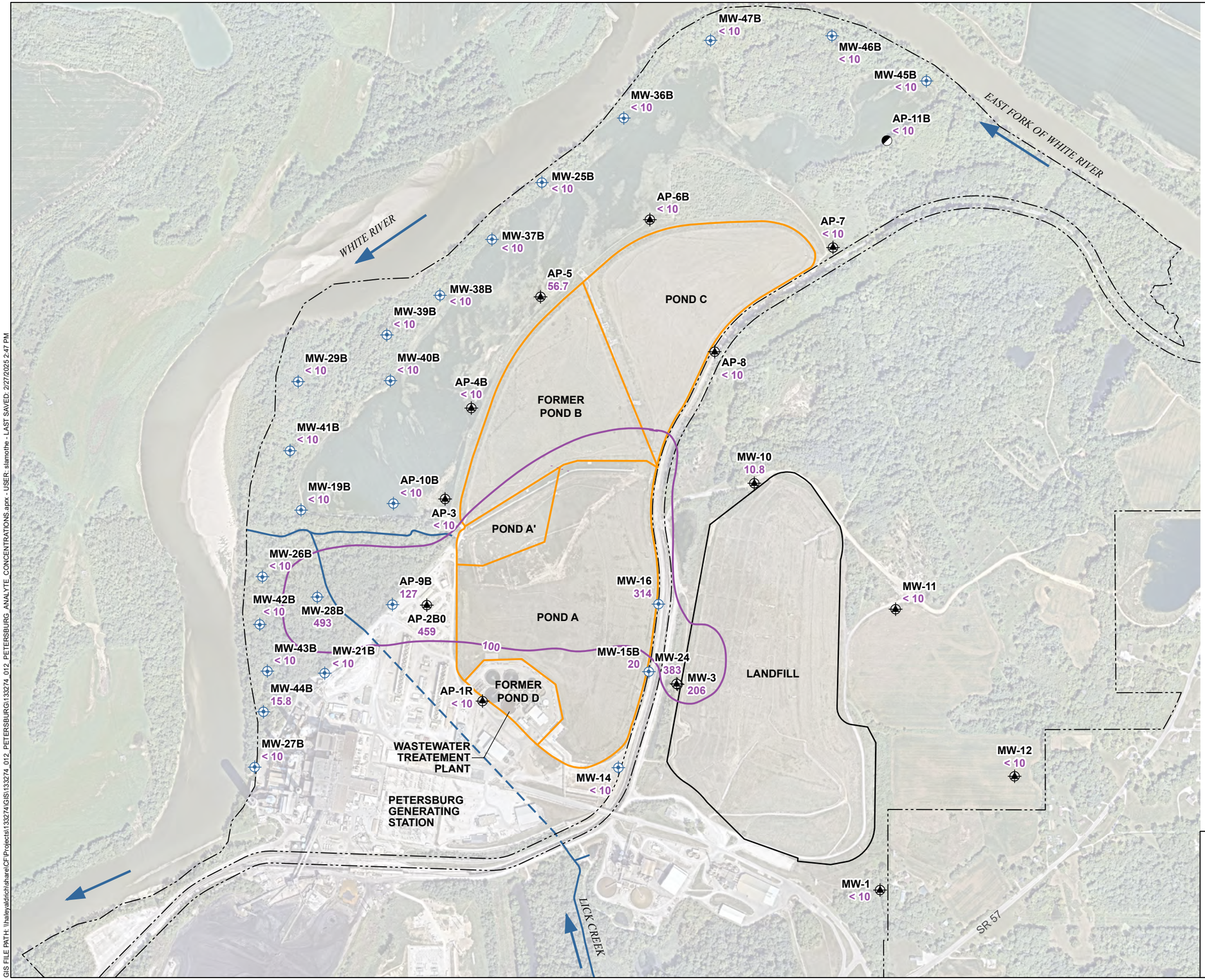
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

LITHIUM CONCENTRATIONS DEEP ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15F

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.apx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- CCR MONITORING WELL WITH MOLYBDENUM CONCENTRATION MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH MOLYBDENUM CONCENTRATION IN ug/L
- PIEZOMETER WITH MOLYBDENUM CONCENTRATION IN ug/L
- MOLYBDENUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

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3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

MOLYBDENUM CONCENTRATIONS SHALLOW ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15G

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM

MW-47I
< 10
MW-46I
< 10
MW-45I
< 10
MW-36I
< 10
AP-11I
< 10
EAST FORK OF WHITE RIVER
MW-25I
51.6
WHITE RIVER
MW-37I
175
MW-38I
239
MW-39I
152
POND C
MW-29I
< 10
MW-40I
185
AP-4I
74.8
FORMER
POND B
MW-41I
< 10
100
MW-20I
< 10
MW-19I
< 10
AP-10I
188
POND A'
500
MW-26I
660
AP-9I
1430
MW-42I
524
MW-28I
609
1000
POND A
MW-43I
119
MW-21I
102
LANDFILL
MW-44I
25.8
FORMER
POND D
WASTEWATER
TREATEMENT
PLANT
PETERSBURG
GENERATING
STATION
LICK CREEK
SR 57

LEGEND

- CCR MONITORING WELL WITH MOLYBDENUM CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH MOLYBDENUM CONCENTRATION IN ug/L
- PIEZOMETER WITH MOLYBDENUM CONCENTRATION IN ug/L
- MOLYBDENUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

NOTES

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2. SAMPLES COLLECTED 4 TO 13 NOVEMBER 2024
3. < = ANALYTE NOT DETECTED IN THE SAMPLE AT OR ABOVE THE DETECTION LIMIT.
4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

MOLYBDENUM CONCENTRATIONS INTERMEDIATE ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15H

GIS FILE PATH: \\haleyaldrichshare\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: kdrozynska - LAST SAVED: 3/3/2025 4:26 PM

MW-47A
< 10
MW-46A
< 10
MW-45A
< 10
MW-36A
< 10
AP-11A
< 10
EAST FORK OF WHITE RIVER
MW-25A
14.6
AP-6A
< 10
WHITE RIVER
MW-37A
445
AP-5A
438
MW-38A
349
POND C
MW-39A
333
MW-29A
150
MW-40A
636
AP-4A
245
FORMER
POND B
MW-41A
421
MW-20A
384
MW-19A
627
AP-10A
399
AP-3A
460
POND A'
MW-26A
1570
1000
MW-28A
1280
AP-9A
1700
1500
MW-42A
2160
AP-2A
943
POND A
MW-4C
11.4
MW-43A
236
MW-21A
175
500
MW-15
106
LANDFILL
MW-44A
451
100
FORMER
POND D
WASTEWATER
TREATEMENT
PLANT
PETERSBURG
GENERATING
STATION
MW-10
10.8
MW-2R
< 10
MW-13
66.3
LICK CREEK
SR 57

LEGEND

- CCR MONITORING WELL WITH MOLYBDENUM CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
- NATURE AND EXTENT MONITORING WELL WITH MOLYBDENUM CONCENTRATION IN ug/L
- PIEZOMETER WITH MOLYBDENUM CONCENTRATION IN ug/L
- MOLYBDENUM ISOCONCENTRATION CONTOUR, ug/L
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE LIMITS OF LANDFILL BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- STREAM AND OPEN CHANNEL
- WATER CONVEYANCE UNDERGROUND
- SURFACE WATER FLOW DIRECTION

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4. AERIAL IMAGERY SOURCE: NEARMAP, 23 AUGUST 2024

N

0 800 1,600
SCALE IN FEET

HALEY ALDRICH

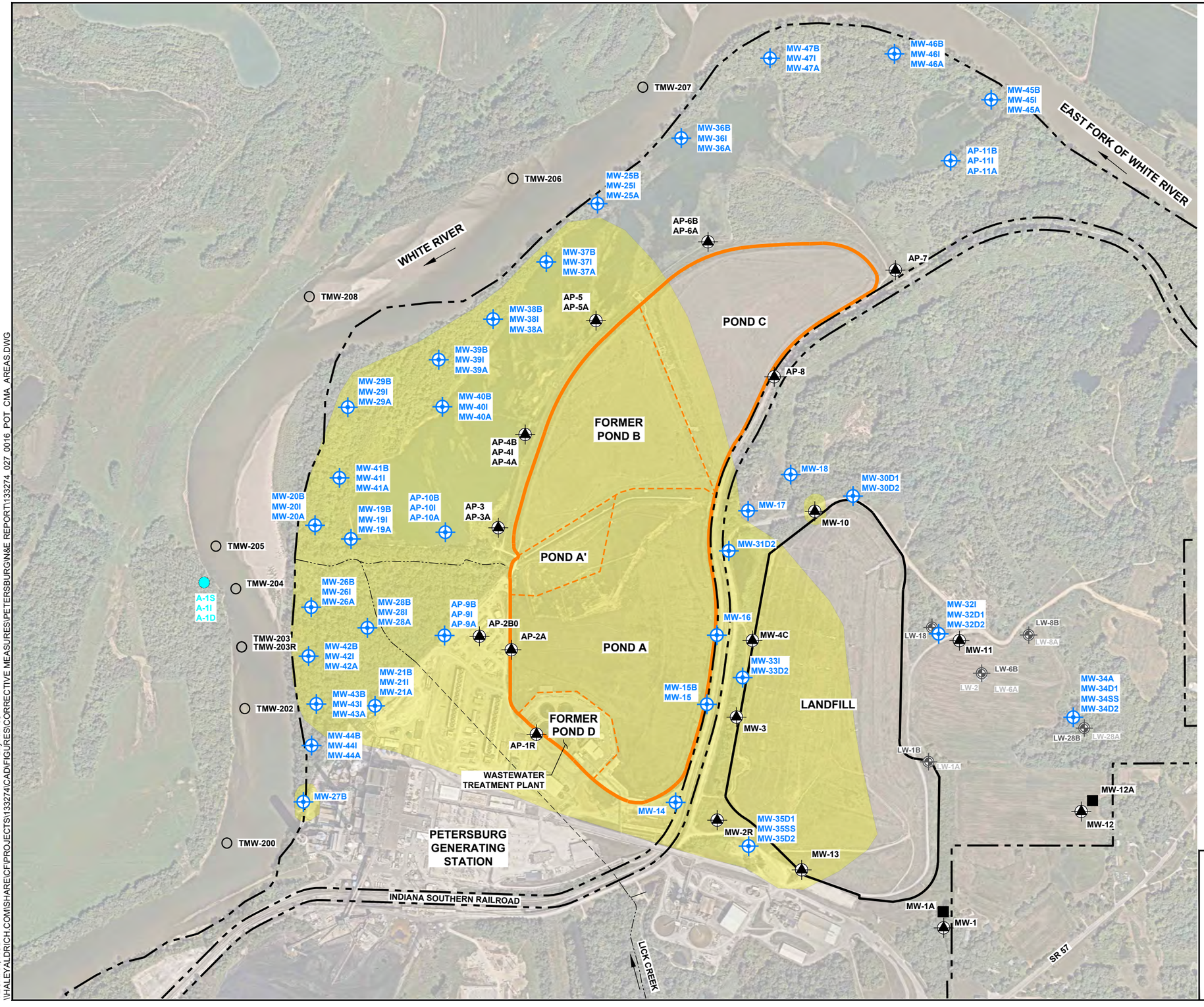
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

MOLYBDENUM CONCENTRATIONS DEEP ZONE NOVEMBER 2024

DECEMBER 2025

FIGURE 15I

GIS FILE PATH: \\haleyaldrich\share\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_ANALYTE_CONCENTRATIONS.aprx - USER: slamothe - LAST SAVED: 2/27/2025 2:47 PM



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- CCR MONITORING WELL LOCATION
- NATURE AND EXTENT MONITORING WELL
- 1991 LANDFILL OBSERVATION WELL
- BEDROCK MONITORING WELL
- APPROXIMATE AREA WITH GROUNDWATER CONCENTRATIONS ABOVE GWPS
- GROUNDWATER SAMPLING LOCATION BENEATH WHITE RIVER
- TEMPORARY WELL LOCATION

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS
4. GWPS = GROUNDWATER PROTECTION STANDARDS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

POTENTIAL AREAS FOR CORRECTIVE MEASURES

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 16

YEOMAN, ROB Saved: 10/30/2025 1:08 PM Layout: 16
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\IN&E REPORT\133274_027_0016_POT_CMA_AREAS.DWG

APPENDIX A
Seasonal Groundwater Variability Evaluation

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

TECHNICAL MEMORANDUM

17 March 2025
File No. 0133274-027

TO: AES Indiana

FROM: Haley & Aldrich, Inc.

SUBJECT: Seasonal Groundwater Variability Evaluation
Petersburg Generating Station
6925 North State Road
Petersburg, Indiana

To further evaluate the aquifer conditions at the Petersburg Generating Station site, data logging pressure transducers were installed inside 39 wells along the white river beginning on 11 August 2022 and remained in place for an approximate year until they were all removed on 16 November 2023. Data quality objectives for this groundwater flow evaluation include:

- Inform understanding of groundwater to surface water interactions along the white river;
- Evaluate vertical gradients considering seasonality of the White River; and
- Correlate White River elevation to groundwater elevations.

Results from this evaluation will be used to:

- Refine the groundwater flow and solute transport model; and
- Support the public meeting and selection process.

Methods

Solinst Data logging pressure transducers were originally installed in 39 screened intervals at 14 locations (**Figure 1**) and later reduced to 25 screened intervals at 9 locations (**Figure 2**) after inspecting the results and spatial distribution. The aquifer at the Site is discretized into shallow, intermediate, and deep flow zones, and the wells within each well cluster that are screened within these zones are similarly separated but are designated on the well IDs with a B, I, or A, respectively. To evaluate vertical

gradients, every well in a cluster was instrumented except for well cluster MW-20 where the shallow well (MW-20B) never got a transducer installed. The transducers were hung within the screen interval of each well with Kevlar braided twine so that stretching of the line would not occur over time. Transducer measurements were set to take readings every 10 minutes, and the data was downloaded monthly over the course of an approximate year. Manual water level measurements were documented in the field before each transducer was deployed, and before each transducer was downloaded. The timeline for transducer deployment and removal is summarized below.

Event Date	Event Description
11 August 2022	The first 15 transducers along with a barometric pressure transducer were deployed.
25 October 2022	An additional 15 transducers were deployed.
21 November 2022	The final 9 transducers were deployed.
9 June 2023	The number of transducers was reduced from 39 to 25
16 November 2023	The remaining 25 transducers and the barometric pressure transducer were removed.

Transducers were downloaded and processed prior to evaluation. The methods for processing the measurements from the transducers is as follows.

- Transducer files were compensated for barometric fluctuations by subtracting data collected from the barometric pressure logger from each well's transducers data. The data correction was completed within the Solinst Levelogger® pressure transducer software package (Version 4.6.1).
- Transducers were set to measure the depth of water above the transducer (the water column above the transducer). This depth of water was converted to depth to water (DTW) by comparing initial readings to manual water levels collected at time of deployment and then converted into groundwater elevation by comparing the DTW to the reference elevation of the top of casing. Well construction details with elevation information for all the wells with transducers installed are shown in **Table 1**, and the daily transducer data is shown as **Attachment A**.
- Groundwater elevation over time was then plotted along with the river elevation obtained from an upgradient United States Geological Survey gauging station north of Petersburg (i.e., station 03373980) to visually determine which wells responded during fluctuations in river stage. Manual water levels measured during each download were compared to transducer elevations at that time to evaluate representativeness of data. Each well had a difference less than or equal to 1 foot (0.24%) for the entire year of record, except for one instance in March of 2023 where MW-29A had a difference of 1.2 feet (0.29%), but this was noted as a possible manual measurement error (**Table 2**).

Conclusions

The aquifer at the Site is shown to be hydraulically connected to the white river evident by the near identical trends between river and groundwater elevations through time. As a result, the aquifer rises significantly during the rivers seasonal high flow periods that typically occurs from March to June and

falls significantly during the rivers seasonal low flow periods that typically occurs from August to November.

In general, the portion of the white river that passes the Site can be considered a gaining stream where the water levels in the wells along the river tend to be higher than the levels of the river itself, indicating flow towards the river. However, the data also shows that during very high river stage events (flooding), like the two events that occurred in March and April of 2023, the river level can become higher than the level in all of the wells along the river causing site wide flow reversals and the temporary development of a losing stream. The flow reversals for both flooding events were shown to occur when the river elevation reached an approximate 421.7 feet above mean sea level, but each event lasted a different length of time. The first flooding event led to a site wide flow reversal that lasted approximately four days, and the second flooding event led to site wide flow reversals that lasted approximately nine days. However, if we consider the entire year of record, these combined 13 days where flows are reversed only make up about 3.5% of the 365 days in a year.

Individually, monitoring wells MW-25 (A/I/B), MW-27, MW-29 (A/I/B), MW-37 (A/I/B), MW-38 (A/I/B), and MW-44 (A/I/B) instantly respond to changes in river levels and the flow persists towards the river the entire year except for the flooding stages observed in March and April. Conversely, MW-20 (A/I), MW-26 (A/I/B), MW-28 (A/I/B), MW-39 (A/I/B), MW-40 (A/I/B), MW-41 (A/I/B), MW-42 (A/I/B), and MW-43 (A/I/B) show a delayed response to fluctuations in river levels which leads to several short lived and localized flow reversals when the river level rapidly increases by approximately 4 feet. or more. Spatially, this distribution indicates that wells north of the point bar deposit across from pond B tend to respond to river fluctuations faster than wells south of this point bar, although, there are some exceptions (i.e., MW-27, MW-44, MW-39, and MW-40).

Vertical gradients at the Site vary between well clusters and flow zones. Monitoring well clusters MW-25, MW-26, MW-37, MW-40, MW-41, and MW-42 had miniscule vertical gradients throughout the year and, therefore, predominately show horizontal flow. MW-27 gradients could not be determined since it is only a single well. Monitoring wells with discernable vertical gradients are described below.

Well ID's	Gradient between Shallow and Intermediate zones	Gradient between Intermediate and Deep zones
MW-20	N/A	upward
MW-28	downward	upward
MW-29	-	downward
MW-38	-	upward
MW-39	upward	upward
MW-43	upward	-
MW-44	-	upward

Notes:
"-" flow is predominately horizontal during the year of record.
"N/A" Transducer is not installed in one of the indicated flow zones.

Overall, it seems that the vertical gradient between the shallow and intermediate zones tend to be absent with only a few instances where the difference in head is continuously large enough to define a

direction (i.e., MW-28, MW-39, and MW-43). However, the difference in head between the deep and intermediate zones tends to be much more pronounced, and in nearly every case where a vertical gradient was present between the deep and intermediate zones the direction is upwards. The only exception is MW-29, which has a downward vertical gradient between the intermediate and deep zones, but this may be due to its location within the point bar deposit (**Figure 1**). The only well cluster that had a consistent vertical gradient between the deep and shallow zone was MW-39 with upward flow across all three zones.

Hydrographs for individual wells, wells grouped by depth, and wells grouped by cluster are presented as **Attachment B**.

Attachments

Table 1 – Transducer Well Construction Details
Table 2 – Percent Difference Calculations
Figure 1 – Initial Transducer Locations
Figure 2 – Updated Transducer Locations (June 2023)
Attachment A – Daily Transducer Data
Attachment B – Hydrographs

TABLES

TABLE 1
GROUNDWATER MONITORING WELL DETAILS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Northing	Easting	Ground Surface Elevation (ft MSL)	Top of Casing (TOC) (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)
MW-20I	1196920.407	2904044.871	421.1	424.00	391.10	381.10
MW-20A	1196927.158	2904047.355	421.0	424.23	366.48	356.48
MW-25B	1199486.6	2906311.7	424.4	427.43	399.68	389.68
MW-25I	1199493.5	2906306.9	424.2	427.43	379.41	369.41
MW-25A	1199501.4	2906301.3	424.5	427.59	360.66	350.66
MW-26B	1196251.2	2904018.6	420.1	423.13	400.17	390.17
MW-26I	1196255.4	2904011.8	420.0	423.25	385.05	375.05
MW-26A	1196258.9	2904005.7	419.9	423.03	369.14	359.14
MW-27B	1194694	2903948.2	417.2	420.46	391.94	386.94
MW-28B	1196098.7	2904464	421.1	424.43	401.15	391.15
MW-28I	1196091.1	2904462.4	421.2	424.26	380.56	370.56
MW-28A	1196084.6	2904460.6	421.4	424.68	369.63	359.63
MW-29B	1197854.6	2904300.5	425.2	428.17	400.34	390.34
MW-29I	1197860	2904305	424.8	427.78	384.95	374.95
MW-29A	1197866.2	2904310.1	424.0	427.13	369.20	359.20
MW-37B	1199019.14	2905890.01	421.03	423.49	400.86	390.86
MW-37I	1199021.95	2905894.13	421.05	423.64	380.75	370.75
MW-37A	1199025.76	2905897.20	420.97	423.56	363.16	353.16
MW-38B	1198563.88	2905475.09	422.46	425.34	402.35	392.35
MW-38I	1198568.57	2905471.18	422.31	425.13	382.64	372.64
MW-38A	1198570.34	2905466.11	422.33	425.20	363.80	353.80
MW-39B	1198245.87	2905029.79	423.54	426.58	400.29	390.29
MW-39I	1198241.44	2905034.24	423.80	426.81	383.85	373.85
MW-39A	1198237.59	2905038.69	424.17	426.94	367.50	357.50
MW-40B	1197864.79	2905063.05	421.13	423.69	401.07	391.07
MW-40I	1197861.03	2905059.95	421.04	423.73	381.73	371.73
MW-40A	1197857.13	2905057.71	421.16	423.62	364.32	354.32

TABLE 1
GROUNDWATER MONITORING WELL DETAILS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well ID	Northing	Easting	Ground Surface Elevation (ft MSL)	Top of Casing (TOC) (ft MSL)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)
MW-41B	1197299.74	2904245.80	422.58	425.31	402.03	392.03
MW-41I	1197296.28	2904242.16	422.83	425.66	382.07	372.07
MW-41A	1197292.97	2904238.51	422.94	425.82	365.95	355.95
MW-42B	1195869.55	2903994.29	419.31	422.18	400.93	390.93
MW-42I	1195864.96	2903993.05	419.12	421.88	384.25	374.25
MW-42A	1195861.19	2903990.91	419.15	421.71	370.11	360.11
MW-43B	1195479.98	2904052.28	417.23	419.84	397.14	387.14
MW-43I	1195484.20	2904055.41	417.27	419.96	382.07	372.07
MW-43A	1195488.90	2904056.37	417.25	419.88	367.98	357.98
MW-44B	1195150.82	2904014.43	415.38	418.79	393.49	383.49
MW-44I	1195146.46	2904014.02	415.59	418.08	377.88	367.88
MW-44A	1195141.45	2904013.37	415.95	418.22	367.62	357.62

Notes:

Coordinate System : Indiana West FIPS 1302
Vertical datum: NAVD88
All elevations in feet above mean sea level.

TABLE 2
PERCENT DIFFERENCE BETWEEN TRANSDUCER AND
MEASURED GROUNDWATER ELEVATIONS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

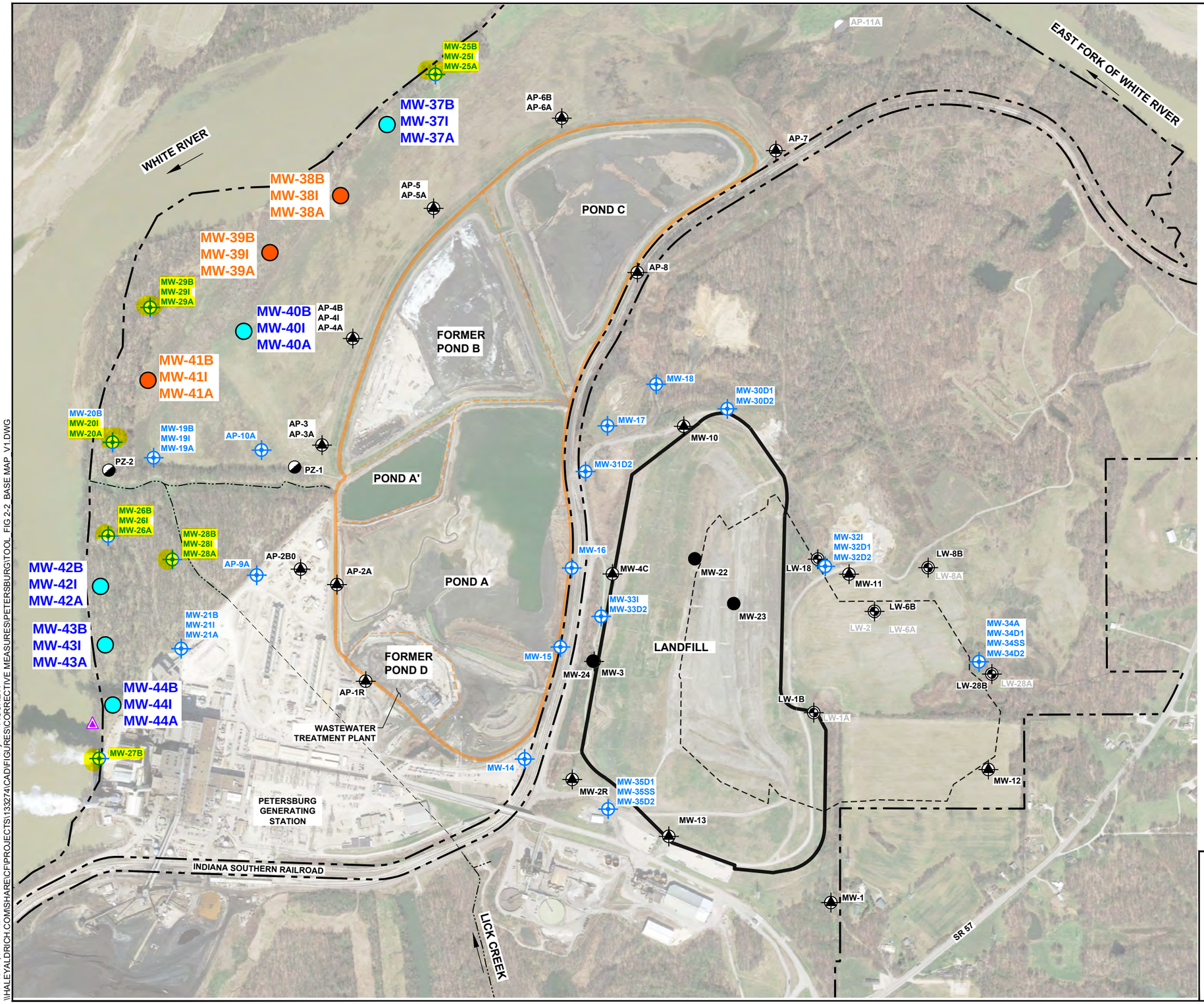
Percent Difference Calculation (Transducer-WLM, %)												
	2022				2023							
Well ID's	Sep, 9	Oct, 25	Nov, 21	Dec, 28	Feb, 2	Mar, 2	May, 8	June, 9	July, 10	Aug, 17	Oct, 4	Nov, 16
MW-20I	0	0.03	0.03	0.01	0	0.01	0	0	-	-	-	-
MW-20A	0	0	0.01	0.02	0	0.06	0	0.01	-	-	-	-
MW-25B	0	0	0.02	0.01	0	0.04	0.01	0.01	0.03	0	0	0.01
MW-25I	0	0	0.03	0	0	0.04	0.03	0.03	0.04	0	0	0
MW-25A	0	0.02	0.02	0	0	0.04	0.02	0.01	0.03	0	0.02	0.03
MW-26B	0	0.16	0.02	N/A	0	0	N/A	0	0.01	0.07	0	0.04
MW-26I	0	0.04	0	N/A	0	0	N/A	0.01	0.01	0.06	0.01	0.05
MW-26A	0	0.05	0.02	N/A	0	0	N/A	0.01	0	0.06	0.01	0
MW-27B	0	0.03	0.02	0.01	0	0	N/A	0.01	0	0.03	0	0
MW-28B	0	0.05	0.01	N/A	N/A	N/A	-	-	0	0.06	0	0.05
MW-28I	0	0.05	0.02	0	0	0	N/A	0	0.01	0.06	0	0.01
MW-28A	0	N/A	0	0.11	0	0	N/A	0.01	0	0.06	0	0
MW-29B	0	0.02	0.01	0.01	N/A	0.04	N/A	0.01	0	N/A	0.03	0
MW-29I	0	0.03	0.01	0.02	0	0.05	0.02	0.02	0	0.02	0	0.1
MW-29A	0	0.08	0.02	0	0	0.29	0.24	0.01	0	0	0.01	0.01
MW-37B	-	-	0.09	0.02	0	0.04	0.01	0.02	-	-	-	-
MW-37I	-	-	0.08	0	0	0.04	0.01	0.01	-	-	-	-
MW-37A	-	-	0.05	0	0	0.04	0	0.02	-	-	-	-
MW-38B	-	-	-	0	0	0.04	0.02	0	-	-	-	-
MW-38I	-	-	-	0	0	0.04	0.02	0.02	-	-	-	-
MW-38A	-	-	-	0.01	0	0.07	0.02	0.01	-	-	-	-
MW-39B	-	-	-	0.01	0	0.04	0	0.05	0	0	0.01	0
MW-39I	-	-	-	0.01	0	0.05	0.07	0.04	0.01	0	0.01	0.03
MW-39A	-	-	-	0.01	0.24	0.03	0.05	0.11	0.02	0	0.01	0
MW-40B	-	-	0.06	0.02	0	0.05	0.01	0.01	0.01	0.01	0.01	0.01
MW-40I	-	-	0.06	0.02	0	0.04	0.01	0.01	0	0	0.01	0.01
MW-40A	-	-	0.06	0.03	0	0.04	0.01	0.01	0	0	0.01	0
MW-41B	-	-	-	0.01	0	0.05	0	0.01	0.02	0.01	0	0.02
MW-41I	-	-	-	0	0	0.04	0.01	0.02	0.01	0	0.02	0.01
MW-41A	-	-	-	0.02	0	0.04	0.01	0.04	0.01	0.01	0	0
MW-42B	-	-	0	0.01	0.04	0	N/A	0	-	-	-	-
MW-42I	-	-	0	0	0.04	0	N/A	0.02	-	-	-	-
MW-42A	-	-	0	0.01	N/A	0	N/A	0	-	-	-	-
MW-43B	-	-	0.03	0.01	0.01	0	N/A	0.01	-	-	-	-
MW-43I	-	-	0.06	0.05	0.03	0	N/A	0.02	-	-	-	-
MW-43A	-	-	0.06	0.03	0.02	0	N/A	0	-	-	-	-
MW-44B	-	-	0.05	0.06	0.02	0	N/A	0.01	0	0.01	0.01	0
MW-44I	-	-	0.06	0.02	0.02	0	N/A	0	0	0.06	0	0.08
MW-44A	-	-	0.06	0.02	0.03	N/A	N/A	0	0.01	0.07	0.01	0.01

Notes

"-" Transducer data was either not downloaded yet, or the transducer was removed during the prior downloading event.

"N/A" either the transducer could not be downloaded due to connection issues, or the Transducer ran out of memory and the data could not be compared to the measured water level for that date.

FIGURES



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- APPROXIMATE PERMITTED LANDFILL EXPANSION BOUNDARY
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- MW-28B / MW-28I / MW-28A — EXISTING N&E WELL WITH TRANSDUCER INSTALLED 8/11/22
- TRANSDUCER INSTALLED ON 10/25/22
- TRANSDUCER INSTALLED ON 11/21/22

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. AERIAL IMAGE FROM GOOGLE EARTH.
3. WELL DESIGNATION LISTED IN ORDER OF DEPTH:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - SS = SANDSTONE UNIT WELL
   - D2 = LOWER BLACK SHALE UNIT
4. CCR = COAL COMBUSTION RESIDUALS

N

0 700 1400
SCALE IN FEET

HALEY ALDRICH

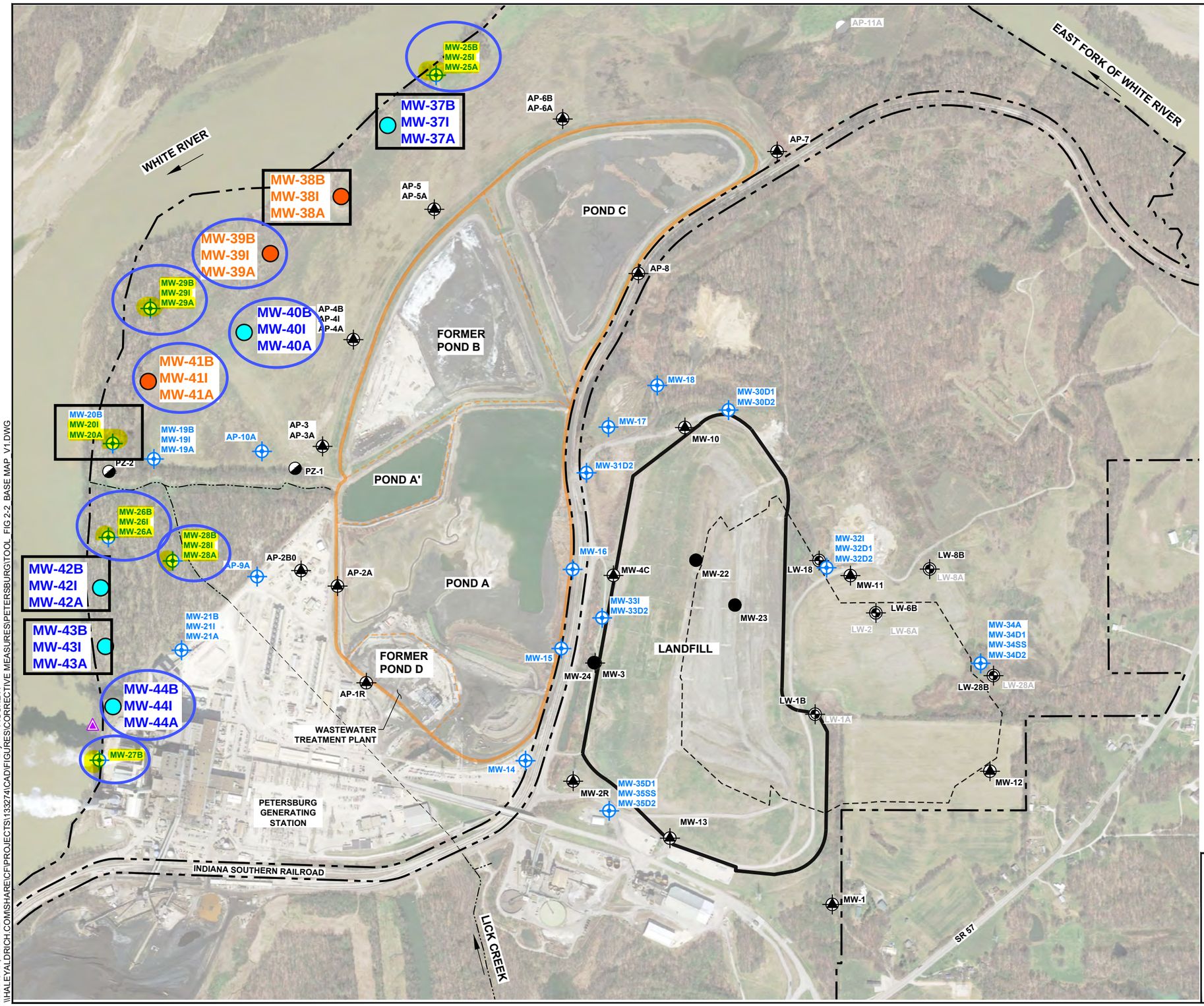
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

INITIAL TRANSDUCER LOCATIONS

AS SHOWN
MARCH 2025

FIGURE 1

KRAKORA, MATTHEW Saved: 11/18/2021 8:42 AM Layout: FIGURE X
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CADD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\TOOL_FIG 2-2_BASE MAP_V1.DWG



KRAKORA, MATTHEW Saved: 11/18/2021 8:42 AM Layout: FIGURE X
\\HALEYALDRICH.COM\SHARE\CP\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\TOOL_FIG 2-2_BASE MAP_V1.DWG

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- APPROXIMATE PERMITTED LANDFILL EXPANSION BOUNDARY
- CCR MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- NATURE AND EXTENT MONITORING WELL
- MW-28B / MW-28I / MW-28A — EXISTING N&E WELL WITH TRANSDUCER INSTALLED 8/11/22
- TRANSDUCER INSTALLED ON 10/25/22
- TRANSDUCER INSTALLED ON 11/21/22
- TRANSDUCER REMOVED ON 6/8/23
- MAINTAIN TRANSDUCER LOCATION

N

0 700 1400
SCALE IN FEET

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

UPDATED TRANSDUCER LOCATIONS (JUNE 2023)

AS SHOWN
MARCH 2025

FIGURE 2

ATTACHMENT A
Daily Transducer Data

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
08/11/22	406.52	406.53	403.68	403.76	403.58	403.06	403.13	402.96
08/12/22	406.55	406.54	406.85	406.89	406.87	406.24	406.23	406.20
08/13/22	406.75	406.76	407.22	407.25	407.22	406.50	406.53	406.50
08/14/22	406.76	406.76	407.15	407.17	407.14	406.50	406.49	406.46
08/15/22	406.65	406.64	406.98	407.00	406.97	406.36	406.35	406.31
08/16/22	406.49	406.47	406.73	406.74	406.72	406.17	406.13	406.09
08/17/22	406.30	406.27	406.46	406.46	406.44	405.98	405.88	405.85
08/18/22	406.12	406.05	406.22	406.23	406.21	405.80	405.66	405.62
08/19/22	405.96	405.86	406.02	406.04	406.02	405.62	405.47	405.43
08/20/22	405.77	405.68	405.86	405.88	405.86	405.43	405.30	405.26
08/21/22	405.61	405.52	405.72	405.73	405.72	405.29	405.15	405.11
08/22/22	405.49	405.40	405.62	405.65	405.63	405.16	405.05	405.01
08/23/22	405.37	405.28	405.50	405.52	405.50	405.05	404.92	404.88
08/24/22	405.28	405.21	405.54	405.57	405.55	404.98	404.90	404.87
08/25/22	405.21	405.14	405.45	405.46	405.44	404.92	404.81	404.78
08/26/22	405.11	405.01	405.31	405.33	405.31	404.81	404.69	404.65
08/27/22	404.98	404.92	405.25	405.27	405.25	404.70	404.60	404.57
08/28/22	404.92	404.84	405.19	405.21	405.19	404.64	404.53	404.49
08/29/22	404.81	404.75	405.10	405.12	405.10	404.54	404.43	404.40
08/30/22	404.78	404.71	405.07	405.09	405.07	404.51	404.40	404.37
08/31/22	404.65	404.60	404.97	404.99	404.97	404.38	404.29	404.26
09/01/22	404.58	404.51	404.90	404.91	404.90	404.31	404.21	404.18
09/02/22	404.69	404.71	405.48	405.59	405.56	404.54	404.60	404.58
09/03/22	405.04	405.08	405.90	405.93	405.90	404.93	404.97	404.95
09/04/22	405.20	405.22	406.04	406.10	406.07	405.05	405.11	405.10
09/05/22	405.18	405.20	405.93	405.93	405.89	405.04	405.05	405.03
09/06/22	405.24	405.27	405.99	406.00	405.97	405.06	405.10	405.09
09/07/22	405.35	405.36	406.07	406.08	406.05	405.16	405.18	405.17
09/08/22	405.52	405.56	406.43	406.47	406.44	405.38	405.46	405.46
09/09/22	405.78	405.72	406.62	406.61	406.60	405.70	405.75	405.76
09/10/22	405.74	405.67	406.44	406.41	406.40	405.63	405.63	405.64
09/11/22	405.61	405.52	406.20	406.18	406.16	405.45	405.43	405.44
09/12/22	405.47	405.39	406.02	406.00	405.99	405.31	405.28	405.29
09/13/22	405.39	405.29	405.93	405.92	405.90	405.22	405.19	405.20
09/14/22	405.21	405.12	405.69	405.66	405.64	405.05	404.99	404.99
09/15/22	405.11	405.04	405.75	405.77	405.76	404.97	404.98	404.98
09/16/22	405.28	405.24	406.02	406.01	406.00	405.20	405.22	405.22
09/17/22	405.24	405.15	405.83	405.82	405.81	405.09	405.08	405.08
09/18/22	405.12	405.04	405.69	405.68	405.67	404.97	404.94	404.95
09/19/22	405.05	404.95	405.55	405.54	405.52	404.87	404.83	404.83
09/20/22	404.94	404.85	405.43	405.42	405.40	404.78	404.73	404.73
09/21/22	404.84	404.73	405.28	405.27	405.25	404.66	404.61	404.60
09/22/22	404.70	404.63	405.16	405.14	405.13	404.56	404.48	404.50

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
09/23/22	404.61	404.54	405.07	405.07	405.05	404.46	404.41	404.41
09/24/22	404.56	404.46	404.98	404.99	404.97	404.37	404.33	404.32
09/25/22	404.49	404.39	404.90	404.91	404.88	404.30	404.25	404.24
09/26/22	404.39	404.29	404.83	404.84	404.81	404.23	404.17	404.17
09/27/22	404.32	404.23	404.76	404.76	404.74	404.16	404.10	404.10
09/28/22	404.22	404.15	404.68	404.68	404.67	404.09	404.02	404.03
09/29/22	404.10	404.08	404.62	404.63	404.60	404.02	403.97	403.96
09/30/22	404.12	404.06	404.57	404.57	404.55	403.96	403.91	403.91
10/01/22	404.07	404.02	404.51	404.51	404.49	403.90	403.85	403.85
10/02/22	404.00	403.92	404.45	404.45	404.43	403.84	403.79	403.79
10/03/22	403.92	403.84	404.39	404.39	404.37	403.78	403.73	403.73
10/04/22	403.89	403.80	404.34	404.35	404.32	403.73	403.69	403.68
10/05/22	403.85	403.76	404.28	404.29	404.27	403.68	403.64	403.63
10/06/22	403.80	403.70	404.23	404.24	404.21	403.63	403.59	403.58
10/07/22	403.73	403.63	404.18	404.18	404.16	403.58	403.54	403.54
10/08/22	403.66	403.60	404.14	404.14	404.13	403.55	403.50	403.50
10/09/22	403.65	403.56	404.10	404.10	404.08	403.50	403.46	403.46
10/10/22	403.61	403.52	404.05	404.06	404.04	403.46	403.42	403.41
10/11/22	403.56	403.47	404.00	404.01	403.99	403.42	403.37	403.37
10/12/22	403.53	403.43	403.96	403.97	403.95	403.37	403.34	403.34
10/13/22	403.48	403.40	403.93	403.94	403.92	403.35	403.31	403.31
10/14/22	403.46	403.37	403.90	403.92	403.89	403.32	403.29	403.28
10/15/22	403.43	403.35	403.87	403.87	403.86	403.30	403.24	403.26
10/16/22	403.40	403.31	403.83	403.84	403.81	403.25	403.22	403.22
10/17/22	403.37	403.28	403.80	403.80	403.78	403.23	403.19	403.19
10/18/22	403.34	403.26	403.77	403.78	403.75	403.20	403.17	403.17
10/19/22	403.29	403.22	403.74	403.75	403.73	403.17	403.13	403.13
10/20/22	403.28	403.19	403.72	403.73	403.70	403.14	403.11	403.11
10/21/22	403.25	403.16	403.68	403.69	403.67	403.11	403.07	403.08
10/22/22	403.22	403.14	403.67	403.67	403.66	403.09	403.05	403.06
10/23/22	403.19	403.11	403.65	403.67	403.65	403.06	403.04	403.04
10/24/22	403.18	403.11	403.66	403.67	403.66	403.06	403.03	403.04
10/25/22	403.19	403.10	403.66	403.67	403.65	403.05	403.03	403.03
10/26/22	403.27	403.29	403.84	403.87	403.85	403.18	403.10	403.13
10/27/22	403.14	403.11	403.71	403.73	403.72	403.01	402.96	402.99
10/28/22	403.12	403.12	403.70	403.72	403.71	403.02	402.95	402.98
10/29/22	403.13	403.14	403.72	403.74	403.74	403.03	402.96	402.99
10/30/22	403.16	403.19	403.76	403.79	403.78	403.06	402.98	403.02
10/31/22	403.09	403.09	403.71	403.73	403.72	402.94	402.89	402.92
11/01/22	403.24	403.23	403.93	403.94	403.92	403.14	403.10	403.14
11/02/22	403.25	403.27	403.92	403.76	403.91	403.15	403.09	403.12
11/03/22	403.26	403.25	403.94	403.94	403.93	403.15	403.09	403.12
11/04/22	403.26	403.26	403.94	403.93	403.93	403.20	403.10	403.11

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
11/05/22	403.30	403.30	403.90	403.94	403.89	403.17	403.06	403.09
11/06/22	403.28	403.26	403.89	403.92	403.88	403.15	403.06	403.08
11/07/22	403.21	403.22	403.84	403.82	403.83	403.10	403.02	403.04
11/08/22	403.17	403.20	403.81	403.80	403.80	403.04	402.99	403.01
11/09/22	403.18	403.18	403.78	403.80	403.77	403.03	402.97	402.99
11/10/22	403.22	403.16	403.75	403.80	403.74	403.07	402.95	402.97
11/11/22	403.21	403.15	403.72	403.78	403.72	403.07	402.94	402.96
11/12/22	403.17	403.13	403.70	403.73	403.69	403.03	402.92	402.95
11/13/22	403.14	403.13	403.70	403.68	403.69	402.99	402.92	402.95
11/14/22	403.10	403.11	403.68	403.66	403.66	402.96	402.90	402.92
11/15/22	403.15	403.09	403.66	403.69	403.64	402.95	402.88	402.90
11/16/22	403.12	403.08	403.64	403.63	403.62	402.92	402.87	402.89
11/17/22	403.07	403.07	403.63	403.61	403.62	402.92	402.87	402.89
11/18/22	403.07	403.06	403.61	403.62	403.60	402.92	402.85	402.87
11/19/22	403.03	403.05	403.60	403.59	403.59	402.91	402.84	402.86
11/20/22	403.03	403.04	403.59	403.56	403.58	402.88	402.83	402.85
11/21/22	403.07	403.03	403.58	403.59	403.57	402.88	402.82	402.84
11/22/22	402.96	402.93	403.46	403.45	403.48	402.81	402.82	402.78
11/23/22	402.95	402.94	403.45	403.49	403.48	402.81	402.81	402.79
11/24/22	402.93	402.92	403.45	403.49	403.48	402.82	402.80	402.77
11/25/22	402.91	402.89	403.42	403.46	403.45	402.79	402.77	402.74
11/26/22	402.91	402.88	403.43	403.45	403.47	402.78	402.79	402.74
11/27/22	402.90	402.87	403.43	403.46	403.51	402.79	402.77	402.75
11/28/22	402.86	402.89	403.47	403.44	403.50	402.77	402.81	402.69
11/29/22	402.87	402.87	403.49	403.46	403.51	402.75	402.82	402.73
11/30/22	402.95	402.93	403.51	403.56	403.55	402.83	402.84	402.81
12/01/22	402.95	402.95	403.61	403.58	403.64	402.84	402.90	402.82
12/02/22	403.12	403.12	403.82	403.84	403.87	402.96	403.06	403.03
12/03/22	403.19	403.19	403.87	403.91	403.91	403.02	403.11	403.10
12/04/22	403.18	403.17	403.87	403.83	403.89	403.06	403.13	403.06
12/05/22	403.24	403.18	403.84	403.88	403.88	403.07	403.13	403.11
12/06/22	403.19	403.17	403.79	403.82	403.85	403.08	403.07	403.05
12/07/22	403.15	403.08	403.76	403.78	403.78	403.03	403.06	403.02
12/08/22	403.13	403.14	403.82	403.79	403.84	403.02	403.08	403.01
12/09/22	403.17	403.15	403.80	403.79	403.83	403.03	403.08	403.01
12/10/22	403.17	403.15	403.80	403.76	403.83	403.02	403.08	402.99
12/11/22	403.14	403.12	403.78	403.77	403.80	403.01	403.07	402.98
12/12/22	403.09	403.09	403.75	403.74	403.78	402.99	403.05	402.96
12/13/22	403.10	403.09	403.73	403.70	403.77	402.97	403.04	402.97
12/14/22	403.12	403.09	403.70	403.74	403.73	402.98	403.00	402.98
12/15/22	403.26	403.26	404.01	404.07	404.10	403.14	403.24	403.23
12/16/22	403.52	403.58	404.61	404.68	404.72	403.49	403.67	403.63
12/17/22	403.80	403.82	404.85	404.88	404.93	403.75	403.91	403.85

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
12/18/22	403.98	403.99	404.97	404.96	405.00	403.92	404.06	403.99
12/19/22	404.06	404.07	404.99	404.96	405.02	404.00	404.11	404.04
12/20/22	404.11	404.10	404.95	404.92	404.95	404.01	404.10	404.03
12/21/22	404.08	404.08	404.89	404.86	404.90	403.99	404.07	403.99
12/22/22	404.11	404.10	404.76	404.78	404.81	403.99	403.99	403.98
12/23/22	404.00	404.00	404.64	404.63	404.69	403.87	403.90	403.80
12/24/22	403.83	403.82	404.23	404.15	404.18	403.68	403.57	403.54
12/25/22	403.51	403.48	403.92	403.97	404.01	#N/A	#N/A	#N/A
12/26/22	403.42	403.40	403.97	404.01	404.04	#N/A	#N/A	#N/A
12/27/22	403.34	403.31	403.84	403.85	403.87	#N/A	#N/A	#N/A
12/28/22	403.32	403.32	403.82	403.86	403.86	#N/A	#N/A	#N/A
12/29/22	403.29	403.29	404.01	404.03	404.02	403.36	403.28	403.32
12/30/22	403.45	403.68	404.19	404.16	404.20	403.45	403.45	403.46
12/31/22	403.59	403.79	404.29	404.28	404.30	403.56	403.56	403.57
01/01/23	403.68	403.93	404.51	404.50	404.54	403.71	403.71	403.72
01/02/23	403.80	404.06	404.69	404.67	404.71	403.84	403.80	403.86
01/03/23	403.96	404.21	404.91	404.91	404.97	403.99	403.98	404.04
01/04/23	404.50	404.81	405.94	406.06	406.14	404.67	404.78	404.86
01/05/23	405.09	405.38	406.56	406.63	406.70	405.30	405.39	405.47
01/06/23	405.63	405.93	407.13	407.20	407.27	405.89	405.96	406.04
01/07/23	406.13	406.43	407.53	407.57	407.63	406.38	406.43	406.51
01/08/23	406.41	406.70	407.67	407.68	407.73	406.63	406.64	406.73
01/09/23	406.54	406.79	407.64	407.61	407.66	406.69	406.67	406.74
01/10/23	406.50	406.67	407.34	407.31	407.30	406.48	406.49	406.54
01/11/23	406.23	406.40	406.91	406.84	406.85	406.14	406.11	406.15
01/12/23	405.96	406.12	406.54	406.49	406.47	405.84	405.77	405.82
01/13/23	405.76	405.99	406.49	406.44	406.47	405.74	405.68	405.70
01/14/23	405.71	405.95	406.49	406.43	406.47	405.70	405.62	405.67
01/15/23	405.94	406.19	406.92	406.88	406.93	406.00	405.98	406.02
01/16/23	406.23	406.48	407.26	407.24	407.28	406.31	406.28	406.35
01/17/23	406.46	406.66	407.44	407.43	407.46	406.50	406.48	406.54
01/18/23	406.56	406.82	407.55	407.50	407.56	406.64	406.60	406.65
01/19/23	406.39	406.60	407.56	407.58	407.66	406.45	406.49	406.57
01/20/23	408.35	408.68	409.77	409.90	410.00	408.65	408.78	408.89
01/21/23	409.27	409.58	410.59	410.69	410.80	409.53	409.65	409.77
01/22/23	409.89	410.17	411.06	411.12	411.19	410.09	410.16	410.26
01/23/23	410.05	410.31	411.08	411.08	411.16	410.21	410.22	410.30
01/24/23	410.05	410.31	411.00	410.96	411.02	410.16	410.13	410.21
01/25/23	409.89	410.06	410.62	410.58	410.57	409.85	409.83	409.83
01/26/23	410.12	410.39	411.23	411.21	411.29	410.23	410.26	410.34
01/27/23	410.45	410.71	411.39	411.34	411.41	410.53	410.51	410.58
01/28/23	410.63	410.89	411.58	411.54	411.59	410.69	410.67	410.75
01/29/23	410.77	411.05	411.73	411.71	411.73	410.85	410.83	410.89

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
01/30/23	410.81	411.07	411.70	411.67	411.68	410.86	410.81	410.88
01/31/23	410.53	410.77	411.33	411.24	411.29	410.53	410.47	410.51
02/01/23	410.50	410.71	411.20	411.13	411.16	410.44	410.38	410.40
02/02/23	410.19	410.42	410.72	410.67	410.68	0.00	409.69	409.68
02/03/23	409.77	410.00	410.22	410.18	410.17	409.47	409.43	409.42
02/04/23	409.37	409.58	409.70	409.66	409.66	409.02	408.95	408.94
02/05/23	408.94	409.14	409.17	409.14	409.13	408.54	408.47	408.45
02/06/23	408.48	408.68	408.61	408.59	408.58	408.05	407.97	407.95
02/07/23	408.10	408.29	408.16	408.15	408.14	407.64	407.55	407.52
02/08/23	407.72	407.93	407.80	407.79	407.78	407.27	407.19	407.16
02/09/23	407.59	407.80	407.71	407.74	407.73	407.18	407.14	407.12
02/10/23	409.40	409.77	410.41	410.53	410.57	409.44	409.62	409.64
02/11/23	410.72	411.06	411.67	411.80	411.81	410.72	410.87	410.91
02/12/23	411.41	411.74	412.21	412.26	412.27	411.40	411.48	411.50
02/13/23	411.43	411.69	412.10	412.10	412.09	411.32	411.35	411.35
02/14/23	411.34	411.66	412.06	412.06	412.05	411.24	411.27	411.27
02/15/23	411.22	411.44	411.74	411.71	411.72	411.01	410.99	410.98
02/16/23	410.64	410.84	410.97	410.94	410.94	410.32	410.27	410.25
02/17/23	411.06	411.38	411.86	411.89	411.88	410.95	411.01	411.02
02/18/23	411.39	411.72	412.19	412.20	412.19	411.29	411.33	411.34
02/19/23	412.00	412.31	412.80	412.81	412.80	411.89	411.94	411.95
02/20/23	412.08	412.34	412.77	412.78	412.76	411.92	411.93	411.94
02/21/23	411.96	412.18	412.52	412.52	412.50	411.74	411.73	411.73
02/22/23	411.60	411.80	412.02	411.99	411.99	411.32	411.27	411.26
02/23/23	411.15	411.39	411.57	411.56	411.56	410.87	410.84	410.82
02/24/23	410.72	411.00	411.13	411.13	411.12	410.45	410.41	410.39
02/25/23	410.40	410.58	410.57	410.56	410.56	410.00	409.92	409.89
02/26/23	409.90	410.08	410.02	410.03	410.02	409.46	409.37	409.35
02/27/23	409.54	409.73	409.68	409.69	409.68	409.11	409.03	409.00
02/28/23	409.22	409.45	409.43	409.45	409.44	408.82	408.76	408.73
03/01/23	409.01	409.22	409.18	409.20	409.19	408.59	408.52	408.50
03/02/23	408.71	408.69	0.00	0.00	0.00	408.35	408.30	408.24
03/03/23	408.60	408.52	408.71	408.76	408.74	408.19	408.17	408.12
03/04/23	412.79	412.95	413.91	414.26	414.33	412.72	413.14	413.19
03/05/23	417.45	417.26	417.01	417.23	417.30	418.44	418.24	418.19
03/06/23	419.65	419.45	419.02	419.10	419.14	420.16	420.06	420.00
03/07/23	420.99	420.88	420.64	420.63	420.65	421.12	421.12	421.05
03/08/23	420.98	420.93	421.10	421.07	421.06	420.96	420.98	420.91
03/09/23	420.97	420.95	421.21	421.19	421.17	420.89	420.92	420.86
03/10/23	420.96	420.94	421.25	421.23	421.21	420.85	420.88	420.80
03/11/23	420.95	420.90	421.23	421.22	421.19	420.78	420.80	420.73
03/12/23	420.97	420.92	421.33	421.31	421.28	420.72	420.76	420.69
03/13/23	419.26	419.28	419.53	419.52	419.47	418.78	418.80	418.73

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
03/14/23	416.51	416.32	415.86	415.88	415.83	415.80	415.57	415.46
03/15/23	414.06	413.91	413.35	413.46	413.40	413.30	413.10	413.00
03/16/23	412.80	412.71	412.24	412.37	412.32	411.98	411.83	411.75
03/17/23	412.05	411.98	411.67	411.79	411.76	411.29	411.20	411.12
03/18/23	411.55	411.49	411.34	411.44	411.42	410.88	410.82	410.74
03/19/23	411.14	411.08	411.02	411.11	411.10	410.52	410.48	410.41
03/20/23	410.88	410.83	410.83	410.92	410.91	410.30	410.27	410.20
03/21/23	410.60	410.56	410.57	410.65	410.64	410.05	410.01	409.94
03/22/23	410.28	410.24	410.27	410.35	410.33	409.76	409.71	409.64
03/23/23	409.99	409.95	409.98	410.07	410.05	409.47	409.43	409.37
03/24/23	409.74	409.70	409.80	409.89	409.88	409.24	409.23	409.16
03/25/23	414.60	414.68	415.56	415.76	415.81	414.66	414.93	414.96
03/26/23	420.34	420.11	419.67	419.73	419.78	420.81	420.71	420.64
03/27/23	421.02	420.95	421.02	420.97	420.97	421.06	421.05	420.98
03/28/23	420.98	420.97	421.18	421.14	421.13	420.86	420.88	420.82
03/29/23	420.97	420.95	421.26	421.22	421.20	420.82	420.85	420.79
03/30/23	420.96	420.96	421.28	421.26	421.24	420.79	420.82	420.77
03/31/23	420.91	420.90	421.27	421.25	421.22	420.71	420.75	420.69
04/01/23	420.93	420.91	421.29	421.28	421.25	420.75	420.77	420.72
04/02/23	420.92	420.91	421.29	421.27	421.24	420.75	420.78	420.72
04/03/23	420.93	420.92	421.32	421.30	421.28	420.78	420.81	420.75
04/04/23	420.93	420.92	421.30	421.28	421.25	420.76	420.80	420.74
04/05/23	420.89	420.90	421.31	421.28	421.25	420.66	420.71	420.65
04/06/23	420.44	420.46	420.82	420.77	420.75	420.21	420.24	420.19
04/07/23	420.95	420.95	421.29	421.26	421.23	420.76	420.79	420.75
04/08/23	420.94	420.93	421.26	421.24	421.22	420.78	420.81	420.75
04/09/23	420.94	420.94	421.27	421.25	421.23	420.77	420.81	420.76
04/10/23	420.36	420.37	420.74	420.73	420.69	420.15	420.19	420.13
04/11/23	419.44	419.45	419.80	419.81	419.77	419.13	419.18	419.12
04/12/23	418.53	418.51	418.74	418.77	418.73	418.07	418.11	418.05
04/13/23	417.28	417.20	417.25	417.30	417.26	416.74	416.70	416.65
04/14/23	415.81	415.70	415.52	415.60	415.56	415.37	415.22	415.15
04/15/23	414.34	414.25	413.97	414.10	414.05	413.87	413.72	413.64
04/16/23	413.17	413.09	412.73	412.89	412.84	412.58	412.44	412.38
04/17/23	412.36	412.28	411.95	412.11	412.06	411.74	411.63	411.56
04/18/23	411.79	411.73	411.54	411.65	411.63	411.21	411.14	411.07
04/19/23	411.34	411.29	411.16	411.26	411.24	410.79	410.73	410.68
04/20/23	410.96	410.91	410.83	410.93	410.92	410.43	410.38	410.33
04/21/23	410.63	410.59	410.55	410.64	410.63	410.14	410.10	410.04
04/22/23	410.40	410.35	410.35	410.44	410.43	409.93	409.89	409.84
04/23/23	410.13	410.09	410.09	410.18	410.17	409.67	409.64	409.58
04/24/23	409.84	409.80	409.85	409.94	409.92	409.40	409.37	409.32
04/25/23	409.73	409.70	409.83	409.91	409.90	409.33	409.32	409.27

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
04/26/23	409.56	409.53	409.65	409.72	409.72	409.17	409.15	409.09
04/27/23	409.38	409.35	409.46	409.54	409.52	409.00	408.97	408.92
04/28/23	409.22	409.18	409.30	409.38	409.37	408.83	408.81	408.76
04/29/23	409.05	409.02	409.18	409.25	409.24	408.69	408.67	408.62
04/30/23	408.94	408.91	409.09	409.17	409.15	408.59	408.57	408.53
05/01/23	408.90	408.89	409.13	409.19	409.18	408.59	408.58	408.54
05/02/23	408.82	408.92	409.27	409.43	409.29	408.06	408.66	408.62
05/03/23	408.92	409.02	409.47	409.61	409.47	408.19	408.82	408.78
05/04/23	409.05	409.15	409.63	409.77	409.62	408.34	408.96	408.93
05/05/23	409.13	409.24	409.74	409.87	409.73	408.43	409.06	409.02
05/06/23	409.23	409.34	409.87	410.00	409.86	408.54	409.18	409.14
05/07/23	409.37	409.48	409.99	410.12	409.98	408.69	409.32	409.28
05/08/23	409.30	409.40	409.82	409.96	409.82	408.60	409.20	409.16
05/09/23	409.89	409.92	410.95	410.93	411.03	0.00	0.00	0.00
05/10/23	411.74	411.78	412.91	412.84	412.93	411.65	411.84	411.86
05/11/23	412.08	412.07	412.99	412.82	412.87	411.99	412.08	412.06
05/12/23	411.81	411.79	412.47	412.31	412.39	411.65	411.68	411.66
05/13/23	411.37	411.33	411.76	411.65	411.73	411.12	411.10	411.07
05/14/23	410.71	410.65	410.89	410.79	410.89	410.36	410.30	410.26
05/15/23	410.08	410.02	410.17	410.10	410.19	409.67	409.61	409.56
05/16/23	409.81	409.76	410.05	409.98	410.07	409.42	409.39	409.35
05/17/23	410.21	410.21	410.77	410.66	410.77	409.96	410.00	409.97
05/18/23	409.90	409.87	410.20	410.12	410.22	409.56	409.54	409.50
05/19/23	409.75	409.72	410.06	409.99	410.07	409.40	409.39	409.36
05/20/23	409.48	409.42	409.65	409.58	409.67	409.09	409.04	409.00
05/21/23	409.21	409.15	409.31	409.25	409.34	408.80	408.74	408.69
05/22/23	408.82	408.76	408.89	408.85	408.93	408.38	408.32	408.28
05/23/23	408.56	408.50	408.70	408.65	408.74	408.13	408.09	408.05
05/24/23	408.36	408.30	408.47	408.42	408.51	407.93	407.87	407.83
05/25/23	408.11	408.05	408.19	408.15	408.23	407.66	407.60	407.56
05/26/23	407.87	407.81	407.93	407.89	407.97	407.41	407.35	407.30
05/27/23	407.61	407.55	407.64	407.60	407.68	407.16	407.08	407.03
05/28/23	407.35	407.28	407.35	407.32	407.40	406.89	406.81	406.76
05/29/23	407.11	407.06	407.12	407.10	407.18	406.67	406.58	406.54
05/30/23	406.91	406.84	406.92	406.89	406.97	406.46	406.38	406.33
05/31/23	406.70	406.63	406.72	406.69	406.77	406.25	406.17	406.13
06/01/23	406.50	406.43	406.55	406.52	406.60	406.08	406.00	405.95
06/02/23	406.34	406.28	406.41	406.38	406.46	405.95	405.84	405.82
06/03/23	406.18	406.12	406.28	406.25	406.32	405.81	405.71	405.68
06/04/23	406.03	405.97	406.15	406.12	406.20	405.68	405.58	405.55
06/05/23	405.91	405.85	406.04	406.00	406.08	405.56	405.46	405.44
06/06/23	405.77	405.71	405.93	405.89	405.97	405.44	405.34	405.31
06/07/23	405.66	405.60	405.81	405.78	405.86	405.33	405.23	405.21

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
06/08/23	405.59	405.53	405.77	405.74	405.81	405.28	405.19	405.16
06/09/23	405.43	405.38	405.64	405.60	405.68	405.14	405.05	405.02
06/10/23	#N/A	#N/A	405.39	405.50	405.48	405.11	405.04	405.04
06/11/23	#N/A	#N/A	405.28	405.40	405.39	405.02	404.95	404.95
06/12/23	#N/A	#N/A	405.28	405.39	405.39	404.98	404.93	404.93
06/13/23	#N/A	#N/A	405.23	405.34	405.34	404.93	404.88	404.89
06/14/23	#N/A	#N/A	405.24	405.34	405.34	404.90	404.86	404.87
06/15/23	#N/A	#N/A	405.33	405.42	405.41	404.92	404.90	404.90
06/16/23	#N/A	#N/A	405.28	405.37	405.36	404.90	404.87	404.87
06/17/23	#N/A	#N/A	405.21	405.30	405.30	404.85	404.80	404.80
06/18/23	#N/A	#N/A	405.16	405.25	405.24	404.80	404.76	404.76
06/19/23	#N/A	#N/A	405.10	405.18	405.18	404.75	404.70	404.70
06/20/23	#N/A	#N/A	405.05	405.13	405.13	404.70	404.65	404.66
06/21/23	#N/A	#N/A	405.01	405.10	405.09	404.65	404.60	404.61
06/22/23	#N/A	#N/A	404.95	405.04	405.03	404.60	404.55	404.56
06/23/23	#N/A	#N/A	404.87	404.95	404.95	404.54	404.48	404.49
06/24/23	#N/A	#N/A	404.79	404.87	404.86	404.46	404.40	404.41
06/25/23	#N/A	#N/A	404.70	404.78	404.77	404.39	404.33	404.33
06/26/23	#N/A	#N/A	404.63	404.72	404.72	404.32	404.26	404.27
06/27/23	#N/A	#N/A	404.62	404.71	404.71	404.29	404.24	404.25
06/28/23	#N/A	#N/A	404.79	404.87	404.87	404.33	404.32	404.33
06/29/23	#N/A	#N/A	405.00	405.06	405.06	404.49	404.48	404.49
06/30/23	#N/A	#N/A	405.89	405.96	405.98	405.13	405.23	405.26
07/01/23	#N/A	#N/A	405.29	405.33	405.33	404.97	404.91	404.93
07/02/23	#N/A	#N/A	405.79	405.90	405.91	405.14	405.20	405.22
07/03/23	#N/A	#N/A	406.91	406.98	407.01	405.76	405.93	405.97
07/04/23	#N/A	#N/A	408.05	408.07	408.10	406.86	407.00	407.06
07/05/23	#N/A	#N/A	408.01	407.99	408.01	407.08	407.14	407.18
07/06/23	#N/A	#N/A	407.70	407.70	407.71	406.97	407.00	407.02
07/07/23	#N/A	#N/A	407.43	407.46	407.46	406.78	406.79	406.80
07/08/23	#N/A	#N/A	407.26	407.31	407.30	406.67	406.65	406.67
07/09/23	#N/A	#N/A	406.93	406.98	406.98	406.42	406.39	406.40
07/10/23	#N/A	#N/A	406.60	406.66	406.65	406.16	406.10	406.11
07/11/23	#N/A	#N/A	406.66	406.72	406.72	405.97	405.96	405.96
07/12/23	#N/A	#N/A	406.96	407.00	406.99	406.17	406.19	406.20
07/13/23	#N/A	#N/A	406.68	406.73	406.71	406.00	405.99	405.99
07/14/23	#N/A	#N/A	406.55	406.60	406.59	405.88	405.87	405.87
07/15/23	#N/A	#N/A	406.39	406.45	406.43	405.77	405.74	405.74
07/16/23	#N/A	#N/A	406.17	406.23	406.21	405.62	405.57	405.57
07/17/23	#N/A	#N/A	405.95	406.02	406.01	405.43	405.38	405.37
07/18/23	#N/A	#N/A	406.31	406.37	406.36	405.57	405.59	405.59
07/19/23	#N/A	#N/A	406.25	406.30	406.29	405.58	405.58	405.58
07/20/23	#N/A	#N/A	406.63	406.67	406.67	405.75	405.81	405.82

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
07/21/23	#N/A	#N/A	406.95	406.96	406.96	406.05	406.11	406.11
07/22/23	#N/A	#N/A	406.94	406.95	406.95	406.13	406.16	406.17
07/23/23	#N/A	#N/A	406.76	406.79	406.78	406.04	406.04	406.04
07/24/23	#N/A	#N/A	406.47	406.50	406.49	405.82	405.81	405.81
07/25/23	#N/A	#N/A	406.18	406.22	406.21	405.61	405.58	405.57
07/26/23	#N/A	#N/A	405.91	405.96	405.94	405.39	405.33	405.32
07/27/23	#N/A	#N/A	405.65	405.72	405.70	405.20	405.14	405.12
07/28/23	#N/A	#N/A	405.38	405.45	405.43	404.98	404.90	404.89
07/29/23	#N/A	#N/A	405.28	405.36	405.34	404.84	404.78	404.76
07/30/23	#N/A	#N/A	405.21	405.28	405.27	404.75	404.70	404.69
07/31/23	#N/A	#N/A	405.14	405.22	405.20	404.67	404.62	404.61
08/01/23	#N/A	#N/A	405.17	405.23	405.22	404.64	404.61	404.60
08/02/23	#N/A	#N/A	405.15	405.22	405.20	404.60	404.58	404.57
08/03/23	#N/A	#N/A	405.11	405.18	405.16	404.57	404.55	404.55
08/04/23	#N/A	#N/A	405.07	405.13	405.12	404.55	404.52	404.52
08/05/23	#N/A	#N/A	404.94	405.00	404.98	404.46	404.41	404.40
08/06/23	#N/A	#N/A	404.78	404.85	404.83	404.35	404.29	404.28
08/07/23	#N/A	#N/A	404.64	404.71	404.70	404.23	404.16	404.15
08/08/23	#N/A	#N/A	405.77	405.84	405.84	404.80	404.91	404.93
08/09/23	#N/A	#N/A	405.63	405.65	405.65	404.87	404.90	404.90
08/10/23	#N/A	#N/A	405.33	405.36	405.35	404.74	404.72	404.72
08/11/23	#N/A	#N/A	405.05	405.09	405.07	404.51	404.47	404.46
08/12/23	#N/A	#N/A	404.90	404.95	404.93	404.39	404.35	404.34
08/13/23	#N/A	#N/A	405.22	405.28	405.27	404.45	404.49	404.50
08/14/23	#N/A	#N/A	405.73	405.75	405.75	404.85	404.90	404.91
08/15/23	#N/A	#N/A	405.76	405.78	405.78	404.95	404.99	405.00
08/16/23	#N/A	#N/A	405.99	406.02	406.02	405.10	405.16	405.18
08/17/23	#N/A	#N/A	406.14	406.13	406.13	405.27	405.31	405.32
08/18/23	#N/A	#N/A	406.25	406.26	406.25	0.00	0.00	0.00
08/19/23	#N/A	#N/A	406.20	406.20	406.18	405.37	405.40	405.40
08/20/23	#N/A	#N/A	405.93	405.95	405.93	405.20	405.21	405.21
08/21/23	#N/A	#N/A	405.68	405.71	405.68	405.02	405.01	405.00
08/22/23	#N/A	#N/A	405.44	405.48	405.45	404.85	404.82	404.81
08/23/23	#N/A	#N/A	405.21	405.26	405.23	404.68	404.63	404.62
08/24/23	#N/A	#N/A	405.00	405.06	405.03	404.52	404.46	404.45
08/25/23	#N/A	#N/A	404.83	404.89	404.86	404.37	404.31	404.29
08/26/23	#N/A	#N/A	404.68	404.74	404.72	404.22	404.17	404.15
08/27/23	#N/A	#N/A	404.98	405.02	405.00	404.36	404.35	404.35
08/28/23	#N/A	#N/A	404.70	404.76	404.74	404.19	404.15	404.14
08/29/23	#N/A	#N/A	405.00	405.05	405.03	404.28	404.30	404.30
08/30/23	#N/A	#N/A	404.95	404.98	404.97	404.31	404.30	404.29
08/31/23	#N/A	#N/A	404.65	404.70	404.67	404.13	404.08	404.08
09/01/23	#N/A	#N/A	404.46	404.52	404.49	404.00	403.94	403.93

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
09/02/23	#N/A	#N/A	404.36	404.42	404.40	403.87	403.83	403.82
09/03/23	#N/A	#N/A	404.30	404.37	404.34	403.80	403.76	403.75
09/04/23	#N/A	#N/A	404.23	404.30	404.27	403.74	403.69	403.69
09/05/23	#N/A	#N/A	404.16	404.23	404.20	403.66	403.62	403.60
09/06/23	#N/A	#N/A	404.07	404.14	404.10	403.59	403.54	403.52
09/07/23	#N/A	#N/A	403.97	404.05	404.01	403.52	403.47	403.45
09/08/23	#N/A	#N/A	403.91	403.98	403.95	403.44	403.39	403.38
09/09/23	#N/A	#N/A	403.84	403.91	403.88	403.37	403.32	403.31
09/10/23	#N/A	#N/A	403.76	403.84	403.81	403.31	403.26	403.25
09/11/23	#N/A	#N/A	403.72	403.79	403.77	403.24	403.20	403.19
09/12/23	#N/A	#N/A	403.66	403.74	403.71	403.19	403.15	403.14
09/13/23	#N/A	#N/A	403.63	403.71	403.68	403.16	403.11	403.10
09/14/23	#N/A	#N/A	403.58	403.66	403.63	403.11	403.07	403.06
09/15/23	#N/A	#N/A	403.54	403.62	403.59	403.07	403.02	403.01
09/16/23	#N/A	#N/A	403.49	403.57	403.54	403.03	402.98	402.98
09/17/23	#N/A	#N/A	403.44	403.52	403.49	402.98	402.94	402.93
09/18/23	#N/A	#N/A	403.41	403.48	403.46	402.94	402.89	402.89
09/19/23	#N/A	#N/A	403.36	403.44	403.41	402.91	402.87	402.86
09/20/23	#N/A	#N/A	403.32	403.40	403.37	402.87	402.83	402.82
09/21/23	#N/A	#N/A	403.28	403.36	403.33	402.83	402.79	402.78
09/22/23	#N/A	#N/A	403.25	403.33	403.30	402.80	402.76	402.75
09/23/23	#N/A	#N/A	403.23	403.31	403.28	402.77	402.73	402.72
09/24/23	#N/A	#N/A	403.24	403.31	403.29	402.75	402.72	402.71
09/25/23	#N/A	#N/A	403.20	403.27	403.24	402.72	402.68	402.68
09/26/23	#N/A	#N/A	403.16	403.23	403.20	402.69	402.65	402.65
09/27/23	#N/A	#N/A	403.13	403.20	403.17	402.66	402.63	402.62
09/28/23	#N/A	#N/A	403.11	403.19	403.16	402.63	402.61	402.60
09/29/23	#N/A	#N/A	403.15	403.22	403.19	402.63	402.61	402.60
09/30/23	#N/A	#N/A	403.13	403.20	403.18	402.63	402.60	402.60
10/01/23	#N/A	#N/A	403.12	403.19	403.16	402.62	402.59	402.59
10/02/23	#N/A	#N/A	403.24	403.30	403.27	402.65	402.64	402.64
10/03/23	#N/A	#N/A	403.26	403.31	403.28	402.67	402.66	402.66
10/04/23	#N/A	#N/A	403.18	403.24	403.21	402.63	402.62	402.61
10/05/23	#N/A	#N/A	403.17	403.20	403.07	402.60	402.56	402.51
10/06/23	#N/A	#N/A	403.18	403.21	403.08	402.60	402.56	402.52
10/07/23	#N/A	#N/A	403.16	403.19	403.05	402.59	402.55	402.51
10/08/23	#N/A	#N/A	403.13	403.16	403.02	402.57	402.54	402.48
10/09/23	#N/A	#N/A	403.10	403.13	402.99	402.55	402.52	402.46
10/10/23	#N/A	#N/A	403.09	403.13	402.99	402.54	402.50	402.45
10/11/23	#N/A	#N/A	403.16	403.19	403.05	402.55	402.53	402.49
10/12/23	#N/A	#N/A	403.11	403.14	403.01	402.54	402.50	402.46
10/13/23	#N/A	#N/A	403.07	403.10	402.96	402.52	402.45	402.44
10/14/23	#N/A	#N/A	403.05	403.09	402.95	402.50	402.49	402.41

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Date	MW-20I	MW-20A	MW-25B	MW-25I	MW-25A	MW-26B	MW-26I	MW-26A
10/15/23	#N/A	#N/A	403.04	403.06	402.92	402.48	402.43	402.40
10/16/23	#N/A	#N/A	403.01	403.04	402.90	402.47	402.43	402.39
10/17/23	#N/A	#N/A	402.99	403.02	402.88	402.46	402.41	402.37
10/18/23	#N/A	#N/A	402.98	403.01	402.87	402.43	402.39	402.35
10/19/23	#N/A	#N/A	403.00	403.03	402.89	402.44	402.42	402.36
10/20/23	#N/A	#N/A	403.04	403.06	402.92	402.45	402.47	402.38
10/21/23	#N/A	#N/A	403.06	403.08	402.95	402.47	402.42	402.40
10/22/23	#N/A	#N/A	403.05	403.06	402.93	402.46	402.40	402.39
10/23/23	#N/A	#N/A	403.00	403.03	402.89	402.44	402.39	402.36
10/24/23	#N/A	#N/A	402.98	403.00	402.87	402.42	402.40	402.35
10/25/23	#N/A	#N/A	402.99	403.01	402.87	402.42	402.38	402.34
10/26/23	#N/A	#N/A	402.97	403.00	402.86	402.41	402.37	402.33
10/27/23	#N/A	#N/A	402.95	402.97	402.83	402.39	402.36	402.31
10/28/23	#N/A	#N/A	402.95	402.98	402.84	402.39	402.33	402.32
10/29/23	#N/A	#N/A	402.95	402.98	402.84	402.38	402.39	402.31
10/30/23	#N/A	#N/A	403.04	403.05	402.92	402.42	402.39	402.36
10/31/23	#N/A	#N/A	403.01	403.03	402.89	402.42	402.38	402.35
11/01/23	#N/A	#N/A	403.03	403.05	402.91	402.42	402.39	402.36
11/02/23	#N/A	#N/A	403.11	403.09	402.97	402.10	402.61	402.38
11/03/23	#N/A	#N/A	403.18	403.16	403.04	402.14	402.66	402.43
11/04/23	#N/A	#N/A	403.27	403.26	403.13	402.20	402.72	402.50
11/05/23	#N/A	#N/A	403.30	403.28	403.16	402.24	402.74	402.52
11/06/23	#N/A	#N/A	403.31	403.29	403.16	402.24	402.78	402.53
11/07/23	#N/A	#N/A	403.29	403.27	403.15	402.24	402.76	402.53
11/08/23	#N/A	#N/A	403.27	403.26	403.11	402.23	402.73	402.51
11/09/23	#N/A	#N/A	403.20	403.21	403.07	402.40	402.75	402.50
11/10/23	#N/A	#N/A	403.14	403.15	403.01	402.35	402.67	402.45
11/11/23	#N/A	#N/A	403.10	403.11	402.97	402.33	402.61	402.42
11/12/23	#N/A	#N/A	403.05	403.07	402.92	402.29	402.62	402.39
11/13/23	#N/A	#N/A	403.02	403.04	402.89	402.27	402.58	402.37
11/14/23	#N/A	#N/A	402.98	403.01	402.86	402.25	402.55	402.34
11/15/23	#N/A	#N/A	402.95	402.99	402.84	402.23	402.57	402.32
11/16/23	#N/A	#N/A	402.93	402.95	402.80	402.21	402.53	402.30

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
08/11/22	402.41	403.73	403.56	403.80	406.08	399.82	398.17	#N/A
08/12/22	405.75	406.89	406.69	406.91	407.09	407.19	406.92	#N/A
08/13/22	406.26	406.98	406.79	407.01	407.37	407.47	407.21	#N/A
08/14/22	406.14	406.97	406.77	406.99	407.36	407.45	407.19	#N/A
08/15/22	405.93	406.87	406.68	406.89	407.23	407.31	407.05	#N/A
08/16/22	405.57	406.75	406.55	406.76	407.03	407.11	406.84	#N/A
08/17/22	405.20	406.59	406.39	406.60	406.79	406.86	406.59	#N/A
08/18/22	404.91	406.42	406.22	406.43	406.56	406.62	406.35	#N/A
08/19/22	404.70	406.26	406.06	406.27	406.36	406.43	406.16	#N/A
08/20/22	404.53	406.10	405.90	406.11	406.17	406.24	405.98	#N/A
08/21/22	404.39	405.96	405.76	405.97	406.01	406.09	405.82	#N/A
08/22/22	404.31	405.84	405.64	405.85	405.89	405.97	405.70	#N/A
08/23/22	404.17	405.72	405.52	405.73	405.77	405.85	405.58	#N/A
08/24/22	404.29	405.64	405.43	405.64	405.73	405.82	405.55	#N/A
08/25/22	404.16	405.56	405.35	405.57	405.66	405.73	405.47	#N/A
08/26/22	404.00	405.45	405.25	405.46	405.53	405.61	405.34	#N/A
08/27/22	403.94	405.35	405.15	405.36	405.44	405.52	405.26	#N/A
08/28/22	403.89	405.27	405.07	405.28	405.37	405.45	405.18	#N/A
08/29/22	403.77	405.18	404.98	405.19	405.28	405.36	405.09	#N/A
08/30/22	403.76	405.15	404.94	405.15	405.25	405.32	405.06	#N/A
08/31/22	403.66	405.03	404.83	405.04	405.14	405.22	404.95	#N/A
09/01/22	403.58	404.95	404.74	404.96	405.06	405.14	404.87	#N/A
09/02/22	404.56	405.02	404.82	405.04	405.39	405.50	405.25	#N/A
09/03/22	405.01	405.24	405.05	405.27	405.81	405.91	405.66	#N/A
09/04/22	405.15	405.37	405.17	405.40	405.95	406.05	405.80	#N/A
09/05/22	404.92	405.33	405.13	405.36	405.90	405.99	405.73	#N/A
09/06/22	404.97	405.38	405.19	405.41	405.96	406.05	405.79	#N/A
09/07/22	405.03	405.46	405.27	405.49	406.06	406.14	405.88	#N/A
09/08/22	405.63	405.57	405.38	405.61	406.32	406.43	406.17	#N/A
09/09/22	405.79	405.84	405.64	405.85	406.53	406.54	406.36	#N/A
09/10/22	405.45	405.85	405.65	405.84	406.43	406.43	406.24	#N/A
09/11/22	405.12	405.75	405.54	405.73	406.24	406.24	406.05	#N/A
09/12/22	404.91	405.66	405.46	405.65	406.09	406.08	405.89	#N/A
09/13/22	404.82	405.58	405.39	405.57	405.99	405.98	405.80	#N/A
09/14/22	404.48	405.44	405.24	405.43	405.79	405.78	405.59	#N/A
09/15/22	404.68	405.35	405.15	405.34	405.75	405.75	405.57	#N/A
09/16/22	405.02	405.49	405.28	405.47	405.98	405.98	405.80	#N/A
09/17/22	404.75	405.44	405.23	405.43	405.86	405.85	405.67	#N/A
09/18/22	404.60	405.34	405.15	405.33	405.73	405.73	405.54	#N/A
09/19/22	404.40	405.28	405.08	405.27	405.62	405.61	405.42	#N/A
09/20/22	404.25	405.21	405.01	405.20	405.51	405.50	405.31	#N/A
09/21/22	404.08	405.13	404.93	405.12	405.38	405.37	405.18	#N/A
09/22/22	403.92	405.05	404.86	405.03	405.26	405.26	405.05	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
09/23/22	403.84	404.98	404.77	404.96	405.17	405.16	404.97	#N/A
09/24/22	403.77	404.92	404.71	404.90	405.09	405.08	404.90	#N/A
09/25/22	403.68	404.85	404.64	404.84	405.01	404.99	404.81	#N/A
09/26/22	403.57	404.79	404.57	404.76	404.93	404.92	404.73	#N/A
09/27/22	403.50	404.72	404.51	404.69	404.85	404.84	404.66	#N/A
09/28/22	403.42	404.65	404.44	404.62	404.77	404.77	404.58	#N/A
09/29/22	403.39	404.58	404.37	404.56	404.71	404.70	404.52	#N/A
09/30/22	403.36	404.52	404.32	404.50	404.65	404.65	404.46	#N/A
10/01/22	403.29	404.47	404.27	404.45	404.59	404.58	404.40	#N/A
10/02/22	403.22	404.41	404.20	404.39	404.53	404.52	404.33	#N/A
10/03/22	403.15	404.35	404.14	404.33	404.47	404.46	404.27	#N/A
10/04/22	403.14	404.30	404.09	404.28	404.42	404.41	404.23	#N/A
10/05/22	403.08	404.25	404.04	404.23	404.37	404.36	404.17	#N/A
10/06/22	403.04	404.20	403.98	404.18	404.32	404.30	404.13	#N/A
10/07/22	402.99	404.14	403.94	404.12	404.27	404.26	404.08	#N/A
10/08/22	402.95	404.10	403.89	404.08	404.23	404.23	404.04	#N/A
10/09/22	402.93	404.05	403.85	404.03	404.19	404.19	404.00	#N/A
10/10/22	402.90	404.01	403.80	403.99	404.15	404.14	403.95	#N/A
10/11/22	402.85	403.96	403.75	403.93	404.10	404.10	403.91	#N/A
10/12/22	402.84	403.92	403.71	403.90	404.06	404.06	403.87	#N/A
10/13/22	402.81	403.88	403.68	403.87	404.03	404.03	403.84	#N/A
10/14/22	402.77	403.86	403.65	403.84	404.01	404.00	403.82	#N/A
10/15/22	402.77	403.82	403.62	403.79	403.98	403.98	403.77	#N/A
10/16/22	402.72	403.79	403.57	403.76	403.96	403.94	403.76	#N/A
10/17/22	402.71	403.75	403.55	403.73	403.92	403.91	403.73	#N/A
10/18/22	402.68	403.72	403.52	403.70	403.90	403.89	403.70	#N/A
10/19/22	402.65	403.68	403.48	403.66	403.86	403.85	403.67	#N/A
10/20/22	402.65	403.65	403.44	403.63	403.84	403.83	403.65	#N/A
10/21/22	402.62	403.61	403.41	403.59	403.81	403.80	403.62	#N/A
10/22/22	402.62	403.58	403.38	403.57	403.79	403.79	403.59	#N/A
10/23/22	402.61	403.55	403.35	403.54	403.78	403.77	403.58	#N/A
10/24/22	402.62	403.54	403.33	403.52	403.77	403.77	403.58	#N/A
10/25/22	402.64	403.52	403.32	403.50	403.77	403.76	403.57	403.39
10/26/22	402.81	403.60	403.39	403.47	403.82	403.85	403.86	403.79
10/27/22	402.65	403.45	403.24	403.33	403.69	403.72	403.73	403.67
10/28/22	402.65	403.44	403.23	403.31	403.68	403.72	403.72	403.67
10/29/22	402.69	403.43	403.23	403.28	403.69	403.73	403.74	403.71
10/30/22	402.75	403.44	403.23	403.31	403.71	403.75	403.76	403.76
10/31/22	402.73	403.30	403.09	403.17	403.62	403.66	403.67	403.69
11/01/22	402.89	403.50	403.30	403.38	403.85	403.88	403.89	403.91
11/02/22	402.82	403.50	403.16	403.41	403.84	403.89	403.85	403.58
11/03/22	402.82	403.50	403.16	403.42	403.85	403.89	403.85	403.94
11/04/22	402.83	403.50	403.16	403.42	403.85	403.89	403.85	403.95

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
11/05/22	402.79	403.49	403.15	403.41	403.82	403.86	403.83	403.92
11/06/22	402.77	403.48	403.15	403.40	403.82	403.86	403.82	403.91
11/07/22	402.70	403.45	403.11	403.36	403.78	403.82	403.78	403.86
11/08/22	402.68	403.43	403.09	403.34	403.75	403.79	403.76	403.82
11/09/22	402.67	403.42	403.07	403.33	403.73	403.77	403.74	403.80
11/10/22	402.66	403.40	403.06	403.32	403.71	403.75	403.72	403.78
11/11/22	402.66	403.40	403.07	403.32	403.70	403.74	403.71	403.75
11/12/22	402.61	403.39	403.05	403.30	403.68	403.72	403.69	403.73
11/13/22	402.61	403.37	403.03	403.29	403.68	403.72	403.68	403.73
11/14/22	402.59	403.35	403.01	403.27	403.66	403.70	403.66	403.71
11/15/22	402.58	403.34	403.00	403.25	403.64	403.68	403.64	403.68
11/16/22	402.56	403.32	402.98	403.24	403.62	403.66	403.63	403.67
11/17/22	402.56	403.31	402.97	403.23	403.62	403.66	403.62	403.73
11/18/22	402.55	403.29	402.96	403.22	403.60	403.64	403.60	403.71
11/19/22	402.54	403.28	402.95	403.20	403.59	403.63	403.59	403.70
11/20/22	402.52	403.26	402.93	403.18	403.58	403.62	403.58	403.69
11/21/22	402.52	403.25	402.91	403.17	403.57	403.61	403.57	403.67
11/22/22	402.54	403.18	402.97	403.13	403.54	403.60	403.59	403.28
11/23/22	402.53	403.17	402.96	403.14	403.54	403.59	403.59	403.30
11/24/22	402.53	403.16	402.95	403.12	403.52	403.58	403.57	403.29
11/25/22	402.49	403.13	402.93	403.09	403.50	403.56	403.54	403.26
11/26/22	402.51	403.14	402.94	403.04	403.51	403.56	403.55	403.29
11/27/22	402.56	403.14	402.93	403.07	403.56	403.55	403.60	403.27
11/28/22	402.55	403.12	402.93	403.05	403.55	403.58	403.59	403.31
11/29/22	402.60	403.13	402.93	403.04	403.52	403.59	403.56	403.34
11/30/22	402.64	403.14	402.94	403.11	403.59	403.60	403.63	403.36
12/01/22	402.71	403.16	402.97	403.08	403.63	403.68	403.67	403.44
12/02/22	403.03	403.26	403.06	403.18	403.82	403.83	403.86	403.65
12/03/22	403.01	403.32	403.12	403.29	403.90	403.89	403.94	403.70
12/04/22	402.96	403.34	403.14	403.26	403.88	403.92	403.92	403.71
12/05/22	402.96	403.37	403.16	403.33	403.91	403.90	403.95	403.69
12/06/22	402.87	403.33	403.14	403.31	403.86	403.85	403.90	403.63
12/07/22	402.84	403.31	403.10	403.25	403.81	403.83	403.85	403.61
12/08/22	402.90	403.31	403.11	403.23	403.83	403.88	403.87	403.65
12/09/22	402.92	403.34	403.14	403.26	403.83	403.87	403.87	403.64
12/10/22	402.90	403.34	403.14	403.26	403.79	403.87	403.83	403.64
12/11/22	402.87	403.32	403.13	403.26	403.80	403.85	403.84	403.62
12/12/22	402.83	403.30	403.10	403.23	403.78	403.84	403.82	403.59
12/13/22	402.83	403.29	403.09	403.22	403.79	403.82	403.83	403.59
12/14/22	402.81	403.26	403.07	403.23	403.79	403.79	403.84	403.54
12/15/22	403.34	403.40	403.20	403.37	404.00	403.99	404.04	403.80
12/16/22	404.13	403.59	403.40	403.51	404.44	404.48	404.48	404.37
12/17/22	404.27	403.77	403.59	403.71	404.68	404.73	404.72	404.63

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AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
12/18/22	404.29	403.91	403.72	403.87	404.84	404.88	404.88	404.77
12/19/22	404.24	403.99	403.80	403.94	404.89	404.94	404.93	404.80
12/20/22	404.13	404.05	403.85	403.93	404.88	404.93	404.92	404.76
12/21/22	404.06	404.09	403.88	#N/A	404.86	404.90	404.90	404.71
12/22/22	403.92	404.09	403.88	#N/A	404.83	404.82	404.87	404.60
12/23/22	403.75	404.03	403.83	#N/A	404.70	404.71	404.74	404.48
12/24/22	403.00	403.91	403.70	#N/A	404.42	404.42	404.46	404.18
12/25/22	402.73	#N/A	403.46	#N/A	404.08	404.08	404.12	403.79
12/26/22	402.91	#N/A	403.37	#N/A	404.07	404.08	404.11	403.84
12/27/22	402.84	#N/A	403.30	#N/A	403.98	404.00	404.02	403.71
12/28/22	402.87	#N/A	403.28	#N/A	403.98	403.98	404.02	403.68
12/29/22	402.92	#N/A	403.24	403.68	405.06	404.48	404.49	403.90
12/30/22	403.29	#N/A	403.54	403.71	405.14	404.58	404.59	404.03
12/31/22	403.40	#N/A	403.64	403.82	405.26	404.69	404.70	404.16
01/01/23	403.69	#N/A	403.75	403.90	405.42	404.87	404.88	404.36
01/02/23	403.89	#N/A	403.83	404.01	405.59	405.02	405.03	404.53
01/03/23	404.20	#N/A	403.93	404.11	405.77	405.21	405.23	404.75
01/04/23	405.83	#N/A	404.28	404.46	406.55	406.02	406.04	405.70
01/05/23	406.37	#N/A	404.67	404.85	407.18	406.63	406.65	406.32
01/06/23	406.99	#N/A	405.09	405.28	407.76	407.20	407.22	406.90
01/07/23	407.36	#N/A	405.49	405.68	408.24	407.66	407.68	407.31
01/08/23	407.34	#N/A	405.77	405.96	#N/A	407.89	407.90	407.47
01/09/23	407.12	#N/A	405.94	406.12	#N/A	407.93	407.93	407.47
01/10/23	406.58	#N/A	405.94	406.16	#N/A	407.72	407.72	407.18
01/11/23	405.94	#N/A	405.82	406.05	#N/A	407.37	407.37	406.79
01/12/23	405.46	#N/A	405.65	405.89	#N/A	407.04	407.04	406.44
01/13/23	405.51	#N/A	405.59	405.76	#N/A	406.94	406.93	406.35
01/14/23	405.50	#N/A	405.57	405.74	#N/A	406.91	406.91	406.34
01/15/23	406.11	#N/A	405.75	405.92	#N/A	407.24	407.25	406.73
01/16/23	406.55	#N/A	405.96	406.18	#N/A	407.56	407.57	407.06
01/17/23	406.76	#N/A	406.10	406.34	#N/A	407.75	407.76	407.25
01/18/23	406.81	#N/A	406.22	406.39	#N/A	407.89	407.89	407.38
01/19/23	407.08	#N/A	406.01	406.26	#N/A	407.72	407.73	407.30
01/20/23	410.09	#N/A	407.50	407.70	#N/A	409.74	409.76	409.40
01/21/23	410.86	#N/A	408.24	408.43	#N/A	410.54	410.55	410.27
01/22/23	411.11	#N/A	408.85	409.05	#N/A	411.09	411.10	410.80
01/23/23	410.86	#N/A	409.12	409.30	#N/A	411.22	411.22	410.86
01/24/23	410.53	#N/A	409.26	409.45	#N/A	411.22	411.22	410.80
01/25/23	409.85	#N/A	409.24	409.47	#N/A	410.97	410.97	410.43
01/26/23	410.80	#N/A	409.44	409.62	#N/A	411.36	411.37	410.96
01/27/23	410.85	#N/A	409.79	409.99	#N/A	411.64	411.64	411.18
01/28/23	411.00	#N/A	409.99	410.18	#N/A	411.81	411.82	411.36
01/29/23	411.11	#N/A	410.19	410.36	#N/A	411.98	411.99	411.53

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
01/30/23	410.99	#N/A	410.29	410.48	#N/A	412.01	412.01	411.52
01/31/23	410.48	#N/A	410.14	410.33	#N/A	411.72	411.73	411.17
02/01/23	410.28	#N/A	410.18	410.38	411.03	411.68	411.69	411.06
02/02/23	409.49	#N/A	409.61	409.79	410.97	410.97	410.98	410.50
02/03/23	409.15	#N/A	409.41	409.59	410.54	410.54	410.55	410.02
02/04/23	408.54	#N/A	409.06	409.23	410.12	410.11	410.12	409.54
02/05/23	407.93	#N/A	408.73	408.90	409.68	409.66	409.67	409.05
02/06/23	407.33	#N/A	408.31	408.49	409.20	409.17	409.19	408.52
02/07/23	406.87	#N/A	407.99	408.16	408.78	408.76	408.77	408.09
02/08/23	406.50	#N/A	407.66	407.83	408.41	408.40	408.41	407.72
02/09/23	406.61	#N/A	407.67	407.83	408.22	408.23	408.23	407.59
02/10/23	410.40	#N/A	409.01	409.19	410.26	410.33	410.35	409.96
02/11/23	411.68	#N/A	409.94	410.14	411.46	411.53	411.55	411.28
02/12/23	411.97	#N/A	410.66	410.84	412.12	412.17	412.18	411.90
02/13/23	411.50	#N/A	410.81	410.99	412.13	412.16	412.17	411.83
02/14/23	411.35	#N/A	410.85	411.03	412.15	412.17	412.18	411.79
02/15/23	410.89	#N/A	410.78	410.95	411.97	411.97	411.98	411.51
02/16/23	409.94	#N/A	410.29	410.47	411.38	411.37	411.38	410.79
02/17/23	411.20	#N/A	410.70	410.88	411.91	411.94	411.96	411.54
02/18/23	411.43	#N/A	410.97	411.16	412.24	412.26	412.27	411.88
02/19/23	412.15	#N/A	411.46	411.64	412.78	412.81	412.82	412.50
02/20/23	412.00	#N/A	411.60	411.77	412.84	412.86	412.86	412.51
02/21/23	411.64	#N/A	411.55	411.73	412.71	412.72	412.73	412.29
02/22/23	411.03	#N/A	411.28	411.45	412.37	412.37	412.37	411.84
02/23/23	410.57	#N/A	410.90	411.07	411.98	411.98	411.98	411.41
02/24/23	410.06	#N/A	410.50	410.68	411.59	411.58	411.59	410.98
02/25/23	409.40	#N/A	410.20	410.37	411.19	411.16	411.16	410.49
02/26/23	408.81	#N/A	409.74	409.91	410.69	410.67	410.67	409.95
02/27/23	408.49	#N/A	409.42	409.59	410.35	410.33	410.34	409.60
02/28/23	408.24	#N/A	409.11	409.28	410.07	410.05	410.06	409.33
03/01/23	408.01	#N/A	408.89	409.06	409.83	409.81	409.82	409.09
03/02/23	407.74	#N/A	408.63	408.80	0.00	0.00	0.00	0.00
03/03/23	407.62	#N/A	408.46	408.63	409.33	409.30	408.31	408.62
03/04/23	415.14	#N/A	411.42	411.60	412.89	413.02	412.07	413.04
03/05/23	418.42	#N/A	416.10	416.29	416.69	416.69	415.70	416.37
03/06/23	419.92	#N/A	419.03	419.21	419.07	419.02	418.01	418.54
03/07/23	420.80	#N/A	420.72	420.87	421.01	421.00	420.01	420.43
03/08/23	420.65	#N/A	420.70	420.86	421.32	421.32	420.32	420.86
03/09/23	420.62	#N/A	420.65	420.81	421.42	421.43	420.44	420.97
03/10/23	420.60	#N/A	420.62	420.78	421.53	421.53	420.54	421.01
03/11/23	420.55	#N/A	420.59	420.74	421.62	421.62	420.62	421.01
03/12/23	420.64	#N/A	420.61	420.77	421.80	421.76	420.76	421.16
03/13/23	418.63	#N/A	418.95	419.11	420.42	420.35	419.35	419.44

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
03/14/23	414.67	#N/A	415.99	416.15	417.99	417.80	416.78	415.93
03/15/23	412.09	#N/A	413.76	413.92	415.71	415.53	414.50	413.52
03/16/23	410.95	#N/A	412.48	412.64	414.28	414.12	413.10	412.40
03/17/23	410.45	#N/A	411.74	411.90	413.30	413.19	412.18	411.78
03/18/23	410.18	#N/A	411.23	411.40	412.69	412.62	411.62	411.38
03/19/23	409.88	#N/A	410.82	410.99	412.20	412.13	411.14	411.04
03/20/23	409.74	#N/A	410.54	410.70	411.86	411.81	410.81	410.82
03/21/23	409.50	#N/A	410.28	410.44	411.52	411.47	410.47	410.56
03/22/23	409.19	#N/A	409.99	410.15	411.16	411.12	410.13	410.24
03/23/23	408.93	#N/A	409.71	409.88	410.84	410.79	409.80	409.96
03/24/23	408.74	#N/A	409.47	409.63	410.57	410.53	409.54	409.74
03/25/23	416.16	#N/A	413.35	413.52	414.74	414.85	413.89	414.86
03/26/23	420.53	#N/A	419.60	419.79	419.58	419.59	418.59	419.22
03/27/23	420.72	#N/A	420.74	420.89	421.11	421.11	420.12	420.64
03/28/23	420.51	#N/A	420.59	420.74	421.58	421.58	420.59	420.90
03/29/23	420.49	#N/A	420.59	420.74	421.65	421.64	420.65	421.00
03/30/23	420.50	#N/A	420.59	420.73	421.64	421.64	420.65	421.05
03/31/23	420.44	#N/A	420.56	420.70	421.58	421.58	420.59	421.05
04/01/23	420.50	#N/A	420.59	420.72	421.60	421.60	420.61	421.06
04/02/23	420.56	#N/A	420.61	420.75	421.61	421.60	420.61	421.07
04/03/23	420.68	#N/A	420.65	420.80	421.66	421.65	420.66	421.12
04/04/23	420.72	#N/A	420.65	420.78	421.68	421.67	420.67	421.10
04/05/23	420.69	#N/A	420.63	420.75	421.86	421.81	420.81	421.12
04/06/23	420.15	#N/A	420.08	420.21	421.44	421.40	420.40	420.53
04/07/23	420.70	#N/A	420.61	420.75	421.74	421.73	420.73	421.04
04/08/23	420.72	#N/A	420.62	420.76	421.66	421.65	420.67	421.03
04/09/23	420.72	#N/A	420.64	420.77	421.68	421.67	420.68	421.06
04/10/23	420.12	#N/A	420.09	420.23	421.22	421.19	420.20	420.55
04/11/23	419.10	#N/A	419.16	419.30	420.42	420.38	419.39	419.65
04/12/23	417.98	#N/A	418.17	418.30	419.60	419.55	418.56	418.64
04/13/23	416.39	#N/A	416.90	417.03	418.50	418.40	417.40	417.21
04/14/23	414.60	#N/A	415.58	415.72	417.12	416.99	415.98	415.55
04/15/23	413.01	#N/A	414.25	414.39	415.68	415.54	414.52	414.07
04/16/23	411.70	#N/A	413.06	413.18	414.37	414.24	413.22	412.86
04/17/23	410.89	#N/A	412.21	412.34	413.44	413.33	412.33	412.07
04/18/23	410.52	#N/A	411.62	411.76	412.81	412.73	411.73	411.59
04/19/23	410.14	#N/A	411.17	411.30	412.31	412.25	411.25	411.18
04/20/23	409.84	#N/A	410.78	410.92	411.88	411.82	410.83	410.84
04/21/23	409.56	#N/A	410.45	410.59	411.51	411.46	410.47	410.54
04/22/23	409.41	#N/A	410.23	410.37	411.24	411.19	410.20	410.32
04/23/23	409.14	#N/A	409.95	410.09	410.95	410.90	409.91	410.06
04/24/23	408.89	#N/A	409.68	409.82	410.64	410.60	409.60	409.80
04/25/23	408.91	#N/A	409.56	409.71	410.54	410.50	409.51	409.75

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
04/26/23	408.74	#N/A	409.40	409.54	410.33	410.29	409.31	409.57
04/27/23	408.53	#N/A	409.22	409.36	410.13	410.09	409.10	409.39
04/28/23	408.39	#N/A	409.09	409.23	409.95	409.91	408.92	409.23
04/29/23	408.27	#N/A	408.92	409.06	409.78	409.75	408.76	409.09
04/30/23	408.22	#N/A	408.81	408.96	409.65	409.62	408.63	408.99
05/01/23	408.26	#N/A	408.77	408.93	409.63	409.60	408.62	409.01
05/02/23	408.44	#N/A	408.76	408.91	409.67	409.64	408.68	409.10
05/03/23	408.68	#N/A	408.83	408.99	409.78	409.76	408.80	409.27
05/04/23	408.86	#N/A	408.92	409.09	409.91	409.88	408.93	409.42
05/05/23	408.97	#N/A	408.99	409.15	409.99	409.96	409.00	409.50
05/06/23	409.13	#N/A	409.08	409.24	410.09	410.07	409.11	409.63
05/07/23	409.27	#N/A	409.22	409.38	410.22	410.20	409.24	409.76
05/08/23	409.08	#N/A	409.18	409.34	410.13	410.10	409.13	409.63
05/09/23	0.00	#N/A	0.00	0.00	410.78	410.82	410.82	410.48
05/10/23	412.80	#N/A	410.82	410.99	412.38	412.43	412.44	412.35
05/11/23	412.50	#N/A	411.33	411.51	412.69	412.71	412.71	412.51
05/12/23	411.78	#N/A	411.27	411.45	412.47	412.46	412.48	412.12
05/13/23	410.96	#N/A	410.98	411.15	412.03	412.02	412.06	411.52
05/14/23	409.92	#N/A	410.41	410.57	411.38	411.34	411.39	410.74
05/15/23	409.11	#N/A	409.84	410.01	410.75	410.72	410.75	410.06
05/16/23	409.05	#N/A	409.61	409.77	410.53	410.50	410.55	409.86
05/17/23	410.02	#N/A	409.96	410.13	410.97	410.98	411.00	410.47
05/18/23	409.30	#N/A	409.65	409.83	410.61	410.59	410.63	410.00
05/19/23	409.12	#N/A	409.52	409.69	410.45	410.59	410.45	409.87
05/20/23	408.66	#N/A	409.27	409.43	410.14	410.28	410.12	409.52
05/21/23	408.27	#N/A	409.02	409.18	409.86	409.99	409.83	409.20
05/22/23	407.78	#N/A	408.68	408.85	409.46	409.58	409.44	408.80
05/23/23	407.62	#N/A	408.44	408.60	409.20	409.34	409.19	408.57
05/24/23	407.36	#N/A	408.24	408.40	408.99	409.13	408.97	408.36
05/25/23	407.05	#N/A	408.02	408.18	408.71	408.84	408.68	408.09
05/26/23	406.75	#N/A	407.79	407.96	408.44	408.57	408.41	407.84
05/27/23	406.43	#N/A	407.59	407.75	408.16	408.29	408.13	407.57
05/28/23	406.11	#N/A	407.38	407.53	407.86	407.99	407.83	407.29
05/29/23	405.89	#N/A	407.18	407.34	407.60	407.73	407.57	407.06
05/30/23	405.66	#N/A	407.00	407.15	407.36	407.49	407.35	406.85
05/31/23	405.44	#N/A	406.81	406.97	407.13	407.26	407.12	406.65
06/01/23	405.30	#N/A	406.64	406.80	406.92	407.07	406.91	406.47
06/02/23	405.15	#N/A	406.47	406.63	406.76	406.89	406.75	406.32
06/03/23	405.04	#N/A	406.33	406.49	406.59	406.74	406.59	406.19
06/04/23	404.92	#N/A	406.20	406.36	406.44	406.59	406.44	406.07
06/05/23	404.81	#N/A	406.06	406.22	406.31	406.45	406.30	405.94
06/06/23	404.71	#N/A	405.94	406.10	406.17	406.33	406.17	405.83
06/07/23	404.61	#N/A	405.82	405.98	406.05	406.20	406.05	405.70

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
06/08/23	404.59	#N/A	405.77	405.93	405.98	406.14	405.99	405.66
06/09/23	404.46	405.82	405.61	405.77	405.84	405.99	405.84	405.52
06/10/23	404.46	405.79	405.56	405.75	405.76	405.77	405.78	#N/A
06/11/23	404.38	405.70	405.47	405.65	405.67	405.67	405.68	#N/A
06/12/23	404.43	405.64	405.41	405.60	405.62	405.62	405.63	#N/A
06/13/23	404.39	405.58	405.35	405.53	405.57	405.58	405.59	#N/A
06/14/23	404.43	405.52	405.29	405.48	405.55	405.55	405.57	#N/A
06/15/23	404.53	405.49	405.27	405.45	405.58	405.59	405.60	#N/A
06/16/23	404.48	405.45	405.22	405.41	405.55	405.56	405.58	#N/A
06/17/23	404.38	405.40	405.16	405.35	405.48	405.49	405.50	#N/A
06/18/23	404.37	405.35	405.12	405.30	405.44	405.45	405.47	#N/A
06/19/23	404.29	405.30	405.06	405.25	405.39	405.39	405.40	#N/A
06/20/23	404.23	405.23	405.01	405.19	405.33	405.34	405.36	#N/A
06/21/23	404.19	405.18	404.95	405.14	405.28	405.29	405.30	#N/A
06/22/23	404.14	405.14	404.91	405.09	405.23	405.23	405.25	#N/A
06/23/23	404.04	405.08	404.85	405.04	405.16	405.16	405.18	#N/A
06/24/23	403.95	405.02	404.79	404.98	405.09	405.09	405.11	#N/A
06/25/23	403.87	404.95	404.71	404.90	405.01	405.02	405.03	#N/A
06/26/23	403.81	404.90	404.66	404.85	404.94	404.95	404.96	#N/A
06/27/23	403.82	404.84	404.60	404.79	404.90	404.91	404.92	#N/A
06/28/23	404.05	404.82	404.58	404.78	404.99	405.00	405.02	#N/A
06/29/23	404.29	404.91	404.67	404.87	405.15	405.17	405.19	#N/A
06/30/23	405.73	405.37	405.14	405.34	405.80	405.85	405.87	#N/A
07/01/23	404.55	405.36	405.14	405.34	405.63	405.63	405.64	#N/A
07/02/23	405.33	405.47	405.24	405.44	405.81	405.84	405.87	#N/A
07/03/23	406.72	405.79	405.56	405.76	406.58	406.65	406.67	#N/A
07/04/23	407.96	406.44	406.23	406.43	407.70	407.75	407.77	#N/A
07/05/23	407.60	406.75	406.53	406.73	407.94	407.96	407.98	#N/A
07/06/23	407.11	406.82	406.60	406.80	407.85	407.85	407.87	#N/A
07/07/23	406.74	406.78	406.55	406.75	407.68	407.68	407.69	#N/A
07/08/23	406.56	406.75	406.52	406.72	407.57	407.56	407.58	#N/A
07/09/23	406.13	406.61	406.38	406.57	407.32	407.31	407.32	#N/A
07/10/23	405.75	406.44	406.20	406.40	407.02	407.01	407.02	#N/A
07/11/23	405.71	406.26	406.06	406.23	#N/A	406.89	406.90	#N/A
07/12/23	406.10	406.36	406.15	406.33	#N/A	407.11	407.12	#N/A
07/13/23	405.76	406.29	406.08	406.26	#N/A	406.93	406.94	#N/A
07/14/23	405.60	406.18	405.98	406.15	#N/A	406.79	406.80	#N/A
07/15/23	405.42	406.10	405.89	406.06	#N/A	406.68	406.68	#N/A
07/16/23	405.18	406.00	405.79	405.96	#N/A	406.51	406.50	#N/A
07/17/23	404.92	405.86	405.65	405.82	#N/A	406.30	406.29	#N/A
07/18/23	405.43	405.88	405.68	405.85	#N/A	406.49	406.49	#N/A
07/19/23	405.38	405.90	405.69	405.86	#N/A	406.48	406.47	#N/A
07/20/23	405.85	405.97	405.76	405.94	#N/A	406.69	406.69	#N/A

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
07/21/23	406.20	406.18	405.97	406.16	#N/A	407.02	407.01	#N/A
07/22/23	406.14	406.27	406.06	406.24	#N/A	407.08	407.08	#N/A
07/23/23	405.91	406.23	406.03	406.20	#N/A	406.98	406.98	#N/A
07/24/23	405.57	406.09	405.88	406.06	#N/A	406.76	406.75	#N/A
07/25/23	405.23	405.93	405.72	405.89	#N/A	406.50	406.50	#N/A
07/26/23	404.91	405.77	405.56	405.74	#N/A	406.26	406.25	#N/A
07/27/23	404.62	405.66	405.44	405.61	#N/A	406.04	406.03	#N/A
07/28/23	404.30	405.50	405.28	405.45	#N/A	405.79	405.78	#N/A
07/29/23	404.24	405.37	405.15	405.32	#N/A	405.64	405.64	#N/A
07/30/23	404.19	405.29	405.07	405.24	#N/A	405.56	405.55	#N/A
07/31/23	404.13	405.20	404.99	405.16	#N/A	405.47	405.47	#N/A
08/01/23	404.19	405.14	404.93	405.09	#N/A	405.45	405.45	#N/A
08/02/23	404.19	405.09	404.87	405.05	#N/A	405.41	405.41	#N/A
08/03/23	404.16	405.06	404.85	405.02	#N/A	405.38	405.37	#N/A
08/04/23	404.13	405.03	404.81	404.98	#N/A	405.34	405.33	#N/A
08/05/23	403.94	404.95	404.74	404.91	#N/A	405.22	405.22	#N/A
08/06/23	403.77	404.87	404.66	404.83	#N/A	405.10	405.09	#N/A
08/07/23	403.62	404.76	404.54	404.72	#N/A	404.96	404.95	#N/A
08/08/23	405.24	405.06	404.85	405.03	#N/A	405.70	405.70	#N/A
08/09/23	404.82	405.16	404.94	405.12	#N/A	405.73	405.73	#N/A
08/10/23	404.42	405.10	404.89	405.06	#N/A	405.57	405.56	#N/A
08/11/23	404.09	404.92	404.71	404.88	#N/A	405.30	405.29	#N/A
08/12/23	403.94	404.83	404.61	404.78	#N/A	405.15	405.16	#N/A
08/13/23	404.40	404.83	404.61	404.79	#N/A	405.29	405.29	#N/A
08/14/23	405.02	405.05	404.85	405.03	#N/A	405.75	405.75	#N/A
08/15/23	405.00	405.18	404.97	405.15	#N/A	405.84	405.84	#N/A
08/16/23	405.28	405.26	405.05	405.23	#N/A	406.01	406.01	#N/A
08/17/23	405.41	405.39	405.18	405.36	#N/A	406.19	406.19	#N/A
08/18/23	405.45	0.00	0.00	0.00	406.19	406.25	406.26	#N/A
08/19/23	405.33	405.48	405.29	405.47	406.20	406.27	406.28	#N/A
08/20/23	405.01	405.43	405.23	405.41	406.02	406.09	406.11	#N/A
08/21/23	404.70	405.30	405.10	405.28	405.83	405.89	405.90	#N/A
08/22/23	404.42	405.17	404.98	405.15	405.62	405.68	405.69	#N/A
08/23/23	404.16	405.04	404.84	405.02	405.42	405.47	405.50	#N/A
08/24/23	403.96	404.93	404.72	404.90	405.23	405.28	405.35	#N/A
08/25/23	403.77	404.80	404.60	404.77	405.06	405.11	405.18	#N/A
08/26/23	403.61	404.70	404.50	404.67	404.92	404.97	405.04	#N/A
08/27/23	404.04	404.76	404.56	404.74	405.07	405.13	405.17	#N/A
08/28/23	403.69	404.66	404.46	404.63	404.87	404.93	404.99	#N/A
08/29/23	404.24	404.66	404.46	404.64	405.01	405.08	405.11	#N/A
08/30/23	404.14	404.69	404.49	404.66	405.04	405.10	405.13	#N/A
08/31/23	403.74	404.59	404.39	404.56	404.82	404.89	404.93	#N/A
09/01/23	403.50	404.50	404.29	404.46	404.68	404.73	404.76	#N/A

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Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
09/02/23	403.42	404.41	404.20	404.37	404.55	404.62	404.64	#N/A
09/03/23	403.37	404.33	404.12	404.29	404.48	404.54	404.59	#N/A
09/04/23	403.32	404.27	404.06	404.23	404.41	404.47	404.54	#N/A
09/05/23	403.24	404.20	403.99	404.17	404.34	404.41	404.47	#N/A
09/06/23	403.14	404.14	403.92	404.10	404.26	404.32	404.39	#N/A
09/07/23	403.03	404.06	403.86	404.04	404.17	404.24	404.30	#N/A
09/08/23	402.98	404.00	403.79	403.97	404.10	404.16	404.21	#N/A
09/09/23	402.89	403.94	403.73	403.90	404.03	404.09	404.13	#N/A
09/10/23	402.84	403.87	403.66	403.83	403.96	404.03	404.07	#N/A
09/11/23	402.82	403.81	403.60	403.78	403.91	403.98	404.02	#N/A
09/12/23	402.76	403.76	403.55	403.72	403.86	403.92	403.99	#N/A
09/13/23	402.68	403.71	403.50	403.67	403.81	403.87	403.92	#N/A
09/14/23	402.63	403.67	403.46	403.63	403.76	403.84	403.89	#N/A
09/15/23	402.59	403.61	403.40	403.58	403.73	403.79	403.82	#N/A
09/16/23	402.58	403.57	403.37	403.53	403.69	403.75	403.78	#N/A
09/17/23	402.54	403.52	403.32	403.49	403.64	403.70	403.77	#N/A
09/18/23	402.50	403.48	403.27	403.45	403.60	403.66	403.70	#N/A
09/19/23	402.46	403.45	403.24	403.41	403.56	403.63	403.66	#N/A
09/20/23	402.43	403.39	403.19	403.36	403.52	403.59	403.60	#N/A
09/21/23	402.39	403.35	403.15	403.32	403.48	403.55	403.55	#N/A
09/22/23	402.37	403.32	403.11	403.28	403.46	403.52	403.53	#N/A
09/23/23	402.38	403.29	403.08	403.25	403.43	403.49	403.50	#N/A
09/24/23	402.39	403.26	403.06	403.23	403.41	403.47	403.50	#N/A
09/25/23	402.33	403.22	403.01	403.19	403.38	403.45	403.44	#N/A
09/26/23	402.29	403.19	402.98	403.16	403.35	403.42	403.42	#N/A
09/27/23	402.27	403.17	402.96	403.13	403.33	403.39	403.39	#N/A
09/28/23	402.28	403.14	402.94	403.11	403.29	403.37	403.38	#N/A
09/29/23	402.31	403.12	402.91	403.09	403.29	403.37	403.38	#N/A
09/30/23	402.30	403.10	402.90	403.07	403.28	403.36	403.36	#N/A
10/01/23	402.29	403.08	402.88	403.05	403.26	403.34	403.34	#N/A
10/02/23	402.42	403.07	402.87	403.05	403.32	403.39	403.40	#N/A
10/03/23	402.43	403.08	402.88	403.06	403.35	403.42	403.46	#N/A
10/04/23	402.36	403.06	402.86	403.03	403.30	403.37	403.44	#N/A
10/05/23	402.26	403.02	402.83	403.00	403.35	403.35	403.35	#N/A
10/06/23	402.28	403.01	402.82	403.00	403.35	403.35	403.35	#N/A
10/07/23	402.24	403.01	402.82	402.99	403.35	403.35	403.33	#N/A
10/08/23	402.23	402.99	402.81	402.98	403.34	403.33	403.32	#N/A
10/09/23	402.21	402.98	402.79	402.96	403.31	403.30	403.36	#N/A
10/10/23	402.21	402.95	402.77	402.94	403.29	403.28	403.31	#N/A
10/11/23	402.28	402.94	402.76	402.94	403.32	403.32	403.32	#N/A
10/12/23	402.24	402.93	402.75	402.92	403.30	403.29	403.31	#N/A
10/13/23	402.18	402.91	402.73	402.90	403.27	403.26	403.24	#N/A
10/14/23	402.17	402.90	402.72	402.90	403.26	403.25	403.26	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-27B	MW-28B	MW-28I	MW-28A	MW-29B	MW-29I	MW-29A	MW-37B
10/15/23	402.14	402.89	402.70	402.87	403.24	403.23	403.22	#N/A
10/16/23	402.13	402.87	402.68	402.86	403.22	403.21	403.22	#N/A
10/17/23	402.13	402.85	402.66	402.84	403.20	403.20	403.18	#N/A
10/18/23	402.10	402.83	402.65	402.82	403.19	403.18	403.19	#N/A
10/19/23	402.16	402.83	402.64	402.81	403.19	403.18	403.21	#N/A
10/20/23	402.20	402.83	402.65	402.82	403.22	403.21	403.26	#N/A
10/21/23	402.21	402.83	402.64	402.82	403.22	403.22	403.24	#N/A
10/22/23	402.19	402.82	402.63	402.81	403.22	403.22	403.19	#N/A
10/23/23	402.16	402.81	402.63	402.81	403.20	403.20	403.18	#N/A
10/24/23	402.15	402.79	402.60	402.78	403.18	403.17	403.16	#N/A
10/25/23	402.15	402.77	402.59	402.77	403.18	403.17	403.16	#N/A
10/26/23	402.14	402.77	402.58	402.76	403.17	403.16	403.15	#N/A
10/27/23	402.11	402.76	402.58	402.75	403.15	403.15	403.14	#N/A
10/28/23	402.11	402.75	402.56	402.74	403.15	403.14	403.12	#N/A
10/29/23	402.15	402.75	402.56	402.73	403.14	403.13	403.15	#N/A
10/30/23	402.25	402.77	402.58	402.75	403.19	403.18	403.17	#N/A
10/31/23	402.19	402.76	402.58	402.76	403.19	403.18	403.18	#N/A
11/01/23	402.21	402.77	402.57	402.75	403.19	403.19	403.20	#N/A
11/02/23	402.27	402.76	402.58	402.75	403.05	403.20	402.94	#N/A
11/03/23	402.35	402.79	402.60	402.77	403.10	403.25	402.96	#N/A
11/04/23	402.44	402.82	402.64	402.82	403.35	402.94	403.03	#N/A
11/05/23	402.45	402.85	402.66	402.84	403.40	402.98	403.04	#N/A
11/06/23	402.45	402.86	402.69	402.86	403.41	403.00	403.11	#N/A
11/07/23	402.44	402.87	402.69	402.87	403.41	402.99	403.38	#N/A
11/08/23	402.41	402.85	402.66	402.84	403.40	402.98	403.38	#N/A
11/09/23	402.34	402.66	402.62	402.82	403.36	402.94	403.36	#N/A
11/10/23	402.28	402.62	402.57	402.78	403.33	402.90	403.31	#N/A
11/11/23	402.24	402.60	402.54	402.74	403.28	402.86	403.25	#N/A
11/12/23	402.21	402.58	402.53	402.73	403.24	402.82	403.24	#N/A
11/13/23	402.19	402.57	402.52	402.71	403.21	402.79	403.20	#N/A
11/14/23	402.16	402.55	402.50	402.70	403.19	402.77	403.17	#N/A
11/15/23	402.14	402.54	402.49	402.70	403.17	402.75	403.20	#N/A
11/16/23	402.10	402.52	402.48	402.68	403.15	402.73	403.15	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
08/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/31/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

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Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
09/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/25/22	403.43	403.43	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/26/22	403.78	403.77	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/27/22	403.66	403.66	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/28/22	403.66	403.66	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/29/22	403.69	403.68	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/30/22	403.73	403.74	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/31/22	403.67	403.68	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/01/22	403.87	403.88	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/02/22	403.91	403.91	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/03/22	403.93	403.92	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/04/22	403.93	403.92	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
11/05/22	403.89	403.89	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/06/22	403.88	403.88	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/07/22	403.83	403.83	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/08/22	403.80	403.79	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/09/22	403.78	403.77	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/10/22	403.76	403.75	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/11/22	403.73	403.72	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/12/22	403.71	403.71	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/13/22	403.70	403.70	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/14/22	403.67	403.67	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/15/22	403.65	403.65	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/16/22	403.71	403.70	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/17/22	403.70	403.70	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/18/22	403.69	403.68	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/19/22	403.68	403.67	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/20/22	403.67	403.66	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/21/22	403.65	403.64	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
11/22/22	403.30	0.00	403.43	403.43	403.45	402.95	403.40	403.77
11/23/22	403.30	403.31	403.45	403.47	403.49	402.96	403.44	403.82
11/24/22	403.29	403.31	403.45	403.47	403.48	402.96	403.44	403.81
11/25/22	403.26	403.28	403.43	403.45	403.46	402.94	403.41	403.79
11/26/22	403.28	403.30	403.44	403.46	403.47	402.94	403.43	403.80
11/27/22	403.27	403.29	403.43	403.45	403.46	402.96	403.41	403.79
11/28/22	403.30	403.32	403.47	403.49	403.51	402.96	403.45	403.83
11/29/22	403.33	403.34	403.48	403.49	403.52	402.97	403.46	403.85
11/30/22	403.36	403.37	403.50	403.52	403.54	403.01	403.48	403.85
12/01/22	403.43	403.45	403.58	403.60	403.63	403.05	403.56	403.94
12/02/22	403.66	403.67	403.74	403.77	403.81	403.21	403.72	404.10
12/03/22	403.70	403.70	403.82	403.84	403.87	403.30	403.78	404.16
12/04/22	403.69	403.69	403.83	403.85	403.87	403.29	403.81	404.18
12/05/22	403.68	403.68	403.81	403.83	403.85	403.29	403.78	404.16
12/06/22	403.61	403.62	403.76	403.78	403.81	403.27	403.73	404.12
12/07/22	403.59	403.60	403.73	403.75	403.78	403.18	403.71	404.09
12/08/22	403.63	403.64	403.78	403.80	403.82	403.26	403.75	404.14
12/09/22	403.62	403.63	403.77	403.79	403.81	403.24	403.75	404.13
12/10/22	403.63	403.63	403.77	403.79	403.82	403.25	403.75	404.13
12/11/22	403.60	403.61	403.76	403.78	403.80	403.22	403.72	404.11
12/12/22	403.58	403.58	403.73	403.75	403.77	403.22	403.70	404.09
12/13/22	403.57	403.58	403.71	403.73	403.76	403.17	403.69	404.08
12/14/22	403.53	403.55	403.68	403.70	403.73	403.20	403.65	404.04
12/15/22	403.86	403.87	403.90	403.94	403.97	403.37	403.86	404.25
12/16/22	404.45	404.46	404.39	404.46	404.50	403.76	404.31	404.71
12/17/22	404.66	404.67	404.65	404.69	404.73	404.02	404.55	404.94

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
12/18/22	404.76	404.77	404.81	404.84	404.87	404.17	404.70	405.10
12/19/22	404.78	404.78	404.85	404.88	404.90	404.23	404.76	405.15
12/20/22	404.73	404.74	404.84	404.86	404.88	404.25	404.75	405.14
12/21/22	404.69	404.73	404.80	404.82	404.78	404.22	404.73	405.12
12/22/22	404.58	404.63	404.72	404.74	404.69	404.17	404.65	405.06
12/23/22	404.46	404.50	404.61	404.63	404.58	404.09	404.55	404.96
12/24/22	404.00	404.03	404.37	404.32	404.29	403.87	404.32	404.71
12/25/22	403.80	403.85	403.96	403.98	403.94	403.50	403.97	404.36
12/26/22	403.84	403.89	403.99	404.01	403.98	403.51	403.99	404.37
12/27/22	403.71	403.74	403.88	403.89	403.85	403.42	403.90	404.28
12/28/22	403.68	403.72	403.85	403.87	403.83	403.38	403.85	404.25
12/29/22	403.88	403.86	404.09	404.08	404.23	403.65	404.13	404.44
12/30/22	404.05	404.04	404.20	404.20	404.35	403.71	404.23	404.56
12/31/22	404.15	404.14	404.32	404.31	404.47	403.81	404.33	404.65
01/01/23	404.37	404.36	404.48	404.49	404.65	403.96	404.49	404.81
01/02/23	404.55	404.53	404.65	404.65	404.81	404.11	404.63	404.96
01/03/23	404.78	404.77	404.83	404.84	405.01	404.27	404.80	405.13
01/04/23	405.84	405.84	405.56	405.64	405.83	404.93	405.49	405.86
01/05/23	406.41	406.40	406.17	406.22	406.40	405.49	406.06	406.42
01/06/23	406.96	406.96	406.68	406.72	406.91	405.98	406.55	406.92
01/07/23	407.34	407.34	407.12	407.14	407.33	406.39	406.95	407.32
01/08/23	407.47	407.46	407.34	407.34	407.52	406.62	407.16	407.52
01/09/23	407.42	407.41	407.41	407.40	407.56	406.72	407.25	407.61
01/10/23	407.11	407.09	407.23	407.20	407.37	406.65	407.11	407.50
01/11/23	406.68	406.67	406.96	406.90	407.05	406.41	406.84	407.22
01/12/23	406.33	406.31	406.65	406.59	406.74	406.15	406.58	406.95
01/13/23	406.29	406.28	406.48	406.47	406.61	405.99	406.48	406.82
01/14/23	406.30	406.28	406.45	406.45	406.60	405.95	406.46	406.80
01/15/23	406.73	406.71	406.75	406.77	406.93	406.23	406.75	407.11
01/16/23	407.06	407.05	407.04	407.07	407.22	406.51	407.02	407.38
01/17/23	407.24	407.23	407.24	407.25	407.41	406.69	407.18	407.54
01/18/23	407.35	407.33	407.40	407.40	407.57	406.81	407.33	407.69
01/19/23	407.38	407.37	407.11	407.17	407.34	406.59	407.08	407.48
01/20/23	409.56	409.56	408.87	408.97	409.16	408.18	408.74	409.14
01/21/23	410.38	410.37	409.68	409.77	409.95	408.91	409.46	409.85
01/22/23	410.83	410.82	410.33	410.38	410.56	409.48	410.03	410.43
01/23/23	410.85	410.83	410.60	410.61	410.79	409.74	410.28	410.68
01/24/23	410.74	410.72	410.65	410.64	410.81	409.87	410.40	410.78
01/25/23	410.34	410.32	410.45	410.41	410.57	409.83	410.29	410.65
01/26/23	410.98	410.96	410.66	410.72	410.89	410.02	410.55	410.94
01/27/23	411.15	411.13	411.06	411.07	411.24	410.36	410.88	411.26
01/28/23	411.35	411.33	411.25	411.26	411.42	410.55	411.07	411.45
01/29/23	411.50	411.48	411.44	411.45	411.60	410.75	411.27	411.65

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
01/30/23	411.48	411.46	411.51	411.51	411.66	410.86	411.36	411.74
01/31/23	411.10	411.08	411.25	411.23	411.38	410.67	411.17	411.53
02/01/23	410.99	410.97	411.22	411.20	411.34	410.69	411.17	411.54
02/02/23	410.48	410.48	410.68	410.65	410.79	410.17	410.61	410.99
02/03/23	410.01	410.00	410.33	410.27	410.40	409.82	410.25	410.63
02/04/23	409.51	409.51	409.89	409.84	409.96	409.44	409.87	410.24
02/05/23	409.00	409.00	409.46	409.39	409.52	409.04	409.47	409.82
02/06/23	408.49	408.48	408.98	408.92	409.05	408.62	409.05	409.38
02/07/23	408.06	408.06	408.55	408.49	408.61	408.23	408.65	408.99
02/08/23	407.69	407.69	408.16	408.11	408.24	407.86	408.29	408.62
02/09/23	407.62	407.62	407.91	407.89	408.03	407.63	408.07	408.41
02/10/23	410.19	410.20	409.53	409.68	409.86	409.16	409.66	410.06
02/11/23	411.44	411.45	410.80	410.92	411.11	410.21	410.71	411.12
02/12/23	411.96	411.97	411.64	411.70	411.86	410.93	411.43	411.84
02/13/23	411.84	411.83	411.78	411.79	411.95	411.12	411.60	411.99
02/14/23	411.79	411.80	411.80	411.80	411.95	411.20	411.66	412.05
02/15/23	411.50	411.49	411.65	411.63	411.77	411.10	411.56	411.93
02/16/23	410.77	410.77	411.11	411.06	411.20	410.62	411.07	411.44
02/17/23	411.62	411.61	411.49	411.54	411.70	411.03	411.51	411.89
02/18/23	411.93	411.93	411.85	411.88	412.04	411.32	411.79	412.18
02/19/23	412.55	412.54	412.42	412.46	412.61	411.81	412.29	412.68
02/20/23	412.53	412.53	412.56	412.56	412.70	411.94	412.41	412.80
02/21/23	412.30	412.29	412.44	412.44	412.56	411.90	412.36	412.72
02/22/23	411.83	411.83	412.09	412.07	412.20	411.63	412.07	412.44
02/23/23	411.42	411.40	411.73	411.69	411.83	411.27	411.72	412.08
02/24/23	410.98	410.97	411.35	411.30	411.43	410.92	411.36	411.69
02/25/23	410.47	410.46	410.92	410.87	411.00	410.57	411.01	411.32
02/26/23	409.93	409.93	410.42	410.36	410.49	410.11	410.54	410.86
02/27/23	409.60	409.60	410.05	410.00	410.14	409.77	410.20	410.52
02/28/23	409.34	409.33	409.77	409.73	409.86	409.48	409.92	410.22
03/01/23	409.09	409.09	409.52	409.47	409.61	409.22	409.66	409.97
03/02/23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03/03/23	408.63	408.63	409.02	409.02	409.02	408.78	409.14	409.51
03/04/23	413.55	413.58	411.53	411.95	412.06	411.30	411.87	412.35
03/05/23	416.61	416.64	415.32	415.50	415.57	414.74	415.30	415.78
03/06/23	418.58	418.60	417.75	417.83	417.90	417.23	417.73	418.19
03/07/23	420.39	420.39	420.19	420.24	420.26	419.79	420.26	420.69
03/08/23	420.85	420.84	420.87	420.92	420.93	420.44	420.87	421.27
03/09/23	420.97	420.96	421.04	421.08	421.09	420.56	420.99	421.39
03/10/23	421.02	421.00	421.14	421.18	421.18	420.67	421.10	421.48
03/11/23	421.01	421.00	421.17	421.20	421.21	420.75	421.16	421.54
03/12/23	421.14	421.13	421.40	421.41	421.42	420.98	421.39	421.76
03/13/23	419.39	419.38	419.85	419.81	419.81	419.47	419.86	420.21

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
03/14/23	415.85	415.85	416.63	416.57	416.55	416.79	417.15	417.48
03/15/23	413.45	413.46	414.42	414.33	414.31	414.69	415.03	415.36
03/16/23	412.36	412.35	413.30	413.21	413.19	413.44	413.79	414.13
03/17/23	411.77	411.76	412.58	412.53	412.51	412.66	413.02	413.37
03/18/23	411.39	411.38	412.09	412.05	412.04	412.11	412.47	412.84
03/19/23	411.05	411.03	411.68	411.66	411.64	411.65	412.02	412.38
03/20/23	410.84	410.83	411.40	411.38	411.37	411.31	411.68	412.05
03/21/23	410.57	410.56	411.12	411.09	411.08	410.97	411.36	411.72
03/22/23	410.26	410.26	410.80	410.77	410.76	410.63	411.00	411.38
03/23/23	409.97	409.97	410.48	410.46	410.46	410.29	410.68	411.05
03/24/23	409.77	409.77	410.22	410.21	410.21	410.01	410.40	410.77
03/25/23	415.19	415.21	413.90	414.16	414.22	413.32	413.83	414.30
03/26/23	419.27	419.28	418.25	418.37	418.43	417.79	418.29	418.75
03/27/23	420.61	420.60	420.44	420.49	420.50	420.05	420.49	420.91
03/28/23	420.90	420.88	421.00	421.04	421.04	420.58	420.99	421.39
03/29/23	421.00	420.98	421.14	421.16	421.18	420.79	421.20	421.59
03/30/23	421.05	421.03	421.18	421.22	421.23	420.81	421.22	421.60
03/31/23	421.04	421.02	421.21	421.23	421.24	420.80	421.22	421.59
04/01/23	421.06	421.04	421.21	421.25	421.25	420.80	421.22	421.60
04/02/23	421.06	421.05	421.24	421.26	421.27	420.84	421.25	421.63
04/03/23	421.12	421.11	421.29	421.32	421.33	420.89	421.31	421.68
04/04/23	421.10	421.08	421.28	421.31	421.31	420.89	421.30	421.68
04/05/23	421.10	421.09	421.39	421.39	421.39	421.01	421.41	421.78
04/06/23	420.51	420.51	420.74	420.74	420.75	420.46	420.87	421.24
04/07/23	421.03	421.02	421.22	421.23	421.24	420.87	421.28	421.66
04/08/23	421.02	421.02	421.21	421.23	421.23	420.83	421.24	421.62
04/09/23	421.05	421.04	421.25	421.27	421.28	420.87	421.27	421.66
04/10/23	420.53	420.52	420.77	420.78	420.79	420.40	420.79	421.17
04/11/23	419.64	419.63	419.94	419.93	419.94	419.59	419.99	420.36
04/12/23	418.63	418.62	419.02	419.00	419.00	418.76	419.15	419.51
04/13/23	417.19	417.18	417.71	417.68	417.68	417.63	418.01	418.38
04/14/23	415.53	415.52	416.14	416.11	416.10	416.22	416.59	416.93
04/15/23	414.04	414.02	414.76	414.70	414.69	414.78	415.15	415.50
04/16/23	412.84	412.81	413.63	413.56	413.54	413.61	413.97	414.32
04/17/23	412.05	412.03	412.82	412.76	412.75	412.81	413.16	413.52
04/18/23	411.59	411.57	412.26	412.22	412.20	412.21	412.59	412.94
04/19/23	411.19	411.17	411.81	411.77	411.77	411.73	412.11	412.47
04/20/23	410.85	410.83	411.42	411.38	411.38	411.30	411.68	412.05
04/21/23	410.56	410.54	411.09	411.06	411.05	410.94	411.33	411.69
04/22/23	410.34	410.32	410.82	410.81	410.80	410.66	411.05	411.42
04/23/23	410.07	410.05	410.54	410.52	410.53	410.35	410.74	411.11
04/24/23	409.82	409.80	410.26	410.25	410.24	410.05	410.45	410.82
04/25/23	409.78	409.77	410.13	410.14	410.15	409.90	410.30	410.67

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
04/26/23	409.60	409.58	409.98	409.97	409.97	409.71	410.11	410.47
04/27/23	409.41	409.39	409.79	409.77	409.79	409.51	409.90	410.28
04/28/23	409.25	409.23	409.62	409.61	409.62	409.32	409.73	410.08
04/29/23	409.12	409.10	409.45	409.45	409.46	409.15	409.55	409.91
04/30/23	409.03	409.01	409.34	409.34	409.35	409.02	409.42	409.78
05/01/23	409.04	409.03	409.30	409.31	409.33	408.96	409.37	409.73
05/02/23	409.14	409.14	409.34	409.37	409.37	408.97	409.38	409.75
05/03/23	409.30	409.30	409.46	409.48	409.51	409.06	409.46	409.84
05/04/23	409.46	409.46	409.58	409.62	409.64	409.16	409.58	409.96
05/05/23	409.53	409.56	409.66	409.69	409.72	409.22	409.64	410.02
05/06/23	409.66	409.69	409.76	409.79	409.82	409.31	409.74	410.11
05/07/23	409.78	409.81	409.89	409.92	409.94	409.43	409.86	410.25
05/08/23	409.64	409.67	409.81	409.83	409.85	409.37	409.78	410.16
05/09/23	410.65	410.64	410.21	410.33	410.38	409.76	410.51	410.42
05/10/23	412.48	412.47	411.92	412.01	412.08	411.12	411.89	411.82
05/11/23	412.53	412.51	412.39	412.39	412.43	411.59	412.33	412.23
05/12/23	412.11	412.09	412.18	412.15	412.18	411.37	412.20	411.98
05/13/23	411.51	411.49	411.76	411.69	411.72	411.04	411.85	411.62
05/14/23	410.71	410.69	411.14	411.04	411.08	410.50	411.30	411.06
05/15/23	410.04	410.02	410.53	410.43	410.44	409.96	410.76	410.51
05/16/23	409.90	409.88	410.20	410.15	410.17	409.69	410.50	410.25
05/17/23	410.53	410.52	410.64	410.62	410.65	410.03	410.85	410.61
05/18/23	410.03	410.01	410.32	410.26	410.29	409.72	410.54	410.28
05/19/23	409.90	409.89	410.18	410.13	410.15	409.59	410.41	410.17
05/20/23	409.52	409.50	409.91	409.84	409.86	409.35	410.14	409.88
05/21/23	409.20	409.19	409.64	409.56	409.59	409.09	409.88	409.62
05/22/23	408.81	408.78	409.24	409.17	409.18	408.72	409.52	409.25
05/23/23	408.61	408.58	408.98	408.91	408.93	408.46	409.27	409.00
05/24/23	408.39	408.36	408.79	408.72	408.74	408.26	409.06	408.80
05/25/23	408.12	408.10	408.53	408.46	408.48	408.01	408.81	408.54
05/26/23	407.87	407.84	408.29	408.21	408.23	407.76	408.56	408.29
05/27/23	407.58	407.56	408.03	407.96	407.96	407.49	408.29	408.02
05/28/23	407.31	407.29	407.76	407.69	407.70	407.23	408.01	407.75
05/29/23	407.08	407.07	407.53	407.45	407.47	406.99	407.78	407.51
05/30/23	406.88	406.87	407.31	407.24	407.25	406.76	407.57	407.30
05/31/23	406.68	406.67	407.11	407.03	407.05	406.55	407.35	407.08
06/01/23	406.51	406.49	406.91	406.86	406.87	406.36	407.15	406.88
06/02/23	406.36	406.34	406.76	406.69	406.71	406.19	406.99	406.72
06/03/23	406.23	406.22	406.61	406.55	406.57	406.03	406.83	406.56
06/04/23	406.11	406.09	406.48	406.41	406.44	405.89	406.68	406.42
06/05/23	405.99	405.97	406.35	406.29	406.31	405.75	406.56	406.28
06/06/23	405.87	405.85	406.22	406.17	406.19	405.63	406.42	406.15
06/07/23	405.75	405.73	406.11	406.05	406.06	405.49	406.29	406.03

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AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
06/08/23	405.71	405.70	406.04	405.99	406.01	405.43	406.23	405.96
06/09/23	405.57	405.56	405.90	405.85	405.87	405.28	406.08	405.82
06/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.31	405.74	406.08
06/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.26	405.64	405.98
06/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.16	405.57	405.92
06/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.08	405.52	405.86
06/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.04	405.49	405.82
06/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.05	405.50	405.86
06/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.04	405.47	405.82
06/17/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.95	405.40	405.76
06/18/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.92	405.36	405.70
06/19/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.88	405.29	405.64
06/20/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.82	405.23	405.58
06/21/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.74	405.18	405.53
06/22/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.69	405.14	405.48
06/23/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.62	405.05	405.40
06/24/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.53	404.98	405.33
06/25/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.47	404.91	405.25
06/26/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.39	404.83	405.18
06/27/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.36	404.78	405.14
06/28/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.41	404.86	405.21
06/29/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.56	405.02	405.38
06/30/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.07	405.55	405.92
07/01/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.02	405.40	405.75
07/02/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.15	405.59	405.95
07/03/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.73	406.21	406.60
07/04/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.69	407.17	407.56
07/05/23	#N/A	#N/A	#N/A	#N/A	#N/A	407.01	407.46	407.84
07/06/23	#N/A	#N/A	#N/A	#N/A	#N/A	407.01	407.44	407.81
07/07/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.89	407.31	407.68
07/08/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.82	407.23	407.60
07/09/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.62	407.03	407.39
07/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.38	406.79	407.15
07/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.28	406.68	407.06
07/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.41	406.87	407.25
07/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.25	406.70	407.08
07/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.14	406.60	406.97
07/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.05	406.49	406.86
07/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.90	406.33	406.71
07/17/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.72	406.14	406.51
07/18/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.84	406.28	406.66
07/19/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.80	406.26	406.63
07/20/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.95	406.43	406.82

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
07/21/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.23	406.70	407.10
07/22/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.33	406.79	407.17
07/23/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.24	406.70	407.08
07/24/23	#N/A	#N/A	#N/A	#N/A	#N/A	406.06	406.49	406.88
07/25/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.83	406.29	406.66
07/26/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.64	406.07	406.44
07/27/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.47	405.87	406.24
07/28/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.23	405.64	406.01
07/29/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.06	405.49	405.87
07/30/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.96	405.40	405.78
07/31/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.88	405.31	405.68
08/01/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.84	405.29	405.67
08/02/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.82	405.25	405.63
08/03/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.79	405.20	405.59
08/04/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.71	405.16	405.54
08/05/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.62	405.07	405.44
08/06/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.51	404.95	405.32
08/07/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.38	404.80	405.18
08/08/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.95	405.43	405.83
08/09/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.04	405.49	405.87
08/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.94	405.33	405.71
08/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.70	405.10	405.47
08/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.56	404.97	405.34
08/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.62	405.09	405.47
08/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.02	405.48	405.87
08/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.10	405.57	405.96
08/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.25	405.73	406.12
08/17/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.42	405.89	406.28
08/18/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.48	405.96	406.35
08/19/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.52	405.98	406.38
08/20/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.38	405.82	406.21
08/21/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.21	405.64	406.03
08/22/23	#N/A	#N/A	#N/A	#N/A	#N/A	405.03	405.46	405.84
08/23/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.86	405.27	405.65
08/24/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.73	405.10	405.48
08/25/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.57	404.94	405.32
08/26/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.43	404.80	405.17
08/27/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.50	404.95	405.32
08/28/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.32	404.75	405.13
08/29/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.44	404.88	405.27
08/30/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.46	404.90	405.28
08/31/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.27	404.70	405.09
09/01/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.12	404.55	404.94

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
09/02/23	#N/A	#N/A	#N/A	#N/A	#N/A	404.00	404.45	404.82
09/03/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.94	404.37	404.74
09/04/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.88	404.30	404.68
09/05/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.80	404.23	404.62
09/06/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.72	404.15	404.53
09/07/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.64	404.07	404.45
09/08/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.56	403.99	404.37
09/09/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.49	403.93	404.31
09/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.43	403.85	404.23
09/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.35	403.80	404.18
09/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.31	403.74	404.12
09/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.26	403.70	404.07
09/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.23	403.65	404.03
09/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.15	403.60	403.99
09/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.13	403.55	403.94
09/17/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.08	403.51	403.89
09/18/23	#N/A	#N/A	#N/A	#N/A	#N/A	403.03	403.47	403.84
09/19/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.99	403.43	403.81
09/20/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.93	403.38	403.76
09/21/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.89	403.34	403.72
09/22/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.87	403.30	403.69
09/23/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.84	403.27	403.65
09/24/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.82	403.26	403.64
09/25/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.78	403.23	403.61
09/26/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.76	403.19	403.58
09/27/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.72	403.16	403.54
09/28/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.70	403.13	403.52
09/29/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.71	403.14	403.53
09/30/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.70	403.12	403.51
10/01/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.66	403.10	403.49
10/02/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.75	403.18	403.56
10/03/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.75	403.20	403.57
10/04/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.72	403.15	403.52
10/05/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.70	403.17	403.55
10/06/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.69	403.16	403.54
10/07/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.69	403.15	403.54
10/08/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.67	403.12	403.51
10/09/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.64	403.10	403.48
10/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.61	403.07	403.46
10/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.65	403.11	403.50
10/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.62	403.08	403.47
10/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.59	403.05	403.44
10/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.57	403.03	403.41

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-37I	MW-37A	MW-38B	MW-38I	MW-38A	MW-39B	MW-39I	MW-39A
10/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.55	403.01	403.39
10/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.53	402.99	403.38
10/17/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.51	402.97	403.36
10/18/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.49	402.96	403.33
10/19/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.49	402.95	403.34
10/20/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.51	402.97	403.36
10/21/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.54	402.99	403.38
10/22/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.52	402.99	403.37
10/23/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.50	402.96	403.34
10/24/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.47	402.93	403.33
10/25/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.47	402.93	403.32
10/26/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.46	402.92	403.31
10/27/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.44	402.89	403.29
10/28/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.43	402.89	403.29
10/29/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.42	402.88	403.28
10/30/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.48	402.93	403.33
10/31/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.47	402.93	403.32
11/01/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.48	402.95	403.33
11/02/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.52	402.99	403.35
11/03/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.58	403.04	403.40
11/04/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.64	403.11	403.48
11/05/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.69	403.15	403.52
11/06/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.69	403.16	403.53
11/07/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.69	403.16	403.52
11/08/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.68	403.14	403.51
11/09/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.65	403.10	403.47
11/10/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.60	403.06	403.43
11/11/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.56	403.02	403.39
11/12/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.51	402.96	403.34
11/13/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.48	402.94	403.31
11/14/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.45	402.91	403.27
11/15/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.44	402.34	403.25
11/16/23	#N/A	#N/A	#N/A	#N/A	#N/A	402.42	402.33	403.23

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
08/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/31/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
09/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/25/22	403.74	403.75	403.81	#N/A	#N/A	#N/A	402.86	402.93
10/26/22	404.04	404.01	404.06	#N/A	#N/A	#N/A	403.06	403.12
10/27/22	403.92	403.89	403.93	#N/A	#N/A	#N/A	402.92	402.97
10/28/22	403.91	403.88	403.92	#N/A	#N/A	#N/A	402.92	402.97
10/29/22	403.90	403.88	403.90	#N/A	#N/A	#N/A	402.93	402.98
10/30/22	403.90	403.88	403.91	#N/A	#N/A	#N/A	402.96	403.01
10/31/22	403.74	403.73	403.75	#N/A	#N/A	#N/A	402.88	402.94
11/01/22	403.96	403.95	403.97	#N/A	#N/A	#N/A	403.09	403.15
11/02/22	404.02	403.99	404.02	#N/A	#N/A	#N/A	403.09	403.13
11/03/22	404.04	404.02	404.06	#N/A	#N/A	#N/A	403.08	403.14
11/04/22	404.05	404.02	404.06	#N/A	#N/A	#N/A	403.09	403.14

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
11/05/22	404.04	404.00	404.05	#N/A	#N/A	#N/A	403.06	403.11
11/06/22	404.04	404.01	404.05	#N/A	#N/A	#N/A	403.06	403.11
11/07/22	404.01	403.98	404.02	#N/A	#N/A	#N/A	403.00	403.05
11/08/22	403.99	403.96	404.00	#N/A	#N/A	#N/A	402.97	403.02
11/09/22	403.98	403.95	403.99	#N/A	#N/A	#N/A	402.96	403.00
11/10/22	403.96	403.93	403.98	#N/A	#N/A	#N/A	402.94	402.99
11/11/22	403.95	403.92	403.97	#N/A	#N/A	#N/A	402.92	402.97
11/12/22	403.95	403.91	403.95	#N/A	#N/A	#N/A	402.91	402.96
11/13/22	403.94	403.91	403.95	#N/A	#N/A	#N/A	402.91	402.96
11/14/22	403.92	403.89	403.93	#N/A	#N/A	#N/A	402.89	402.94
11/15/22	403.90	403.87	403.91	#N/A	#N/A	#N/A	402.86	402.92
11/16/22	403.88	403.85	403.89	#N/A	#N/A	#N/A	402.86	402.91
11/17/22	403.87	403.84	403.88	#N/A	#N/A	#N/A	402.86	402.91
11/18/22	403.86	403.82	403.87	#N/A	#N/A	#N/A	402.84	402.89
11/19/22	403.84	403.81	403.85	#N/A	#N/A	#N/A	402.83	402.89
11/20/22	403.82	403.79	403.84	#N/A	#N/A	#N/A	402.82	402.87
11/21/22	403.81	403.78	403.83	403.04	403.06	403.06	402.81	402.86
11/22/22	0.00	0.00	0.00	403.07	403.09	403.10	402.82	402.88
11/23/22	403.53	403.51	403.59	403.08	403.09	403.10	402.80	402.88
11/24/22	403.52	403.51	403.58	403.07	403.08	403.10	402.80	402.86
11/25/22	403.50	403.48	403.55	403.04	403.06	403.07	402.77	402.85
11/26/22	403.50	403.49	403.57	403.05	403.07	403.09	402.78	402.86
11/27/22	403.48	403.51	403.58	403.05	403.05	403.07	402.78	402.85
11/28/22	403.49	403.47	403.55	403.05	403.08	403.08	402.81	402.88
11/29/22	403.48	403.47	403.55	403.06	403.09	403.10	402.82	402.89
11/30/22	403.47	403.45	403.53	403.08	403.10	403.11	402.84	402.92
12/01/22	403.52	403.52	403.59	403.10	403.16	403.16	402.92	402.99
12/02/22	403.64	403.59	403.71	403.24	403.26	403.28	403.07	403.17
12/03/22	403.70	403.65	403.78	403.32	403.35	403.37	403.14	403.23
12/04/22	403.76	403.71	403.83	403.35	403.36	403.42	403.15	403.22
12/05/22	403.76	403.71	403.83	403.38	403.41	403.42	403.14	403.22
12/06/22	403.75	403.69	403.82	403.33	403.36	403.38	403.09	403.17
12/07/22	403.72	403.67	403.80	403.29	403.33	403.36	403.06	403.14
12/08/22	403.74	403.69	403.82	403.28	403.35	403.39	403.10	403.18
12/09/22	403.73	403.69	403.81	403.31	403.34	403.39	403.10	403.18
12/10/22	403.74	403.70	403.82	403.28	403.34	403.39	403.10	403.18
12/11/22	403.74	403.69	403.81	403.29	403.34	403.38	403.09	403.17
12/12/22	403.72	403.68	403.79	403.26	403.31	403.36	403.06	403.13
12/13/22	403.71	403.66	403.79	403.26	403.30	403.35	403.04	403.11
12/14/22	403.68	403.63	403.75	403.28	403.27	403.31	403.01	403.08
12/15/22	403.75	403.71	403.83	403.36	403.39	403.45	403.25	403.37
12/16/22	403.91	403.87	404.00	403.59	403.70	403.75	403.77	403.92
12/17/22	404.09	404.04	404.17	403.80	403.93	403.99	404.02	404.14

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
12/18/22	404.23	404.19	404.31	404.01	404.10	404.16	404.17	404.27
12/19/22	404.34	404.30	404.42	404.11	404.20	404.25	404.20	404.30
12/20/22	404.41	404.36	404.49	404.17	404.24	404.29	404.18	404.30
12/21/22	404.49	404.50	404.58	404.24	404.28	404.29	404.13	404.26
12/22/22	404.51	404.56	404.64	404.22	404.24	404.26	404.03	404.13
12/23/22	404.50	404.51	404.59	404.15	404.18	404.20	403.91	404.02
12/24/22	404.40	404.41	404.49	404.01	404.02	404.03	403.61	403.64
12/25/22	404.21	404.21	404.29	403.77	403.71	403.72	403.19	403.27
12/26/22	404.13	404.13	404.21	403.65	403.63	403.65	403.20	403.30
12/27/22	404.06	404.07	404.15	403.53	403.56	403.56	403.13	403.22
12/28/22	404.02	404.03	404.11	403.54	403.52	403.54	403.13	403.22
12/29/22	404.20	404.18	404.23	403.78	403.84	403.80	403.13	403.24
12/30/22	404.19	404.17	404.22	403.81	403.88	403.85	403.32	403.44
12/31/22	404.26	404.24	404.28	403.90	403.98	403.95	403.44	403.56
01/01/23	404.35	404.33	404.37	404.02	404.11	404.08	403.62	403.76
01/02/23	404.43	404.41	404.46	404.14	404.23	404.20	403.79	403.91
01/03/23	404.51	404.49	404.54	404.27	404.36	404.33	403.98	404.13
01/04/23	404.74	404.73	404.78	404.66	404.84	404.83	404.94	405.12
01/05/23	405.06	405.04	405.10	405.16	405.35	405.33	405.55	405.73
01/06/23	405.39	405.37	405.42	405.67	405.85	405.83	406.15	406.32
01/07/23	405.72	405.71	405.76	406.14	406.32	406.30	406.60	406.76
01/08/23	406.01	406.00	406.05	406.46	406.63	406.60	406.77	406.90
01/09/23	406.24	406.22	406.27	406.65	406.77	406.75	406.75	406.88
01/10/23	406.38	406.35	406.40	406.68	406.72	406.70	406.45	406.56
01/11/23	406.39	406.36	406.40	406.51	406.53	406.50	406.04	406.12
01/12/23	406.31	406.29	406.34	406.29	406.29	406.26	405.68	405.75
01/13/23	406.25	406.22	406.27	406.14	406.17	406.13	405.61	405.71
01/14/23	406.25	406.23	406.27	406.06	406.14	406.10	405.59	405.70
01/15/23	406.37	406.35	406.40	406.27	406.34	406.32	405.98	406.10
01/16/23	406.51	406.49	406.54	406.52	406.59	406.56	406.32	406.45
01/17/23	406.62	406.60	406.64	406.69	406.76	406.74	406.52	406.64
01/18/23	406.77	406.74	406.79	406.81	406.91	406.89	406.63	406.76
01/19/23	406.52	406.50	406.54	406.60	406.66	406.64	406.58	406.74
01/20/23	407.35	407.34	407.38	408.07	408.32	408.31	408.95	409.15
01/21/23	407.90	407.89	407.94	408.89	409.16	409.14	409.78	409.96
01/22/23	408.49	408.47	408.52	409.55	409.80	409.78	410.26	410.41
01/23/23	408.94	408.92	408.95	409.86	410.06	410.04	410.29	410.41
01/24/23	409.27	409.25	409.29	410.01	410.16	410.14	410.17	410.29
01/25/23	409.50	409.48	409.52	410.01	410.06	410.03	409.78	409.86
01/26/23	409.64	409.62	409.66	410.11	410.28	410.26	410.32	410.46
01/27/23	410.00	409.97	410.02	410.48	410.63	410.61	410.56	410.66
01/28/23	410.24	410.21	410.27	410.67	410.82	410.79	410.70	410.81
01/29/23	410.51	410.48	410.52	410.87	411.01	410.99	410.84	410.96

Transducer Data for All Monitoring Wells on a Daily Basis
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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
01/30/23	410.70	410.68	410.72	410.96	411.08	411.06	410.82	410.92
01/31/23	410.71	410.68	410.73	410.80	410.88	410.84	410.46	410.55
02/01/23	410.90	410.87	410.92	410.84	410.88	410.86	410.33	410.43
02/02/23	410.53	410.51	410.55	410.27	410.30	410.26	409.78	409.83
02/03/23	410.31	410.28	410.34	409.96	409.93	409.89	409.50	409.56
02/04/23	410.06	410.04	410.09	409.60	409.56	409.52	408.99	409.05
02/05/23	409.84	409.81	409.86	409.31	409.19	409.14	408.49	408.53
02/06/23	409.55	409.52	409.56	408.87	408.76	408.71	407.95	407.99
02/07/23	409.27	409.24	409.27	408.52	408.39	408.35	407.52	407.55
02/08/23	408.96	408.93	408.95	408.16	408.04	407.99	407.15	407.20
02/09/23	408.76	408.73	408.76	407.95	407.85	407.80	407.13	407.20
02/10/23	409.33	409.31	409.35	409.16	409.36	409.33	409.87	410.03
02/11/23	410.04	410.03	410.09	410.26	410.50	410.47	411.07	411.22
02/12/23	410.72	410.70	410.76	411.05	411.24	411.21	411.65	411.77
02/13/23	411.11	411.09	411.14	411.23	411.34	411.31	411.48	411.56
02/14/23	411.29	411.27	411.31	411.28	411.38	411.34	411.38	411.47
02/15/23	411.39	411.36	411.41	411.27	411.26	411.22	411.09	411.16
02/16/23	411.18	411.16	411.19	410.85	410.80	410.74	410.34	410.39
02/17/23	411.30	411.28	411.32	411.04	411.15	411.10	411.17	411.28
02/18/23	411.54	411.52	411.55	411.36	411.47	411.43	411.44	411.56
02/19/23	411.92	411.89	411.93	411.87	411.99	411.95	412.07	412.17
02/20/23	412.13	412.11	412.14	412.00	412.09	412.05	412.06	412.14
02/21/23	412.23	412.21	412.25	411.97	412.01	411.96	411.83	411.91
02/22/23	412.16	412.14	412.18	411.79	411.73	411.68	411.36	411.42
02/23/23	411.89	411.86	411.90	411.41	411.37	411.32	410.91	410.97
02/24/23	411.57	411.54	411.59	411.06	411.00	410.95	410.46	410.51
02/25/23	411.41	411.39	411.43	410.78	410.67	410.61	409.96	410.00
02/26/23	411.07	411.05	411.09	410.35	410.22	410.16	409.40	409.44
02/27/23	410.79	410.77	410.82	410.02	409.89	409.83	409.05	409.10
02/28/23	410.49	410.46	410.51	409.70	409.58	409.52	408.76	408.83
03/01/23	410.26	410.23	410.27	409.47	409.35	409.30	408.53	408.59
03/02/23	0.00	0.00	0.00	0.00	0.00	0.00	408.28	408.34
03/03/23	409.79	409.72	409.73	409.01	408.86	408.82	408.13	408.20
03/04/23	410.62	410.56	410.60	411.41	411.84	411.85	413.36	413.67
03/05/23	412.70	412.63	412.67	415.13	415.61	415.63	418.72	418.68
03/06/23	415.45	415.40	415.43	417.60	418.00	418.02	420.31	420.36
03/07/23	419.31	419.23	419.27	419.78	420.11	420.11	421.23	421.30
03/08/23	420.57	420.49	420.50	420.35	420.54	420.54	421.04	421.13
03/09/23	420.79	420.71	420.71	420.56	420.71	420.70	420.97	421.07
03/10/23	420.93	420.85	420.86	420.78	420.87	420.84	420.93	421.02
03/11/23	421.07	420.98	420.99	420.98	420.97	420.94	420.86	420.95
03/12/23	421.43	421.33	421.35	421.34	421.14	421.10	420.80	420.91
03/13/23	420.29	420.20	420.22	420.26	419.84	419.78	418.74	418.87

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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
03/14/23	418.32	418.24	418.24	417.89	417.33	417.25	415.65	415.64
03/15/23	416.41	416.34	416.36	415.67	415.09	415.02	413.33	413.27
03/16/23	415.14	415.06	415.08	414.18	413.72	413.67	411.85	411.85
03/17/23	414.27	414.19	414.20	413.18	412.83	412.77	411.17	411.20
03/18/23	413.58	413.51	413.52	412.51	412.21	412.16	410.79	410.84
03/19/23	413.01	412.93	412.95	411.98	411.72	411.67	410.45	410.52
03/20/23	412.58	412.50	412.52	411.61	411.37	411.32	410.25	410.31
03/21/23	412.19	412.11	412.13	411.23	411.03	410.99	410.00	410.06
03/22/23	411.82	411.74	411.77	410.91	410.69	410.64	409.70	409.76
03/23/23	411.47	411.39	411.41	410.55	410.36	410.31	409.43	409.49
03/24/23	411.13	411.05	411.07	410.26	410.09	410.04	409.21	409.29
03/25/23	412.81	412.73	412.76	413.42	413.78	413.78	415.49	415.65
03/26/23	416.24	416.18	416.21	418.13	418.58	418.62	420.97	421.02
03/27/23	419.87	419.78	419.80	420.04	420.30	420.30	421.13	421.22
03/28/23	420.79	420.70	420.71	420.89	420.91	420.89	420.92	421.02
03/29/23	421.06	420.97	420.97	420.97	420.98	420.96	420.87	420.97
03/30/23	421.11	421.02	421.01	420.99	421.00	420.96	420.85	420.94
03/31/23	421.17	421.07	421.05	420.94	420.94	420.92	420.76	420.87
04/01/23	421.15	421.05	421.04	420.95	420.96	420.92	420.79	420.90
04/02/23	421.20	421.11	421.11	420.98	420.96	420.94	420.81	420.92
04/03/23	421.26	421.17	421.16	420.99	420.99	420.96	420.85	420.97
04/04/23	421.28	421.18	421.18	421.05	421.02	420.99	420.85	420.97
04/05/23	421.49	421.38	421.38	421.38	421.19	421.15	420.75	420.86
04/06/23	420.81	420.70	420.70	421.03	420.79	420.74	420.28	420.38
04/07/23	421.19	421.10	421.10	421.19	421.08	421.06	420.85	420.96
04/08/23	421.14	421.05	421.03	421.04	421.01	420.98	420.87	420.97
04/09/23	421.20	421.11	421.10	421.06	421.02	421.00	420.87	420.96
04/10/23	420.81	420.71	420.71	420.68	420.57	420.54	420.23	420.33
04/11/23	420.16	420.06	420.06	419.95	419.77	419.74	419.20	419.30
04/12/23	419.55	419.45	419.46	419.13	418.92	418.88	418.08	418.20
04/13/23	418.67	418.59	418.58	418.03	417.77	417.72	416.60	416.70
04/14/23	417.47	417.38	417.37	416.75	416.44	416.39	415.35	415.34
04/15/23	416.17	416.09	416.08	415.42	415.08	415.02	413.88	413.86
04/16/23	415.09	415.01	415.00	414.23	413.90	413.84	412.47	412.48
04/17/23	414.32	414.23	414.21	413.34	413.03	412.97	411.59	411.62
04/18/23	413.63	413.54	413.53	412.67	412.40	412.34	411.10	411.15
04/19/23	413.09	413.00	412.99	412.14	411.90	411.85	410.69	410.76
04/20/23	412.61	412.52	412.51	411.66	411.46	411.41	410.34	410.41
04/21/23	412.20	412.10	412.10	411.28	411.09	411.05	410.06	410.12
04/22/23	411.86	411.77	411.76	410.98	410.81	410.77	409.88	409.94
04/23/23	411.52	411.43	411.43	410.66	410.50	410.47	409.61	409.67
04/24/23	411.20	411.11	411.10	410.35	410.20	410.17	409.35	409.41
04/25/23	410.97	410.88	410.88	410.18	410.05	410.02	409.31	409.38

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
04/26/23	410.74	410.65	410.64	409.98	409.86	409.83	409.13	409.21
04/27/23	410.53	410.44	410.44	409.78	409.67	409.64	408.96	409.02
04/28/23	410.35	410.26	410.25	409.61	409.49	409.46	408.80	408.88
04/29/23	410.14	410.05	410.04	409.42	409.32	409.29	408.66	408.73
04/30/23	409.98	409.88	409.87	409.27	409.18	409.15	408.57	408.65
05/01/23	409.87	409.78	409.75	409.20	409.13	409.10	408.60	408.67
05/02/23	409.78	409.67	409.65	409.17	409.13	409.09	408.68	408.78
05/03/23	409.73	409.64	409.62	409.21	409.19	409.17	408.85	408.95
05/04/23	409.75	409.65	409.63	409.29	409.29	409.27	409.02	409.12
05/05/23	409.77	409.67	409.65	409.36	409.35	409.32	409.12	409.21
05/06/23	409.81	409.71	409.68	409.43	409.44	409.41	409.25	409.34
05/07/23	409.91	409.80	409.79	409.56	409.56	409.54	409.39	409.49
05/08/23	409.89	409.79	409.79	409.52	409.52	409.49	409.26	409.36
05/09/23	409.93	409.91	409.91	409.80	409.90	409.89	0.00	0.00
05/10/23	410.60	410.60	410.59	411.13	411.34	411.35	412.00	412.19
05/11/23	411.15	411.13	411.13	411.64	411.78	411.78	412.21	412.33
05/12/23	411.39	411.37	411.40	411.61	411.68	411.67	411.78	411.88
05/13/23	411.38	411.37	411.40	411.36	411.37	411.27	411.15	411.24
05/14/23	411.16	411.14	411.17	410.87	410.82	410.71	410.31	410.37
05/15/23	410.81	410.80	410.83	410.36	410.27	410.16	409.58	409.62
05/16/23	410.59	410.58	410.61	410.12	410.01	409.91	409.37	409.45
05/17/23	410.62	410.61	410.64	410.34	410.32	410.22	410.07	410.18
05/18/23	410.50	410.48	410.52	410.11	410.05	409.95	409.56	409.65
05/19/23	410.40	410.39	410.42	409.98	409.91	409.81	409.39	409.48
05/20/23	410.25	410.24	410.25	409.76	409.66	409.55	409.03	409.10
05/21/23	410.06	410.04	410.07	409.52	409.40	409.30	408.70	408.77
05/22/23	409.81	409.80	409.82	409.19	409.06	408.96	408.26	408.32
05/23/23	409.56	409.55	409.55	408.91	408.79	408.69	408.03	408.11
05/24/23	409.36	409.35	409.37	408.71	408.59	408.49	407.81	407.89
05/25/23	409.15	409.15	409.15	408.46	408.34	408.24	407.52	407.59
05/26/23	408.93	408.92	408.93	408.22	408.10	407.99	407.26	407.33
05/27/23	408.72	408.70	408.72	407.98	407.84	407.73	406.97	407.04
05/28/23	408.49	408.47	408.49	407.73	407.58	407.47	406.69	406.76
05/29/23	408.27	408.25	408.26	407.48	407.33	407.23	406.46	406.52
05/30/23	408.05	408.03	408.05	407.25	407.12	407.01	406.25	406.31
05/31/23	407.84	407.82	407.83	407.03	406.90	406.79	406.09	406.11
06/01/23	407.64	407.62	407.63	406.83	406.69	406.59	405.91	405.95
06/02/23	407.45	407.44	407.44	406.64	406.52	406.42	405.77	405.80
06/03/23	407.29	407.27	407.27	406.49	406.36	406.26	405.63	405.66
06/04/23	407.12	407.11	407.12	406.32	406.20	406.10	405.50	405.54
06/05/23	406.97	406.95	406.96	406.18	406.07	405.97	405.39	405.42
06/06/23	406.82	406.80	406.82	406.04	405.93	405.83	405.27	405.31
06/07/23	406.69	406.67	406.67	405.91	405.80	405.70	405.16	405.20

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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
06/08/23	406.60	406.58	406.59	405.83	405.73	405.63	405.13	405.16
06/09/23	406.43	406.41	406.43	405.67	405.57	405.47	404.99	405.03
06/10/23	406.32	406.30	406.30	405.62	405.54	405.52	#N/A	#N/A
06/11/23	406.21	406.19	406.19	405.51	405.46	405.42	#N/A	#N/A
06/12/23	406.10	406.10	406.09	405.41	405.36	405.35	#N/A	#N/A
06/13/23	406.02	406.00	406.01	405.34	405.28	405.29	#N/A	#N/A
06/14/23	405.94	405.92	405.92	405.30	405.25	405.25	#N/A	#N/A
06/15/23	405.88	405.87	405.85	405.25	405.24	405.24	#N/A	#N/A
06/16/23	405.83	405.82	405.82	405.21	405.21	405.21	#N/A	#N/A
06/17/23	405.77	405.76	405.75	405.15	405.15	405.15	#N/A	#N/A
06/18/23	405.71	405.70	405.70	405.12	405.12	405.10	#N/A	#N/A
06/19/23	405.65	405.63	405.64	405.07	405.06	405.05	#N/A	#N/A
06/20/23	405.59	405.58	405.58	404.99	404.99	404.99	#N/A	#N/A
06/21/23	405.53	405.52	405.52	404.95	404.94	404.94	#N/A	#N/A
06/22/23	405.48	405.47	405.46	404.91	404.90	404.90	#N/A	#N/A
06/23/23	405.42	405.41	405.40	404.84	404.83	404.83	#N/A	#N/A
06/24/23	405.36	405.34	405.33	404.76	404.76	404.76	#N/A	#N/A
06/25/23	405.28	405.27	405.26	404.70	404.68	404.69	#N/A	#N/A
06/26/23	405.22	405.21	405.19	404.68	404.62	404.63	#N/A	#N/A
06/27/23	405.16	405.15	405.14	404.57	404.56	404.57	#N/A	#N/A
06/28/23	405.11	405.10	405.10	404.58	404.60	404.59	#N/A	#N/A
06/29/23	405.16	405.15	405.15	404.68	404.71	404.72	#N/A	#N/A
06/30/23	405.43	405.43	405.42	405.09	405.20	405.20	#N/A	#N/A
07/01/23	405.58	405.57	405.56	405.22	405.27	405.24	#N/A	#N/A
07/02/23	405.69	405.69	405.68	405.30	405.34	405.34	#N/A	#N/A
07/03/23	405.96	405.96	405.95	405.70	405.83	405.85	#N/A	#N/A
07/04/23	406.46	406.46	406.47	406.51	406.72	406.74	#N/A	#N/A
07/05/23	406.86	406.86	406.85	406.93	407.08	407.08	#N/A	#N/A
07/06/23	407.07	407.06	407.06	407.03	407.14	407.14	#N/A	#N/A
07/07/23	407.15	407.14	407.14	407.01	407.06	407.05	#N/A	#N/A
07/08/23	407.18	407.17	407.16	406.97	407.00	406.99	#N/A	#N/A
07/09/23	407.12	407.11	407.10	406.84	406.82	406.81	#N/A	#N/A
07/10/23	406.99	406.98	406.97	406.63	406.59	406.58	#N/A	#N/A
07/11/23	406.88	406.85	406.83	406.40	406.41	406.39	#N/A	#N/A
07/12/23	406.91	406.89	406.88	406.48	406.53	406.51	#N/A	#N/A
07/13/23	406.86	406.83	406.83	406.40	406.45	406.41	#N/A	#N/A
07/14/23	406.78	406.75	406.73	406.28	406.29	406.28	#N/A	#N/A
07/15/23	406.71	406.68	406.67	406.20	406.20	406.18	#N/A	#N/A
07/16/23	406.62	406.59	406.57	406.07	406.06	406.05	#N/A	#N/A
07/17/23	406.50	406.47	406.46	405.91	405.89	405.88	#N/A	#N/A
07/18/23	406.45	406.42	406.41	405.93	405.95	405.93	#N/A	#N/A
07/19/23	406.43	406.40	406.39	405.92	405.95	405.93	#N/A	#N/A
07/20/23	406.45	406.42	406.42	406.01	406.05	406.05	#N/A	#N/A

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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
07/21/23	406.61	406.59	406.58	406.25	406.32	406.31	#N/A	#N/A
07/22/23	406.70	406.68	406.67	406.39	406.42	406.41	#N/A	#N/A
07/23/23	406.72	406.69	406.68	406.34	406.38	406.37	#N/A	#N/A
07/24/23	406.61	406.59	406.58	406.20	406.23	406.22	#N/A	#N/A
07/25/23	406.47	406.45	406.44	406.01	406.02	406.00	#N/A	#N/A
07/26/23	406.35	406.32	406.31	405.83	405.83	405.81	#N/A	#N/A
07/27/23	406.25	406.22	406.21	405.71	405.68	405.64	#N/A	#N/A
07/28/23	406.12	406.09	406.07	405.51	405.45	405.44	#N/A	#N/A
07/29/23	405.98	405.95	405.94	405.37	405.31	405.29	#N/A	#N/A
07/30/23	405.87	405.84	405.82	405.26	405.20	405.18	#N/A	#N/A
07/31/23	405.76	405.74	405.72	405.13	405.09	405.08	#N/A	#N/A
08/01/23	405.69	405.66	405.64	405.03	405.04	405.03	#N/A	#N/A
08/02/23	405.61	405.59	405.57	405.00	404.99	404.98	#N/A	#N/A
08/03/23	405.56	405.53	405.51	404.96	404.97	404.94	#N/A	#N/A
08/04/23	405.50	405.47	405.45	404.91	404.91	404.90	#N/A	#N/A
08/05/23	405.43	405.40	405.38	404.83	404.82	404.81	#N/A	#N/A
08/06/23	405.35	405.32	405.31	404.75	404.74	404.70	#N/A	#N/A
08/07/23	405.25	405.22	405.20	404.68	404.63	404.60	#N/A	#N/A
08/08/23	405.37	405.34	405.33	404.93	405.01	404.98	#N/A	#N/A
08/09/23	405.48	405.46	405.44	405.06	405.13	405.12	#N/A	#N/A
08/10/23	405.47	405.44	405.43	405.05	405.10	405.06	#N/A	#N/A
08/11/23	405.33	405.29	405.28	404.85	404.86	404.85	#N/A	#N/A
08/12/23	405.24	405.21	405.19	404.75	404.73	404.71	#N/A	#N/A
08/13/23	405.21	405.18	405.16	404.69	404.74	404.73	#N/A	#N/A
08/14/23	405.39	405.36	405.34	404.99	405.07	405.06	#N/A	#N/A
08/15/23	405.49	405.46	405.44	405.13	405.19	405.19	#N/A	#N/A
08/16/23	405.56	405.53	405.52	405.25	405.32	405.32	#N/A	#N/A
08/17/23	405.69	405.67	405.65	405.43	405.46	405.48	#N/A	#N/A
08/18/23	405.73	405.73	405.71	405.49	405.55	405.54	#N/A	#N/A
08/19/23	405.80	405.80	405.78	405.55	405.60	405.58	#N/A	#N/A
08/20/23	405.80	405.79	405.77	405.48	405.50	405.49	#N/A	#N/A
08/21/23	405.71	405.71	405.68	405.35	405.36	405.34	#N/A	#N/A
08/22/23	405.60	405.59	405.57	405.19	405.19	405.17	#N/A	#N/A
08/23/23	405.48	405.48	405.45	405.04	405.02	405.00	#N/A	#N/A
08/24/23	405.37	405.37	405.33	404.93	404.86	404.84	#N/A	#N/A
08/25/23	405.26	405.26	405.23	404.80	404.72	404.70	#N/A	#N/A
08/26/23	405.15	405.15	405.13	404.67	404.58	404.56	#N/A	#N/A
08/27/23	405.12	405.11	405.09	404.66	404.65	404.63	#N/A	#N/A
08/28/23	405.05	405.05	405.03	404.56	404.52	404.50	#N/A	#N/A
08/29/23	405.02	405.02	405.00	404.52	404.56	404.55	#N/A	#N/A
08/30/23	405.04	405.04	405.01	404.58	404.61	404.58	#N/A	#N/A
08/31/23	404.97	404.97	404.95	404.48	404.46	404.43	#N/A	#N/A
09/01/23	404.90	404.90	404.87	404.34	404.34	404.32	#N/A	#N/A

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Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
09/02/23	404.80	404.81	404.78	404.26	404.24	404.21	#N/A	#N/A
09/03/23	404.73	404.73	404.70	404.18	404.15	404.13	#N/A	#N/A
09/04/23	404.67	404.66	404.64	404.12	404.08	404.06	#N/A	#N/A
09/05/23	404.59	404.59	404.56	404.06	404.01	403.99	#N/A	#N/A
09/06/23	404.52	404.52	404.50	403.99	403.94	403.91	#N/A	#N/A
09/07/23	404.45	404.46	404.43	403.92	403.86	403.83	#N/A	#N/A
09/08/23	404.39	404.39	404.36	403.83	403.78	403.76	#N/A	#N/A
09/09/23	404.32	404.32	404.29	403.72	403.71	403.69	#N/A	#N/A
09/10/23	404.25	404.24	404.22	403.64	403.65	403.62	#N/A	#N/A
09/11/23	404.18	404.18	404.16	403.59	403.59	403.56	#N/A	#N/A
09/12/23	404.12	404.13	404.10	403.54	403.53	403.51	#N/A	#N/A
09/13/23	404.06	404.07	404.04	403.48	403.47	403.46	#N/A	#N/A
09/14/23	404.02	404.02	403.98	403.44	403.43	403.41	#N/A	#N/A
09/15/23	403.95	403.96	403.93	403.38	403.38	403.36	#N/A	#N/A
09/16/23	403.91	403.91	403.89	403.34	403.33	403.32	#N/A	#N/A
09/17/23	403.86	403.86	403.83	403.30	403.28	403.27	#N/A	#N/A
09/18/23	403.80	403.81	403.78	403.25	403.25	403.22	#N/A	#N/A
09/19/23	403.77	403.77	403.73	403.21	403.21	403.19	#N/A	#N/A
09/20/23	403.72	403.71	403.68	403.16	403.17	403.15	#N/A	#N/A
09/21/23	403.67	403.67	403.63	403.12	403.12	403.10	#N/A	#N/A
09/22/23	403.63	403.63	403.60	403.09	403.09	403.08	#N/A	#N/A
09/23/23	403.58	403.59	403.56	403.08	403.06	403.04	#N/A	#N/A
09/24/23	403.55	403.56	403.53	403.08	403.04	403.02	#N/A	#N/A
09/25/23	403.51	403.51	403.49	403.01	403.01	402.98	#N/A	#N/A
09/26/23	403.48	403.48	403.45	402.96	402.98	402.95	#N/A	#N/A
09/27/23	403.45	403.45	403.42	402.94	402.94	402.93	#N/A	#N/A
09/28/23	403.42	403.42	403.39	402.93	402.92	402.91	#N/A	#N/A
09/29/23	403.38	403.38	403.36	402.90	402.91	402.88	#N/A	#N/A
09/30/23	403.37	403.38	403.35	402.87	402.89	402.88	#N/A	#N/A
10/01/23	403.35	403.35	403.32	402.88	402.87	402.86	#N/A	#N/A
10/02/23	403.33	403.34	403.31	402.86	402.89	402.87	#N/A	#N/A
10/03/23	403.33	403.34	403.31	402.89	402.90	402.89	#N/A	#N/A
10/04/23	403.32	403.32	403.29	402.91	402.88	402.86	#N/A	#N/A
10/05/23	403.37	403.34	403.32	402.89	402.95	402.86	#N/A	#N/A
10/06/23	403.36	403.32	403.31	402.88	402.94	402.84	#N/A	#N/A
10/07/23	403.35	403.31	403.30	402.87	402.93	402.84	#N/A	#N/A
10/08/23	403.34	403.29	403.29	402.86	402.91	402.83	#N/A	#N/A
10/09/23	403.32	403.27	403.26	402.84	402.89	402.81	#N/A	#N/A
10/10/23	403.29	403.26	403.24	402.81	402.87	402.79	#N/A	#N/A
10/11/23	403.28	403.25	403.23	402.81	402.88	402.80	#N/A	#N/A
10/12/23	403.27	403.23	403.21	402.80	402.86	402.78	#N/A	#N/A
10/13/23	403.24	403.21	403.19	402.78	402.84	402.76	#N/A	#N/A
10/14/23	403.24	403.19	403.18	402.77	402.83	402.74	#N/A	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-40B	MW-40I	MW-40A	MW-41B	MW-41I	MW-41A	MW-42B	MW-42I
10/15/23	403.21	403.17	403.16	402.76	402.81	402.73	#N/A	#N/A
10/16/23	403.19	403.15	403.14	402.74	402.79	402.71	#N/A	#N/A
10/17/23	403.18	403.14	403.12	402.72	402.78	402.69	#N/A	#N/A
10/18/23	403.15	403.11	403.11	402.71	402.76	402.68	#N/A	#N/A
10/19/23	403.15	403.11	403.09	402.70	402.75	402.67	#N/A	#N/A
10/20/23	403.14	403.09	403.08	402.71	402.77	402.68	#N/A	#N/A
10/21/23	403.14	403.10	403.09	402.72	402.78	402.69	#N/A	#N/A
10/22/23	403.12	403.09	403.08	402.72	402.78	402.68	#N/A	#N/A
10/23/23	403.12	403.08	403.07	402.70	402.76	402.67	#N/A	#N/A
10/24/23	403.10	403.07	403.04	402.68	402.74	402.65	#N/A	#N/A
10/25/23	403.09	403.05	403.03	402.67	402.72	402.64	#N/A	#N/A
10/26/23	403.08	403.04	403.02	402.66	402.72	402.64	#N/A	#N/A
10/27/23	403.06	403.02	403.01	402.65	402.70	402.62	#N/A	#N/A
10/28/23	403.05	403.01	403.00	402.64	402.69	402.61	#N/A	#N/A
10/29/23	403.05	403.00	403.00	402.69	402.70	402.61	#N/A	#N/A
10/30/23	403.04	403.00	402.99	402.68	402.71	402.63	#N/A	#N/A
10/31/23	403.06	403.02	403.00	402.65	402.72	402.64	#N/A	#N/A
11/01/23	403.04	403.01	403.00	402.68	402.72	402.64	#N/A	#N/A
11/02/23	403.07	403.02	403.00	402.68	402.74	402.67	#N/A	#N/A
11/03/23	403.08	403.03	403.03	402.70	402.77	402.71	#N/A	#N/A
11/04/23	403.13	403.08	403.07	402.75	402.83	402.76	#N/A	#N/A
11/05/23	403.17	403.12	403.11	402.78	402.87	402.80	#N/A	#N/A
11/06/23	403.19	403.14	403.14	402.87	402.89	402.81	#N/A	#N/A
11/07/23	403.20	403.15	403.15	402.86	402.89	402.81	#N/A	#N/A
11/08/23	403.20	403.15	403.14	402.80	402.88	402.81	#N/A	#N/A
11/09/23	403.18	403.12	403.12	402.82	402.86	402.79	#N/A	#N/A
11/10/23	403.14	403.09	403.08	402.75	402.82	402.75	#N/A	#N/A
11/11/23	403.11	403.06	403.05	402.70	402.79	402.72	#N/A	#N/A
11/12/23	403.07	403.02	403.01	402.71	402.75	402.69	#N/A	#N/A
11/13/23	403.06	403.01	402.99	402.70	402.72	402.66	#N/A	#N/A
11/14/23	403.04	403.00	402.99	402.67	402.71	402.64	#N/A	#N/A
11/15/23	403.03	402.98	402.98	402.69	402.69	402.63	#N/A	#N/A
11/16/23	403.02	402.97	402.96	402.68	402.68	402.61	#N/A	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
08/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
08/31/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
09/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/25/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/26/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/27/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/28/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/29/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
09/30/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/01/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/02/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/03/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/04/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/05/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/06/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/07/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/08/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/09/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/10/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/11/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/12/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/13/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/14/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/15/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/16/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/17/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/18/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/19/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/20/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/21/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/22/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/23/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/24/22	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
10/25/22	402.90	402.69	402.76	402.76	402.68	402.70	402.74
10/26/22	403.10	402.97	403.14	403.16	403.12	403.12	403.16
10/27/22	402.95	402.78	402.98	403.00	402.92	402.94	402.98
10/28/22	402.95	402.79	402.98	403.00	402.92	402.94	402.99
10/29/22	402.97	402.80	403.03	403.03	402.96	402.98	403.01
10/30/22	403.00	402.84	403.07	403.07	403.01	403.02	403.08
10/31/22	402.93	402.79	403.02	403.03	403.01	403.02	403.08
11/01/22	403.14	402.97	403.22	403.23	403.18	403.19	403.25
11/02/22	403.12	402.96	403.24	403.23	403.17	403.21	403.25
11/03/22	403.12	402.96	403.24	403.23	403.16	403.21	403.27
11/04/22	403.13	402.99	403.25	403.23	403.15	403.20	403.24

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
11/05/22	403.10	402.96	403.21	403.20	403.11	403.16	403.20
11/06/22	403.09	402.95	403.20	403.21	403.12	403.16	403.21
11/07/22	403.04	402.87	403.15	403.14	403.05	403.10	403.15
11/08/22	403.01	402.82	403.12	403.11	403.03	403.07	403.12
11/09/22	402.99	402.84	403.11	403.10	403.02	403.06	403.09
11/10/22	402.98	402.84	403.10	403.09	402.99	403.04	403.08
11/11/22	402.96	402.85	403.08	403.07	402.97	403.03	403.07
11/12/22	402.94	402.77	403.05	403.04	402.94	402.99	403.03
11/13/22	402.95	402.77	403.06	403.04	402.95	403.00	403.04
11/14/22	402.93	402.76	403.04	403.02	402.93	402.97	403.02
11/15/22	402.91	402.79	403.01	403.00	402.90	402.96	403.00
11/16/22	402.90	402.72	403.01	403.00	402.89	402.95	402.98
11/17/22	402.90	402.75	403.00	402.99	402.90	402.94	402.99
11/18/22	402.88	402.72	402.99	402.98	402.89	402.93	402.98
11/19/22	402.87	402.71	402.98	402.97	402.87	402.93	402.96
11/20/22	402.87	402.70	402.97	402.96	402.86	402.90	402.96
11/21/22	402.85	402.74	402.96	402.95	402.86	402.91	402.95
11/22/22	402.85	402.73	402.76	402.74	402.71	402.71	402.74
11/23/22	402.83	402.74	402.74	402.73	402.71	402.71	402.74
11/24/22	402.83	402.72	402.75	402.72	402.70	402.71	402.74
11/25/22	402.81	402.68	402.72	402.70	402.69	402.70	402.69
11/26/22	402.81	402.69	402.72	402.70	402.71	402.70	402.73
11/27/22	402.82	402.69	402.74	402.72	402.73	402.72	402.75
11/28/22	402.85	402.72	402.77	402.74	402.78	402.78	402.79
11/29/22	402.86	402.69	402.78	402.76	402.78	402.79	402.81
11/30/22	402.88	402.76	402.81	402.79	402.82	402.82	402.83
12/01/22	402.96	402.79	402.89	402.87	402.92	402.91	402.95
12/02/22	403.14	403.05	403.09	403.08	403.17	403.18	403.22
12/03/22	403.19	403.10	403.14	403.12	403.17	403.18	403.22
12/04/22	403.18	403.04	403.11	403.10	403.14	403.14	403.20
12/05/22	403.18	403.09	403.11	403.09	403.13	403.13	403.17
12/06/22	403.13	403.00	403.05	403.02	403.05	403.04	403.08
12/07/22	403.10	402.94	403.03	403.02	403.08	403.08	403.11
12/08/22	403.14	403.00	403.08	403.05	403.09	403.08	403.13
12/09/22	403.14	403.00	403.09	403.07	403.13	403.13	403.17
12/10/22	403.14	403.00	403.07	403.06	403.11	403.10	403.14
12/11/22	403.12	402.96	403.05	403.02	403.05	403.05	403.09
12/12/22	403.09	402.92	403.01	403.00	403.02	403.01	403.06
12/13/22	403.07	402.95	403.00	402.98	403.01	403.01	403.05
12/14/22	403.05	402.96	402.98	402.96	402.99	402.98	403.01
12/15/22	403.33	403.30	403.39	403.37	403.59	403.58	403.61
12/16/22	403.88	403.89	403.97	403.93	404.25	404.25	404.29
12/17/22	404.11	404.10	404.17	404.14	404.38	404.38	404.42

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
12/18/22	404.24	404.20	404.26	404.24	404.41	404.41	404.45
12/19/22	404.26	404.18	404.26	404.23	404.38	404.38	404.42
12/20/22	404.23	404.16	404.22	404.18	404.29	404.29	404.32
12/21/22	404.22	404.12	404.26	404.20	404.31	404.22	404.25
12/22/22	404.06	404.03	404.21	404.11	404.22	404.09	404.11
12/23/22	403.95	403.86	404.08	403.97	404.06	403.95	403.96
12/24/22	403.57	403.49	403.66	403.56	403.42	403.29	403.31
12/25/22	403.20	403.05	403.24	403.14	403.11	402.98	403.00
12/26/22	403.23	403.14	403.32	403.23	403.28	403.15	403.16
12/27/22	403.16	403.03	403.23	403.14	403.19	403.06	403.07
12/28/22	403.16	403.07	403.24	403.15	403.21	403.09	403.10
12/29/22	403.17	403.08	403.27	403.18	403.26	403.14	403.14
12/30/22	403.36	403.28	403.29	403.30	403.34	403.38	403.39
12/31/22	403.48	403.41	403.43	403.43	403.49	403.53	403.55
01/01/23	403.68	403.60	403.66	403.66	403.76	403.80	403.81
01/02/23	403.84	403.75	403.83	403.83	403.92	403.97	403.98
01/03/23	404.06	403.98	404.07	404.07	404.23	404.29	404.31
01/04/23	405.07	405.19	405.27	405.27	405.73	405.78	405.81
01/05/23	405.67	405.74	405.82	405.83	406.25	406.31	406.32
01/06/23	406.26	406.32	406.41	406.40	406.84	406.91	406.92
01/07/23	406.69	406.73	406.82	406.81	407.21	407.26	407.29
01/08/23	406.85	406.85	406.92	406.93	407.24	407.28	407.29
01/09/23	406.82	406.78	406.84	406.85	407.05	407.11	407.12
01/10/23	406.48	406.46	406.48	406.48	406.57	406.63	406.63
01/11/23	406.04	406.00	405.99	406.02	405.99	406.04	406.05
01/12/23	405.67	405.61	405.60	405.62	405.55	405.60	405.60
01/13/23	405.64	405.58	405.62	405.63	405.64	405.69	405.69
01/14/23	405.62	405.51	405.57	405.60	405.60	405.65	405.65
01/15/23	406.03	405.98	406.04	406.05	406.13	406.19	406.21
01/16/23	406.38	406.32	406.39	406.41	406.54	406.59	406.60
01/17/23	406.57	406.53	406.60	406.61	406.76	406.81	406.83
01/18/23	406.68	406.63	406.70	406.70	406.81	406.86	406.88
01/19/23	406.68	406.96	406.98	406.97	407.24	407.27	407.28
01/20/23	409.09	409.24	409.31	409.29	409.89	409.95	409.96
01/21/23	409.90	409.98	410.05	410.03	410.61	410.68	410.69
01/22/23	410.36	410.40	410.45	410.44	410.91	410.96	410.98
01/23/23	410.34	410.33	410.39	410.39	410.73	410.78	410.80
01/24/23	410.21	410.17	410.23	410.22	410.44	410.50	410.51
01/25/23	409.79	409.77	409.76	409.77	409.85	409.90	409.90
01/26/23	410.39	410.49	410.52	410.51	410.80	410.84	410.86
01/27/23	410.59	410.57	410.62	410.62	410.84	410.87	410.88
01/28/23	410.74	410.70	410.75	410.74	410.96	411.01	411.03
01/29/23	410.89	410.84	410.88	410.88	411.07	411.12	411.13

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
01/30/23	410.84	410.78	410.84	410.84	410.97	411.02	411.03
01/31/23	410.47	410.39	410.43	410.44	410.50	410.55	410.55
02/01/23	#N/A	410.28	410.30	410.30	410.31	410.35	410.37
02/02/23	409.78	408.63	409.67	409.66	409.63	409.66	409.73
02/03/23	409.50	408.33	409.37	409.36	409.31	409.32	409.40
02/04/23	408.99	407.80	408.83	408.82	408.72	408.74	408.82
02/05/23	408.47	407.26	408.30	408.28	408.14	408.16	408.23
02/06/23	407.93	406.69	407.74	407.73	407.55	407.57	407.64
02/07/23	407.50	406.26	407.30	407.29	407.09	407.10	407.19
02/08/23	407.13	405.88	406.93	406.93	406.72	406.74	406.81
02/09/23	407.15	406.22	407.21	407.18	407.02	407.01	407.08
02/10/23	409.99	409.12	410.17	410.13	410.49	410.50	410.57
02/11/23	411.19	410.20	411.26	411.23	411.63	411.67	411.74
02/12/23	411.72	410.68	411.75	411.71	411.96	411.99	412.08
02/13/23	411.51	410.43	411.49	411.46	411.57	411.60	411.67
02/14/23	411.41	410.30	411.35	411.33	411.42	411.44	411.53
02/15/23	411.10	409.98	411.03	411.00	411.02	411.04	411.11
02/16/23	410.33	409.17	410.22	410.19	410.11	410.12	410.20
02/17/23	411.23	410.34	411.35	411.31	411.41	411.43	411.51
02/18/23	411.50	410.42	411.48	411.45	411.56	411.58	411.65
02/19/23	412.12	411.04	412.10	412.07	412.22	412.25	412.32
02/20/23	412.09	410.99	412.05	412.02	412.10	412.12	412.19
02/21/23	411.85	410.73	411.78	411.76	411.77	411.79	411.87
02/22/23	411.36	410.22	411.27	411.24	411.18	411.20	#N/A
02/23/23	410.92	409.77	410.83	410.80	410.76	410.77	#N/A
02/24/23	410.47	409.28	410.32	410.32	410.25	410.25	#N/A
02/25/23	409.93	408.73	409.77	409.77	409.60	409.62	#N/A
02/26/23	409.39	408.16	409.20	409.19	409.03	409.03	#N/A
02/27/23	409.04	407.82	408.87	408.85	408.68	408.70	#N/A
02/28/23	408.76	407.55	408.59	408.58	408.45	408.47	#N/A
03/01/23	408.53	407.32	408.36	408.36	408.21	408.23	408.13
03/02/23	408.29	407.07	408.11	408.11	407.96	407.97	408.03
03/03/23	408.13	406.93	407.98	407.98	407.85	407.85	407.91
03/04/23	413.65	413.12	414.16	414.10	415.04	415.08	415.14
03/05/23	418.62	417.67	418.68	418.63	418.64	418.68	418.73
03/06/23	420.29	419.21	420.26	420.21	420.18	420.21	420.26
03/07/23	421.23	420.10	421.14	421.09	421.06	421.09	421.14
03/08/23	421.06	419.91	420.98	420.92	420.92	420.93	421.00
03/09/23	420.99	419.86	420.91	420.85	420.86	420.88	420.94
03/10/23	420.95	419.81	420.86	420.81	420.81	420.84	420.90
03/11/23	420.88	419.74	420.80	420.75	420.77	420.80	420.85
03/12/23	420.84	419.73	420.77	420.72	420.79	420.81	420.89
03/13/23	418.79	417.64	418.69	418.65	418.73	418.73	418.81

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
03/14/23	415.54	414.37	415.39	415.36	414.95	414.95	415.02
03/15/23	413.18	412.12	413.11	413.09	412.52	412.52	412.58
03/16/23	411.78	410.58	411.62	411.59	411.29	411.29	411.36
03/17/23	411.14	409.91	410.97	410.95	410.74	410.74	410.80
03/18/23	410.78	409.57	410.63	410.60	410.44	410.45	410.52
03/19/23	410.44	409.24	410.30	410.27	410.13	410.15	410.20
03/20/23	410.25	409.06	410.12	410.09	409.98	409.99	410.05
03/21/23	410.00	408.81	409.86	409.84	409.72	409.73	409.80
03/22/23	409.70	408.51	409.55	409.54	409.41	409.42	409.48
03/23/23	409.42	408.25	409.29	409.27	409.16	409.16	409.23
03/24/23	409.22	408.06	409.10	409.09	409.02	409.02	409.08
03/25/23	415.59	415.03	416.06	415.99	416.38	416.42	416.47
03/26/23	420.95	419.86	420.91	420.86	420.82	420.85	420.91
03/27/23	421.13	420.00	421.05	421.00	420.98	421.00	421.07
03/28/23	420.93	419.79	420.84	420.79	420.78	420.80	420.87
03/29/23	420.89	419.74	420.80	420.74	420.74	420.77	420.84
03/30/23	420.86	419.71	420.78	420.72	420.72	420.75	420.81
03/31/23	420.78	419.64	420.70	420.64	420.66	420.68	420.75
04/01/23	420.81	419.68	420.75	420.69	420.71	420.74	420.80
04/02/23	420.83	419.70	420.78	420.72	420.75	420.77	420.85
04/03/23	420.87	419.77	420.84	420.78	420.85	420.86	420.94
04/04/23	420.88	419.77	420.85	420.78	420.87	420.88	420.94
04/05/23	420.78	419.69	420.75	420.70	420.79	420.79	420.88
04/06/23	420.31	419.20	420.27	420.22	420.28	420.30	420.38
04/07/23	420.88	419.78	420.85	420.78	420.85	420.87	420.94
04/08/23	420.89	419.79	420.87	420.81	420.87	420.89	420.97
04/09/23	420.89	419.79	420.86	420.81	420.87	420.89	420.96
04/10/23	420.24	419.16	420.21	420.16	420.24	420.27	420.33
04/11/23	419.22	418.12	419.19	419.13	419.21	419.24	419.29
04/12/23	418.11	417.01	418.06	418.02	418.10	418.11	418.17
04/13/23	416.64	415.46	416.52	416.48	416.49	416.51	416.57
04/14/23	415.26	414.12	415.17	415.14	414.85	414.86	414.92
04/15/23	413.77	412.70	413.72	413.68	413.33	413.33	413.39
04/16/23	412.40	411.23	412.28	412.24	411.98	411.99	412.06
04/17/23	411.55	410.36	411.40	411.37	411.15	411.15	411.23
04/18/23	411.07	409.87	410.93	410.89	410.75	410.75	410.82
04/19/23	410.67	409.48	410.54	410.51	410.36	410.37	410.43
04/20/23	410.34	409.14	410.20	410.18	410.05	410.06	410.12
04/21/23	410.05	408.86	409.93	409.90	409.78	409.79	409.87
04/22/23	409.87	408.73	409.79	409.75	409.65	409.66	409.74
04/23/23	409.60	408.44	409.49	409.46	409.36	409.37	409.45
04/24/23	409.35	408.16	409.23	409.19	409.09	409.10	409.16
04/25/23	409.32	408.15	409.22	409.20	409.12	409.13	409.20

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
04/26/23	409.14	407.98	409.03	409.01	408.93	408.95	409.02
04/27/23	408.96	407.79	408.85	408.83	408.74	408.75	408.82
04/28/23	408.81	407.66	408.72	408.69	408.62	408.63	408.70
04/29/23	408.67	407.50	408.57	408.54	408.48	408.48	408.57
04/30/23	408.59	407.43	408.49	408.46	408.41	408.42	408.49
05/01/23	408.61	407.46	408.53	408.50	408.46	408.47	408.55
05/02/23	408.72	407.59	408.64	408.62	408.61	408.62	408.71
05/03/23	408.90	407.78	408.84	408.81	408.82	408.85	408.93
05/04/23	409.05	407.96	409.02	408.99	409.02	409.03	409.12
05/05/23	409.15	408.05	409.12	409.08	409.12	409.14	409.23
05/06/23	409.28	408.19	409.25	409.22	409.26	409.28	409.37
05/07/23	409.43	408.34	409.42	409.38	409.43	409.44	409.53
05/08/23	409.29	408.27	409.33	409.28	409.30	409.31	409.40
05/09/23	0.00	0.00	0.00	0.00	0.00	0.00	0.00
05/10/23	412.19	412.27	412.31	412.26	412.74	412.78	412.83
05/11/23	412.32	412.33	412.36	412.31	412.54	412.56	412.62
05/12/23	411.85	411.79	411.82	411.79	411.87	411.89	411.94
05/13/23	411.21	411.09	411.12	411.10	411.08	411.10	411.14
05/14/23	410.34	410.18	410.21	410.18	410.08	410.10	410.15
05/15/23	409.60	409.40	409.43	409.41	409.28	409.29	409.35
05/16/23	409.43	409.27	409.30	409.27	409.21	409.23	409.27
05/17/23	410.16	410.22	410.21	410.19	410.22	410.23	410.28
05/18/23	409.62	409.51	409.52	409.51	409.46	409.48	409.52
05/19/23	409.46	409.32	409.34	409.32	409.27	409.29	409.34
05/20/23	409.06	408.92	408.94	408.92	408.85	408.87	408.91
05/21/23	408.75	408.58	408.59	408.58	408.46	408.48	408.53
05/22/23	408.30	408.10	408.12	408.10	407.96	407.98	408.03
05/23/23	408.08	407.89	407.92	407.90	407.78	407.80	407.84
05/24/23	407.86	407.66	407.69	407.67	407.54	407.56	407.61
05/25/23	407.57	407.39	407.38	407.37	407.23	407.25	407.28
05/26/23	407.30	407.11	407.10	407.11	406.91	406.95	406.99
05/27/23	407.02	406.81	406.80	406.81	406.59	406.62	406.67
05/28/23	406.73	406.51	406.50	406.51	406.27	406.30	406.36
05/29/23	406.50	406.28	406.28	406.29	406.05	406.08	406.13
05/30/23	406.29	406.06	406.07	406.08	405.83	405.86	405.92
05/31/23	406.08	405.85	405.85	405.87	405.62	405.64	405.70
06/01/23	405.96	405.69	405.69	405.70	405.46	405.50	405.54
06/02/23	405.81	405.55	405.55	405.57	405.33	405.36	405.40
06/03/23	405.67	405.42	405.42	405.44	405.20	405.23	405.29
06/04/23	405.56	405.31	405.30	405.32	405.08	405.11	405.17
06/05/23	405.44	405.19	405.19	405.20	404.97	405.01	405.06
06/06/23	405.33	405.08	405.07	405.09	404.87	404.89	404.96
06/07/23	405.21	404.97	404.97	404.98	404.77	404.80	404.84

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
06/08/23	405.17	404.93	404.93	404.95	404.74	404.77	404.84
06/09/23	405.03	404.80	404.79	404.80	404.61	404.63	404.70
06/10/23	#N/A	#N/A	#N/A	#N/A	404.64	404.62	404.68
06/11/23	#N/A	#N/A	#N/A	#N/A	404.56	404.54	404.60
06/12/23	#N/A	#N/A	#N/A	#N/A	404.74	404.73	404.78
06/13/23	#N/A	#N/A	#N/A	#N/A	404.58	404.56	404.63
06/14/23	#N/A	#N/A	#N/A	#N/A	404.59	404.58	404.64
06/15/23	#N/A	#N/A	#N/A	#N/A	404.69	404.68	404.74
06/16/23	#N/A	#N/A	#N/A	#N/A	404.63	404.62	404.69
06/17/23	#N/A	#N/A	#N/A	#N/A	404.54	404.54	404.60
06/18/23	#N/A	#N/A	#N/A	#N/A	404.52	404.51	404.57
06/19/23	#N/A	#N/A	#N/A	#N/A	404.45	404.44	404.50
06/20/23	#N/A	#N/A	#N/A	#N/A	404.40	404.39	404.45
06/21/23	#N/A	#N/A	#N/A	#N/A	404.37	404.35	404.39
06/22/23	#N/A	#N/A	#N/A	#N/A	404.30	404.28	404.34
06/23/23	#N/A	#N/A	#N/A	#N/A	404.20	404.19	404.25
06/24/23	#N/A	#N/A	#N/A	#N/A	404.11	404.10	404.16
06/25/23	#N/A	#N/A	#N/A	#N/A	404.03	404.01	404.08
06/26/23	#N/A	#N/A	#N/A	#N/A	403.98	403.97	404.02
06/27/23	#N/A	#N/A	#N/A	#N/A	403.98	403.98	404.04
06/28/23	#N/A	#N/A	#N/A	#N/A	404.19	404.18	404.24
06/29/23	#N/A	#N/A	#N/A	#N/A	404.42	404.41	404.48
06/30/23	#N/A	#N/A	#N/A	#N/A	406.10	406.06	406.11
07/01/23	#N/A	#N/A	#N/A	#N/A	404.76	404.74	404.80
07/02/23	#N/A	#N/A	#N/A	#N/A	405.72	405.70	405.74
07/03/23	#N/A	#N/A	#N/A	#N/A	406.81	406.81	406.87
07/04/23	#N/A	#N/A	#N/A	#N/A	407.95	407.94	408.02
07/05/23	#N/A	#N/A	#N/A	#N/A	407.65	407.65	407.70
07/06/23	#N/A	#N/A	#N/A	#N/A	407.20	407.19	407.26
07/07/23	#N/A	#N/A	#N/A	#N/A	406.84	406.84	406.89
07/08/23	#N/A	#N/A	#N/A	#N/A	406.66	406.65	406.71
07/09/23	#N/A	#N/A	#N/A	#N/A	406.27	406.25	406.33
07/10/23	#N/A	#N/A	#N/A	#N/A	405.89	405.87	405.95
07/11/23	#N/A	#N/A	#N/A	#N/A	405.81	405.82	405.85
07/12/23	#N/A	#N/A	#N/A	#N/A	406.19	406.20	406.23
07/13/23	#N/A	#N/A	#N/A	#N/A	405.88	405.88	405.92
07/14/23	#N/A	#N/A	#N/A	#N/A	405.72	405.74	405.76
07/15/23	#N/A	#N/A	#N/A	#N/A	405.55	405.56	405.59
07/16/23	#N/A	#N/A	#N/A	#N/A	405.36	405.36	405.39
07/17/23	#N/A	#N/A	#N/A	#N/A	405.09	405.09	405.11
07/18/23	#N/A	#N/A	#N/A	#N/A	405.55	405.56	405.59
07/19/23	#N/A	#N/A	#N/A	#N/A	405.61	405.60	405.61
07/20/23	#N/A	#N/A	#N/A	#N/A	405.95	405.96	405.99

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
07/21/23	#N/A	#N/A	#N/A	#N/A	406.28	406.30	406.32
07/22/23	#N/A	#N/A	#N/A	#N/A	406.24	406.25	406.27
07/23/23	#N/A	#N/A	#N/A	#N/A	406.01	406.02	406.06
07/24/23	#N/A	#N/A	#N/A	#N/A	405.69	405.70	405.73
07/25/23	#N/A	#N/A	#N/A	#N/A	405.37	405.38	405.41
07/26/23	#N/A	#N/A	#N/A	#N/A	405.06	405.07	405.07
07/27/23	#N/A	#N/A	#N/A	#N/A	404.78	404.79	404.81
07/28/23	#N/A	#N/A	#N/A	#N/A	404.48	404.48	404.50
07/29/23	#N/A	#N/A	#N/A	#N/A	404.40	404.41	404.42
07/30/23	#N/A	#N/A	#N/A	#N/A	404.36	404.36	404.40
07/31/23	#N/A	#N/A	#N/A	#N/A	404.30	404.30	404.33
08/01/23	#N/A	#N/A	#N/A	#N/A	404.35	404.35	404.39
08/02/23	#N/A	#N/A	#N/A	#N/A	404.33	404.34	404.37
08/03/23	#N/A	#N/A	#N/A	#N/A	404.30	404.31	404.34
08/04/23	#N/A	#N/A	#N/A	#N/A	404.31	404.32	404.34
08/05/23	#N/A	#N/A	#N/A	#N/A	404.12	404.12	404.14
08/06/23	#N/A	#N/A	#N/A	#N/A	403.94	403.95	403.98
08/07/23	#N/A	#N/A	#N/A	#N/A	403.80	403.81	403.82
08/08/23	#N/A	#N/A	#N/A	#N/A	405.35	405.36	405.39
08/09/23	#N/A	#N/A	#N/A	#N/A	404.96	404.97	404.99
08/10/23	#N/A	#N/A	#N/A	#N/A	404.58	404.58	404.60
08/11/23	#N/A	#N/A	#N/A	#N/A	404.25	404.24	404.27
08/12/23	#N/A	#N/A	#N/A	#N/A	404.09	404.11	404.13
08/13/23	#N/A	#N/A	#N/A	#N/A	404.52	404.53	404.55
08/14/23	#N/A	#N/A	#N/A	#N/A	405.09	405.10	405.12
08/15/23	#N/A	#N/A	#N/A	#N/A	405.14	405.14	405.16
08/16/23	#N/A	#N/A	#N/A	#N/A	405.38	405.39	405.41
08/17/23	#N/A	#N/A	#N/A	#N/A	405.50	405.50	405.53
08/18/23	#N/A	#N/A	#N/A	#N/A	0.00	0.00	0.00
08/19/23	#N/A	#N/A	#N/A	#N/A	405.47	405.48	405.54
08/20/23	#N/A	#N/A	#N/A	#N/A	405.17	405.18	405.23
08/21/23	#N/A	#N/A	#N/A	#N/A	404.89	404.90	404.95
08/22/23	#N/A	#N/A	#N/A	#N/A	404.61	404.62	404.67
08/23/23	#N/A	#N/A	#N/A	#N/A	404.36	404.37	404.42
08/24/23	#N/A	#N/A	#N/A	#N/A	404.15	404.16	404.20
08/25/23	#N/A	#N/A	#N/A	#N/A	403.97	403.98	404.03
08/26/23	#N/A	#N/A	#N/A	#N/A	403.82	403.82	403.87
08/27/23	#N/A	#N/A	#N/A	#N/A	404.30	404.30	404.35
08/28/23	#N/A	#N/A	#N/A	#N/A	403.91	403.92	403.97
08/29/23	#N/A	#N/A	#N/A	#N/A	404.27	404.28	404.33
08/30/23	#N/A	#N/A	#N/A	#N/A	404.18	404.18	404.24
08/31/23	#N/A	#N/A	#N/A	#N/A	403.80	403.80	403.86
09/01/23	#N/A	#N/A	#N/A	#N/A	403.59	403.58	403.65

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

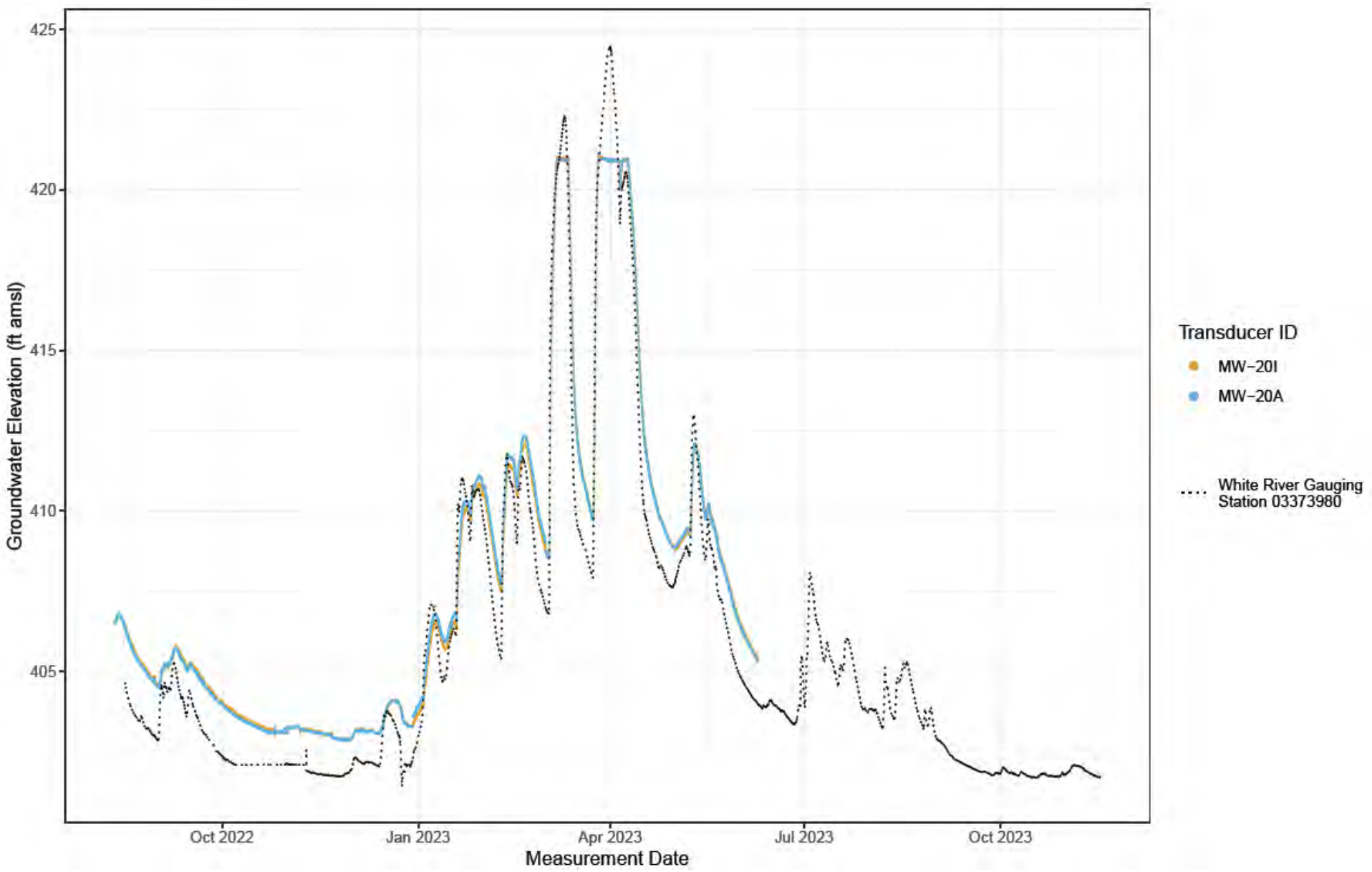
Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
09/02/23	#N/A	#N/A	#N/A	#N/A	403.50	403.49	403.55
09/03/23	#N/A	#N/A	#N/A	#N/A	403.44	403.45	403.50
09/04/23	#N/A	#N/A	#N/A	#N/A	403.39	403.39	403.44
09/05/23	#N/A	#N/A	#N/A	#N/A	403.31	403.32	403.36
09/06/23	#N/A	#N/A	#N/A	#N/A	403.21	403.21	403.26
09/07/23	#N/A	#N/A	#N/A	#N/A	403.11	403.11	403.16
09/08/23	#N/A	#N/A	#N/A	#N/A	403.05	403.04	403.10
09/09/23	#N/A	#N/A	#N/A	#N/A	402.98	402.97	403.03
09/10/23	#N/A	#N/A	#N/A	#N/A	402.92	402.91	402.97
09/11/23	#N/A	#N/A	#N/A	#N/A	402.89	402.89	402.95
09/12/23	#N/A	#N/A	#N/A	#N/A	402.84	402.84	402.89
09/13/23	#N/A	#N/A	#N/A	#N/A	402.80	402.80	402.86
09/14/23	#N/A	#N/A	#N/A	#N/A	402.78	402.77	402.82
09/15/23	#N/A	#N/A	#N/A	#N/A	402.72	402.73	402.78
09/16/23	#N/A	#N/A	#N/A	#N/A	402.70	402.71	402.77
09/17/23	#N/A	#N/A	#N/A	#N/A	402.67	402.66	402.72
09/18/23	#N/A	#N/A	#N/A	#N/A	402.62	402.62	402.69
09/19/23	#N/A	#N/A	#N/A	#N/A	402.59	402.59	402.64
09/20/23	#N/A	#N/A	#N/A	#N/A	402.56	402.56	402.60
09/21/23	#N/A	#N/A	#N/A	#N/A	402.52	402.53	402.58
09/22/23	#N/A	#N/A	#N/A	#N/A	402.51	402.50	402.55
09/23/23	#N/A	#N/A	#N/A	#N/A	402.49	402.50	402.55
09/24/23	#N/A	#N/A	#N/A	#N/A	402.50	402.49	402.55
09/25/23	#N/A	#N/A	#N/A	#N/A	402.45	402.45	402.51
09/26/23	#N/A	#N/A	#N/A	#N/A	402.42	402.41	402.47
09/27/23	#N/A	#N/A	#N/A	#N/A	402.42	402.41	402.47
09/28/23	#N/A	#N/A	#N/A	#N/A	402.45	402.44	402.49
09/29/23	#N/A	#N/A	#N/A	#N/A	402.45	402.45	402.51
09/30/23	#N/A	#N/A	#N/A	#N/A	402.43	402.42	402.49
10/01/23	#N/A	#N/A	#N/A	#N/A	402.41	402.41	402.46
10/02/23	#N/A	#N/A	#N/A	#N/A	402.52	402.53	402.59
10/03/23	#N/A	#N/A	#N/A	#N/A	402.54	402.54	402.60
10/04/23	#N/A	#N/A	#N/A	#N/A	402.47	402.47	402.53
10/05/23	#N/A	#N/A	#N/A	#N/A	402.39	402.42	402.41
10/06/23	#N/A	#N/A	#N/A	#N/A	402.44	402.38	402.46
10/07/23	#N/A	#N/A	#N/A	#N/A	402.39	402.42	402.41
10/08/23	#N/A	#N/A	#N/A	#N/A	402.36	402.44	402.40
10/09/23	#N/A	#N/A	#N/A	#N/A	402.34	402.47	402.36
10/10/23	#N/A	#N/A	#N/A	#N/A	402.34	402.47	402.36
10/11/23	#N/A	#N/A	#N/A	#N/A	402.40	402.41	402.43
10/12/23	#N/A	#N/A	#N/A	#N/A	402.36	402.45	402.39
10/13/23	#N/A	#N/A	#N/A	#N/A	402.31	402.50	402.33
10/14/23	#N/A	#N/A	#N/A	#N/A	402.31	402.51	402.31

Transducer Data for All Monitoring Wells on a Daily Basis
AES Indiana Petersburg Generating Station - Petersburg, Indiana

Date	MW-42A	MW-43B	MW-43I	MW-43A	MW-44B	MW-44I	MW-44A
10/15/23	#N/A	#N/A	#N/A	#N/A	402.28	402.54	402.28
10/16/23	#N/A	#N/A	#N/A	#N/A	402.26	402.56	402.29
10/17/23	#N/A	#N/A	#N/A	#N/A	402.25	402.56	402.28
10/18/23	#N/A	#N/A	#N/A	#N/A	402.23	402.57	402.25
10/19/23	#N/A	#N/A	#N/A	#N/A	402.26	402.55	402.29
10/20/23	#N/A	#N/A	#N/A	#N/A	402.31	402.49	402.34
10/21/23	#N/A	#N/A	#N/A	#N/A	402.33	402.48	402.36
10/22/23	#N/A	#N/A	#N/A	#N/A	402.31	402.49	402.34
10/23/23	#N/A	#N/A	#N/A	#N/A	402.27	402.52	402.30
10/24/23	#N/A	#N/A	#N/A	#N/A	402.26	402.54	402.29
10/25/23	#N/A	#N/A	#N/A	#N/A	402.27	402.54	402.30
10/26/23	#N/A	#N/A	#N/A	#N/A	402.26	402.55	402.28
10/27/23	#N/A	#N/A	#N/A	#N/A	402.22	402.57	402.25
10/28/23	#N/A	#N/A	#N/A	#N/A	402.23	402.58	402.25
10/29/23	#N/A	#N/A	#N/A	#N/A	402.27	402.54	402.29
10/30/23	#N/A	#N/A	#N/A	#N/A	402.46	402.37	402.45
10/31/23	#N/A	#N/A	#N/A	#N/A	402.36	402.47	402.35
11/01/23	#N/A	#N/A	#N/A	#N/A	402.35	402.45	402.36
11/02/23	#N/A	#N/A	#N/A	#N/A	402.40	402.42	402.40
11/03/23	#N/A	#N/A	#N/A	#N/A	402.44	402.35	402.48
11/04/23	#N/A	#N/A	#N/A	#N/A	402.54	402.28	402.56
11/05/23	#N/A	#N/A	#N/A	#N/A	402.55	402.27	402.57
11/06/23	#N/A	#N/A	#N/A	#N/A	402.54	402.27	402.58
11/07/23	#N/A	#N/A	#N/A	#N/A	402.54	402.28	402.55
11/08/23	#N/A	#N/A	#N/A	#N/A	402.51	402.31	402.52
11/09/23	#N/A	#N/A	#N/A	#N/A	402.46	402.35	402.48
11/10/23	#N/A	#N/A	#N/A	#N/A	402.42	402.40	402.43
11/11/23	#N/A	#N/A	#N/A	#N/A	402.42	402.41	402.42
11/12/23	#N/A	#N/A	#N/A	#N/A	402.37	402.45	402.37
11/13/23	#N/A	#N/A	#N/A	#N/A	402.35	402.48	402.35
11/14/23	#N/A	#N/A	#N/A	#N/A	402.30	402.52	402.32
11/15/23	#N/A	#N/A	#N/A	#N/A	402.27	402.53	402.28
11/16/23	#N/A	#N/A	#N/A	#N/A	402.25	402.57	402.24

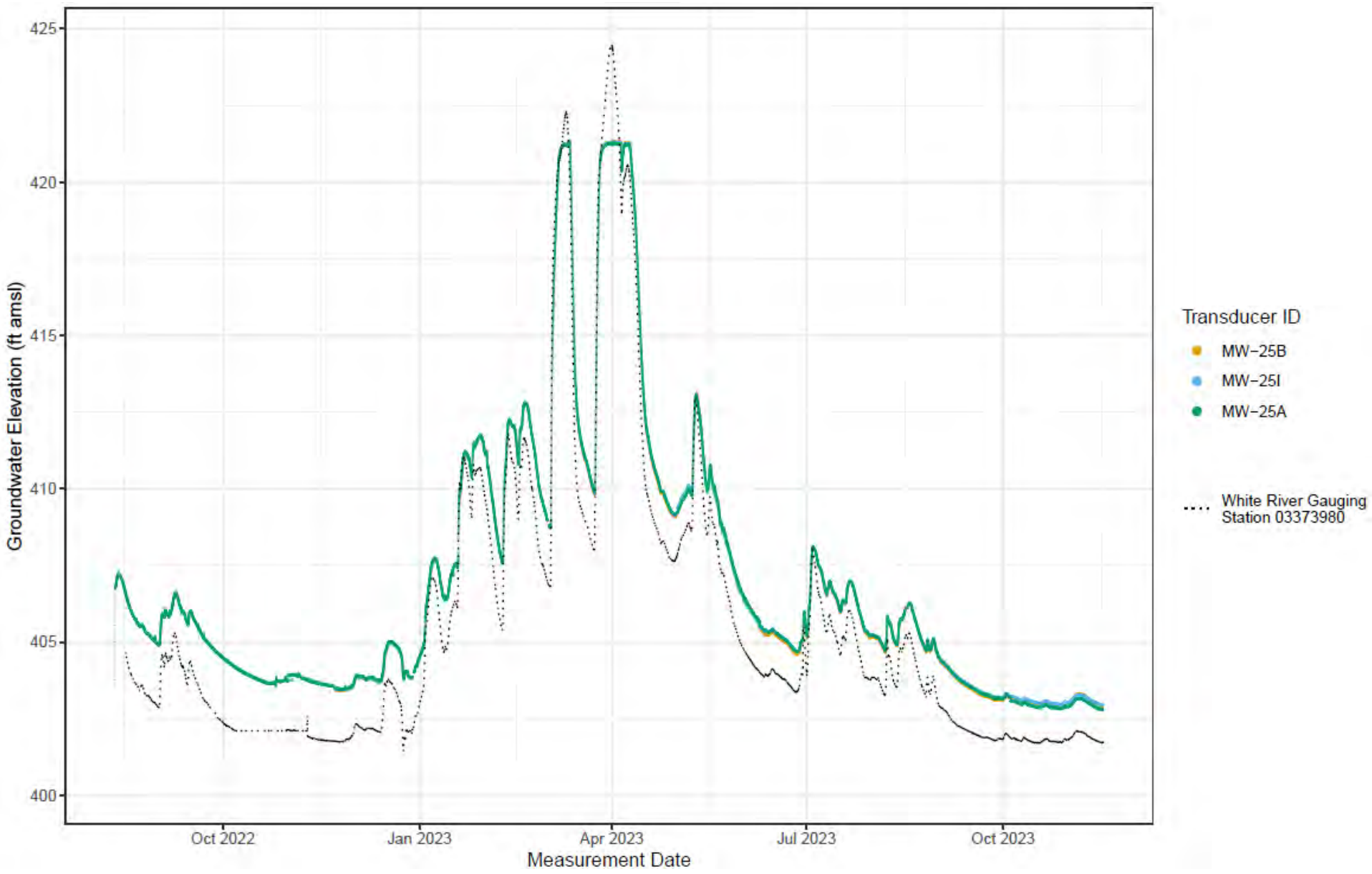
ATTACHMENT B
Hydrographs

Monitoring Well MW-20 Cluster



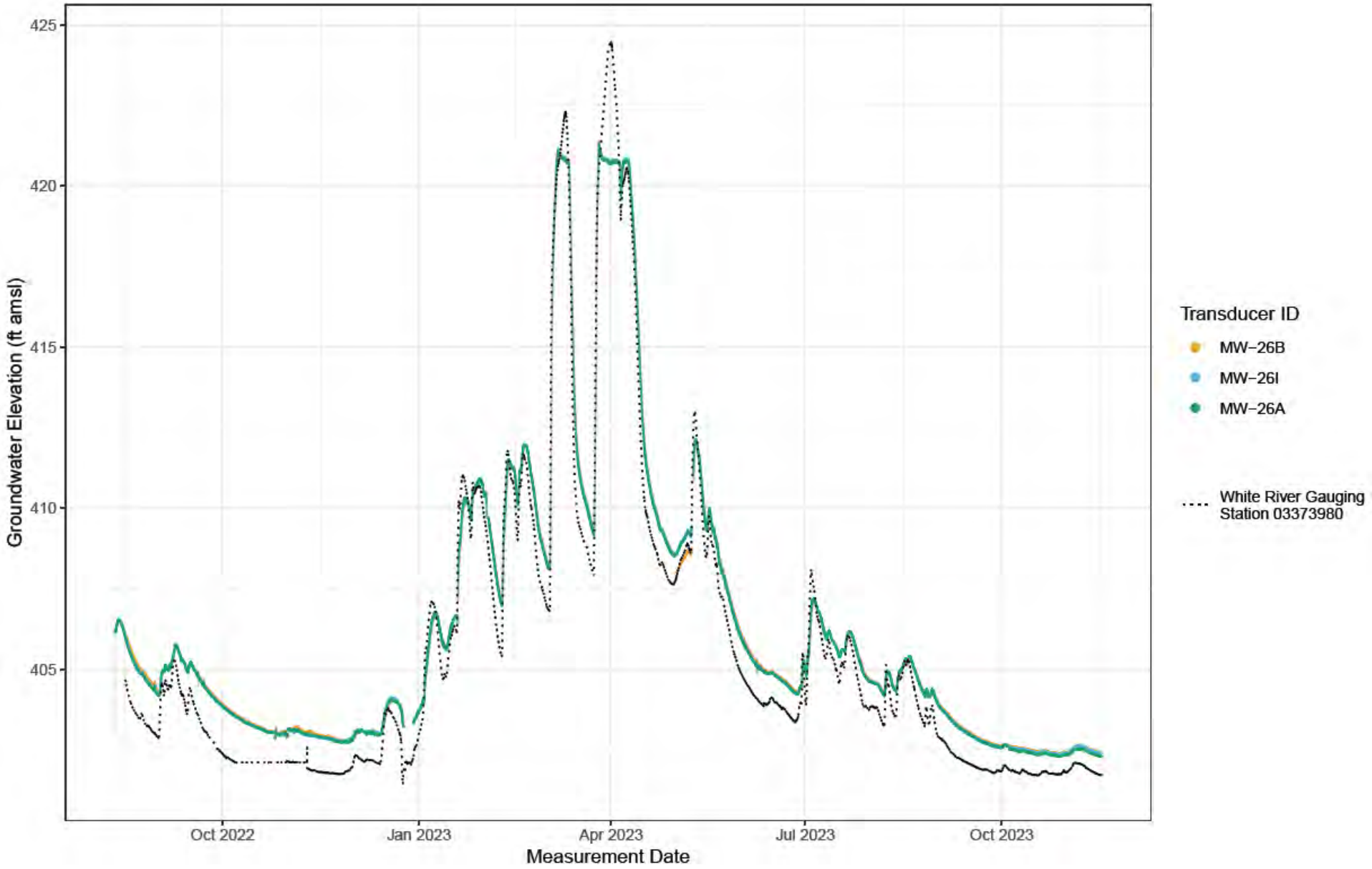
HALEY ALDRICH

Monitoring Well MW-25 Cluster



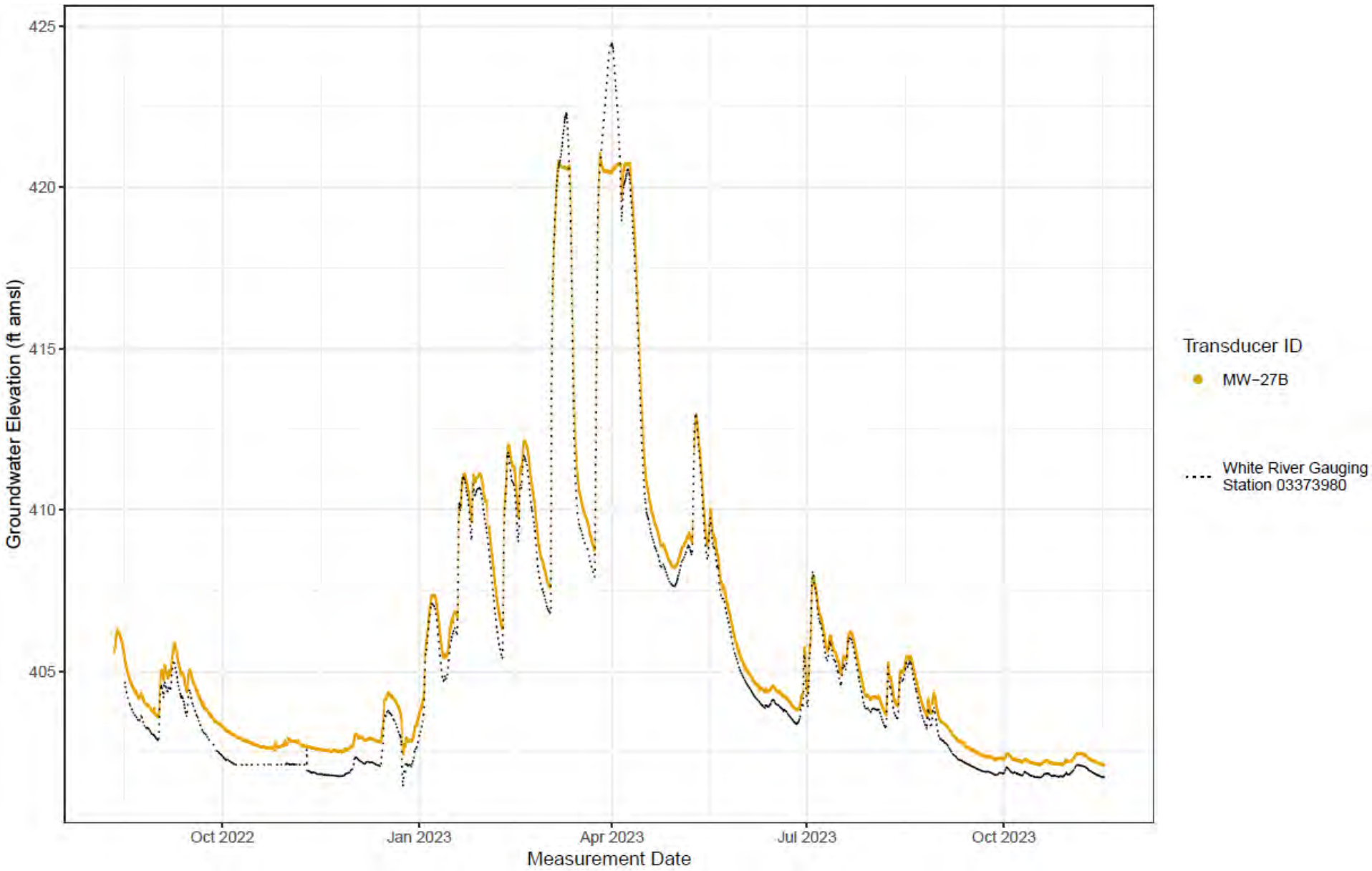
HALEY ALDRICH

Monitoring Well MW-27 Cluster



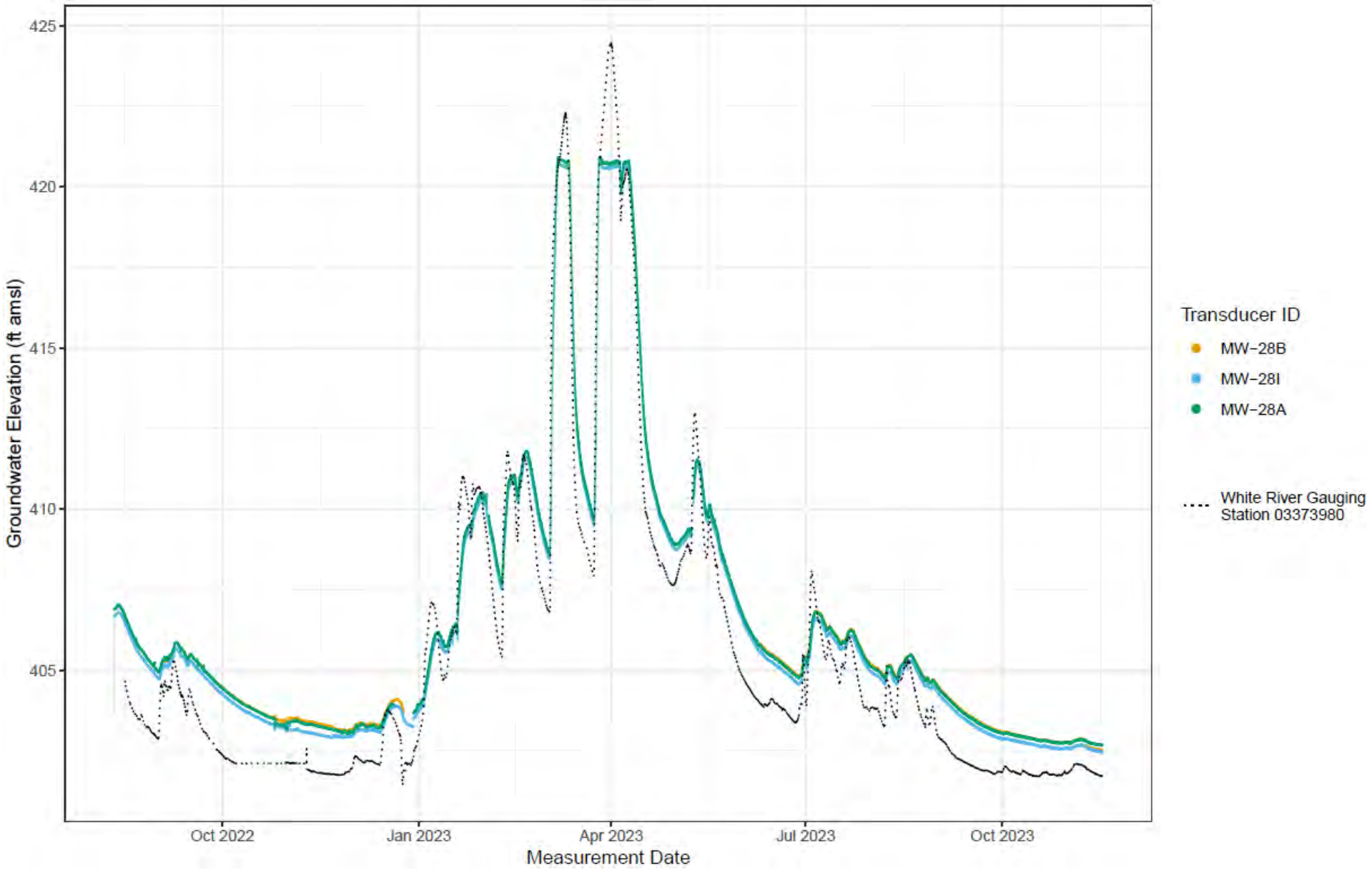
HALEY ALDRICH

Monitoring Well MW-27 Cluster



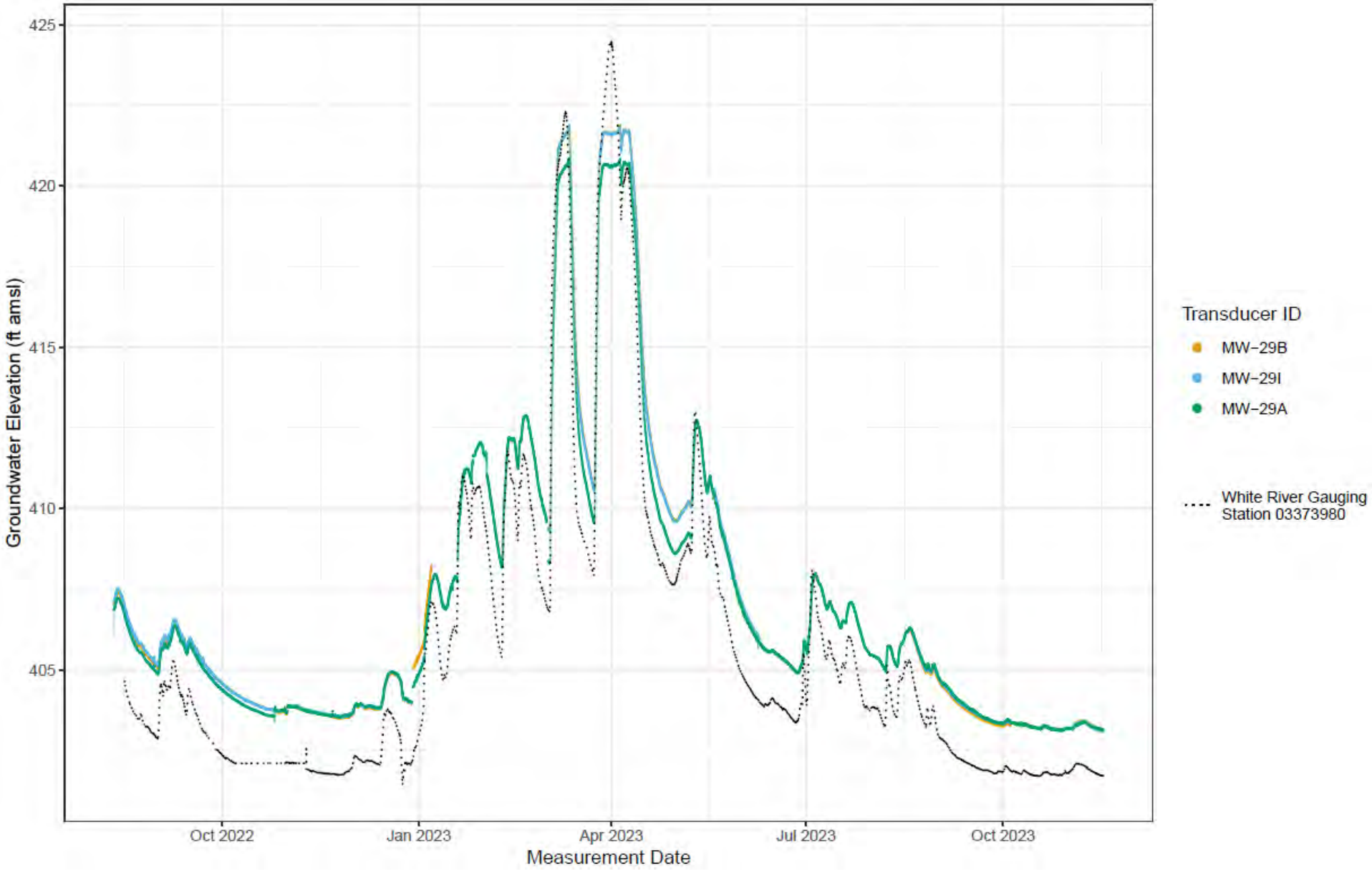
HALEY ALDRICH

Monitoring Well MW-29 Cluster



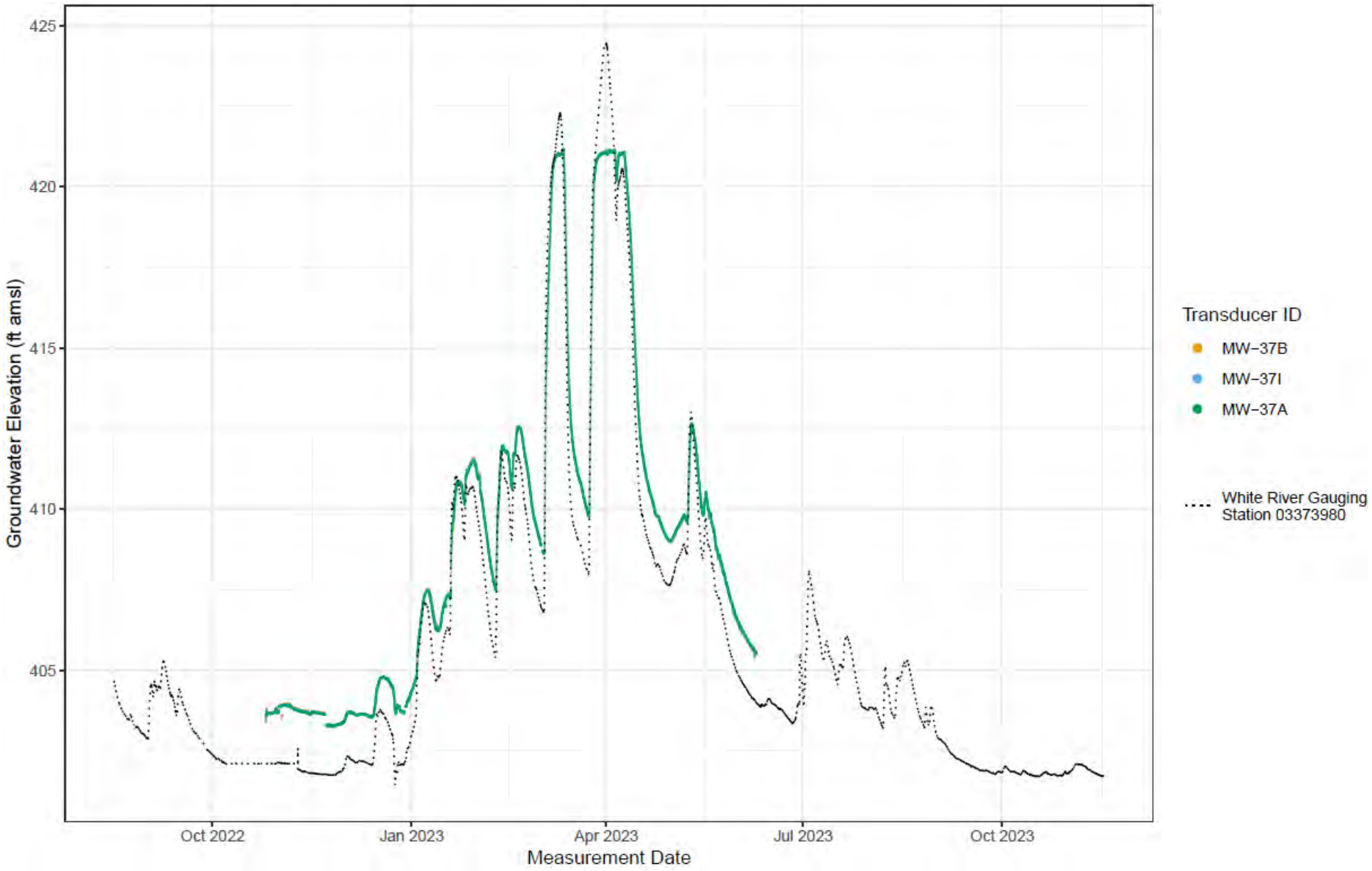
HALEY ALDRICH

Monitoring Well MW-29 Cluster



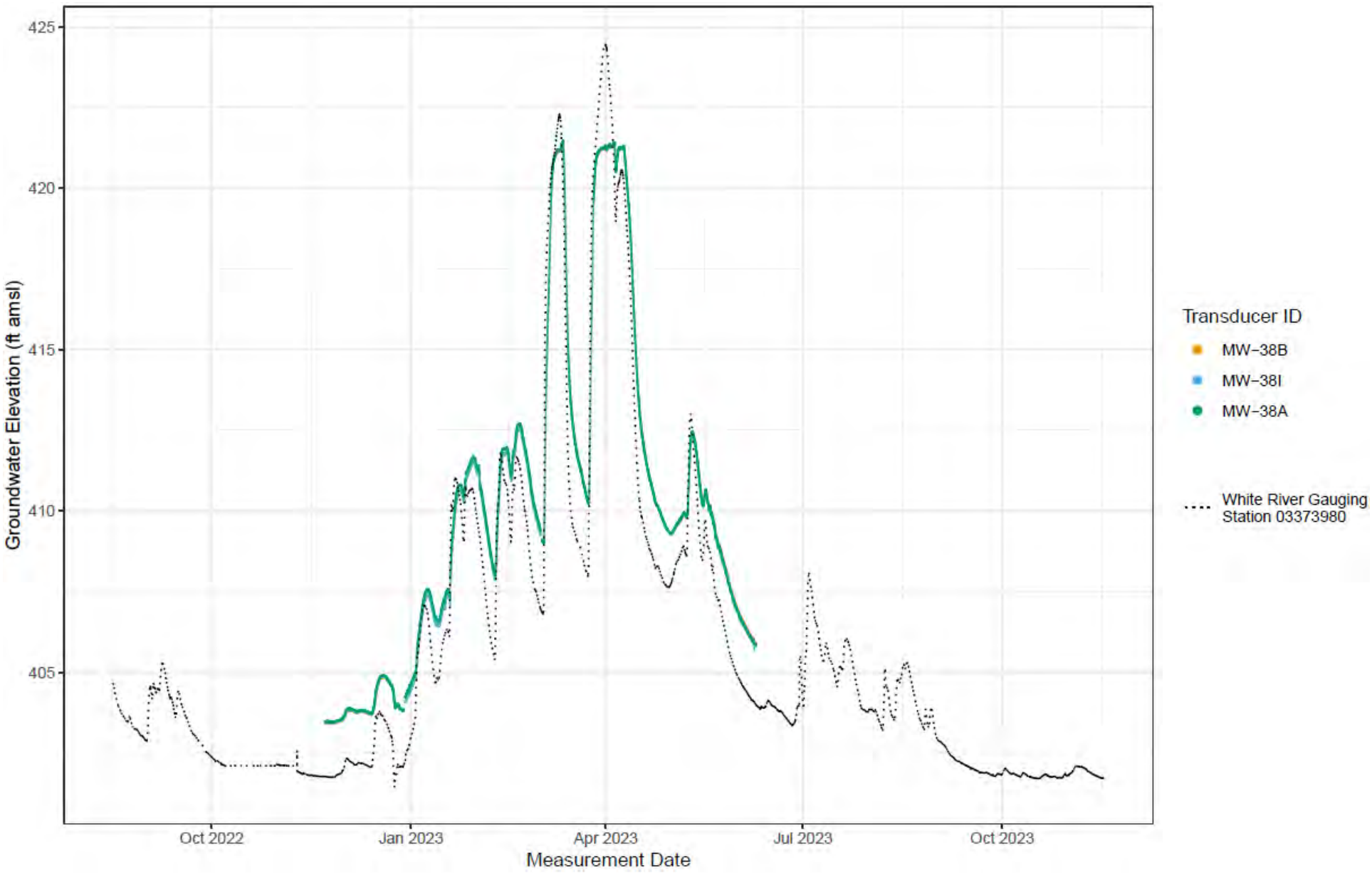
HALEY ALDRICH

Monitoring Well MW-37 Cluster



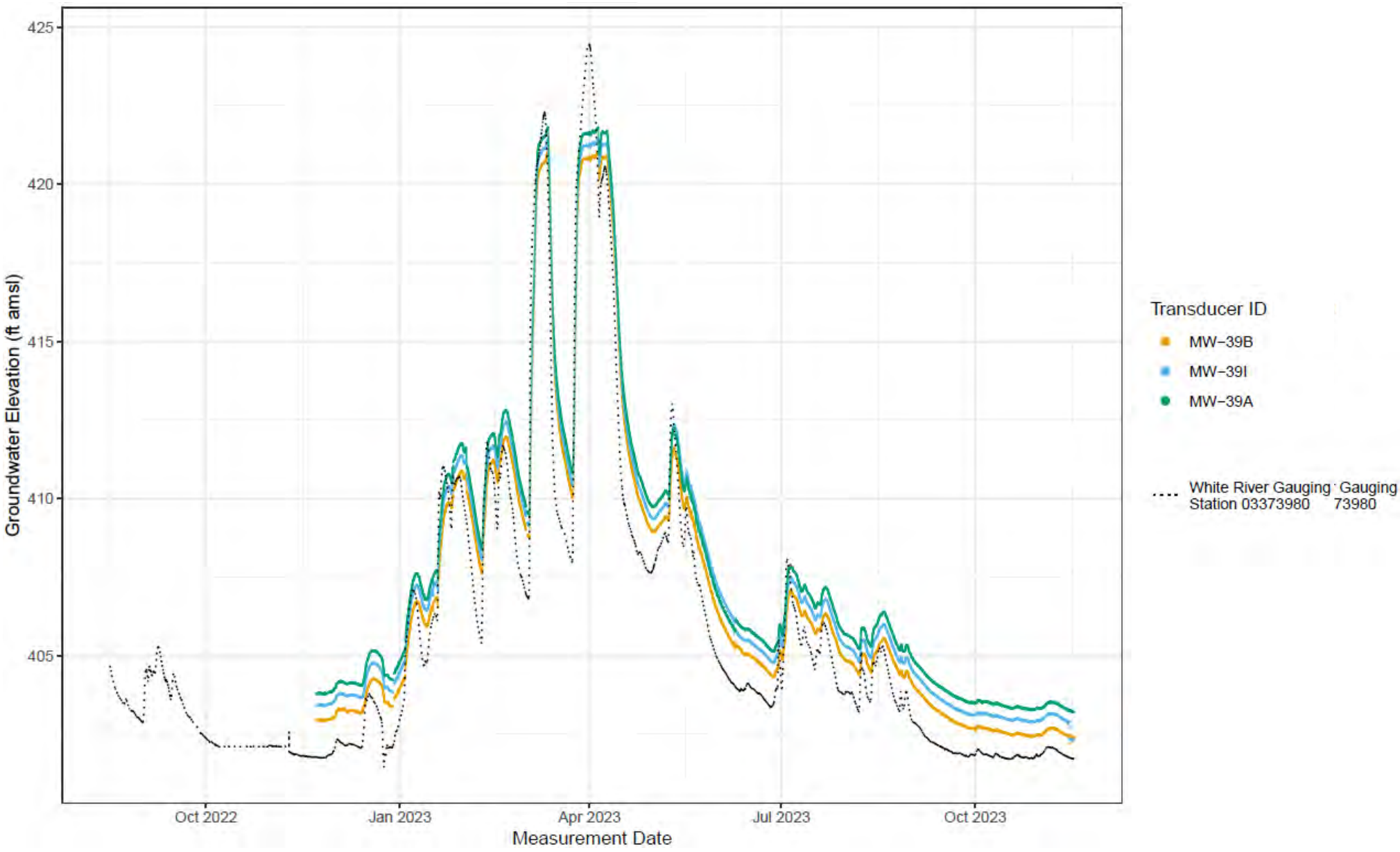
HALEY ALDRICH

Monitoring Well MW-38 Cluster



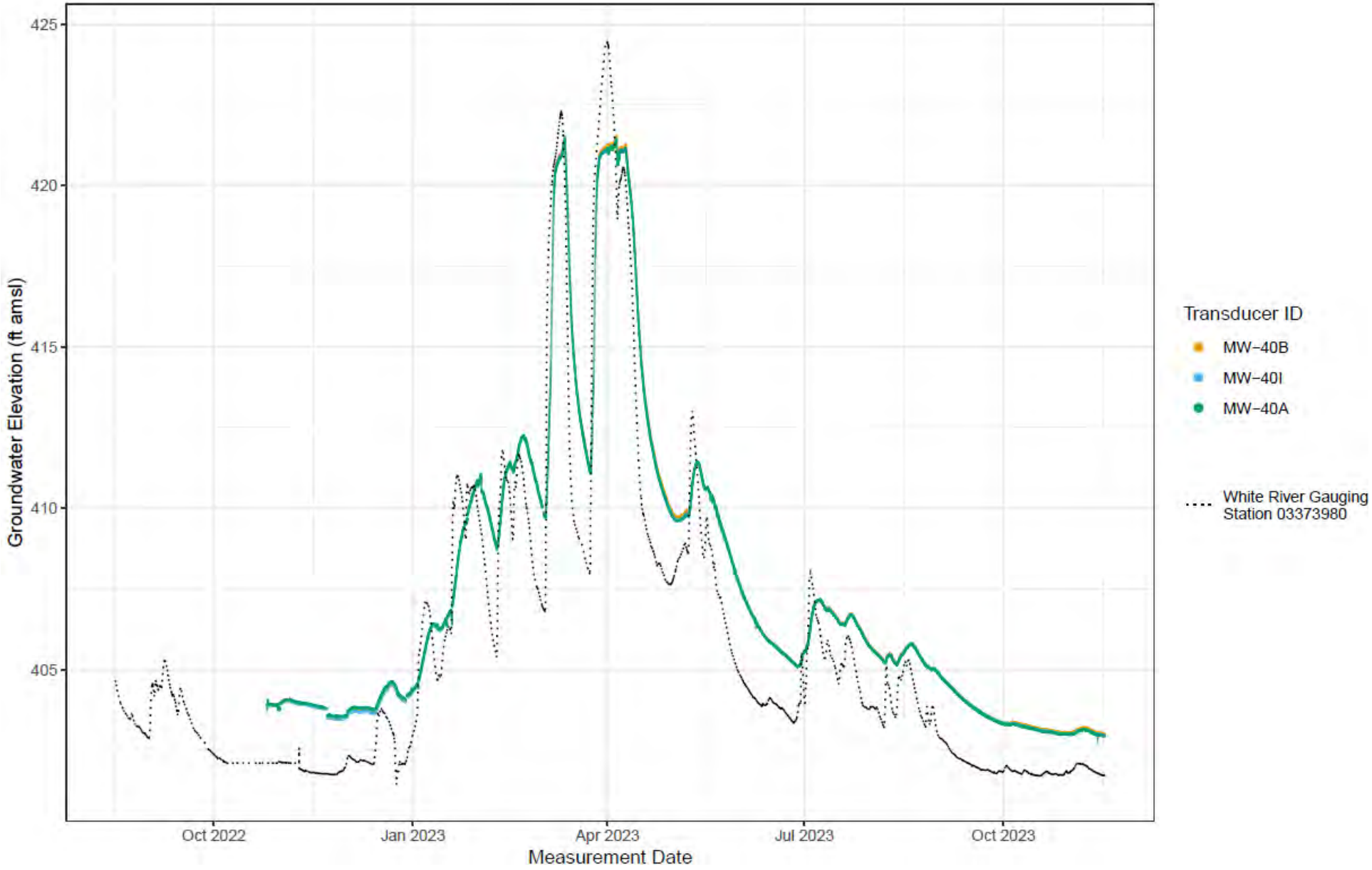
HALEY ALDRICH

Monitoring Well MW-39 Cluster



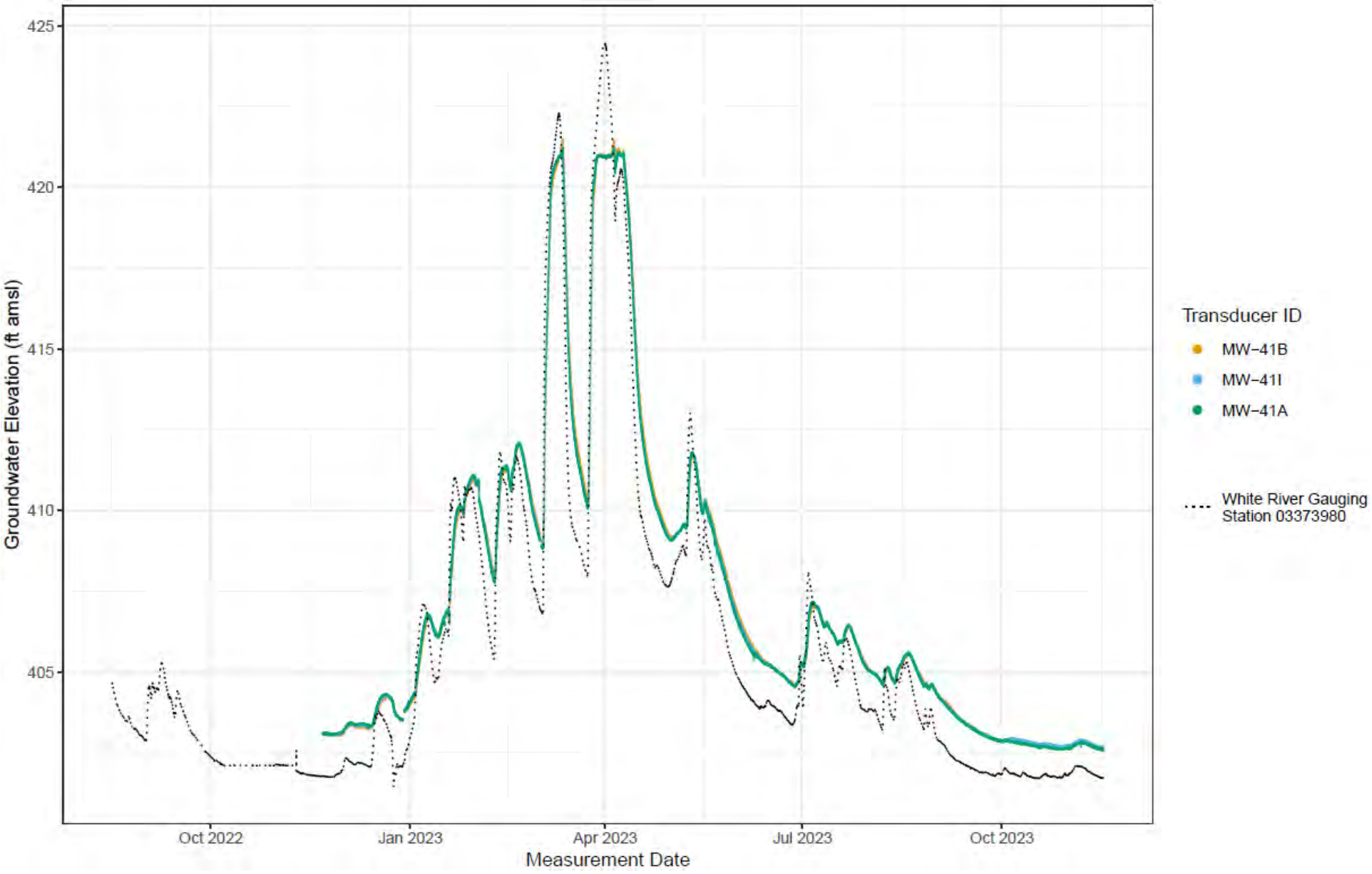
HALEY ALDRICH

Monitoring Well MW-40 Cluster



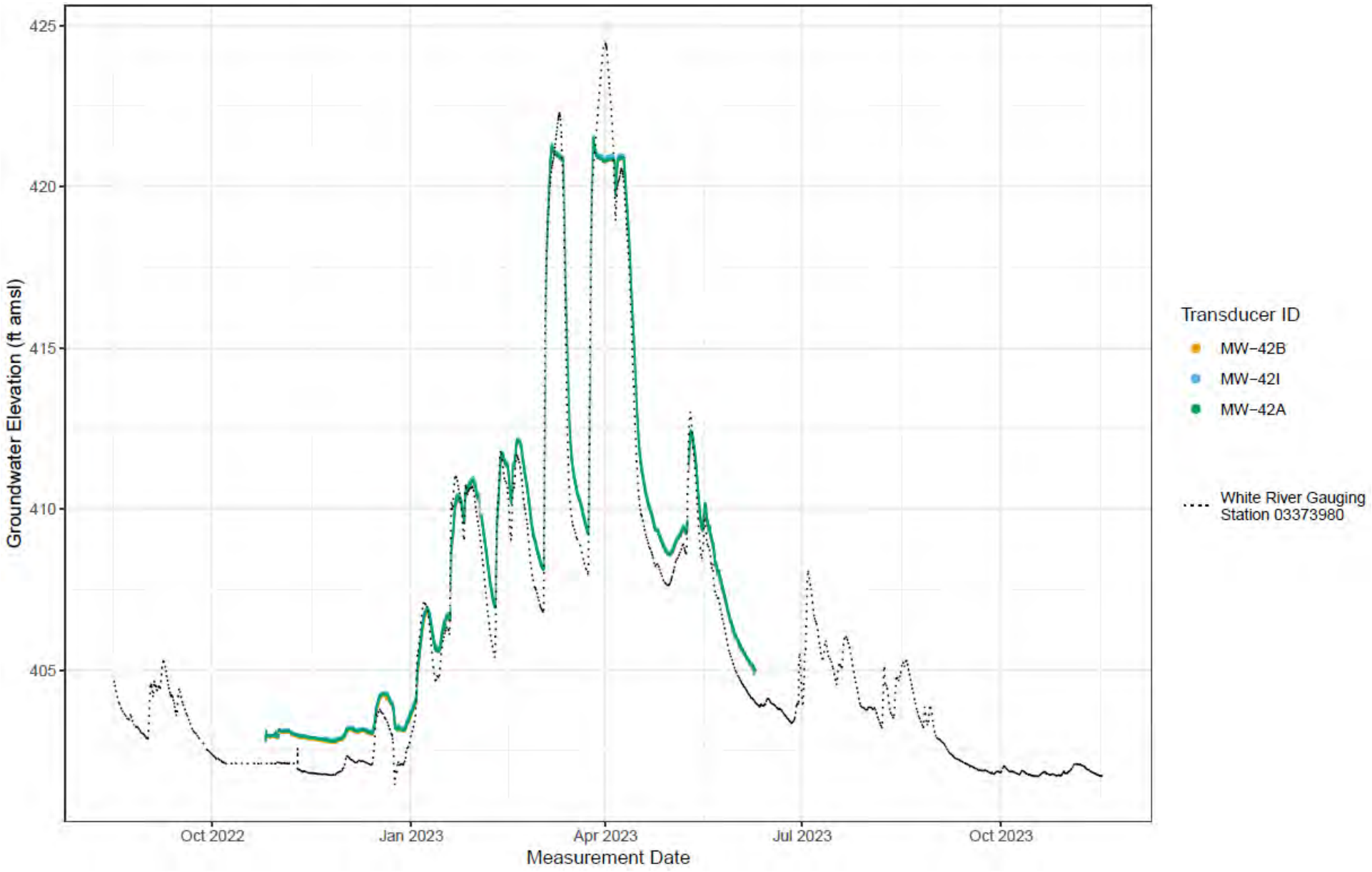
HALEY ALDRICH

Monitoring Well MW-41 Cluster



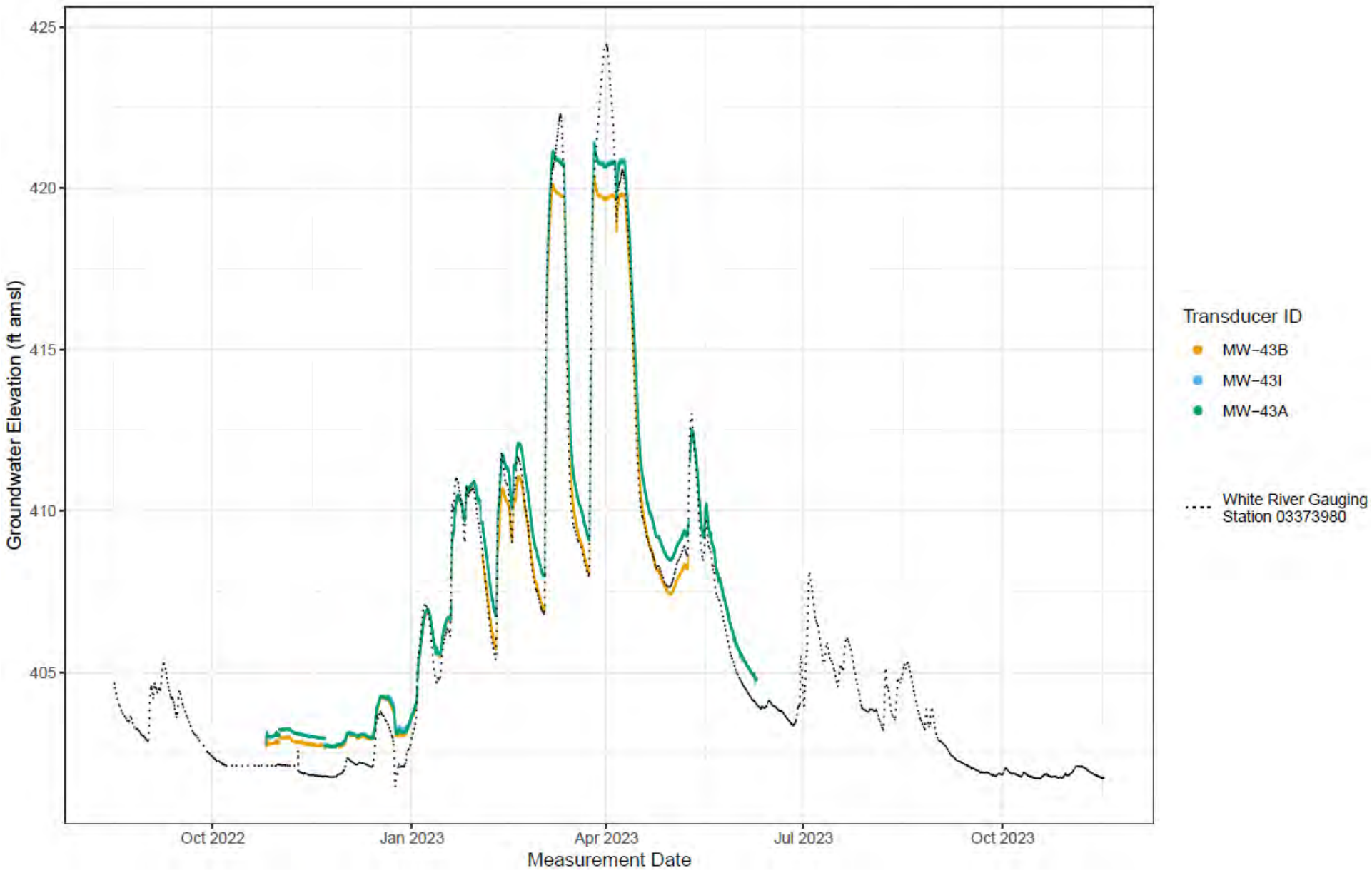
HALEY ALDRICH

Monitoring Well MW-42 Cluster



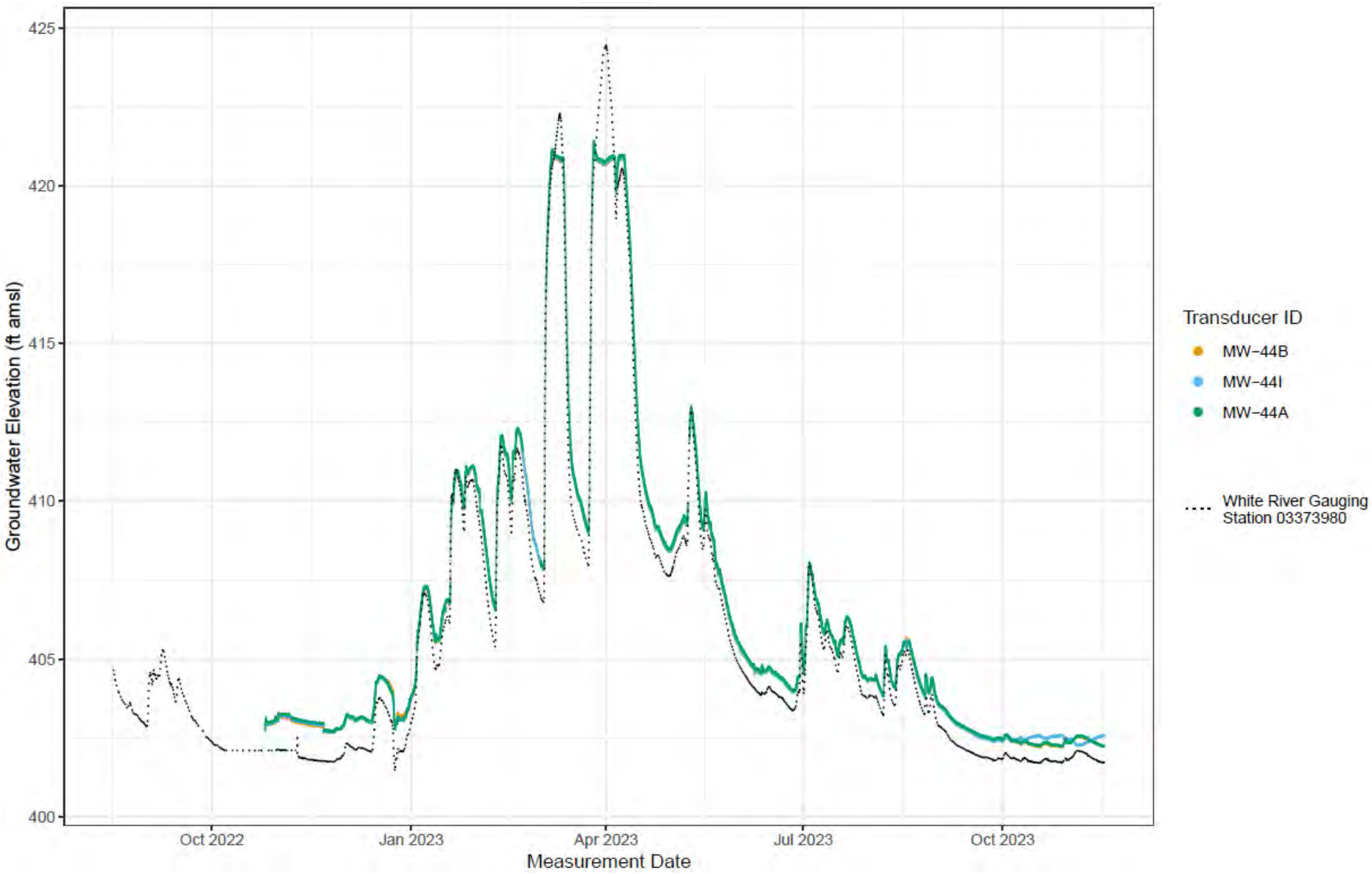
HALEY ALDRICH

Monitoring Well MW-44 Cluster

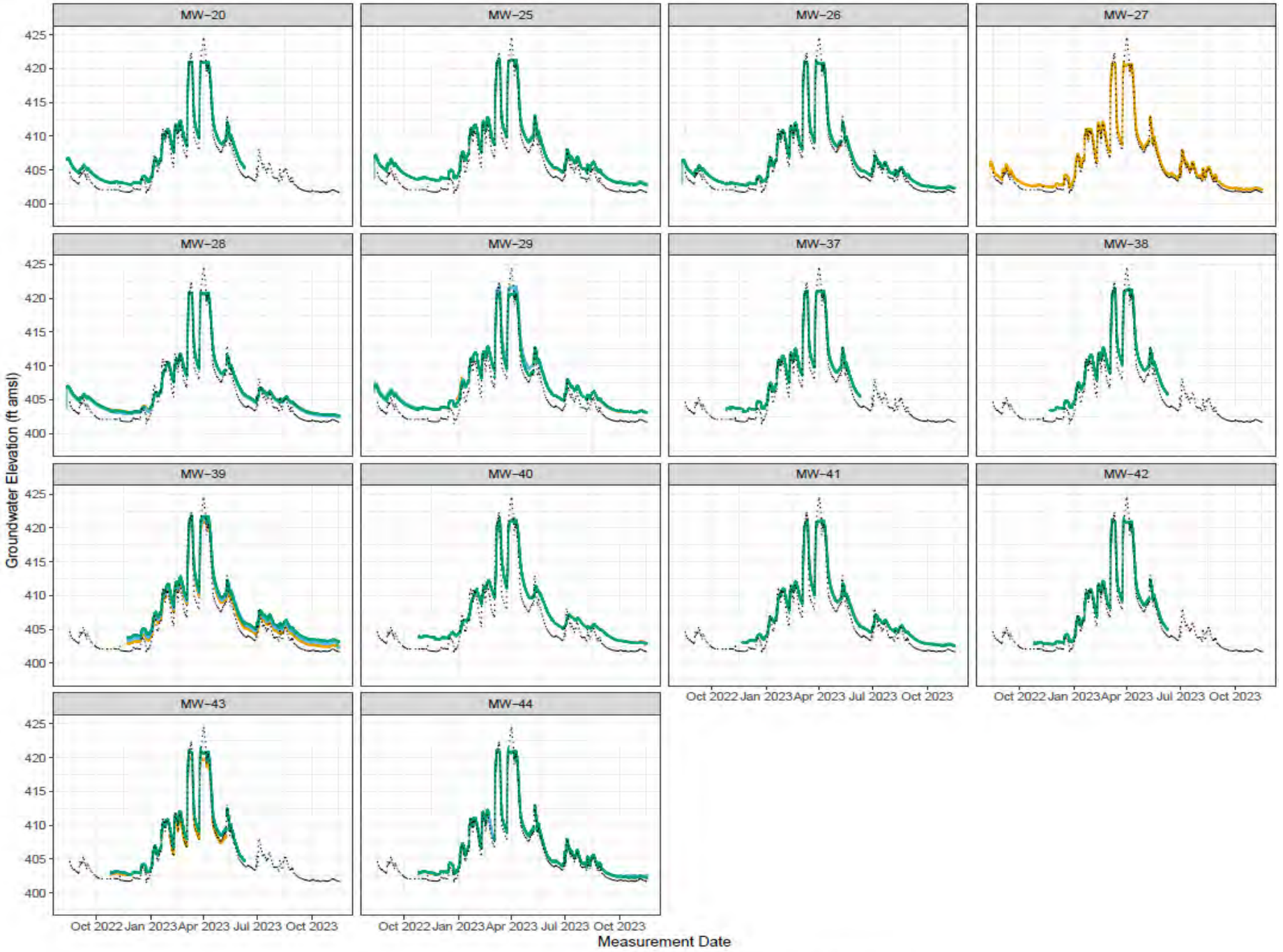


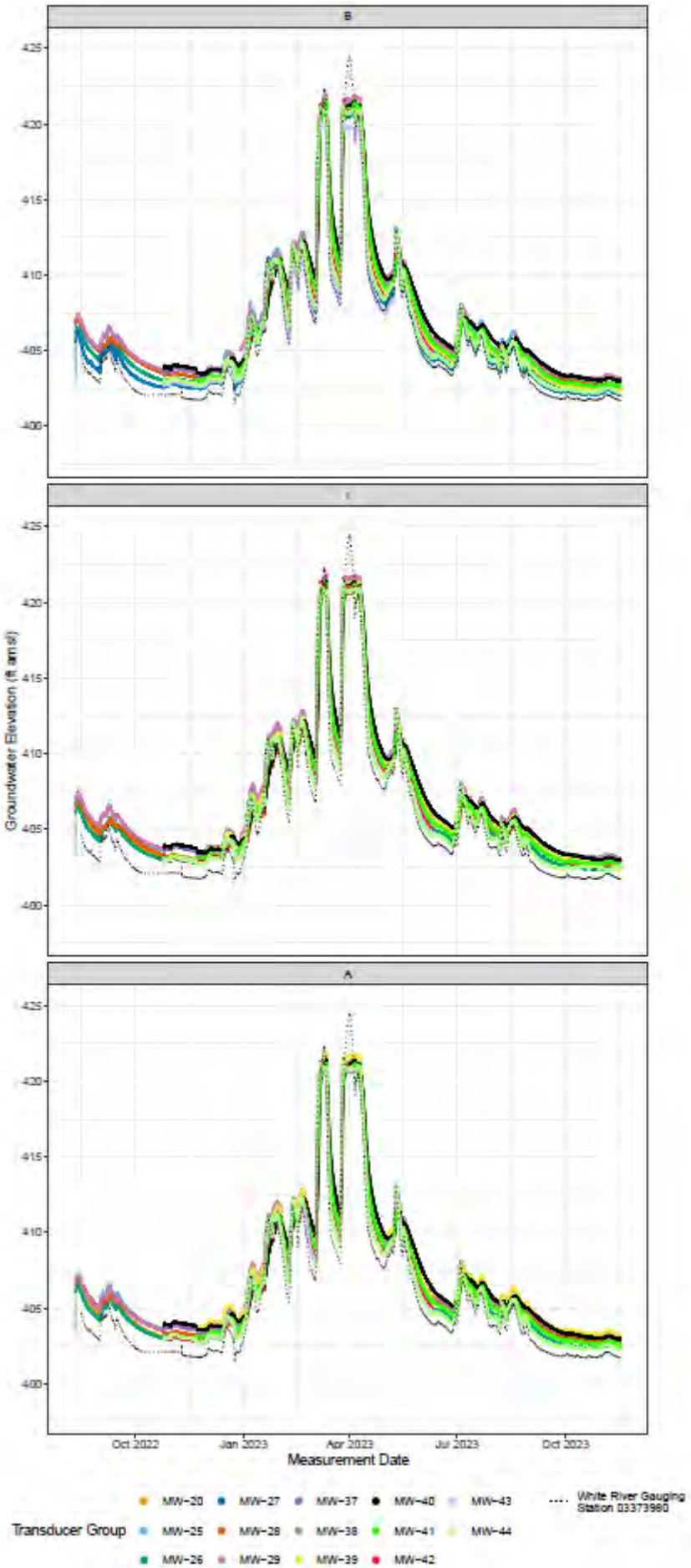
HALEY ALDRICH

Monitoring Well MW-44 Cluster

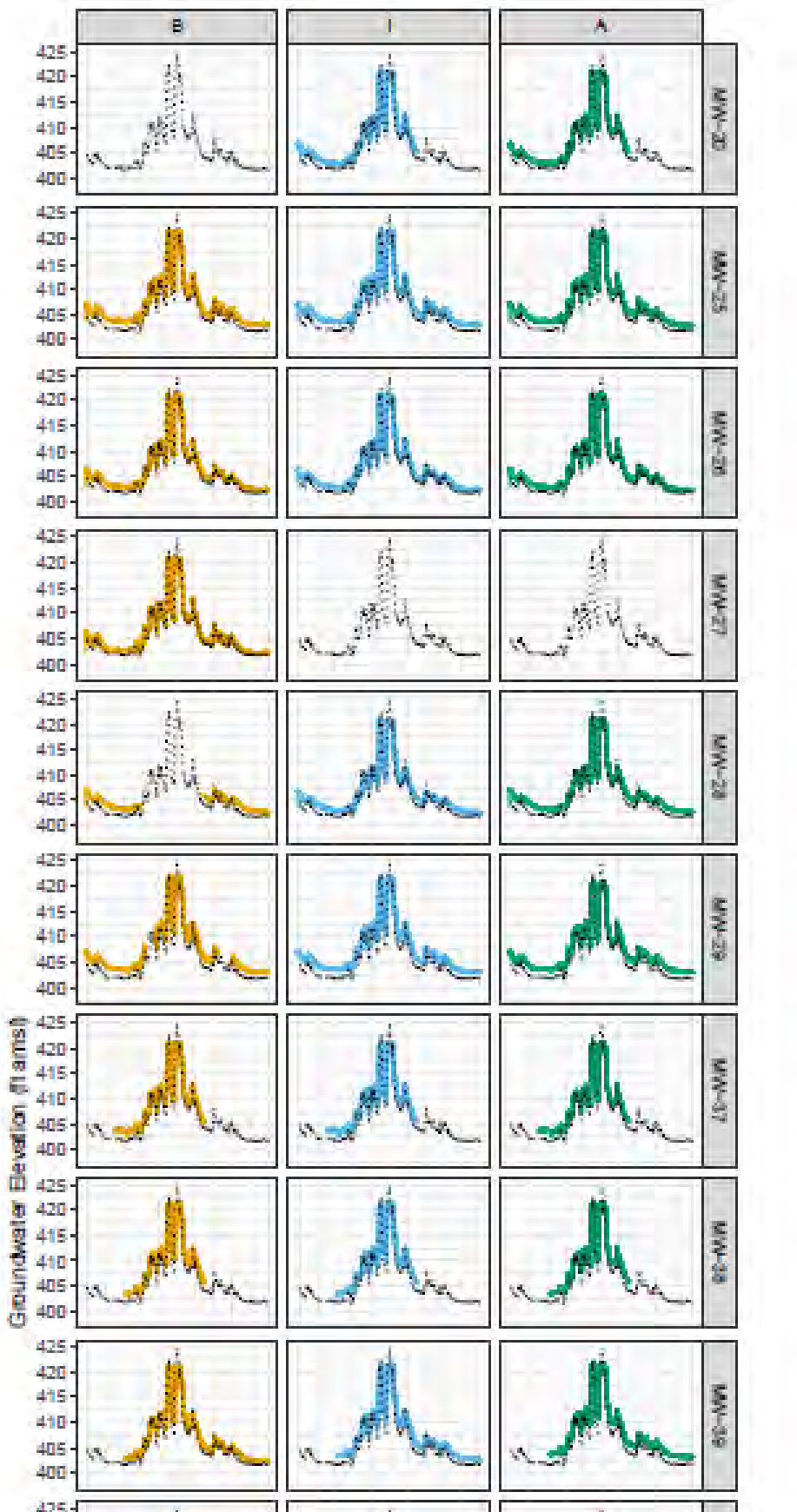


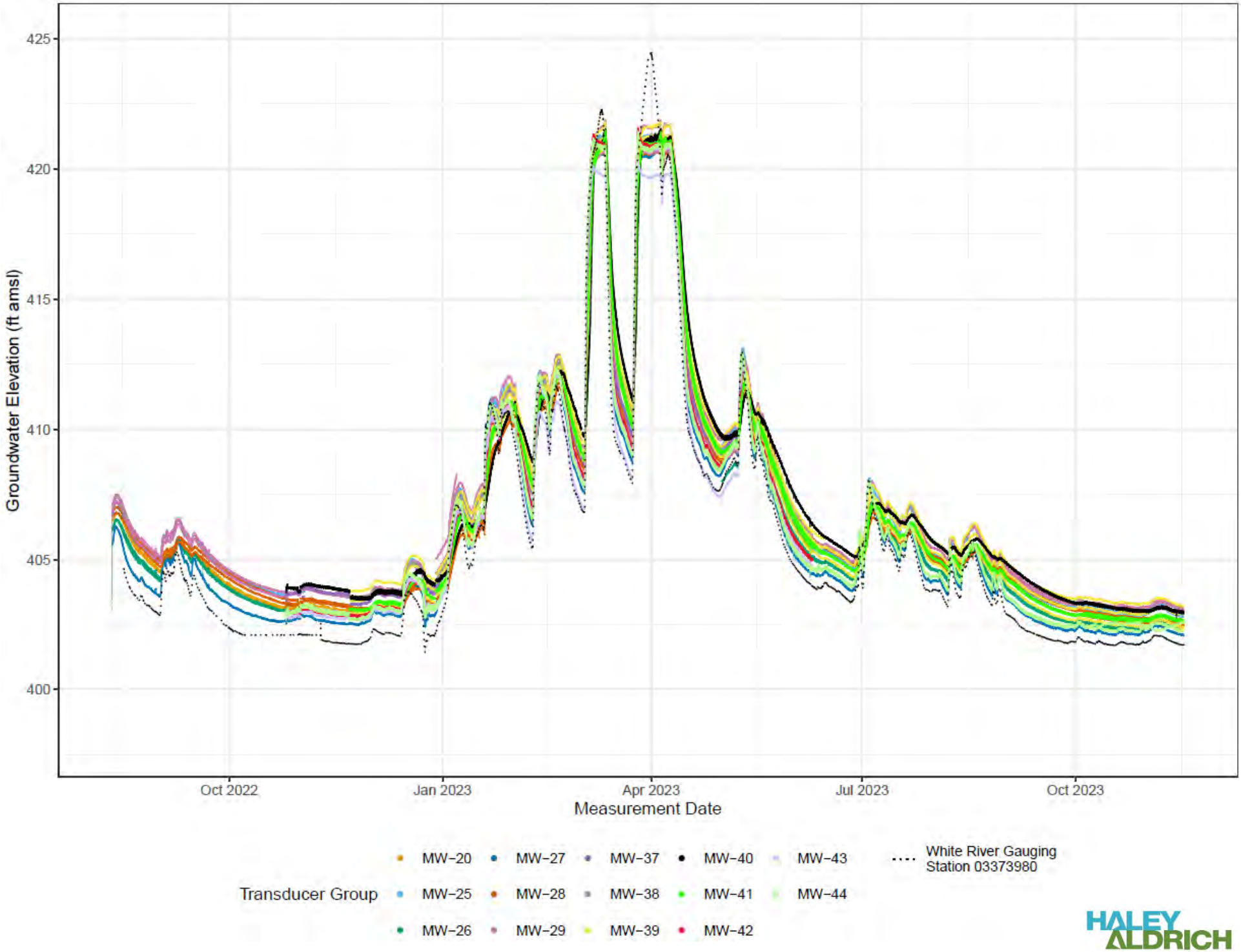
HALEY ALDRICH

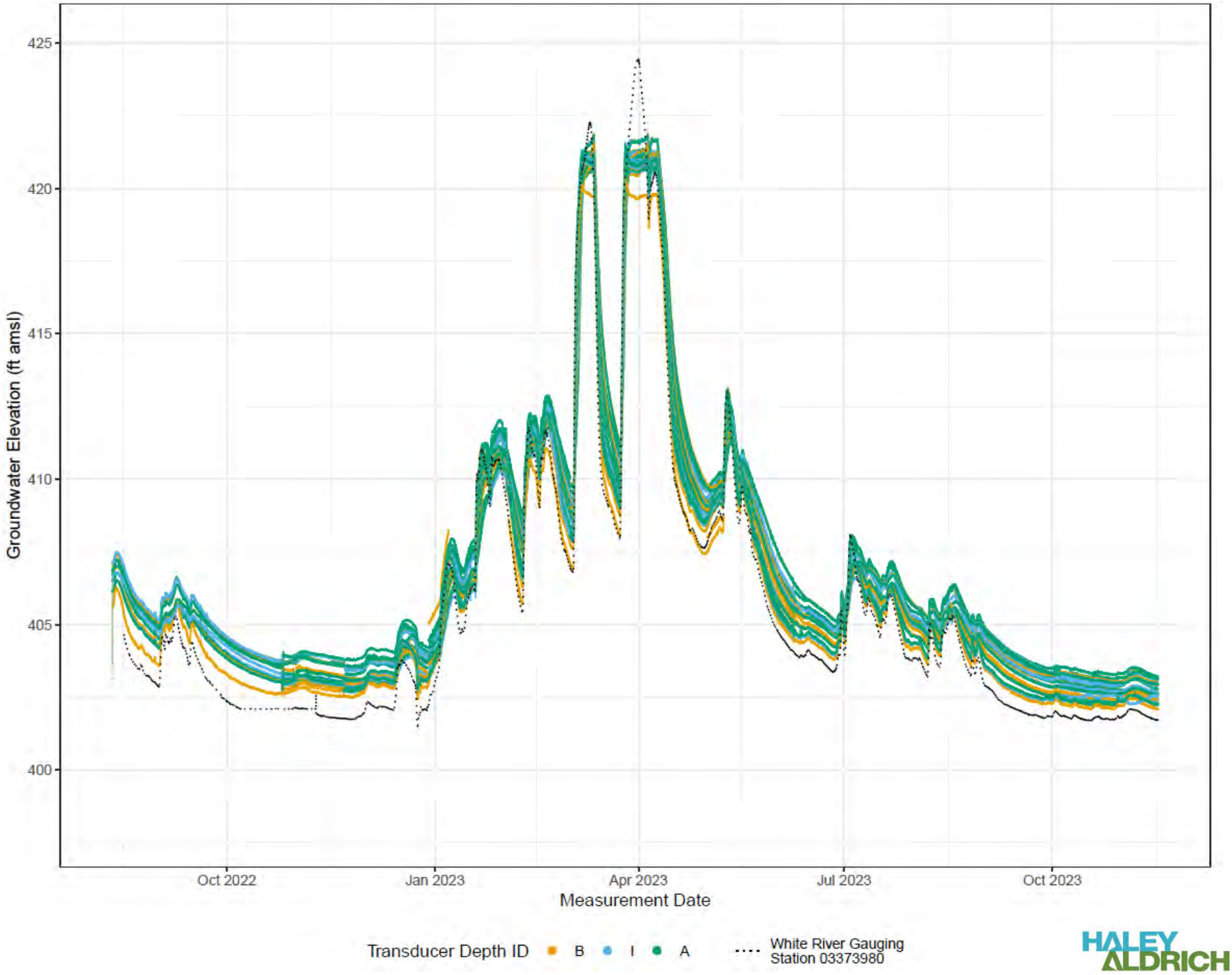

MW-20
MW-25
MW-26
MW-27
MW-28
MW-29
MW-37
MW-38
MW-39
MW-40
MW-41
MW-42
MW-43
MW-44
Groundwater Elevation (ft amsl)
425
420
415
410
405
400
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Measurement Date
Transducer Depth ID
B
I
A
White River Gauging Station 03373980



HALEY ALDRICH


B
I
A
MW-30
MW-25
MW-26
MW-27
MW-29
MW-28
MW-37
MW-38
MW-39
MW-40
MW-41
MW-42
MW-43
MW-44
425
420
415
410
405
400
Groundwater Elevation (ft amsl)
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Measurement Date
White River Gauging Station 03373980


425
420
415
410
405
400
Groundwater Elevation (ft amsl)
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Measurement Date
Transducer Group
MW-20
MW-25
MW-26
MW-27
MW-28
MW-29
MW-37
MW-38
MW-39
MW-40
MW-41
MW-42
MW-43
MW-44
White River Gauging Station 03373980


425
420
415
410
405
400
Groundwater Elevation (ft amsl)
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Measurement Date
Transducer Depth ID
B
I
A
White River Gauging Station 03373980

APPENDIX B
Hydraulic Conductivity Data

Hydraulic Conductivity Testing Data
(Slug Testing, Packer Testing, and
Vertical Hydraulic Conductivity Lab Testing)

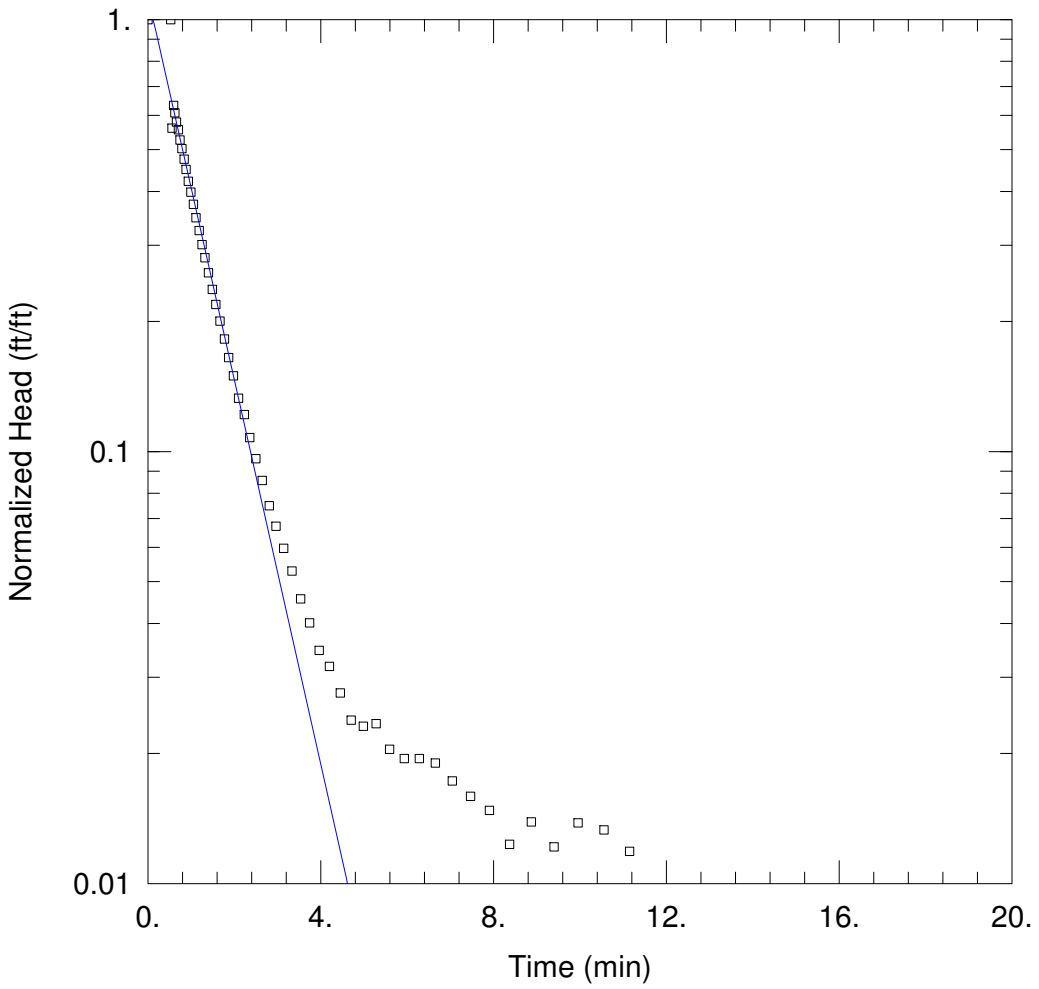
Horizontal Hydraulic Conductivity Testing Data
(Slug Testing AQTESOLV Outputs)

Table 2
Summary of Hydraulic Conductivity Testing
Indianapolis Power and Light Company
Petersburg Generating Station
Petersburg, Indiana

Cardno ATC Project No. 86.22351.0026

Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
AP-1	Falling Head	0.083	0.33	10	11	1.34	4.73E-04
	Rising Head					1.16	4.08E-04
AP-2A	Falling Head	0.083	0.33	10	33	30.76	1.09E-02
	Rising Head					119.79	4.23E-02
AP-2B	Falling Head	0.083	0.33	10	11.1	43.14	1.52E-02
	Rising Head					29.06	1.03E-02
AP-3	Falling Head	0.083	0.33	10	13.9	60.43	2.13E-02
	Rising Head					109.05	3.85E-02
AP-4A	Falling Head	0.083	0.33	10	45.9	49.29	1.74E-02
	Rising Head					9.87	3.48E-03
AP-4I	Falling Head	0.083	0.33	10	26.2	52.30	1.85E-02
	Rising Head					45.81	1.62E-02
AP-4B	Falling Head	0.083	0.33	10	8.0	40.05	1.41E-02
	Rising Head					176.14	6.21E-02
AP-5	Falling Head	0.083	0.33	10	16.4	34.98	1.23E-02
	Rising Head					253.53	8.94E-02
AP-6A	Falling Head	0.083	0.33	10	52.8	17.01	6.00E-03
	Rising Head					41.02	1.45E-02
AP-6B	Falling Head	0.083	0.33	10	52.9	35.97	1.27E-02
	Rising Head					74.89	2.64E-02
AP-7	Falling Head	0.083	0.33	10	11.5	0.67	2.36E-04
	Rising Head					0.59	2.09E-04
AP-8	Falling Head	0.083	0.33	10	15.3	4.65	1.64E-03
	Rising Head					8.60	3.03E-03
					Average	51.67	1.82E-02

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



AP-1 FALLING HEAD

Data Set: G:\...\AP-1.aqt
Date: 07/22/14 Time: 16:58:08

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-1
Test Date: 07-02-2014

AQUIFER DATA

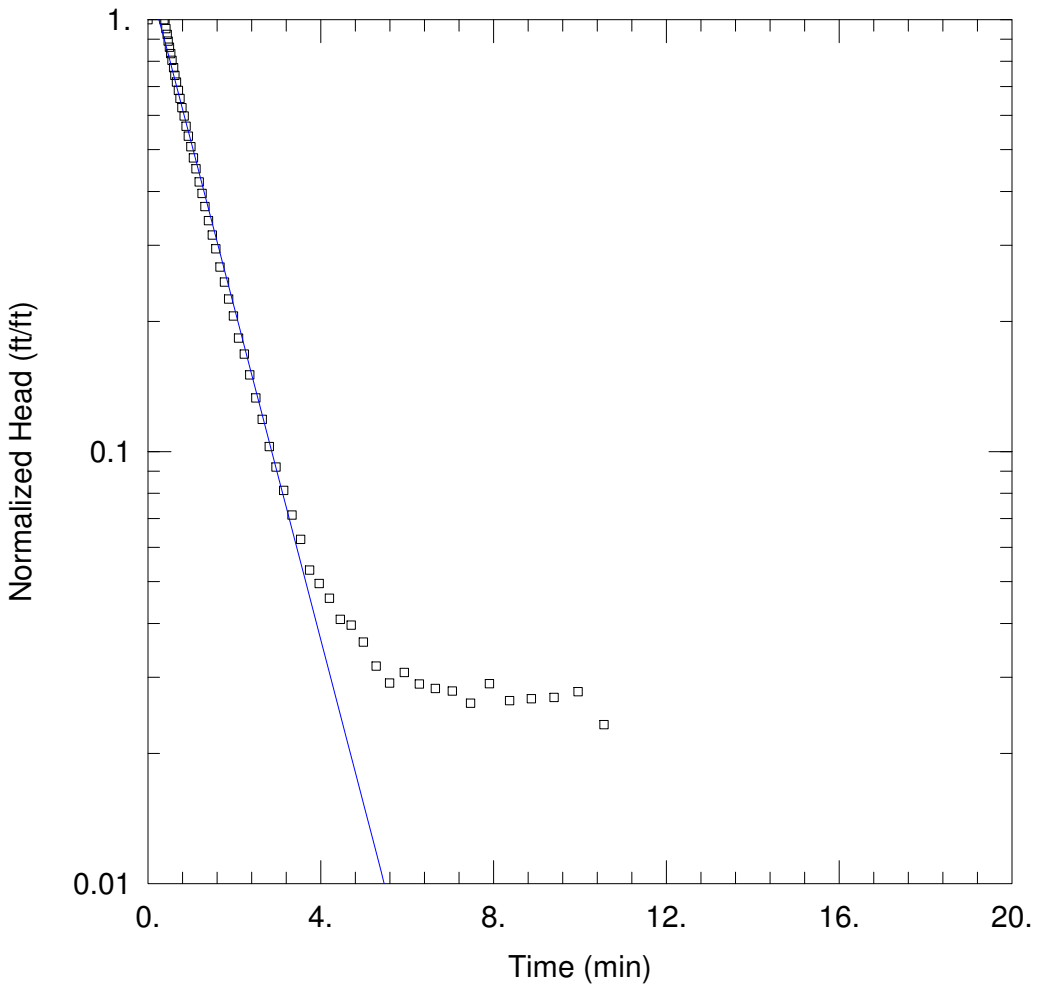
Saturated Thickness: 11. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-1)

Initial Displacement: 2.815 ft
Total Well Penetration Depth: 11. ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.31 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0004728 cm/sec
y0 = 3.194 ft



AP-1 RISING HEAD

Data Set: G:\...\AP-1 Rising Head.aqt
Date: 07/24/14 Time: 16:05:56

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-1
Test Date: 07-02-2014

AQUIFER DATA

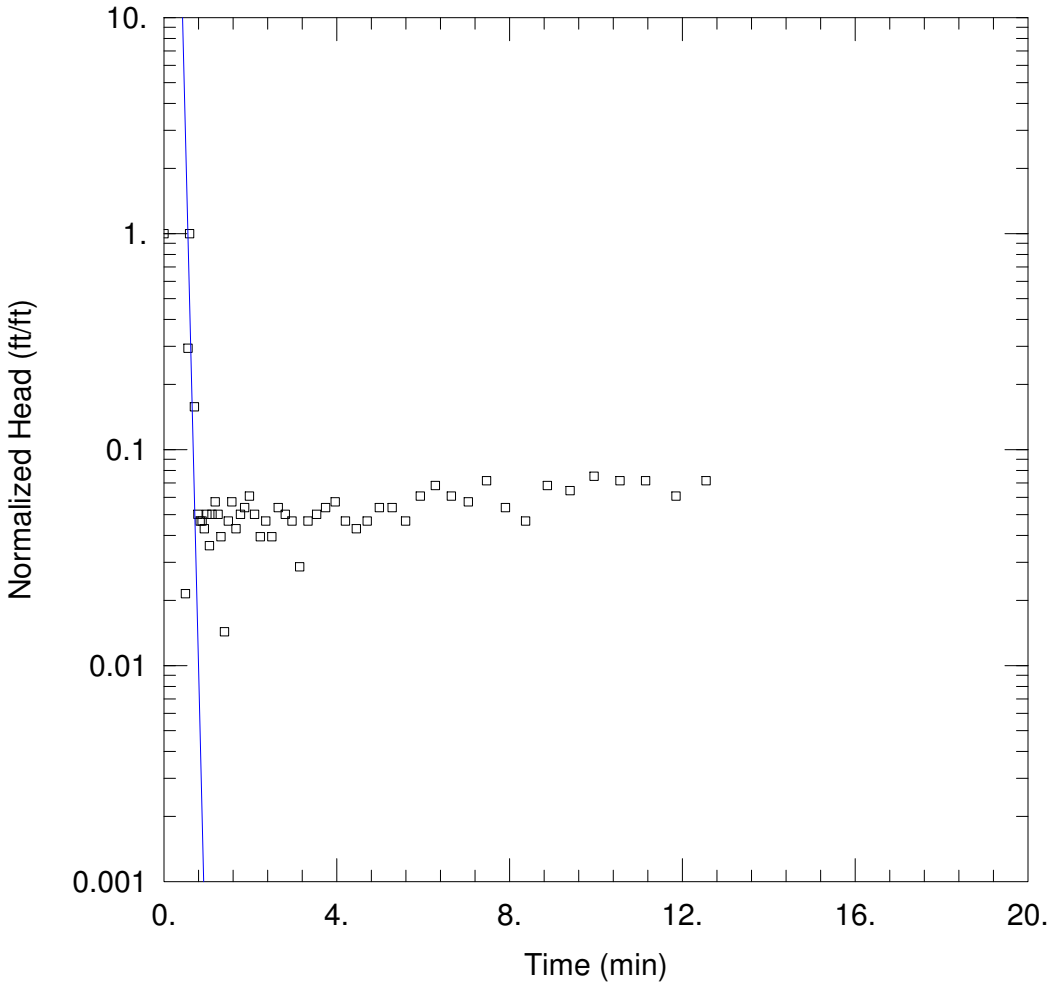
Saturated Thickness: 11. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-1)

Initial Displacement: 2.05 ft
Total Well Penetration Depth: 11. ft
Casing Radius: 0.083 ft
Static Water Column Height: 18.31 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.000408 cm/sec
y0 = 2.577 ft



AP-2A FALLING HEAD

Data Set: G:\...\AP-2A Falling Head.aqt
Date: 07/23/14 Time: 12:03:03

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-2A Falling Head
Test Date: 07-02-2014

AQUIFER DATA

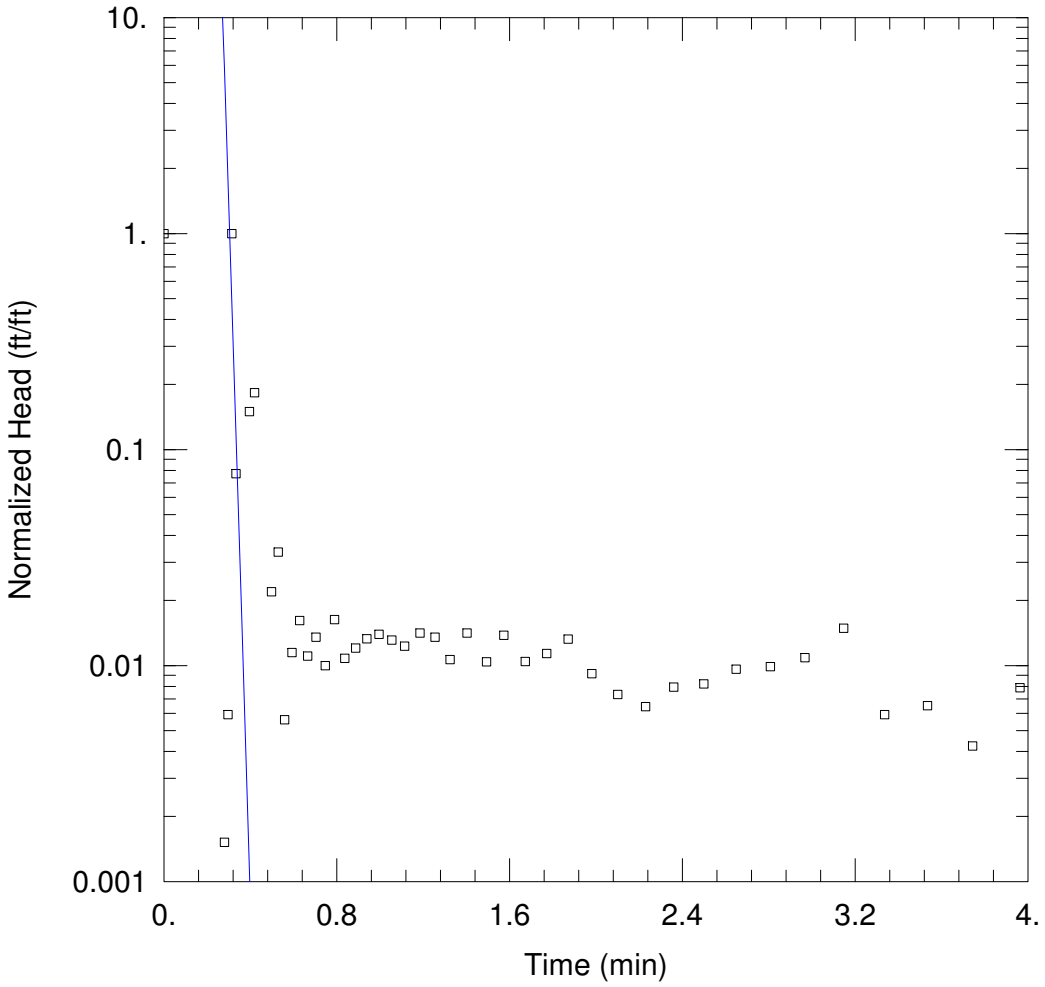
Saturated Thickness: 33. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2A)

Initial Displacement: 0.279 ft
Total Well Penetration Depth: 33. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 36.83 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01085 cm/sec
y0 = 9128.9 ft



AP-2A RISING HEAD

Data Set: G:\...\AP-2A Rising Head.aqt
Date: 07/23/14 Time: 12:07:45

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-2A Rising Head
Test Date: 07-02-2014

AQUIFER DATA

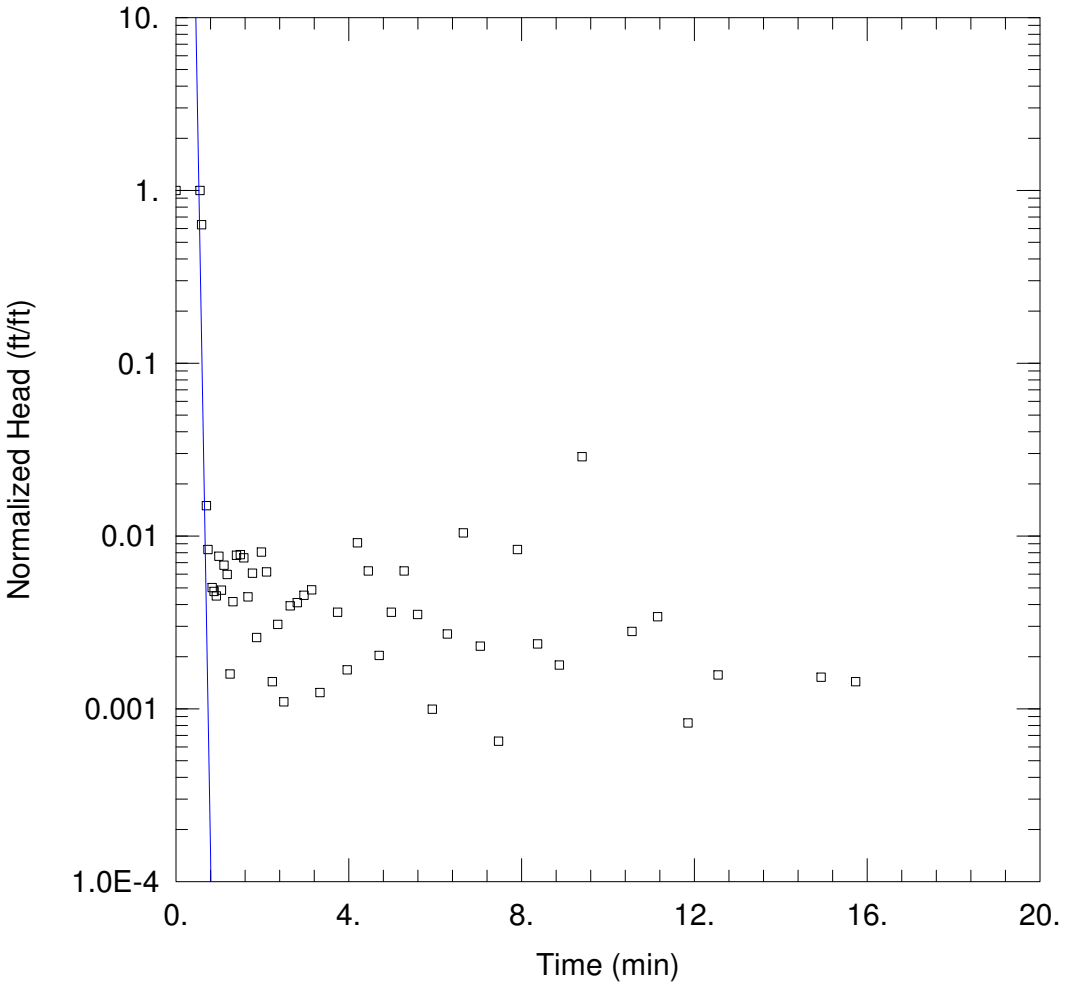
Saturated Thickness: 33. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2A)

Initial Displacement: 0.9705 ft
Total Well Penetration Depth: 33. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 36.83 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.04226 cm/sec
y0 = 4.372E+9 ft



AP-2B FALLING HEAD

Data Set: G:\...\AP-2B Falling Head.aqt
Date: 07/24/14 Time: 14:54:24

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-2B
Test Date: 07-02-2014

AQUIFER DATA

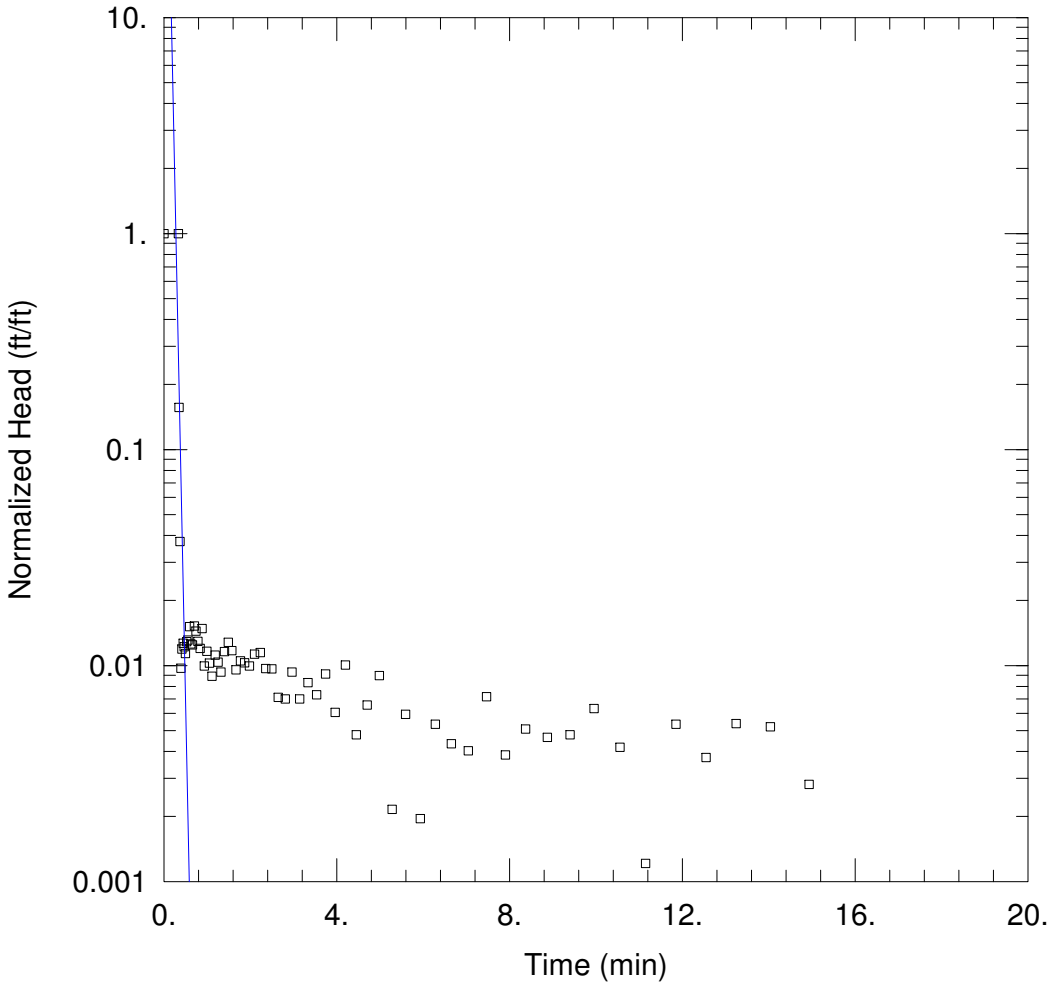
Saturated Thickness: 11.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2B)

Initial Displacement: 0.7583 ft
Total Well Penetration Depth: 11. ft
Casing Radius: 0.083 ft
Static Water Column Height: 15. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01522 cm/sec
y0 = 3.13E+7 ft



AP-2B RISING HEAD

Data Set: G:\...\AP-2B Rising Head.aqt
Date: 07/24/14 Time: 14:55:48

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-2B
Test Date: 07-02-2014

AQUIFER DATA

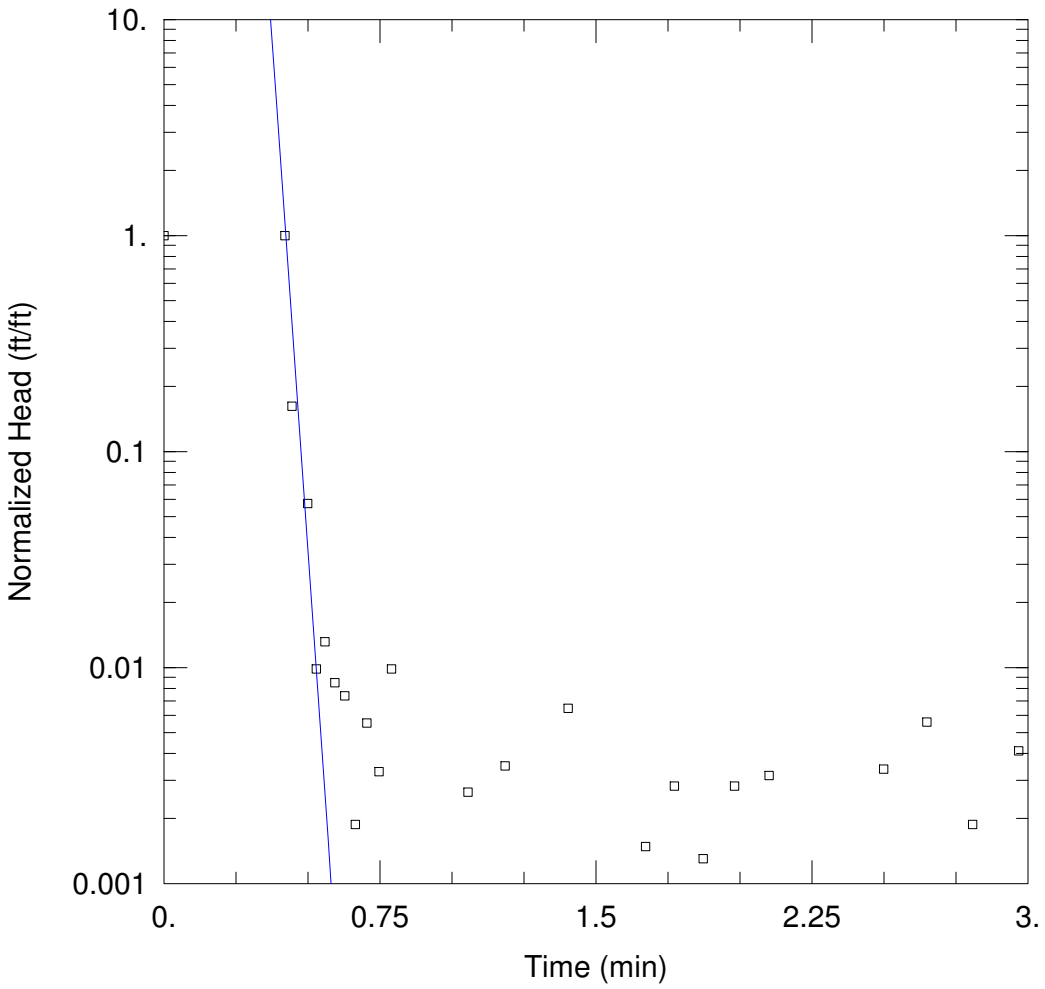
Saturated Thickness: 11.1 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2B)

Initial Displacement: 1.069 ft
Total Well Penetration Depth: 11. ft
Casing Radius: 0.083 ft
Static Water Column Height: 15. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01025 cm/sec
y0 = 482.8 ft



AP-3 FALLING HEAD

Data Set: G:\...\AP-3 Falling Head.aqt
Date: 07/23/14 Time: 12:17:44

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-3
Test Date: 07-02-2014

AQUIFER DATA

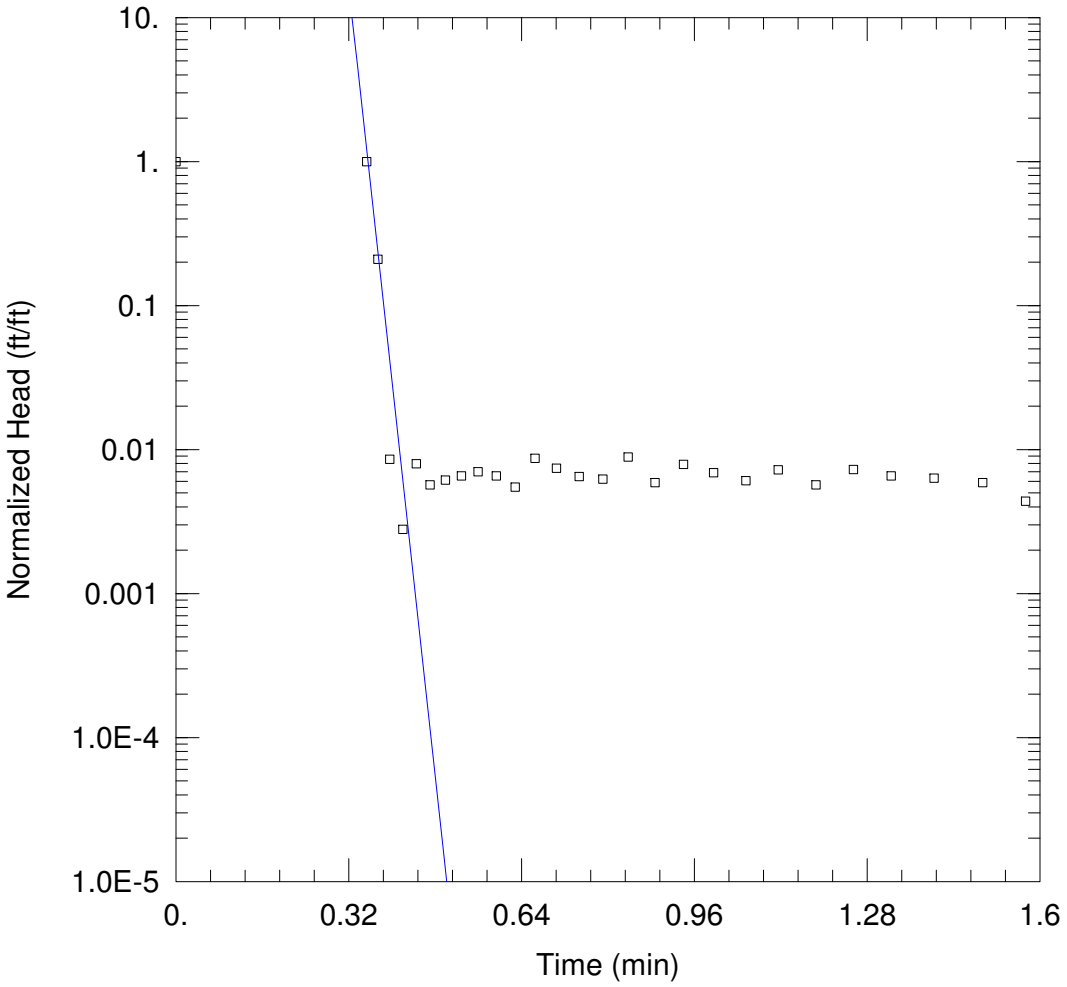
Saturated Thickness: 13.94 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-3)

Initial Displacement: 0.3503 ft
Total Well Penetration Depth: 13.94 ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.94 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02132 cm/sec
y0 = 3.847E+7 ft



AP-3 RISING HEAD

Data Set: G:\...\AP-3 Rising Head.aqt
Date: 07/24/14 Time: 16:08:27

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-3
Test Date: 07-02-2014

AQUIFER DATA

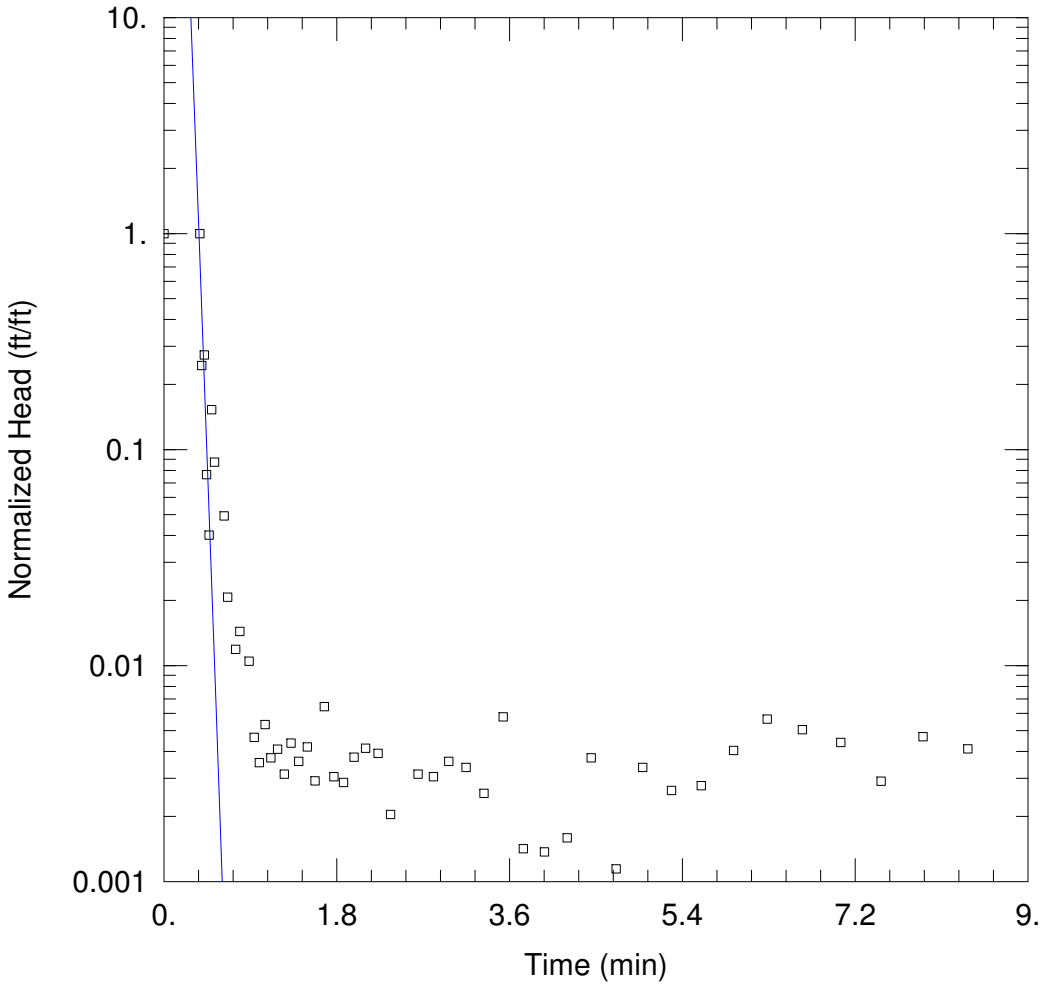
Saturated Thickness: 13.94 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-3)

Initial Displacement: 0.9837 ft
Total Well Penetration Depth: 13.94 ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.94 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.03847 cm/sec
y0 = 1.536E+12 ft



AP-4A FALLING HEAD

Data Set: G:\...\AP-4A Falling Head.aqt
Date: 07/24/14 Time: 16:10:16

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4A
Test Date: 07-02-2014

AQUIFER DATA

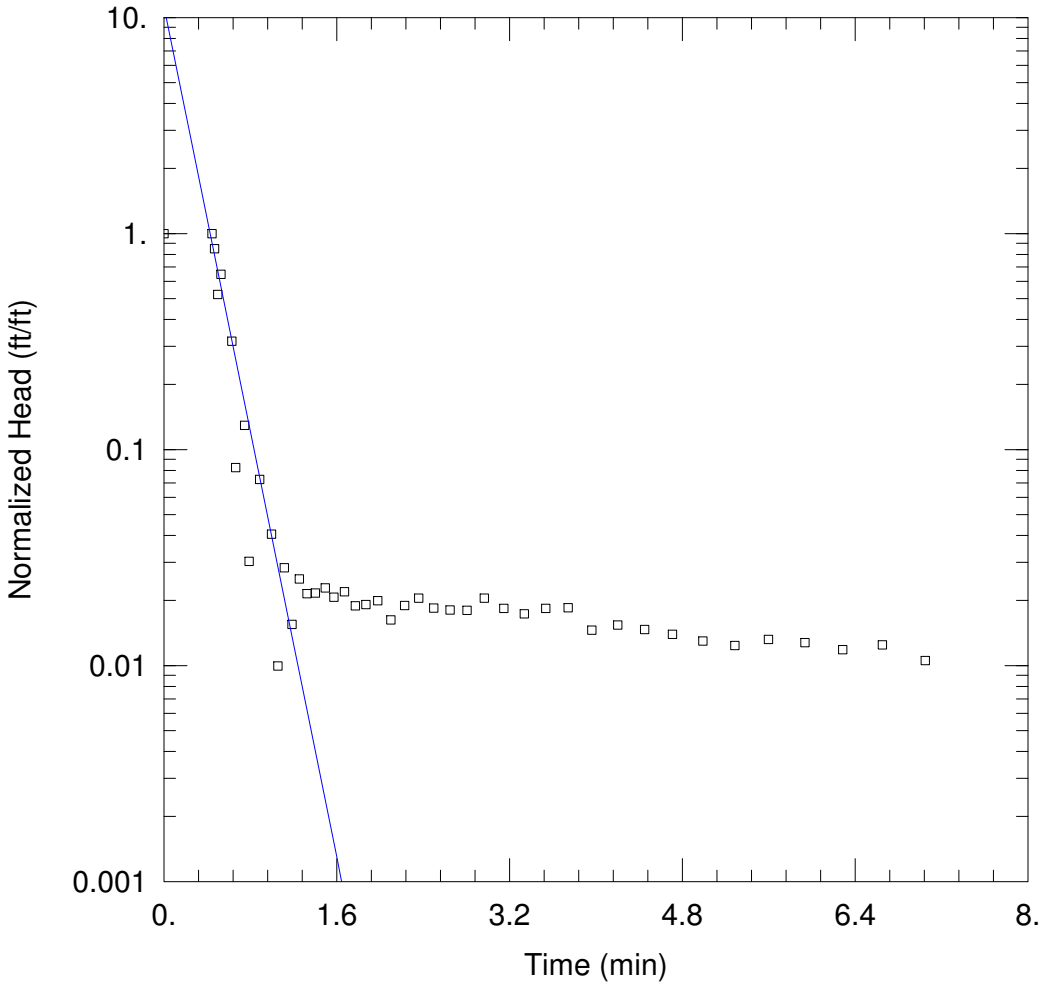
Saturated Thickness: 45.9 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4A)

Initial Displacement: 1.434 ft
Total Well Penetration Depth: 49.78 ft
Casing Radius: 0.083 ft
Static Water Column Height: 49.78 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01739 cm/sec
y0 = 4.28E+4 ft



AP-4A RISING HEAD

Data Set: G:\...\AP-4A Rising Head.aqt
Date: 07/22/14 Time: 17:03:15

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4A
Test Date: 07-02-2014

AQUIFER DATA

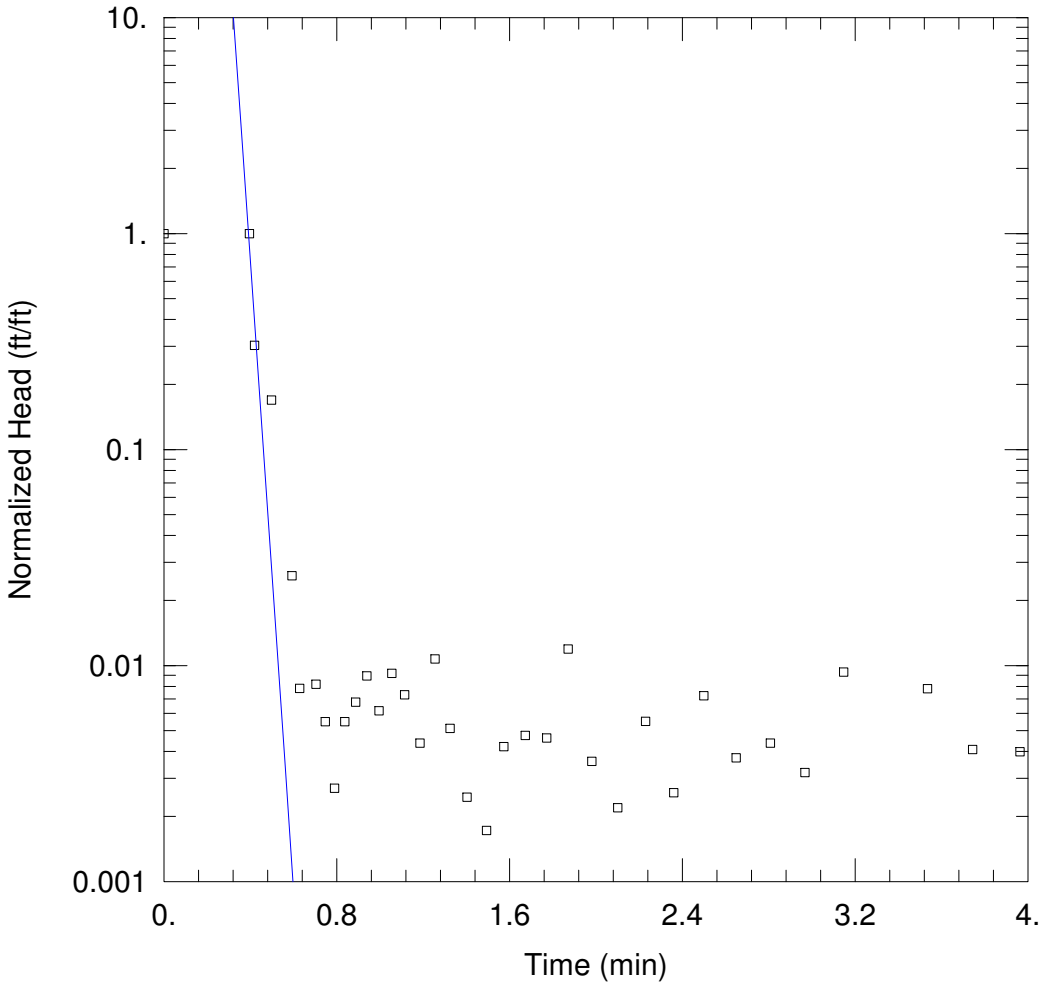
Saturated Thickness: 45.9 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4A)

Initial Displacement: 0.8334 ft
Total Well Penetration Depth: 49.78 ft
Casing Radius: 0.083 ft
Static Water Column Height: 49.78 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.003483 cm/sec
y0 = 9.376 ft



AP-4I FALLING HEAD

Data Set: G:\...\AP-4I Falling Head.aqt
Date: 07/22/14 Time: 17:05:15

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4I
Test Date: 07-03-2014

AQUIFER DATA

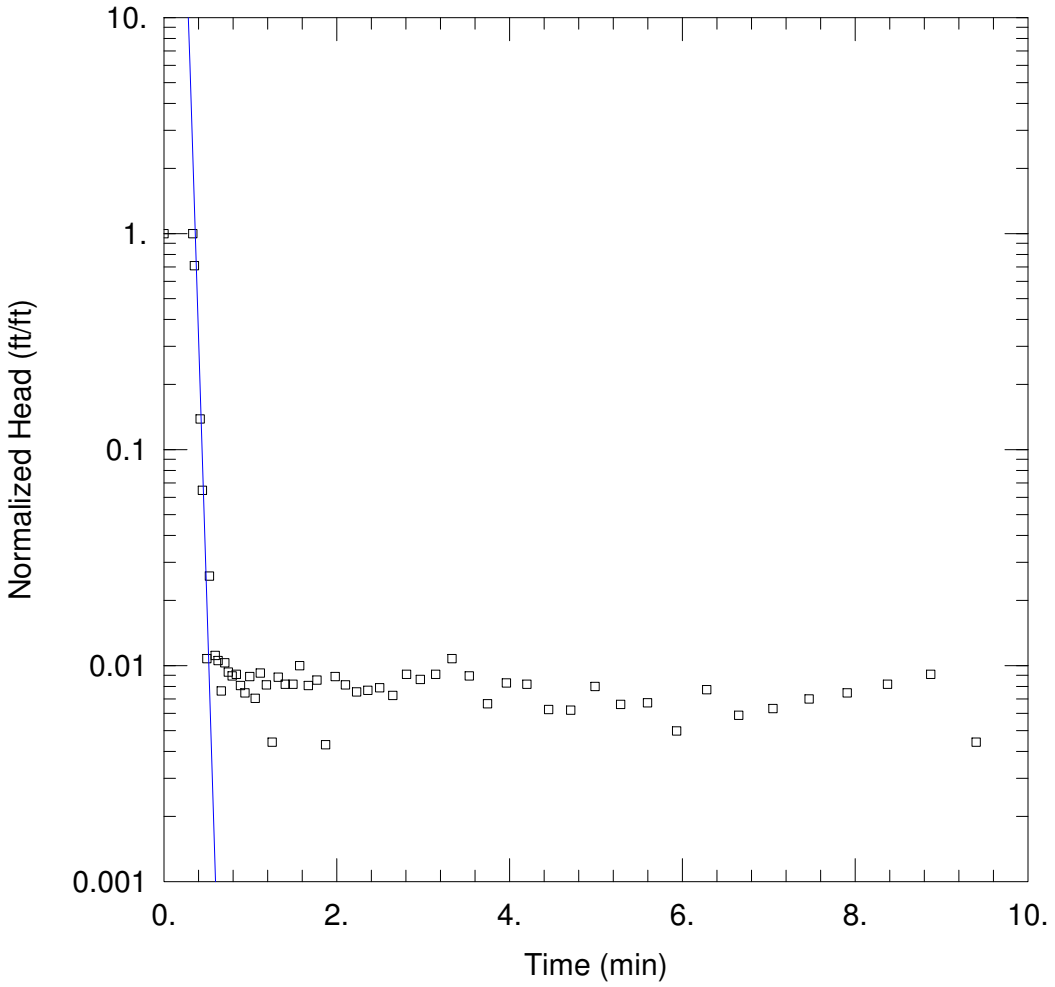
Saturated Thickness: 26.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4I)

Initial Displacement: 0.5153 ft
Total Well Penetration Depth: 26.2 ft
Casing Radius: 0.083 ft
Static Water Column Height: 30. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01845 cm/sec
y0 = 2.433E+5 ft



AP-4I RISING HEAD

Data Set: G:\...\AP-4I Rising Head.aqt
Date: 07/22/14 Time: 17:05:41

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4I
Test Date: 07-03-2014

AQUIFER DATA

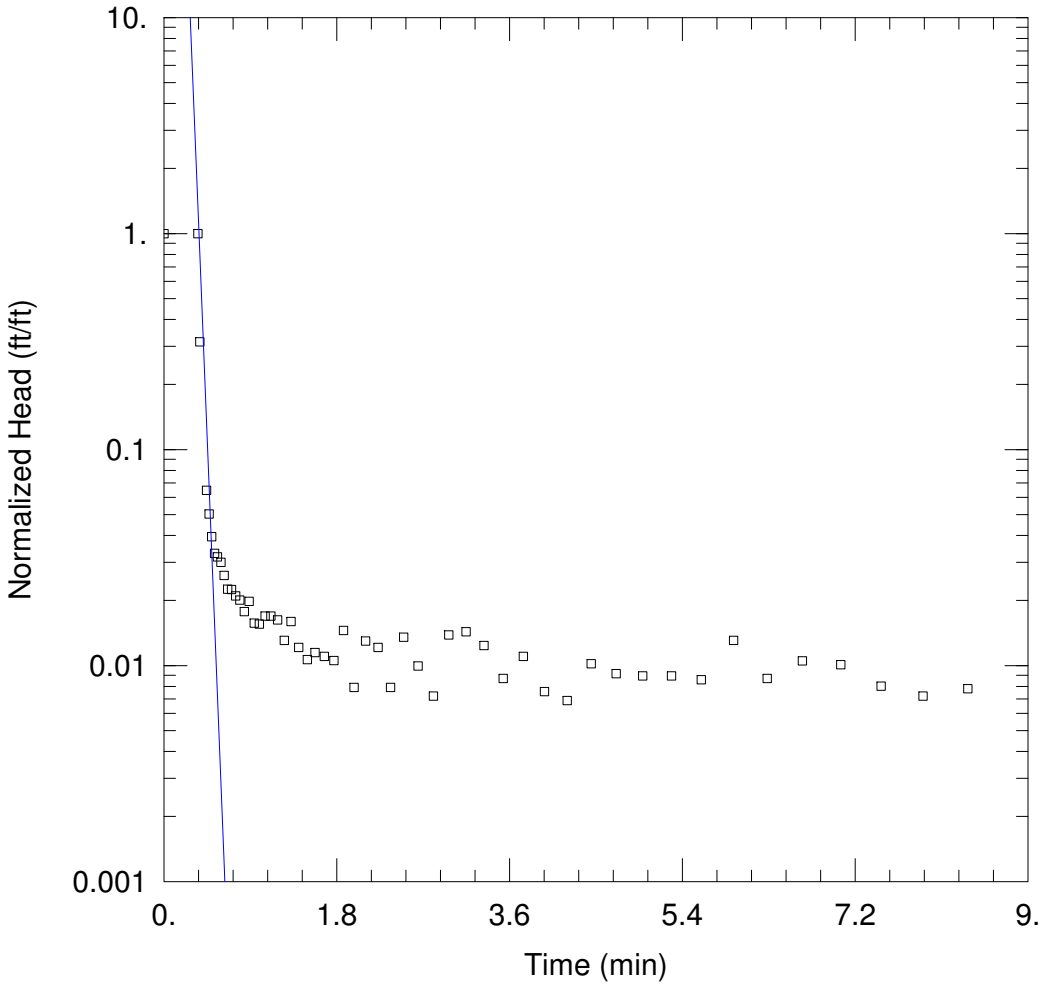
Saturated Thickness: 26.2 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4I)

Initial Displacement: 1.164 ft
Total Well Penetration Depth: 26.2 ft
Casing Radius: 0.083 ft
Static Water Column Height: 30. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01616 cm/sec
y0 = 4.614E+4 ft



AP-4B FALLING HEAD

Data Set: G:\...\AP-4B Falling Head.aqt
Date: 07/28/14 Time: 09:14:10

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4B
Test Date: 07-02-2014

AQUIFER DATA

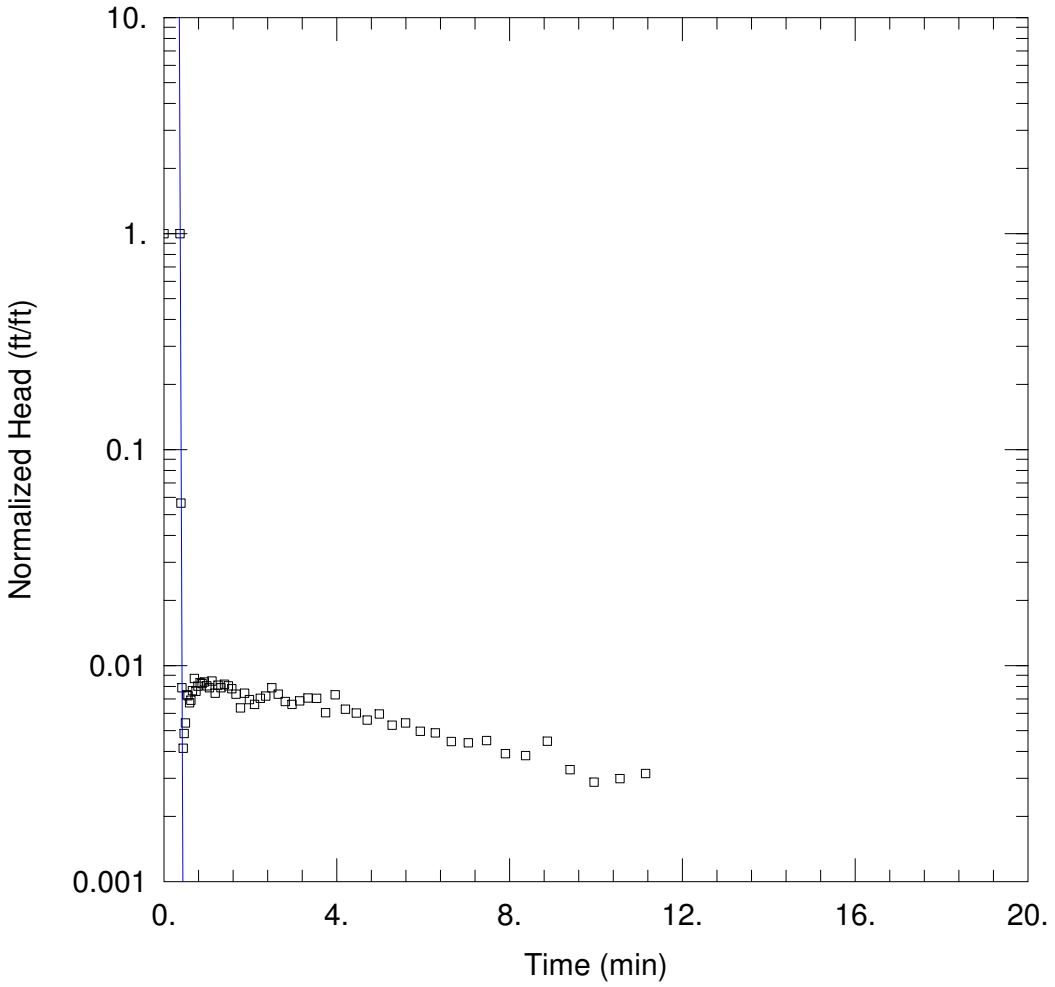
Saturated Thickness: 8.02 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4B)

Initial Displacement: 0.5681 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.04 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01413 cm/sec
y0 = 6607.8 ft



AP-4B RISING HEAD

Data Set: G:\...\AP-4B Rising Head .aqt
Date: 07/22/14 Time: 17:04:40

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-4B
Test Date: 07-02-2014

AQUIFER DATA

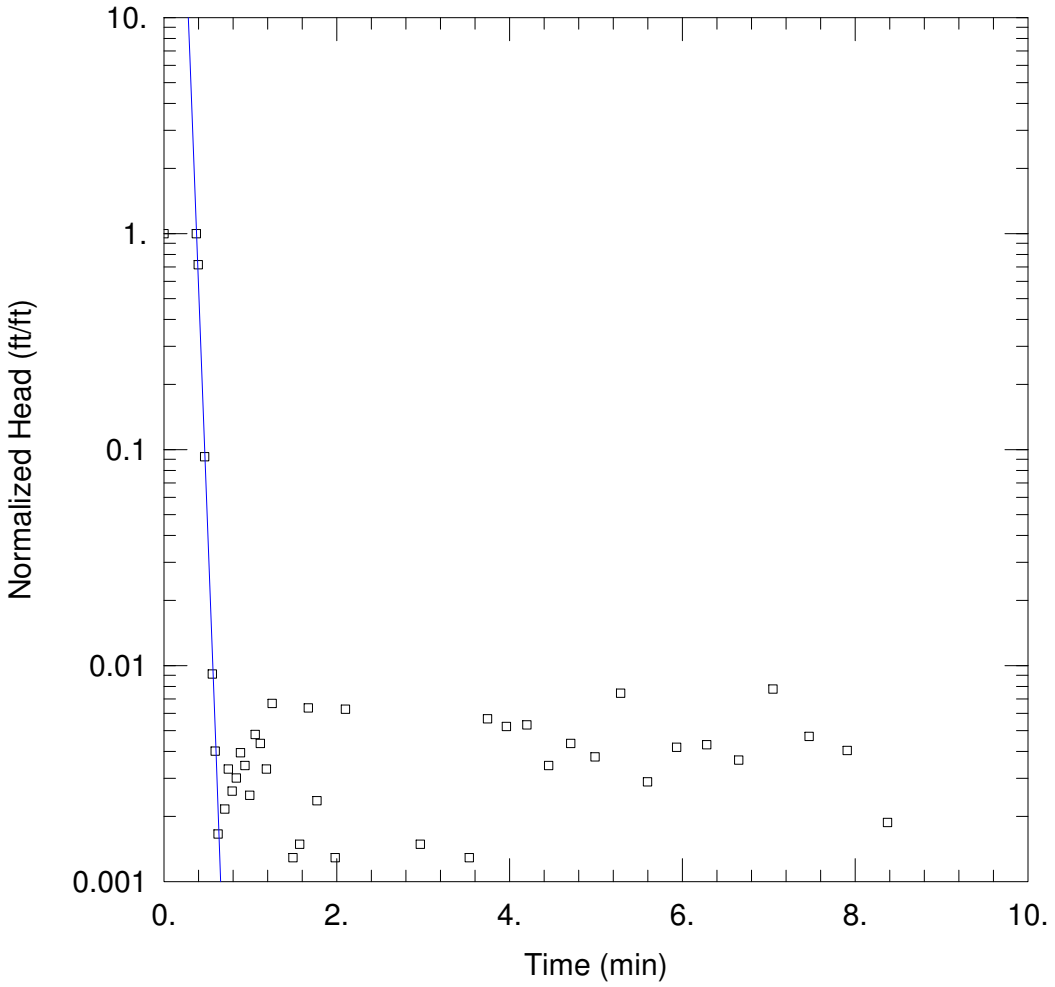
Saturated Thickness: 8.02 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-4B)

Initial Displacement: 2.551 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft
Static Water Column Height: 12.04 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.06214 cm/sec
y0 = 6.86E+18 ft



AP-5 FALLING HEAD

Data Set: G:\...\AP-5 Falling Head.aqt
Date: 07/22/14 Time: 17:06:07

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-5
Test Date: 07-03-2014

AQUIFER DATA

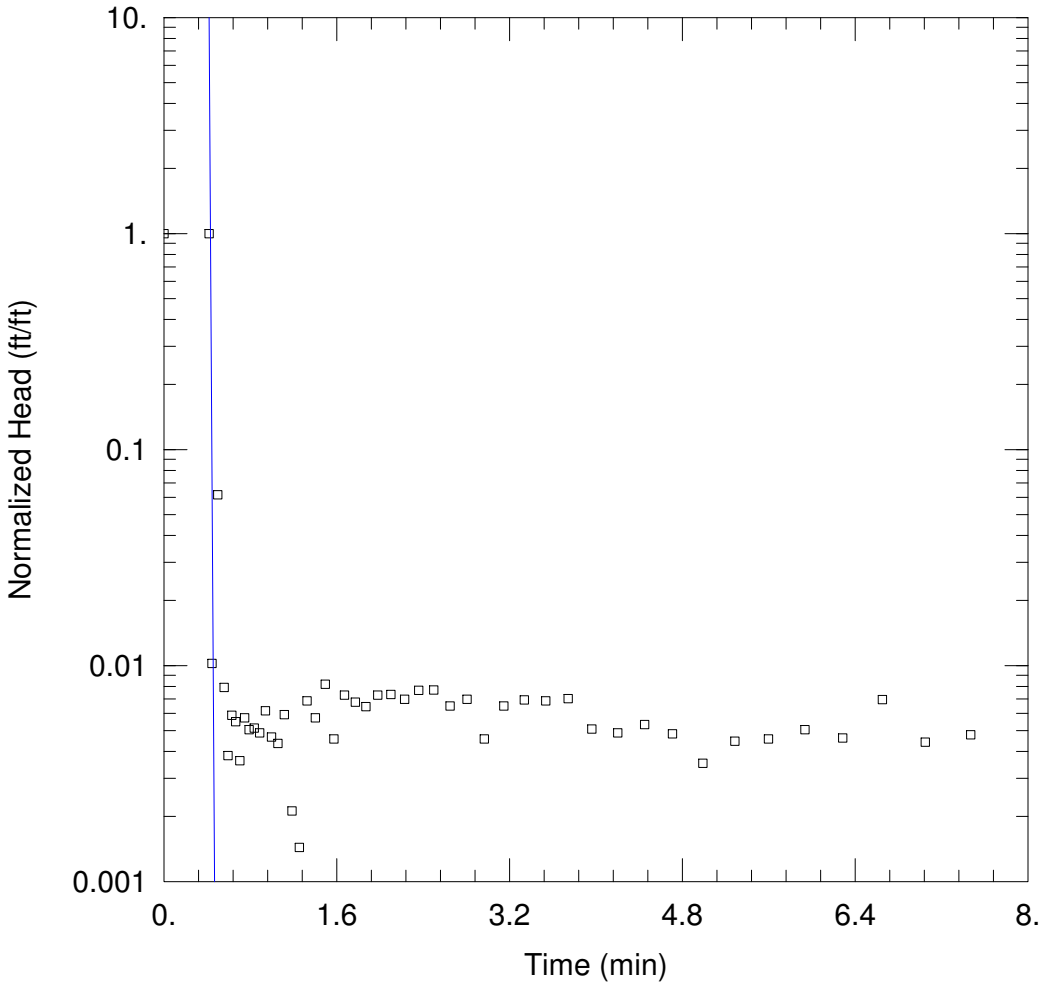
Saturated Thickness: 16.4 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-5)

Initial Displacement: 0.6215 ft
Total Well Penetration Depth: 16.4 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.47 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.01234 cm/sec
y0 = 6247.1 ft



AP-5 RISING HEAD

Data Set: G:\...\AP-5 Rising Head.aqt
Date: 07/24/14 Time: 16:12:04

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-5
Test Date: 07-03-2014

AQUIFER DATA

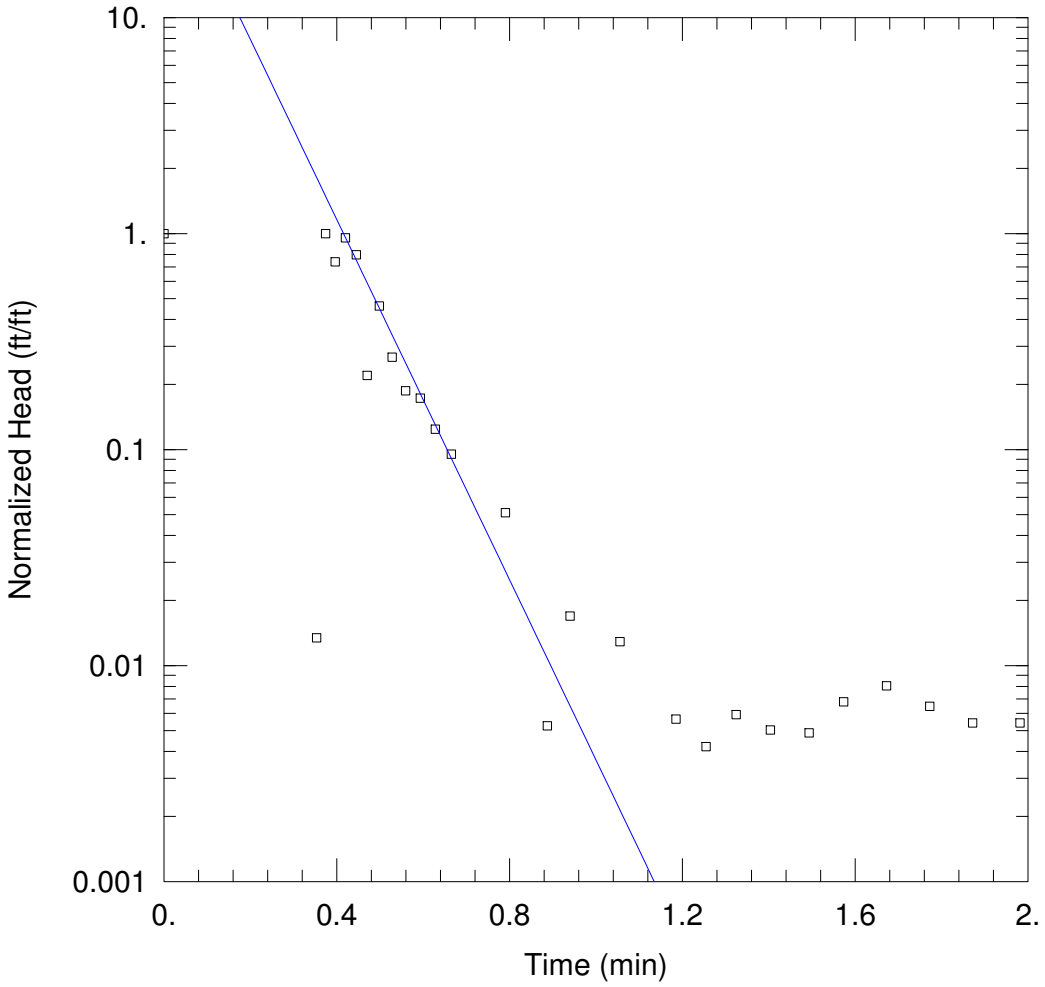
Saturated Thickness: 16.4 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-5)

Initial Displacement: 1.241 ft
Total Well Penetration Depth: 16.4 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.47 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.08944 cm/sec
y0 = 2.179E+33 ft



AP-6A FALLING HEAD

Data Set: G:\...\AP-6A Falling Head.aqt
Date: 07/23/14 Time: 12:21:43

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-6A
Test Date: 07-03-2014

AQUIFER DATA

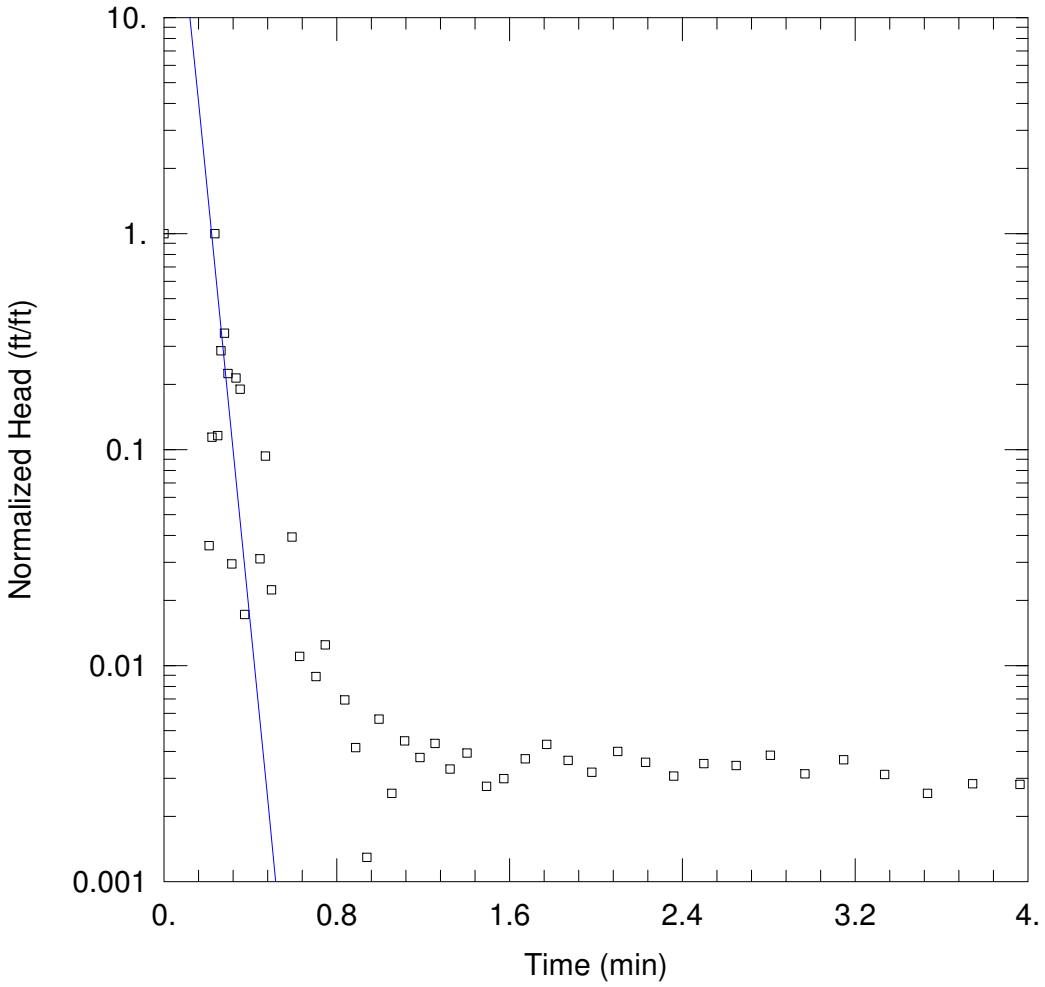
Saturated Thickness: 52.81 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-6A)

Initial Displacement: 0.8148 ft
Total Well Penetration Depth: 52.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 52.81 ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.006001 cm/sec
y0 = 44.04 ft



AP-6A RISING HEAD

Data Set: G:\...\AP-6A Rising Head.aqt
Date: 07/24/14 Time: 16:16:50

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-6A Rising Head
Test Date: 07-03-2014

AQUIFER DATA

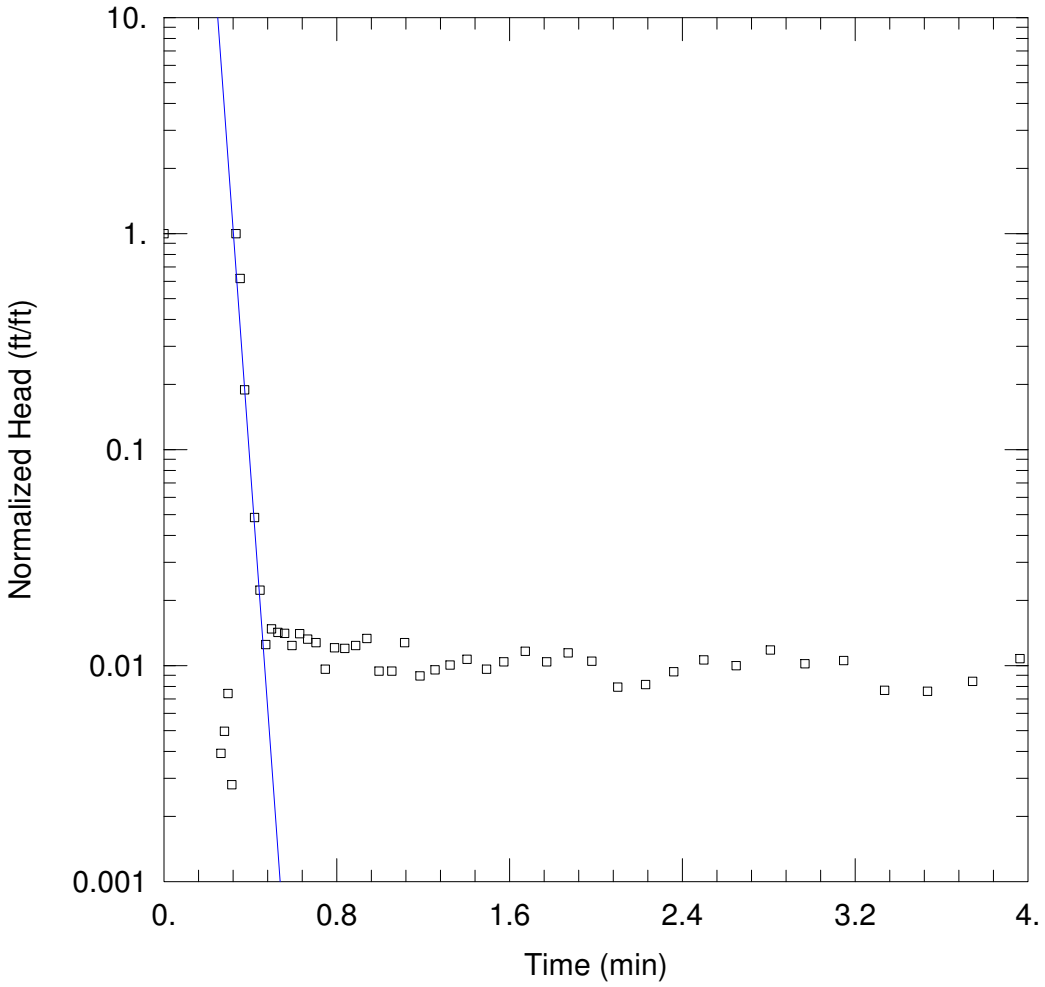
Saturated Thickness: 52.81 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-6A)

Initial Displacement: 4.091 ft
Total Well Penetration Depth: 52.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 52.81 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01447 cm/sec
y0 = 682.4 ft



AP-6B FALLING HEAD

Data Set: G:\...\AP-6B Falling Head.aqt
Date: 07/23/14 Time: 12:26:41

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-6B Falling Head
Test Date: 07-03-2014

AQUIFER DATA

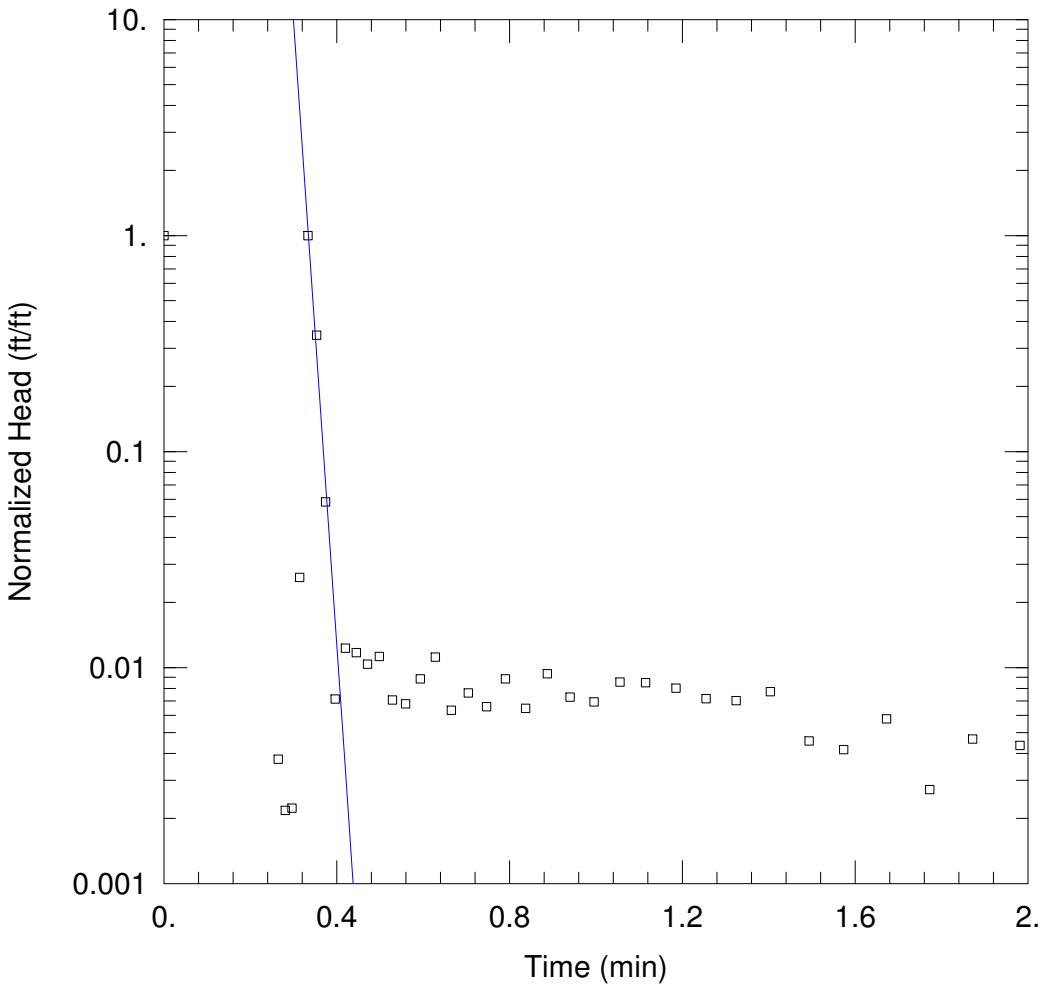
Saturated Thickness: 52.89 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-6B)

Initial Displacement: 0.9307 ft
Total Well Penetration Depth: 13.29 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 13.29 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01269 cm/sec
y0 = 2.634E+4 ft



AP-6B RISING HEAD

Data Set: G:\...\AP-6B Rising Head.aqt
Date: 07/23/14 Time: 12:28:45

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-6B Rising Head
Test Date: 07-03-2014

AQUIFER DATA

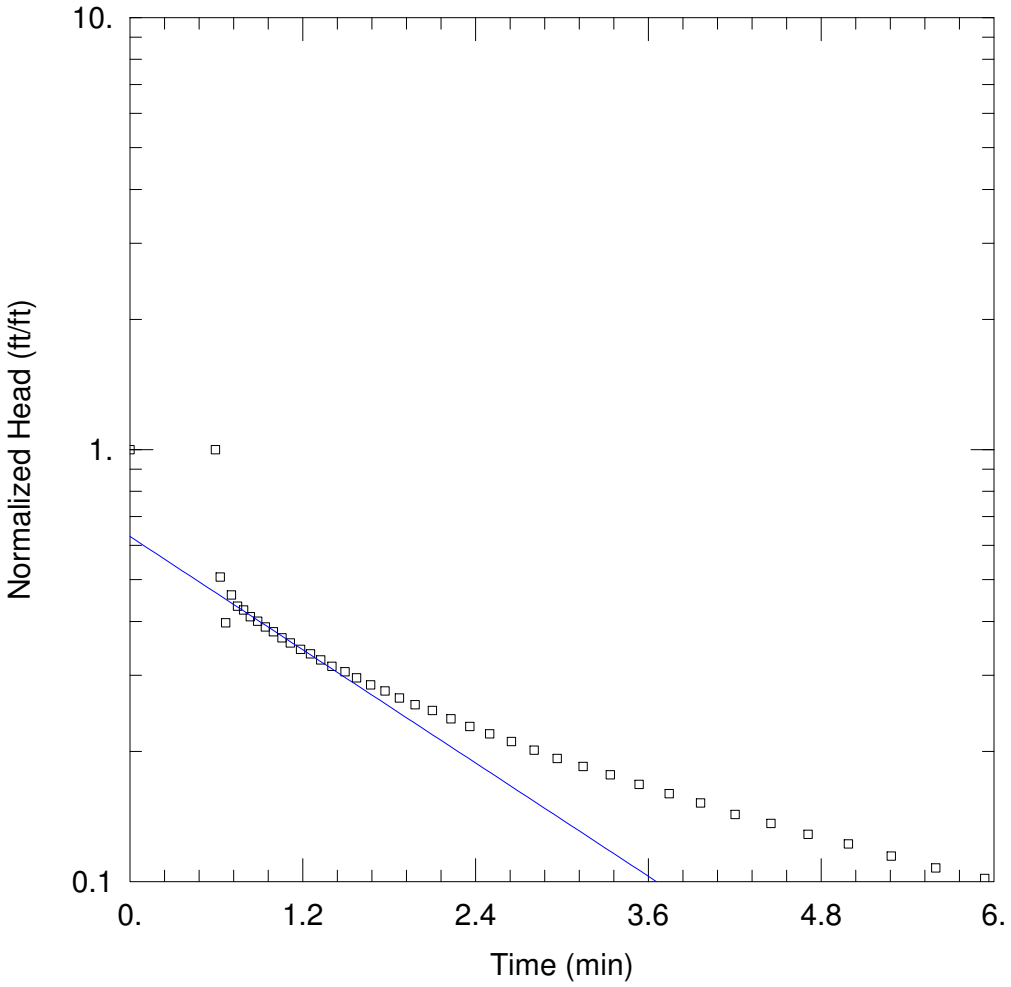
Saturated Thickness: 52.89 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-6B)

Initial Displacement: 1.313 ft
Total Well Penetration Depth: 13.29 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 13.29 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02642 cm/sec
y0 = 5.77E+9 ft



AP-7 FALLING HEAD

Data Set: G:\...\AP-7 Falling Head.aqt
Date: 07/25/14 Time: 12:14:19

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-7 Falling Head
Test Date: 07-02-2014

AQUIFER DATA

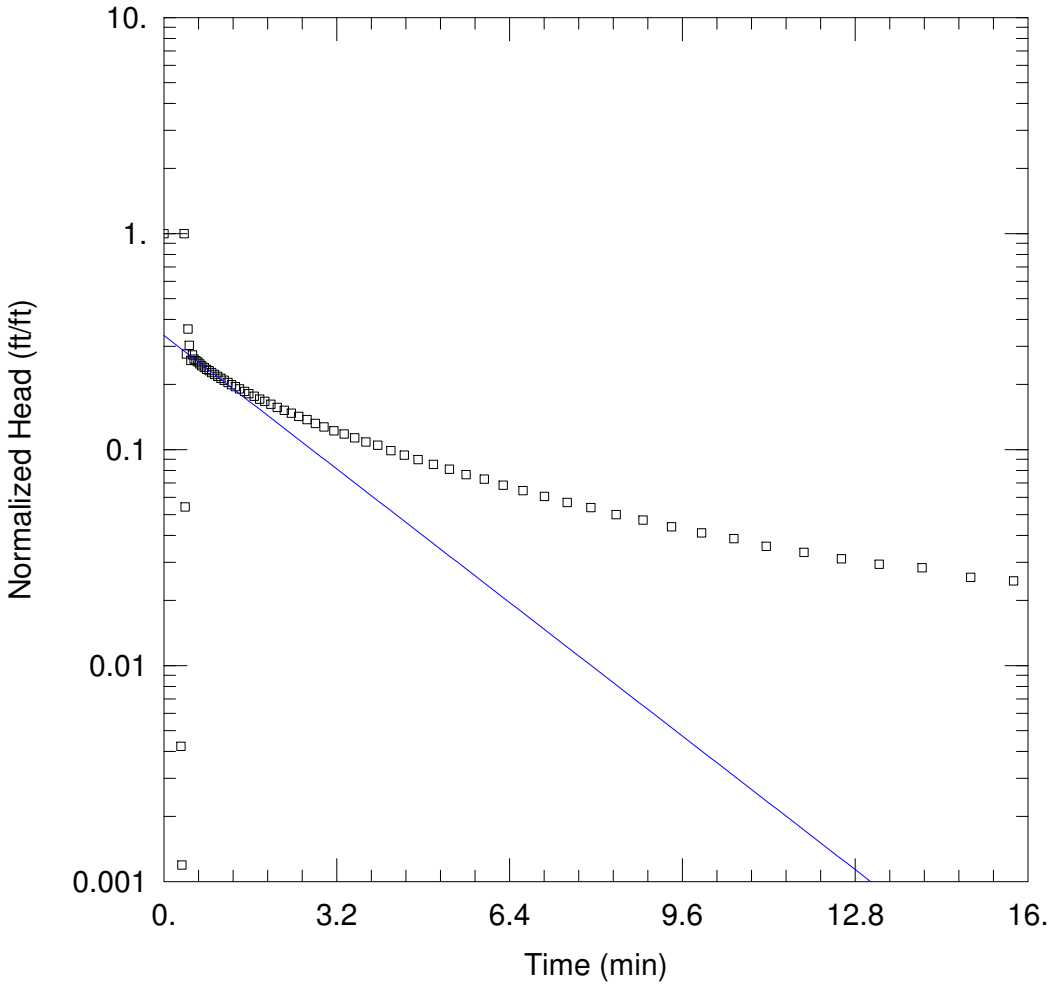
Saturated Thickness: 11.5 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-7)

Initial Displacement: 3.403 ft
Total Well Penetration Depth: 11.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 117.9 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0002357 cm/sec
y0 = 2.14 ft



AP-7 RISING HEAD

Data Set: G:\...\AP-7 Rising Head.aqt
Date: 07/25/14 Time: 12:23:27

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-7 Rising Head Head
Test Date: 07-02-2014

AQUIFER DATA

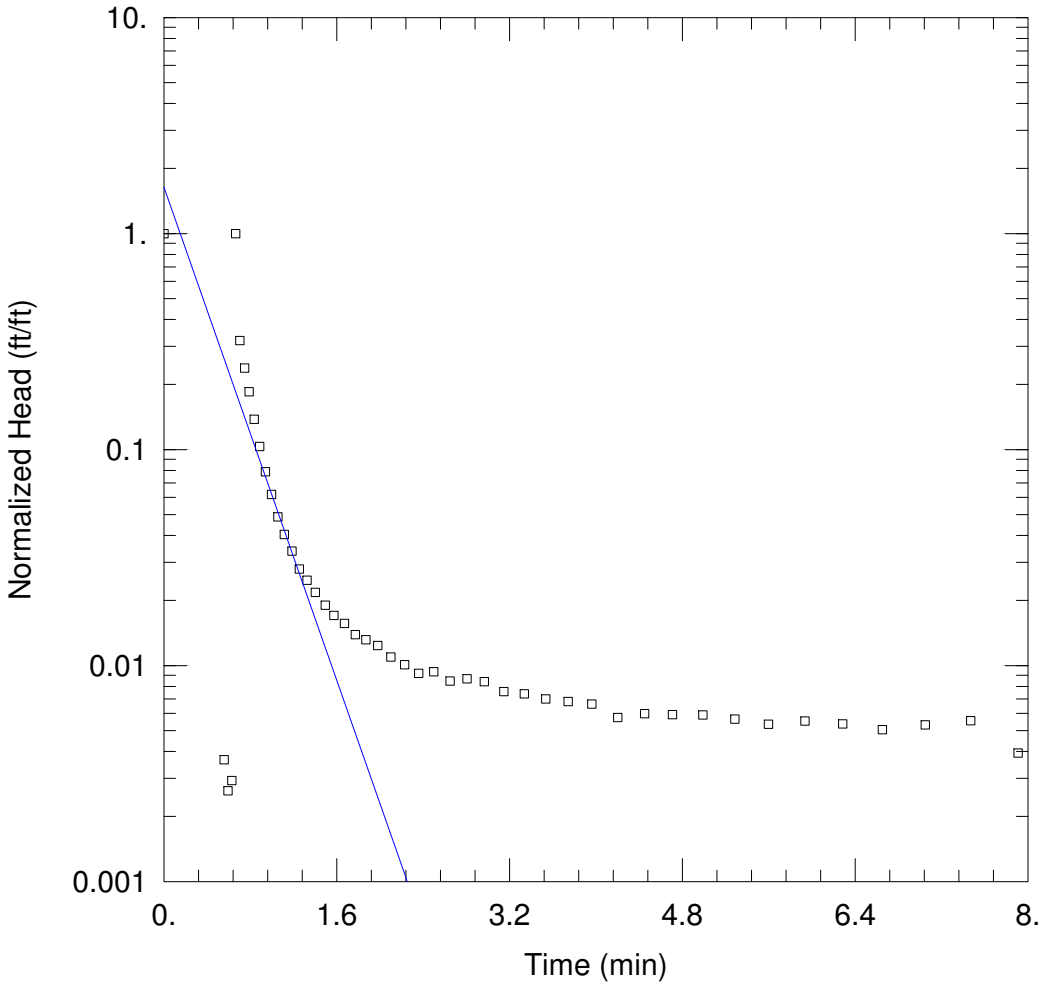
Saturated Thickness: 11.5 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-7)

Initial Displacement: 5.738 ft
Total Well Penetration Depth: 11.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.86 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0002085 cm/sec
y0 = 1.937 ft



AP-8 FALLING HEAD

Data Set: G:\...\AP-8 Falling Head.aqt
Date: 07/25/14 Time: 12:17:19

PROJECT INFORMATION

Company: Cardno ATC
Client: Indianapolis Power and Light
Project: 86.22351.0026
Location: Petersburg, Indiana
Test Well: AP-8 Falling Head Head
Test Date: 07-02-2014

AQUIFER DATA

Saturated Thickness: 15.32 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-8)

Initial Displacement: 3.557 ft
Total Well Penetration Depth: 15.32 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 15.32 ft
Screen Length: 10. ft
Well Radius: 0.333 ft
Gravel Pack Porosity: 0.

SOLUTION

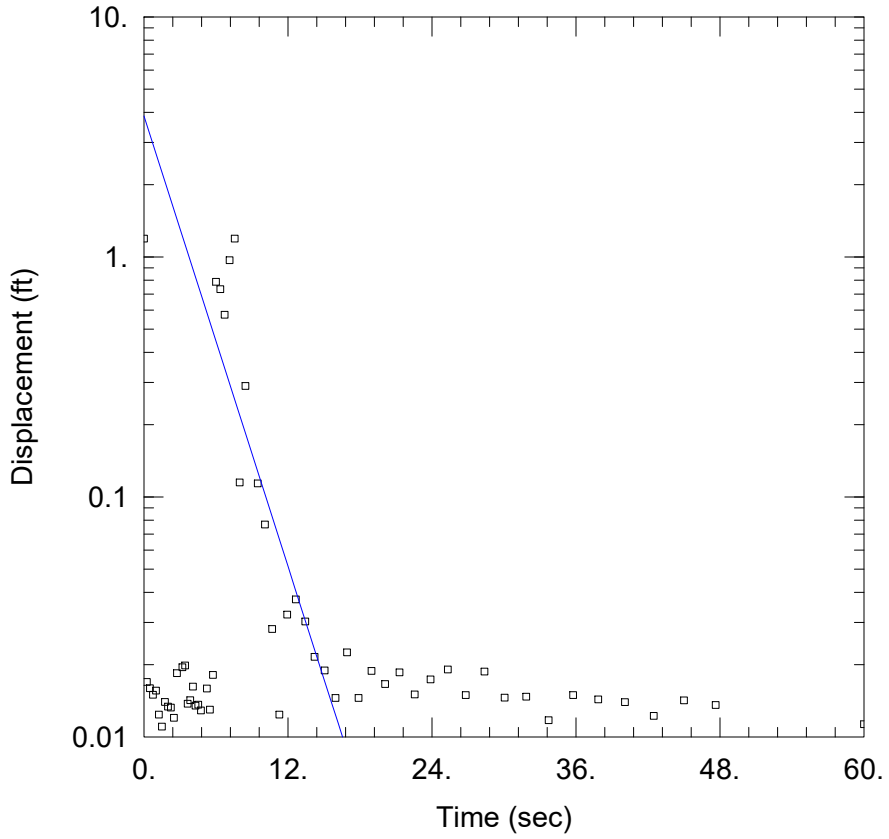
Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.001641 cm/sec
y0 = 5.831 ft

Table 3
In-Situ Hydraulic Conductivity Results
Indianapolis Power and Light Co.
Petersburg Generating Station
Petersburg, IN

ATC Project No. 170LF00221

Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
AP-2BO	Falling Head	0.083	0.33	10	12	29.1	1.03E-02
AP-2BO	Rising Head				12	24.9	8.79E-03
					Average:	27.0	9.52E-03

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



WELL TEST ANALYSIS

Data Set: G:\...\2BOIN.aqt
Date: 05/18/16 Time: 08:59:24

PROJECT INFORMATION

Company: ATC
Client: Indianapolis Power and Light
Project: 170LF00221
Location: Petersburg Gen. Station
Test Well: AP-2BO FALLING HEAD
Test Date: 4/8/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.01025 cm/sec
y0 = 3.862 ft

AQUIFER DATA

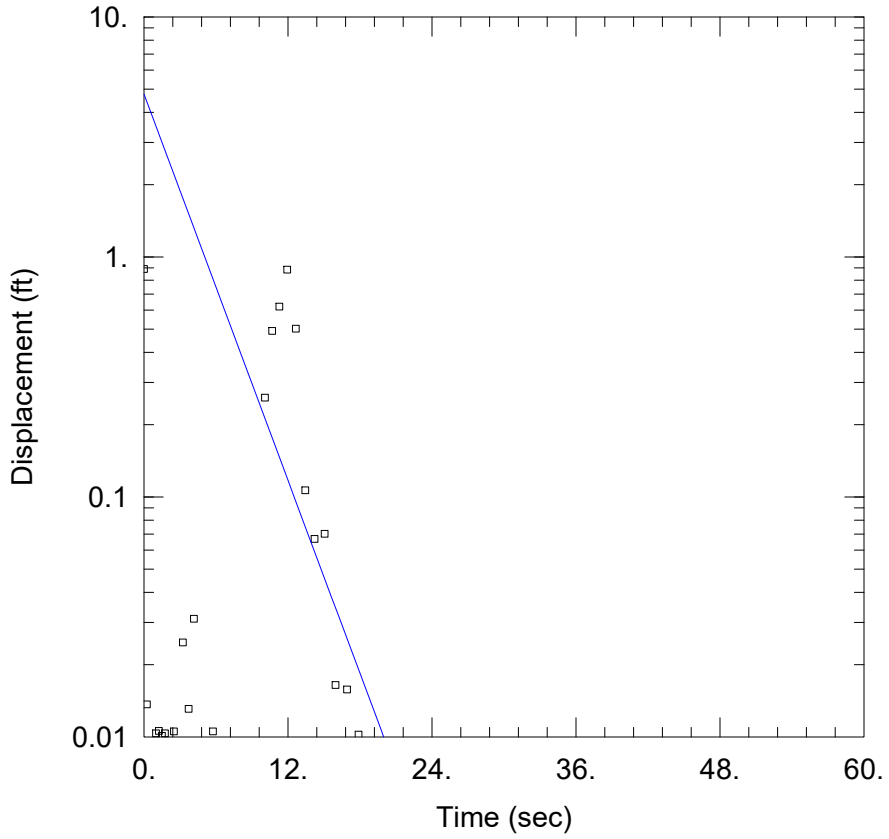
Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2BO)

Initial Displacement: 1.192 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.0833 ft

Static Water Column Height: 23. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.



WELL TEST ANALYSIS

Data Set: G:\...\2BOOUT.aqt
Date: 05/18/16 Time: 09:00:17

PROJECT INFORMATION

Company: ATC
Client: Indianapolis Power and Light
Project: 170LF00221
Location: Petersburg Gen. Station
Test Well: AP-2BO RISING HEAD
Test Date: 4/8/2016

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.008789 cm/sec
y0 = 4.771 ft

AQUIFER DATA

Saturated Thickness: 12. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-2BO RISING HEAD)

Initial Displacement: 0.89 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.0833 ft

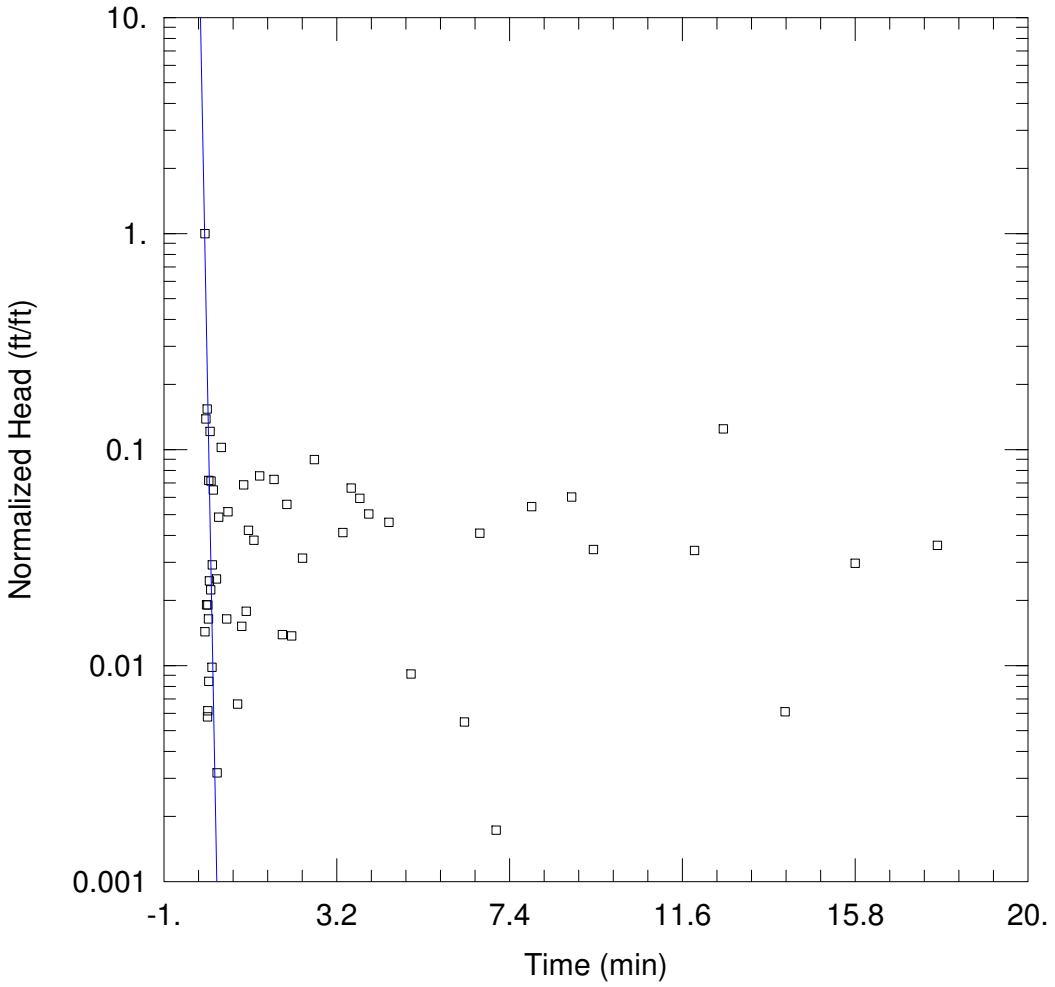
Static Water Column Height: 23. ft
Screen Length: 10. ft
Well Radius: 0.33 ft
Gravel Pack Porosity: 0.

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power and Light Company
Petersburg Generating Station
Petersburg, Indiana

Cardno ATC Project No. 170LF00039

Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
AP-3A	Falling Head	0.083	0.33	10	63.29	42.260	1.49E-02
	Rising Head					10.340	3.65E-03
AP-5A	Falling Head	0.083	0.33	10	58.86	44.39	1.57E-02
	Rising Head					3.21	1.13E-03
					Average	25.05	8.84E-03

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



SLUG TEST - AP-3A FALLING HEAD

Data Set: G:\Projects\Landfill\IPL\Ash Pond Closure\Petersburg\Drilling 2015\slug test\AP-3A IN.aqt
Date: 08/19/15 Time: 11:43:59

PROJECT INFORMATION

Company: Cardno ATC
Client: IPL
Project: 170LF00039
Location: Petersburg, IN
Test Well: AP-3A Falling Head
Test Date: 06/12/2015

AQUIFER DATA

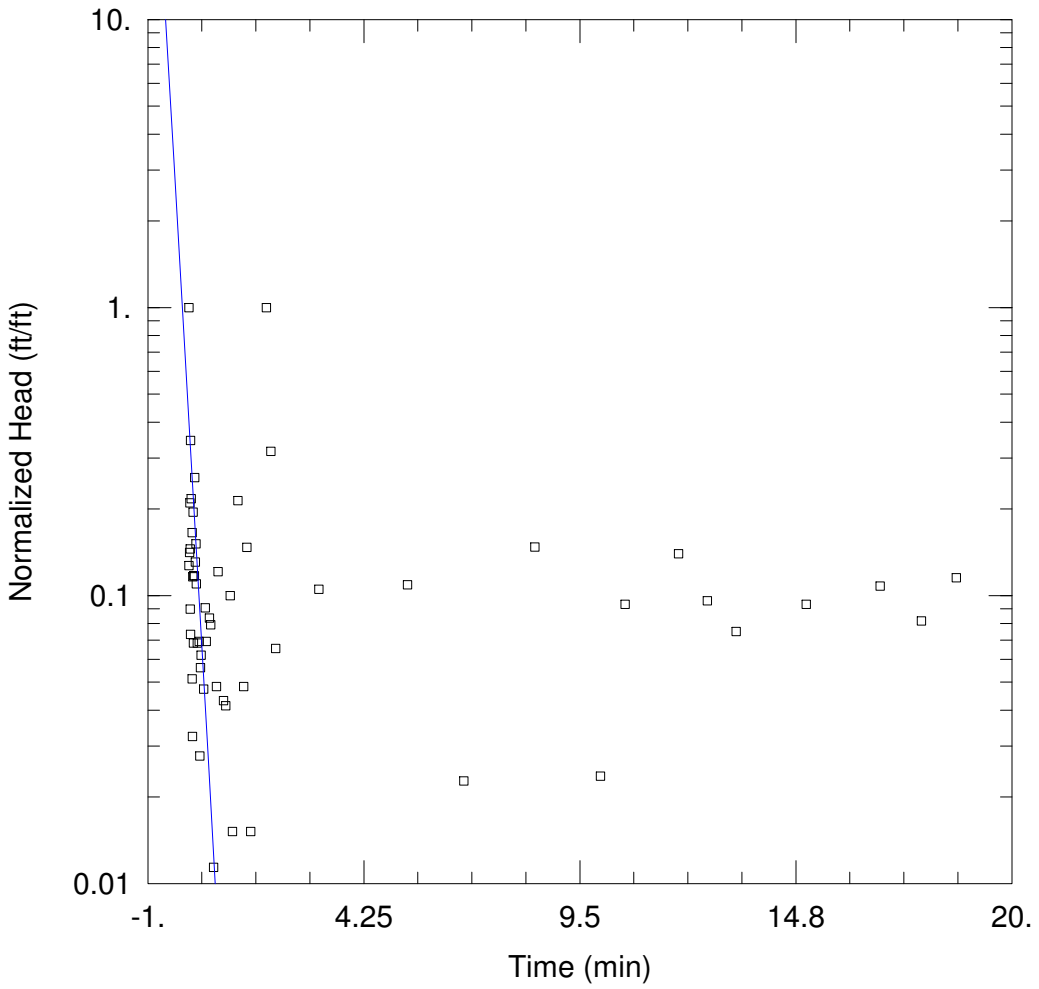
Saturated Thickness: 63.29 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-3A)

Initial Displacement: 0.7852 ft
Total Well Penetration Depth: 63.29 ft
Casing Radius: 0.083 ft
Static Water Column Height: 63.29 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01491 cm/sec
y0 = 0.607 ft



SLUG TEST - AP-3A RISING HEAD

Data Set: G:\Projects\Landfill\IPL\Ash Pond Closure\Petersburg\Drilling 2015\slug test\AP-3A OUT.aqt
Date: 08/19/15 Time: 12:14:21

PROJECT INFORMATION

Company: Cardno ATC
Client: IPL
Project: 170LF00039
Location: Petersburg, IN
Test Well: AP-3A Rising Head
Test Date: 06/12/2015

AQUIFER DATA

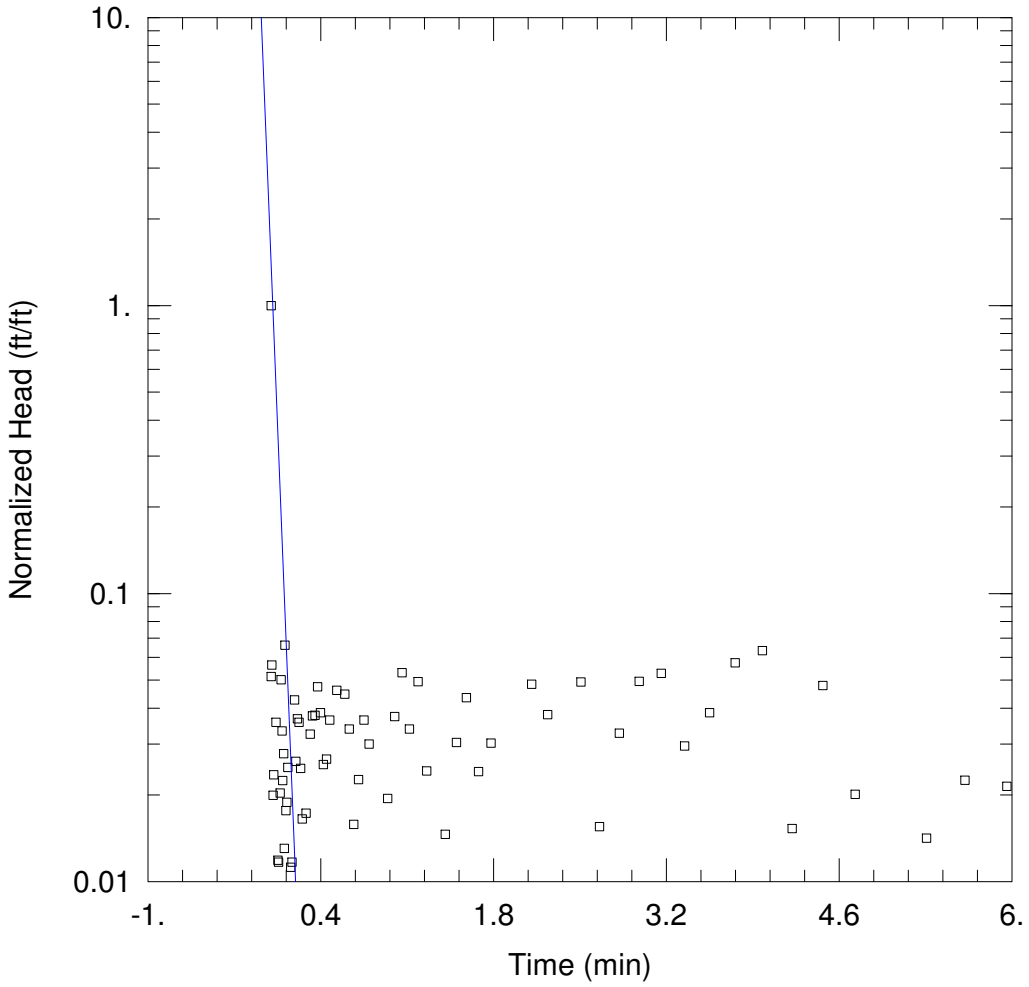
Saturated Thickness: 63.29 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-3A)

Initial Displacement: 0.3639 ft
Total Well Penetration Depth: 63.29 ft
Casing Radius: 0.083 ft
Static Water Column Height: 63.29 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.003648 cm/sec
y0 = 0.1423 ft



SLUG TEST - AP-5A FALLING HEAD

Data Set: G:\Projects\Landfill\IPL\Ash Pond Closure\Petersburg\Drilling 2015\slug test\AP-5A IN.aqt
Date: 08/19/15 Time: 12:39:47

PROJECT INFORMATION

Company: Cardno ATC
Client: IPL
Project: 170LF00039
Location: Petersburg, IN
Test Well: AP-3A Falling Head
Test Date: 06/12/2015

AQUIFER DATA

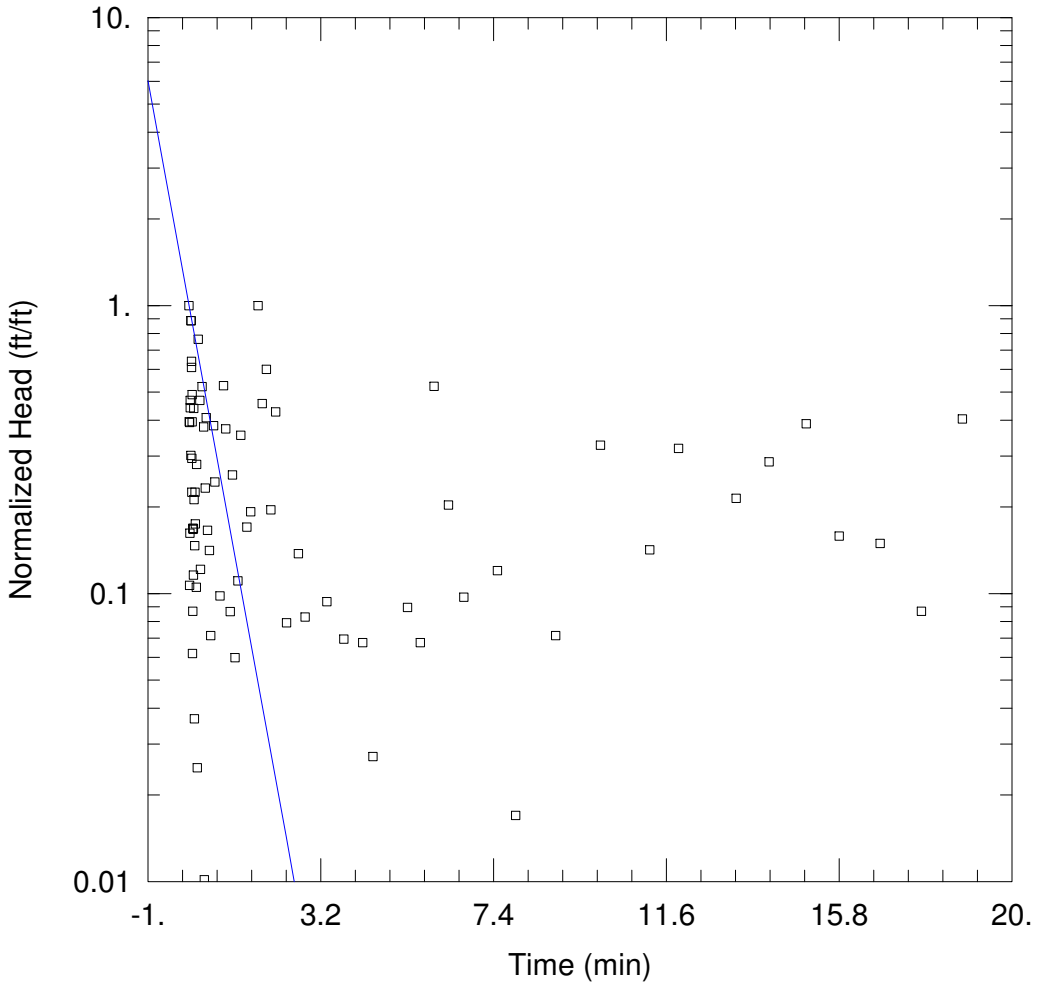
Saturated Thickness: 58.86 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-5A)

Initial Displacement: 2.142 ft
Total Well Penetration Depth: 58.86 ft
Casing Radius: 0.083 ft
Static Water Column Height: 58.86 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01566 cm/sec
y0 = 2.817 ft



SLUG TEST - AP-5A RISING HEAD

Data Set: G:\Projects\Landfill\IPL\Ash Pond Closure\Petersburg\Drilling 2015\slug test\AP-5A OUT.aqt
Date: 08/19/15 Time: 12:45:15

PROJECT INFORMATION

Company: Cardno ATC
Client: IPL
Project: 170LF00039
Location: Petersburg, IN
Test Well: AP-3A Rising Head Head
Test Date: 06/12/2015

AQUIFER DATA

Saturated Thickness: 58.86 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-5A)

Initial Displacement: 0.1913 ft
Total Well Penetration Depth: 58.86 ft
Casing Radius: 0.083 ft
Static Water Column Height: 58.86 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

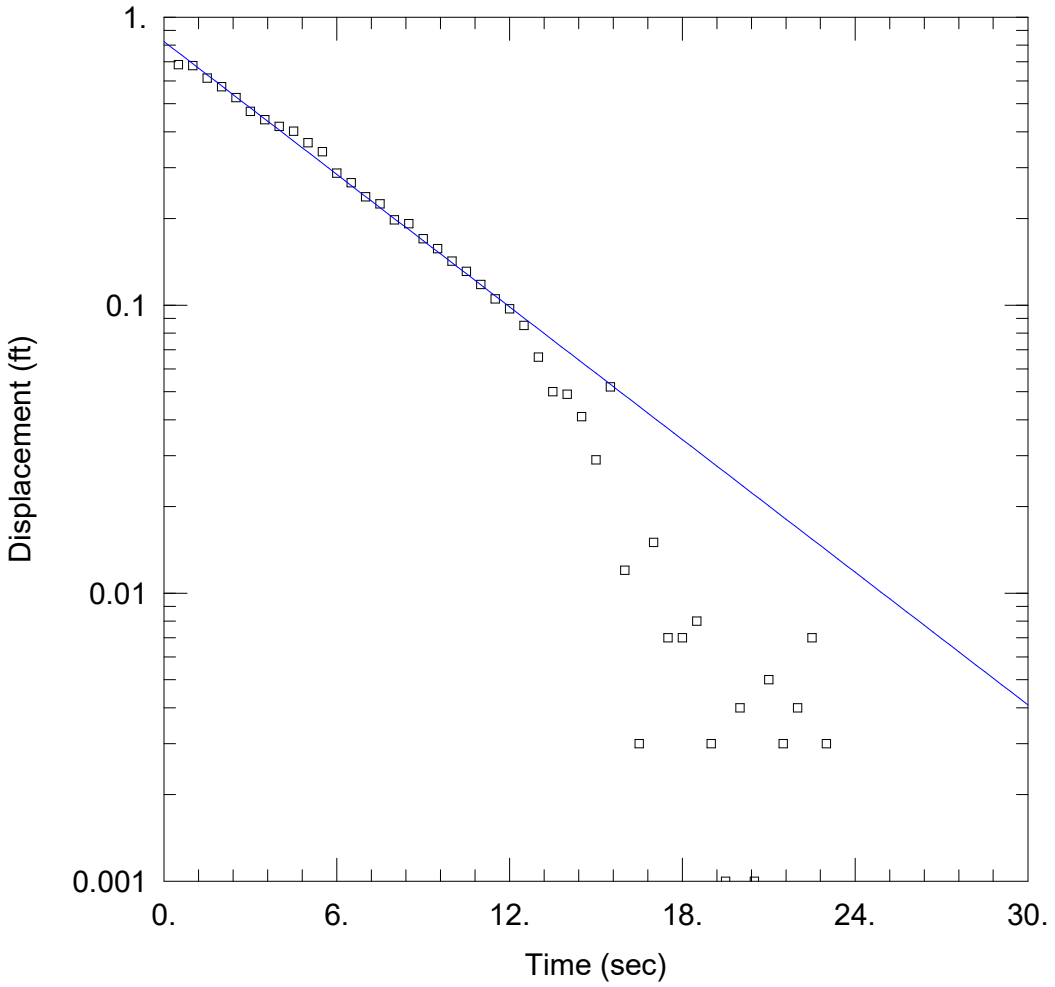
SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001134 cm/sec
y0 = 0.1909 ft

TABLE X
SUMMARY OF HYDRAULIC CONDUCTIVITY VALUES
PETERSBURG GENERATING STATION - PETERSBURG, IN

Well	Falling Head 1	Falling Head 2	Falling Head Geo. Mean	Rising Head 1	Rising Head 2	Rising Head Geo. Mean
AP-9B	1.09E-02	1.14E-02	1.12E-02	1.22E-02	1.18E-02	1.20E-02
AP-9I	2.92E-02	3.35E-02	3.13E-02	2.96E-02	2.59E-02	2.77E-02
AP-10B	3.05E-02	2.70E-02	2.87E-02	4.47E-02	4.30E-02	4.39E-02
AP-10I	2.03E-02	2.05E-02	2.04E-02	2.25E-02	2.10E-02	2.17E-02
AP-11B	1.66E-02	1.75E-02	1.71E-02	1.93E-02	2.04E-02	1.98E-02
AP-11I	2.77E-02	3.07E-02	2.92E-02	2.90E-02	3.50E-02	3.19E-02
MW-15B	2.11E-03	2.06E-03	2.08E-03	1.75E-03	1.98E-03	1.86E-03

Notes
Slug Testing completed 2/21/23 through 2/22/23
Values reported in cm/sec.



WELL TEST ANALYSIS

Data Set: \...\AP9B_F1.aqt
Date: 02/28/23 Time: 09:21:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.01 ft Anisotropy Ratio (Kz/Kr): 1.

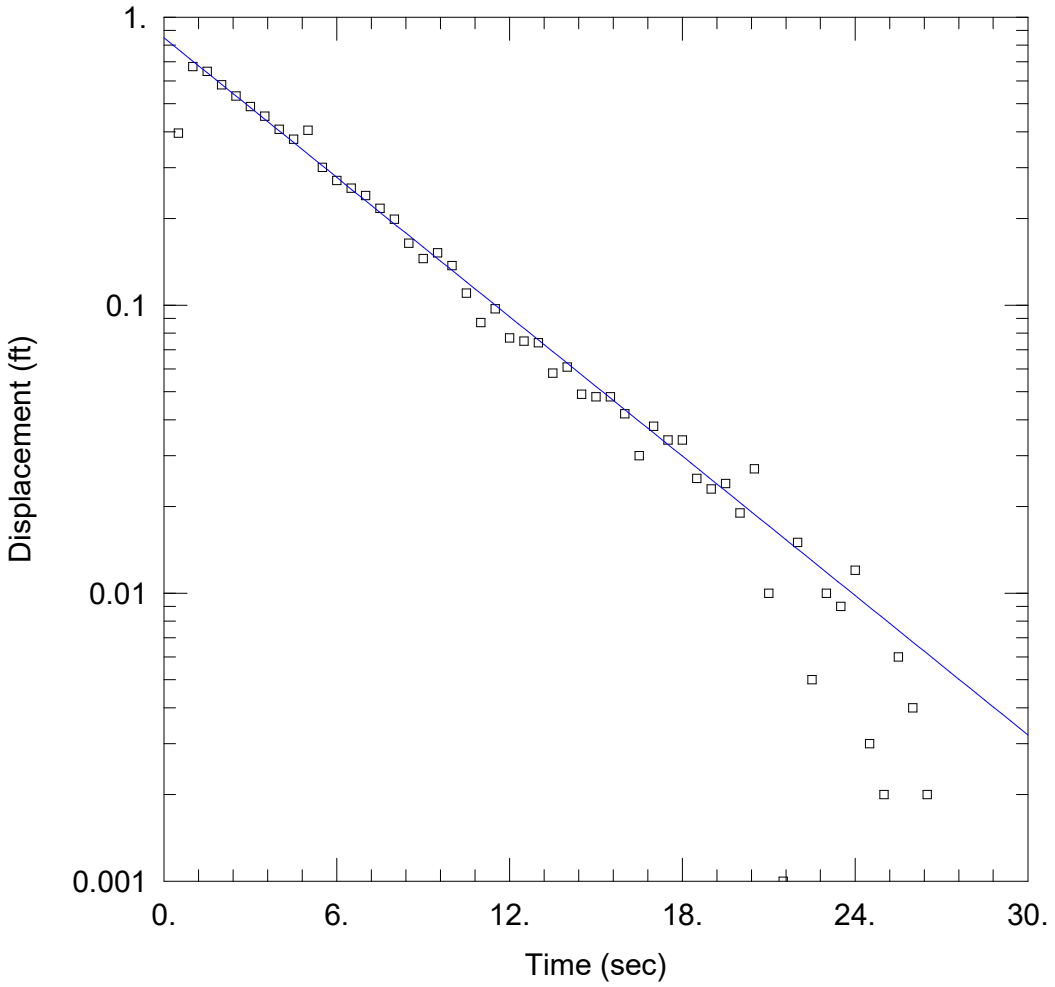
WELL DATA (AP-9B)

Initial Displacement: 1.754 ft
Total Well Penetration Depth: 17.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.01 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01088 cm/sec y0 = 0.8223 ft



WELL TEST ANALYSIS

Data Set: \...\AP9B_F2.aqt
Date: 02/28/23 Time: 09:21:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.01 ft Anisotropy Ratio (Kz/Kr): 1.

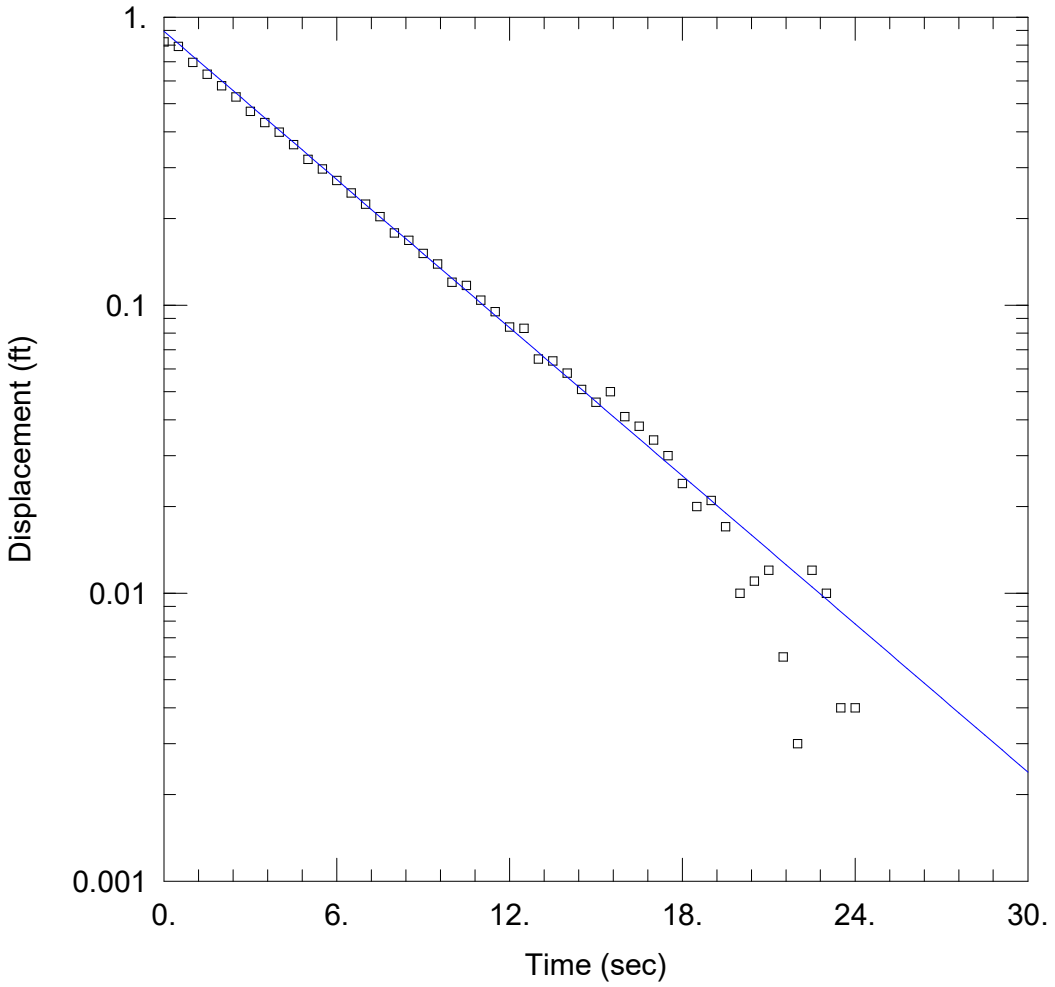
WELL DATA (AP-9B)

Initial Displacement: 1.302 ft
Total Well Penetration Depth: 17.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.01 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01143 cm/sec y0 = 0.847 ft



WELL TEST ANALYSIS

Data Set: \...\AP9B_R1.aqt
Date: 02/28/23 Time: 09:22:03

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.01 ft Anisotropy Ratio (Kz/Kr): 1.

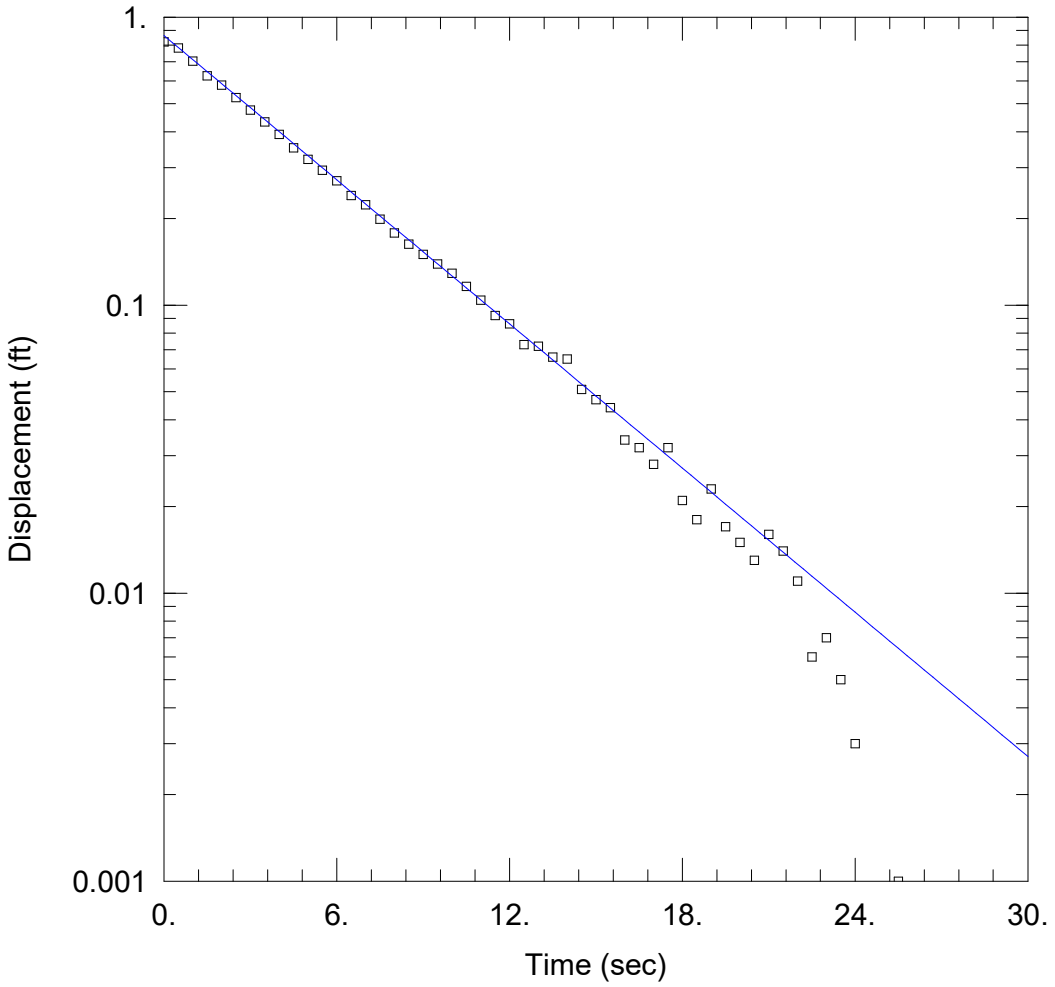
WELL DATA (AP-9B)

Initial Displacement: 0.821 ft
Total Well Penetration Depth: 17.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.01 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01215 cm/sec y0 = 0.8921 ft



WELL TEST ANALYSIS

Data Set: \...\AP9B_R2.aqt
Date: 02/28/23 Time: 09:22:28

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.01 ft Anisotropy Ratio (Kz/Kr): 1.

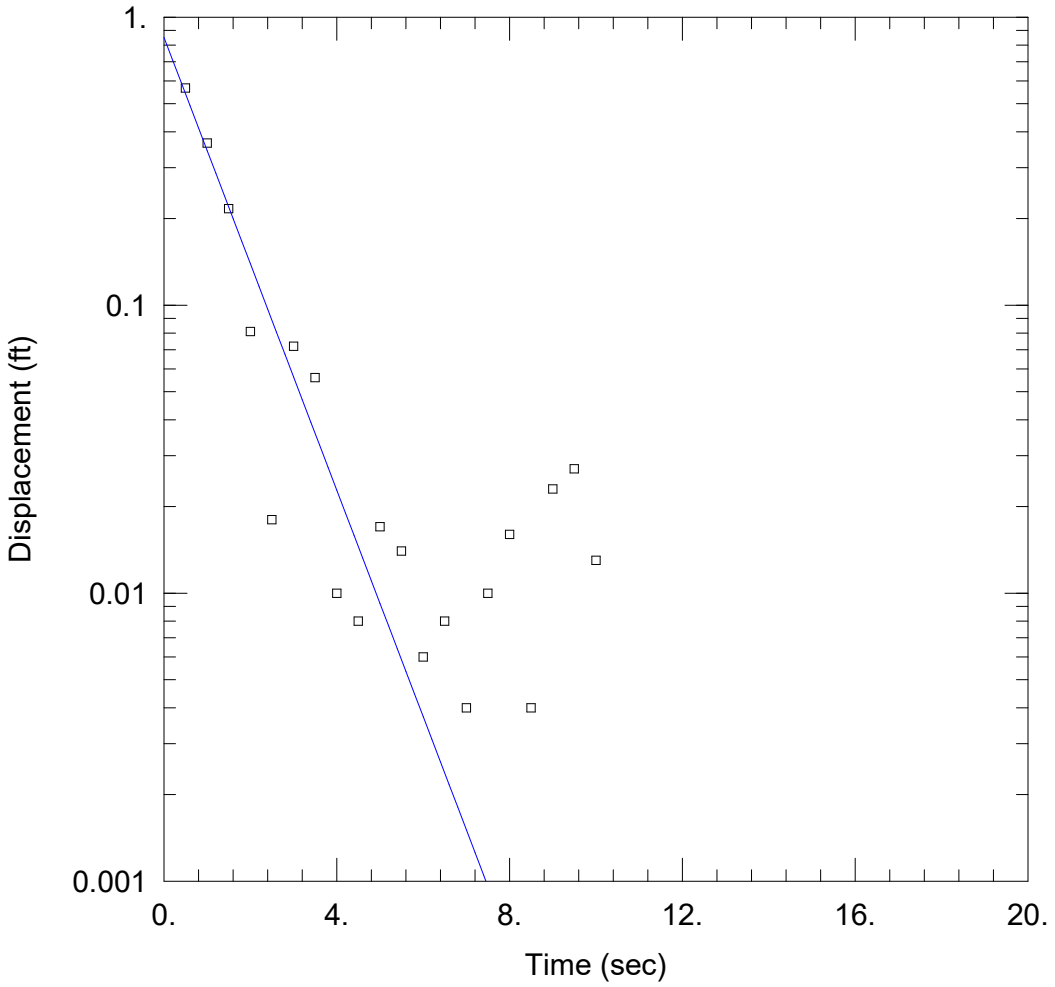
WELL DATA (AP-9B)

Initial Displacement: 0.821 ft
Total Well Penetration Depth: 17.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.01 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01182 cm/sec y0 = 0.863 ft



WELL TEST ANALYSIS

Data Set: \...\AP9I_F1.aqt
Date: 02/27/23 Time: 10:48:01

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.43 ft Anisotropy Ratio (Kz/Kr): 1.

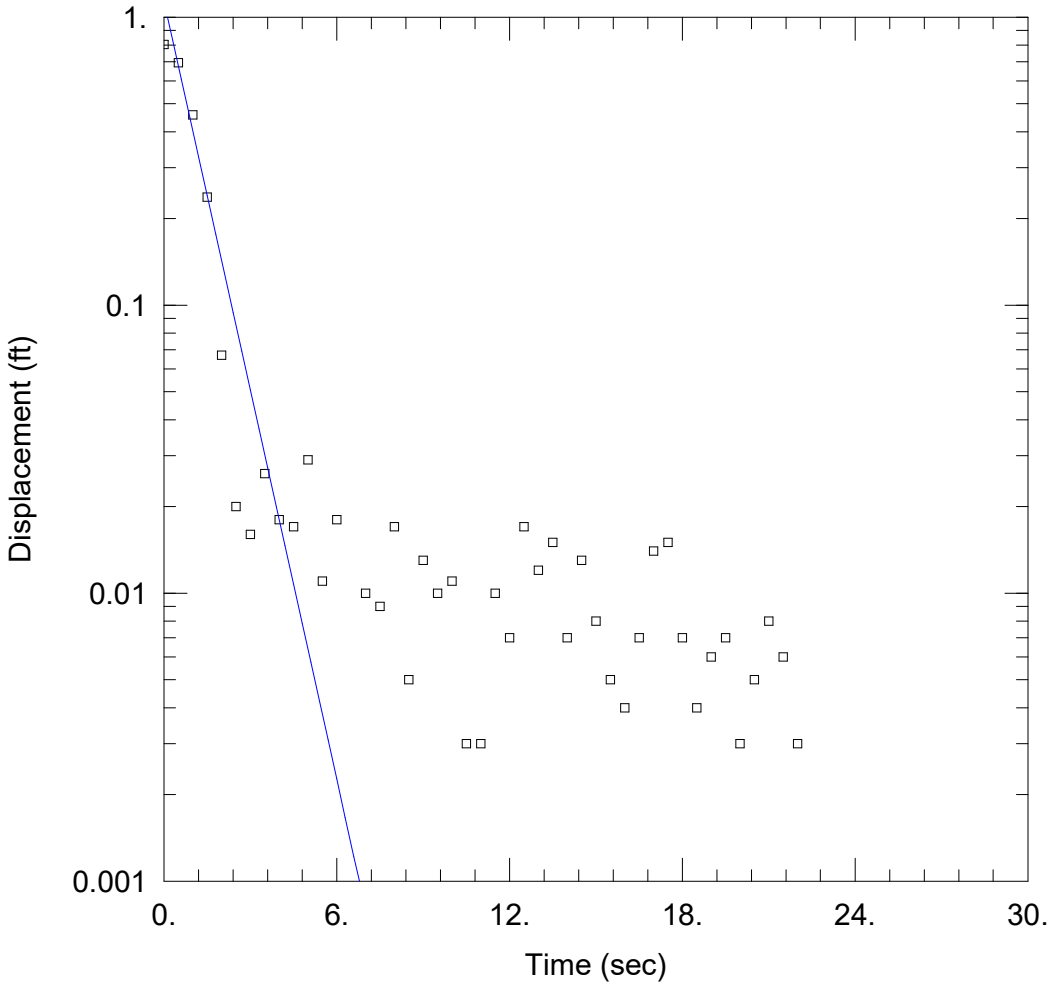
WELL DATA (AP-9I)

Initial Displacement: 5.395 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02921 cm/sec y0 = 0.8503 ft



WELL TEST ANALYSIS

Data Set: \...\AP9I_F2.aqt
Date: 02/27/23 Time: 10:49:24

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.43 ft Anisotropy Ratio (Kz/Kr): 1.

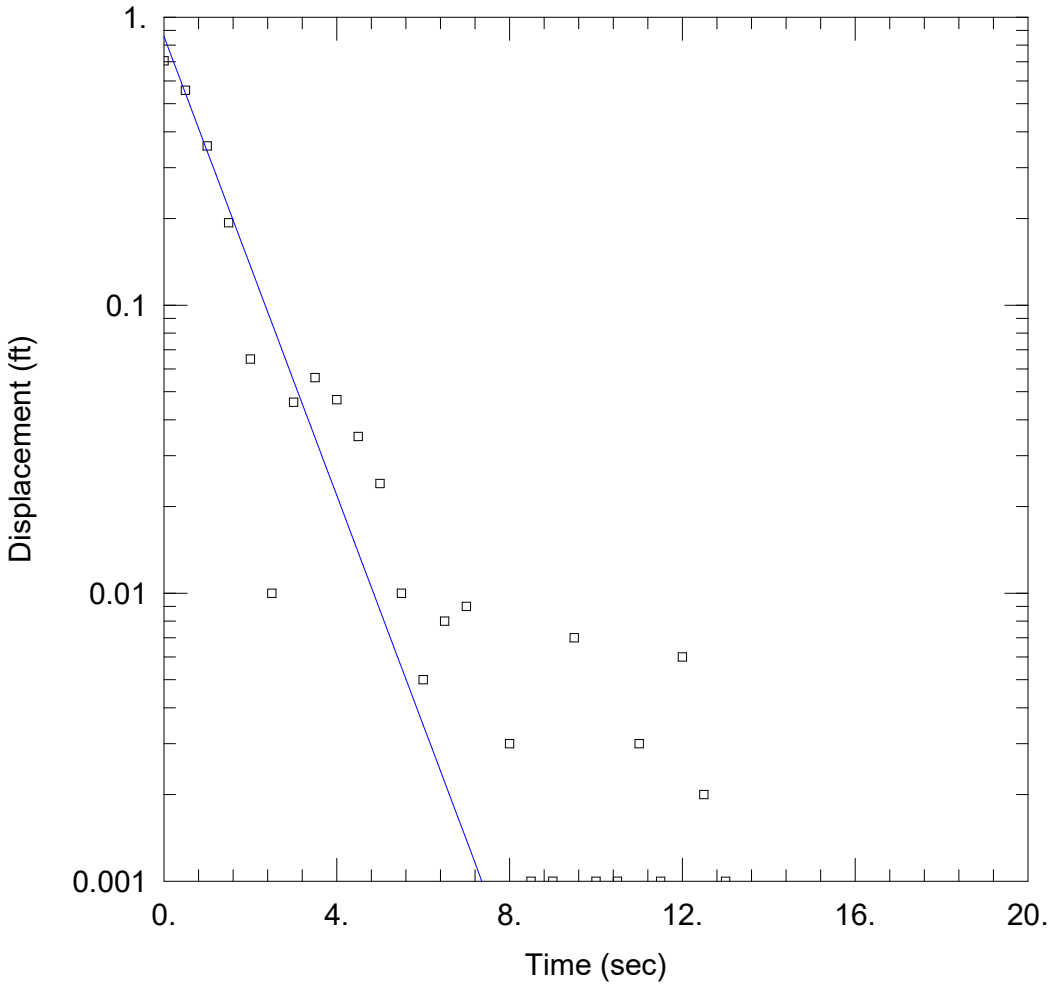
WELL DATA (AP-9I)

Initial Displacement: 0.803 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03345 cm/sec y0 = 1.136 ft



WELL TEST ANALYSIS

Data Set: \...\AP9I_R1.aqt
Date: 02/27/23 Time: 10:50:18

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.43 ft Anisotropy Ratio (Kz/Kr): 1.

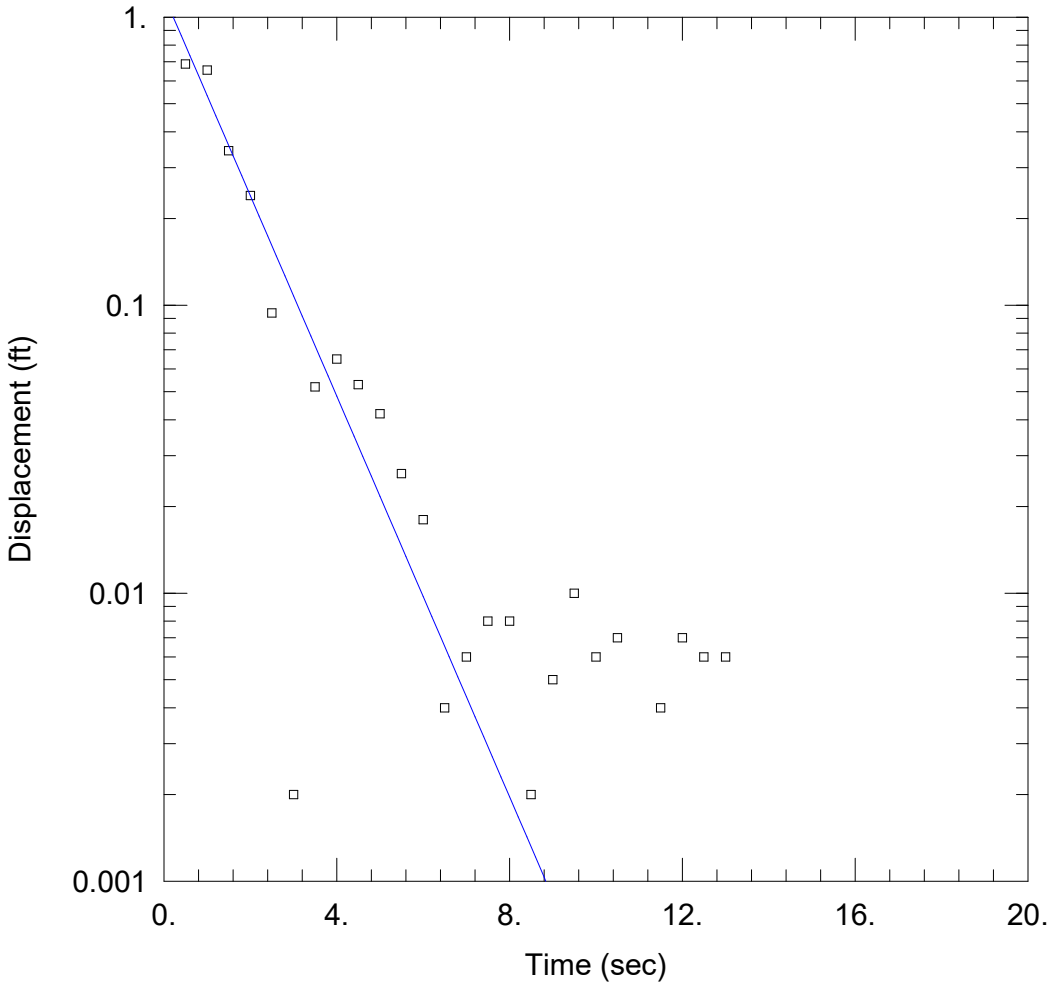
WELL DATA (AP-9I)

Initial Displacement: 0.705 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02961 cm/sec y0 = 0.8565 ft



WELL TEST ANALYSIS

Data Set: \...\AP9I_R2.aqt
Date: 02/27/23 Time: 10:50:50

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-9I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.43 ft Anisotropy Ratio (Kz/Kr): 1.

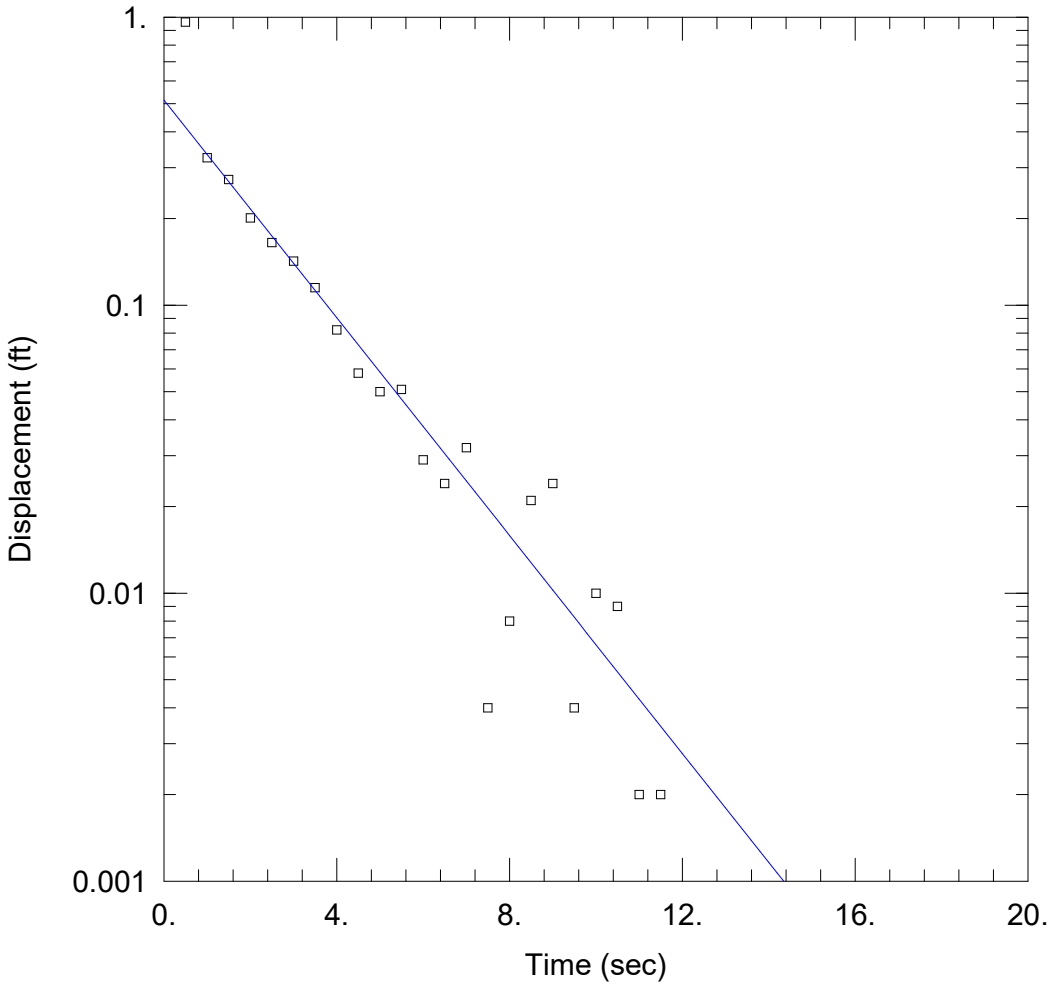
WELL DATA (AP-9I)

Initial Displacement: 1.114 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02585 cm/sec y0 = 1.189 ft



WELL TEST ANALYSIS

Data Set: \...\AP10B_F1.aqt
Date: 02/27/23 Time: 10:51:52

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.47 ft Anisotropy Ratio (Kz/Kr): 1.

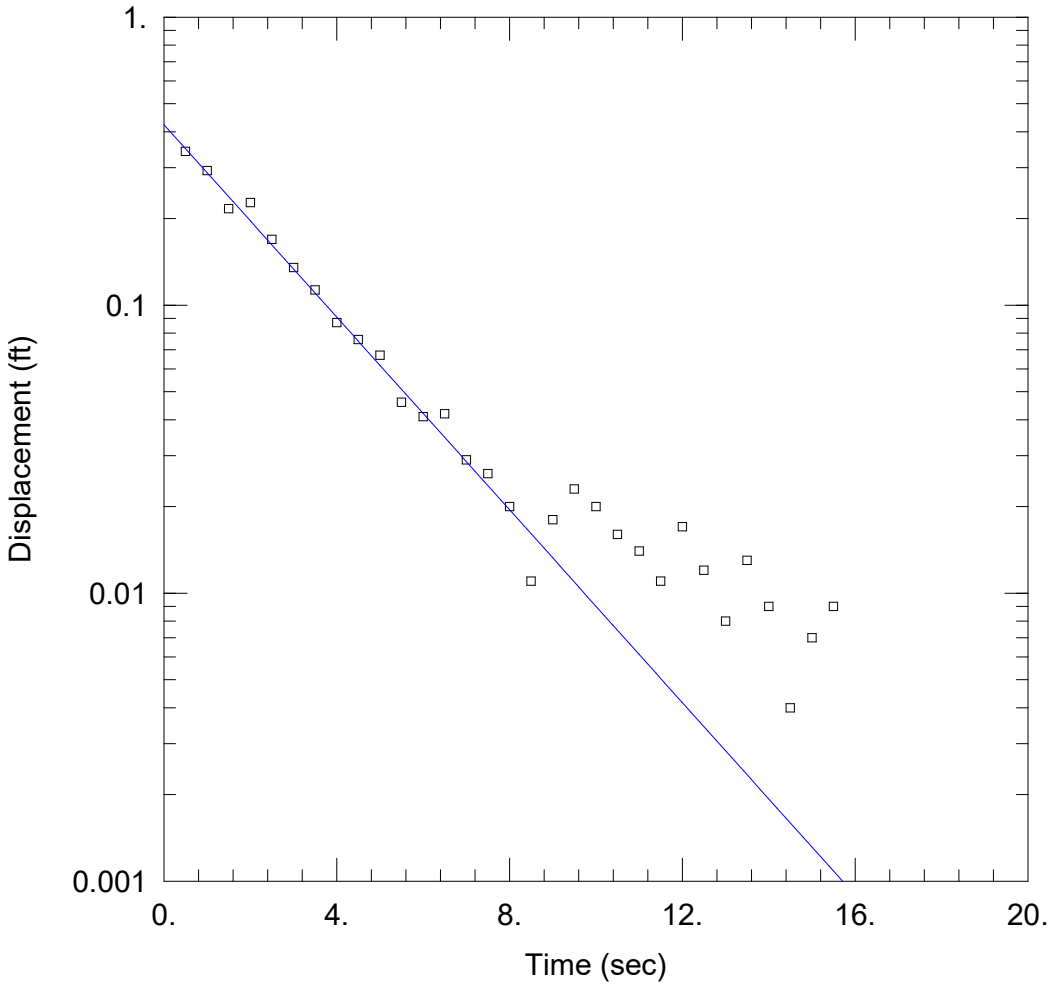
WELL DATA (AP-10B)

Initial Displacement: 1.122 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.47 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03048 cm/sec y0 = 0.5152 ft



WELL TEST ANALYSIS

Data Set: \...\AP10B_F2.aqt
Date: 02/27/23 Time: 10:52:32

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.47 ft Anisotropy Ratio (Kz/Kr): 1.

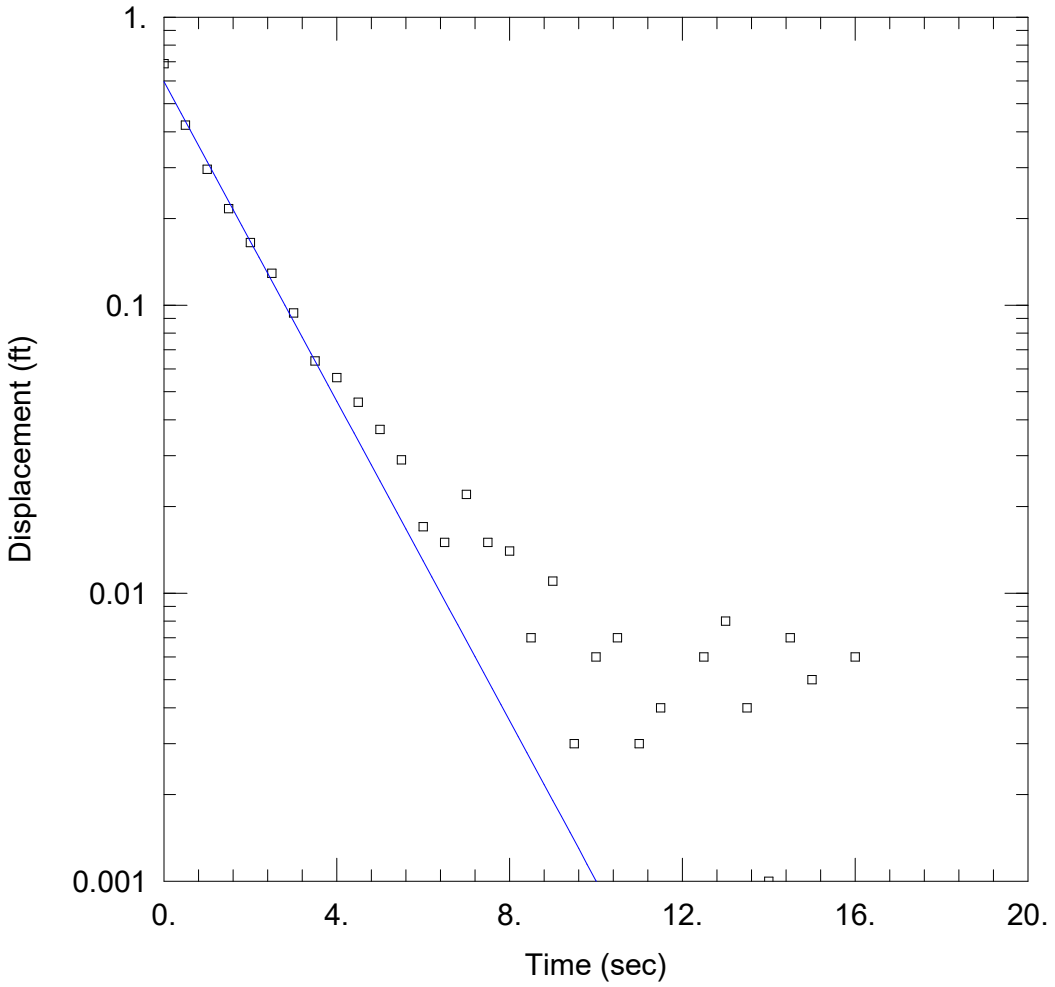
WELL DATA (AP-10B)

Initial Displacement: 1.423 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.47 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02695 cm/sec y0 = 0.4232 ft



WELL TEST ANALYSIS

Data Set: \...\AP10B_R1.aqt
Date: 02/27/23 Time: 10:53:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.47 ft Anisotropy Ratio (Kz/Kr): 1.

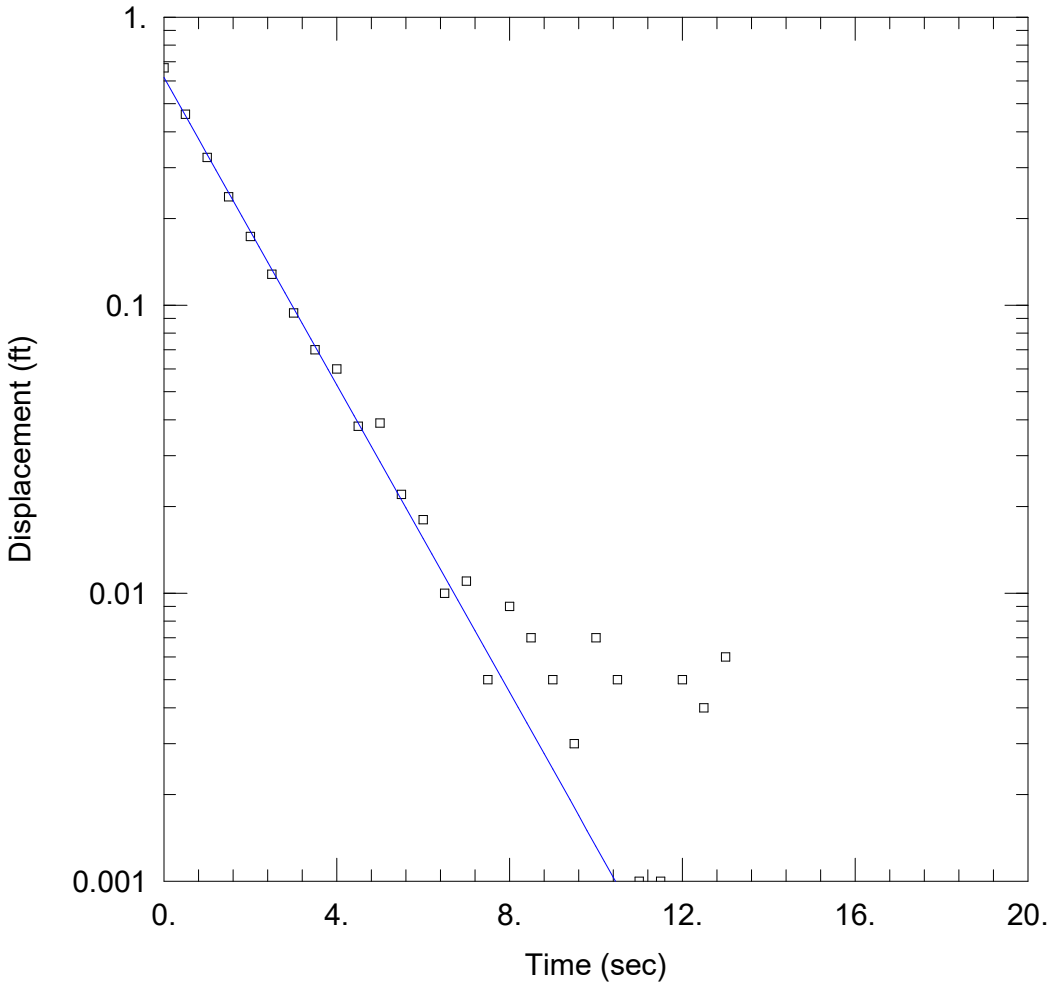
WELL DATA (AP-10B)

Initial Displacement: 0.689 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.47 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04471 cm/sec y0 = 0.5966 ft



WELL TEST ANALYSIS

Data Set: \...\AP10B_R2.aqt
Date: 02/27/23 Time: 10:53:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 12.47 ft Anisotropy Ratio (Kz/Kr): 1.

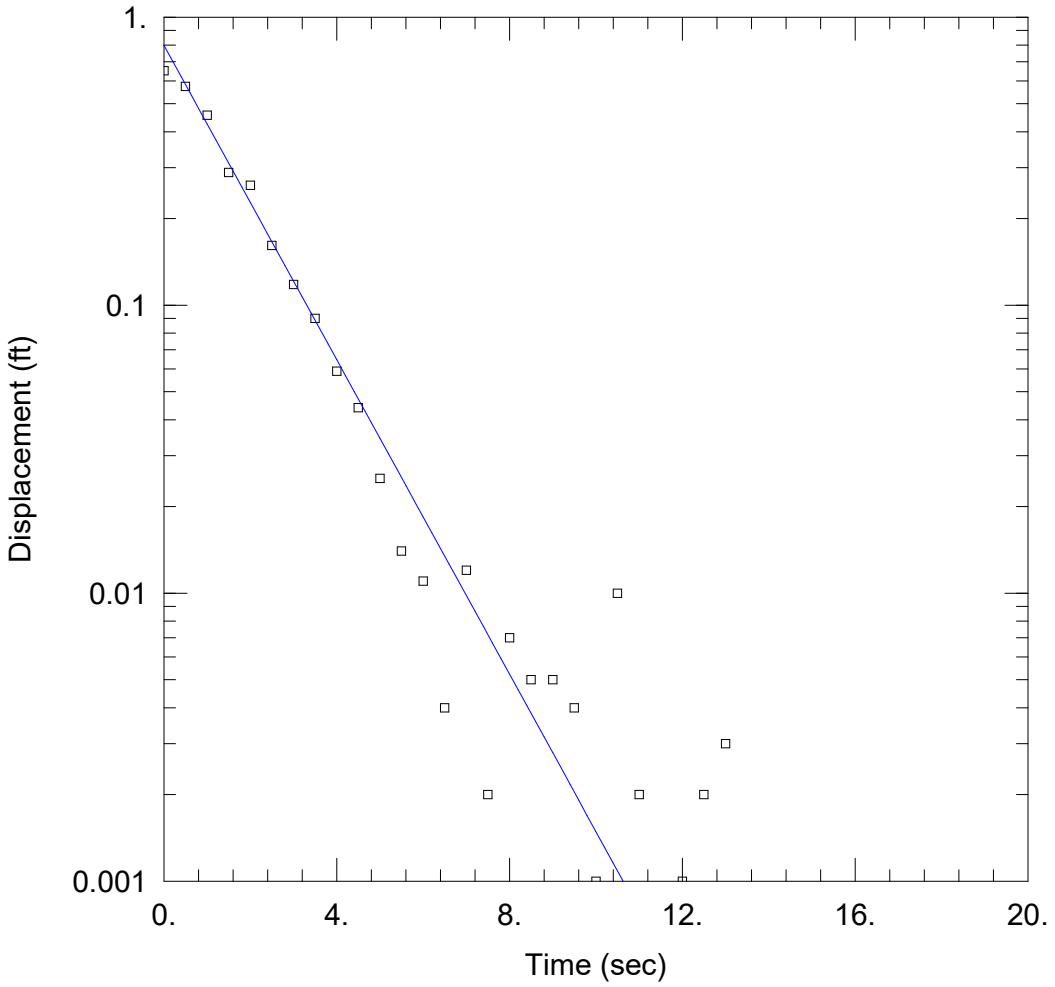
WELL DATA (AP-10B)

Initial Displacement: 0.666 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 12.47 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04302 cm/sec y0 = 0.6168 ft



WELL TEST ANALYSIS

Data Set: \...\AP10I_F1.aqt
Date: 02/27/23 Time: 10:54:18

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.38 ft Anisotropy Ratio (Kz/Kr): 1.

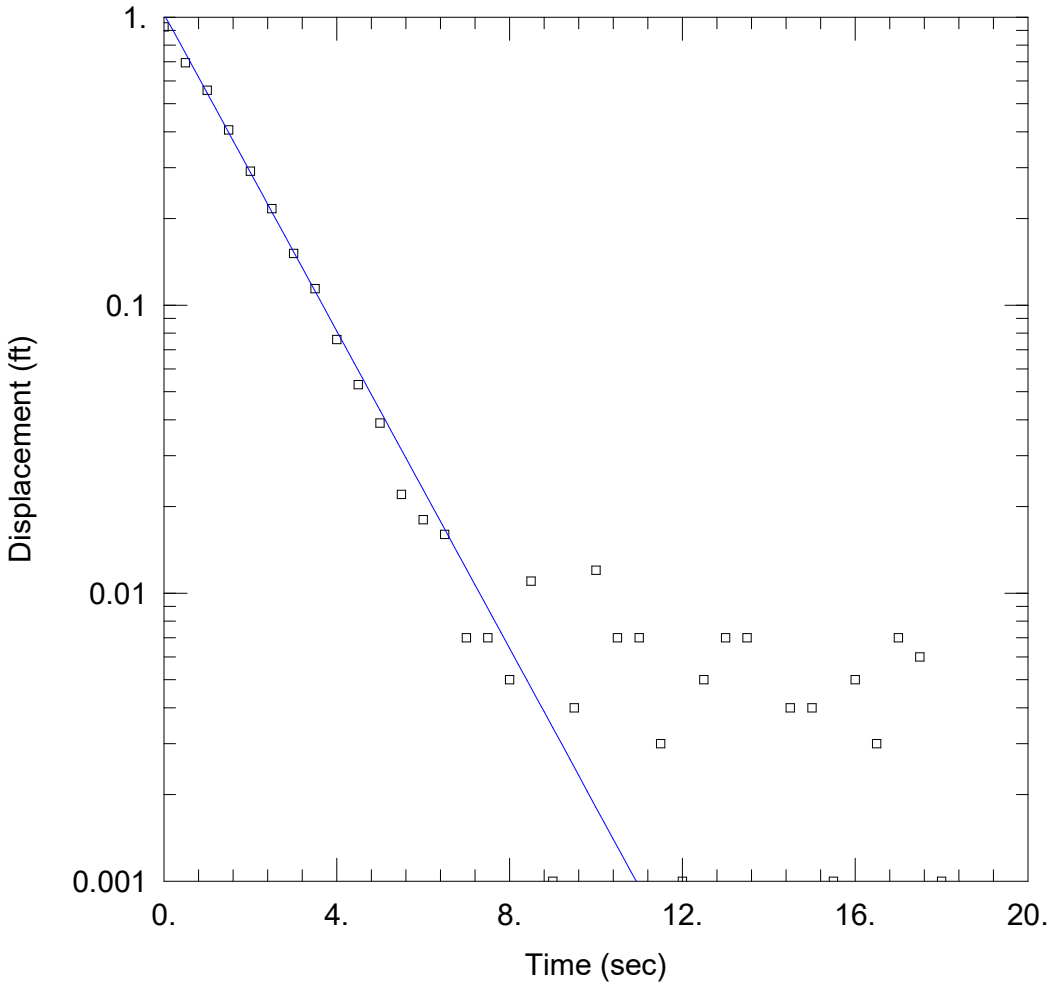
WELL DATA (AP-10I)

Initial Displacement: 0.651 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.38 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02029 cm/sec y0 = 0.7971 ft



WELL TEST ANALYSIS

Data Set: \...\AP10I_F2.aqt
Date: 02/27/23 Time: 10:54:56

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.38 ft Anisotropy Ratio (Kz/Kr): 1.

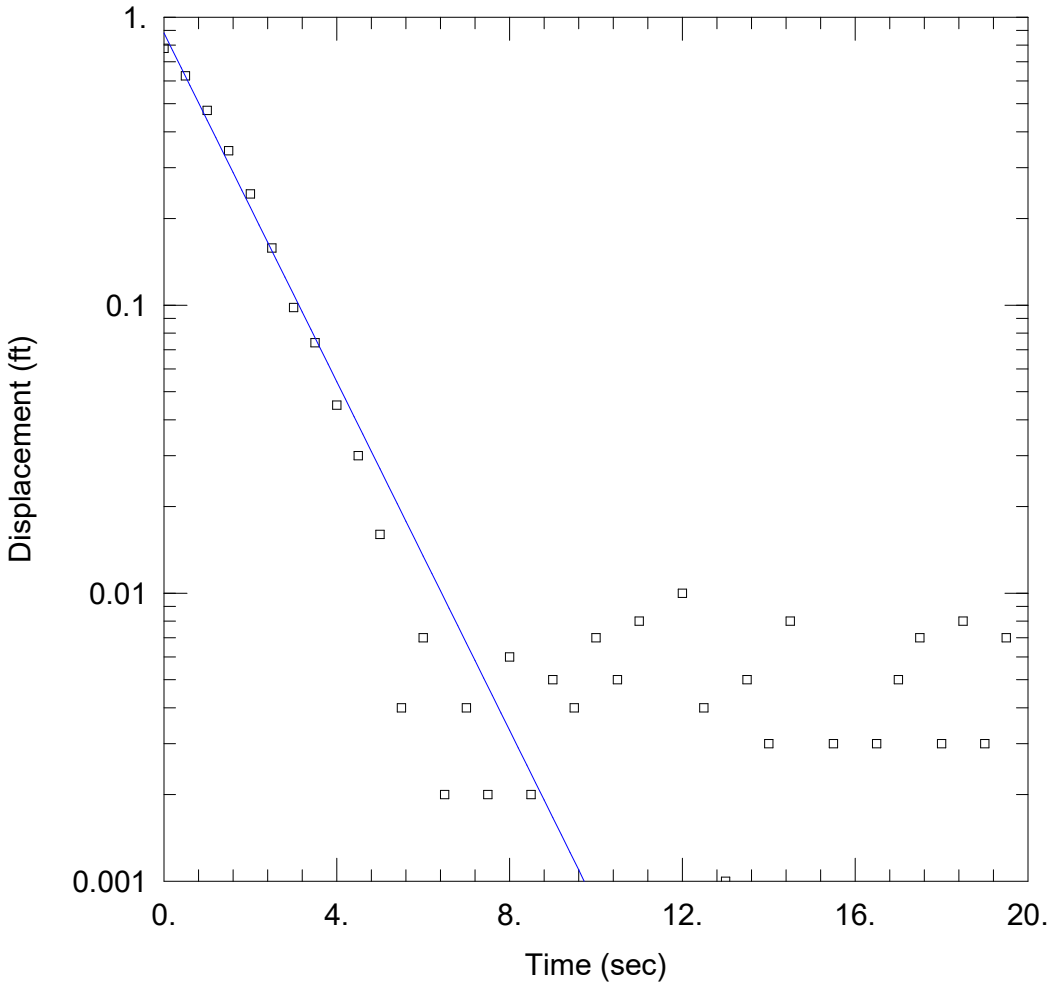
WELL DATA (AP-10I)

Initial Displacement: 0.924 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.38 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02048 cm/sec y0 = 1.027 ft



WELL TEST ANALYSIS

Data Set: \...\AP10I_R1.aqt
Date: 02/27/23 Time: 10:55:27

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.38 ft Anisotropy Ratio (Kz/Kr): 1.

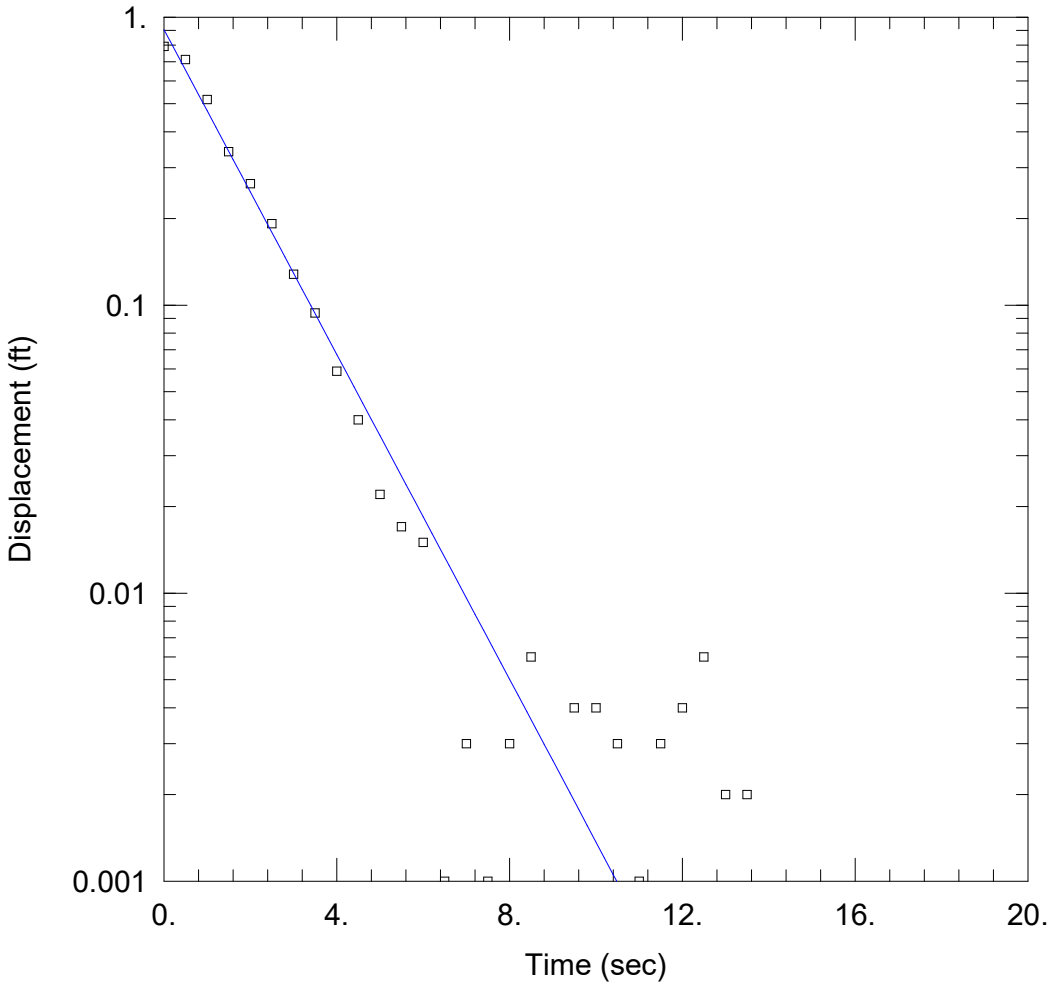
WELL DATA (AP-10I)

Initial Displacement: 0.779 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.38 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0225 cm/sec y0 = 0.8802 ft



WELL TEST ANALYSIS

Data Set: \...\AP10I_R2.aqt
Date: 02/27/23 Time: 10:56:07

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-10I
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 32.38 ft Anisotropy Ratio (Kz/Kr): 1.

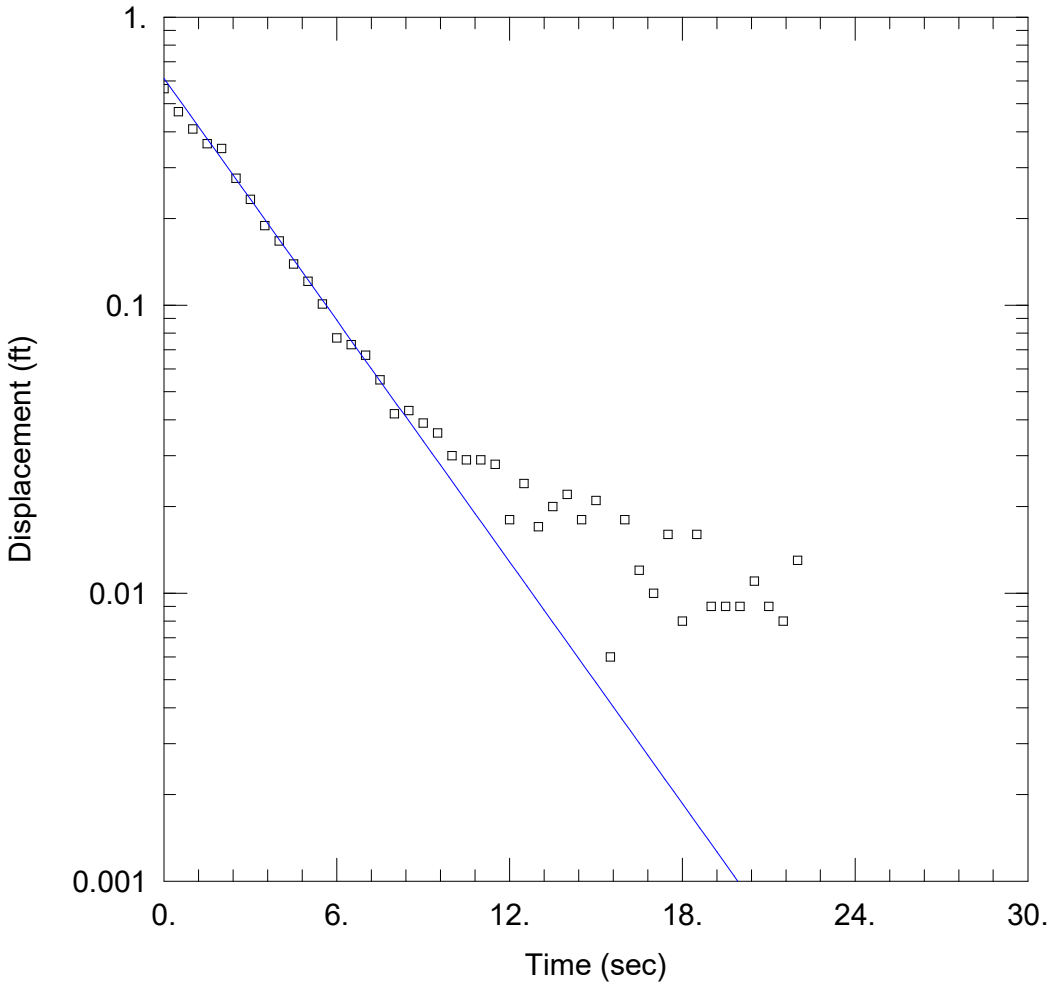
WELL DATA (AP-10I)

Initial Displacement: 0.791 ft
Total Well Penetration Depth: 29.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 32.38 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02096 cm/sec y0 = 0.905 ft



WELL TEST ANALYSIS

Data Set: \...\AP11B_F1.aqt
Date: 02/27/23 Time: 10:56:47

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11B
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 20.13 ft Anisotropy Ratio (Kz/Kr): 1.

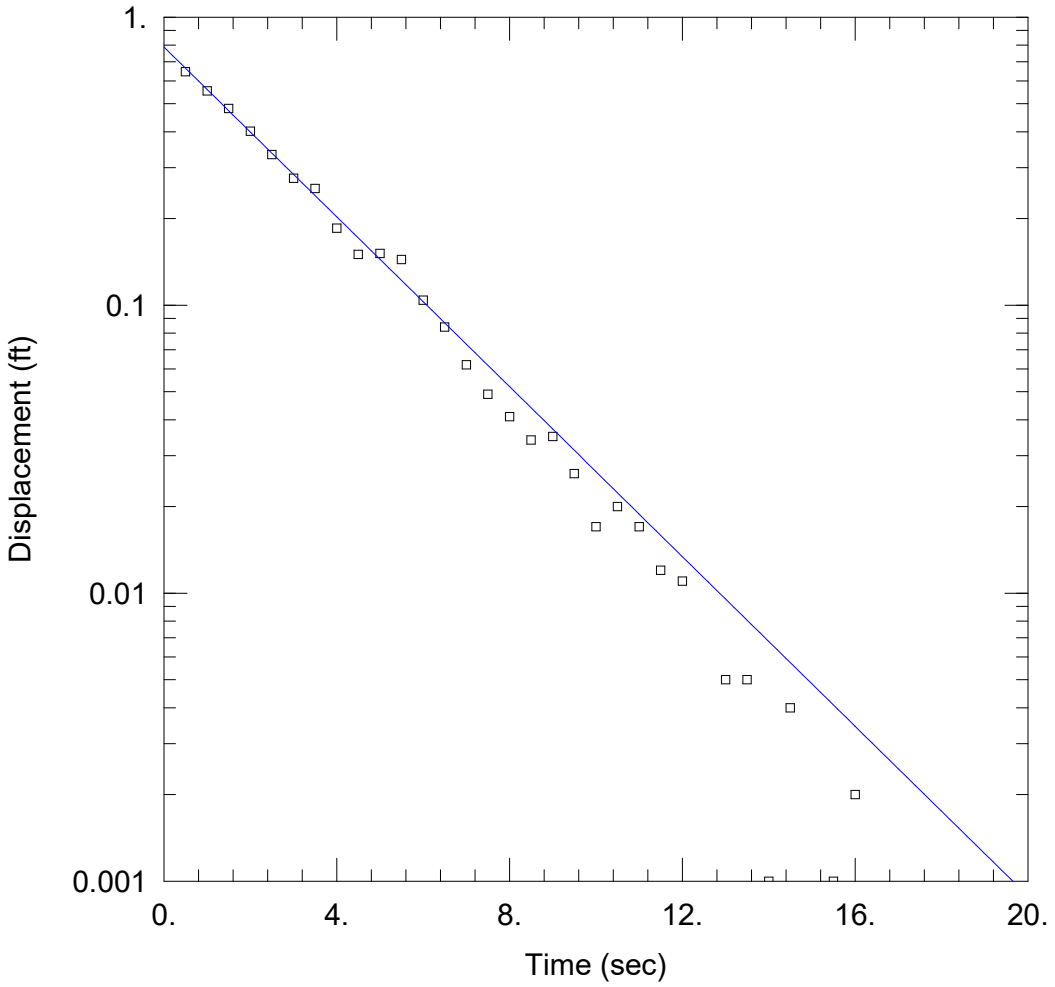
WELL DATA (AP-11B)

Initial Displacement: 0.564 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.13 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01662 cm/sec y0 = 0.613 ft



WELL TEST ANALYSIS

Data Set: \...\AP11B_F2.aqt
Date: 02/27/23 Time: 10:57:42

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11B
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 20.13 ft Anisotropy Ratio (Kz/Kr): 1.

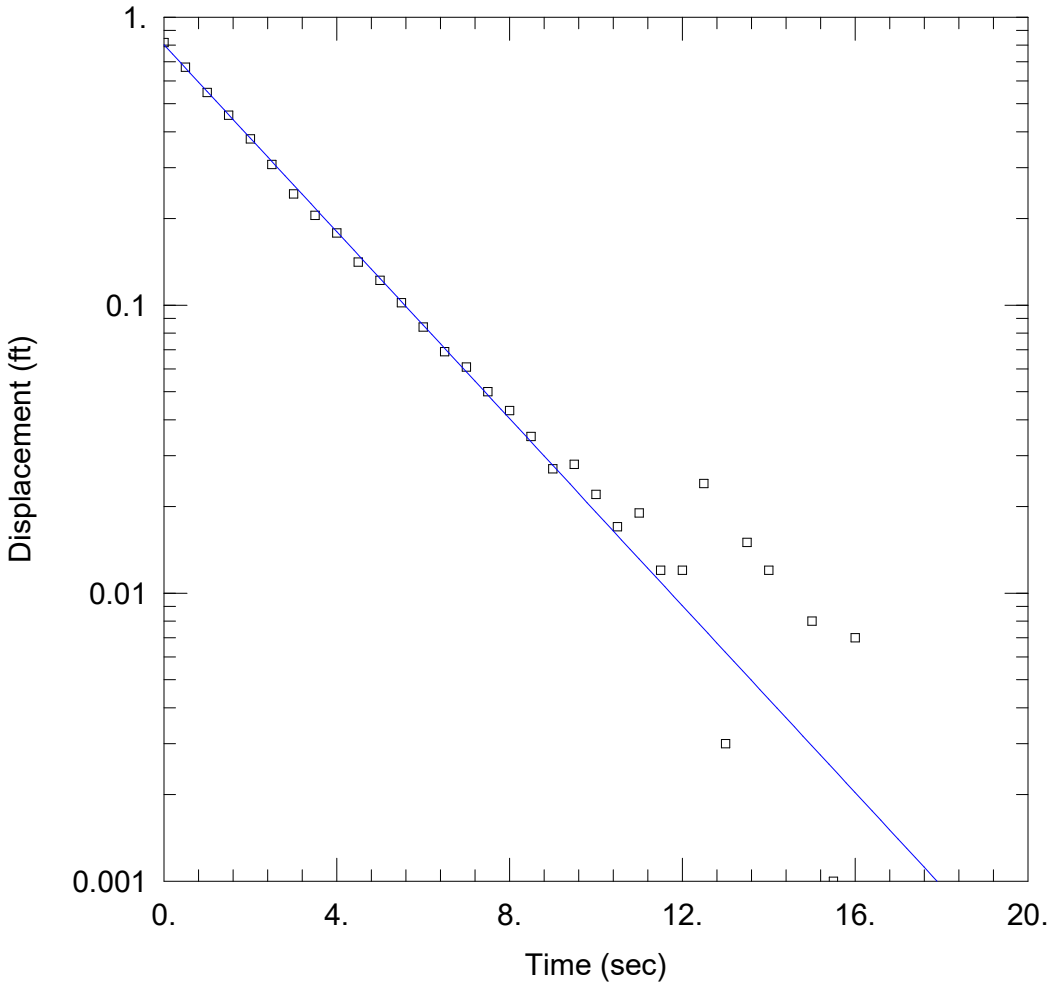
WELL DATA (AP-11B)

Initial Displacement: 1.18 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.13 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01751 cm/sec y0 = 0.7865 ft



WELL TEST ANALYSIS

Data Set: \...\AP11B_R1.aqt
Date: 02/27/23 Time: 10:58:14

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11B
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 20.13 ft Anisotropy Ratio (Kz/Kr): 1.

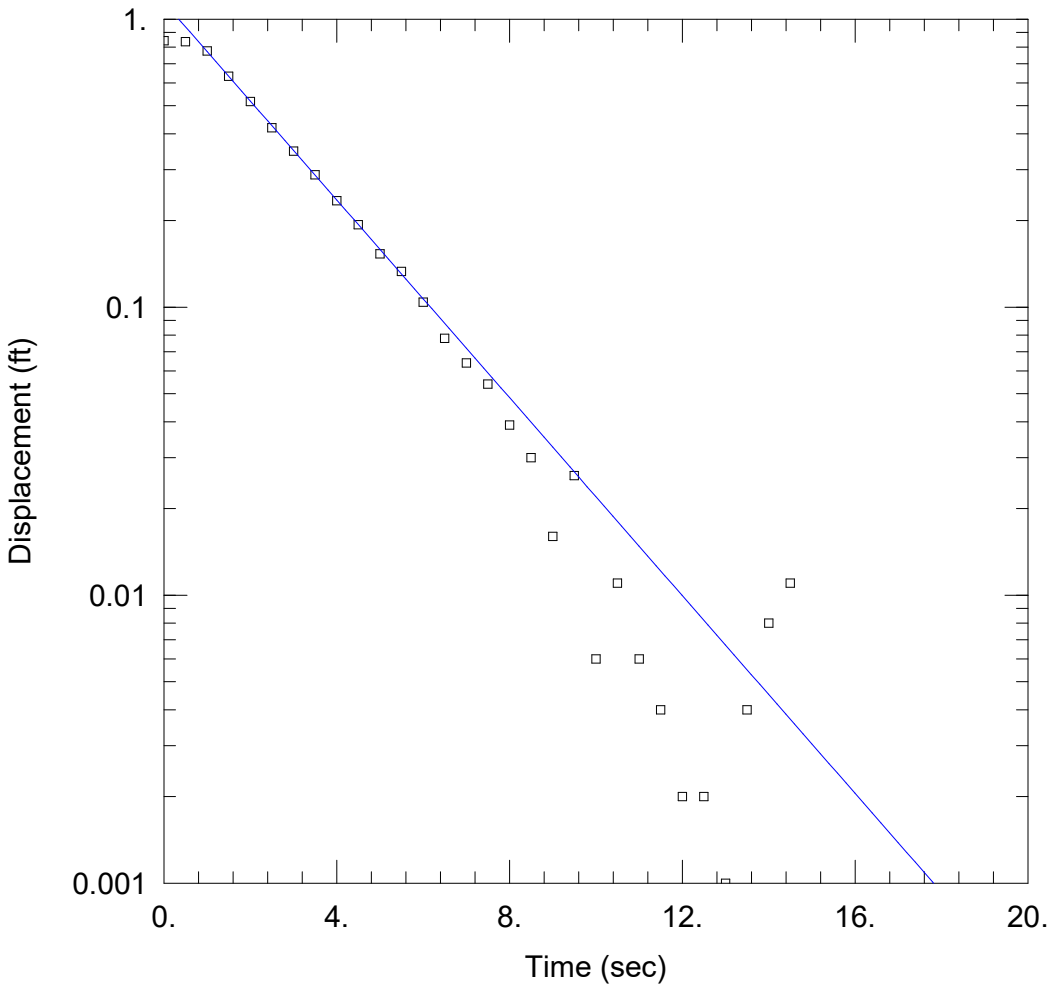
WELL DATA (AP-11B)

Initial Displacement: 0.816 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.13 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01927 cm/sec y0 = 0.8015 ft



WELL TEST ANALYSIS

Data Set: \...\AP11B_R2.aqt
Date: 02/27/23 Time: 10:58:44

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11B
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 20.13 ft Anisotropy Ratio (Kz/Kr): 1.

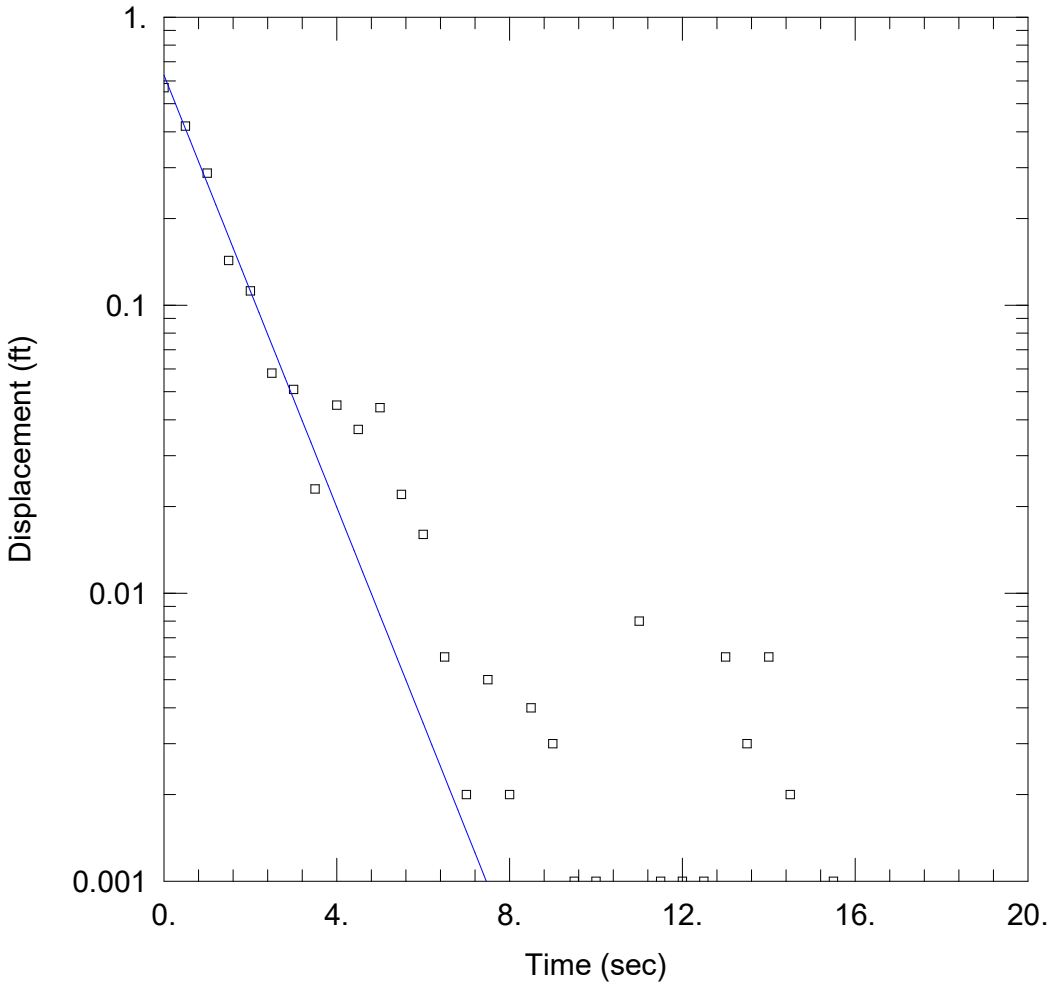
WELL DATA (AP-11B)

Initial Displacement: 0.841 ft
Total Well Penetration Depth: 17.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.13 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02039 cm/sec y0 = 1.144 ft



WELL TEST ANALYSIS

Data Set: \...\AP11I_F1.aqt
Date: 02/27/23 Time: 10:59:10

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11I
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 30.96 ft Anisotropy Ratio (Kz/Kr): 1.

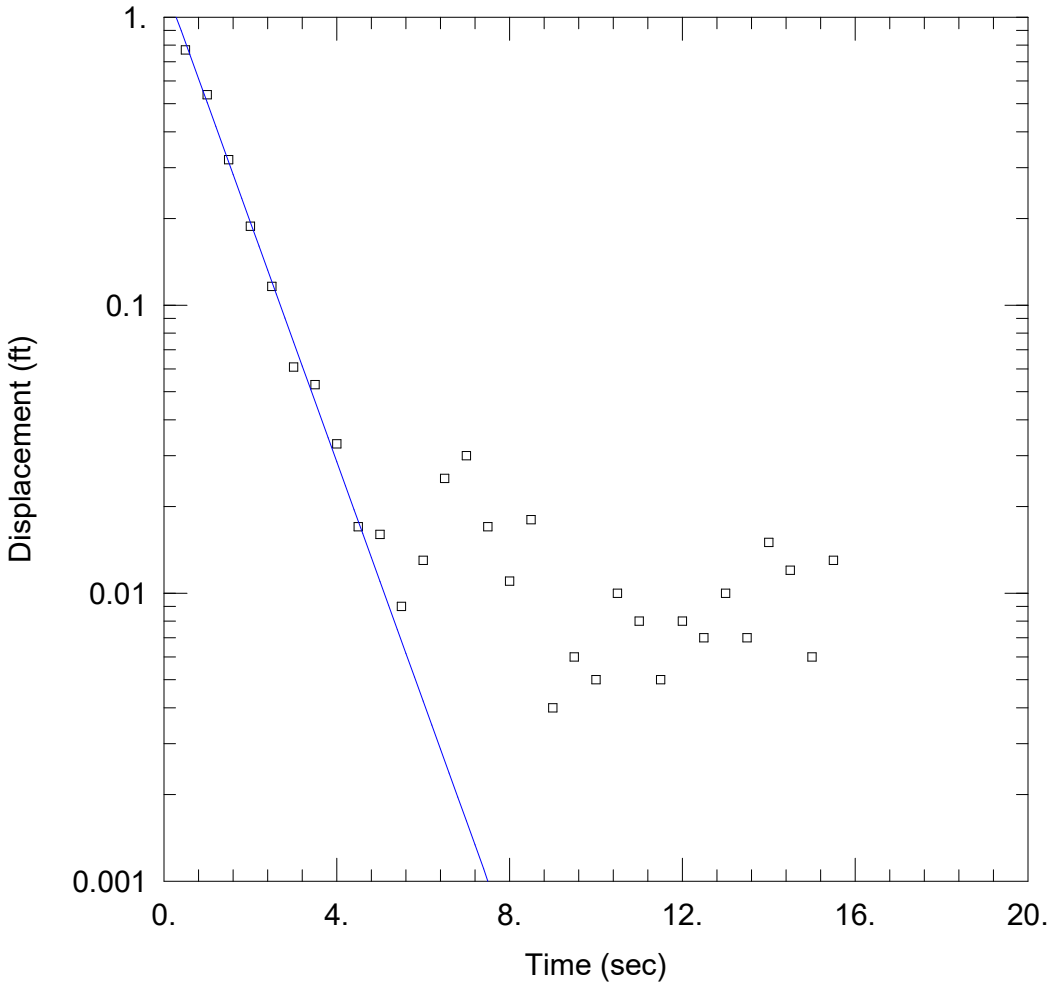
WELL DATA (AP-11I)

Initial Displacement: 0.569 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.96 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02769 cm/sec y0 = 0.6289 ft



WELL TEST ANALYSIS

Data Set: \...\AP11I_F2.aqt
Date: 02/27/23 Time: 10:59:32

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11I
Test Date: 2/21/22

AQUIFER DATA

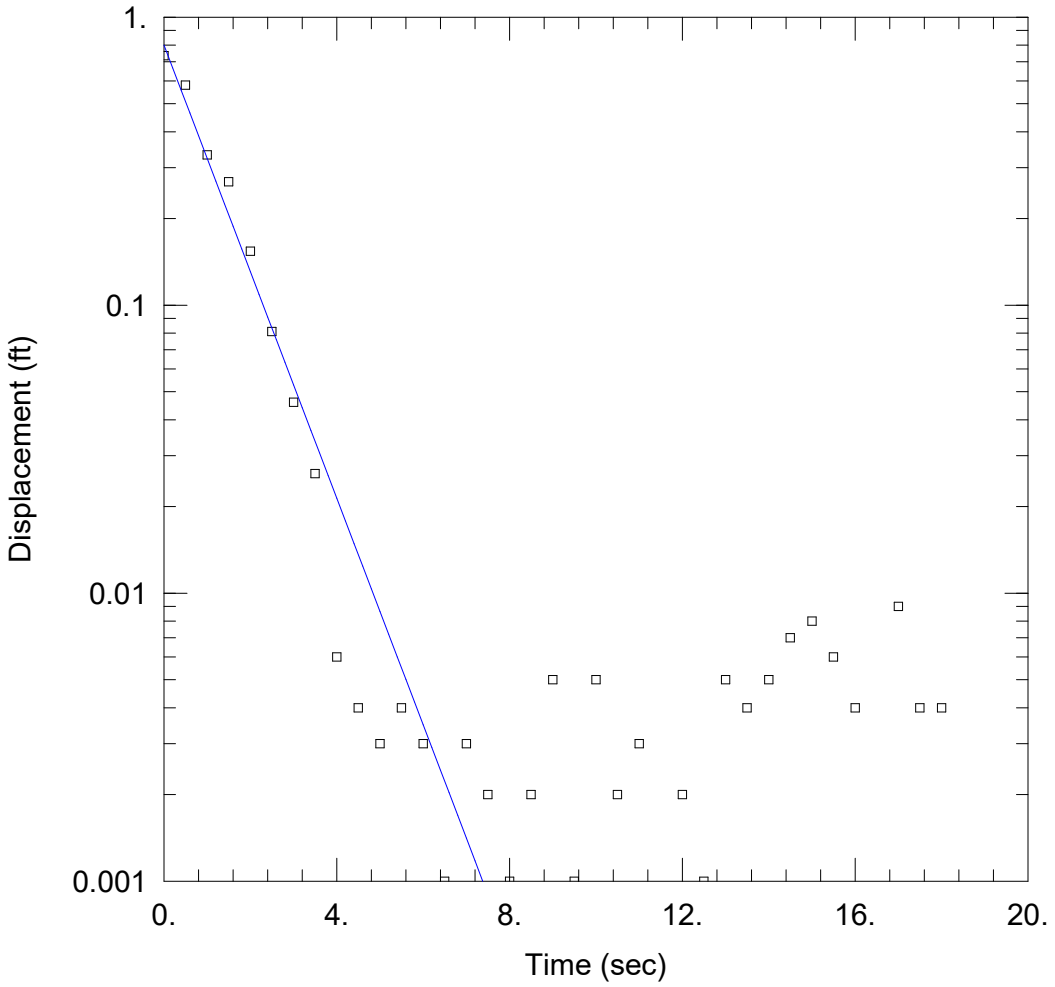
Saturated Thickness: 30.96 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (AP-11I)

Initial Displacement: 1.087 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.96 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0307 cm/sec
y0 = 1.316 ft



WELL TEST ANALYSIS

Data Set: \...\AP11I_R1.aqt
Date: 02/28/23 Time: 09:24:39

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11I
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 30.96 ft Anisotropy Ratio (Kz/Kr): 1.

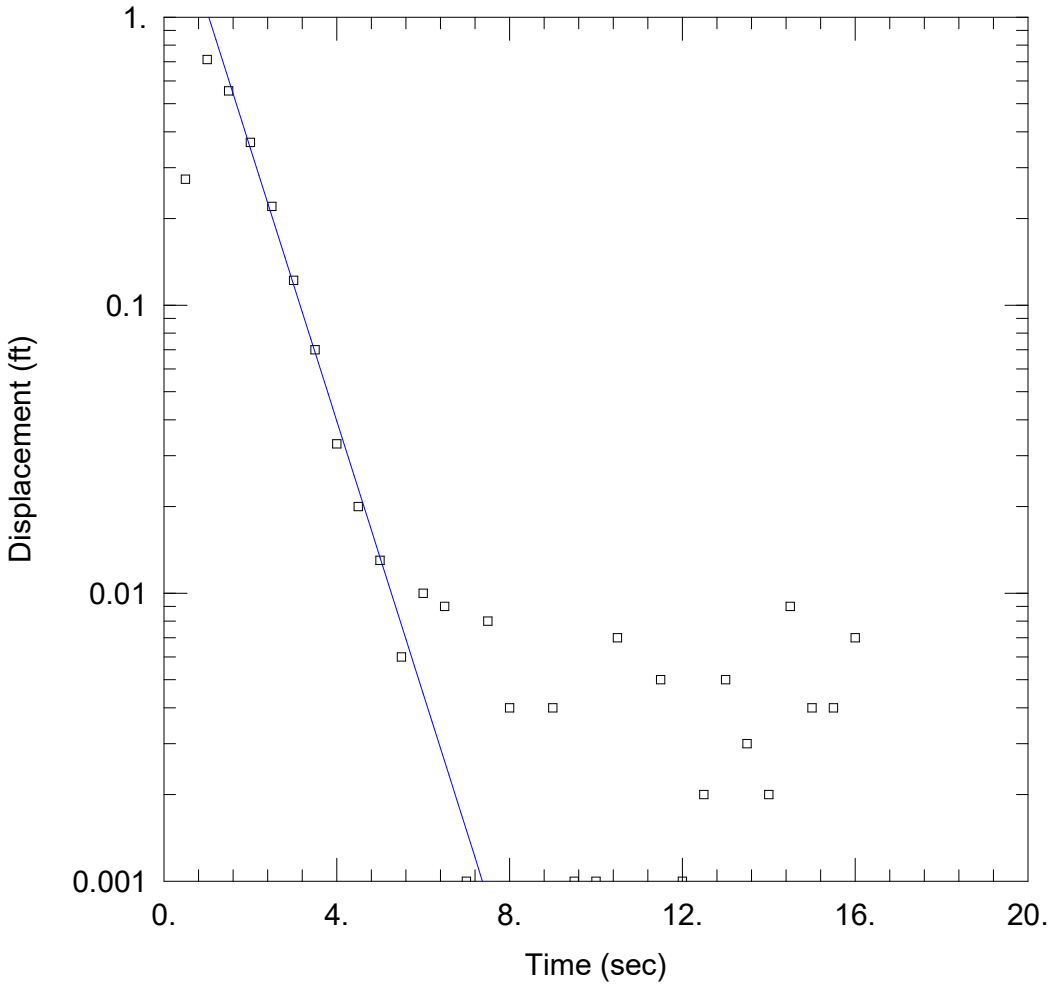
WELL DATA (AP-11I)

Initial Displacement: 0.735 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.96 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02904 cm/sec y0 = 0.7994 ft



WELL TEST ANALYSIS

Data Set: \...\AP11I_R2.aqt
Date: 02/27/23 Time: 11:00:54

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: AP-11I
Test Date: 2/21/22

AQUIFER DATA

Saturated Thickness: 30.96 ft Anisotropy Ratio (Kz/Kr): 1.

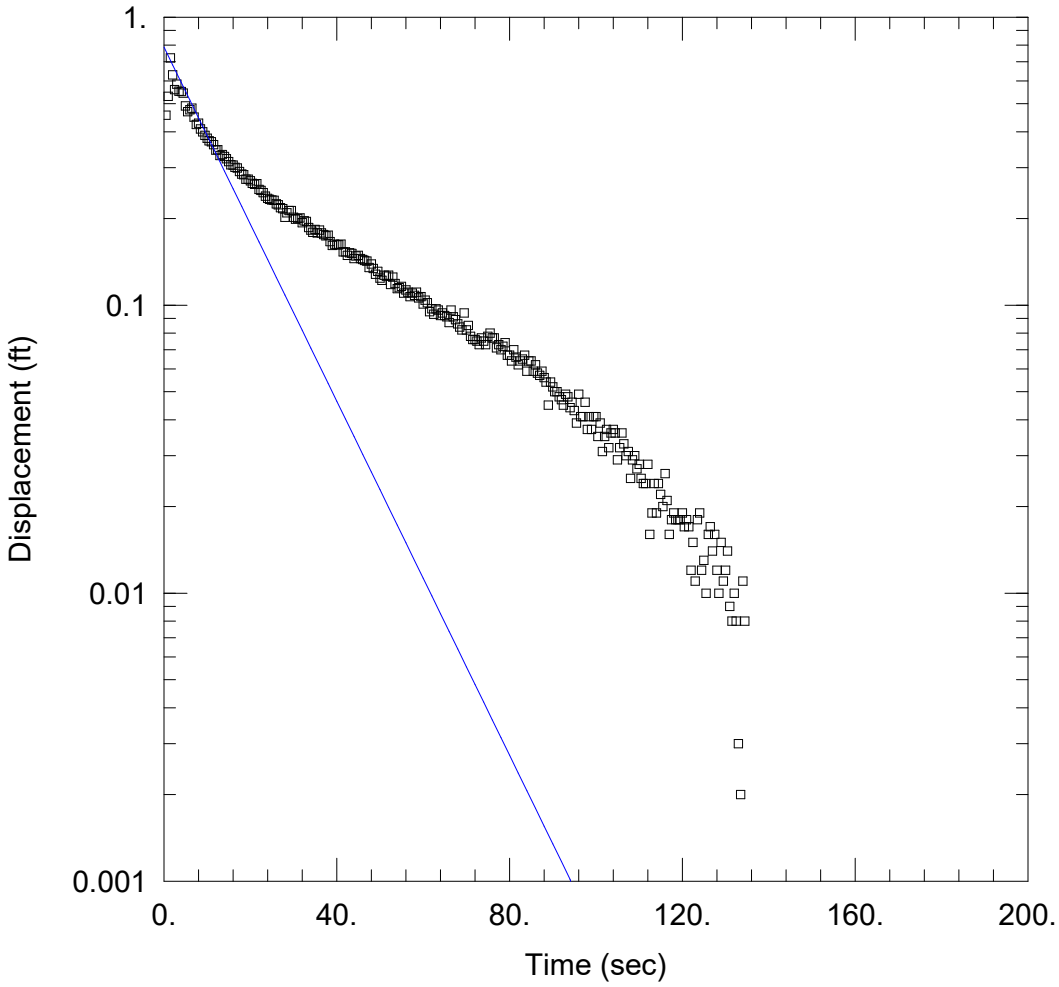
WELL DATA (AP-11I)

Initial Displacement: 2.052 ft
Total Well Penetration Depth: 28. ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.96 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.03495 cm/sec
y0 = 3.099 ft



WELL TEST ANALYSIS

Data Set: \...\MW15B_F1.aqt
Date: 02/27/23 Time: 11:01:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-15B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 20.65 ft Anisotropy Ratio (Kz/Kr): 1.

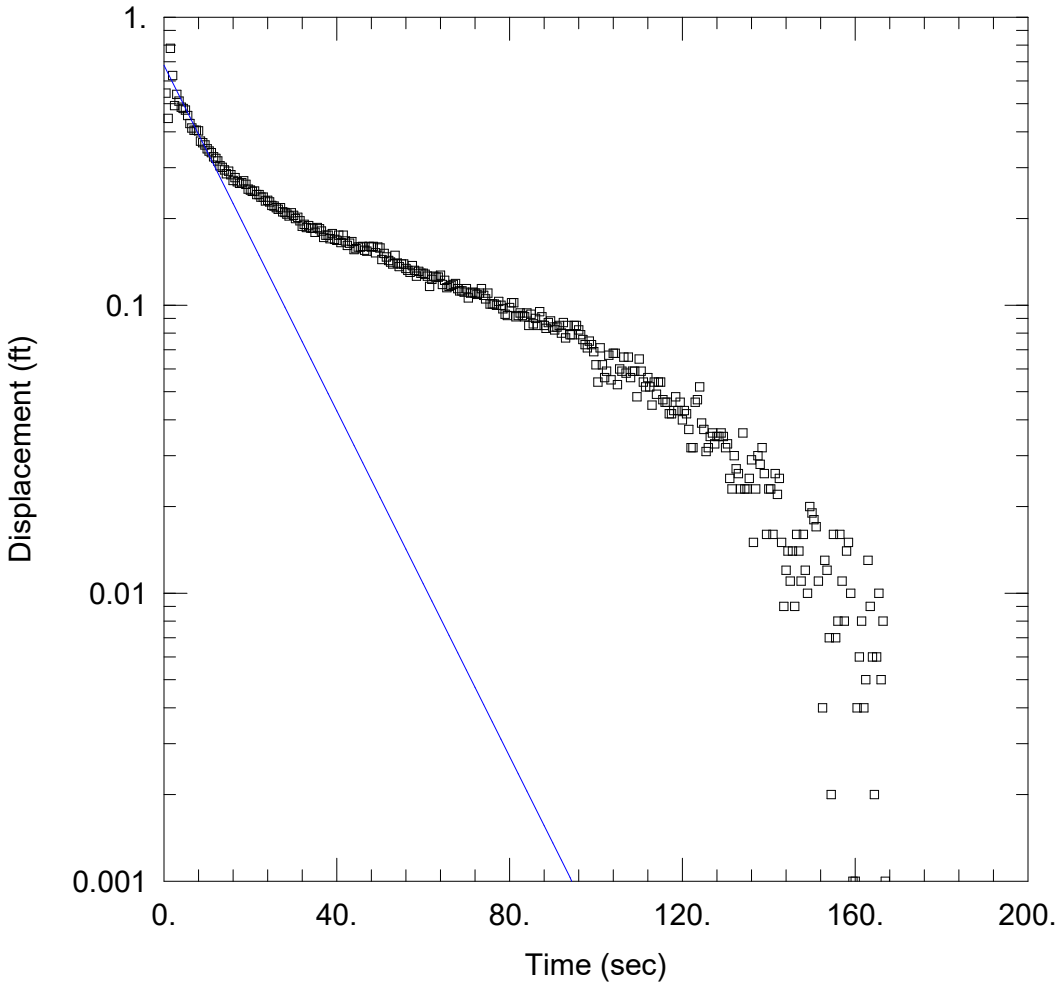
WELL DATA (MW-15B)

Initial Displacement: 1.131 ft
Total Well Penetration Depth: 17.7 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.65 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002109 cm/sec y0 = 0.7867 ft



WELL TEST ANALYSIS

Data Set: \...\MW15B_F2.aqt
Date: 02/27/23 Time: 11:01:55

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-15B
Test Date: 2/22/22

AQUIFER DATA

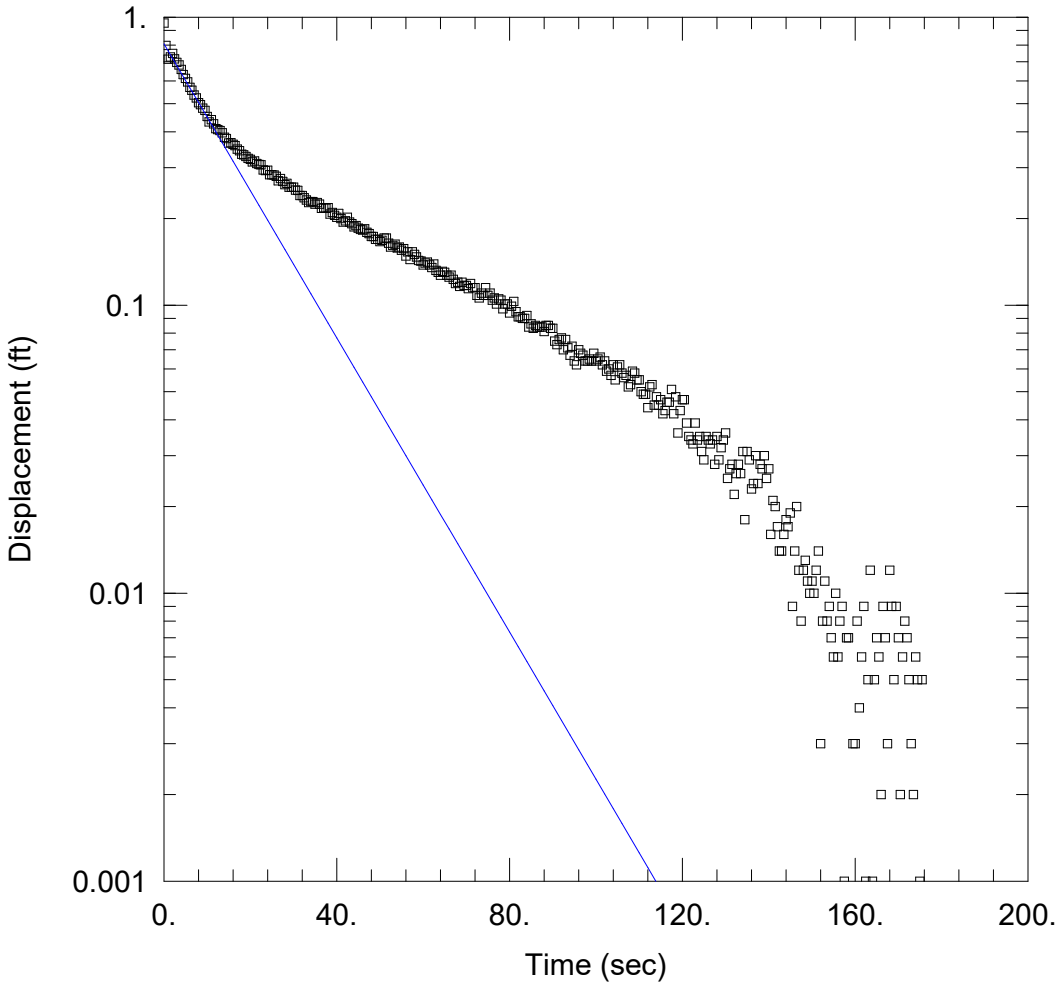
Saturated Thickness: 20.65 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-15B)

Initial Displacement: 1.247 ft
Total Well Penetration Depth: 17.7 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.65 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.002059 cm/sec
y0 = 0.6813 ft



WELL TEST ANALYSIS

Data Set: \...\MW15B_R1.aqt
Date: 02/27/23 Time: 11:02:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-15B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 20.65 ft Anisotropy Ratio (Kz/Kr): 1.

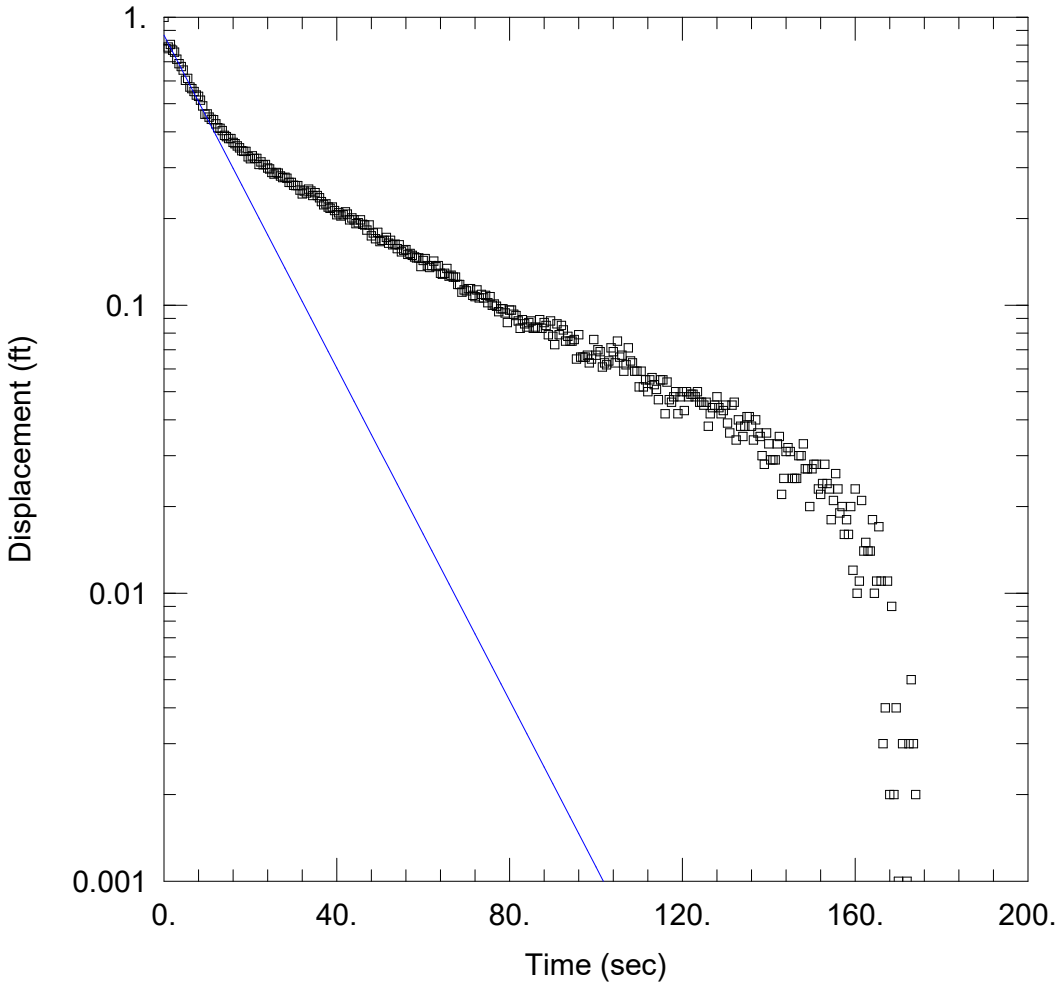
WELL DATA (MW-15B)

Initial Displacement: 0.954 ft
Total Well Penetration Depth: 17.7 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.65 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.001752 cm/sec
y0 = 0.8085 ft



WELL TEST ANALYSIS

Data Set: \...\MW15B_R2.aqt
Date: 02/27/23 Time: 11:02:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-15B
Test Date: 2/22/22

AQUIFER DATA

Saturated Thickness: 20.65 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-15B)

Initial Displacement: 0.998 ft
Total Well Penetration Depth: 17.7 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 20.65 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

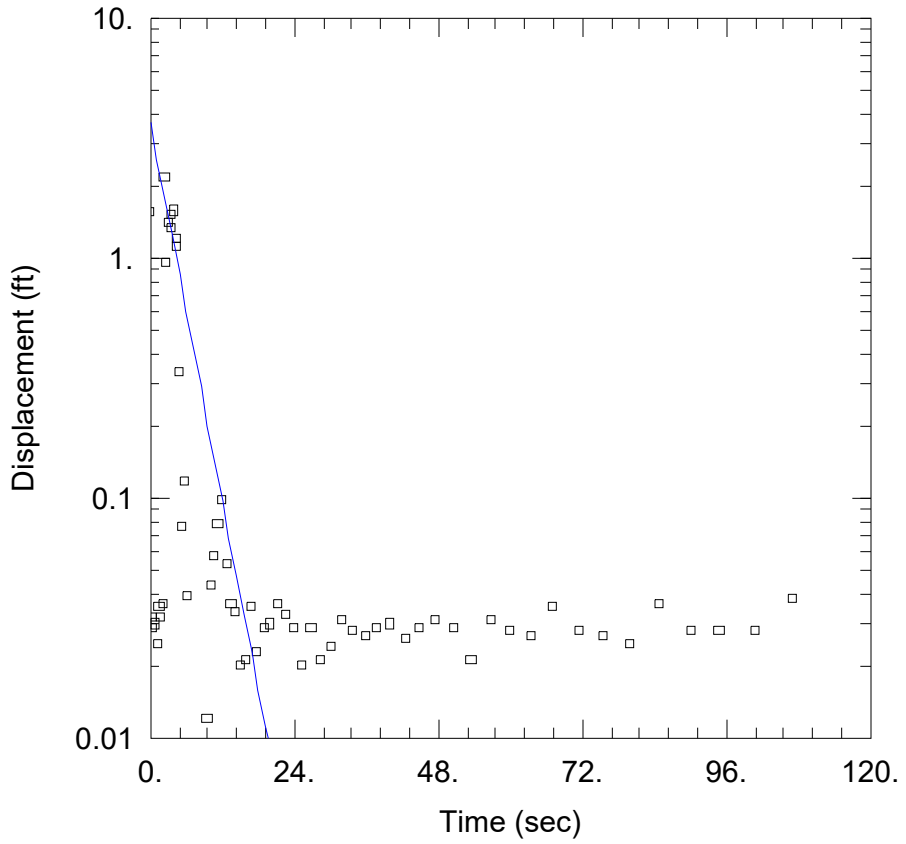
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001981 cm/sec
y0 = 0.8649 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00746

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, ft/min	K, cm/sec
AP-11A	Falling Head	0.083	0.33	10	44.50	32.85	2.28E-02	1.16E-02
	Rising Head					36.48	2.53E-02	1.29E-02
IAPZ-1	Falling Head	0.083	0.33	10	9.67	1.67	1.16E-03	5.88E-04
	Rising Head					1.65	1.15E-03	5.82E-04
					Average	18.16	1.26E-02	6.41E-03

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



AP-11A FALLING HEAD

Data Set: G:\...\AP-11A Falling Head.aqt
Date: 10/07/19 Time: 15:15:15

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-11A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

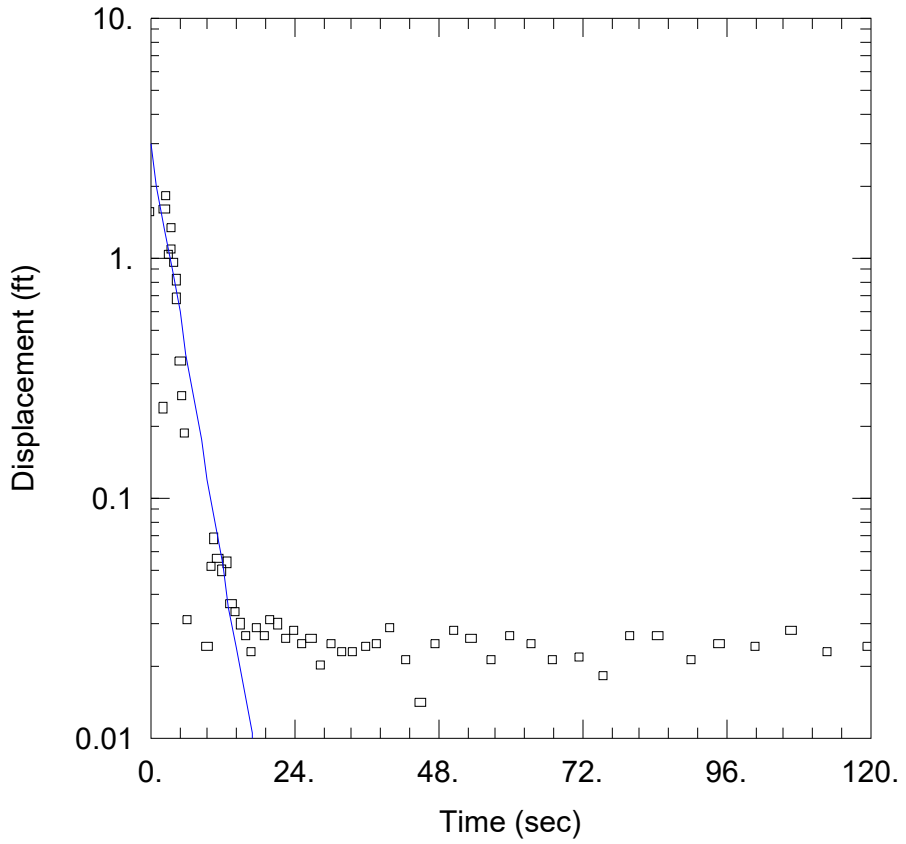
K = 0.01159 cm/sec
y0 = 3.708 ft

AQUIFER DATA

Saturated Thickness: 44.5 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.58 ft
Total Well Penetration Depth: 63.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 46.9 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



AP-11A RISING HEAD

Data Set: G:\...\AP-11A Rising Head.aqt
Date: 10/07/19 Time: 15:14:59

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-11A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

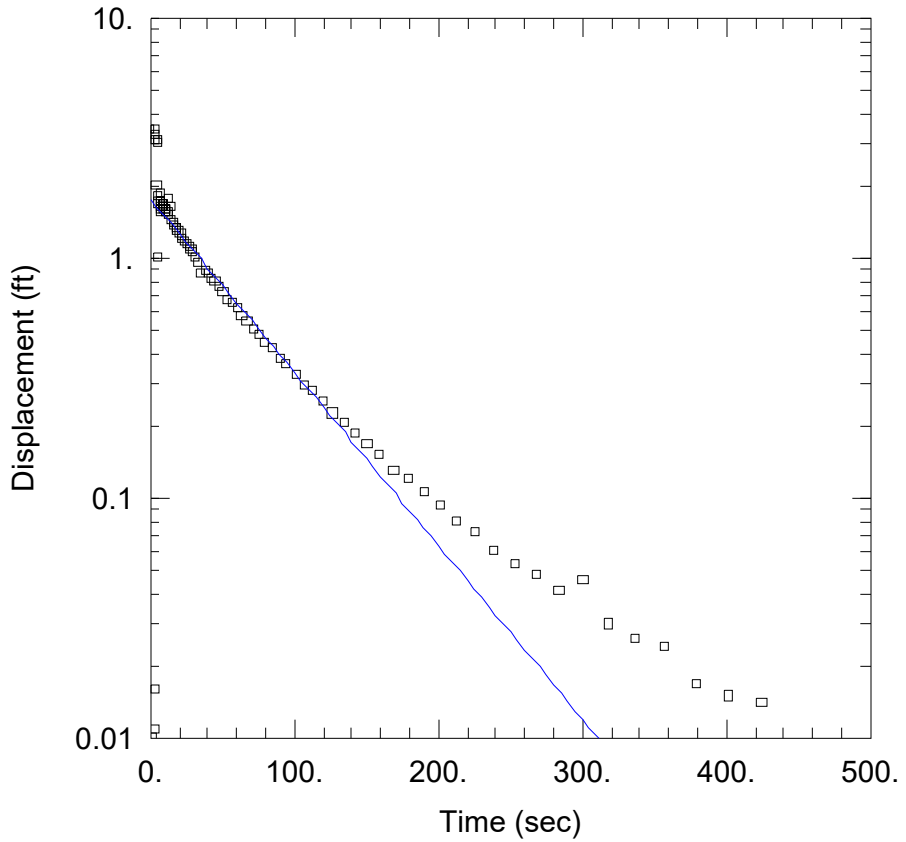
K = 0.01287 cm/sec
y0 = 3.003 ft

AQUIFER DATA

Saturated Thickness: 44.5 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.58 ft
Total Well Penetration Depth: 63.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 46.9 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



IAPZ-1 FALLING HEAD

Data Set: G:\...\IAPZ-1 Falling Head.aqt
Date: 10/07/19 Time: 15:15:27

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00746
Location: Petersburg
Test Well: IAPZ-1
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0005884 cm/sec
y0 = 1.765 ft

AQUIFER DATA

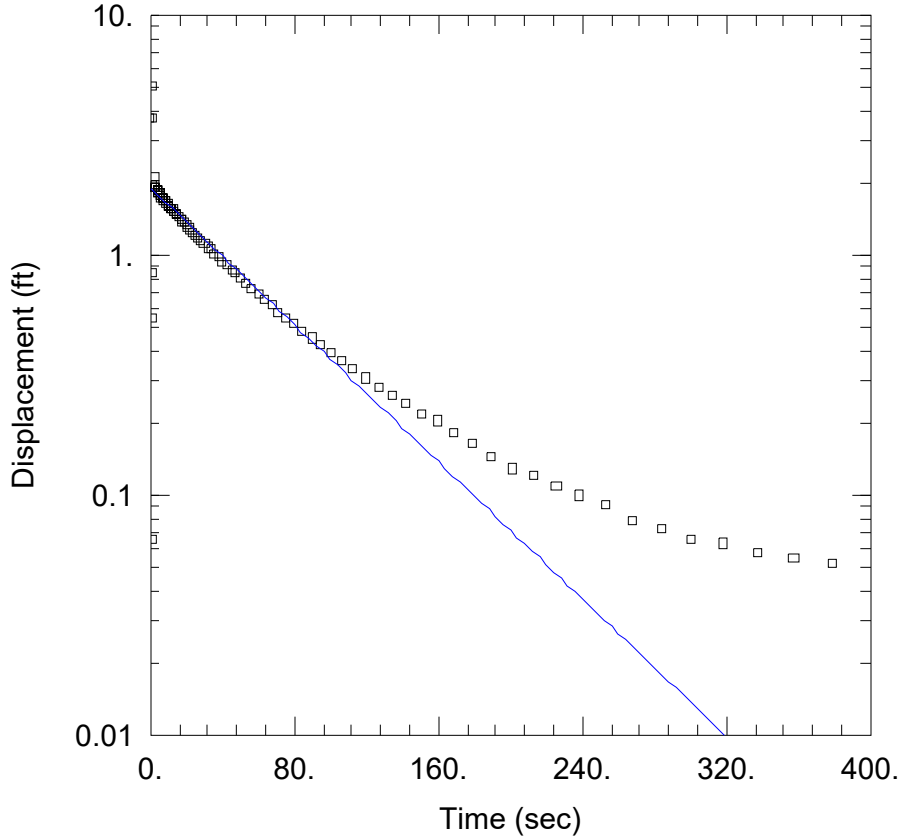
Saturated Thickness: 9.67 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 3.48 ft
Total Well Penetration Depth: 32.5 ft
Casing Radius: 0.083 ft

Static Water Column Height: 9.67 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



IAPZ-1 RISING HEAD

Data Set: G:\...\IAPZ-1 Rising Head.aqt
Date: 10/07/19 Time: 15:15:36

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00746
Location: Petersburg
Test Well: IAPZ-1
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0005818 cm/sec
y0 = 1.908 ft

AQUIFER DATA

Saturated Thickness: 9.67 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 3.72 ft
Total Well Penetration Depth: 32.5 ft
Casing Radius: 0.083 ft

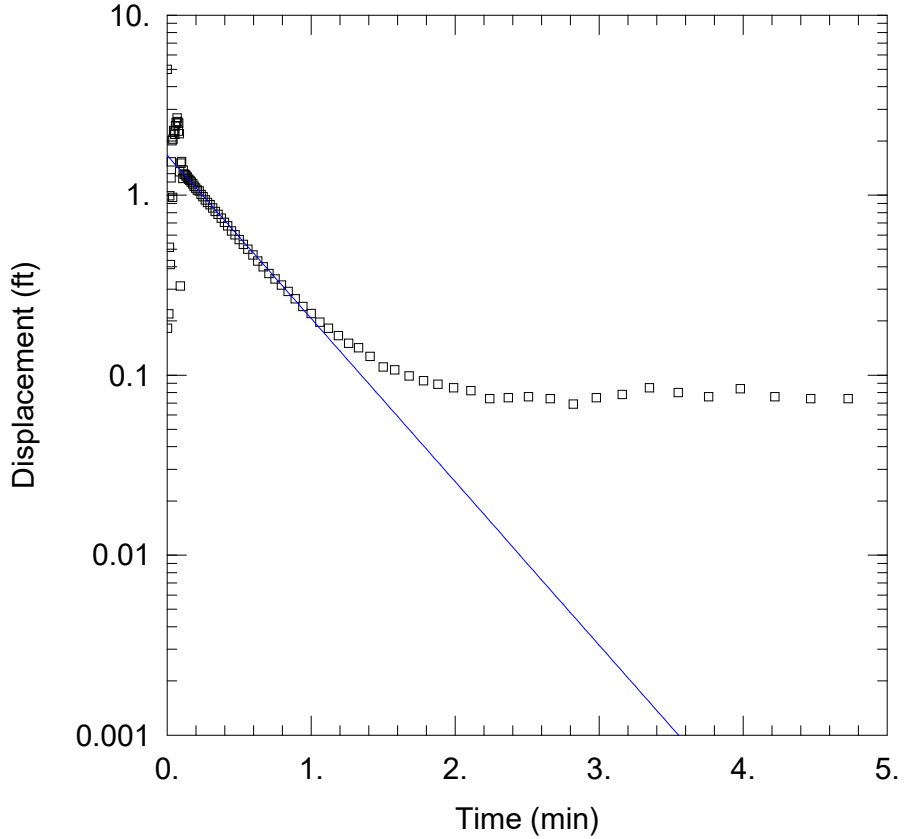
Static Water Column Height: 9.67 ft
Screen Length: 10. ft
Well Radius: 0.333 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00695

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, ft/min
P-4-2019	Falling Head	0.083	0.33	10	28.29	3.73	2.59E-03
	Rising Head					4.32	3.00E-03
					Average	4.03	2.80E-03

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



PZ-4-2019 FALLING HEAD

Data Set: G:\...\PZ-4IN.aqt
Date: 04/30/19 Time: 11:42:44

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: PZ-4 Falling Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

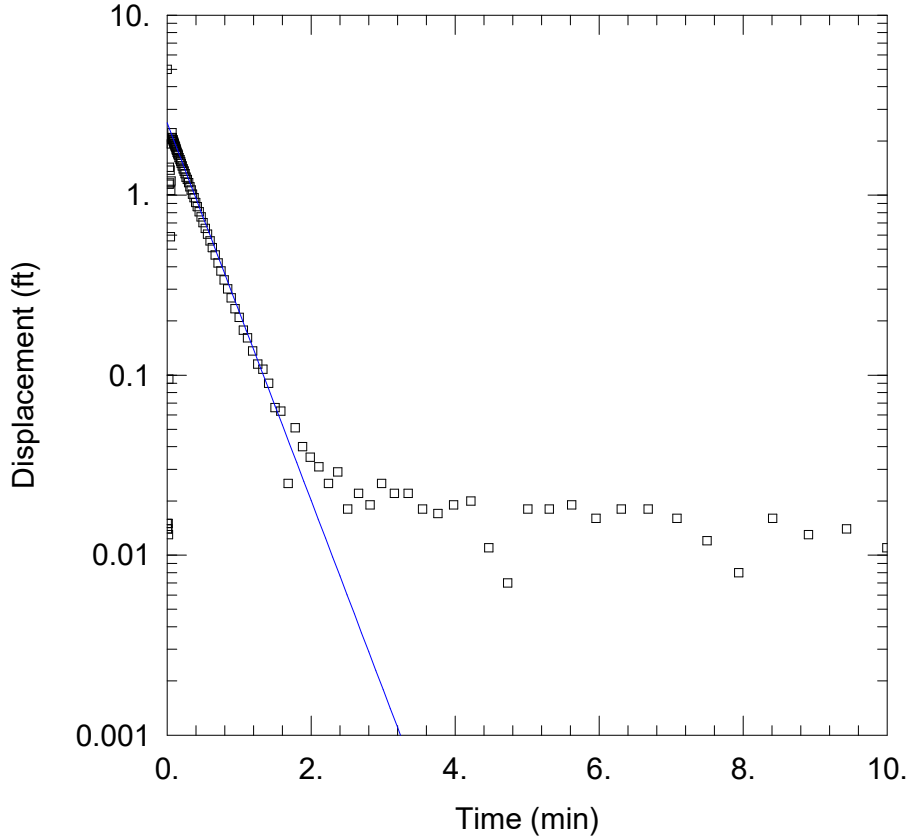
K = 0.002592 ft/min
y0 = 1.666 ft

AQUIFER DATA

Saturated Thickness: 28.29 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 59.85 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.29 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



PZ-4-2019 RISING HEAD

Data Set: G:\...\PZ-4OUT.aqt
Date: 04/30/19 Time: 11:42:28

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: PZ-4 Rising Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.002999 ft/min
y0 = 2.522 ft

AQUIFER DATA

Saturated Thickness: 28.29 ft

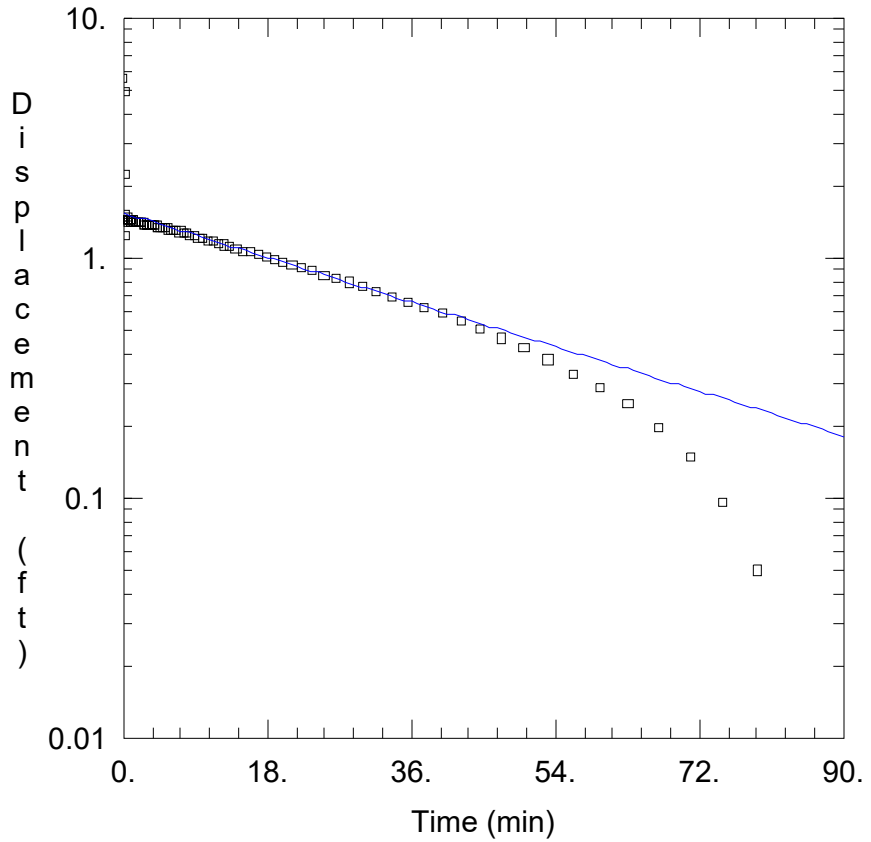
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 59.85 ft
Casing Radius: 0.083 ft

Static Water Column Height: 28.29 ft
Screen Length: 10. ft
Well Radius: 0.333 ft

LW-1A and LW-8A



LW-1A FALLING HEAD

Data Set: G:\...\LW-1A Falling Head.aqt
Date: 07/30/19 Time: 11:08:24

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: LW-1A
Test Date: 7/23/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 2.698E-5 cm/sec
y0 = 1.544 ft

AQUIFER DATA

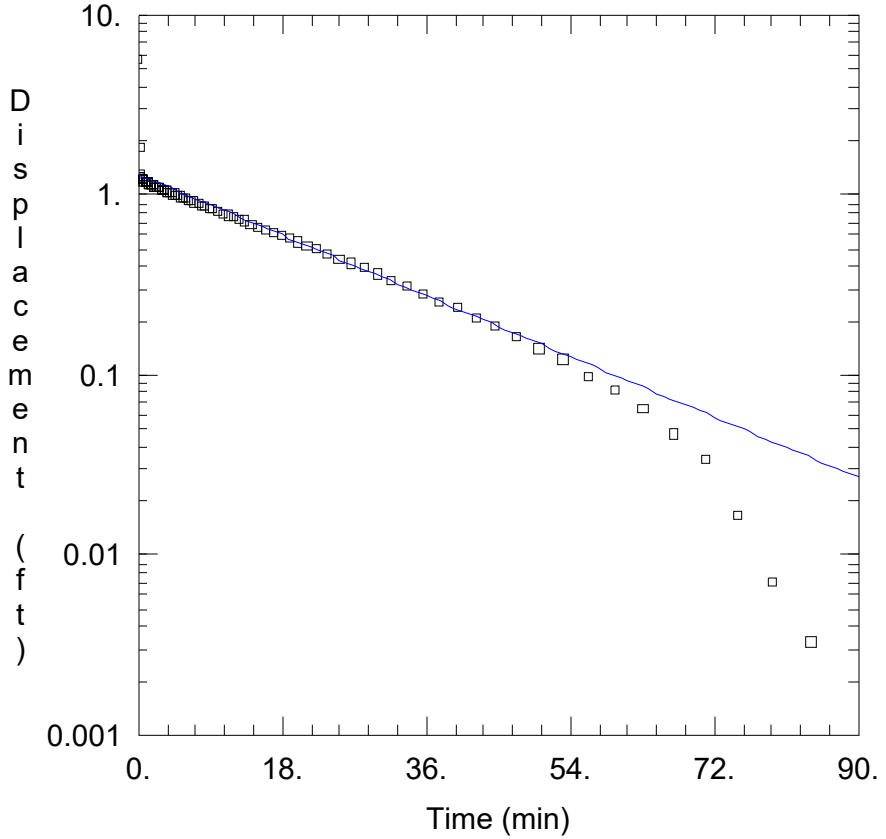
Saturated Thickness: 55.45 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5.61 ft
Total Well Penetration Depth: 65. ft
Casing Radius: 0.083 ft

Static Water Column Height: 55.45 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



LW-1A RISING HEAD

Data Set: G:\...\LW-1A Rising Head.aqt
Date: 07/30/19 Time: 11:08:46

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: LW-1A
Test Date: 7/23/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

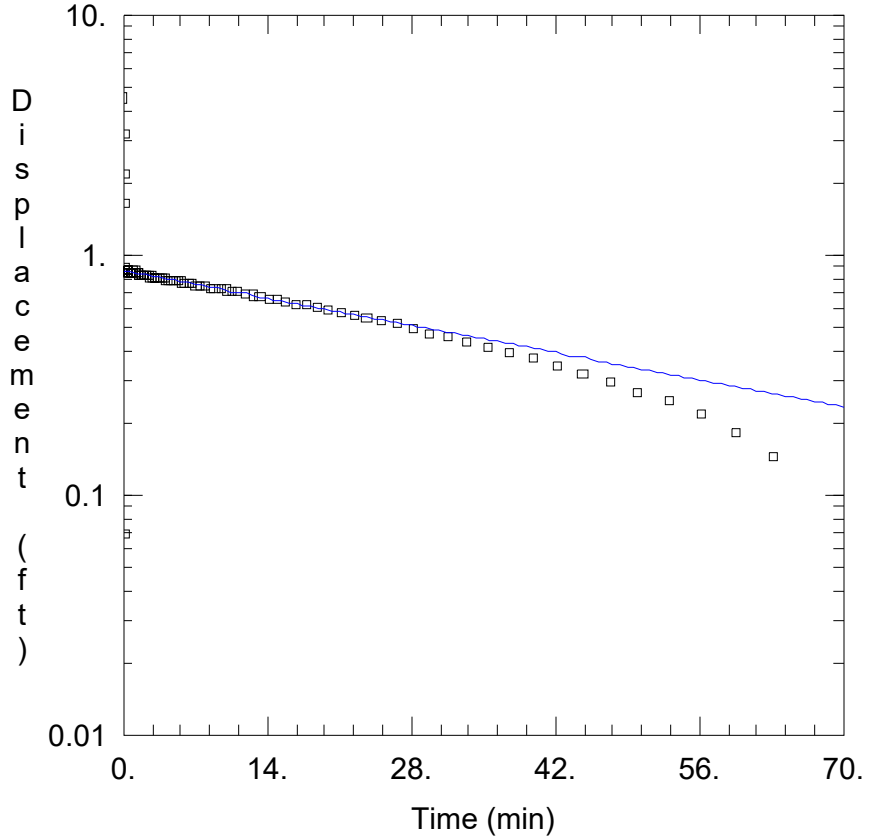
K = 4.891E-5 cm/sec
y0 = 1.301 ft

AQUIFER DATA

Saturated Thickness: 55.45 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5.61 ft
Total Well Penetration Depth: 65. ft
Casing Radius: 0.083 ft
Static Water Column Height: 55.45 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



LW-8A FALLING HEAD

Data Set: G:\...\LW-8A Falling Head.aqt
Date: 07/30/19 Time: 11:09:02

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: LW-8A
Test Date: 7/23/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 2.163E-5 cm/sec
y0 = 0.8598 ft

AQUIFER DATA

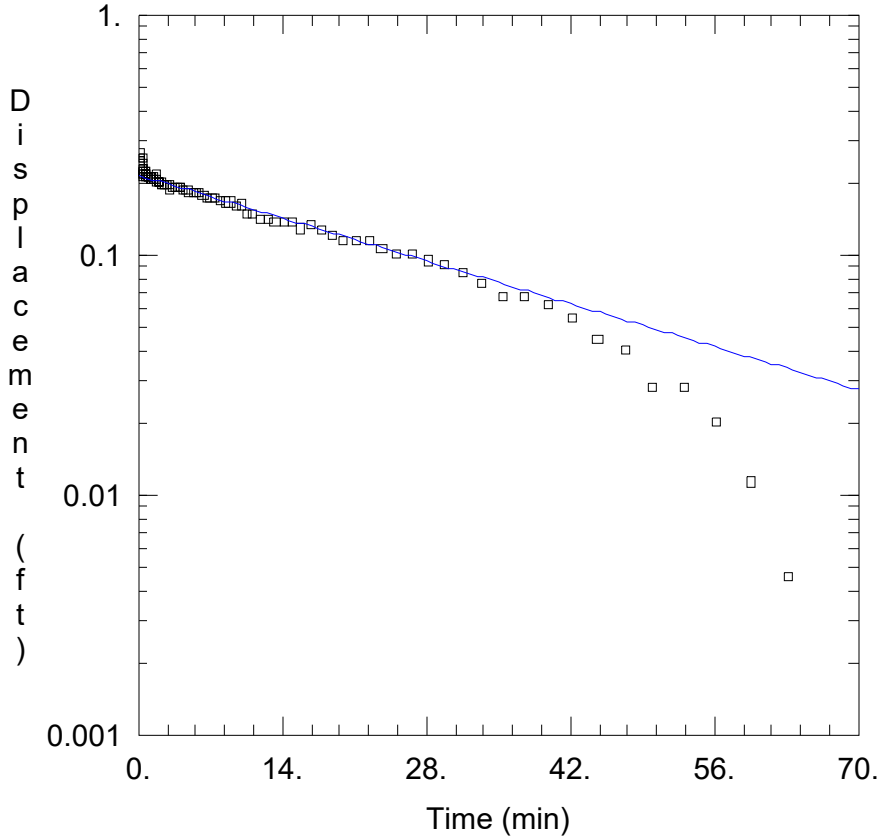
Saturated Thickness: 17.62 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 4.51 ft
Total Well Penetration Depth: 76. ft
Casing Radius: 0.083 ft

Static Water Column Height: 17.62 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



LW-8A RISING HEAD

Data Set: G:\...\LW-8A Rising Head.aqt
Date: 07/30/19 Time: 11:09:16

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: LW-8A
Test Date: 7/23/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 3.405E-5 cm/sec
y0 = 0.2157 ft

AQUIFER DATA

Saturated Thickness: 17.62 ft
Anisotropy Ratio (Kz/Kr): 1.

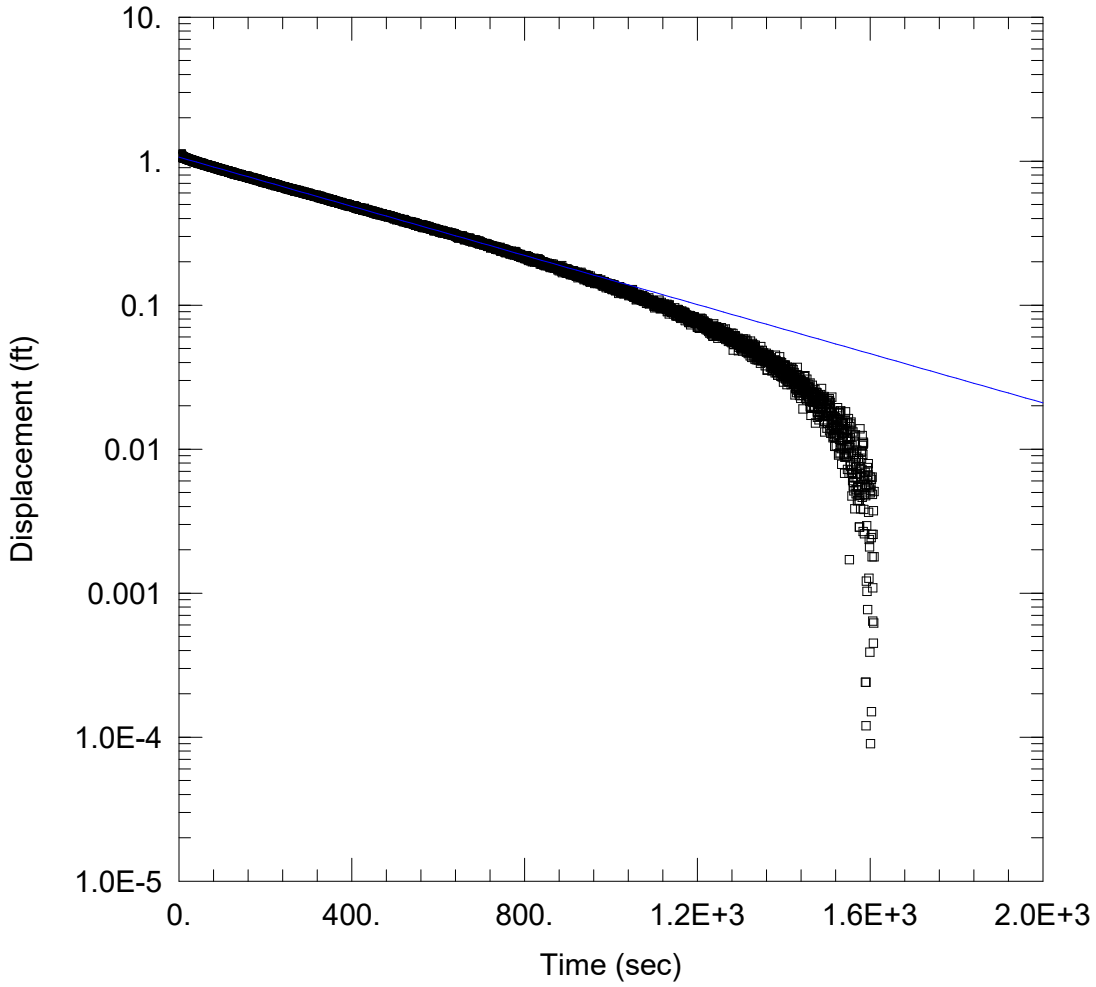
WELL DATA (New Well)

Initial Displacement: 2.27 ft
Total Well Penetration Depth: 76. ft
Casing Radius: 0.083 ft
Static Water Column Height: 17.62 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

TABLE X
SUMMARY OF HYDRAULIC CONDUCTIVITY VALUES
PETERSBURG GENERATING STATION - PETERSBURG, IN

Well	Falling Head 1	Falling Head 2	Falling Head Geo. Mean	Rising Head 1	Rising Head 2	Rising Head Geo. Mean
MW-1A	1.81E-04	1.75E-04	1.78E-04	1.90E-04	1.95E-04	1.92E-04
MW-12A	8.63E-04	8.44E-04	8.53E-04	7.19E-04	7.50E-04	7.34E-04

Notes
Slug Testing completed 6/8/23 through 6/9/23
Values reported in cm/sec.



WELL TEST ANALYSIS

Data Set: C:\...\MW-1A_F1.aqt
Date: 06/15/23 Time: 12:01:36

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-1A
Test Date: 6/9/23

AQUIFER DATA

Saturated Thickness: 3.5 ft Anisotropy Ratio (Kz/Kr): 1.

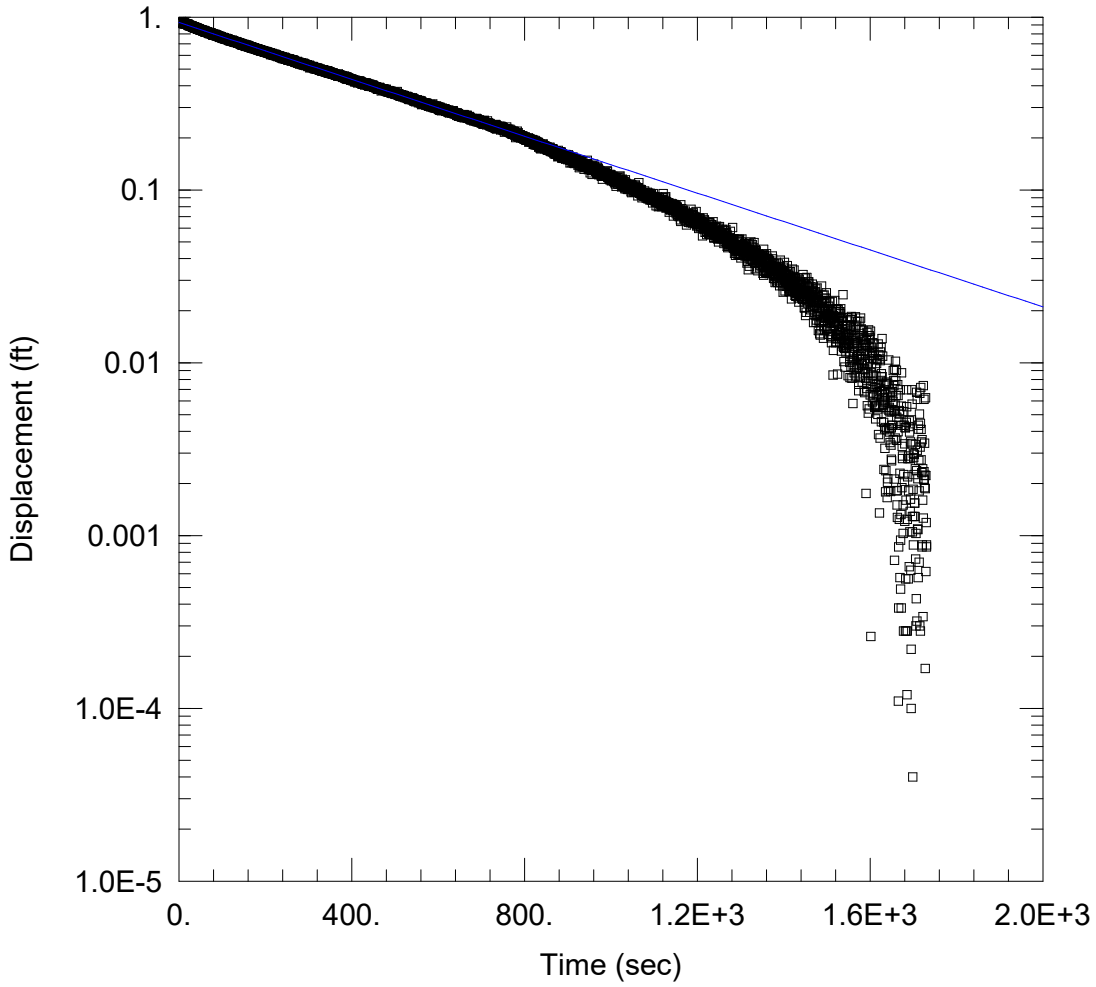
WELL DATA (MW-1A)

Initial Displacement: 1.105 ft
Total Well Penetration Depth: 34.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001812 cm/sec y0 = 1.066 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-1A_F2.aqt
Date: 06/15/23 Time: 12:02:10

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-1A
Test Date: 6/9/23

AQUIFER DATA

Saturated Thickness: 3.5 ft Anisotropy Ratio (Kz/Kr): 1.

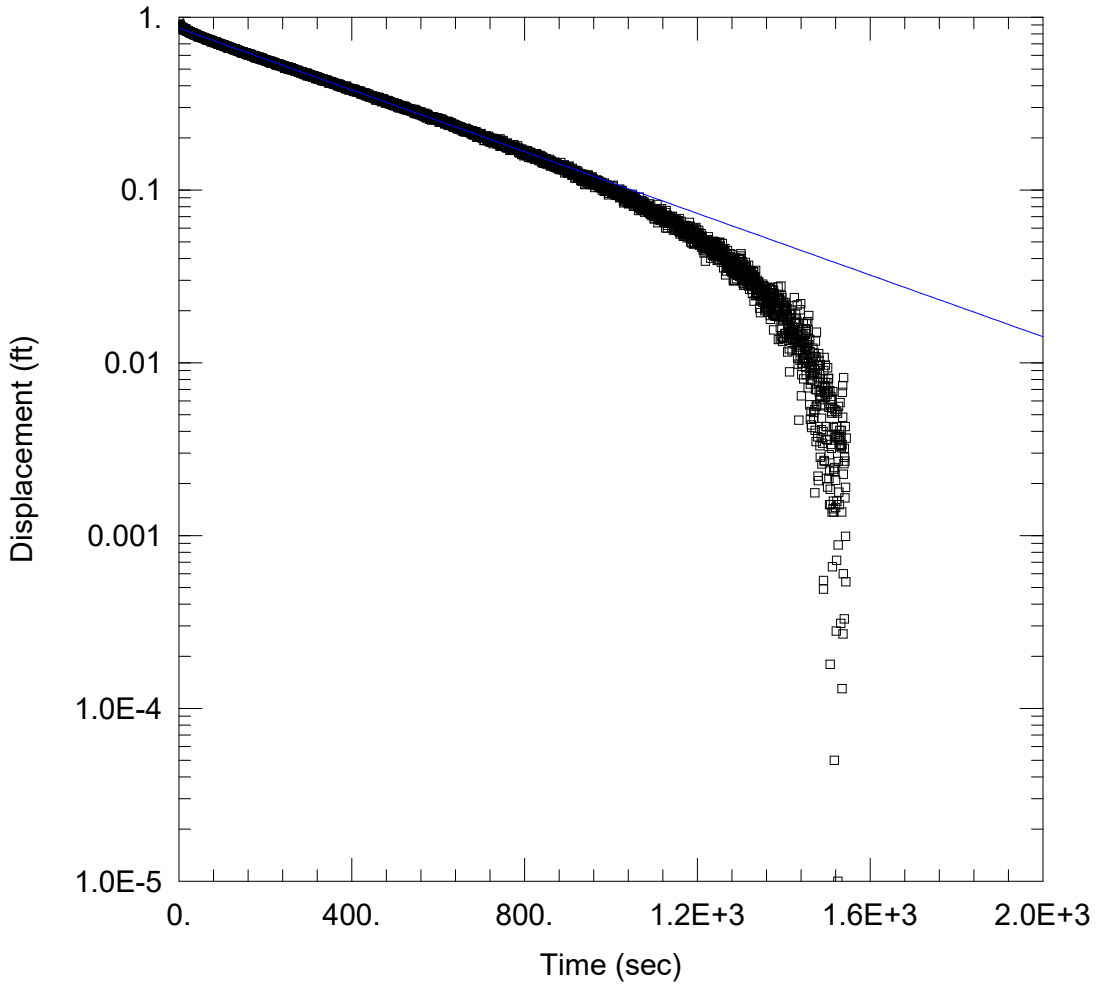
WELL DATA (MW-1A)

Initial Displacement: 0.936 ft
Total Well Penetration Depth: 34.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001747 cm/sec y0 = 0.9313 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-1A_R1.aqt
Date: 06/15/23 Time: 12:02:27

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-1A
Test Date: 6/9/23

AQUIFER DATA

Saturated Thickness: 3.5 ft Anisotropy Ratio (Kz/Kr): 1.

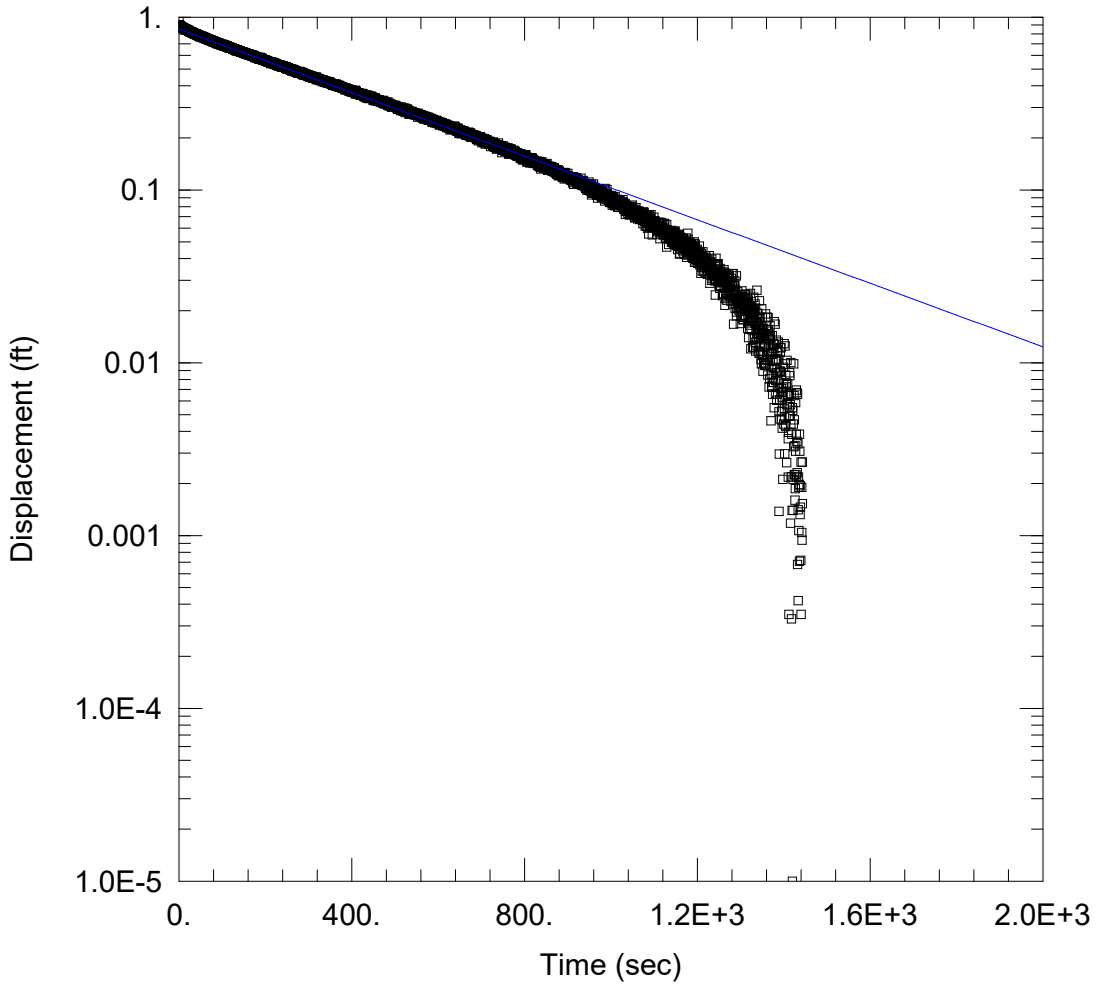
WELL DATA (MW-1A)

Initial Displacement: 0.953 ft
Total Well Penetration Depth: 34.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0001895 cm/sec
y0 = 0.8604 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-1A_R2.aqt
Date: 06/15/23 Time: 12:02:46

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-1A
Test Date: 6/9/23

AQUIFER DATA

Saturated Thickness: 3.5 ft Anisotropy Ratio (Kz/Kr): 1.

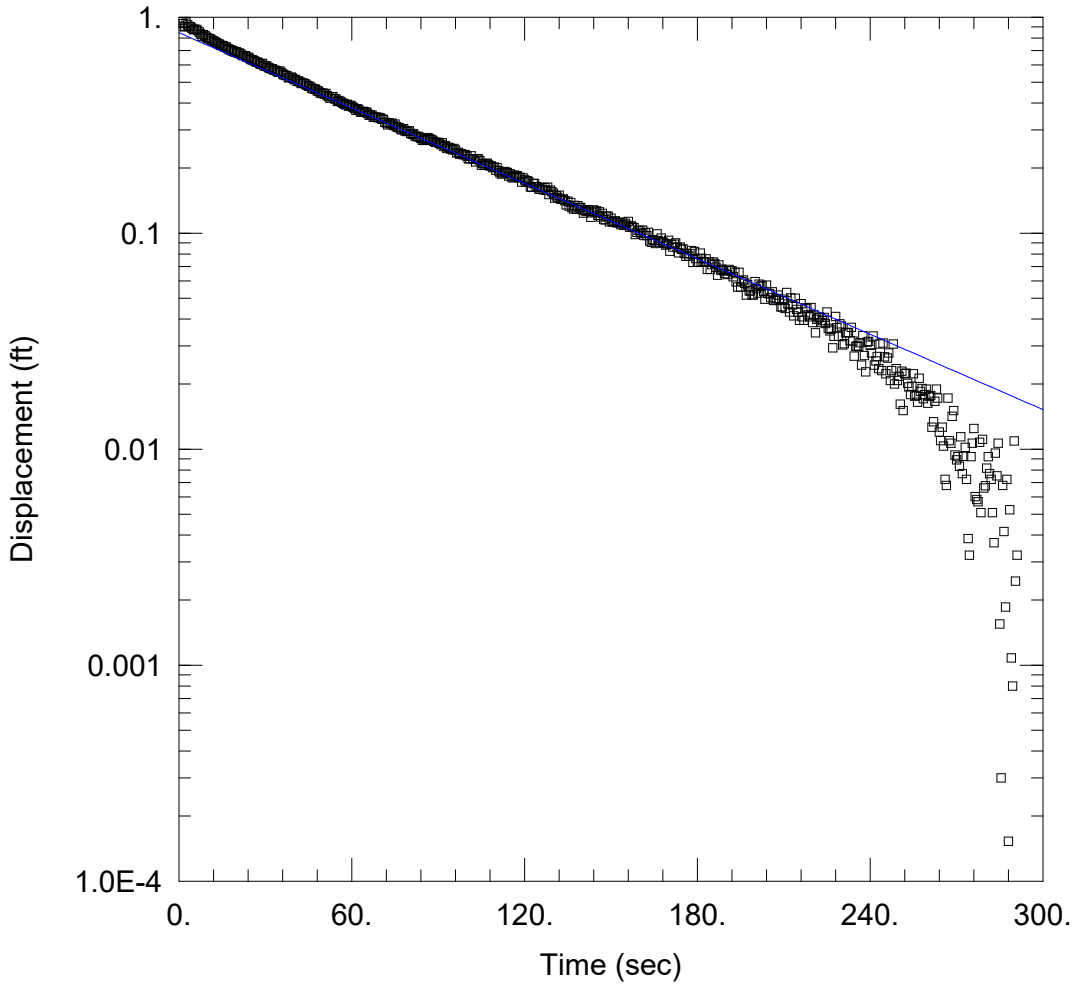
WELL DATA (MW-1A)

Initial Displacement: 0.996 ft
Total Well Penetration Depth: 34.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 37.43 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0001952 cm/sec
y0 = 0.8522 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-12A_F1.aqt
Date: 06/15/23 Time: 12:03:14

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-12A
Test Date: 6/8/23

AQUIFER DATA

Saturated Thickness: 4.5 ft Anisotropy Ratio (Kz/Kr): 1.

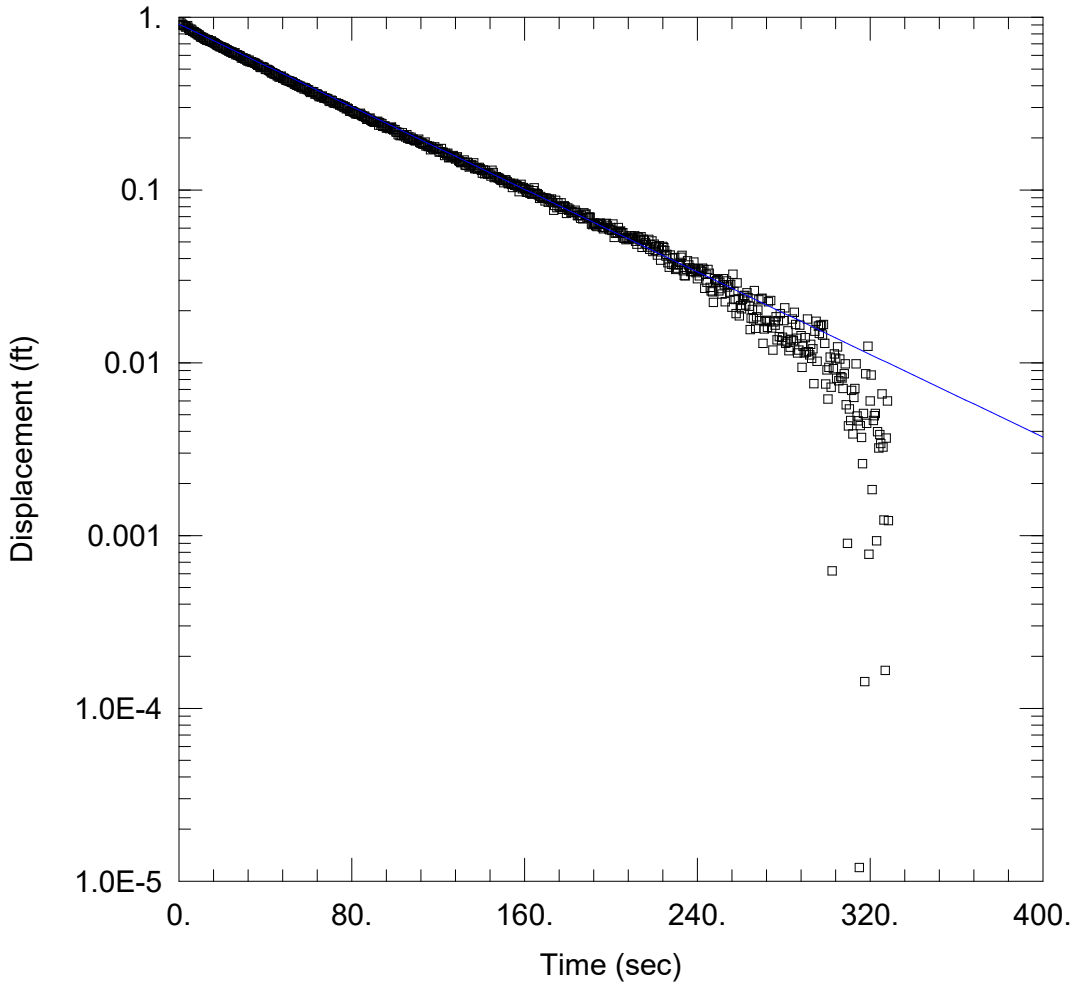
WELL DATA (MW-12A)

Initial Displacement: 1.077 ft
Total Well Penetration Depth: 10.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.67 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 0.0008215 cm/sec y0 = 0.8464 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-12A_F2.aqt
Date: 06/15/23 Time: 12:03:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-12A
Test Date: 6/8/23

AQUIFER DATA

Saturated Thickness: 4.5 ft Anisotropy Ratio (Kz/Kr): 1.

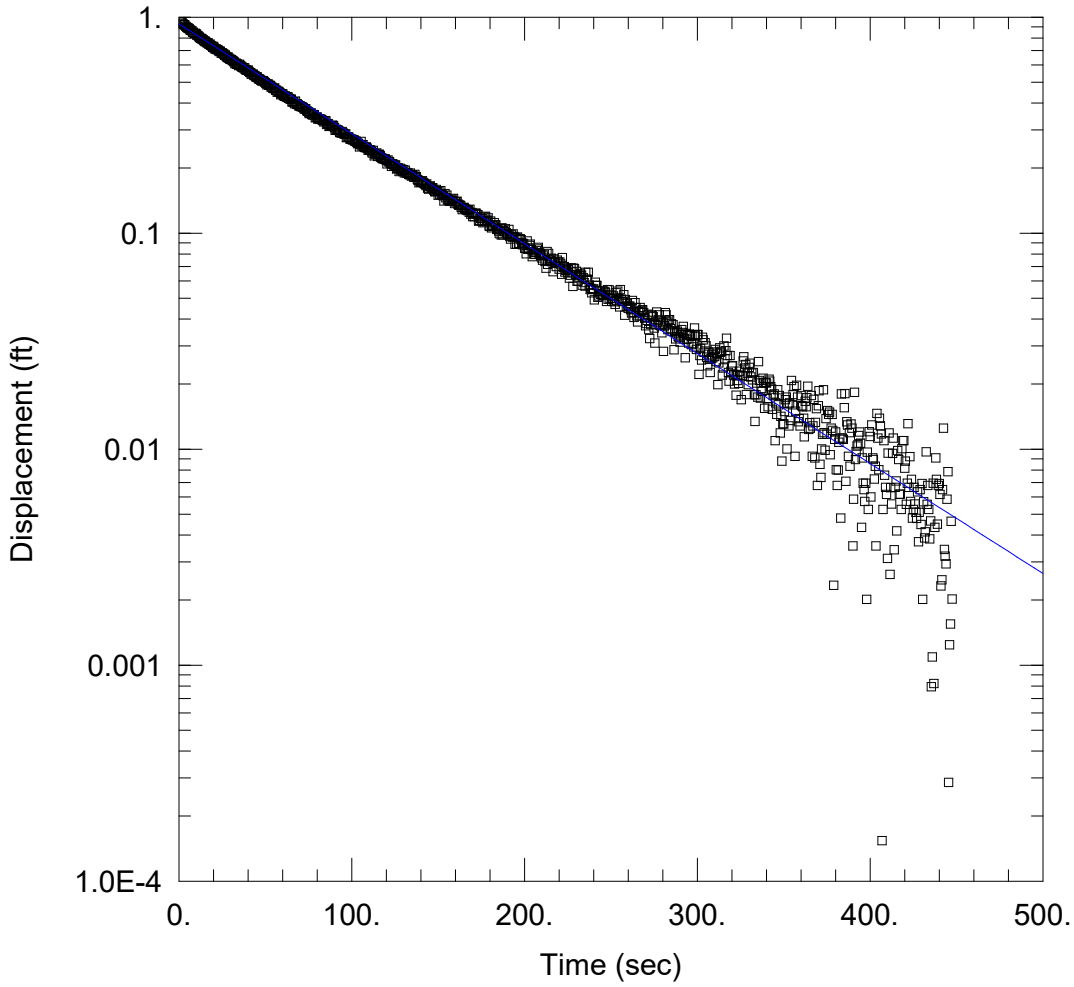
WELL DATA (MW-12A)

Initial Displacement: 0.94 ft
Total Well Penetration Depth: 10.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.67 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.0008436 cm/sec
y0 = 0.9104 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-12A_R1.aqt
Date: 06/15/23 Time: 12:03:34

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-12A
Test Date: 6/8/23

AQUIFER DATA

Saturated Thickness: 4.5 ft Anisotropy Ratio (Kz/Kr): 1.

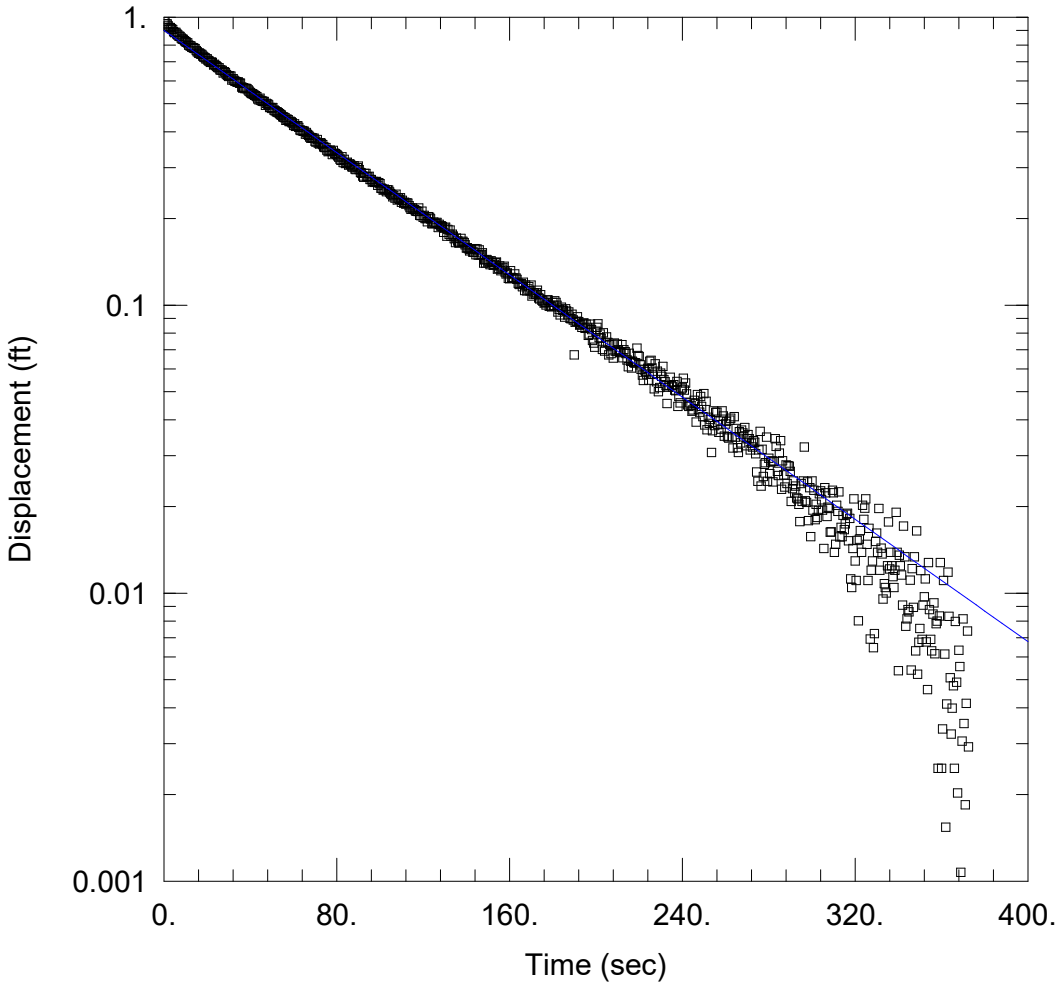
WELL DATA (MW-12A)

Initial Displacement: 1.07 ft
Total Well Penetration Depth: 10.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.67 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.0007188 cm/sec
y0 = 0.9308 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-12A_R2.aqt
Date: 06/15/23 Time: 12:03:47

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-036
Location: Petersburg, IN
Test Well: MW-12A
Test Date: 6/8/23

AQUIFER DATA

Saturated Thickness: 4.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-12A)

Initial Displacement: 0.981 ft
Total Well Penetration Depth: 10.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 46.67 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

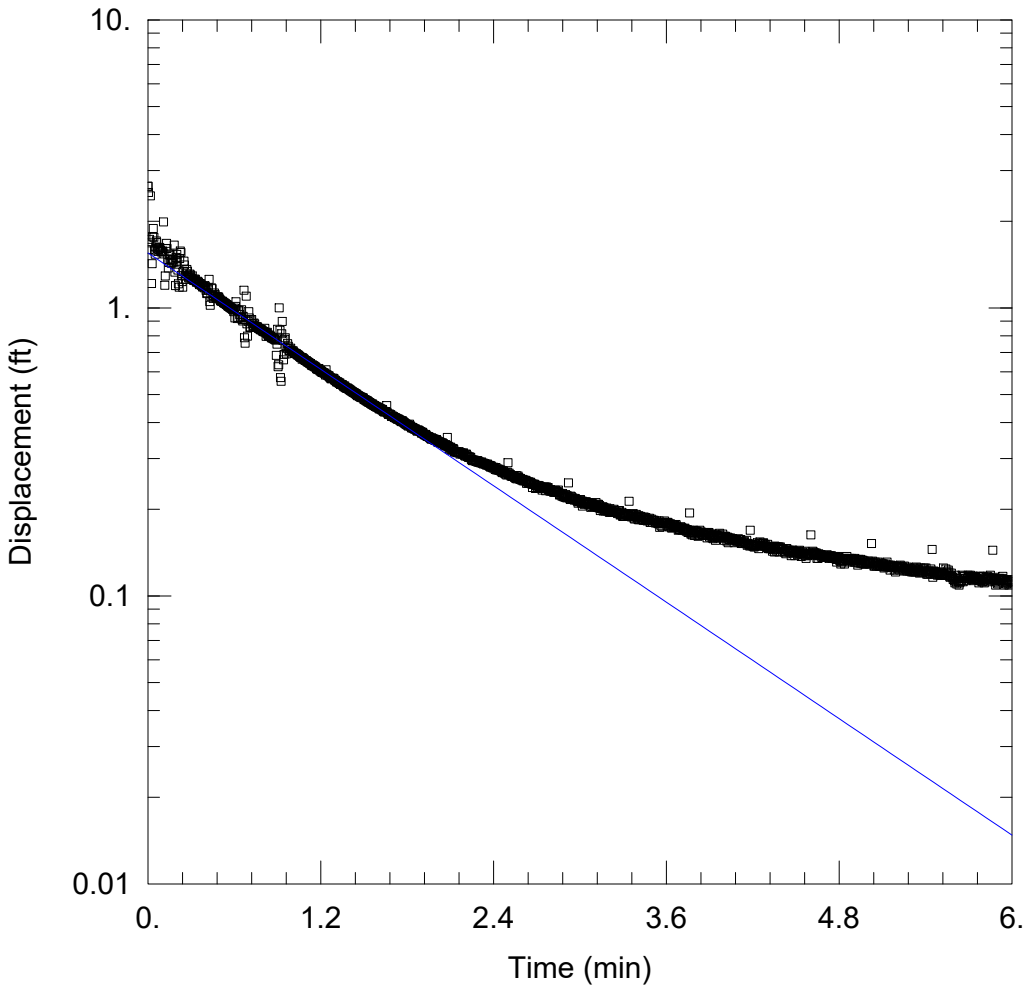
K = 0.0007495 cm/sec
y0 = 0.9001 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00326

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
MW-2R Offset	Falling Head	0.083	0.33	10	14.4	1.08	3.81E-04
	Rising Head					1.17	4.14E-04
					Average	1.13	3.97E-04

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



MW-2R OFFSET FALLING HEAD

Data Set: G:\...\MW-2R Falling Head.aqt
Date: 02/09/17 Time: 13:47:40

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-2R Offset
Test Date: 2/08/2017

AQUIFER DATA

Saturated Thickness: 14.4 ft Anisotropy Ratio (Kz/Kr): 1.

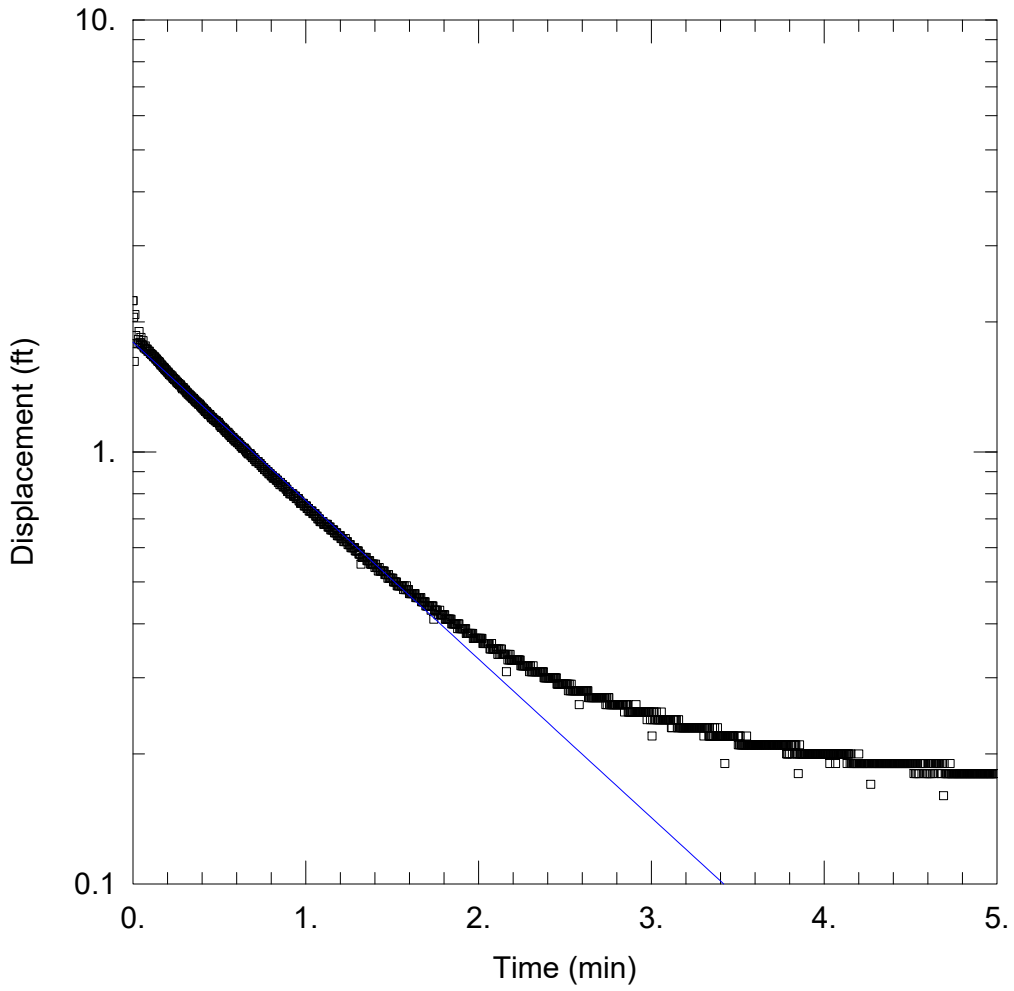
WELL DATA (MW-2R Offset)

Initial Displacement: 2.647 ft
Total Well Penetration Depth: 14.4 ft
Casing Radius: 0.083 ft
Static Water Column Height: 14.4 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0003806 cm/sec y0 = 1.552 ft



MW-2R OFFSET RISING HEAD

Data Set: G:\...\MW-2R Offset Rising Head.aqt
Date: 02/09/17 Time: 14:02:16

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-2R Offset
Test Date: 2/08/2017

AQUIFER DATA

Saturated Thickness: 14.4 ft
Anisotropy Ratio (Kz/Kr): 1.

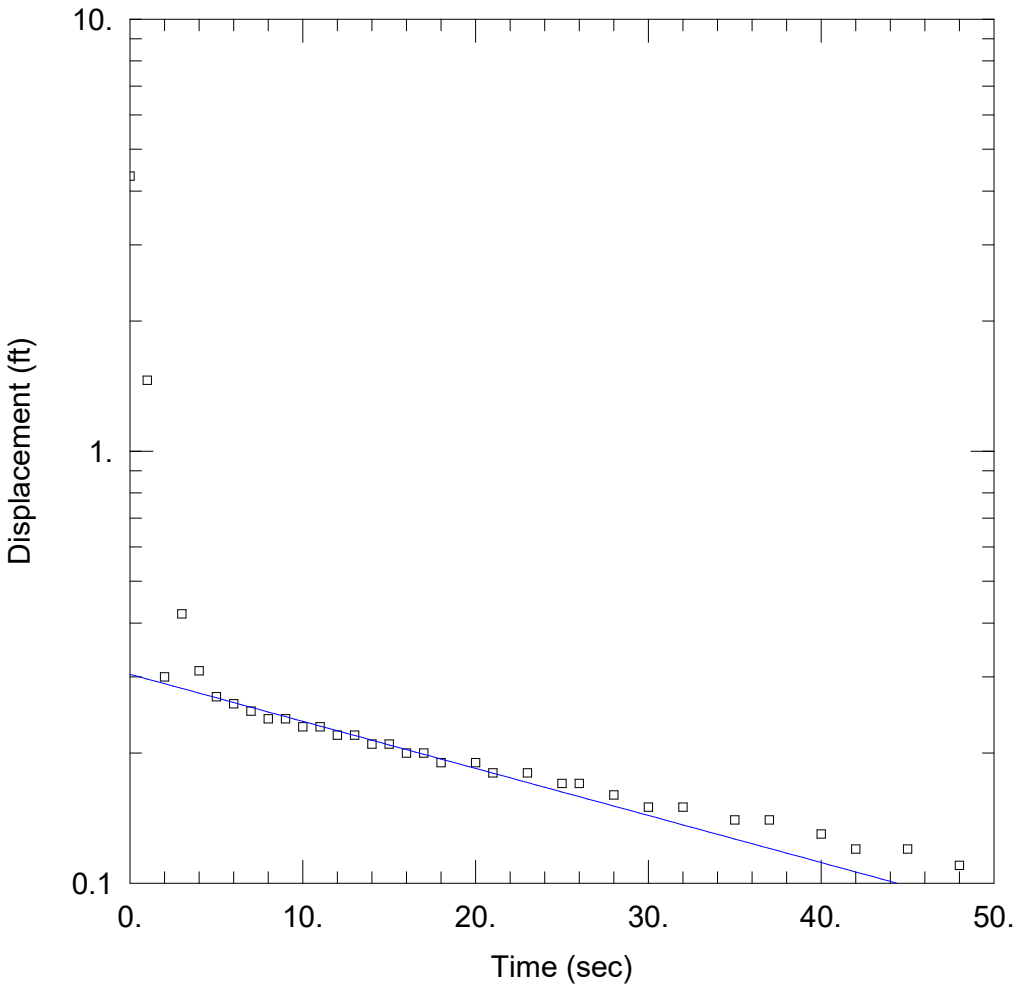
WELL DATA (MW-2R Offset)

Initial Displacement: 2.24 ft
Total Well Penetration Depth: 14.4 ft
Casing Radius: 0.083 ft
Static Water Column Height: 14.4 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004143 cm/sec
y0 = 1.795 ft

MW-3 and MW-4C



WELL TEST ANALYSIS

Data Set: G:\...\MW-3 5ft in.aqt
Date: 04/14/21 Time: 13:37:52

PROJECT INFORMATION

Company: ATC GROUP SERVICES
Client: IPL PETERSBURG
Project: 170LF00795
Location: PETERSBURG
Test Well: MW-3 IN
Test Date: 1-19-21

AQUIFER DATA

Saturated Thickness: 8.4 ft Anisotropy Ratio (Kz/Kr): 1.

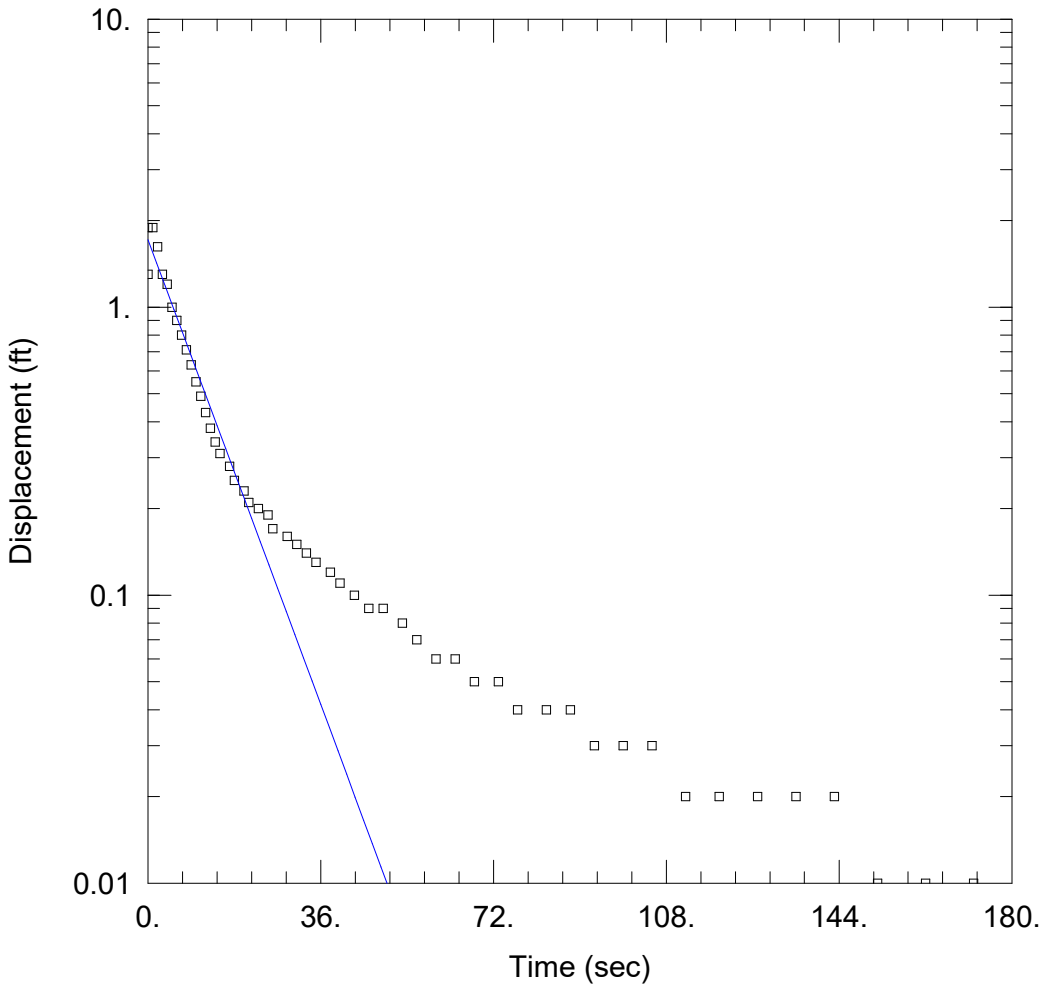
WELL DATA (New Well)

Initial Displacement: 4.33 ft
Total Well Penetration Depth: 8.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 8.4 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001204 cm/sec y0 = 0.3044 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-3 5ft out.aqt
Date: 04/14/21 Time: 13:38:30

PROJECT INFORMATION

Company: ATC GROUP SERVICES
Client: IPL PETERSBURG
Project: 170LF00795
Location: PETERSBURG
Test Well: MW-3 out
Test Date: 1-19-21

AQUIFER DATA

Saturated Thickness: 8.4 ft Anisotropy Ratio (Kz/Kr): 1.

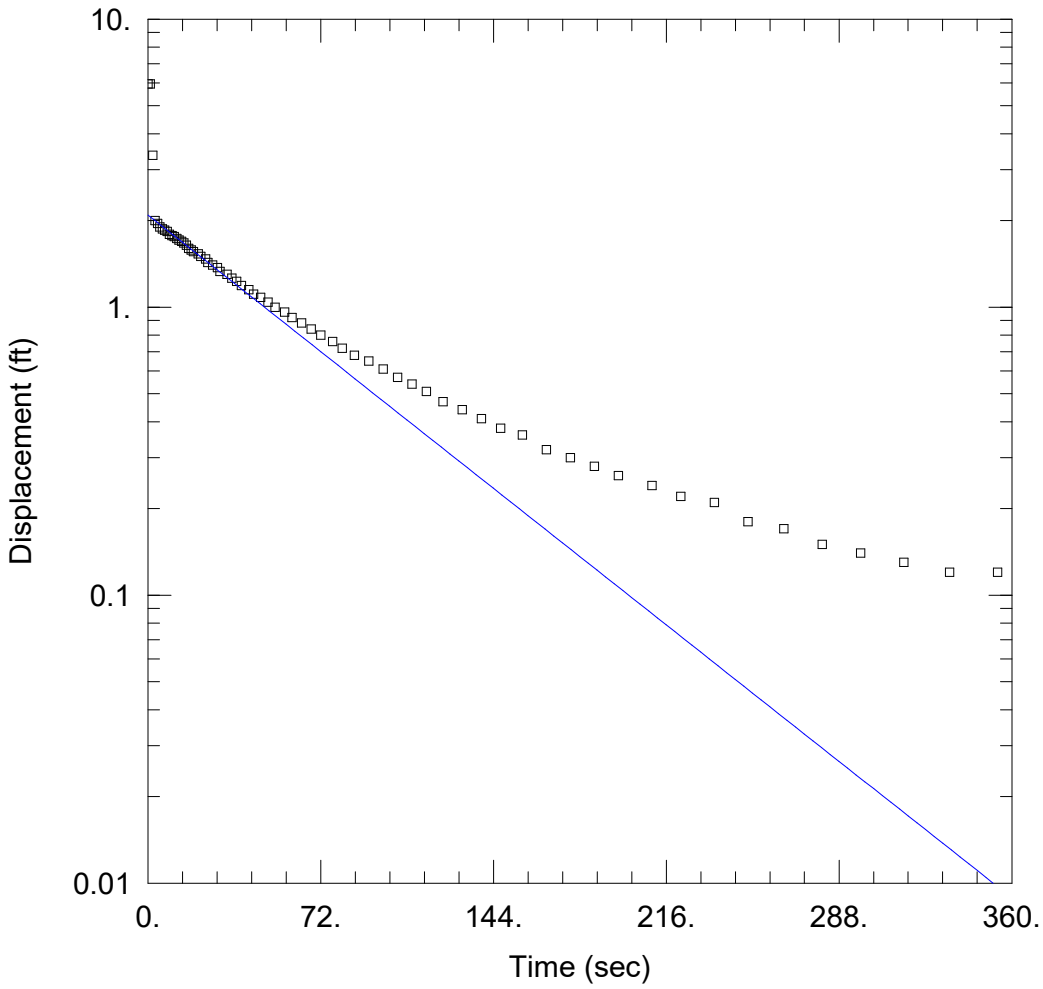
WELL DATA (New Well)

Initial Displacement: 1.89 ft
Total Well Penetration Depth: 8.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.9 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004952 cm/sec y0 = 1.714 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-4C 5ft in.aqt
Date: 04/14/21 Time: 13:39:12

PROJECT INFORMATION

Company: ATC GROUP SERVICES
Client: IPL PETERSBURG
Project: 170LF00795
Location: PETERSBURG
Test Well: MW-4c in
Test Date: 1-19-21

AQUIFER DATA

Saturated Thickness: 19.4 ft Anisotropy Ratio (Kz/Kr): 1.

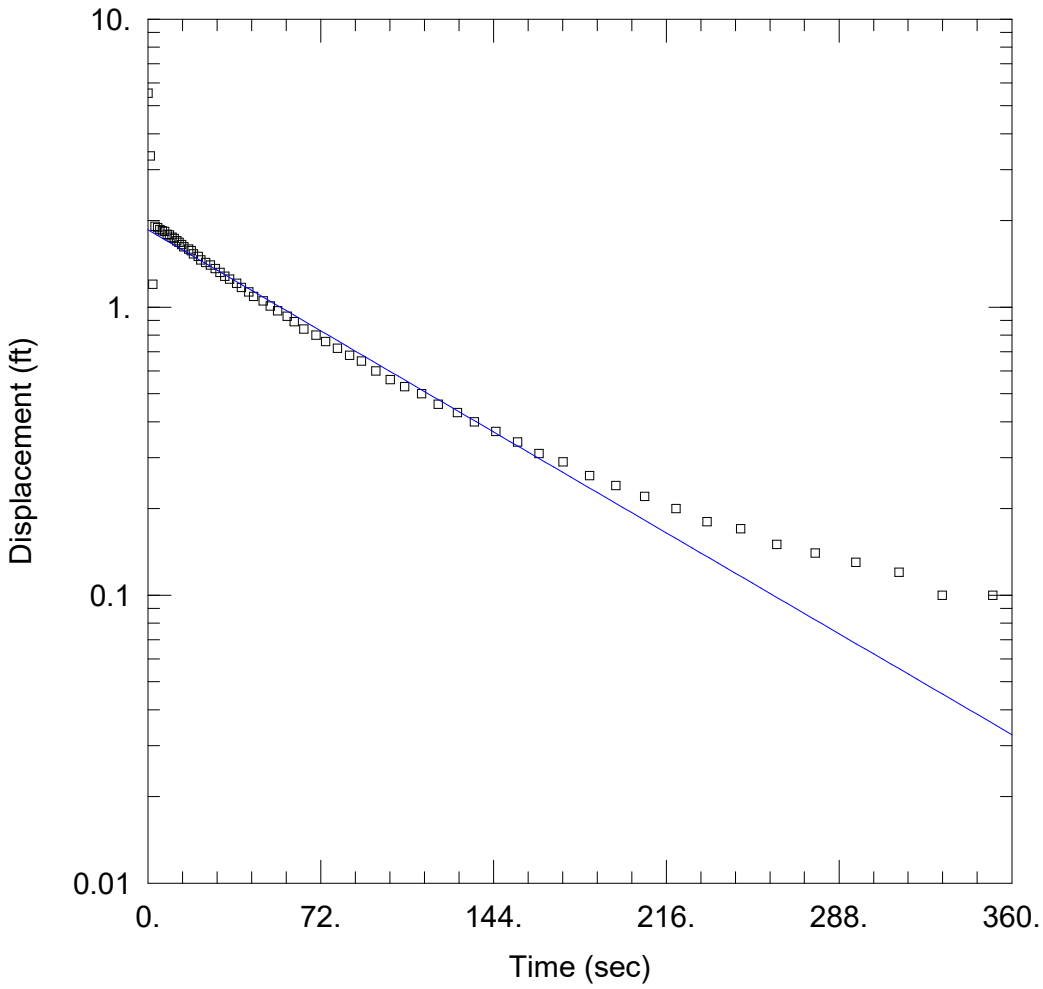
WELL DATA (New Well)

Initial Displacement: 5.96 ft
Total Well Penetration Depth: 19.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 19.4 ft
Screen Length: 10. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0004769 cm/sec y0 = 2.087 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-4C 5ft out.aqt
Date: 04/14/21 Time: 13:39:42

PROJECT INFORMATION

Company: ATC GROUP SERVICES
Client: IPL PETERSBURG
Project: 170LF00795
Location: PETERSBURG
Test Well: MW-4c Out
Test Date: 1-19-21

AQUIFER DATA

Saturated Thickness: 19.38 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5.53 ft
Total Well Penetration Depth: 19.38 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 19.38 ft
Screen Length: 10. ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

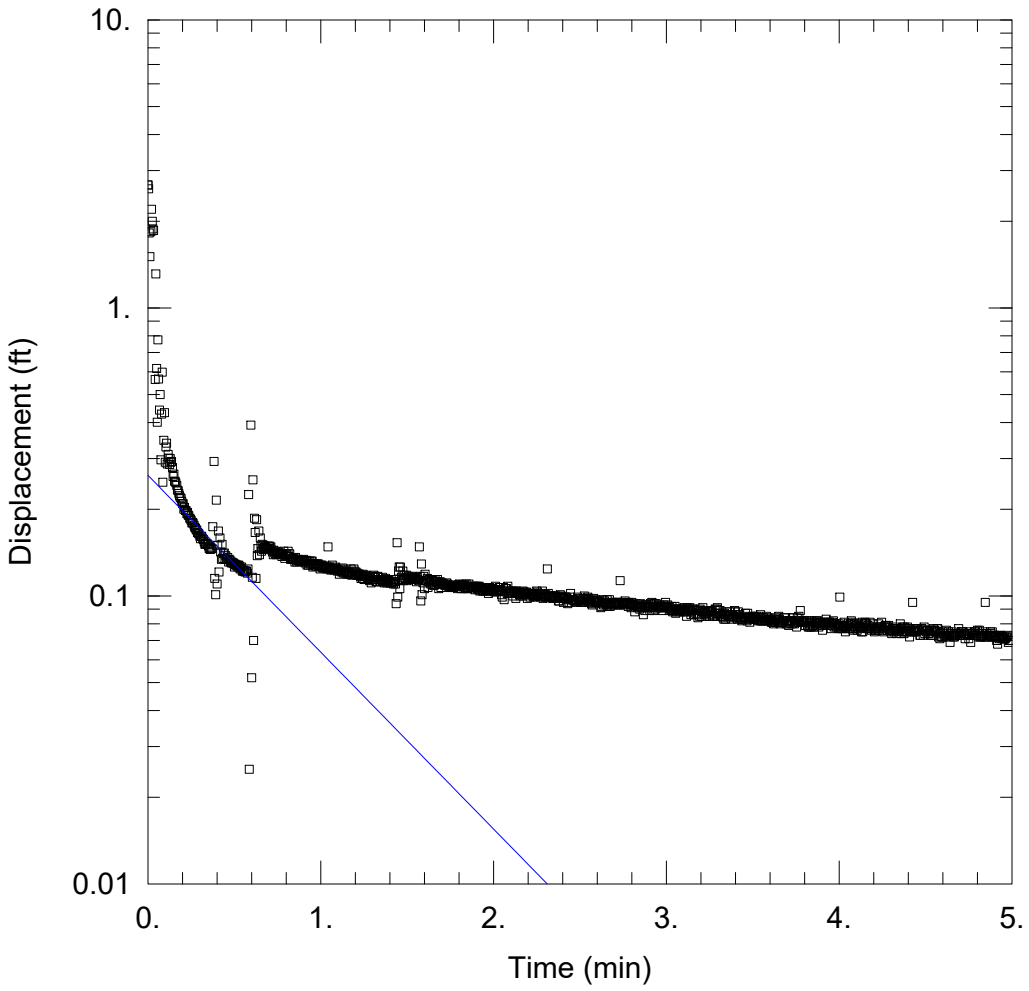
K = 0.0003525 cm/sec y0 = 1.855 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00326

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
MW-10	Falling Head	0.083	0.33	10	13.5	1.65	5.82E-04
	Rising Head					1.29	4.56E-04
MW-11	Falling Head	0.083	0.33	10	13	0.464	1.64E-04
	Rising Head					0.861	3.04E-04
MW-12	Falling Head	0.083	0.33	10	13.53	1.62	5.72E-04
	Rising Head					2.00	7.07E-04
MW-13	Falling Head	0.083	0.33	10	9.4	1.01	3.55E-04
	Rising Head					1.29	4.56E-04
					Average	0.33	4.50E-04

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



MW-10 FALLING HEAD

Data Set: G:\...\MW-10 Falling Head.aqt
Date: 02/09/17 Time: 14:45:51

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-10
Test Date: 2/08/2017

AQUIFER DATA

Saturated Thickness: 13.5 ft Anisotropy Ratio (Kz/Kr): 1.

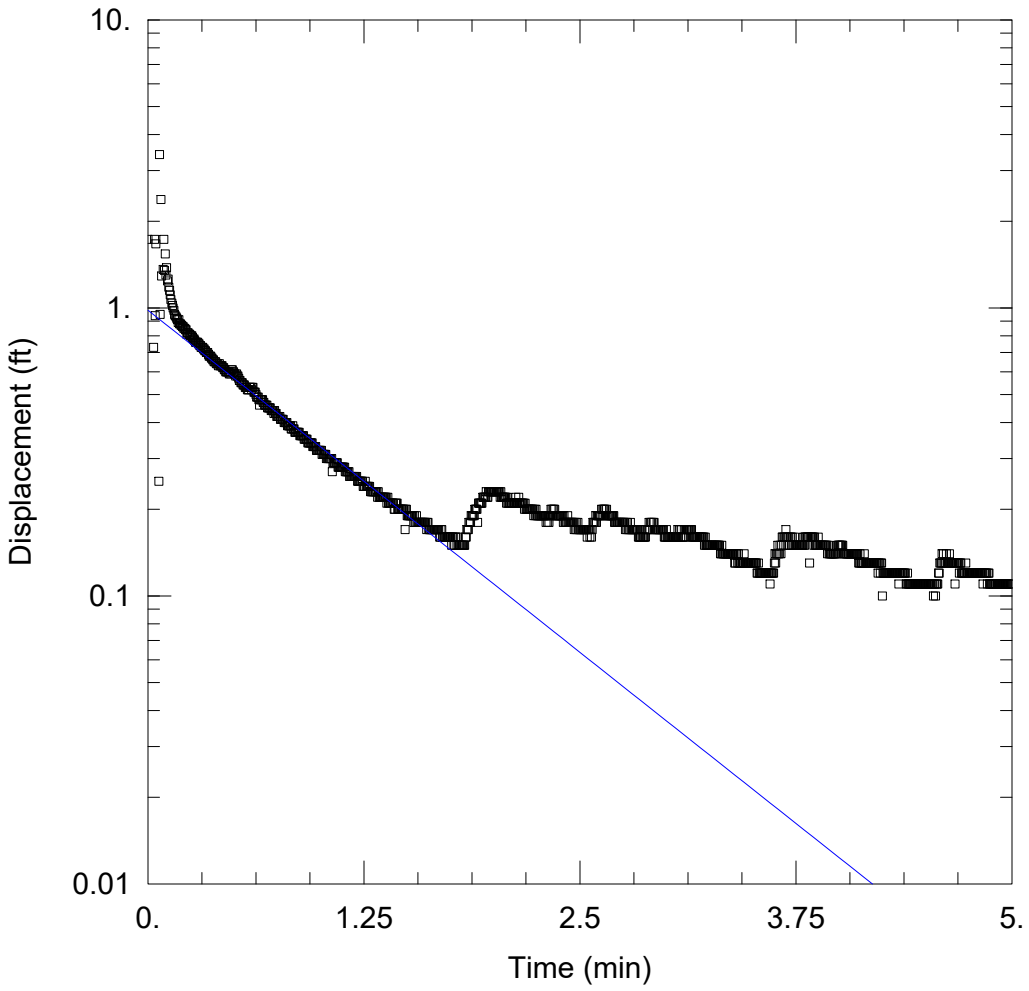
WELL DATA (MW-10)

Initial Displacement: 2.673 ft
Total Well Penetration Depth: 10.74 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.74 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0005824 cm/sec y0 = 0.2622 ft



MW-10 RISING HEAD

Data Set: G:\...\MW-10 Rising Head.aqt
Date: 02/09/17 Time: 15:26:18

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-10
Test Date: 2/08/2017

AQUIFER DATA

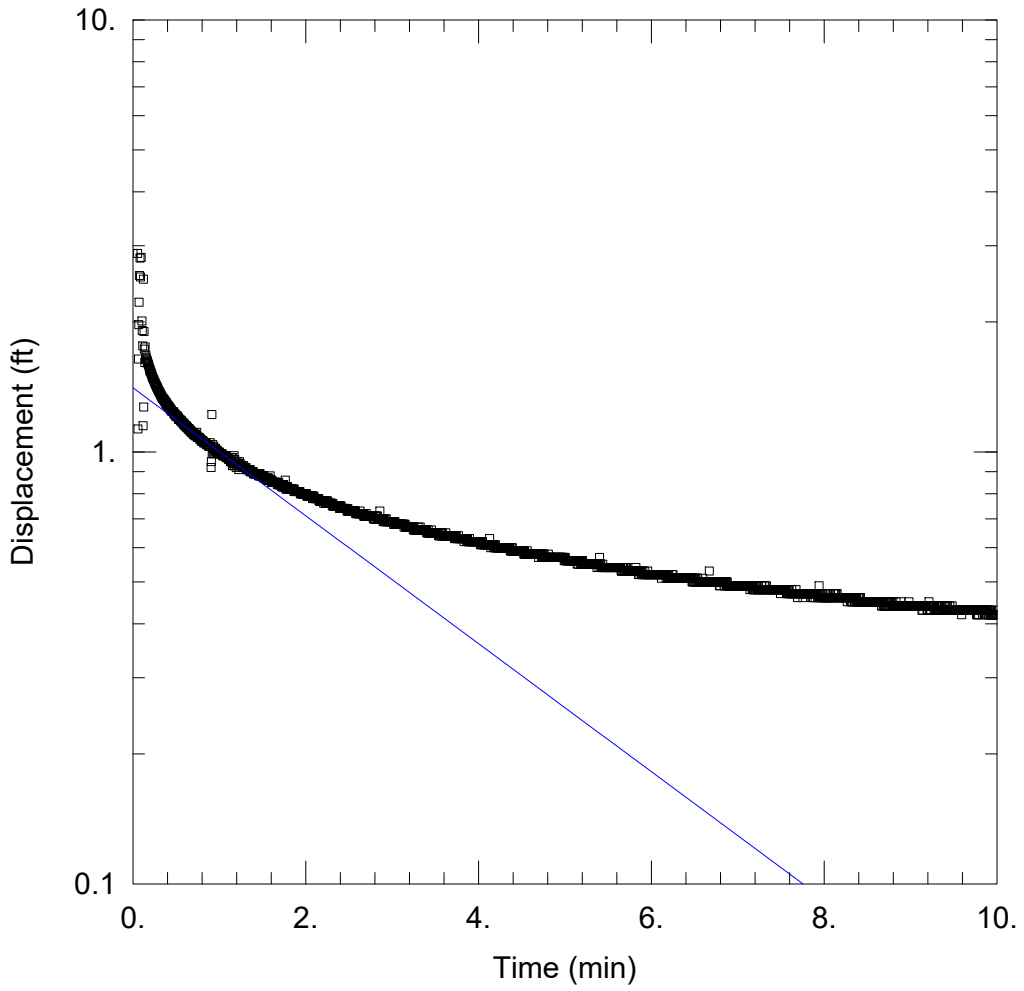
Saturated Thickness: 13.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.73 ft
Total Well Penetration Depth: 10.74 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.74 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004506 cm/sec
y0 = 0.9815 ft



MW-11 FALLING HEAD

Data Set: G:\...\MW-11 Falling Head.aqt
Date: 02/09/17 Time: 15:47:21

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-11
Test Date: 2/08/2017

AQUIFER DATA

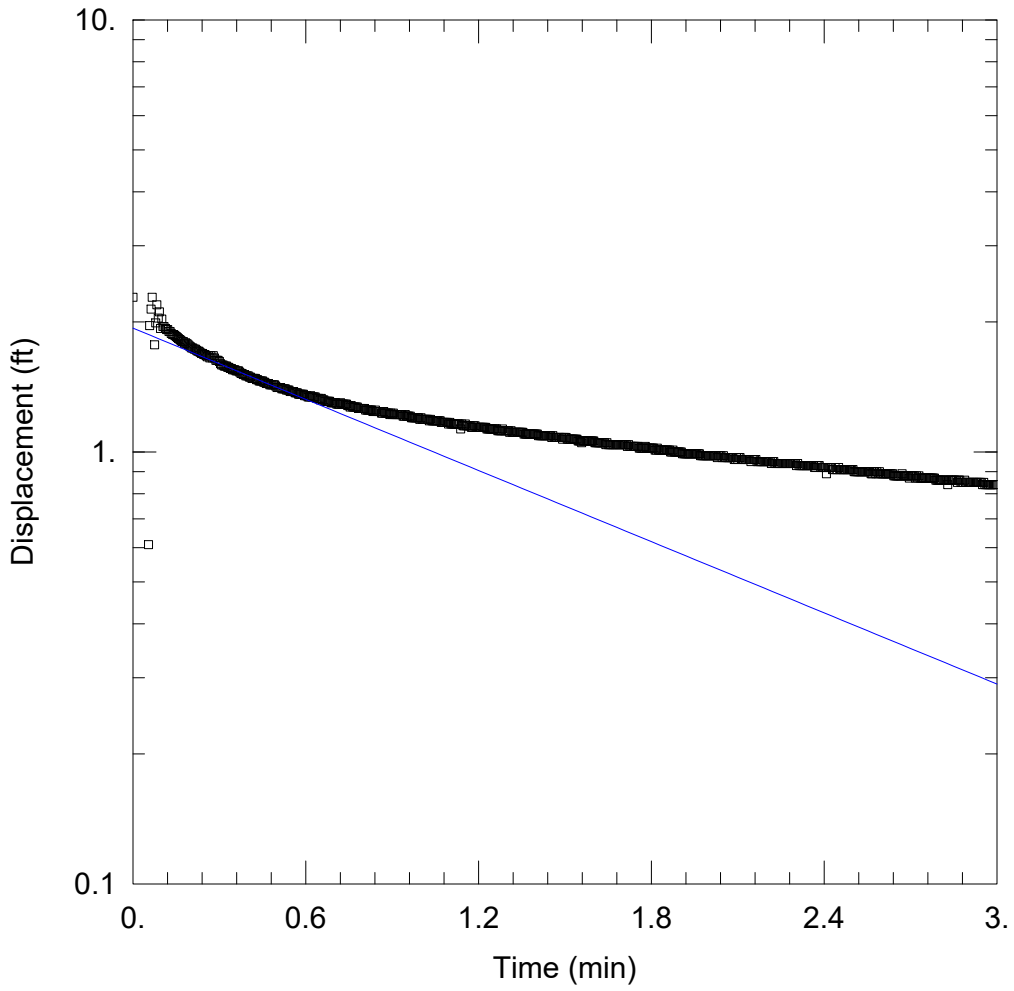
Saturated Thickness: 13. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11)

Initial Displacement: 2.88 ft Static Water Column Height: 13.09 ft
Total Well Penetration Depth: 13.09 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001638 cm/sec y0 = 1.407 ft



MW-11 RISING HEAD

Data Set: G:\...\MW-11 Rising Head.aqt
Date: 02/09/17 Time: 15:58:13

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-11
Test Date: 2/08/2017

AQUIFER DATA

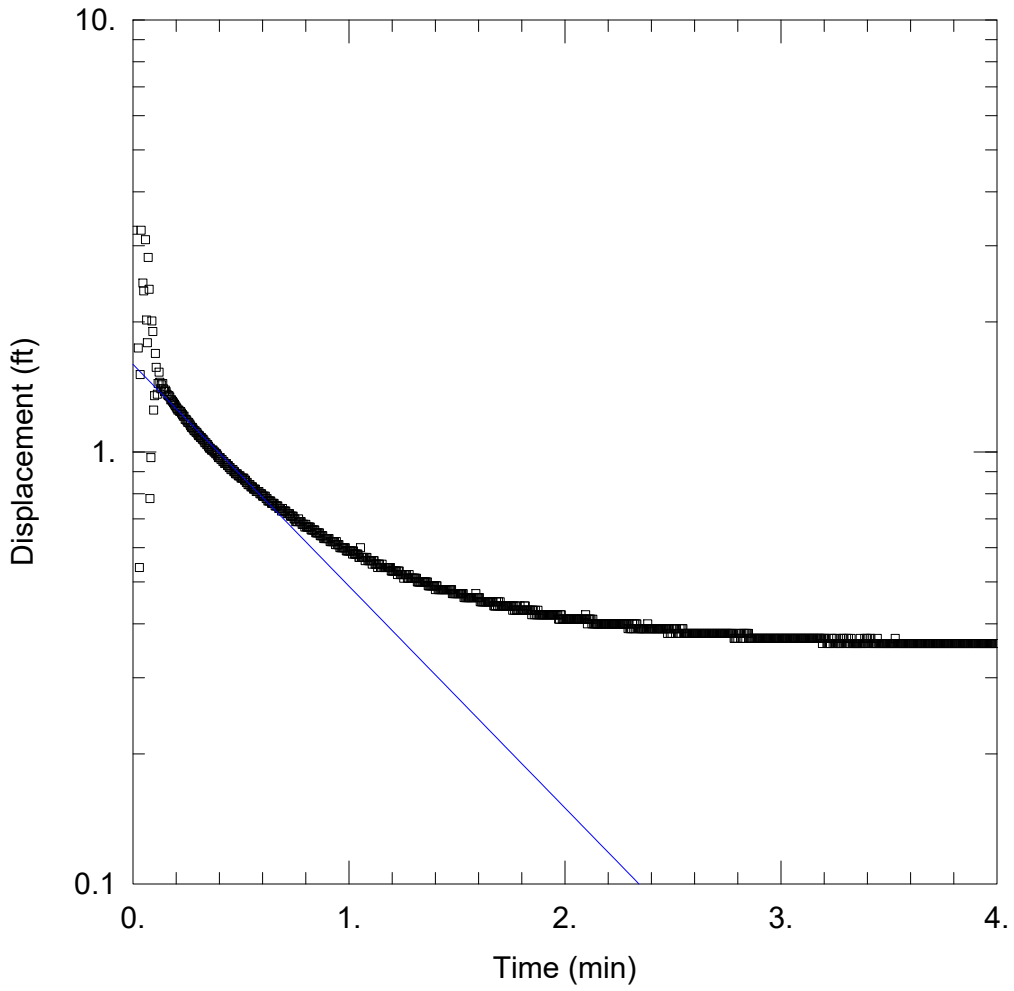
Saturated Thickness: 13.09 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11)

Initial Displacement: 2.28 ft
Total Well Penetration Depth: 13.09 ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.09 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003038 cm/sec
y0 = 1.934 ft



MW-12 FALLING HEAD

Data Set: G:\...\MW-12 Falling Head.aqt
Date: 02/09/17 Time: 16:13:46

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-12
Test Date: 2/08/2017

AQUIFER DATA

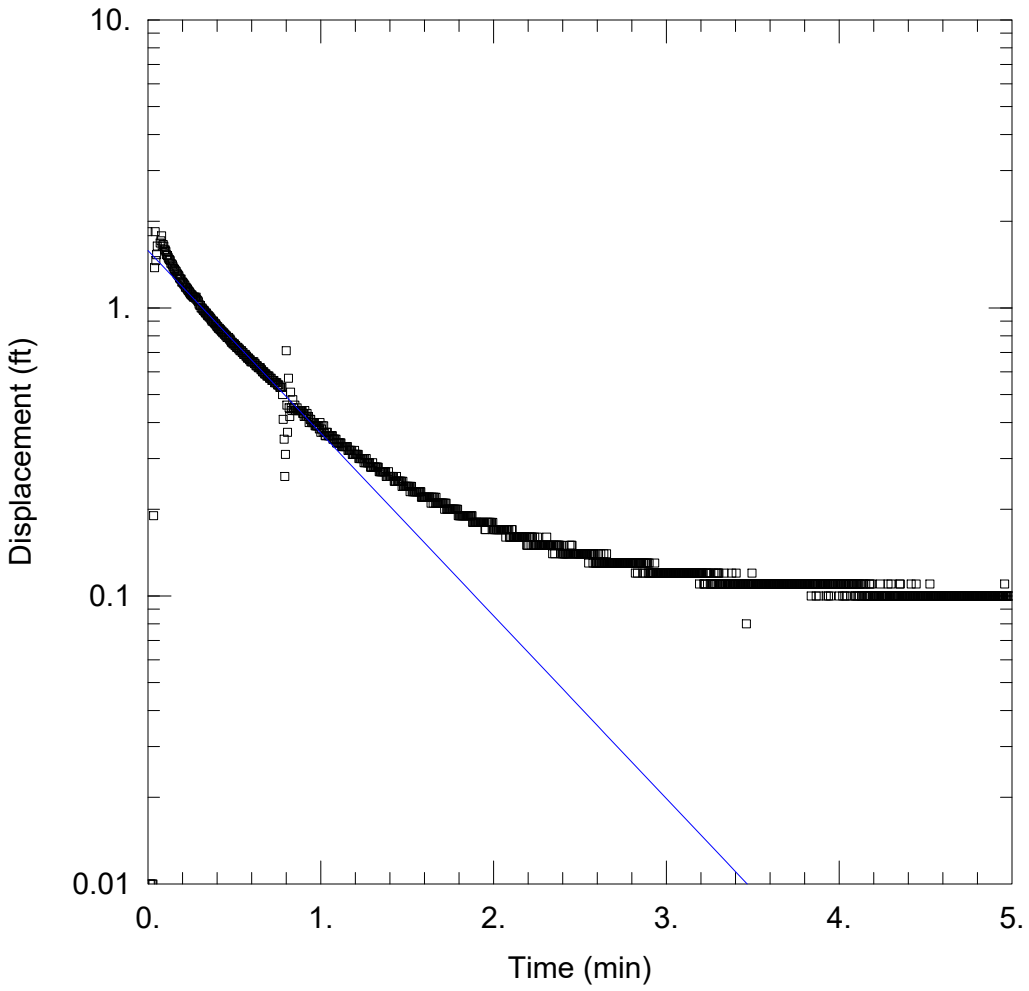
Saturated Thickness: 13.53 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-12)

Initial Displacement: 3.26 ft Static Water Column Height: 13.53 ft
Total Well Penetration Depth: 13.53 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0005722 cm/sec y0 = 1.595 ft



MW-12 RISING HEAD

Data Set: G:\...\MW-12 Rising Head.aqt
Date: 02/09/17 Time: 16:32:37

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-12
Test Date: 2/08/2017

AQUIFER DATA

Saturated Thickness: 13.53 ft Anisotropy Ratio (Kz/Kr): 1.

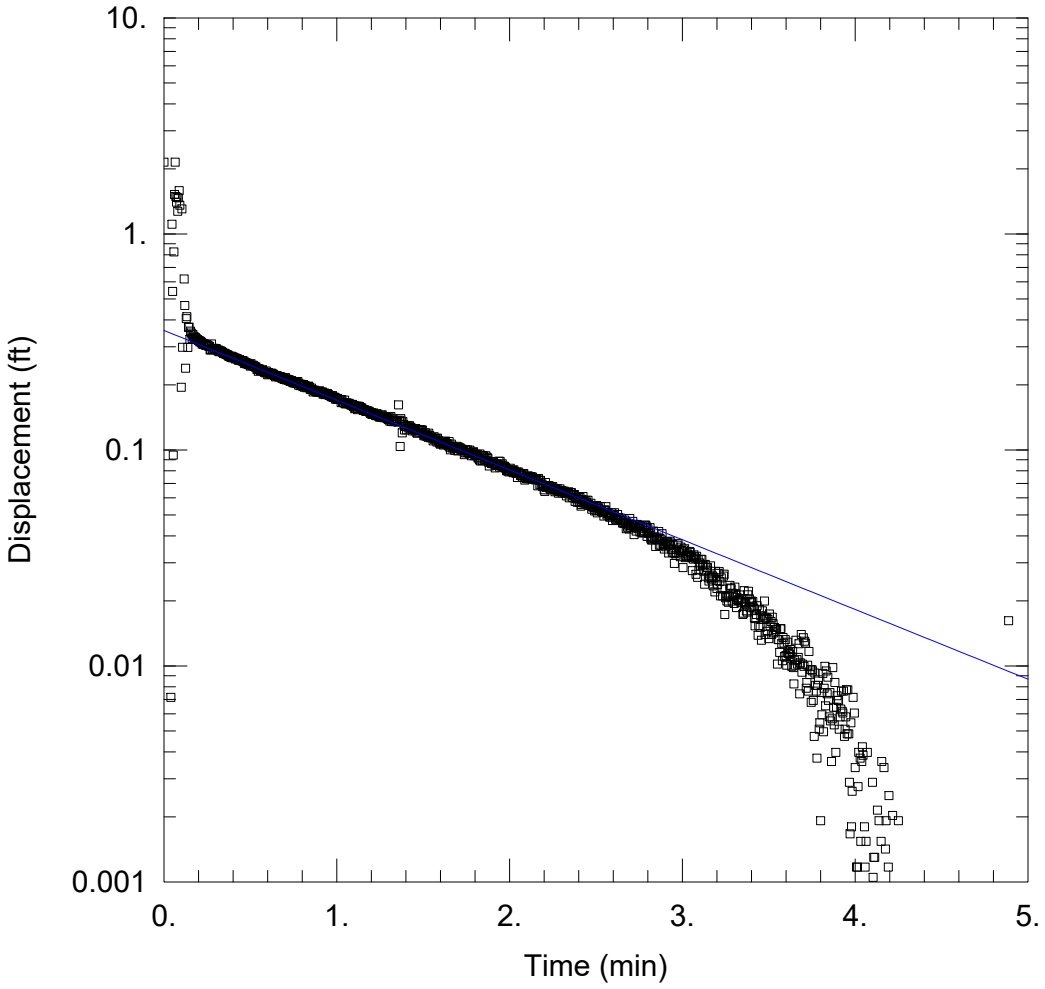
WELL DATA (New Well)

Initial Displacement: 1.84 ft
Total Well Penetration Depth: 13.53 ft
Casing Radius: 0.083 ft
Static Water Column Height: 13.53 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0007067 cm/sec
y0 = 1.582 ft



MW-13 FALLING HEAD

Data Set: G:\...\MW-13 Fallinng Head.aqt
Date: 02/09/17 Time: 16:55:15

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-13
Test Date: 2/08/2017

AQUIFER DATA

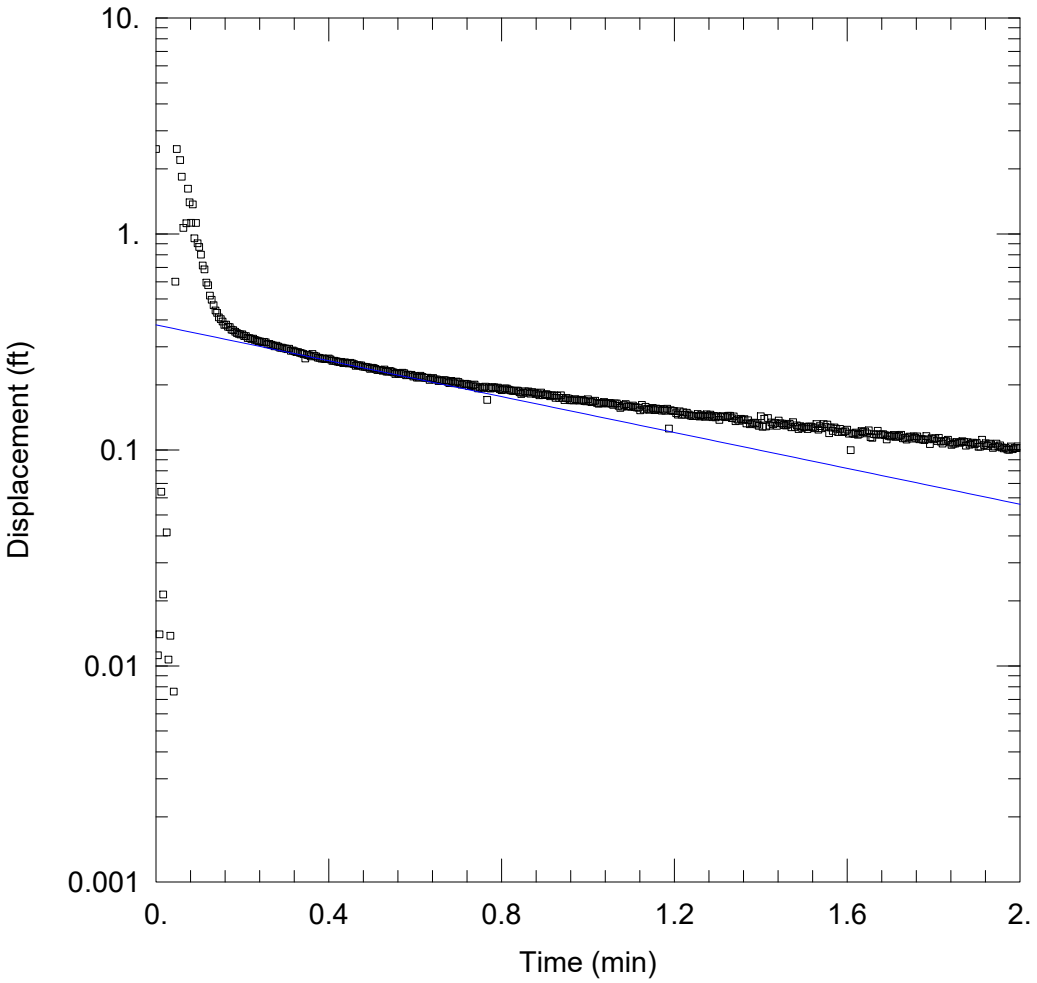
Saturated Thickness: 9.4 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-13)

Initial Displacement: 2.148 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft
Static Water Column Height: 9.4 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003549 cm/sec
y0 = 0.3573 ft



MW-13 RISING HEAD

Data Set: G:\...\MW-13 Rising Head.aqt
Date: 06/05/17 Time: 15:06:05

PROJECT INFORMATION

Company: ATC Group Services LLC
Client: IPL
Project: 170LF00326
Location: IPL Petersburg
Test Well: MW-13
Test Date: 2/08/2017

AQUIFER DATA

Saturated Thickness: 9.4 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-13)

Initial Displacement: 2.472 ft
Total Well Penetration Depth: 10. ft
Casing Radius: 0.083 ft
Static Water Column Height: 9.4 ft
Screen Length: 10. ft
Well Radius: 0.33 ft

SOLUTION

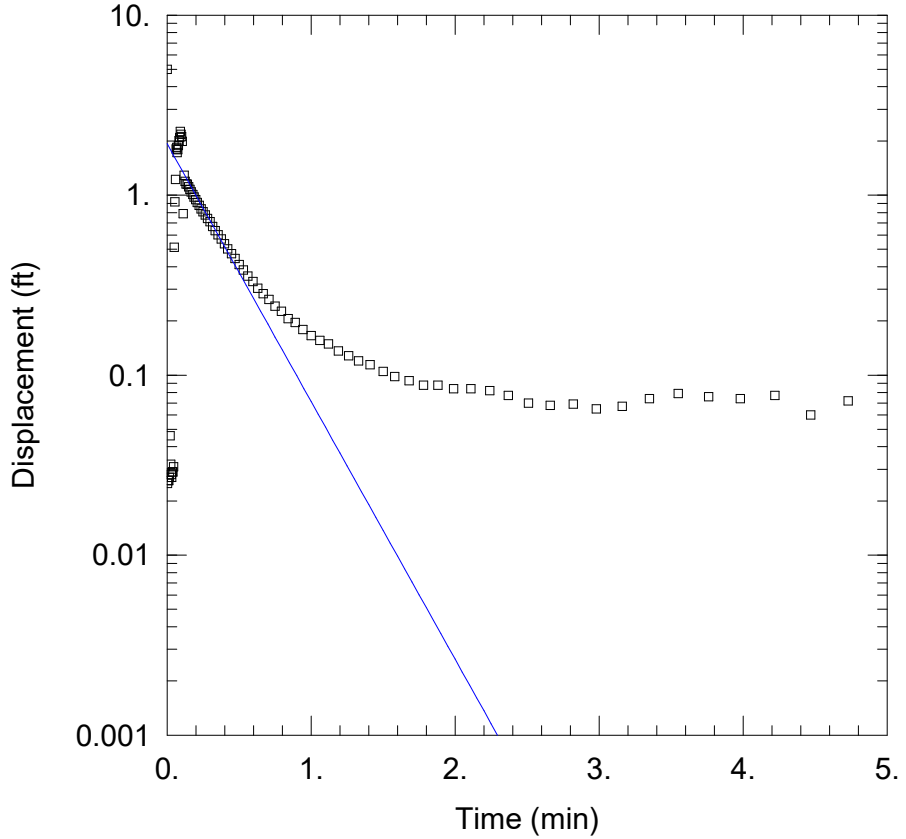
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004564 cm/sec
y0 = 0.3793 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00695

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, ft/min	K, cm/sec
MW-14	Falling Head	0.083	0.33	5	9.93	8.30	5.76E-03	2.93E-03
	Rising Head					8.27	5.75E-03	2.92E-03
MW-15	Falling Head	0.083	0.33	5	28.73	18.950	1.32E-02	6.69E-03
	Rising Head					19.728	1.37E-02	6.96E-03
MW-16	Falling Head	0.083	0.33	5	19.02	7.98	5.54E-03	2.81E-03
	Rising Head					7.70	5.35E-03	2.72E-03
					Average	7.84	8.21E-03	4.17E-03

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



MW-14 FALLING HEAD

Data Set: G:\...\MW-14IN.aqt
Date: 04/30/19 Time: 11:39:08

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-14 Falling Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.005764 ft/min
y0 = 1.929 ft

AQUIFER DATA

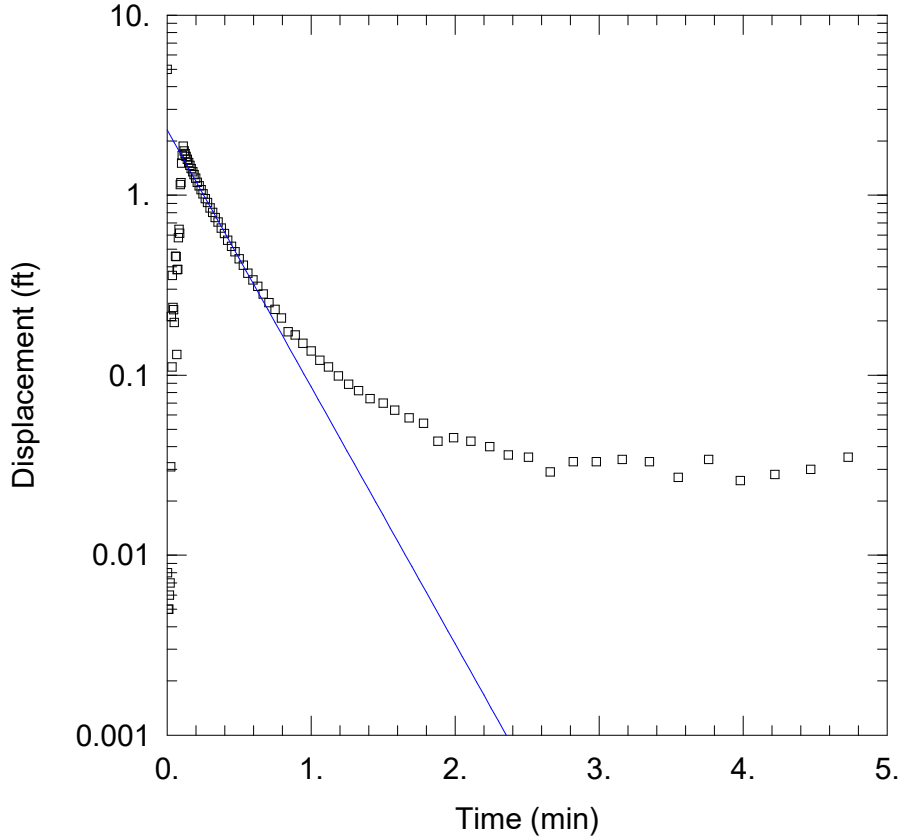
Saturated Thickness: 9.93 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 1. ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-14 RISING HEAD

Data Set: G:\...\MW-14OUT.aqt
Date: 04/30/19 Time: 11:38:23

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-14 Rising Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.005746 ft/min
y0 = 2.303 ft

AQUIFER DATA

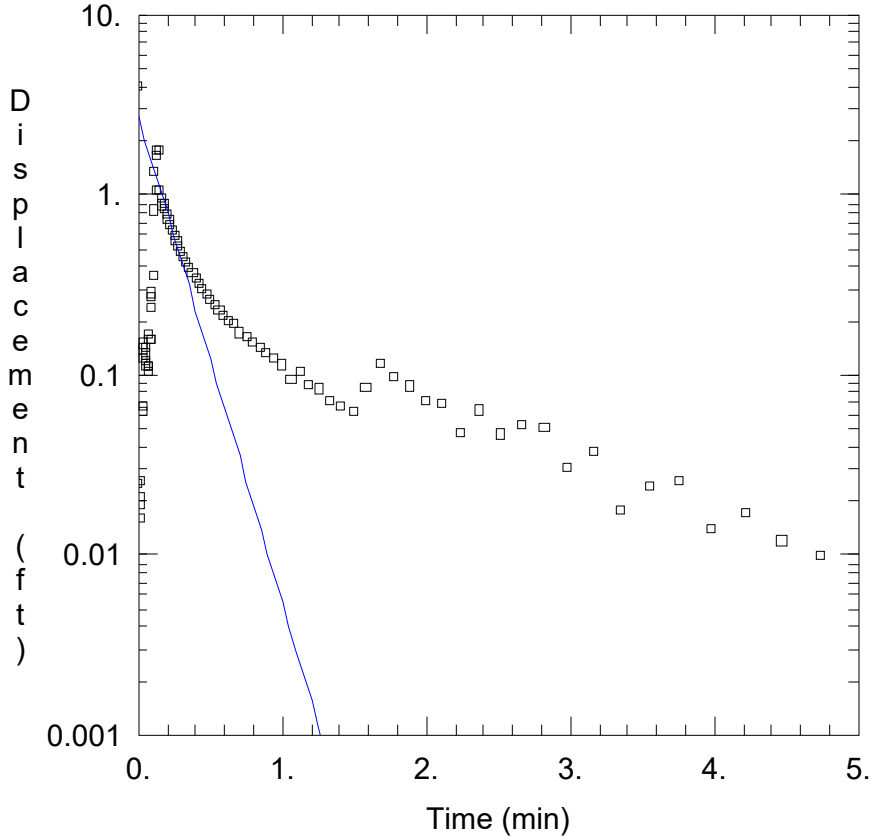
Saturated Thickness: 9.93 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.083 ft

Static Water Column Height: 9.93 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-15 FALLING HEAD

Data Set: G:\...\MW-15IN.aqt
Date: 07/17/19 Time: 09:26:26

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-15 Falling Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

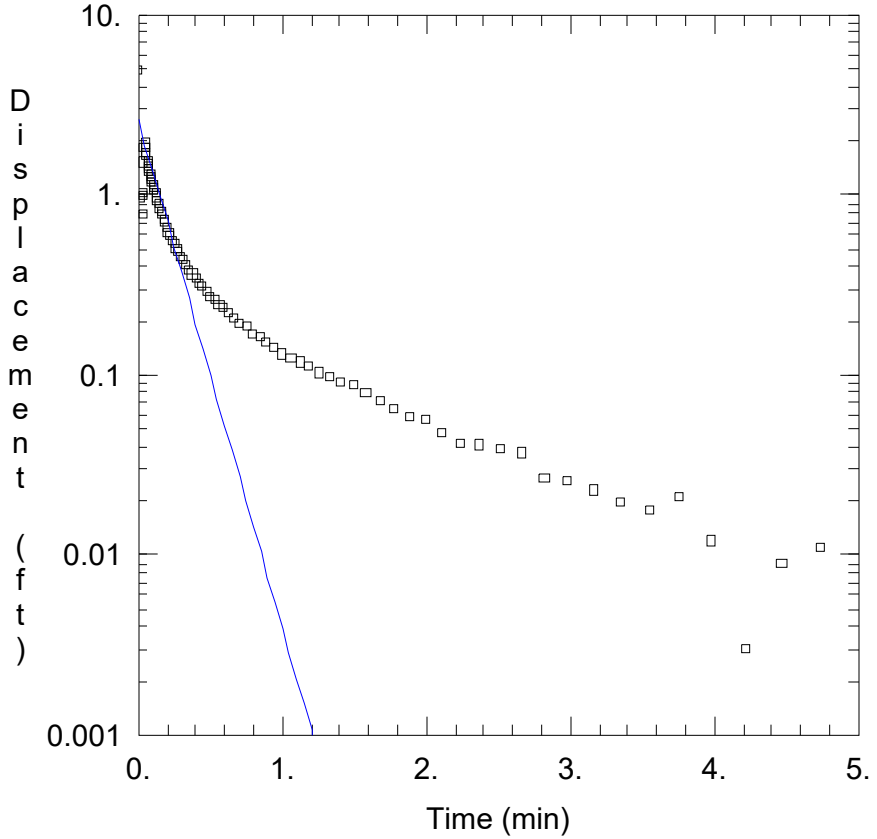
K = 0.01316 ft/min
y0 = 2.772 ft

AQUIFER DATA

Saturated Thickness: 28.73 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 4. ft
Total Well Penetration Depth: 42.65 ft
Casing Radius: 0.083 ft
Static Water Column Height: 28.73 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-15 RISING HEAD

Data Set: G:\...\MW-15OUT.aqt
Date: 07/17/19 Time: 09:26:07

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-15 Rising Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.0137 ft/min
y0 = 2.603 ft

AQUIFER DATA

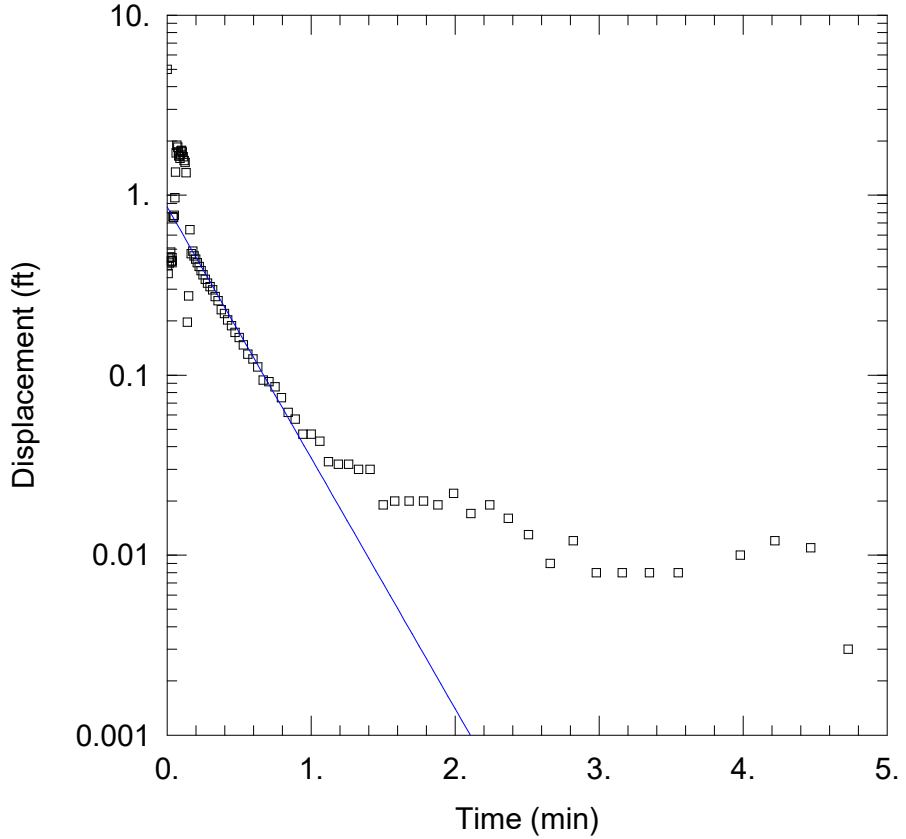
Saturated Thickness: 28.73 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 42.65 ft
Casing Radius: 0.083 ft

Static Water Column Height: 28.73 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-16 FALLING HEAD

Data Set: G:\...\MW-16IN.aqt
Date: 04/30/19 Time: 11:41:01

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-16 Falling Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.005541 ft/min
y0 = 0.8596 ft

AQUIFER DATA

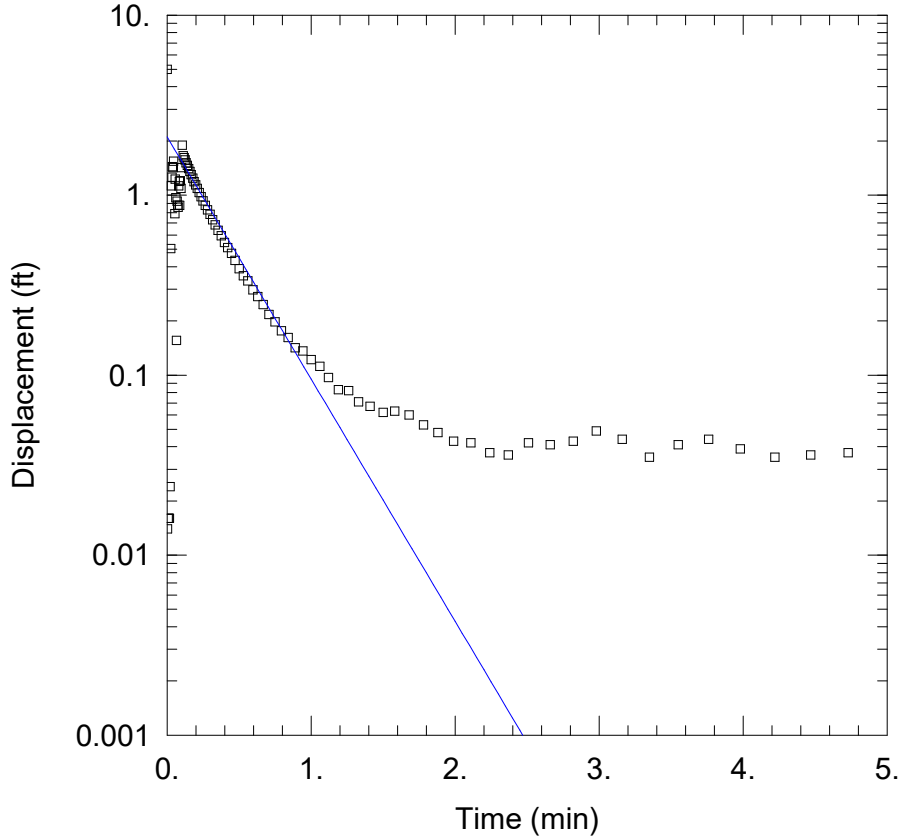
Saturated Thickness: 19.02 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 18.8 ft
Casing Radius: 0.083 ft

Static Water Column Height: 19.02 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-16 RISING HEAD

Data Set: G:\...\MW-16OUT.aqt
Date: 04/30/19 Time: 11:40:41

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00695
Location: Petersburg
Test Well: MW-16 Rising Head
Test Date: 4/15/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.00535 ft/min
y0 = 2.108 ft

AQUIFER DATA

Saturated Thickness: 19.02 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 5. ft
Total Well Penetration Depth: 18.8 ft
Casing Radius: 0.083 ft

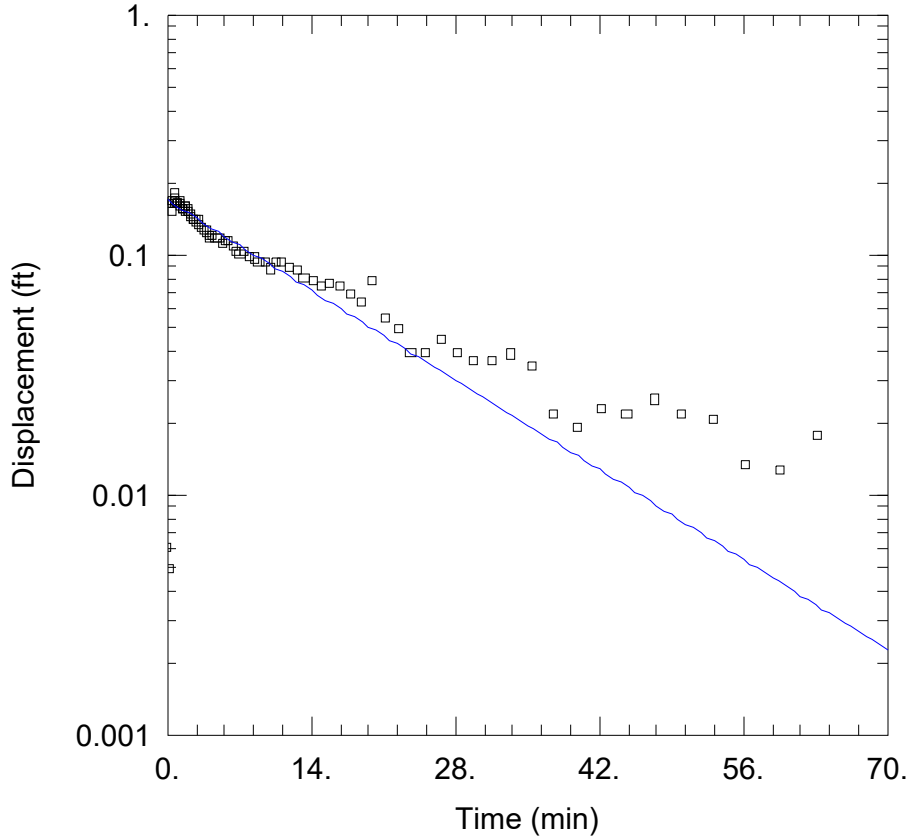
Static Water Column Height: 19.02 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00705

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, ft/min	K, cm/sec
MW-17	Falling Head	0.083	0.33	10	3.56	0.21	1.45E-04	7.37E-05
	Rising Head					0.23	1.59E-04	8.09E-05
MW-18	Falling Head	0.083	0.33	5	19.84	0.05	3.41E-05	1.73E-05
	Rising Head					0.05	3.68E-05	1.87E-05
					Average	0.14	9.38E-05	4.77E-05

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



MW-17 FALLING HEAD

Data Set: G:\...\MW-17 Falling Head.aqt
Date: 09/24/19 Time: 14:48:20

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-17
Test Date: 7/10/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 7.374E-5 cm/sec
y0 = 0.1687 ft

AQUIFER DATA

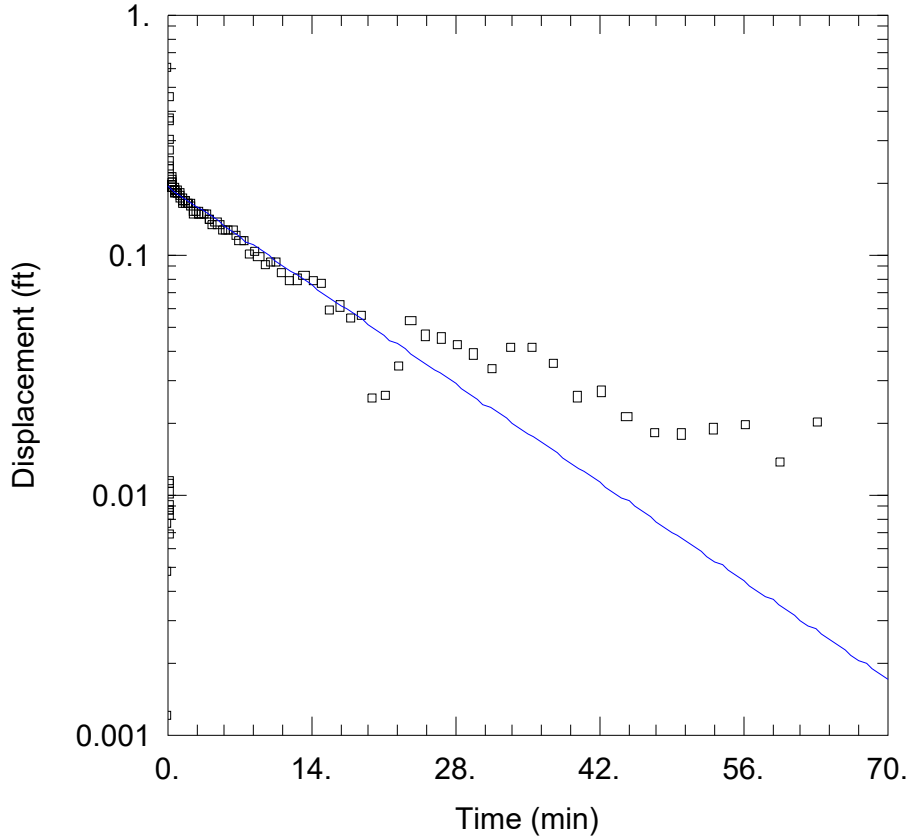
Saturated Thickness: 3.56 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.49 ft
Total Well Penetration Depth: 15.5 ft
Casing Radius: 0.083 ft

Static Water Column Height: 3.56 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-17 RISING HEAD

Data Set: G:\...\MW-17 Rising Head.aqt
Date: 09/24/19 Time: 14:58:51

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-17
Test Date: 7/10/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

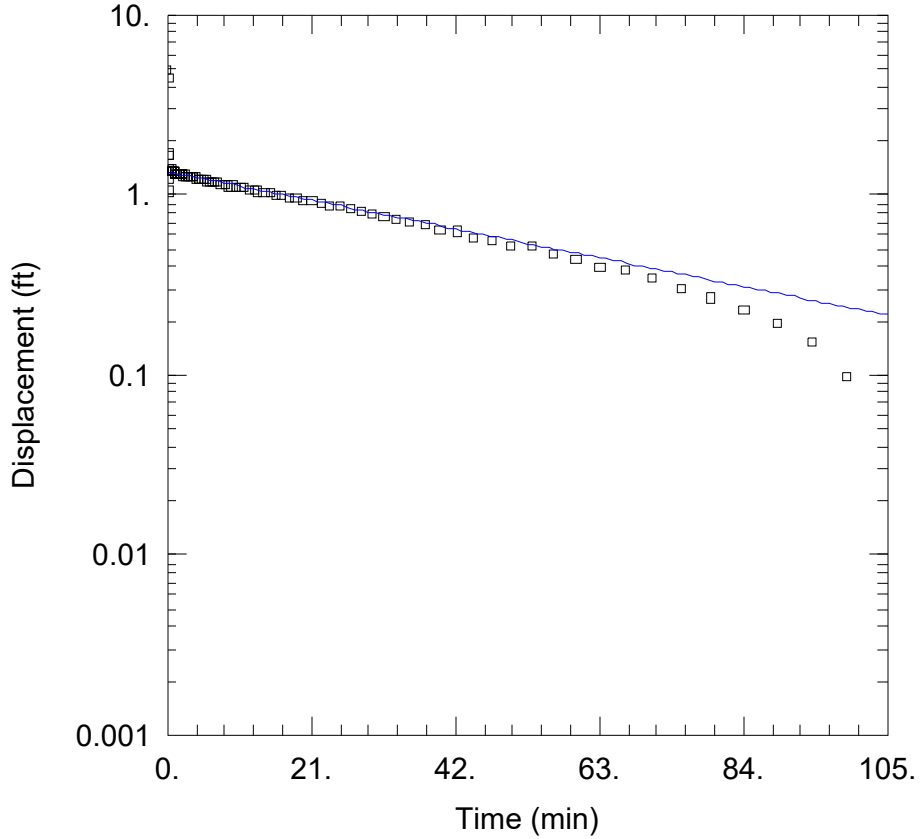
K = 8.094E-5 cm/sec
y0 = 0.1929 ft

AQUIFER DATA

Saturated Thickness: 3.56 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 0.611 ft
Total Well Penetration Depth: 15.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 3.52 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-18 FALLING HEAD

Data Set: G:\...\MW-18 Falling Head.aqt
Date: 09/24/19 Time: 15:49:32

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-18
Test Date: 7/10/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 1.73E-5 cm/sec
y0 = 1.352 ft

AQUIFER DATA

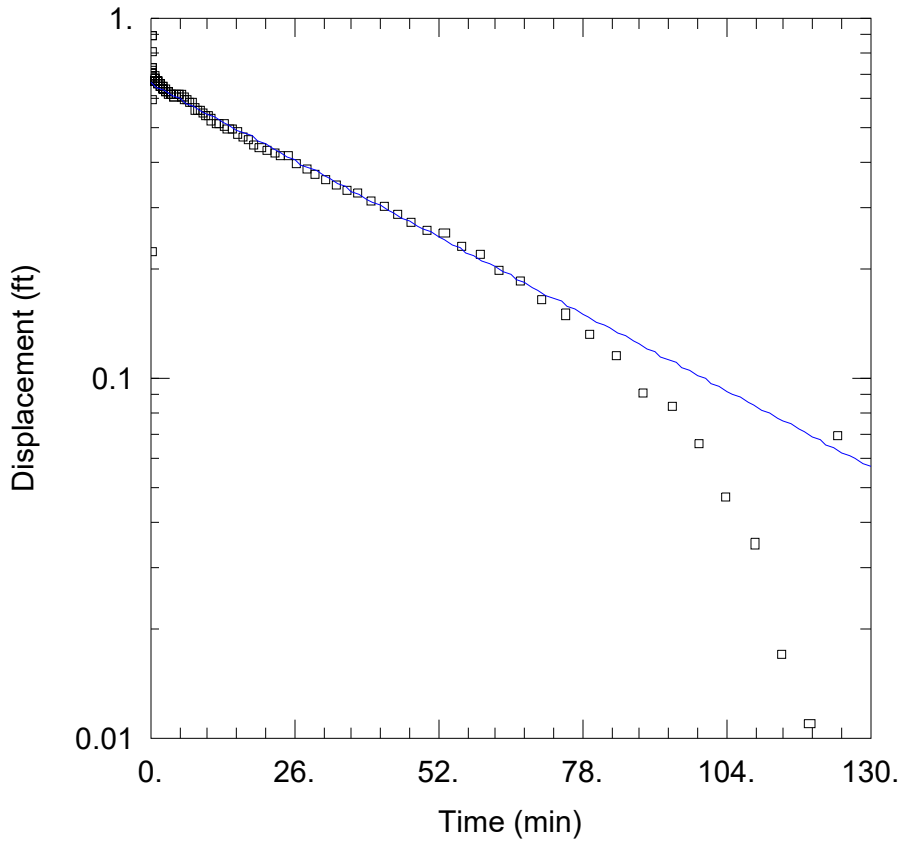
Saturated Thickness: 19.84 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 4.98 ft
Total Well Penetration Depth: 25.2 ft
Casing Radius: 0.083 ft

Static Water Column Height: 19.23 ft
Screen Length: 5. ft
Well Radius: 0.333 ft



MW-18 RISING HEAD

Data Set: G:\...\MW-18 Rising Head.aqt
Date: 09/24/19 Time: 15:49:15

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-18
Test Date: 7/10/2019

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 1.867E-5 cm/sec
y0 = 0.6586 ft

AQUIFER DATA

Saturated Thickness: 19.84 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

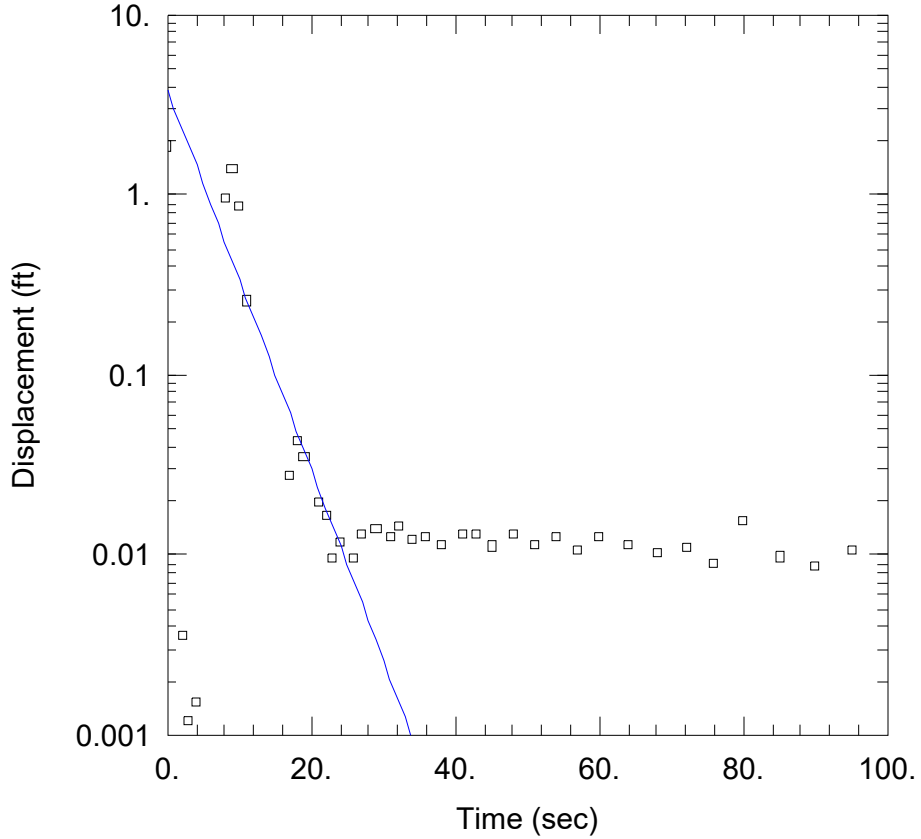
Initial Displacement: 2.095 ft
Total Well Penetration Depth: 25.2 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.84 ft
Screen Length: 5. ft
Well Radius: 0.333 ft

Table 3
Summary of Hydraulic Conductivity Testing
Indianapolis Power & Light Company
Petersburg Generating Station
Petersburg, Indiana

ATC Project No. 170LF00705

Monitoring Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, ft/min	K, cm/sec
AP-9A	Falling Head	0.083	0.33	10	9.93	27.19	1.89E-02	9.59E-03
	Rising Head					26.90	1.87E-02	9.49E-03
AP-10A	Falling Head	0.083	0.33	10	19.02	28.80	2.00E-02	1.02E-02
	Rising Head					33.45	2.32E-02	1.18E-02
MW-19B	Falling Head	0.083	0.33	10	19.02	56.92	3.95E-02	2.01E-02
	Rising Head					67.66	4.70E-02	2.39E-02
MW-19I	Falling Head	0.083	0.33	10	28.73	52.696	3.66E-02	1.86E-02
	Rising Head					52.696	3.66E-02	1.86E-02
MW-19A	Falling Head	0.083	0.33	10	19.02	15.95	1.11E-02	5.63E-03
	Rising Head					16.05	1.11E-02	5.66E-03
					Average	16.00	2.63E-02	1.33E-02

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius
K= Hydraulic conductivity



AP-9A FALLING HEAD

Data Set: G:\...\AP-9A IN.aqt
Date: 09/25/19 Time: 08:53:00

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-9A
Test Date: 6/7/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

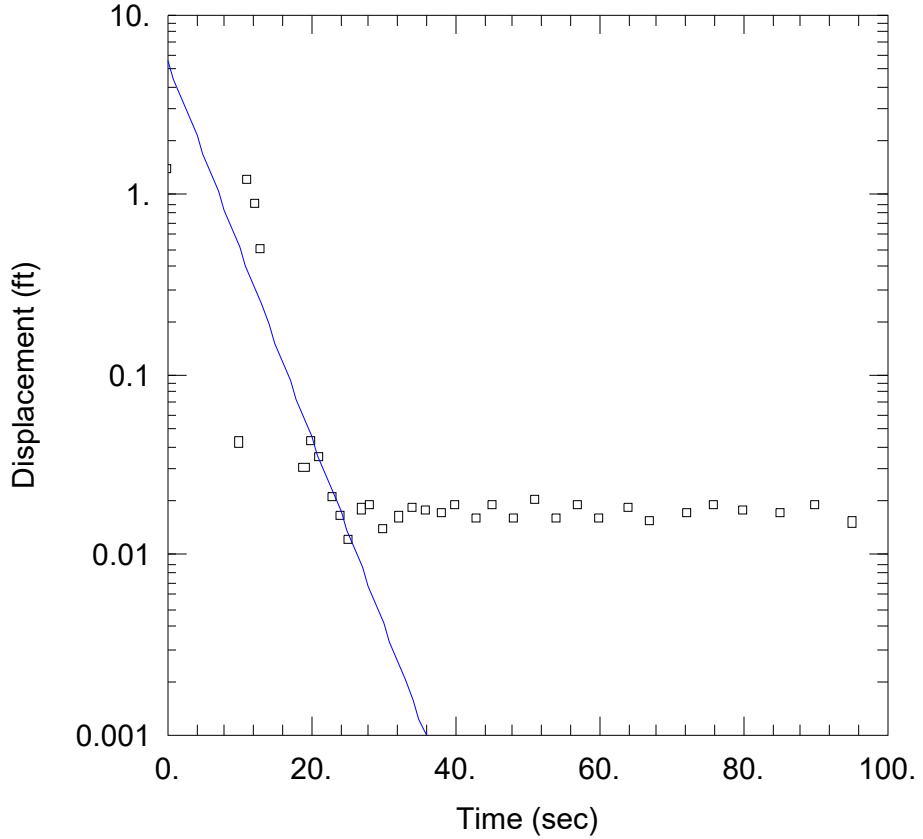
K = 0.009592 cm/sec
y0 = 3.865 ft

AQUIFER DATA

Saturated Thickness: 55.05 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.87 ft
Total Well Penetration Depth: 80.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 58.43 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



AP-9A RISING HEAD

Data Set: G:\...\AP-9A OUT.aqt
Date: 09/25/19 Time: 08:52:45

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-9A
Test Date: 6/7/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

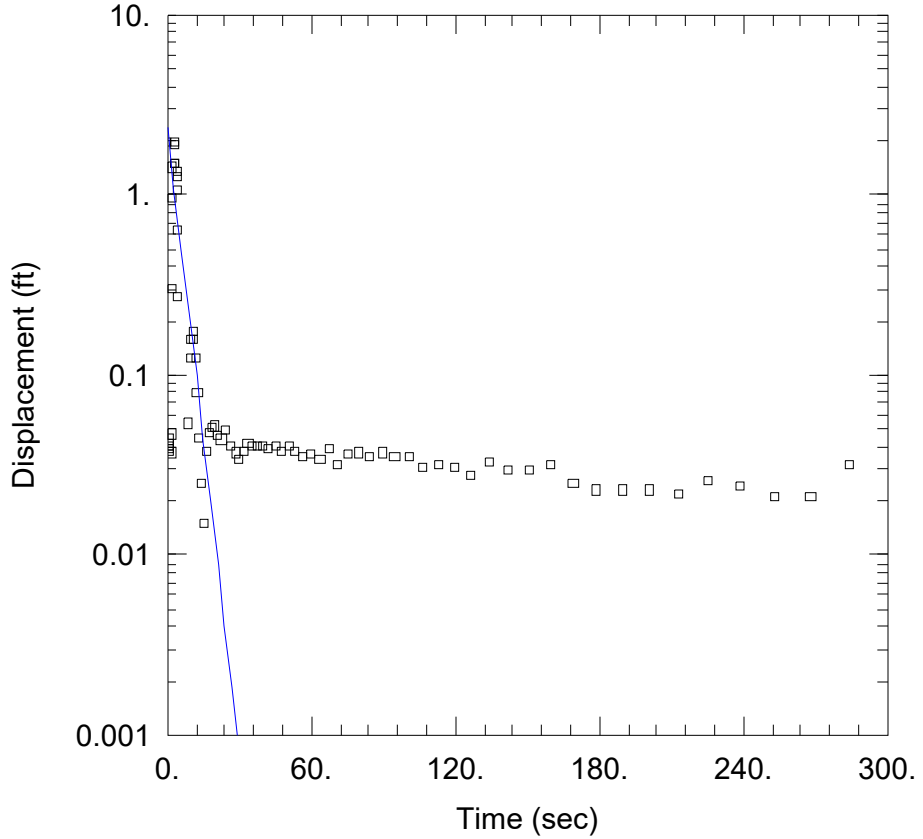
K = 0.009491 cm/sec
y0 = 5.604 ft

AQUIFER DATA

Saturated Thickness: 55.05 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.39 ft
Total Well Penetration Depth: 80.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 58.43 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



AP-10A FALLING HEAD

Data Set: G:\...\AP-10A Falling Head.aqt
Date: 09/25/19 Time: 08:53:43

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-10A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

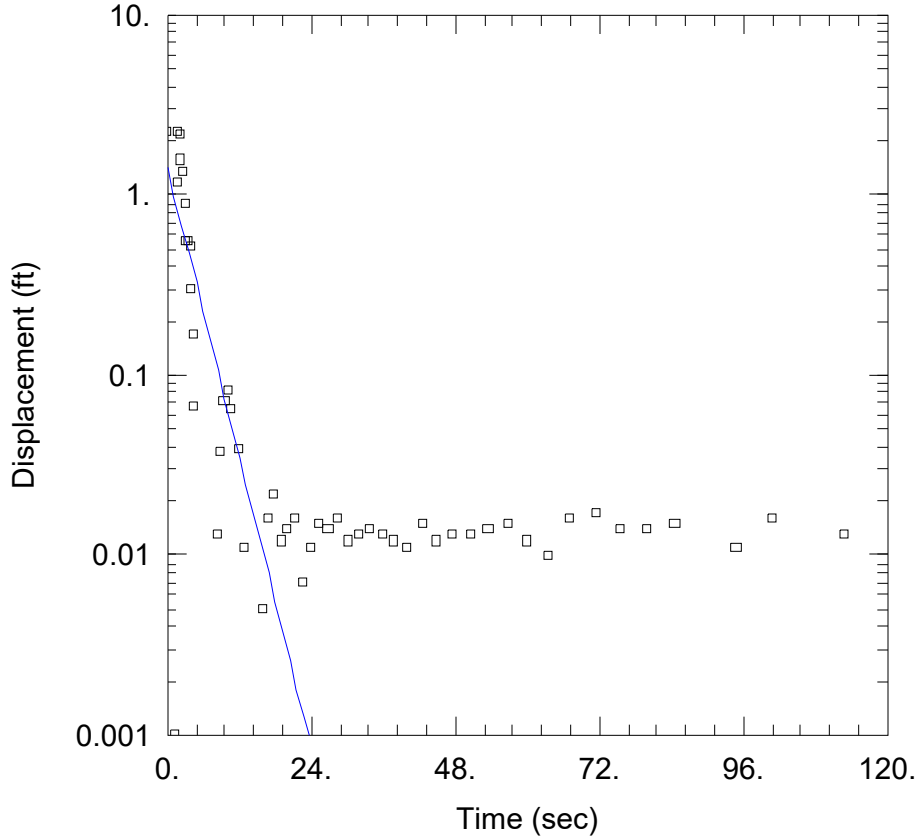
K = 0.01016 cm/sec
y0 = 2.4 ft

AQUIFER DATA

Saturated Thickness: 49.38 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.95 ft
Total Well Penetration Depth: 63.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 49.38 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



AP-10A RISING HEAD

Data Set: G:\...\AP-10A Rising Head.aqt
Date: 09/25/19 Time: 08:53:29

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: AP-10A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

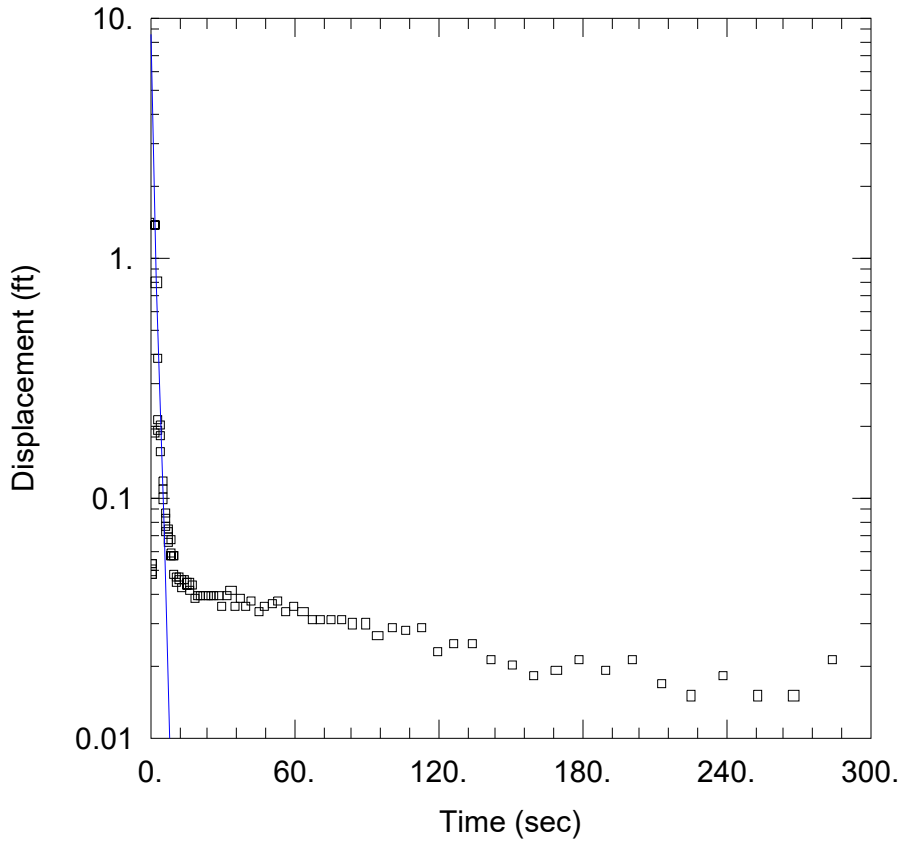
K = 0.0118 cm/sec
y0 = 1.435 ft

AQUIFER DATA

Saturated Thickness: 49.38 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 2.24 ft
Total Well Penetration Depth: 63.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 49.38 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19B FALLING HEAD

Data Set: G:\...\MW-19B Falling Head.aqt
Date: 09/25/19 Time: 08:54:53

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19B
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.02008 cm/sec
y0 = 8.54 ft

AQUIFER DATA

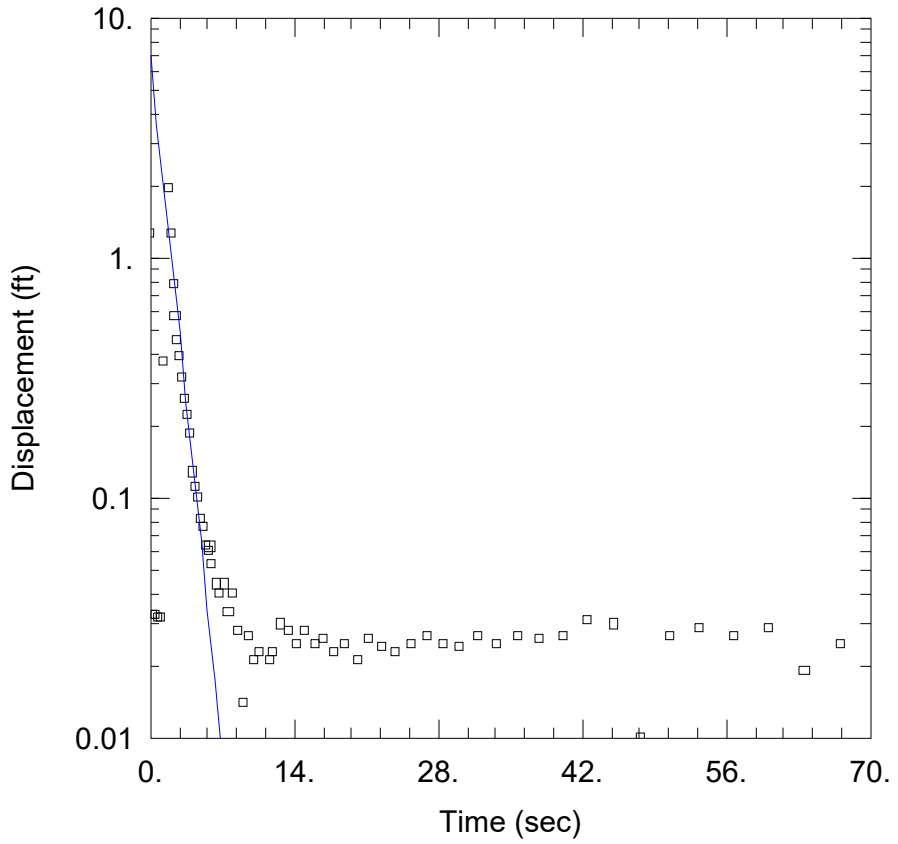
Saturated Thickness: 49.58 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.39 ft
Total Well Penetration Depth: 18. ft
Casing Radius: 0.083 ft

Static Water Column Height: 3.72 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19B RISING HEAD

Data Set: G:\...\MW-19B Rising Head.aqt
Date: 09/25/19 Time: 08:55:05

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19B
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

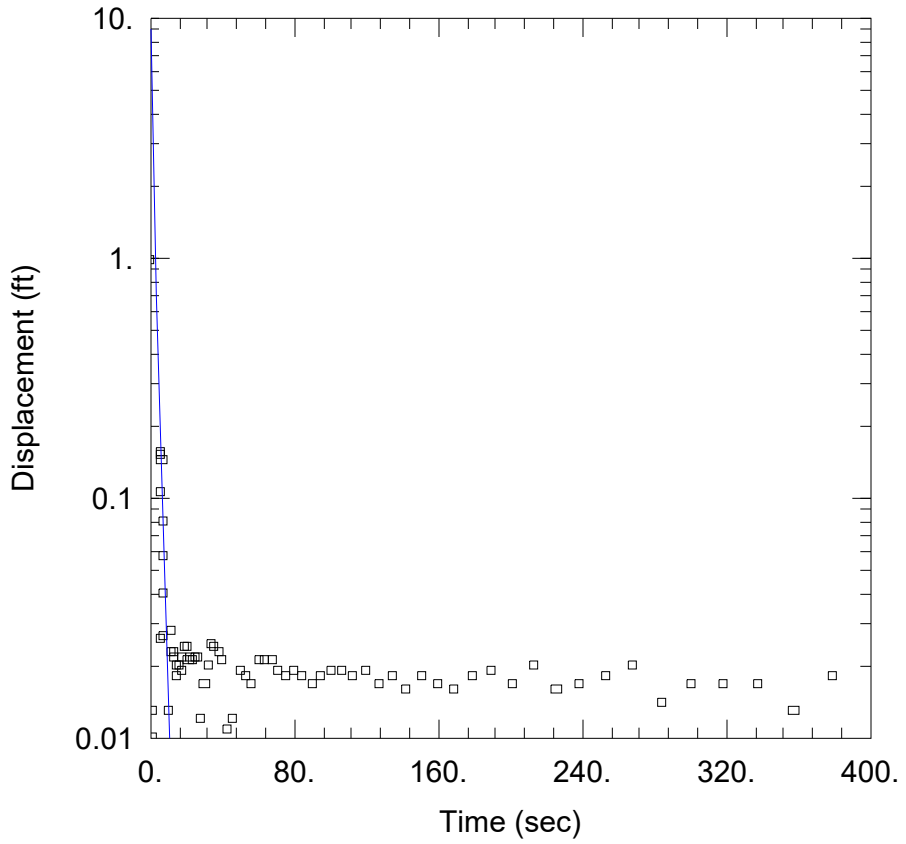
K = 0.02387 cm/sec
y0 = 6.901 ft

AQUIFER DATA

Saturated Thickness: 49.58 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 1.27 ft
Total Well Penetration Depth: 18. ft
Casing Radius: 0.083 ft
Static Water Column Height: 3.72 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19I FALLING HEAD

Data Set: G:\...\MW-19I Falling Head.aqt
Date: 09/25/19 Time: 08:55:37

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19I
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.01859 cm/sec
y0 = 8.913 ft

AQUIFER DATA

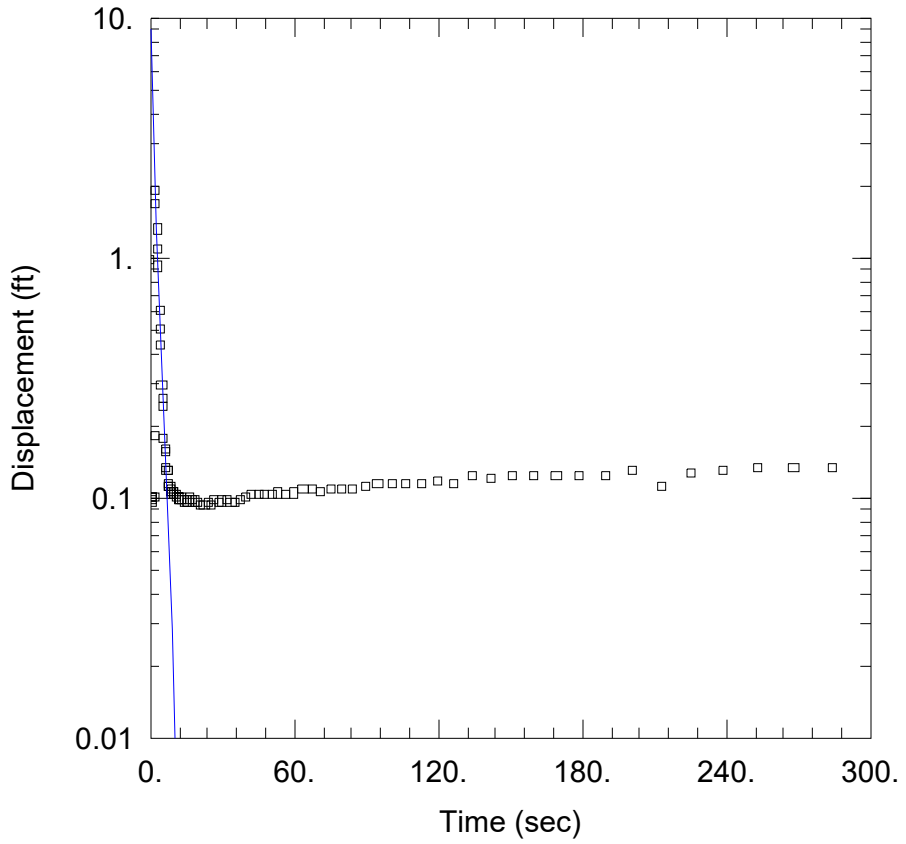
Saturated Thickness: 49.58 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 0.99 ft
Total Well Penetration Depth: 37.9 ft
Casing Radius: 0.083 ft

Static Water Column Height: 23.68 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19I RISING HEAD

Data Set: G:\...\MW-19I Rising Head.aqt
Date: 09/25/19 Time: 08:55:51

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19I
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

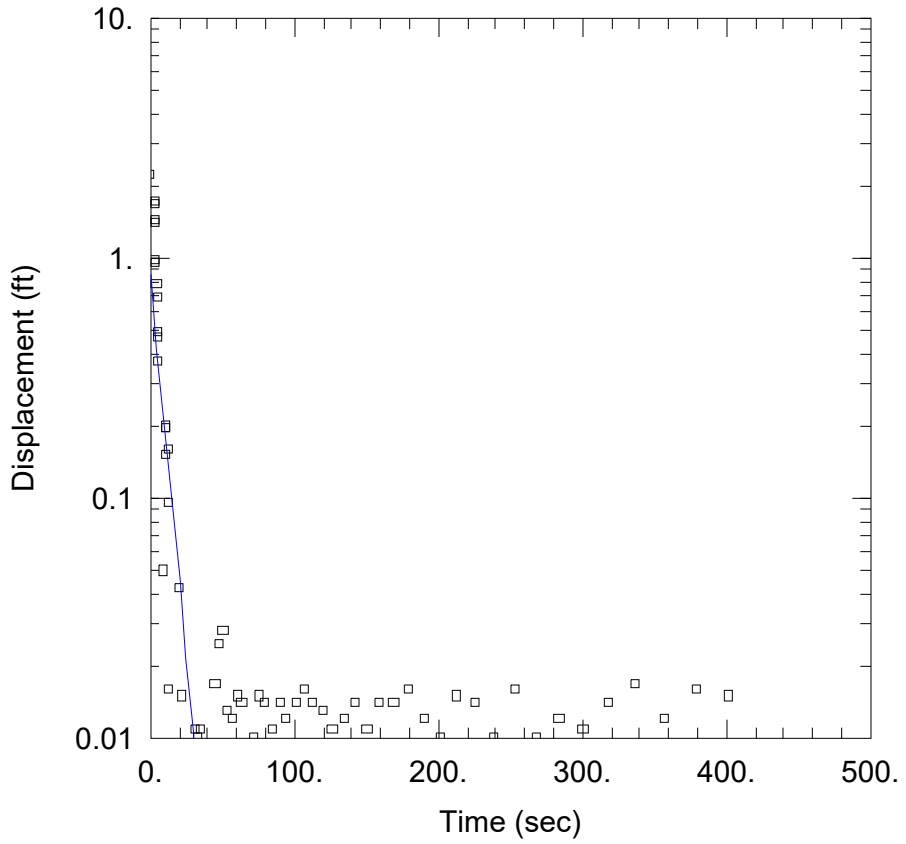
K = 0.01859 cm/sec
y0 = 8.913 ft

AQUIFER DATA

Saturated Thickness: 49.58 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 0.99 ft
Total Well Penetration Depth: 37.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 23.68 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19A FALLING HEAD

Data Set: G:\...\MW-19A Falling Head.aqt
Date: 09/25/19 Time: 08:54:27

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.005628 cm/sec
y0 = 0.865 ft

AQUIFER DATA

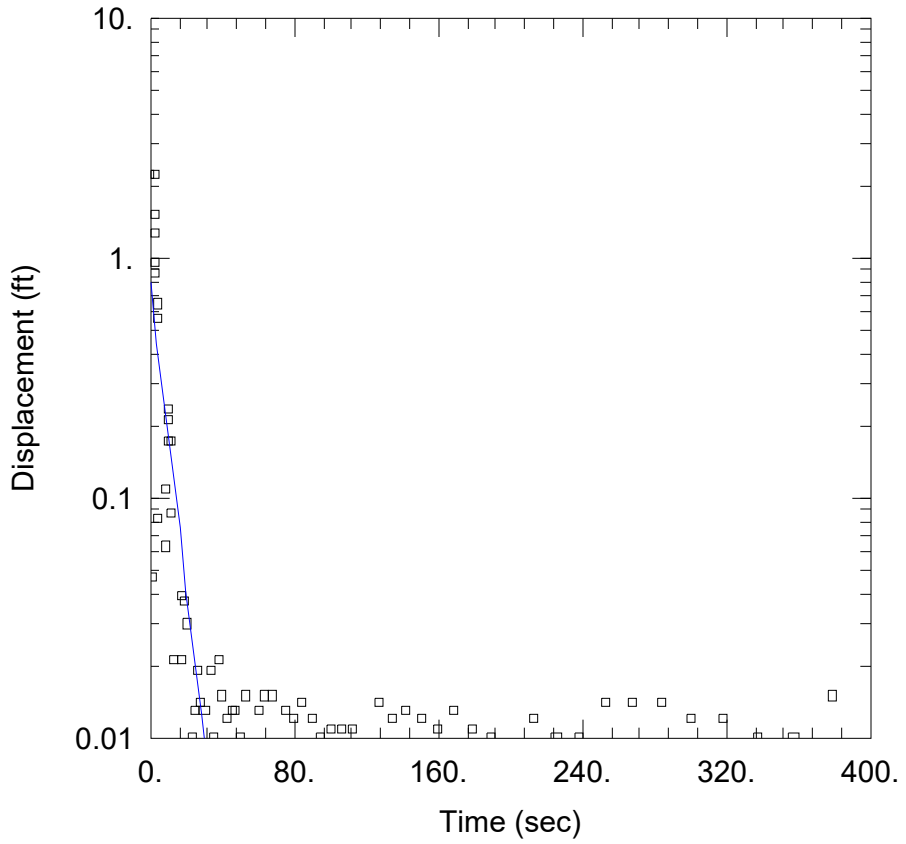
Saturated Thickness: 49.58 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 2.23 ft
Total Well Penetration Depth: 63.7 ft
Casing Radius: 0.083 ft

Static Water Column Height: 49.38 ft
Screen Length: 10. ft
Well Radius: 0.333 ft



MW-19A RISING HEAD

Data Set: G:\...\MW-19A Rising Head.aqt
Date: 09/25/19 Time: 09:04:47

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00705
Location: Petersburg
Test Well: MW-19A
Test Date: 8/12/2019

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.005661 cm/sec
y0 = 0.8003 ft

AQUIFER DATA

Saturated Thickness: 49.58 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

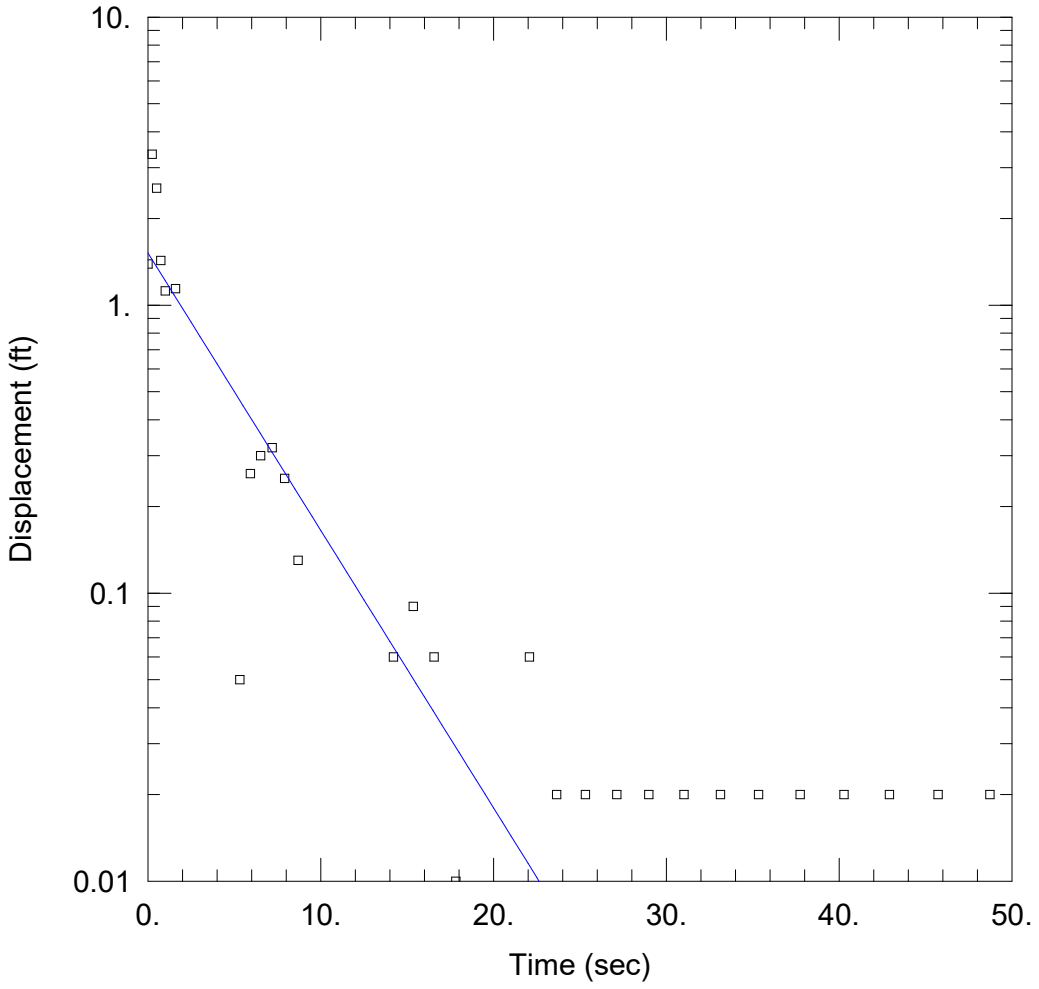
Initial Displacement: 2.24 ft
Total Well Penetration Depth: 63.7 ft
Casing Radius: 0.083 ft
Static Water Column Height: 49.38 ft
Screen Length: 10. ft
Well Radius: 0.333 ft

Table 2: In-Situ Hydraulic Conductivity Results
Indianapolis Power and Light
Petersburg Generating Station
Petersburg, IN

ATC Project No. 170LF00795

Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
MW-20A	Falling Head	0.083	0.333	10	10.0	31.4	1.11E-02
	Rising Head					15.7	5.53E-03
MW-20B	Falling Head	0.083	0.333	10	10.0	81.5	2.88E-02
	Rising Head					28.5	1.01E-02
MW-20I	Falling Head	0.083	0.333	10	10.0	5.9	2.08E-03
	Rising Head					24.5	8.65E-03
PZ-1A	Falling Head	0.083	0.333	10	10.0	30.2	1.07E-02
	Rising Head					50.1	1.77E-02
PZ-1B	Falling Head	0.083	0.333	10	10.0	4.0	1.42E-03
	Rising Head					57.0	2.01E-02
PZ-1I	Falling Head	0.083	0.333	10	10.0	44.7	1.58E-02
	Rising Head					93.0	3.28E-02
PZ-2A	Falling Head	0.083	0.333	10	10.0	30.6	1.08E-02
	Rising Head					29.4	1.04E-02
PZ-2B	Falling Head	0.083	0.333	10	10.0	164.3	5.80E-02
	Rising Head					35.6	1.26E-02
PZ-2I	Falling Head	0.083	0.333	10	10.0	90.3	3.18E-02
	Rising Head					71.9	2.54E-02
					Average:	49.4	1.74E-02

D= Approximate saturated aquifer thickness
L= Well screen length
r= Well casing radius
R= Well bore radius



SLUG TEST RESULTS MW-20A IN

Data Set: G:\...\MW-20A IN.aqt
Date: 07/23/20 Time: 11:58:50

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

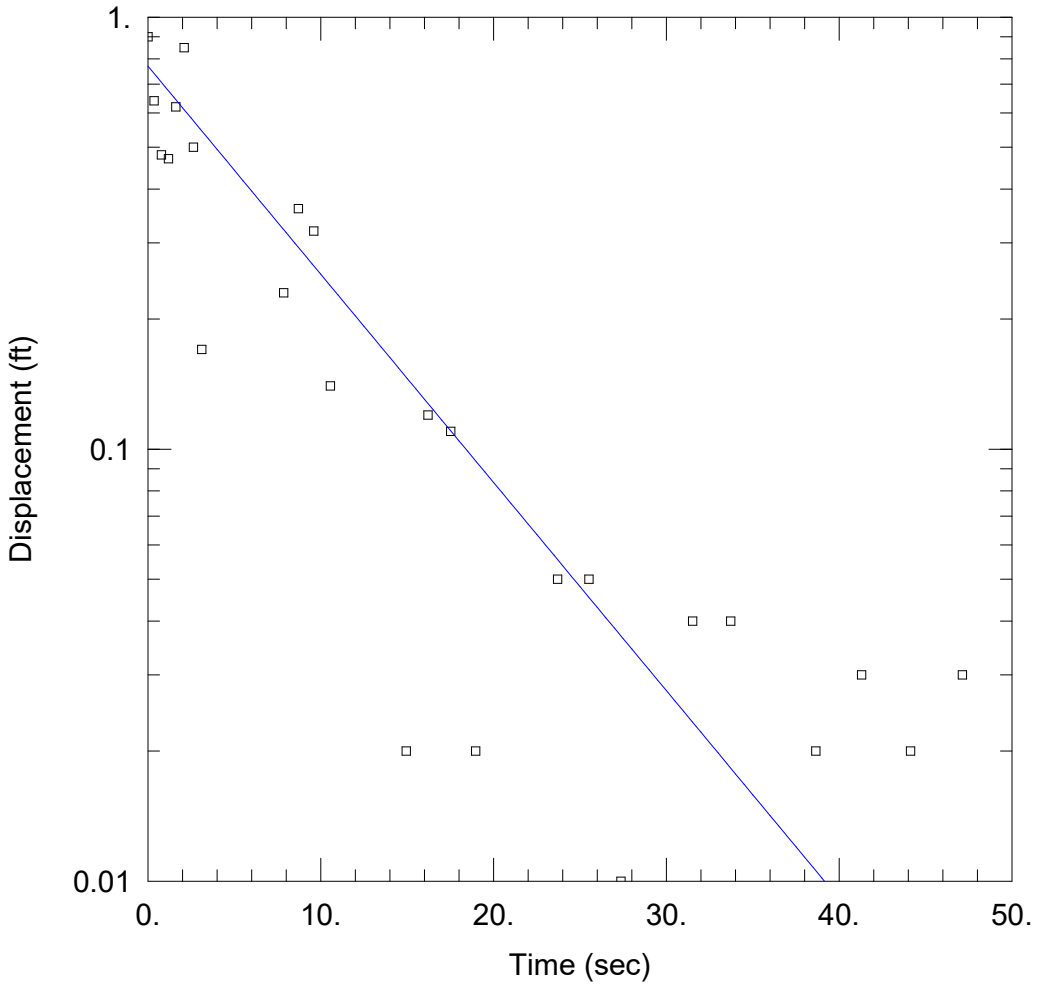
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-20A IN)

Initial Displacement: 1.39 ft
Total Well Penetration Depth: 54.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01106 cm/sec
y0 = 1.517 ft



SLUG TEST RESULTS MW-20A OUT

Data Set: G:\...\MW-20A OUT.aqt
Date: 07/23/20 Time: 11:58:18

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

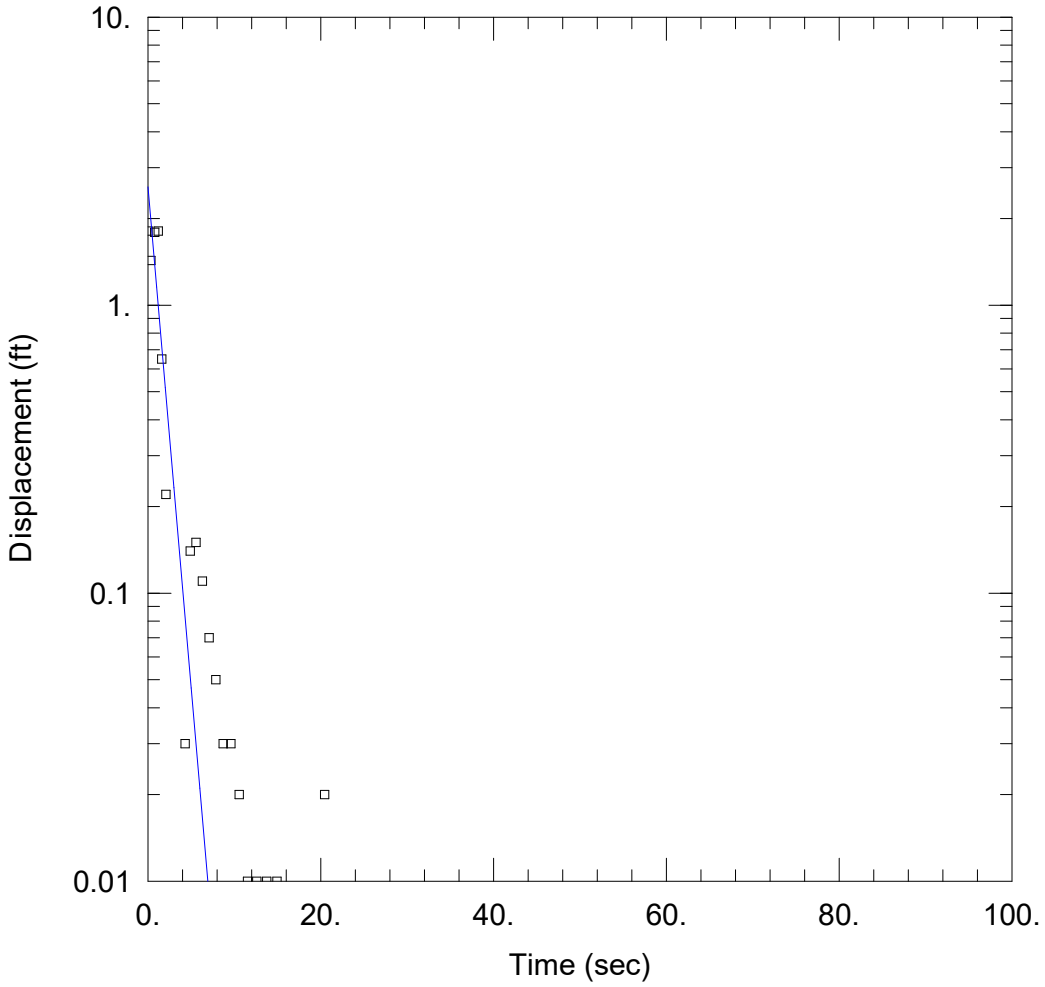
WELL DATA (MW-20A OUT)

Initial Displacement: 0.9 ft
Total Well Penetration Depth: 54.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.00553 cm/sec y0 = 0.77 ft



SLUG TEST RESULTS MW-20B IN

Data Set: G:\...\MW-20B IN.aqt
Date: 06/18/20 Time: 19:33:55

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

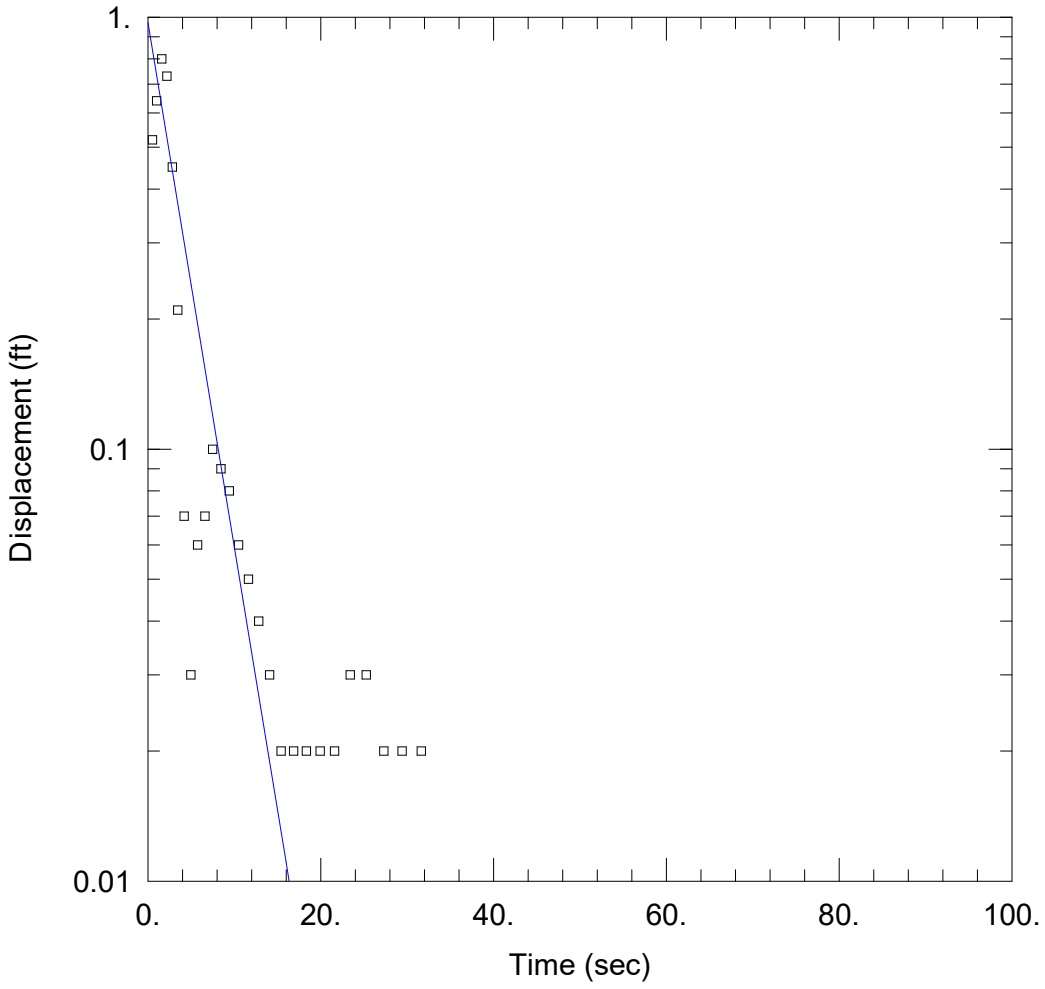
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-20B IN)

Initial Displacement: 1.81 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02876 cm/sec
y0 = 2.571 ft



SLUG TEST RESULTS MW-20B OUT

Data Set: G:\...\MW-20B OUT.aqt
Date: 06/18/20 Time: 20:02:09

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

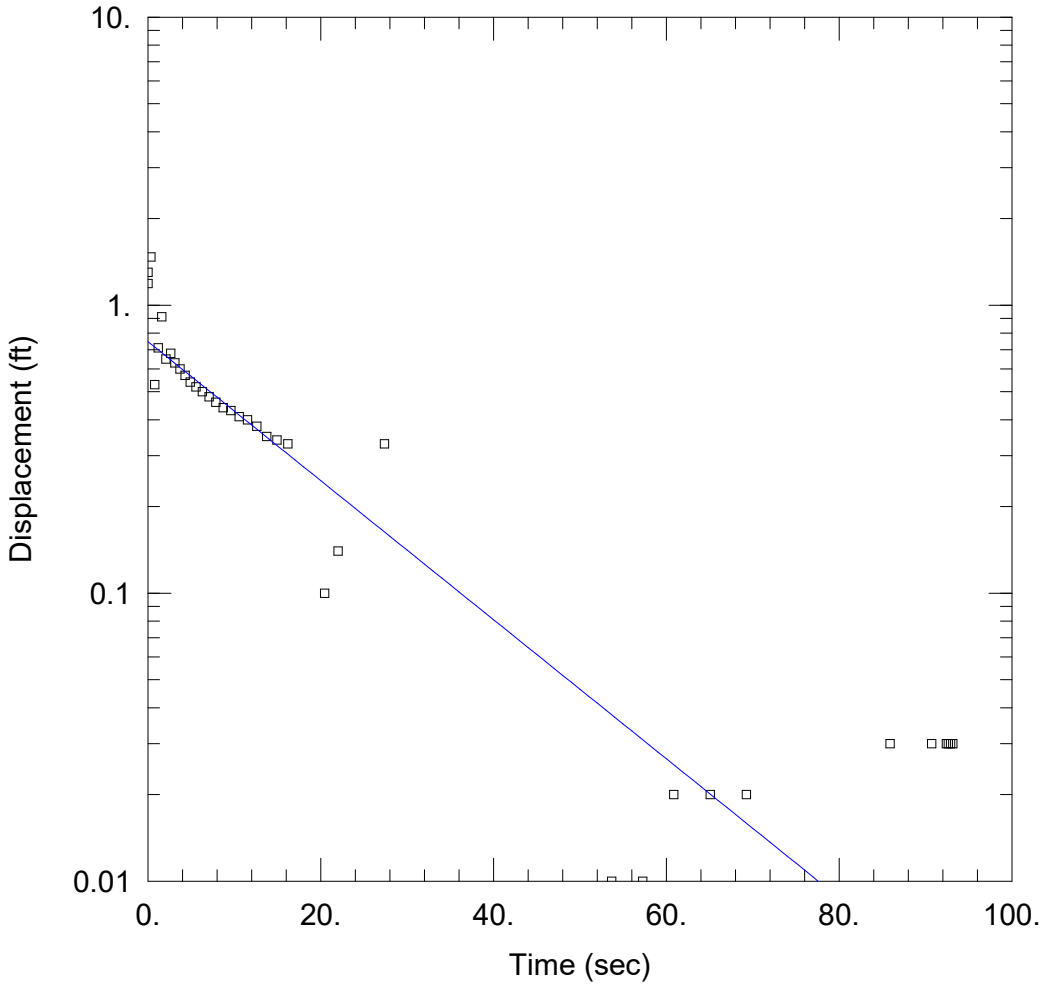
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-20B OUT)

Initial Displacement: 1.81 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01005 cm/sec
y0 = 0.97 ft



SLUG TEST RESULTS MW-20I IN

Data Set: G:\...\MW-20I IN.aqt
Date: 07/23/20 Time: 12:01:02

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

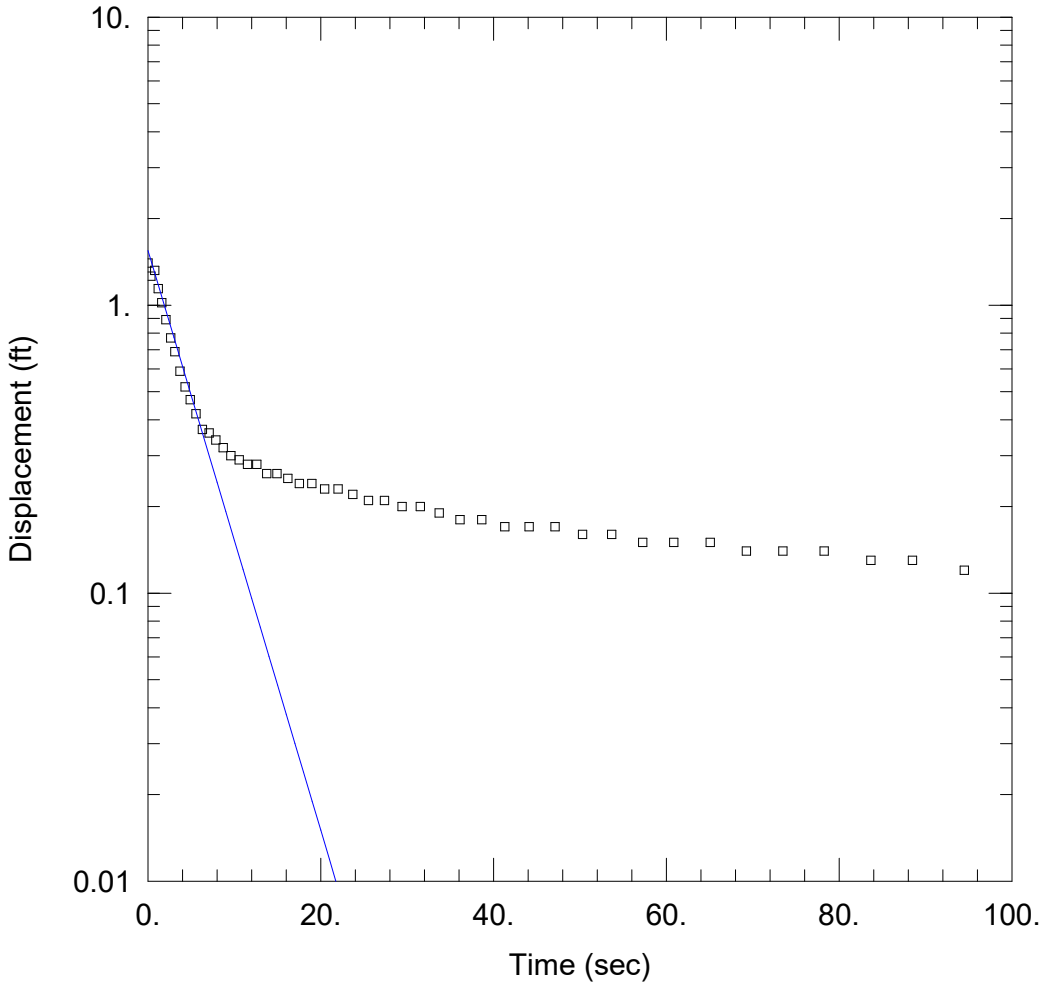
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-20C IN)

Initial Displacement: 1.3 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.002075 cm/sec
y0 = 0.7468 ft



SLUG TEST RESULTS MW-20I OUT

Data Set: G:\...\MW-20I OUT.aqt
Date: 07/23/20 Time: 12:01:29

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

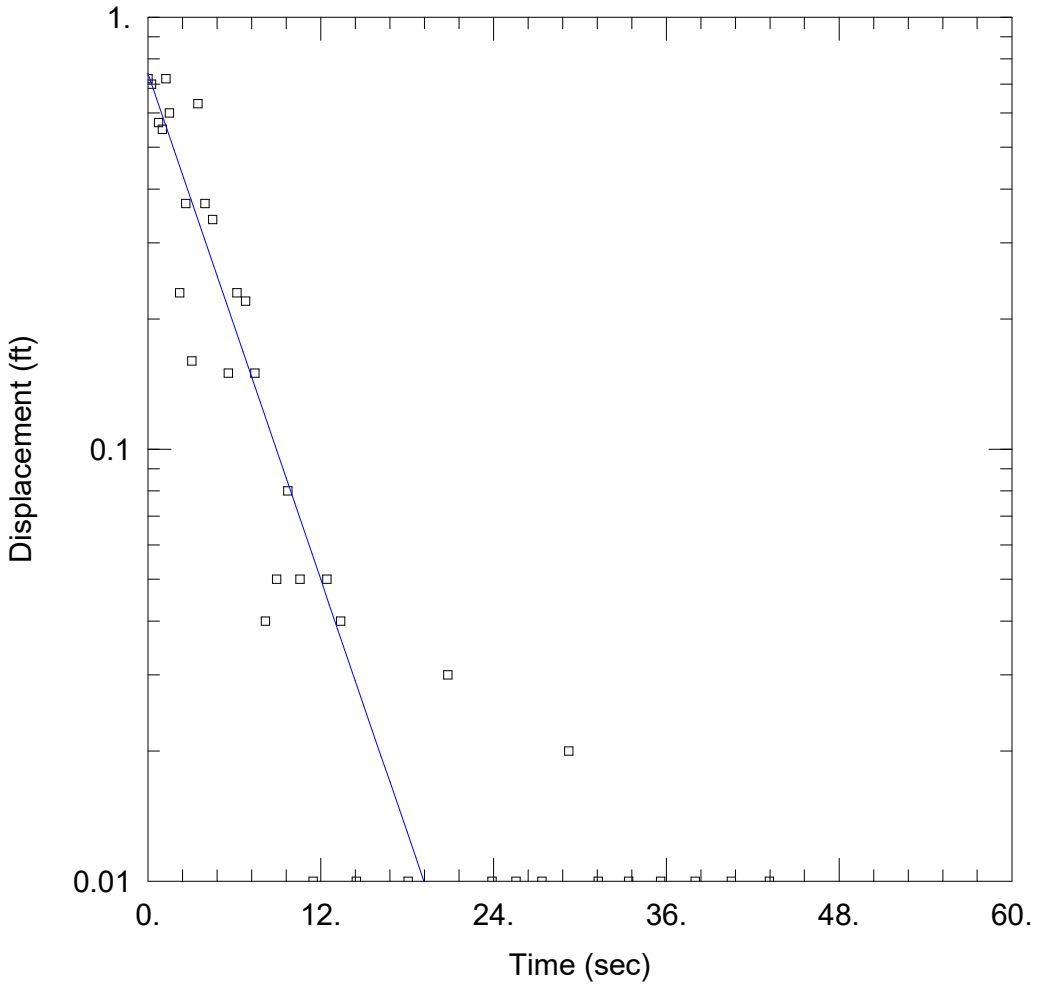
WELL DATA (MW-20C OUT)

Initial Displacement: 1.4 ft
Total Well Penetration Depth: 20. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.008652 cm/sec y0 = 1.549 ft



SLUG TEST RESULTS PZ-1A IN

Data Set: G:\...\PZ-1A IN.aqt
Date: 08/07/20 Time: 08:04:15

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

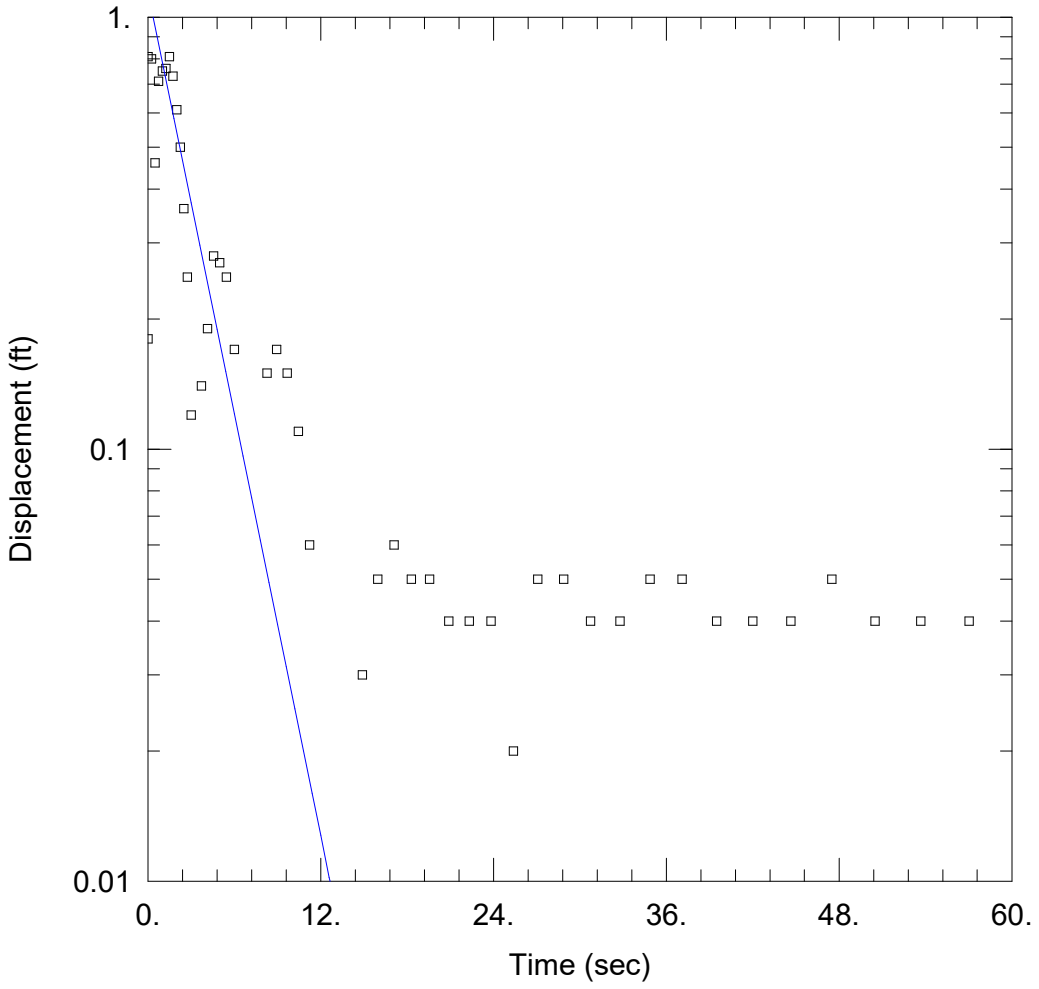
Saturated Thickness: 56.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-1A IN)

Initial Displacement: 0.72 ft Static Water Column Height: 56.6 ft
Total Well Penetration Depth: 56. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.01066 cm/sec y0 = 0.7402 ft



SLUG TEST RESULTS PZ-1A OUT

Data Set: G:\...\PZ-1A OUT.aqt
Date: 08/07/20 Time: 08:07:01

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

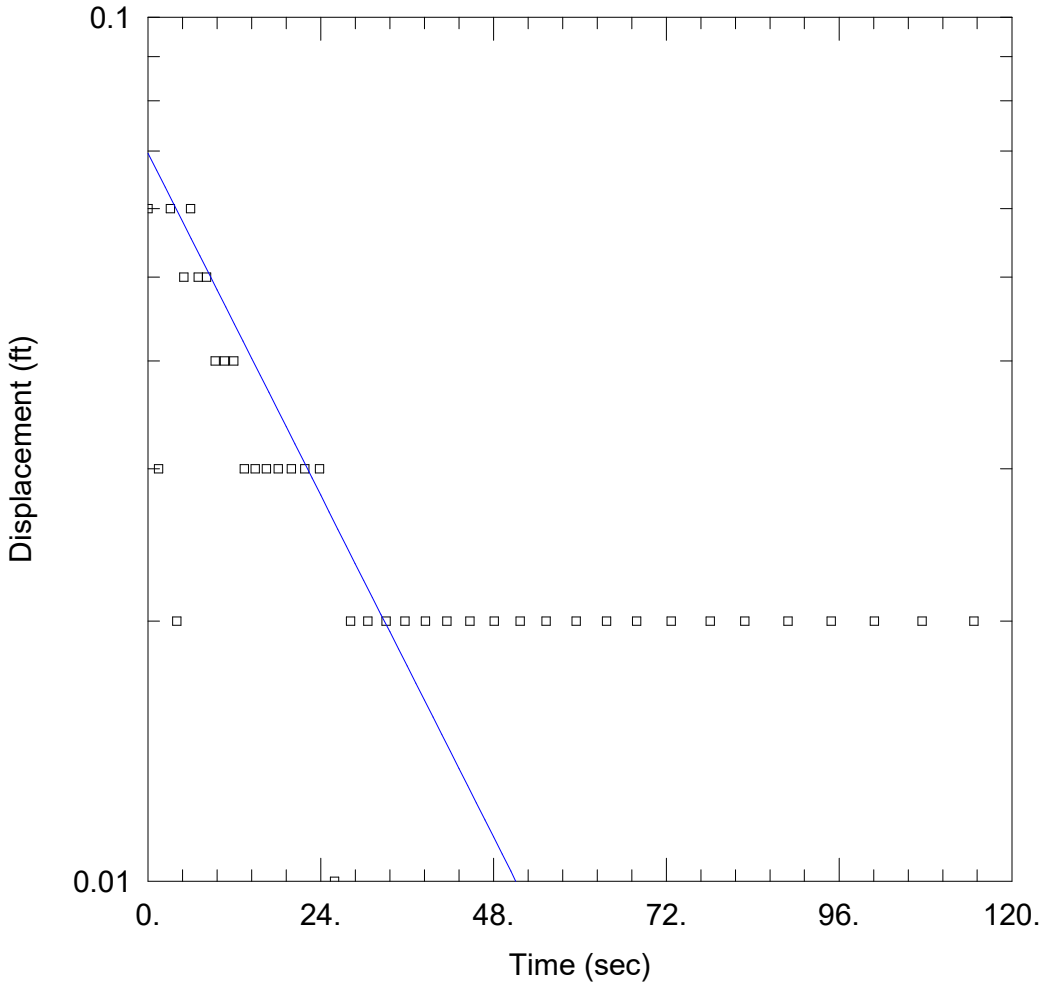
Saturated Thickness: 56.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-1A OUT)

Initial Displacement: 0.81 ft
Total Well Penetration Depth: 56. ft
Casing Radius: 0.083 ft
Static Water Column Height: 56.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01777 cm/sec
y0 = 1.143 ft



SLUG TEST RESULTS PZ-1B IN

Data Set: G:\...\PZ-1B IN.aqt
Date: 08/07/20 Time: 08:07:33

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

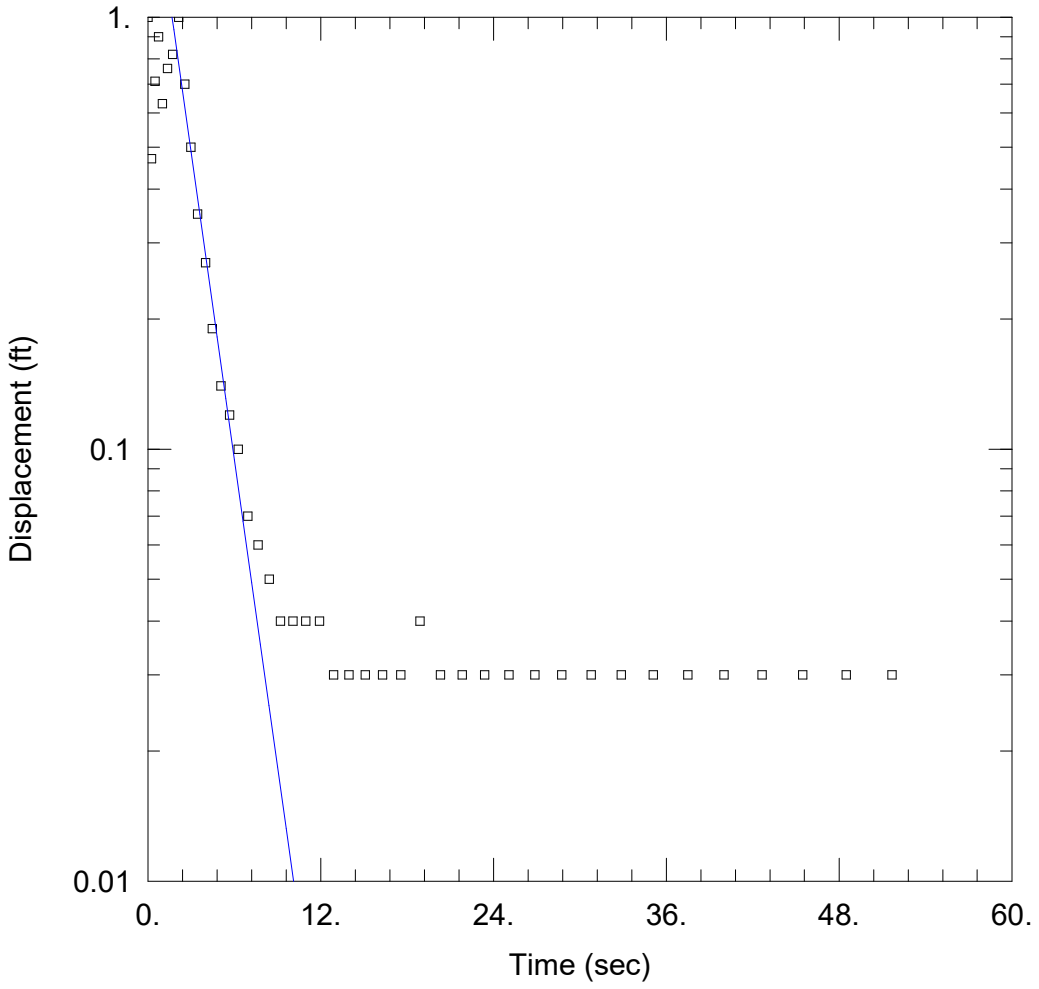
Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-1B IN)

Initial Displacement: 0.06 ft
Total Well Penetration Depth: 12.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 56.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.001423 cm/sec
y0 = 0.0696 ft



SLUG TEST RESULTS PZ-1B OUT

Data Set: G:\...\PZ-1B OUT.aqt
Date: 08/07/20 Time: 08:08:08

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

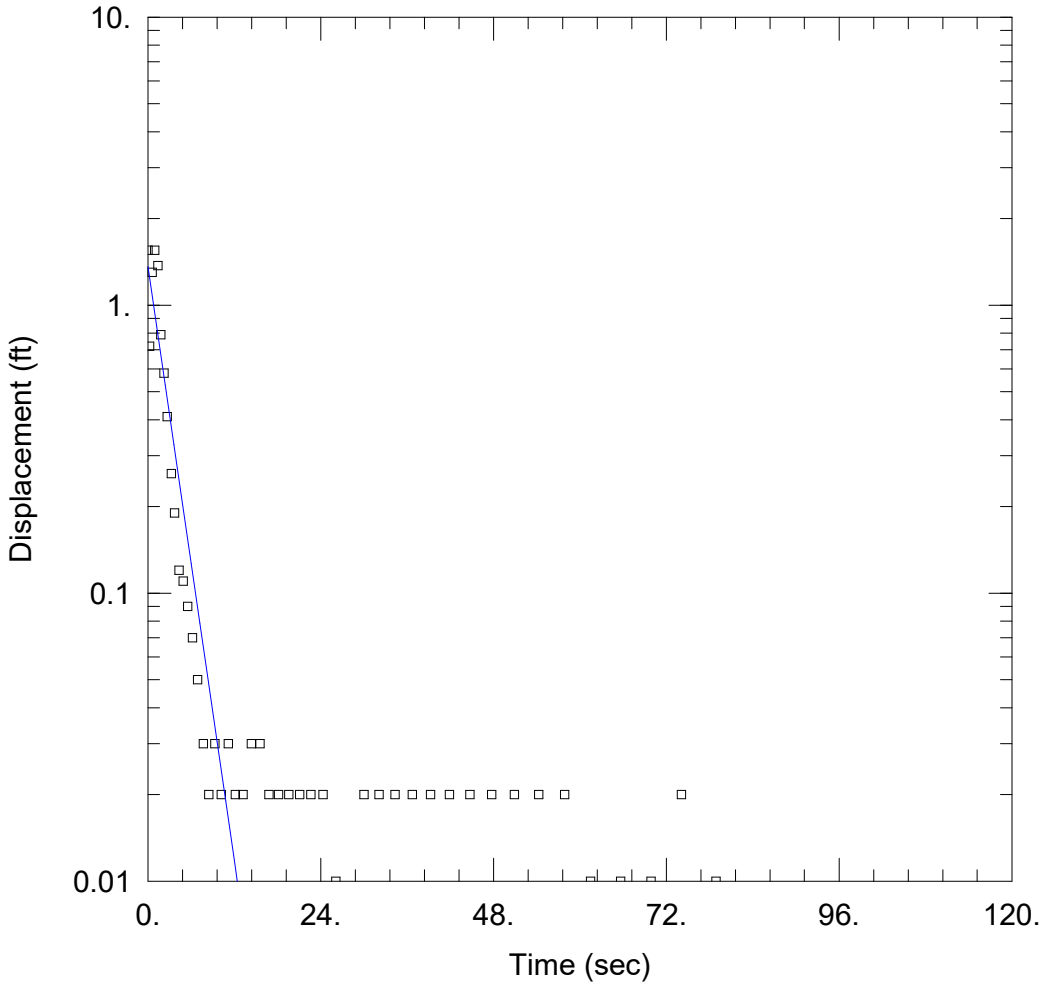
WELL DATA (PZ-1B OUT)

Initial Displacement: 1. ft
Total Well Penetration Depth: 12.1 ft
Casing Radius: 0.083 ft
Static Water Column Height: 56.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02011 cm/sec y0 = 2.499 ft



SLUG TEST RESULTS PZ-1I IN

Data Set: G:\...\PZ-1I IN.aqt
Date: 08/07/20 Time: 08:09:27

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 56.5 ft Anisotropy Ratio (Kz/Kr): 1.

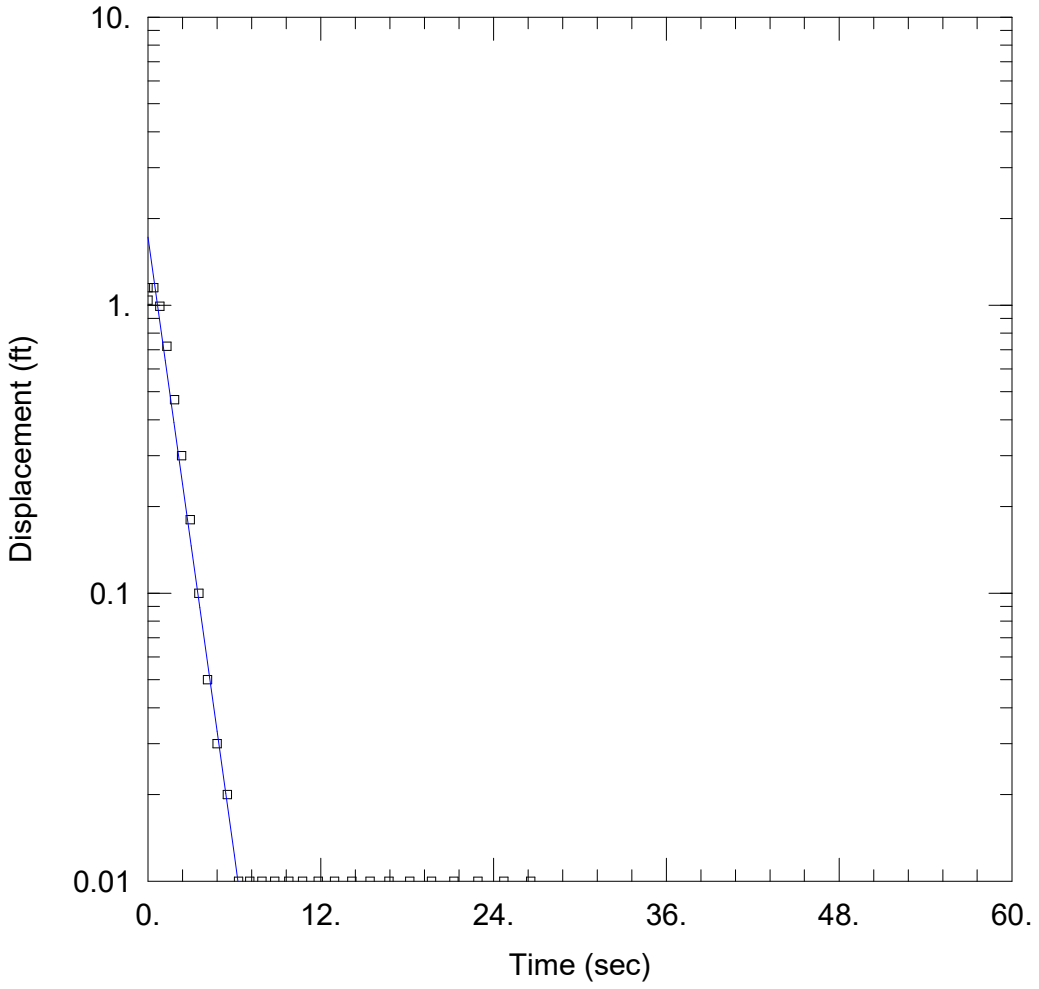
WELL DATA (PZ-1I IN)

Initial Displacement: 1.55 ft
Total Well Penetration Depth: 31.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 56.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01577 cm/sec y0 = 1.36 ft



SLUG TEST RESULTS PZ-1I OUT

Data Set: G:\...\PZ-1I OUT.aqt
Date: 08/07/20 Time: 08:09:49

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

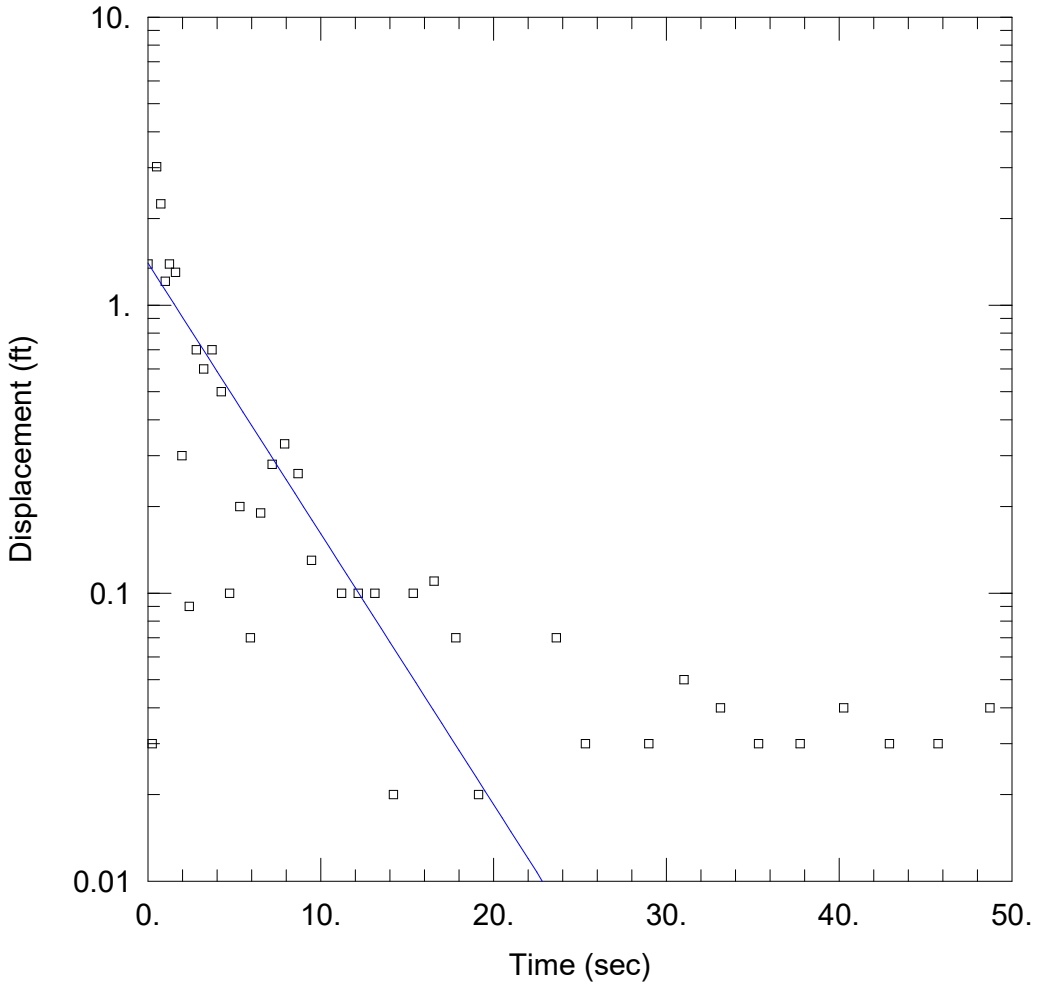
Saturated Thickness: 56.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-1I OUT)

Initial Displacement: 1.15 ft
Total Well Penetration Depth: 31.9 ft
Casing Radius: 0.083 ft
Static Water Column Height: 56.6 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.03281 cm/sec
y0 = 1.723 ft



SLUG TEST RESULTS PZ-2A IN

Data Set: G:\...\PZ-2A IN.aqt
Date: 07/23/20 Time: 14:17:01

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

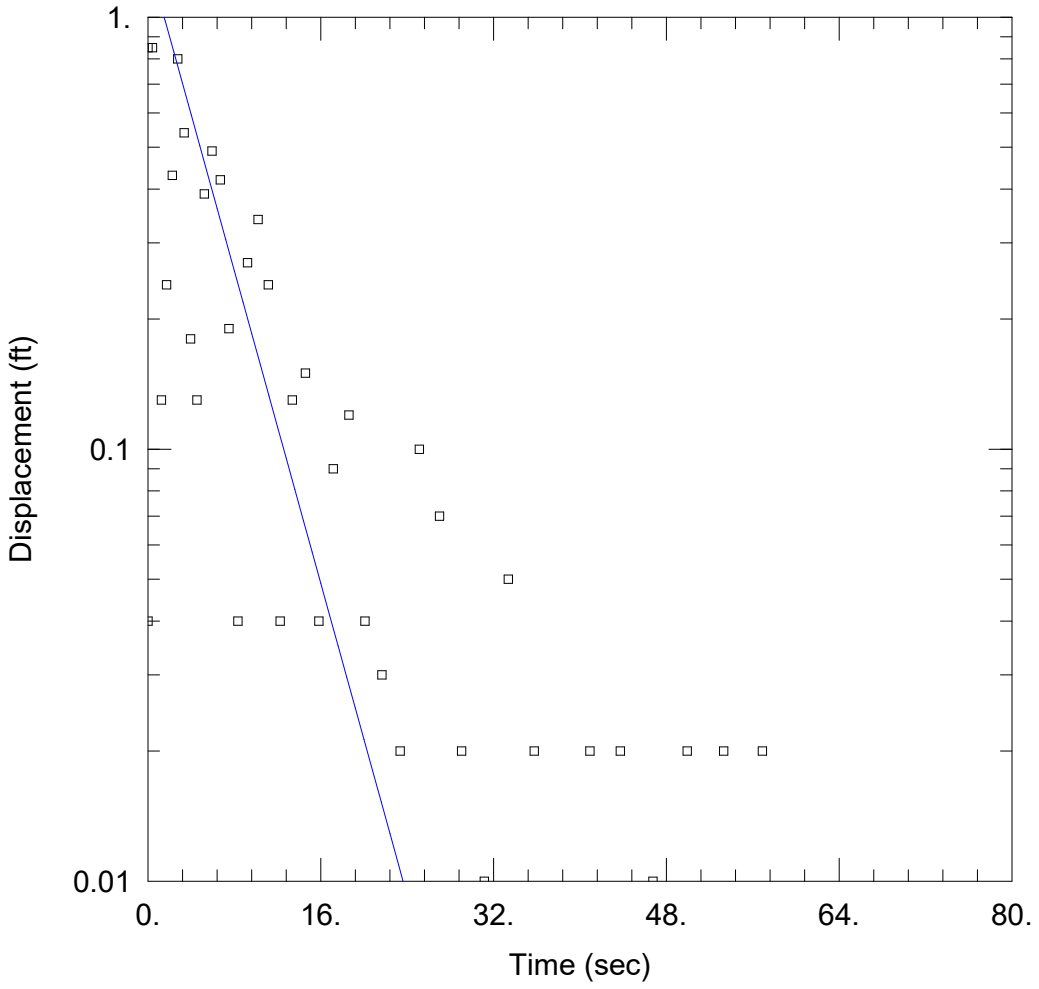
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-2A IN)

Initial Displacement: 1.39 ft
Total Well Penetration Depth: 54.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01079 cm/sec
y0 = 1.399 ft



SLUG TEST RESULTS PZ-2A OUT

Data Set: G:\...\PZ-2A OUT.aqt
Date: 07/23/20 Time: 14:19:16

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

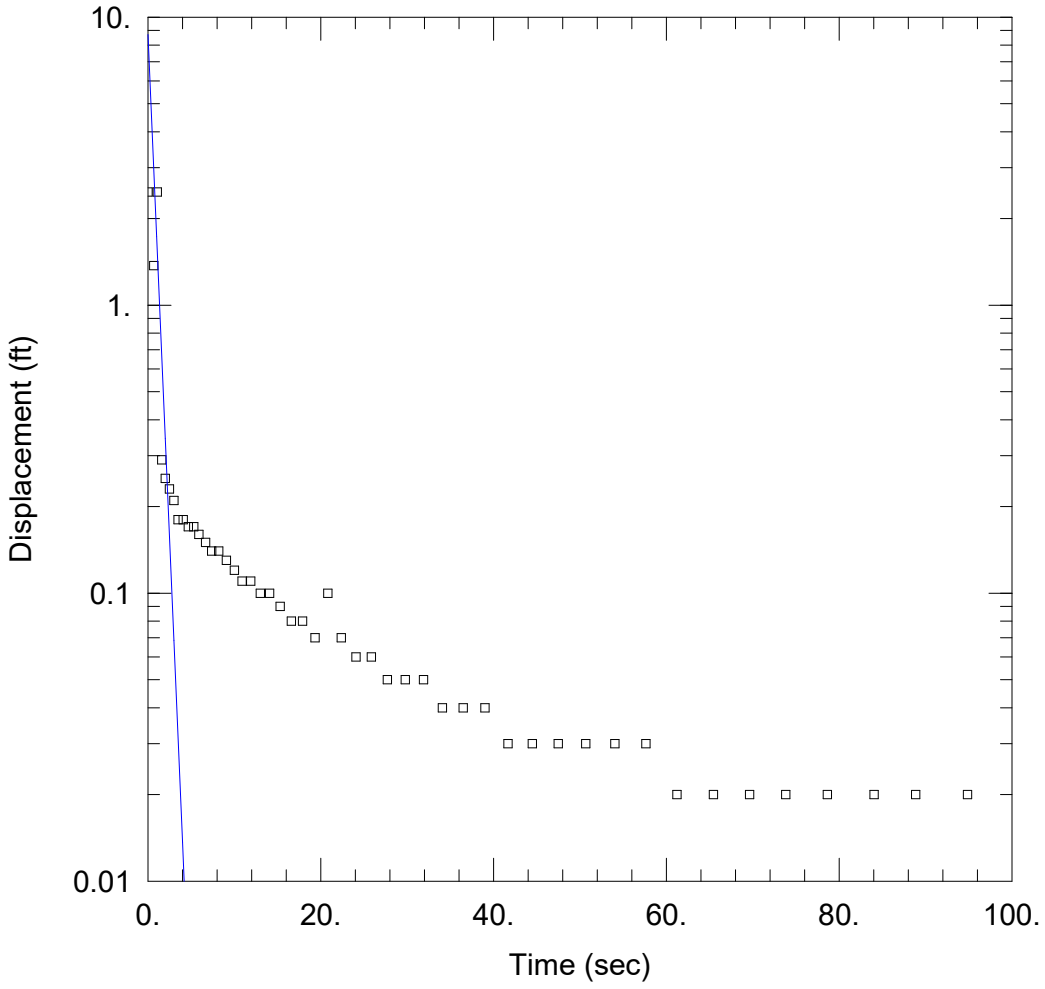
WELL DATA (PZ-2A OUT)

Initial Displacement: 0.85 ft
Total Well Penetration Depth: 54.5 ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01038 cm/sec y0 = 1.367 ft



SLUG TEST RESULTS PZ-2B IN

Data Set: G:\...\PZ-2B IN.aqt
Date: 07/24/20 Time: 12:25:41

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

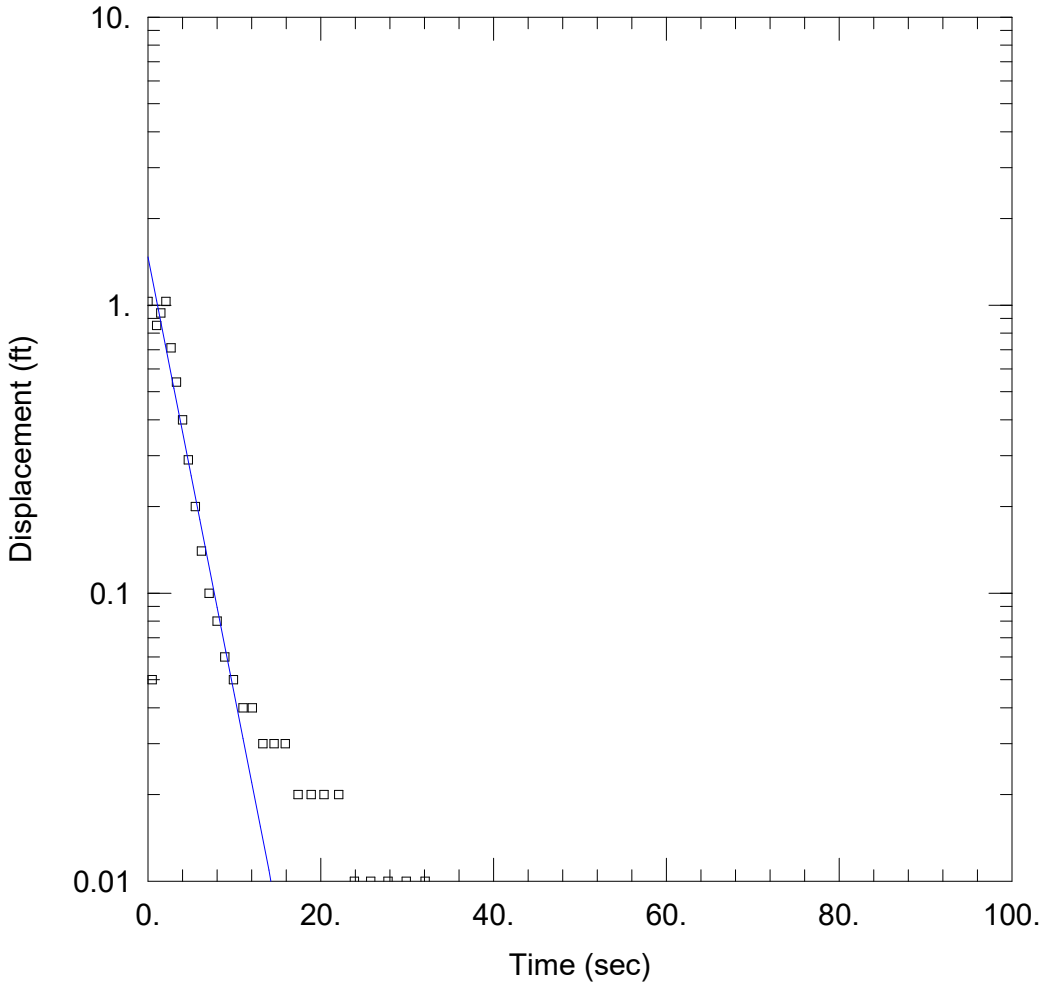
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-2B IN)

Initial Displacement: 2.47 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.05797 cm/sec
y0 = 8.689 ft



SLUG TEST RESULTS PZ-2B OUT

Data Set: G:\...\PZ-2B OUT.aqt
Date: 07/23/20 Time: 14:25:33

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

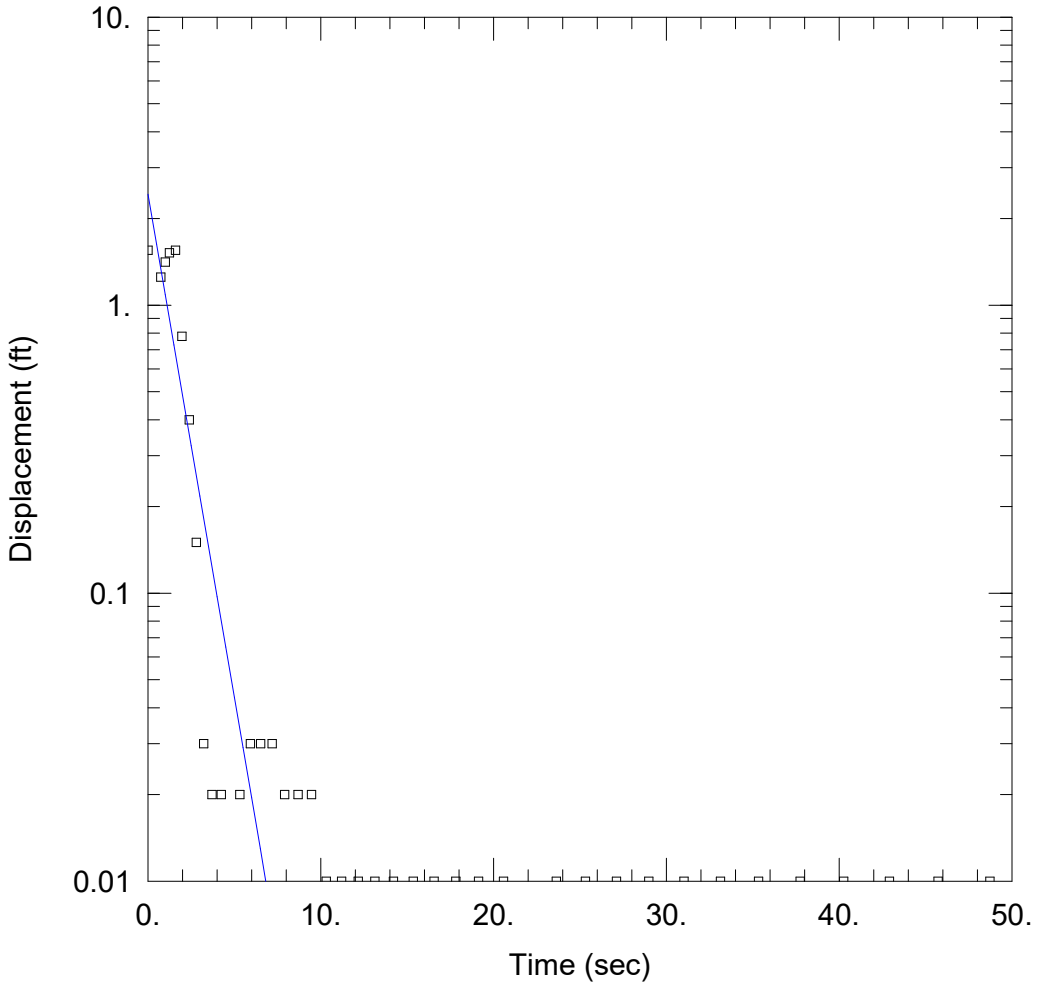
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-2B OUT)

Initial Displacement: 1.03 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01257 cm/sec
y0 = 1.469 ft



SLUG TEST RESULTS PZ-2I IN

Data Set: G:\...\PZ-2I IN.aqt
Date: 07/23/20 Time: 14:26:52

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

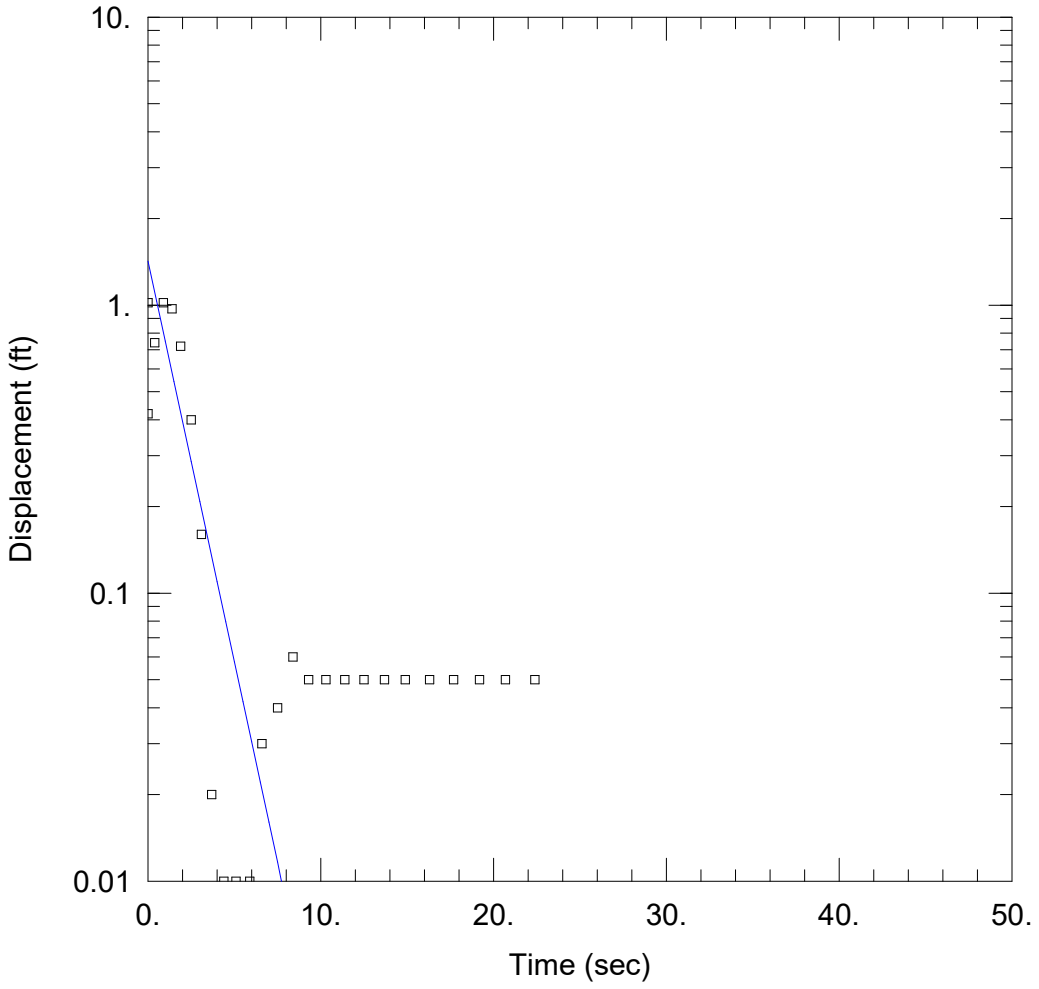
Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-2I IN)

Initial Displacement: 1.55 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.03184 cm/sec
y0 = 2.428 ft



SLUG TEST RESULTS PZ-2I OUT

Data Set: G:\...\PZ-2I OUT.aqt
Date: 07/23/20 Time: 14:27:42

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Date: 05/05/2020

AQUIFER DATA

Saturated Thickness: 54.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (PZ-2I OUT)

Initial Displacement: 1.02 ft
Total Well Penetration Depth: 30. ft
Casing Radius: 0.083 ft
Static Water Column Height: 54.2 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02536 cm/sec y0 = 1.422 ft

Table 3: In-Situ Hydraulic Conductivity Results

Indianapolis Power and Light

Petersburg Generating Station

Petersburg, IN

ATC Project No. 170LF00795

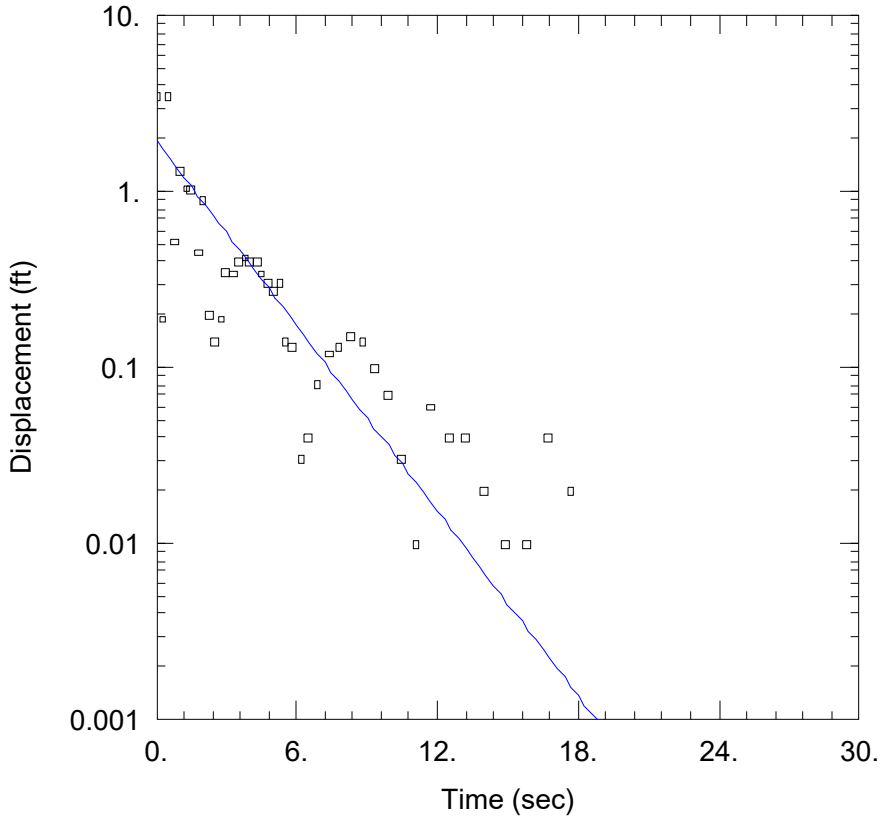
Well	Type of Test	r, ft	R, ft	L, ft	D, ft	K, ft/day	K, cm/sec
MW-21A	Falling Head	0.083	0.333	10	10.0	51.4	1.82E-02
	Rising Head					121.5	4.29E-02
MW-21I	Falling Head	0.083	0.333	10	10.0	21.4	7.55E-03
	Rising Head					46.2	1.63E-02
MW-21B	Falling Head	0.083	0.333	10	10.0	16.4	5.80E-03
	Rising Head					20.5	7.22E-03
					Average:	46.2	1.63E-02

D= Approximate saturated aquifer thickness

L= Well screen length

r= Well casing radius

R= Well bore radius



WELL TEST ANALYSIS

Data Set: G:\...\MW-21A - IN.aqt
Date: 03/29/22 Time: 12:45:35

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21A - IN
Test Date: 03/28/22

AQUIFER DATA

Saturated Thickness: 65.14 ft Anisotropy Ratio (Kz/Kr): 1.

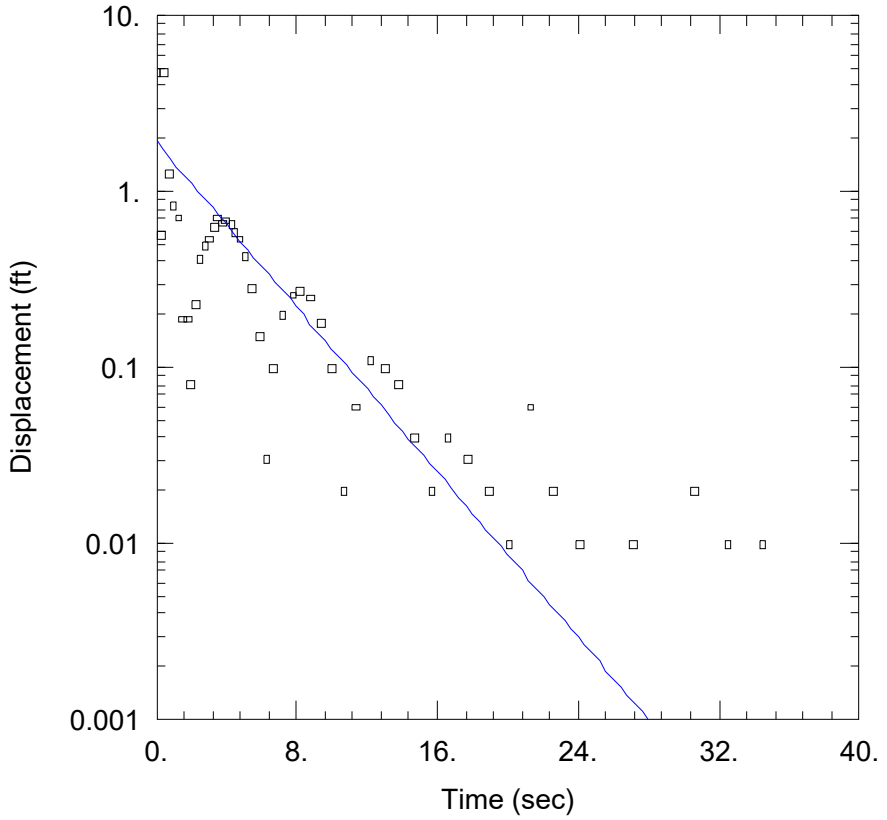
WELL DATA (MW-21A - IN)

Initial Displacement: 3.48 ft
Total Well Penetration Depth: 66.11 ft
Casing Radius: 0.08 ft
Static Water Column Height: 65.71 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01929 cm/sec y0 = 1.974 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-21A - OUT.aqt
Date: 03/29/22 Time: 12:45:38

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21A - OUT
Test Date: 03/28/22

AQUIFER DATA

Saturated Thickness: 65.14 ft Anisotropy Ratio (Kz/Kr): 1.

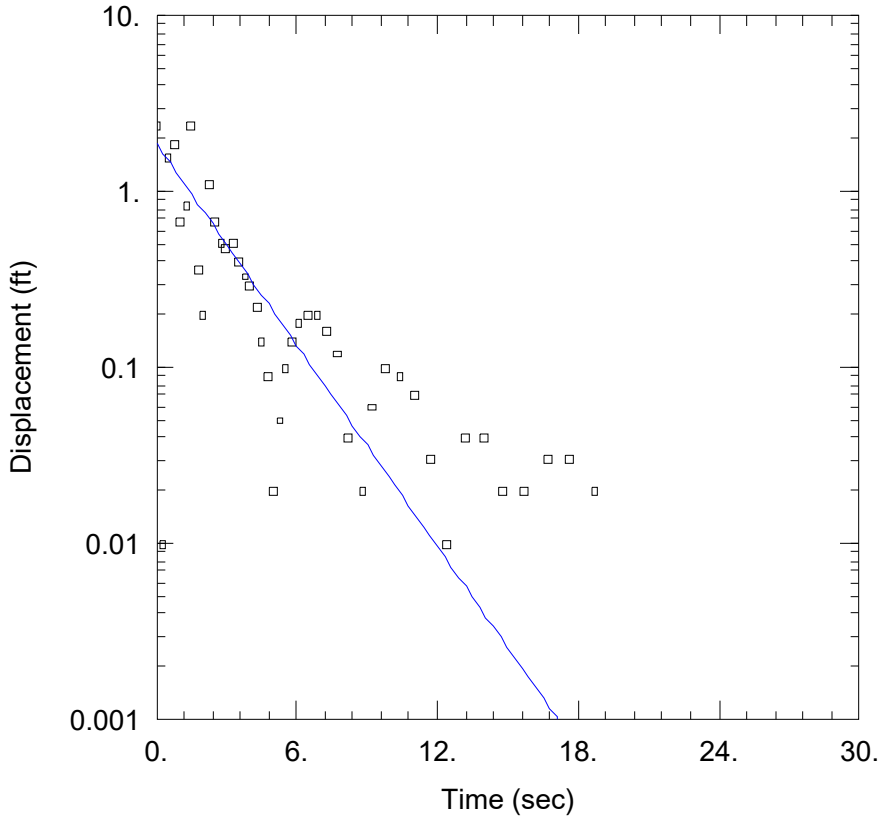
WELL DATA (MW-21A - OUT)

Initial Displacement: 4.75 ft
Total Well Penetration Depth: 66.11 ft
Casing Radius: 0.08 ft
Static Water Column Height: 65.71 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01289 cm/sec y0 = 1.928 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-21I - IN.aqt
Date: 03/29/22 Time: 12:45:50

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21I - IN
Test Date: 03/28/22

AQUIFER DATA

Saturated Thickness: 65.26 ft Anisotropy Ratio (Kz/Kr): 1.

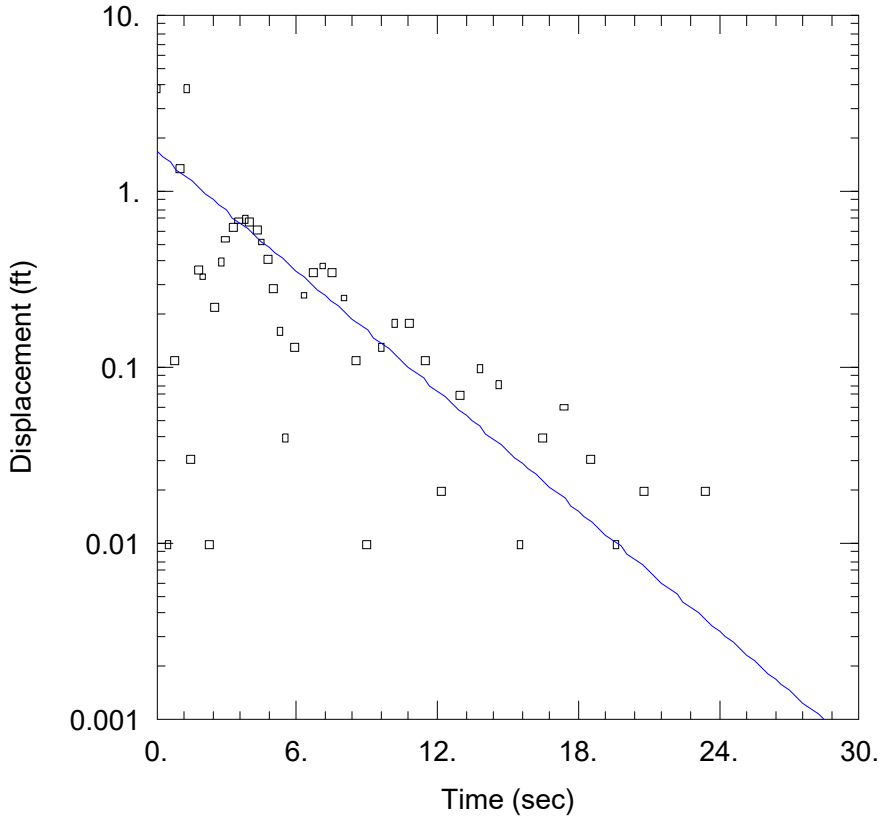
WELL DATA (MW-21I - IN)

Initial Displacement: 2.36 ft
Total Well Penetration Depth: 42.39 ft
Casing Radius: 0.08 ft
Static Water Column Height: 41.99 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.017 cm/sec y0 = 1.898 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-21I - OUT.aqt
Date: 03/29/22 Time: 12:45:53

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21I - OUT
Test Date: 03/28/22

AQUIFER DATA

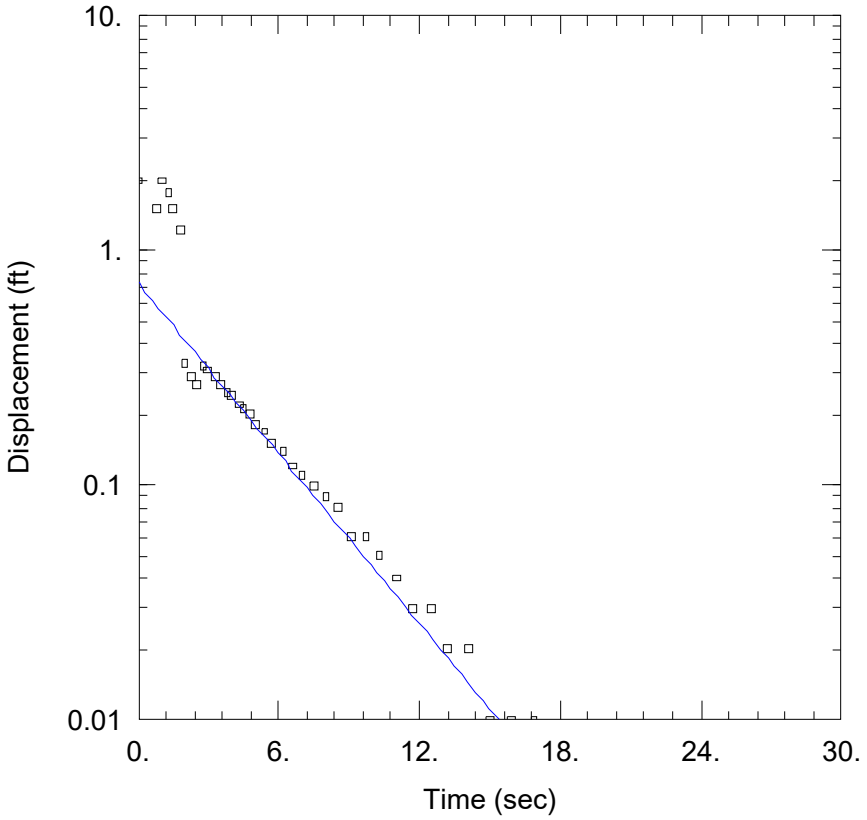
Saturated Thickness: 65.26 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (New Well)

Initial Displacement: 3.85 ft Static Water Column Height: 41.99 ft
Total Well Penetration Depth: 42.39 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.01011 cm/sec y0 = 1.71 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-21B - IN.aqt
Date: 03/29/22 Time: 12:45:42

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21B - IN
Test Date: 03/28/22

AQUIFER DATA

Saturated Thickness: 65.15 ft Anisotropy Ratio (Kz/Kr): 1.

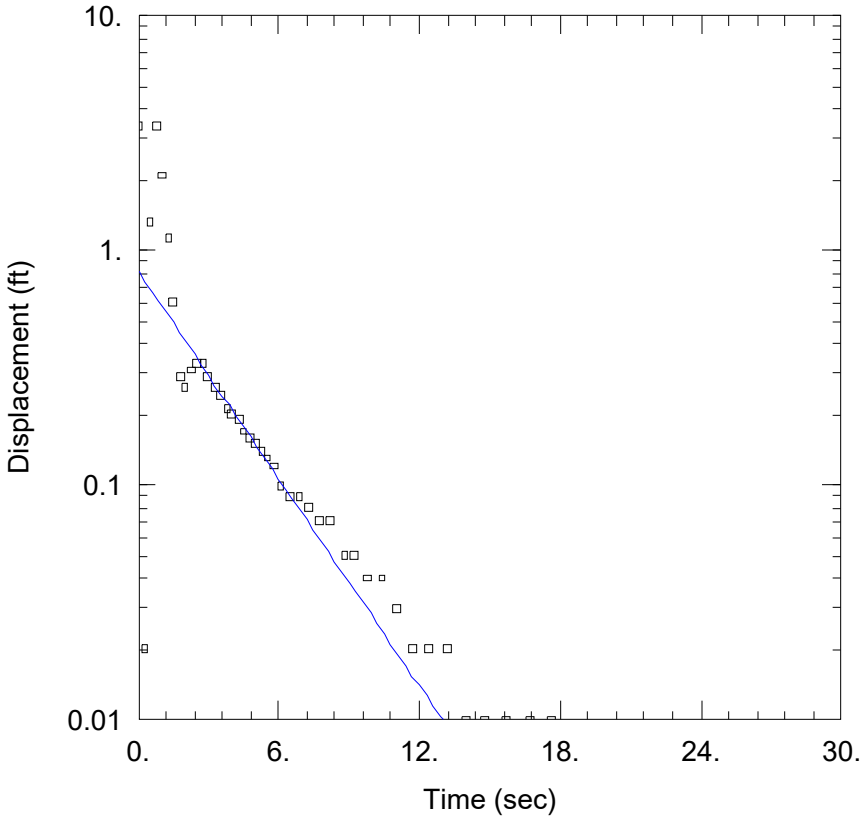
WELL DATA (MW-21B - IN)

Initial Displacement: 1.98 ft
Total Well Penetration Depth: 22.94 ft
Casing Radius: 0.08 ft
Static Water Column Height: 22.54 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.009919 cm/sec y0 = 0.7268 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-21B - OUT.aqt
Date: 03/29/22 Time: 12:45:46

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-21B - OUT
Test Date: 03/28/22

AQUIFER DATA

Saturated Thickness: 65.15 ft Anisotropy Ratio (Kz/Kr): 1.

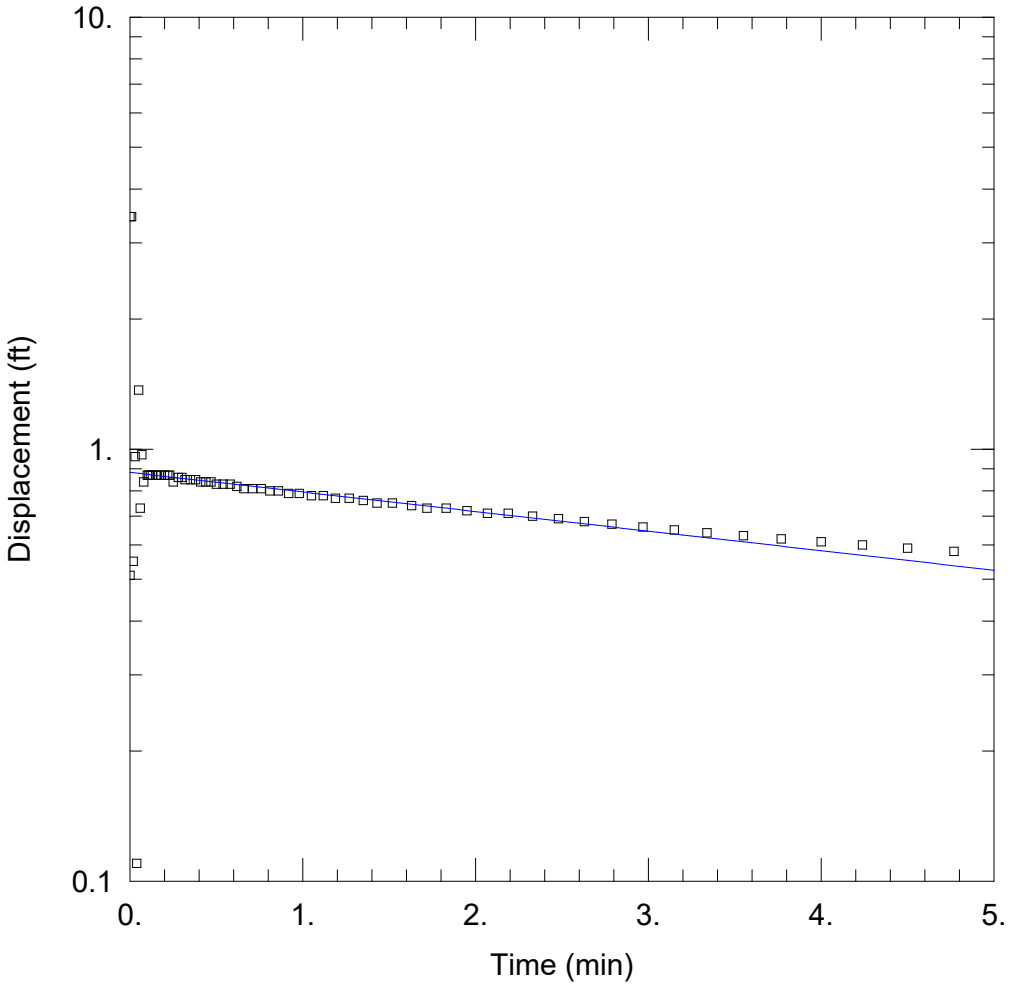
WELL DATA (MW-21B - OUT)

Initial Displacement: 3.42 ft Static Water Column Height: 22.54 ft
Total Well Penetration Depth: 22.94 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.01209 cm/sec y0 = 0.8185 ft

MW-22, MW-23, and MW-24



WELL TEST ANALYSIS

Data Set: G:\...\MW-22IN corrected.aqt
Date: 04/14/21 Time: 13:29:36

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-22
Test Date: 11/09/2020

AQUIFER DATA

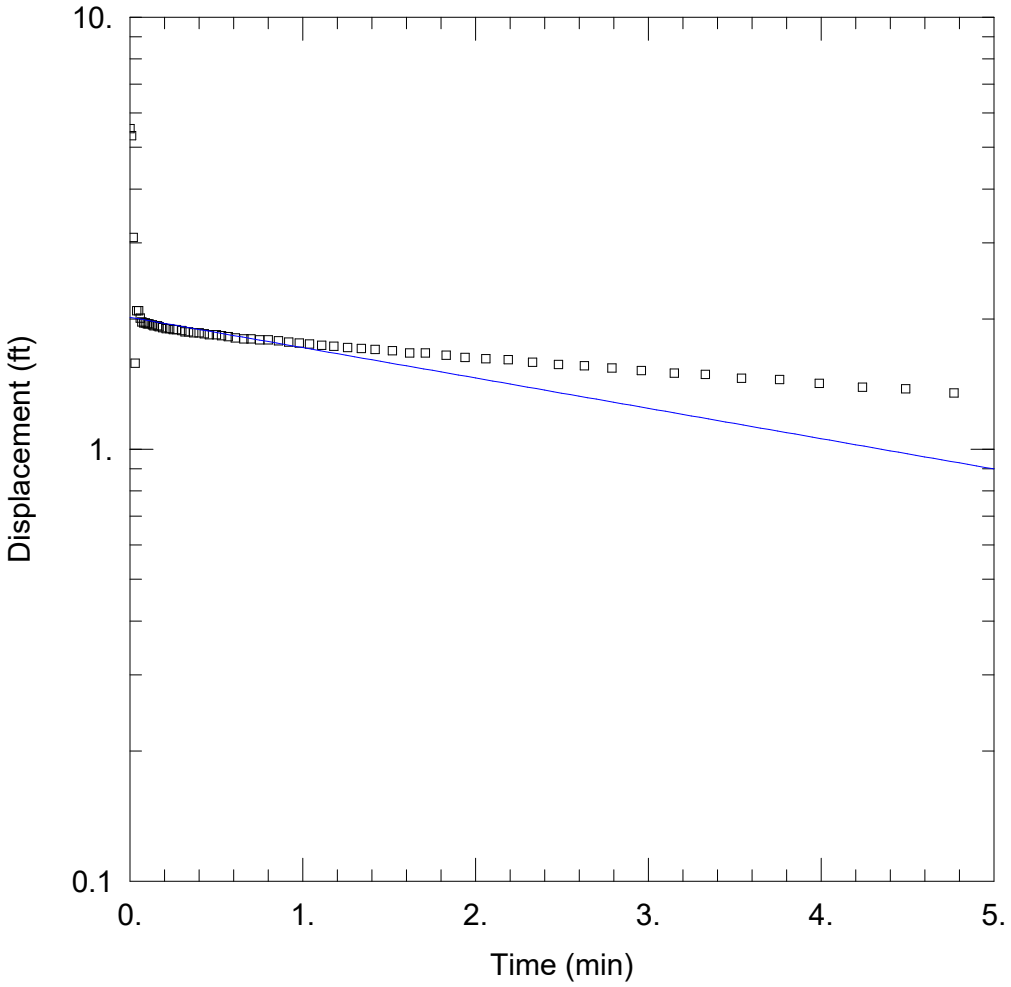
Saturated Thickness: 23. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-22 IN)

Initial Displacement: 3.45 ft
Total Well Penetration Depth: 23. ft
Casing Radius: 0.083 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 7.707E-5 cm/sec
y0 = 0.8832 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-22OUT.aqt
Date: 04/14/21 Time: 13:31:01

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-22
Test Date: 11/09/2020

AQUIFER DATA

Saturated Thickness: 23. ft Anisotropy Ratio (Kz/Kr): 1.

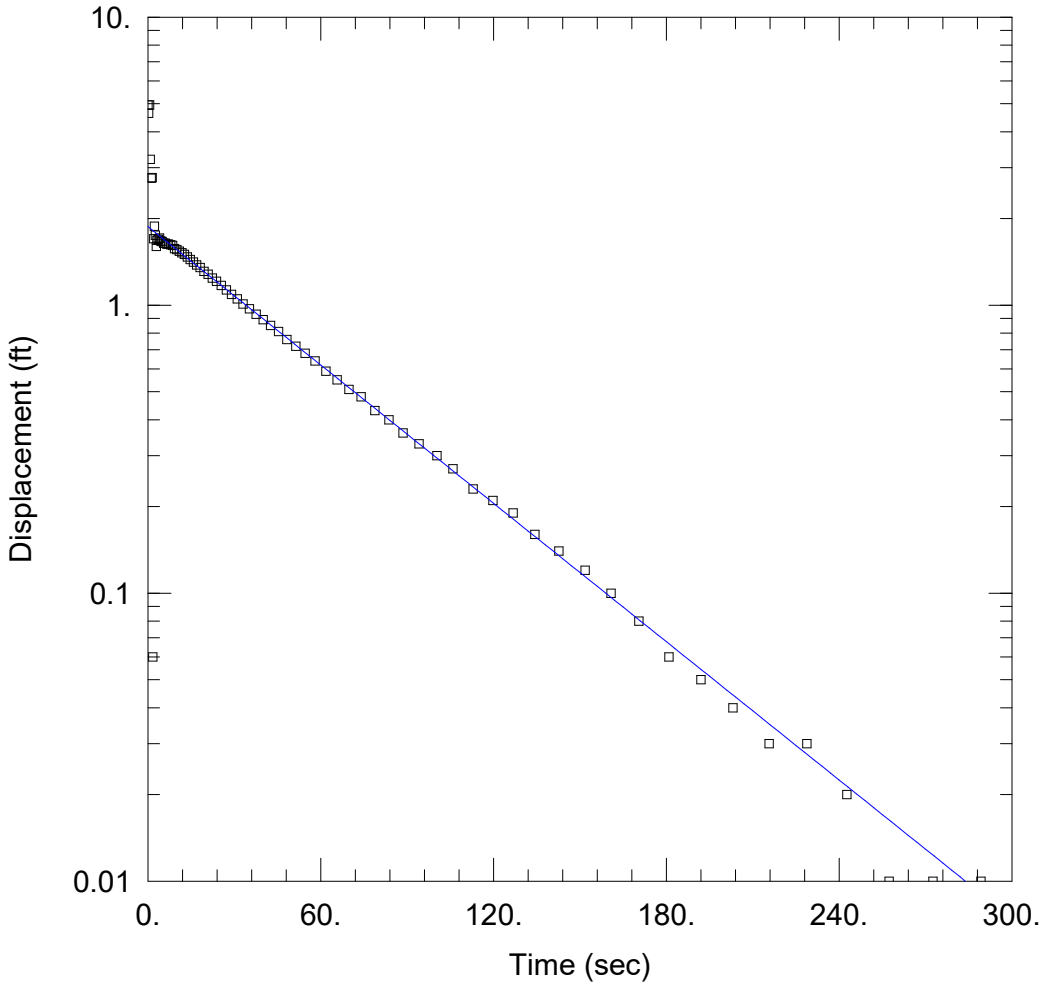
WELL DATA (MW-22 OUT)

Initial Displacement: 5.52 ft
Total Well Penetration Depth: 23. ft
Casing Radius: 0.083 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 0.0001195 cm/sec y0 = 2.019 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-23IN.aqt
Date: 04/14/21 Time: 13:32:30

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-23
Test Date: 11/09/2020

AQUIFER DATA

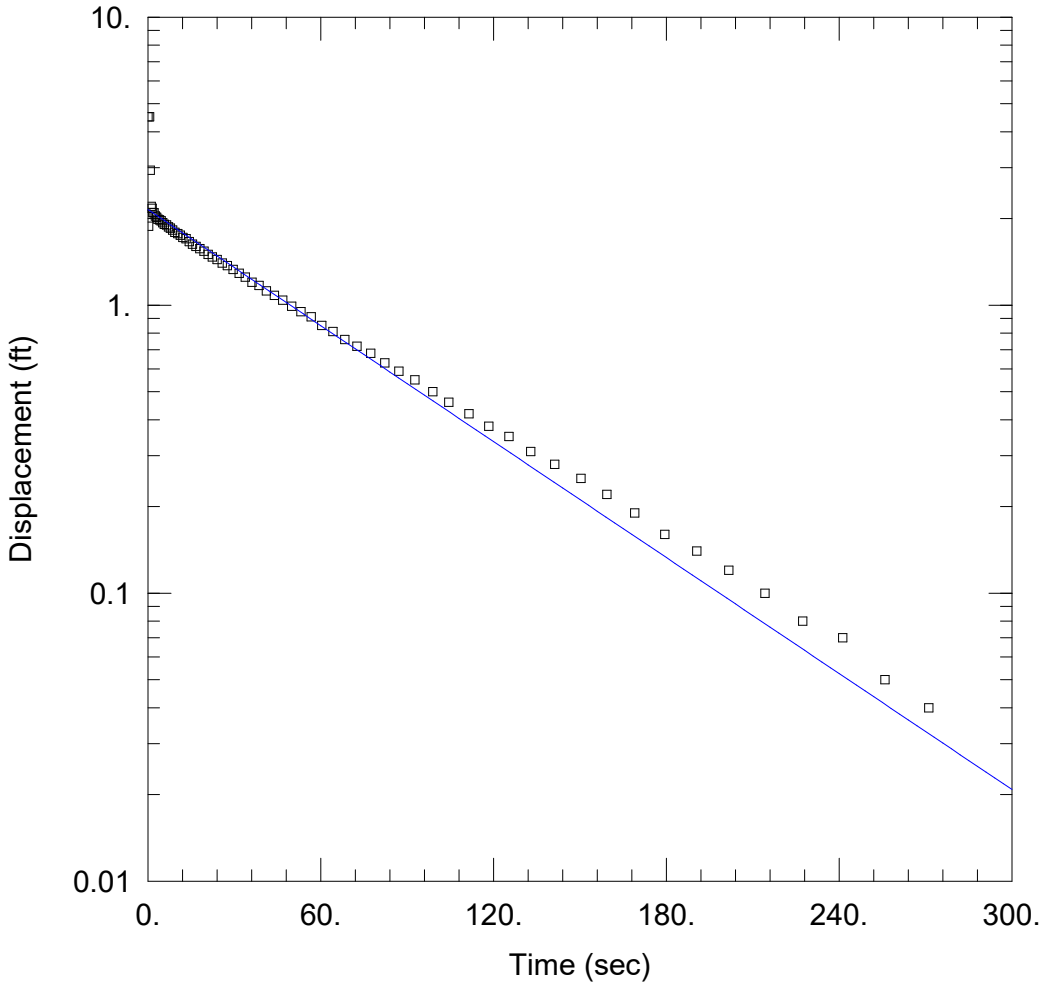
Saturated Thickness: 14.3 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-23 IN)

Initial Displacement: 4.95 ft
Total Well Penetration Depth: 14.3 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.8 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 0.0007598 cm/sec
y0 = 1.872 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-23OUT.aqt
Date: 11/16/20 Time: 09:19:05

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-23
Test Date: 11/09/2020

AQUIFER DATA

Saturated Thickness: 14.3 ft Anisotropy Ratio (Kz/Kr): 1.

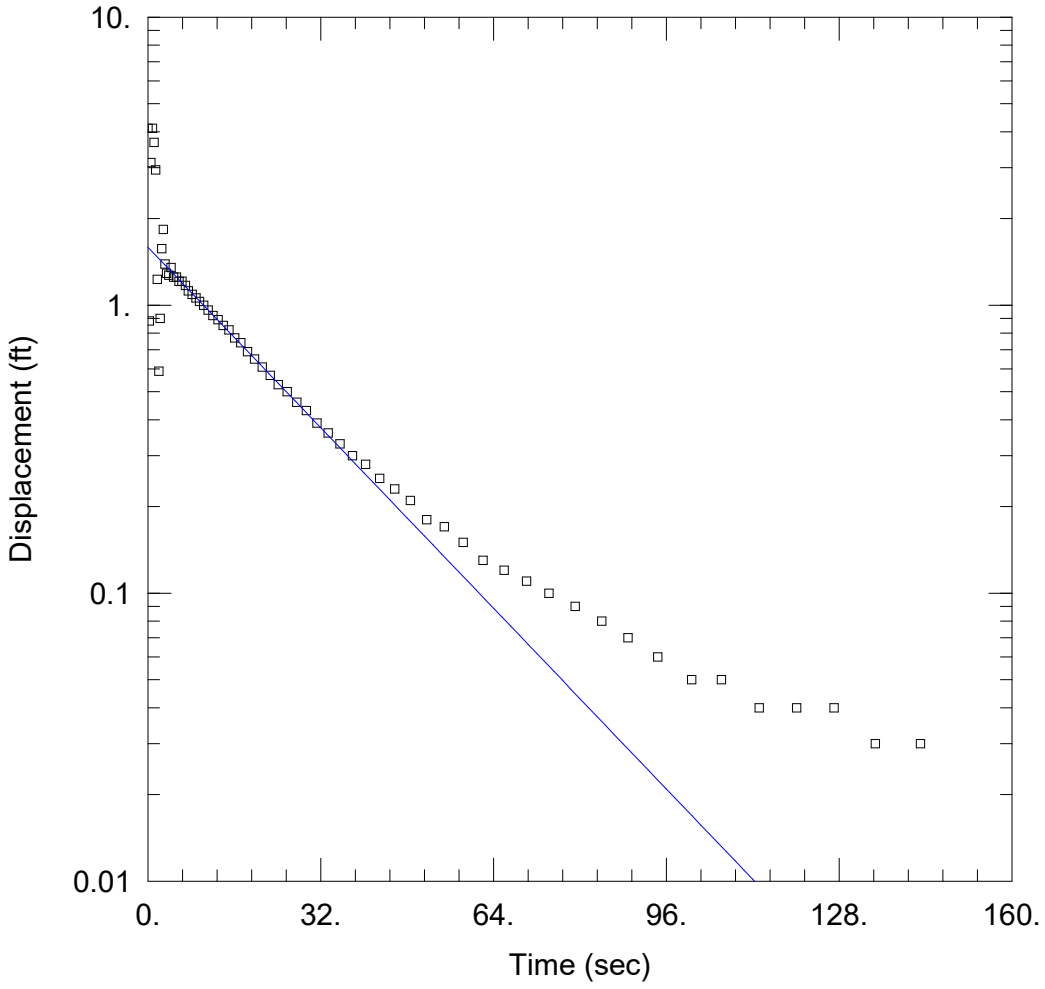
WELL DATA (MW-23 OUT)

Initial Displacement: 4.51 ft
Total Well Penetration Depth: 14.3 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.8 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 0.000637 cm/sec y0 = 2.145 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-24IN.aqt
Date: 04/14/21 Time: 13:33:52

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-24
Test Date: 11/09/2020

AQUIFER DATA

Saturated Thickness: 27.2 ft Anisotropy Ratio (Kz/Kr): 1.

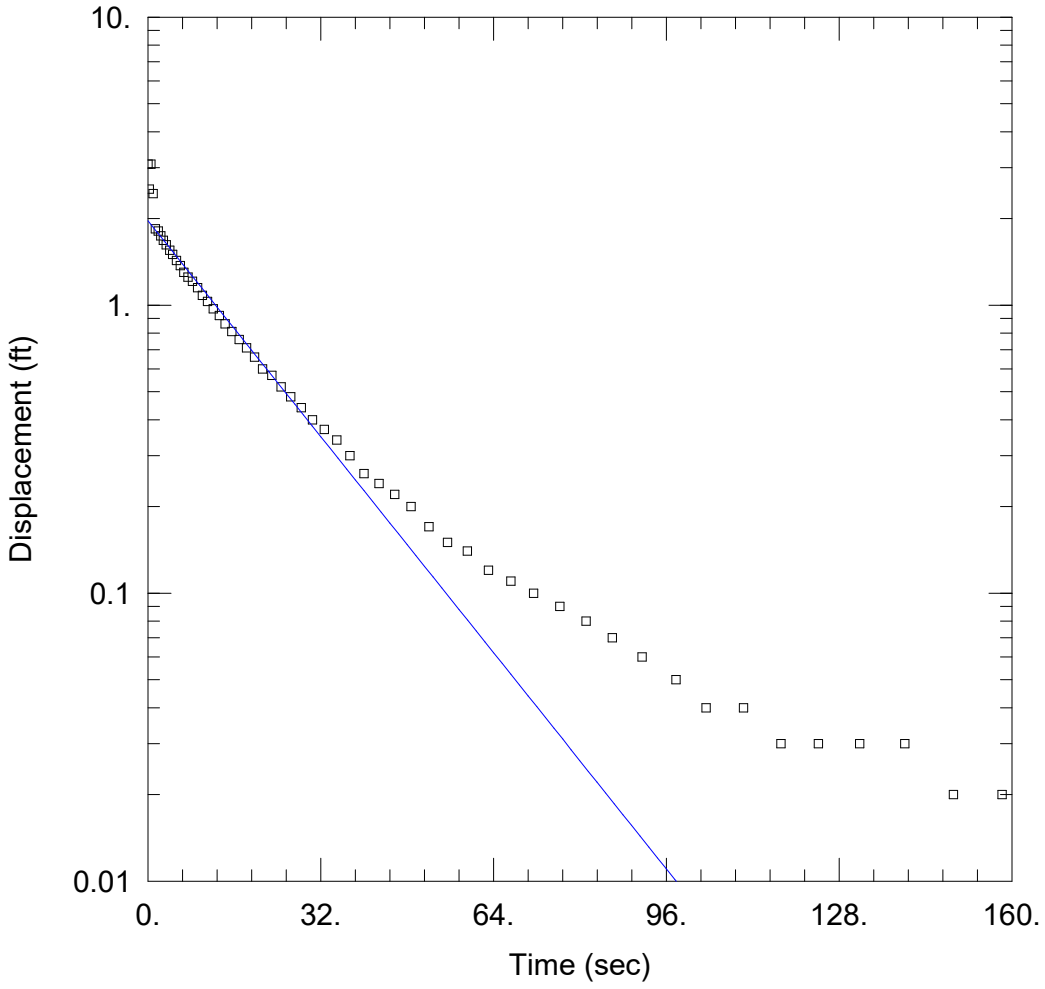
WELL DATA (MW-24 IN)

Initial Displacement: 4.11 ft
Total Well Penetration Depth: 27.2 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.5 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002049 cm/sec y0 = 1.587 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-24OUT.aqt
Date: 11/16/20 Time: 09:15:56

PROJECT INFORMATION

Company: ATC Group Services
Client: IPL
Project: 170LF00795
Location: Petersburg
Test Well: MW-24
Test Date: 11/09/2020

AQUIFER DATA

Saturated Thickness: 27.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-24 OUT)

Initial Displacement: 3.09 ft
Total Well Penetration Depth: 27.2 ft
Casing Radius: 0.083 ft
Static Water Column Height: 19.5 ft
Screen Length: 10. ft
Well Radius: 0.083 ft

SOLUTION

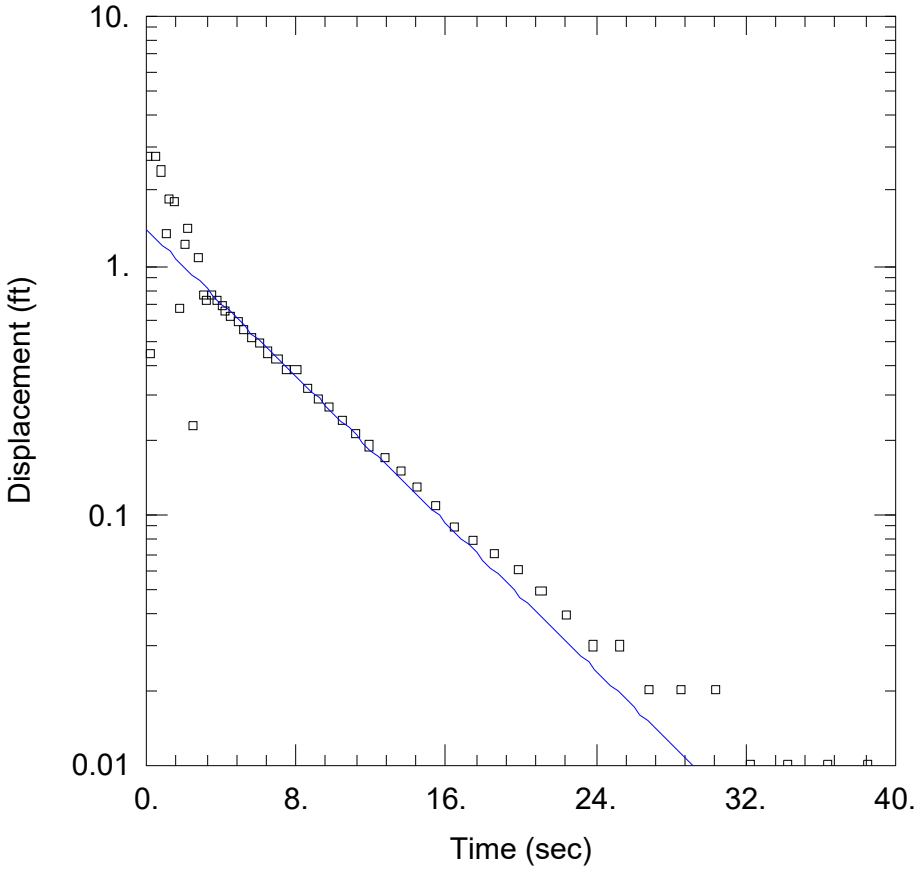
Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002452 cm/sec y0 = 1.963 ft

Table 3: Slug Test Results
AES Indiana
Petersburg Generating Station
ATC Project No. 170LF01106

Monitoring Well	Type of Test	D, ft	Kv/Kh	L, ft	r_c, ft	r_w, ft	Φ	K, cm/sec
MW-25A	Falling Head	58.81	1	10	0.083	0.50	0.30	7.16E-03
	Rising Head	58.81	1	10	0.083	0.50	0.30	7.32E-03
MW-25I	Falling Head	59.08	1	10	0.083	0.50	0.30	3.73E-02
	Rising Head	59.08	1	10	0.083	0.50	0.30	2.19E-02
MW-25B	Falling Head	58.86	1	10	0.083	0.50	0.30	2.38E-02
	Rising Head	58.86	1	10	0.083	0.50	0.30	2.37E-02
MW-26A	Falling Head	47.43	1	10	0.083	0.50	0.30	2.36E-02
	Rising Head	47.43	1	10	0.083	0.50	0.30	2.33E-02
MW-26I	Falling Head	47.34	1	10	0.083	0.50	0.30	1.88E-02
	Rising Head	47.34	1	10	0.083	0.50	0.30	3.99E-02
MW-26B	Falling Head	47.27	1	10	0.083	0.50	0.30	4.08E-02
	Rising Head	47.27	1	10	0.083	0.50	0.30	3.86E-02
MW-27B	Falling Head	19.04	1	5	0.083	0.50	0.30	3.02E-02
	Rising Head	19.04	1	5	0.083	0.50	0.30	3.17E-02
MW-28A	Falling Head	47.08	1	10	0.083	0.50	0.30	5.47E-02
	Rising Head	47.08	1	10	0.083	0.50	0.30	2.66E-02
MW-28I	Falling Head	46.99	1	10	0.083	0.50	0.30	2.03E-02
	Rising Head	46.99	1	10	0.083	0.50	0.30	2.33E-02
MW-28B	Falling Head	47.38	1	10	0.083	0.50	0.30	4.95E-02
	Rising Head	47.38	1	10	0.083	0.50	0.30	4.20E-02
MW-29A	Falling Head	48.65	1	10	0.083	0.50	0.30	2.64E-02
	Rising Head	48.65	1	10	0.083	0.50	0.30	2.03E-02
MW-29I	Falling Head	47.88	1	10	0.083	0.50	0.30	1.85E-02
	Rising Head	47.88	1	10	0.083	0.50	0.30	1.67E-02
MW-29B	Falling Head	47.40	1	10	0.083	0.50	0.30	3.25E-02
	Rising Head	47.40	1	10	0.083	0.50	0.30	2.26E-02

D = Approximate saturated aquifer thickness
Kv/Kh = Aquifer anisotropy ratio (vertical to horizontal)
L = Monitoring well screen length
r_c = Monitoring well casing radius
r_w = Monitoring wellbore radius
Φ = Effective gravel pack porosity
K = Hydraulic conductivity
Slug tests generally measure hydraulic conductivity to approximately one order of magnitude



WELL TEST ANALYSIS

Data Set: G:\...\MW-25A - IN.aqt
Date: 05/07/24 Time: 14:52:58

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25A - IN
Test Date: 09/02/21

AQUIFER DATA

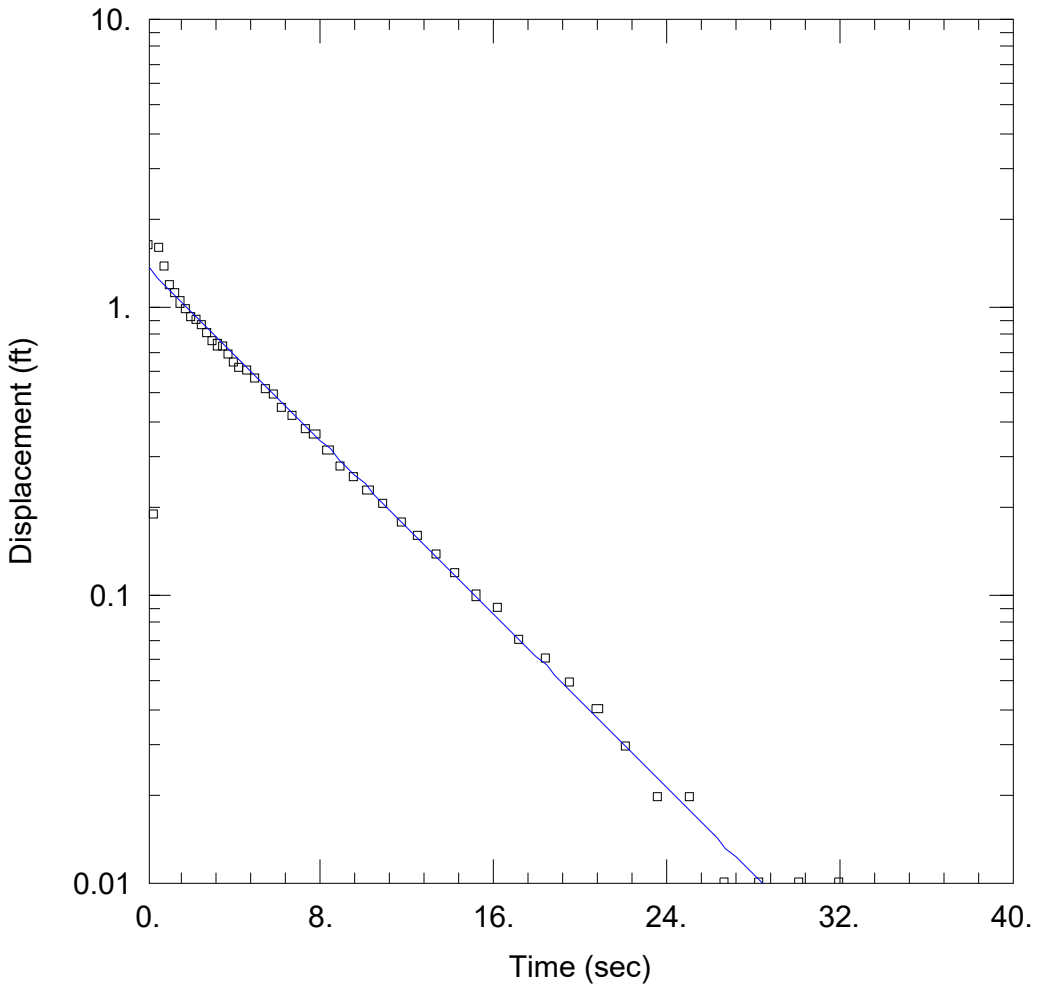
Saturated Thickness: 55. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-25A - IN)

Initial Displacement: 2.73 ft
Total Well Penetration Depth: 53. ft
Casing Radius: 0.08 ft
Static Water Column Height: 55. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.007162 cm/sec
y0 = 1.389 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-25A - OUT.aqt
Date: 05/07/24 Time: 14:39:48

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25A - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 55. ft Anisotropy Ratio (Kz/Kr): 1.

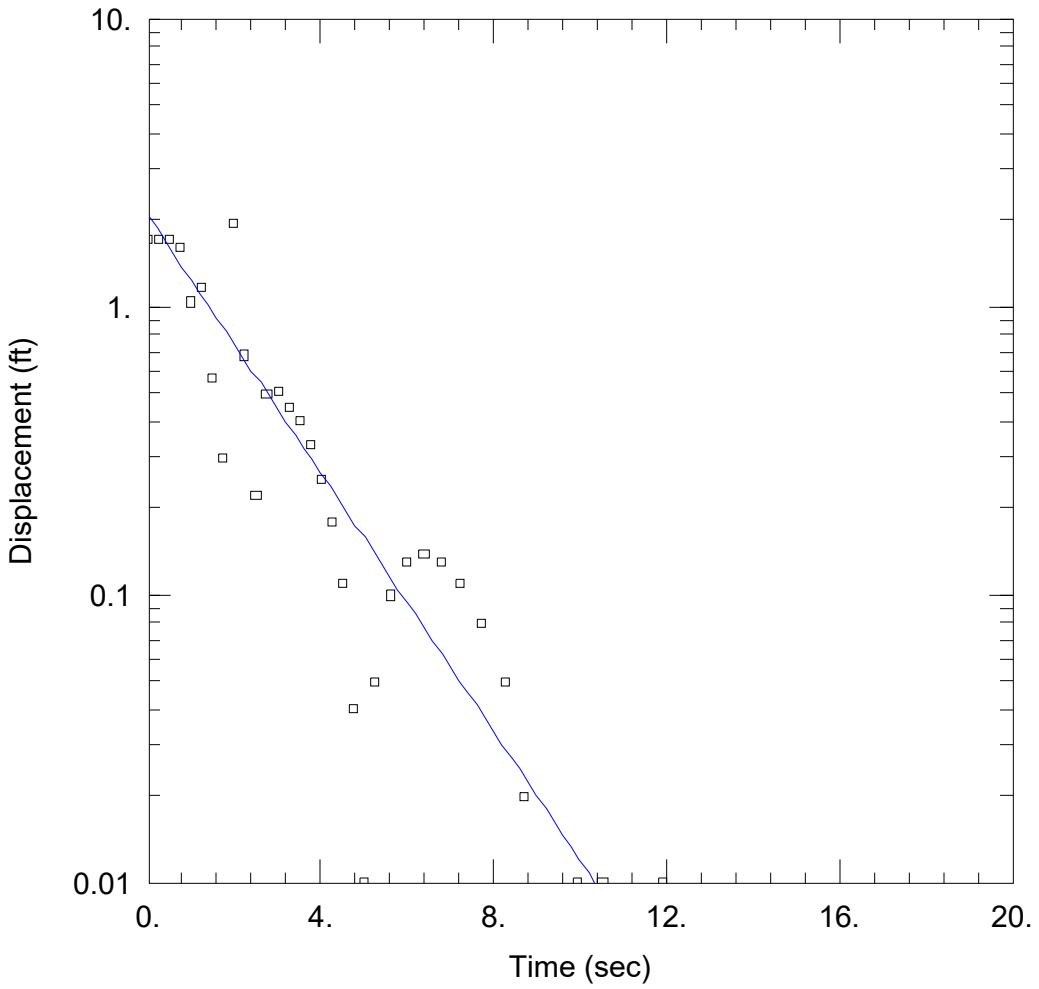
WELL DATA (MW-25A - OUT)

Initial Displacement: 1.65 ft
Total Well Penetration Depth: 53. ft
Casing Radius: 0.08 ft
Static Water Column Height: 55. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.007315 cm/sec y0 = 1.362 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-25I - IN.aqt
Date: 05/07/24 Time: 15:11:05

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25I - IN
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 37. ft Anisotropy Ratio (Kz/Kr): 1.

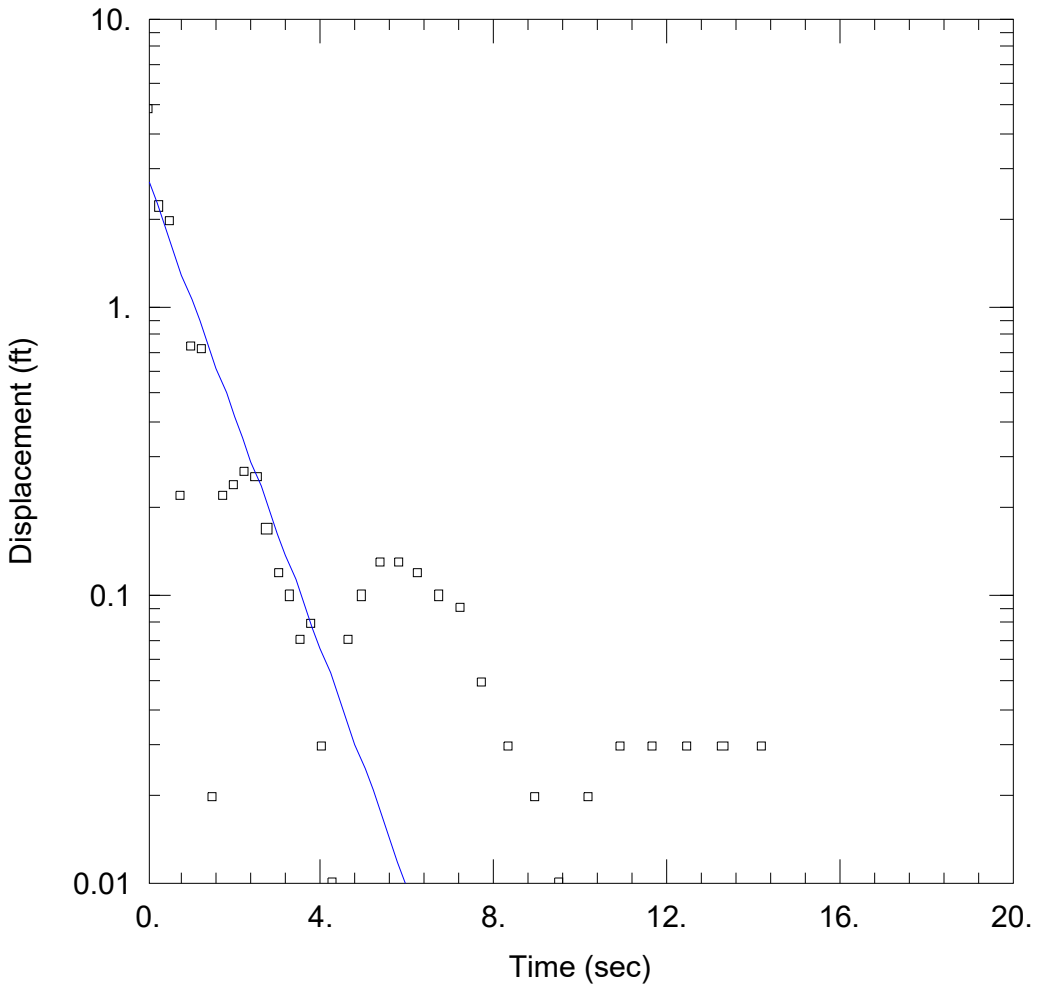
WELL DATA (MW-25I - IN)

Initial Displacement: 1.73 ft
Static Water Column Height: 37. ft
Total Well Penetration Depth: 34. ft
Screen Length: 10. ft
Casing Radius: 0.083 ft
Well Radius: 0.083 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.02187 cm/sec
y0 = 2.077 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-25I - OUT.aqt
Date: 05/07/24 Time: 15:13:51

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25I - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 37. ft Anisotropy Ratio (Kz/Kr): 1.

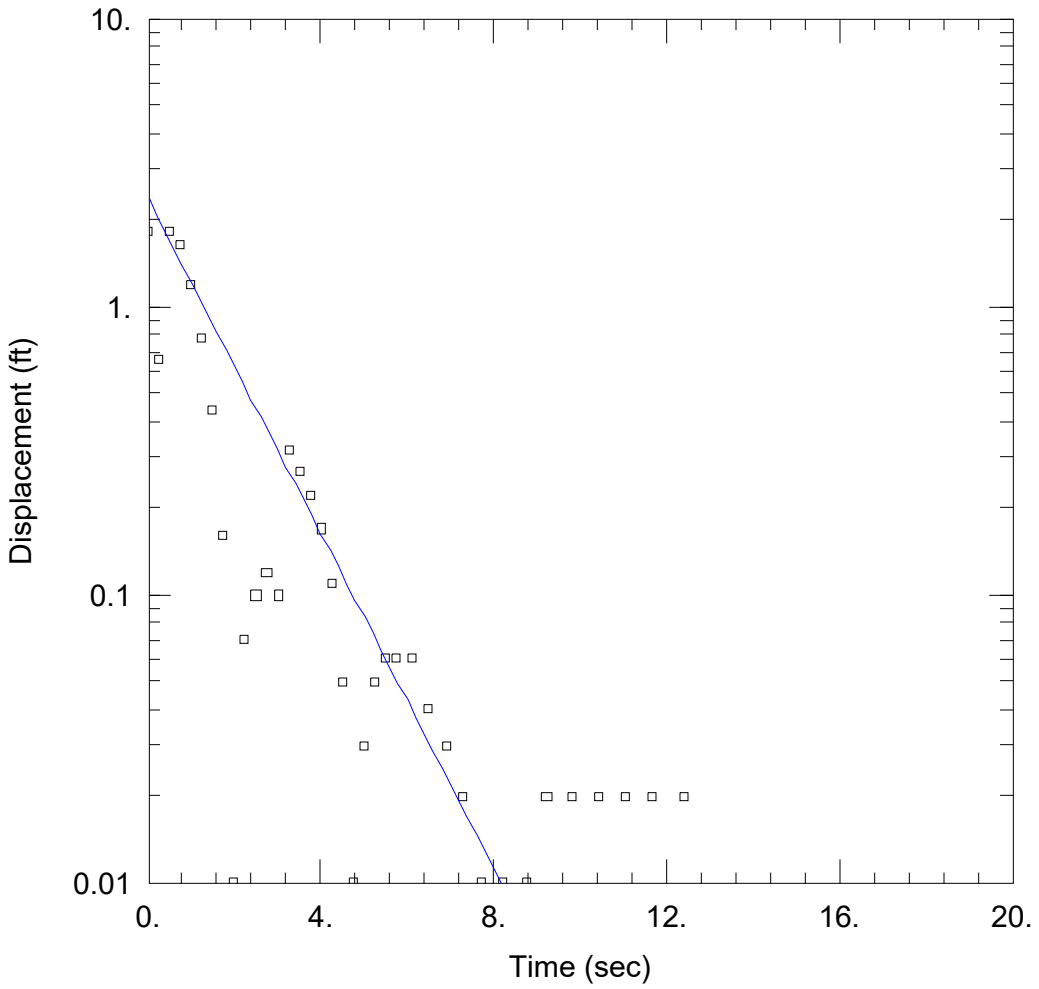
WELL DATA (MW-25I - OUT)

Initial Displacement: 4.84 ft
Total Well Penetration Depth: 34. ft
Casing Radius: 0.08 ft
Static Water Column Height: 37. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03726 cm/sec y0 = 2.741 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-25B - IN.aqt
Date: 05/09/24 Time: 11:43:58

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25B - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 16.5 ft Anisotropy Ratio (Kz/Kr): 1.

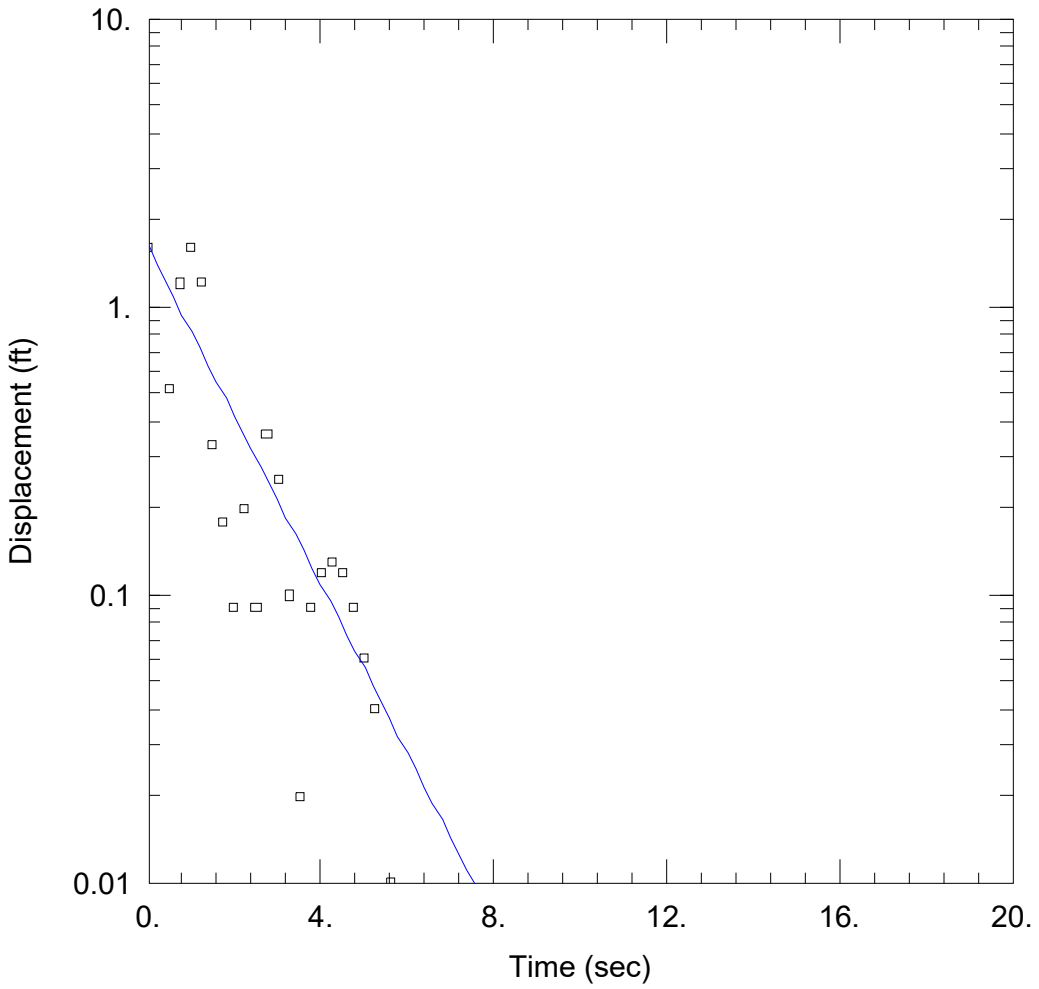
WELL DATA (MW-25B - IN)

Initial Displacement: 1.83 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.08 ft
Static Water Column Height: 16.5 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02367 cm/sec y0 = 2.377 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-25B - OUT.aqt
Date: 05/09/24 Time: 11:43:46

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-25B - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 16.5 ft Anisotropy Ratio (Kz/Kr): 1.

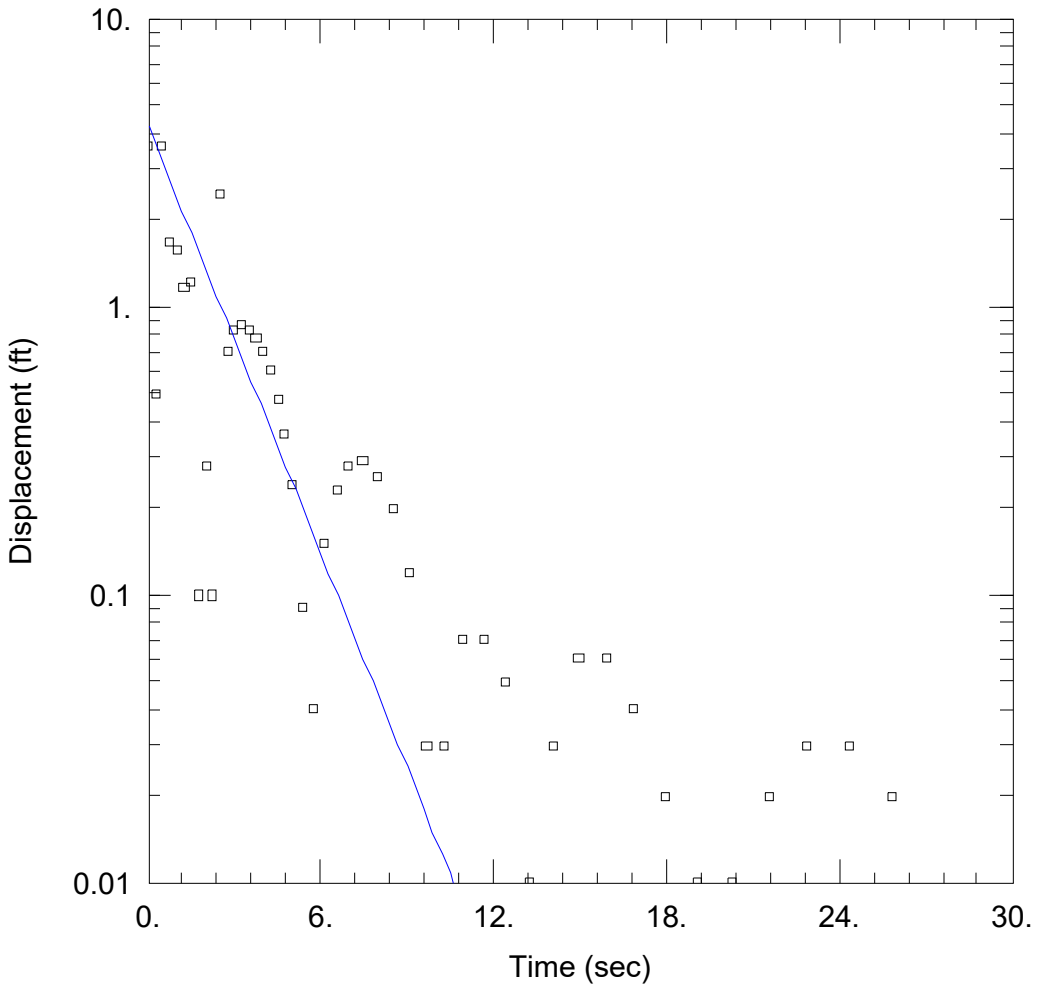
WELL DATA (MW-25B - OUT)

Initial Displacement: 1.6 ft
Total Well Penetration Depth: 14. ft
Casing Radius: 0.08 ft
Static Water Column Height: 16.5 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02384 cm/sec y0 = 1.614 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-26A - IN.aqt
Date: 05/09/24 Time: 11:48:25

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26A - IN
Test Date: 09/03/21

AQUIFER DATA

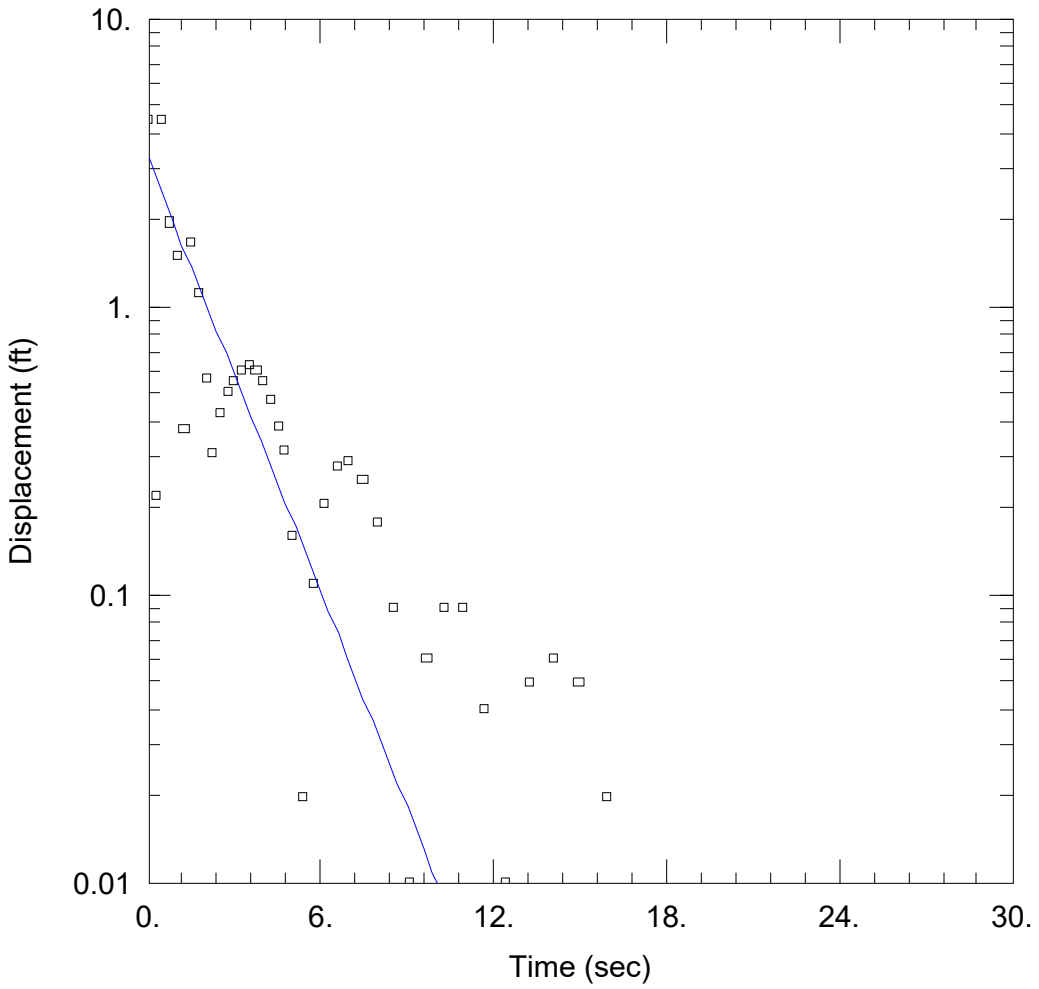
Saturated Thickness: 46. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-26A - IN)

Initial Displacement: 3.65 ft
Total Well Penetration Depth: 43.2 ft
Casing Radius: 0.08 ft
Static Water Column Height: 46. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02334 cm/sec
y0 = 4.257 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-26A - OUT.aqt
Date: 05/09/24 Time: 11:48:15

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26A - OUT
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 46. ft Anisotropy Ratio (Kz/Kr): 1.

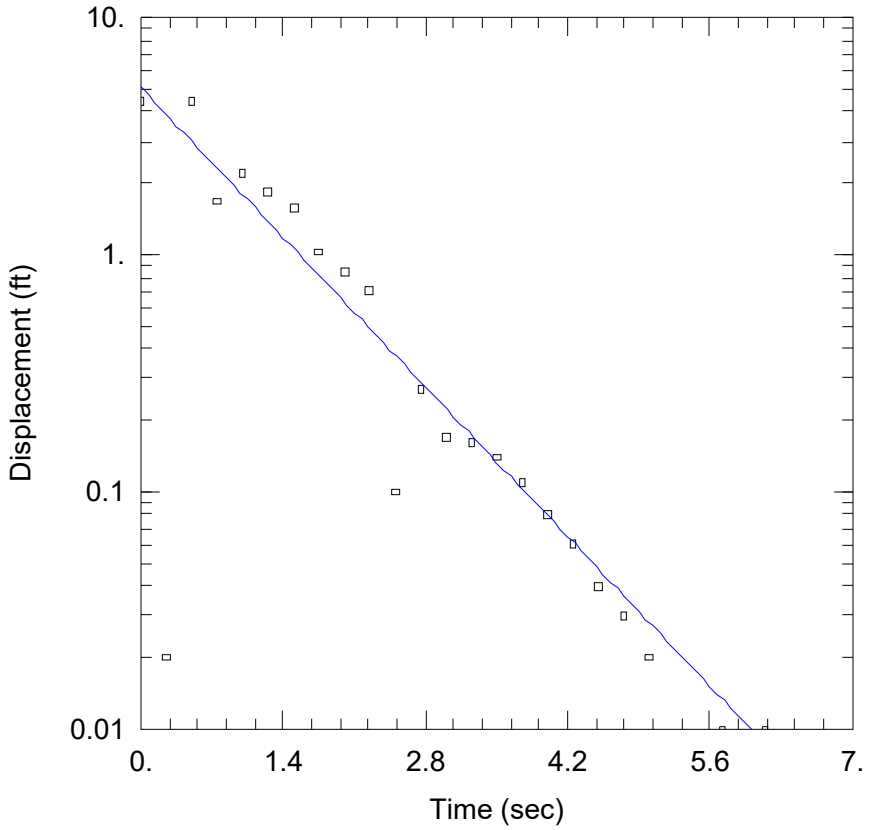
WELL DATA (MW-26A - OUT)

Initial Displacement: 4.49 ft
Total Well Penetration Depth: 43.2 ft
Casing Radius: 0.08 ft
Static Water Column Height: 46. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02359 cm/sec y0 = 3.282 ft



WELL TEST ANALYSIS

Data Set: C:\Users\colton.palmer\Desktop\Petersburg Slug Testing 1106\MW-26I - IN.aqt
Date: 01/13/22 Time: 12:58:19

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26I - IN
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 47.34 ft Anisotropy Ratio (Kz/Kr): 1.

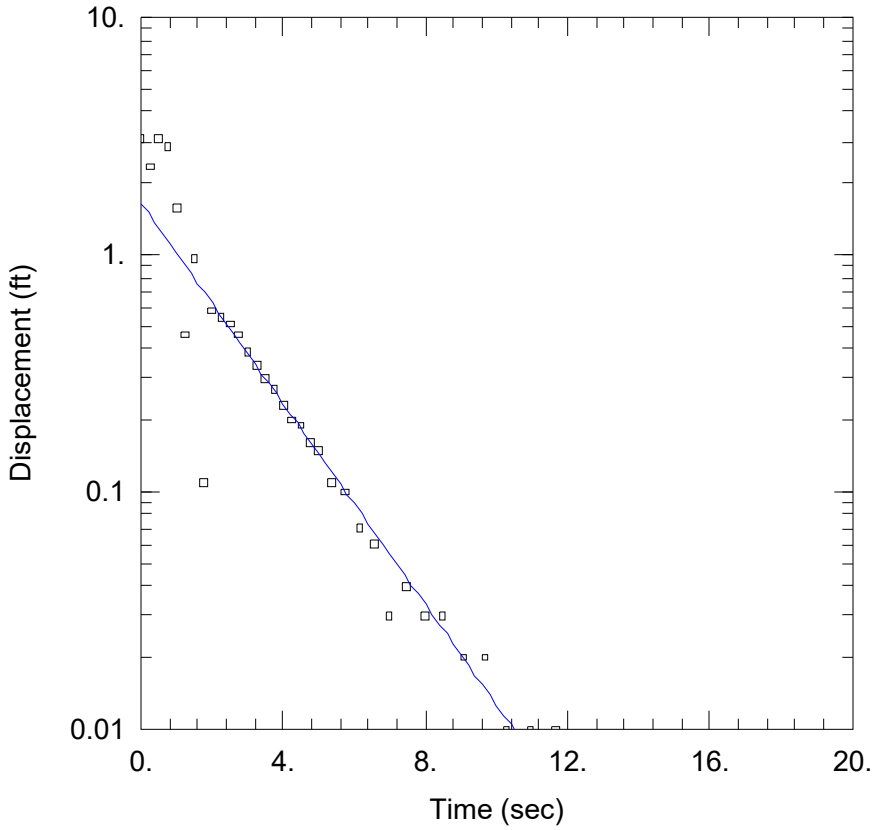
WELL DATA (MW-26I - IN)

Initial Displacement: 4.4 ft
Total Well Penetration Depth: 35.18 ft
Casing Radius: 0.08 ft
Static Water Column Height: 29.78 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03987 cm/sec y0 = 5.039 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-26I - OUT.aqt
Date: 01/13/22 Time: 12:58:23

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26I - OUT
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 47.34 ft Anisotropy Ratio (Kz/Kr): 1.

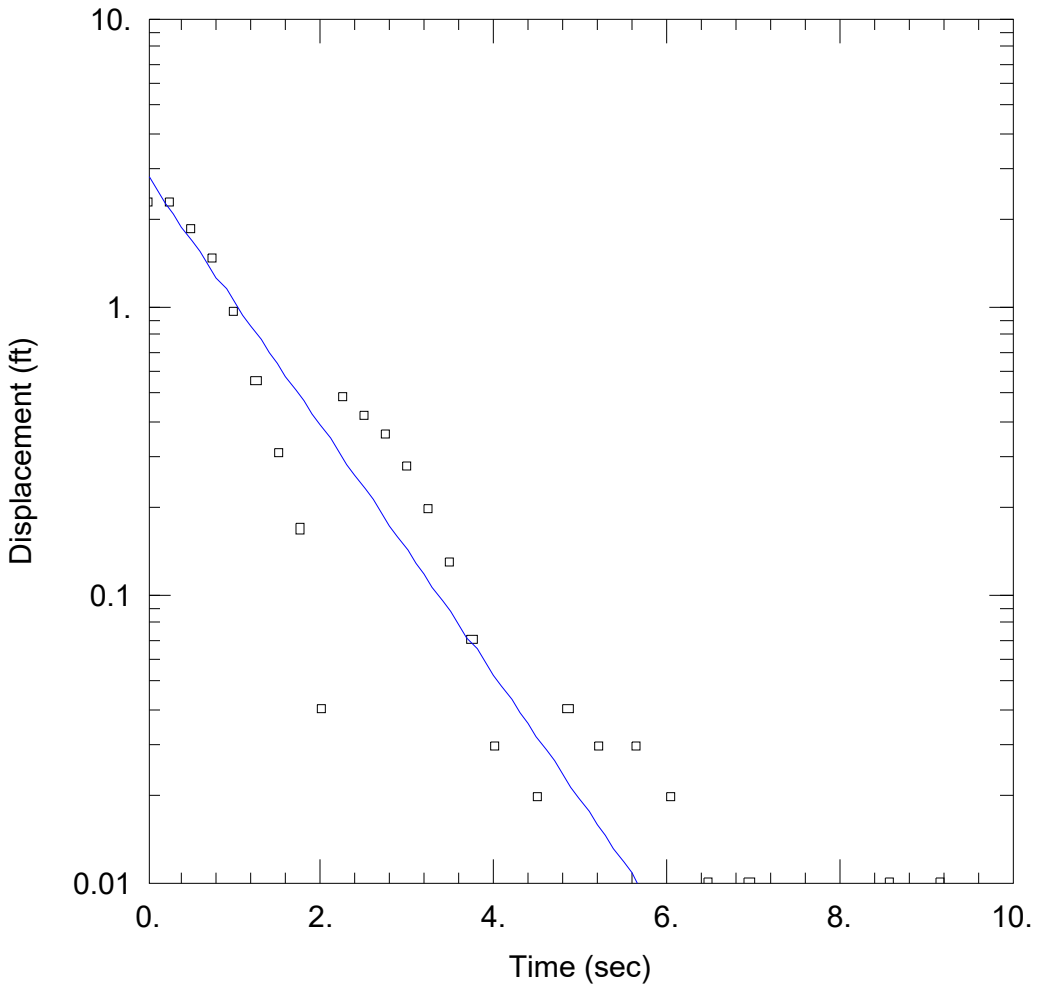
WELL DATA (MW-26I - OUT)

Initial Displacement: 3.08 ft
Total Well Penetration Depth: 35.18 ft
Casing Radius: 0.08 ft
Static Water Column Height: 29.78 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01875 cm/sec y0 = 1.654 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-26B - IN.aqt
Date: 05/09/24 Time: 12:02:57

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26B - IN
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

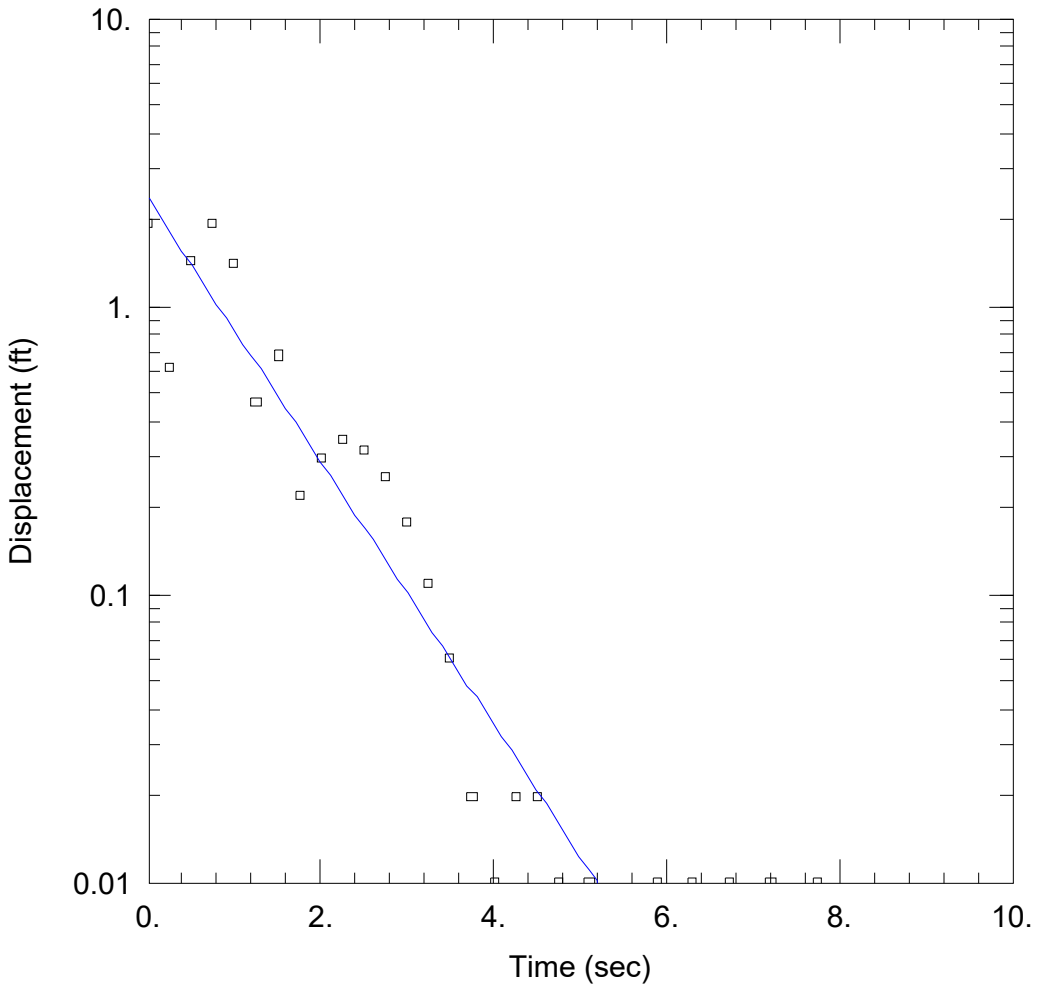
WELL DATA (MW-26S - IN)

Initial Displacement: 2.3 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.08 ft
Static Water Column Height: 15. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03863 cm/sec y0 = 2.814 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-26B - OUT.aqt
Date: 05/09/24 Time: 12:03:06

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-26B - OUT
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 15. ft Anisotropy Ratio (Kz/Kr): 1.

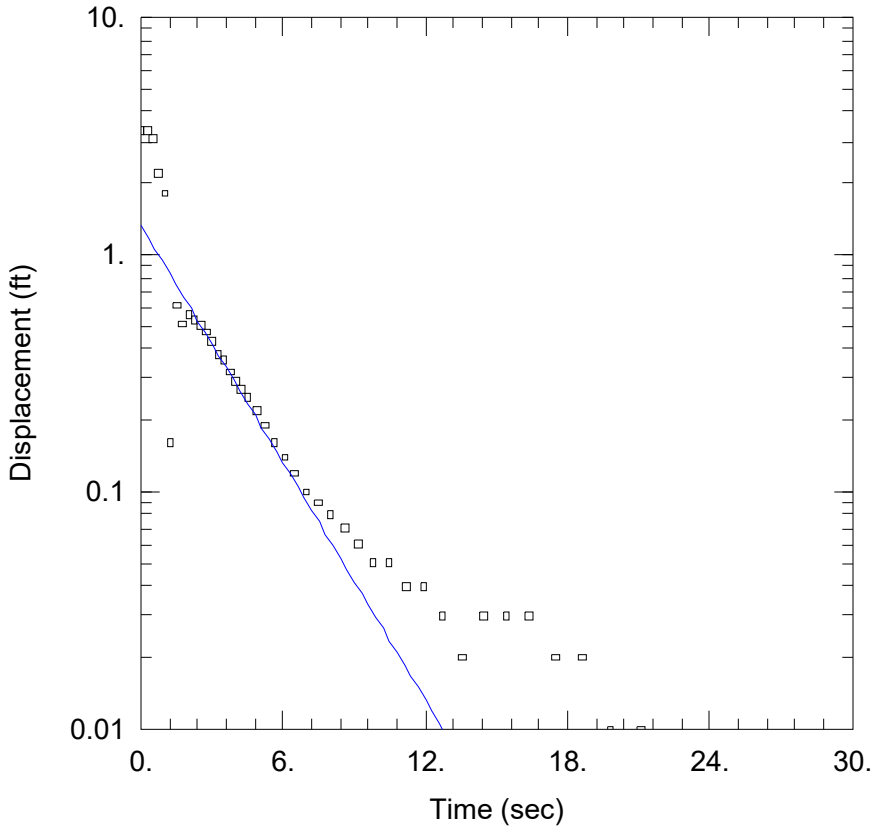
WELL DATA (MW-26B - OUT)

Initial Displacement: 1.96 ft
Total Well Penetration Depth: 15. ft
Casing Radius: 0.08 ft
Static Water Column Height: 15. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04084 cm/sec y0 = 2.374 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-27B - IN.aqt
Date: 01/13/22 Time: 12:58:50

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-27B - IN
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 19.04 ft Anisotropy Ratio (Kz/Kr): 1.

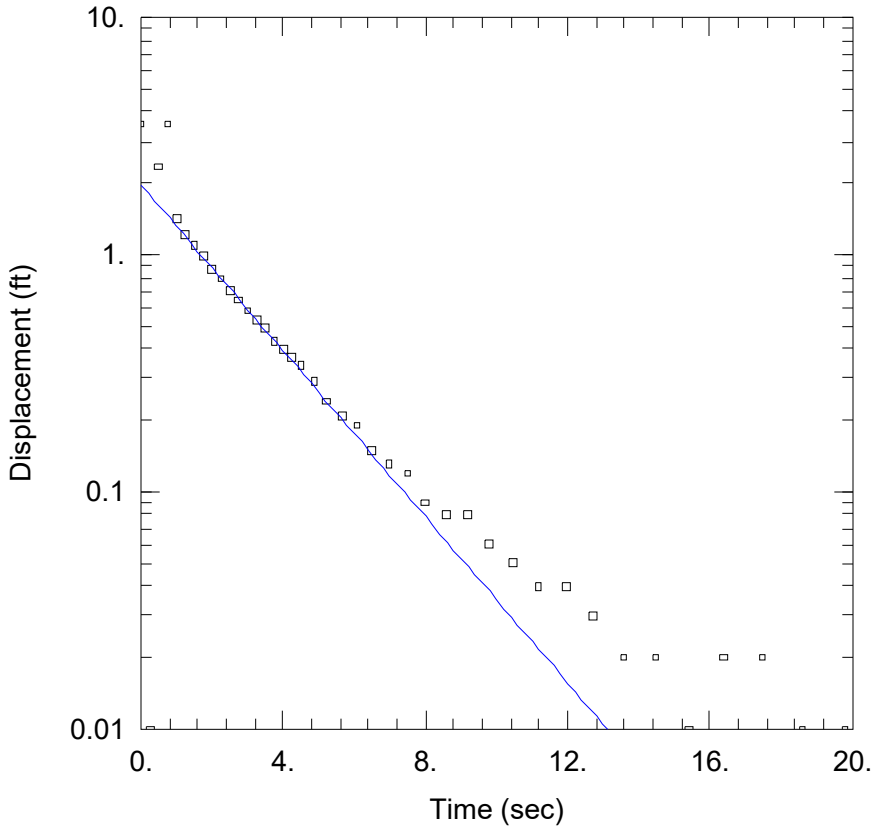
WELL DATA (MW-27B - IN)

Initial Displacement: 3.34 ft Static Water Column Height: 19.9 ft
Total Well Penetration Depth: 20.3 ft Screen Length: 5. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0302 cm/sec y0 = 1.324 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-27B - OUT.aqt
Date: 01/13/22 Time: 12:58:55

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-27B - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 19.04 ft Anisotropy Ratio (Kz/Kr): 1.

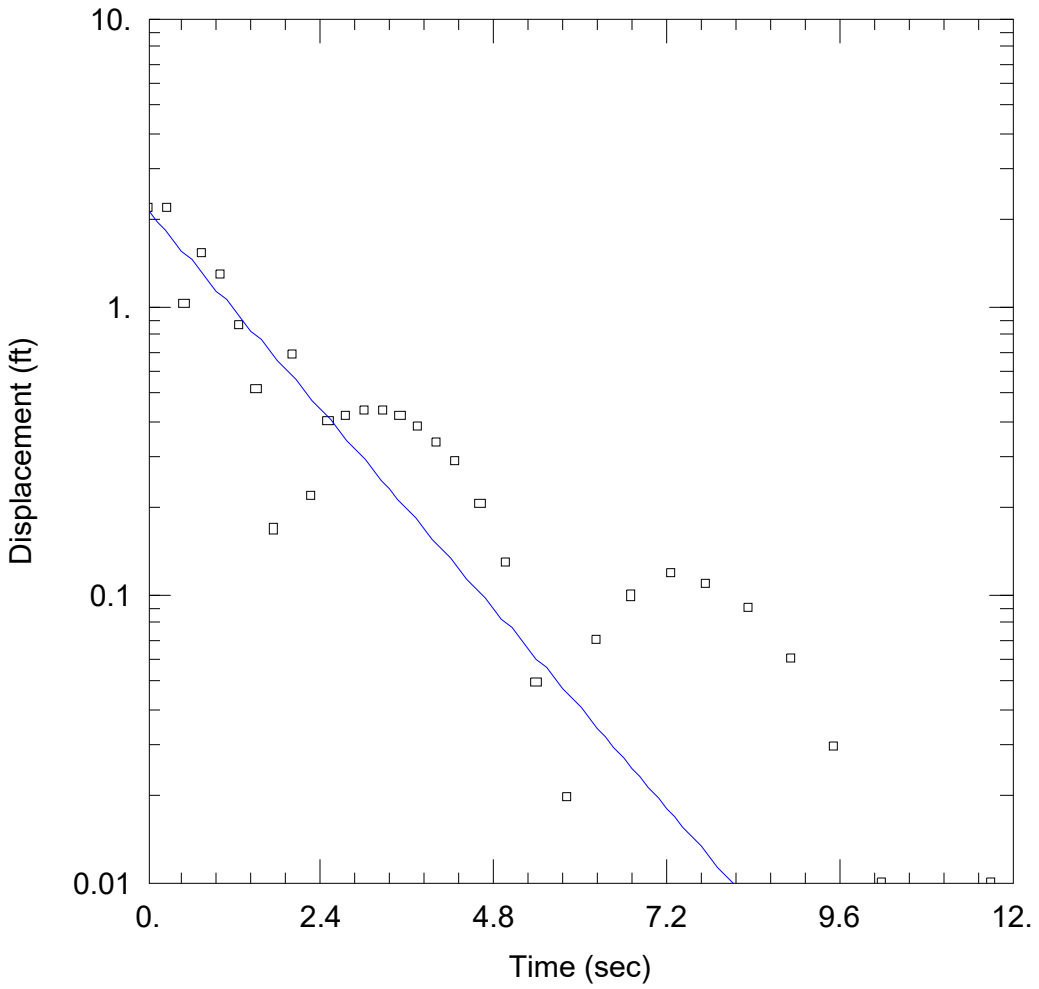
WELL DATA (MW-27B - OUT)

Initial Displacement: 3.55 ft
Total Well Penetration Depth: 20.3 ft
Casing Radius: 0.08 ft
Static Water Column Height: 19.9 ft
Screen Length: 5. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03171 cm/sec y0 = 1.968 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28A - IN.aqt
Date: 05/09/24 Time: 12:17:09

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28A - IN
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 46. ft Anisotropy Ratio (Kz/Kr): 1.

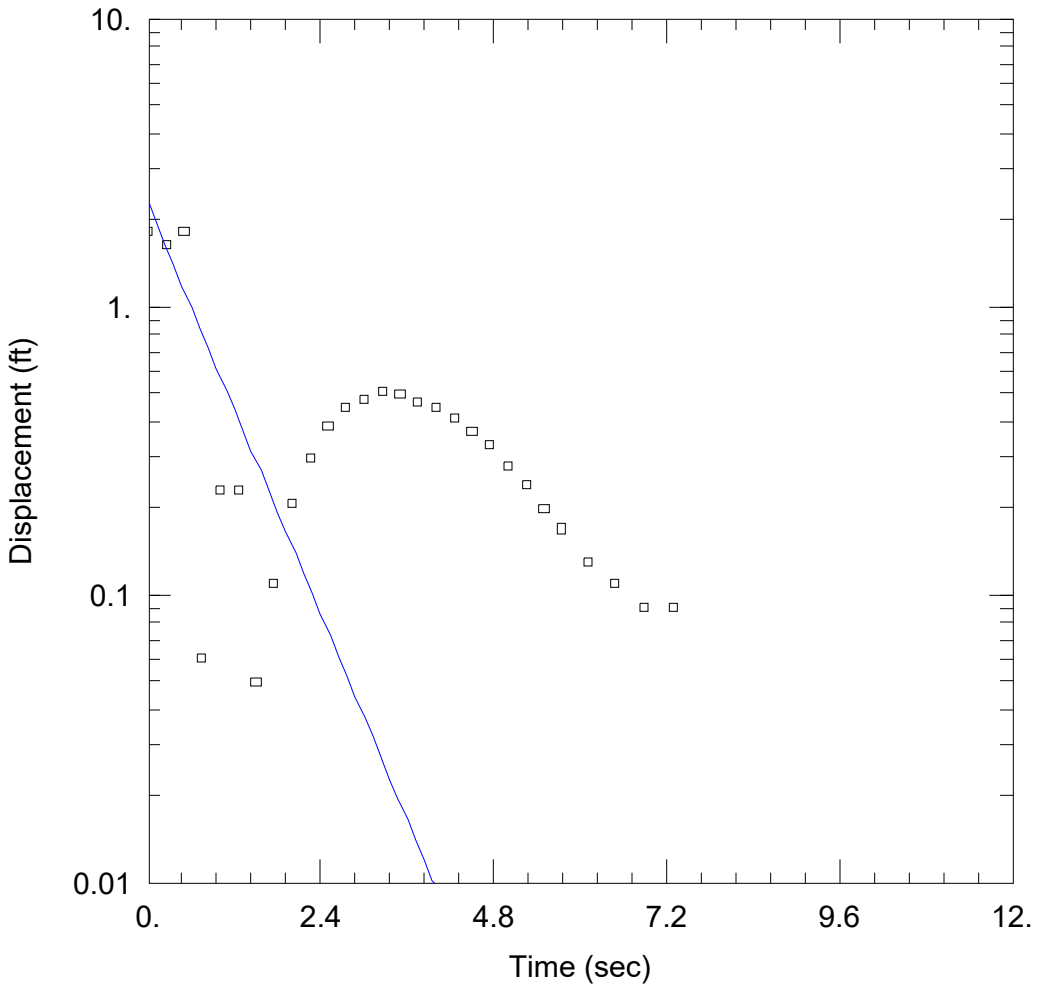
WELL DATA (MW-28A - IN)

Initial Displacement: 2.21 ft
Total Well Penetration Depth: 41. ft
Casing Radius: 0.08 ft
Static Water Column Height: 46. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02655 cm/sec y0 = 2.158 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28A - OUT.aqt
Date: 05/09/24 Time: 12:17:19

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28A - OUT
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 46. ft Anisotropy Ratio (Kz/Kr): 1.

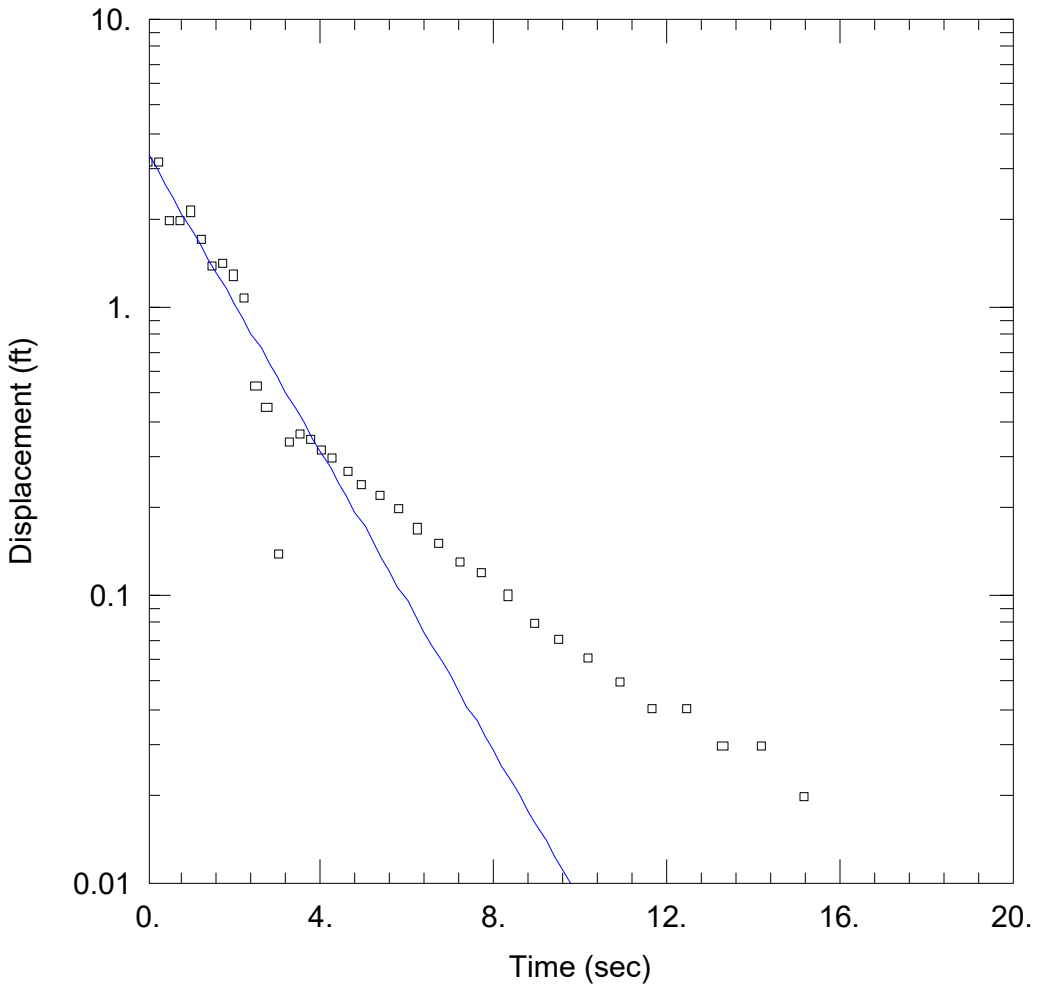
WELL DATA (MW-28A - OUT)

Initial Displacement: 1.82 ft
Total Well Penetration Depth: 41. ft
Casing Radius: 0.08 ft
Static Water Column Height: 46. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.05471 cm/sec y0 = 2.269 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28I - IN.aqt
Date: 05/09/24 Time: 12:20:43

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28I - IN
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 35. ft Anisotropy Ratio (Kz/Kr): 1.

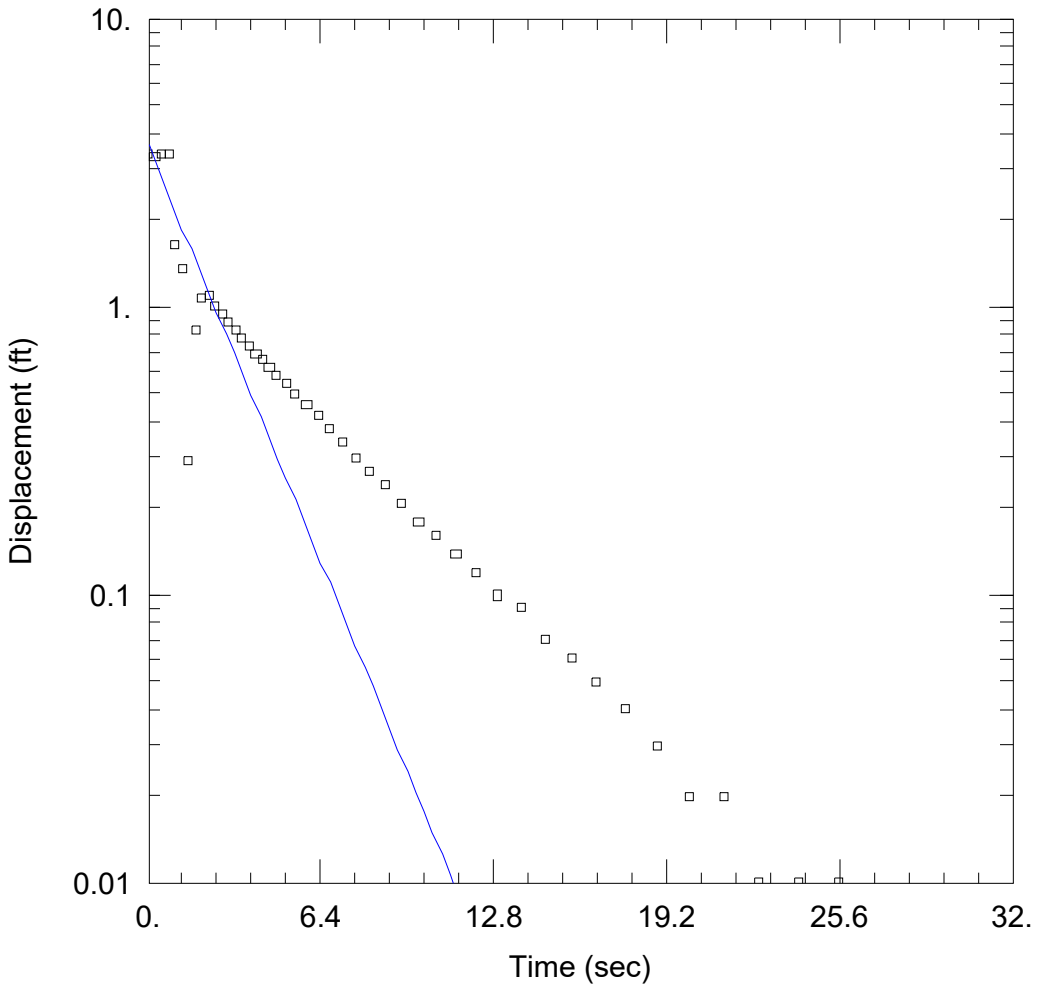
WELL DATA (MW-28I - IN)

Initial Displacement: 3.19 ft
Total Well Penetration Depth: 31. ft
Casing Radius: 0.08 ft
Static Water Column Height: 35. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02325 cm/sec y0 = 3.392 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28I - OUT.aqt
Date: 05/09/24 Time: 12:20:59

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28I - OUT
Test Date: 09/03/21

AQUIFER DATA

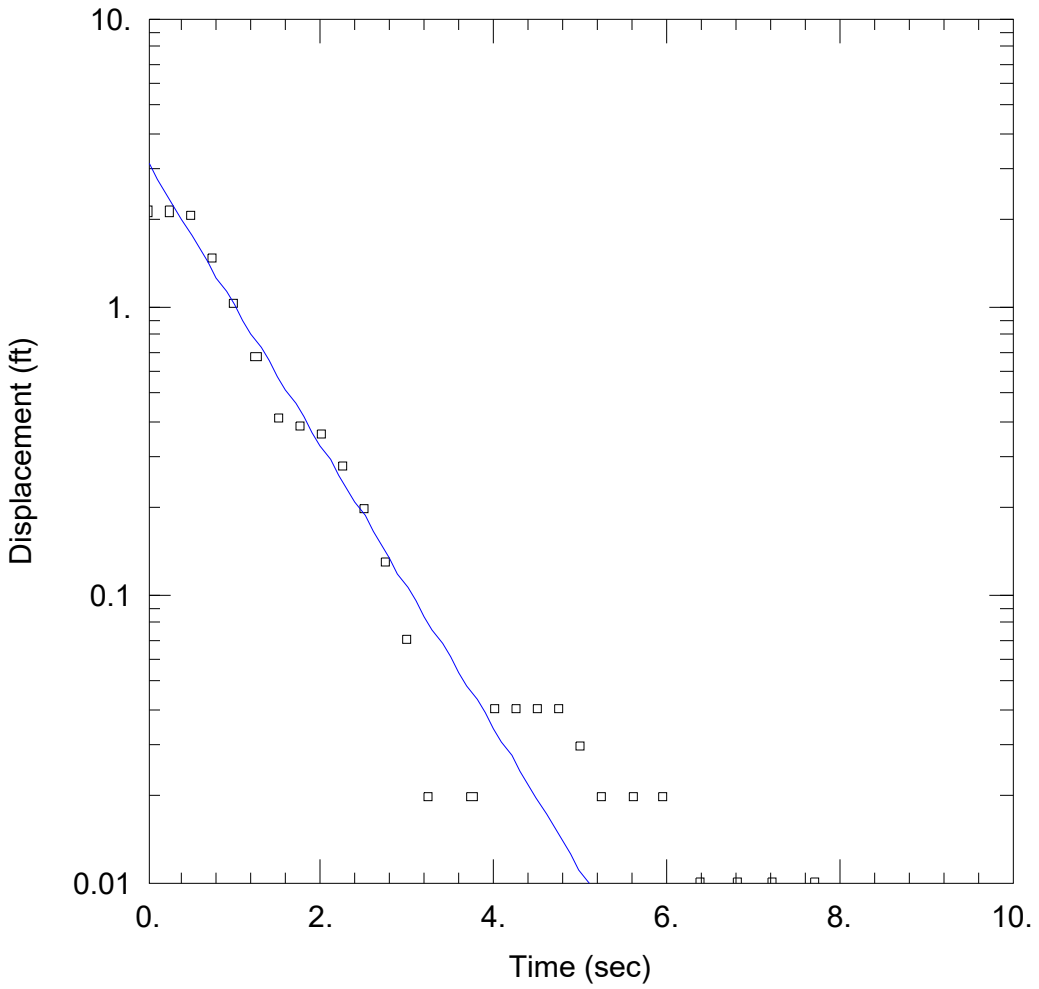
Saturated Thickness: 35. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-28I - OUT)

Initial Displacement: 3.42 ft
Total Well Penetration Depth: 31. ft
Casing Radius: 0.08 ft
Static Water Column Height: 35. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.02028 cm/sec
y0 = 3.628 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28B - IN.aqt
Date: 05/07/24 Time: 14:24:15

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28B - IN
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 11.5 ft Anisotropy Ratio (Kz/Kr): 1.

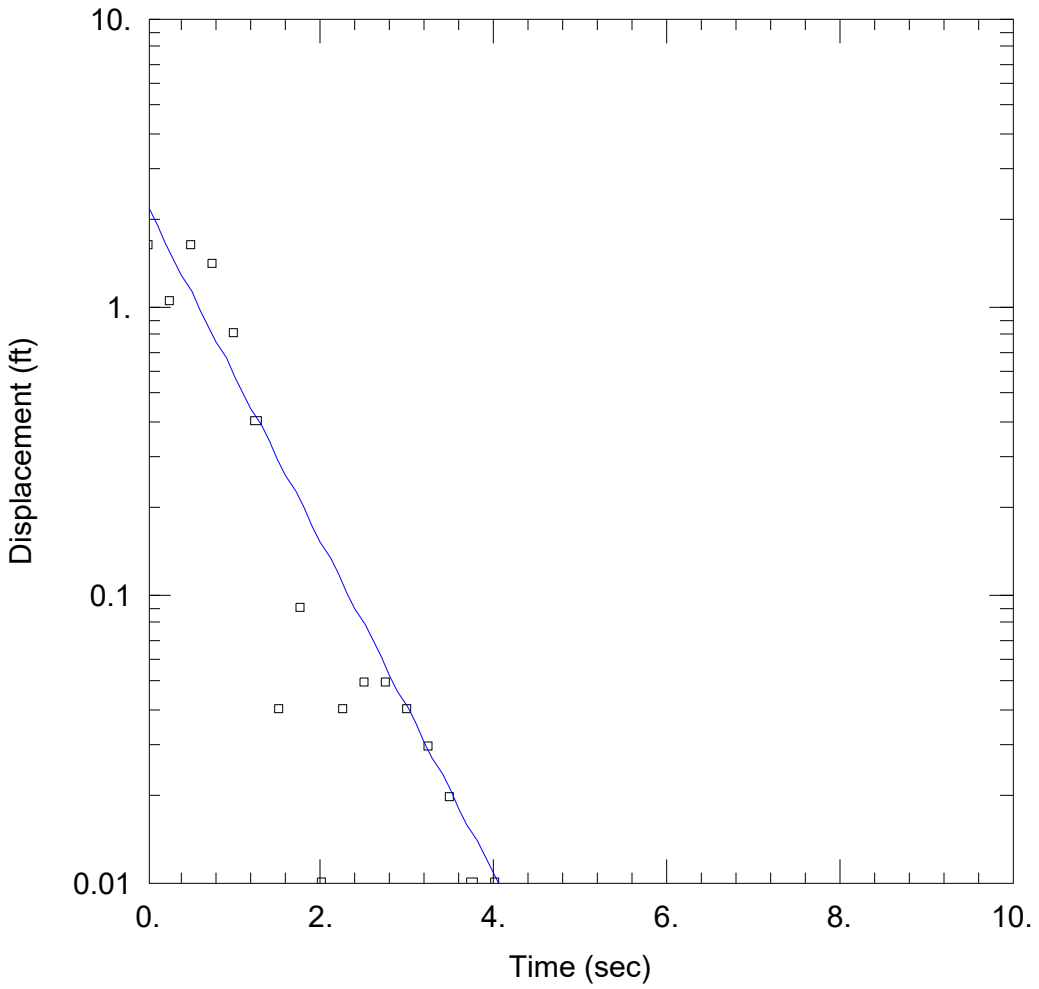
WELL DATA (MW-28B - IN)

Initial Displacement: 2.15 ft
Total Well Penetration Depth: 11.5 ft
Casing Radius: 0.08 ft
Static Water Column Height: 11.5 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04196 cm/sec y0 = 3.135 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-28B - OUT.aqt
Date: 05/07/24 Time: 14:24:02

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-28B - OUT
Test Date: 09/03/21

AQUIFER DATA

Saturated Thickness: 11.5 ft Anisotropy Ratio (Kz/Kr): 1.

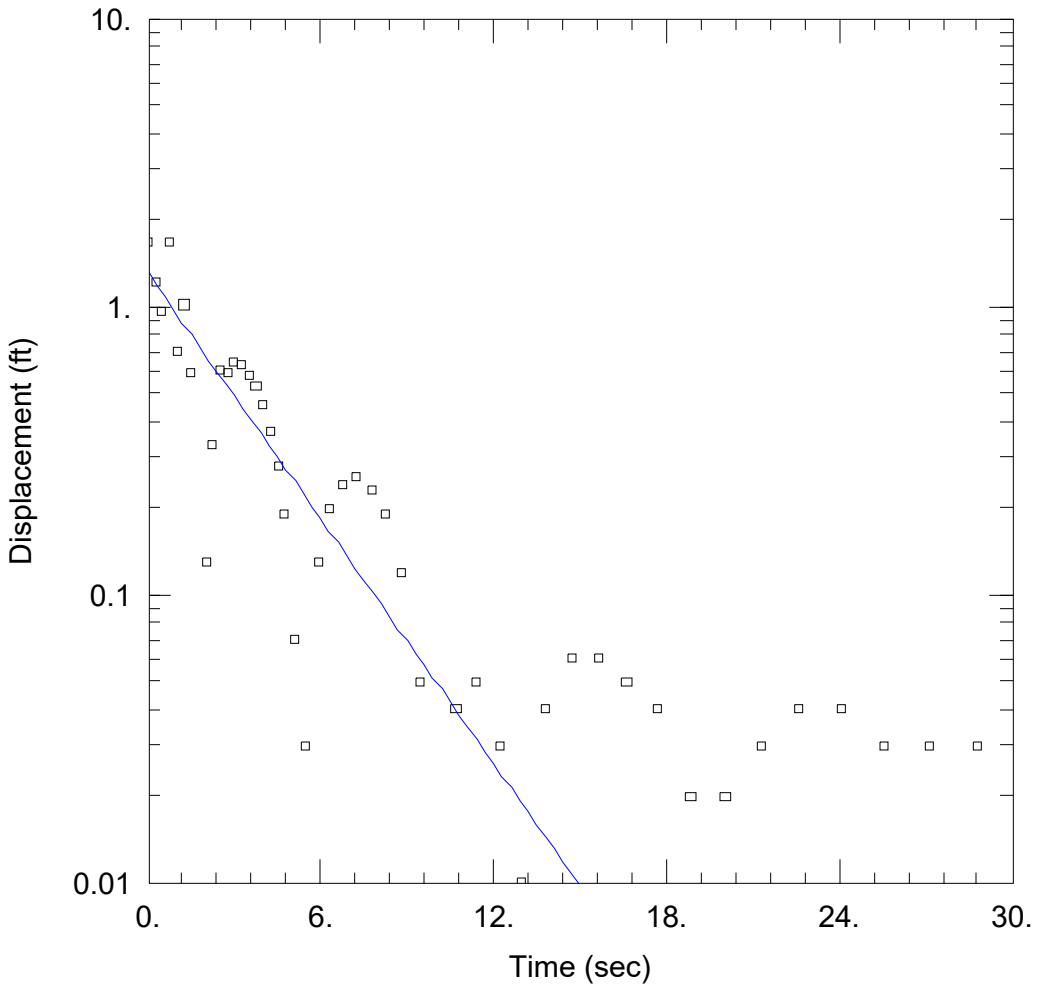
WELL DATA (MW-28B - OUT)

Initial Displacement: 1.65 ft
Total Well Penetration Depth: 11.5 ft
Casing Radius: 0.08 ft
Static Water Column Height: 11.5 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04947 cm/sec y0 = 2.19 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-29A - IN.aqt
Date: 05/07/24 Time: 14:05:53

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29A - IN
Test Date: 09/03/21

AQUIFER DATA

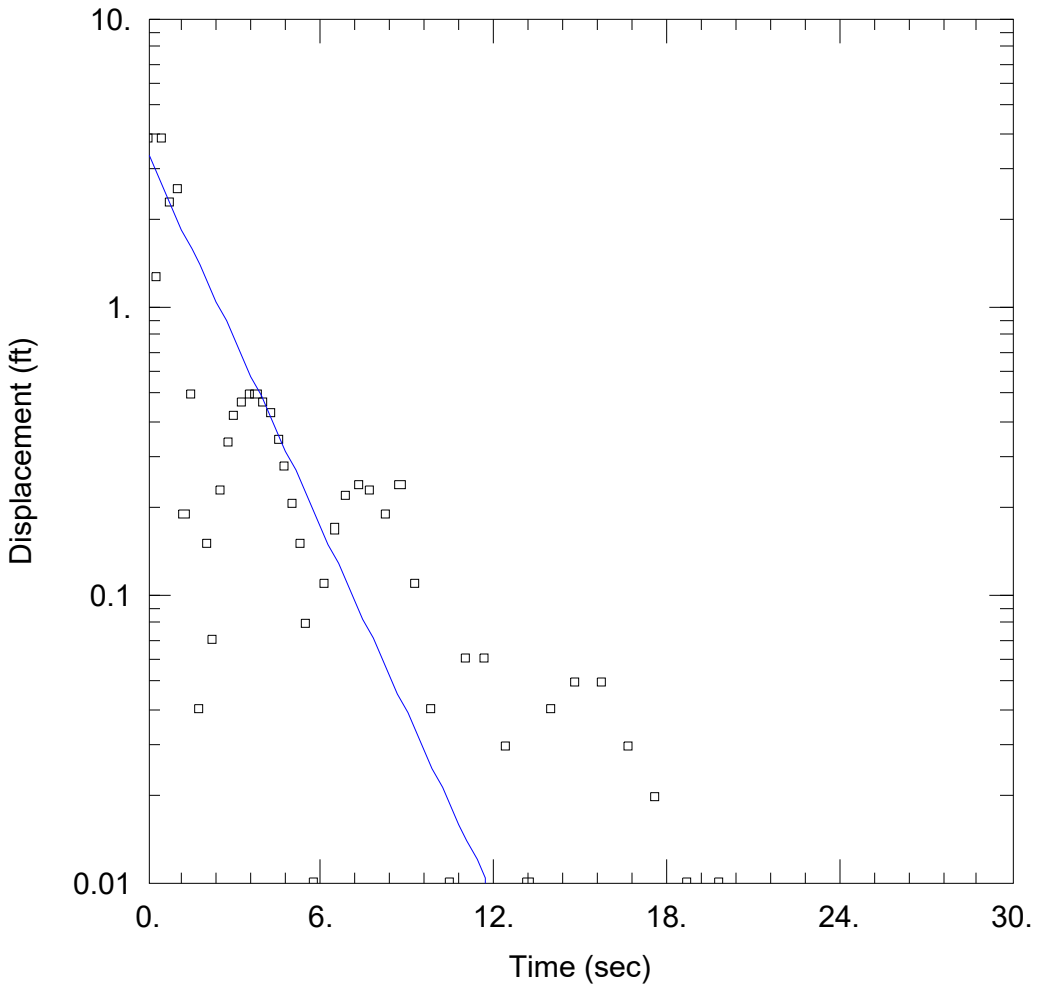
Saturated Thickness: 47. ft
Anisotropy Ratio (Kz/Kr): 0.001

WELL DATA (MW-29A - IN)

Initial Displacement: 1.67 ft
Static Water Column Height: 47. ft
Total Well Penetration Depth: 44. ft
Screen Length: 10. ft
Casing Radius: 0.08 ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0264 cm/sec
y0 = 1.307 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-29A - OUT.aqt
Date: 05/07/24 Time: 14:05:39

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29A - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 47. ft Anisotropy Ratio (Kz/Kr): 1.

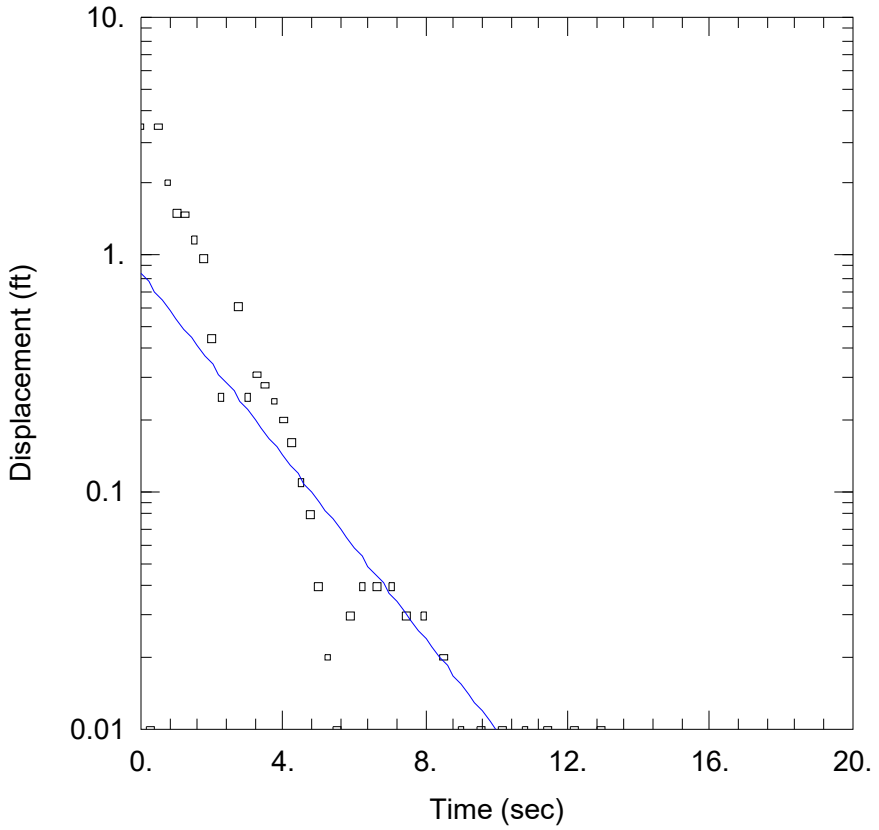
WELL DATA (MW-29A - OUT)

Initial Displacement: 3.84 ft
Total Well Penetration Depth: 44. ft
Casing Radius: 0.08 ft
Static Water Column Height: 47. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02029 cm/sec y0 = 3.386 ft



WELL TEST ANALYSIS

Data Set: C:\Users\colton.palmer\Desktop\Petersburg Slug Testing 1106\MW-29I - IN.aqt
Date: 01/13/22 Time: 12:59:57

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29I - IN
Test Date: 09/02/21

AQUIFER DATA

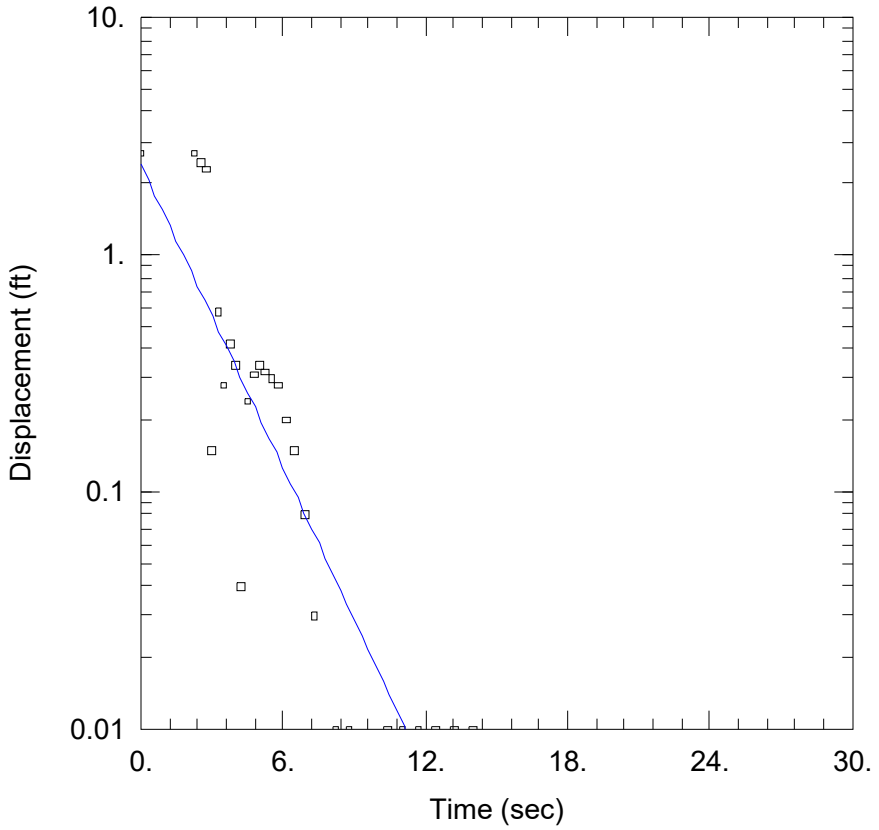
Saturated Thickness: 47.88 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-29I - IN)

Initial Displacement: 3.46 ft
Total Well Penetration Depth: 31.23 ft
Casing Radius: 0.08 ft
Static Water Column Height: 30.83 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.01667 cm/sec
y0 = 0.8328 ft



WELL TEST ANALYSIS

Data Set: C:\...\MW-29I - OUT.aqt
Date: 01/13/22 Time: 13:00:00

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29I - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 47.88 ft Anisotropy Ratio (Kz/Kr): 1.

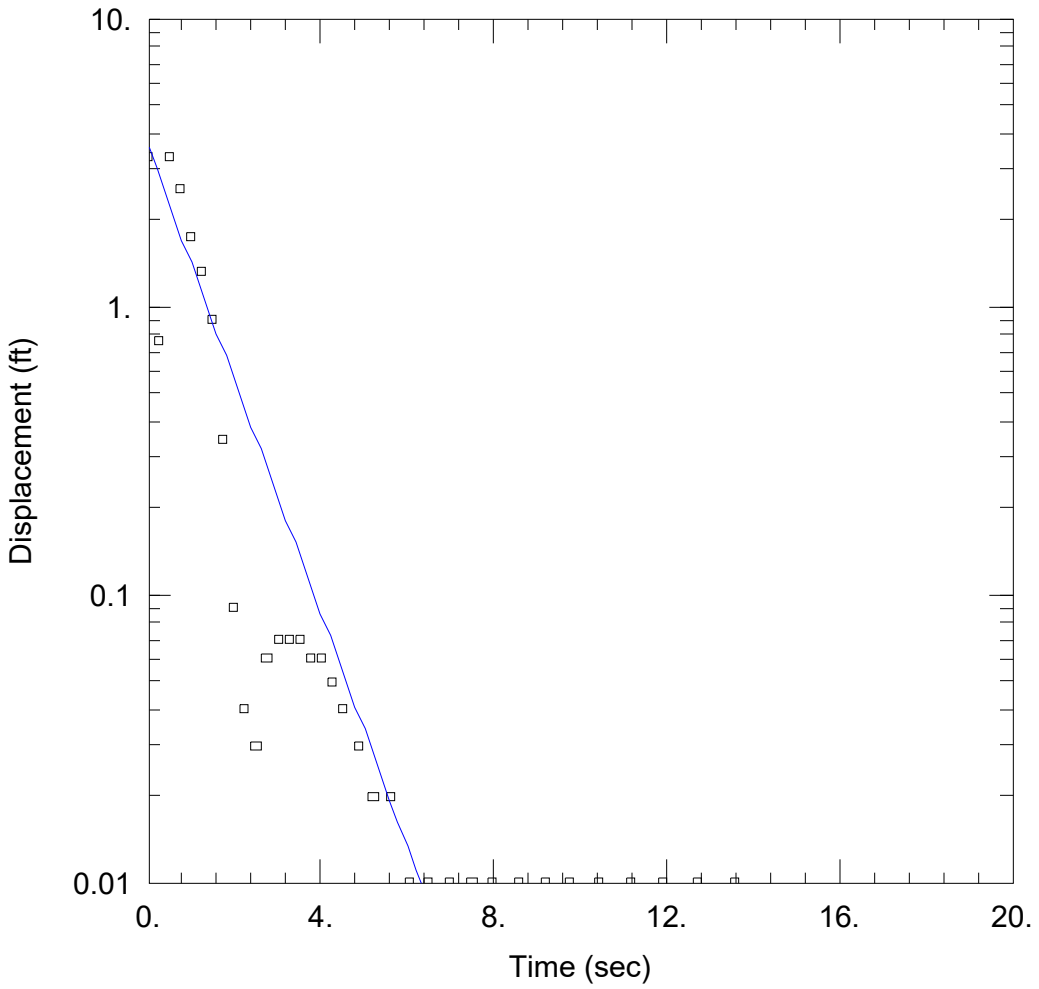
WELL DATA (MW-29I - OUT)

Initial Displacement: 2.68 ft
Total Well Penetration Depth: 31.23 ft
Casing Radius: 0.08 ft
Static Water Column Height: 30.83 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01848 cm/sec y0 = 2.398 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-29B - IN.aqt
Date: 05/07/24 Time: 14:14:52

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29B - IN
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 16. ft Anisotropy Ratio (Kz/Kr): 1.

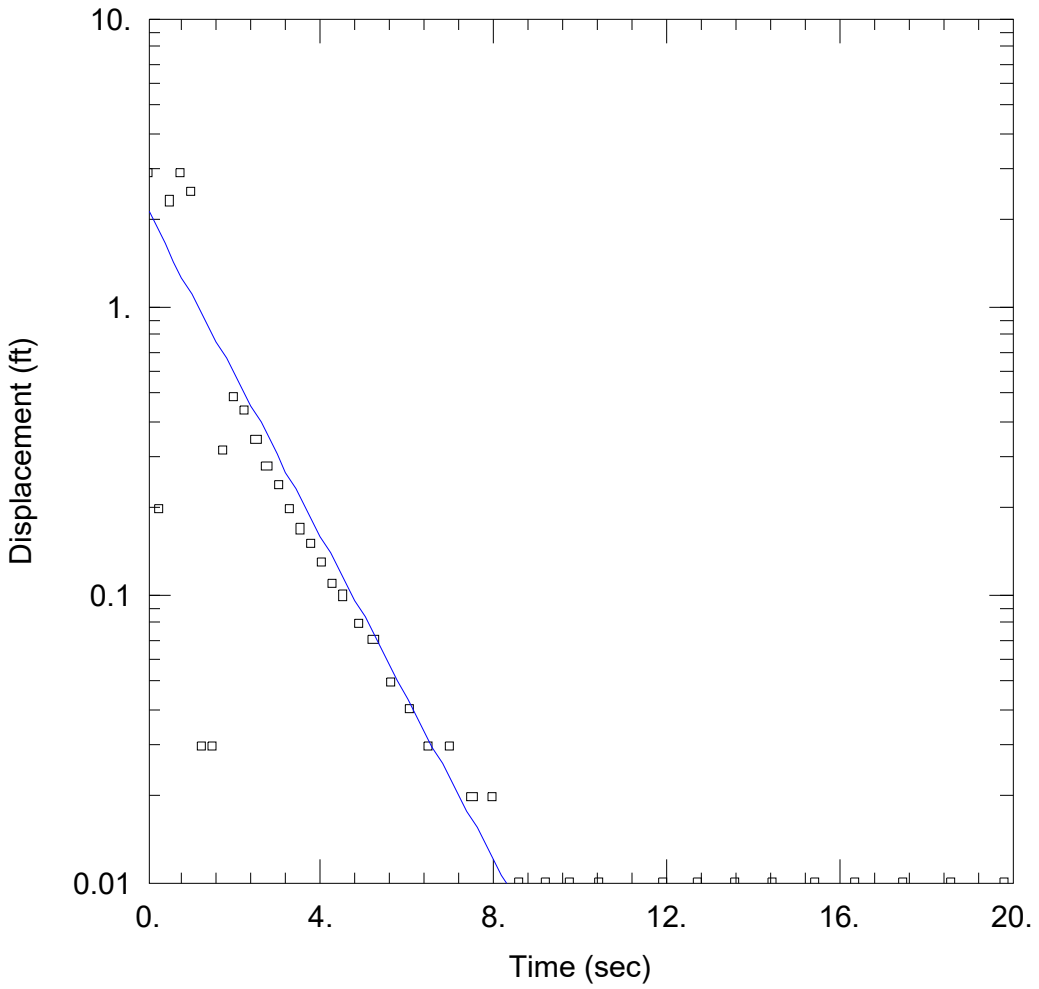
WELL DATA (MW-29B - IN)

Initial Displacement: 3.32 ft
Total Well Penetration Depth: 13. ft
Casing Radius: 0.08 ft
Static Water Column Height: 16. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0325 cm/sec y0 = 3.609 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-29B - OUT.aqt
Date: 05/07/24 Time: 14:15:04

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01106
Location: Petersburg Generating Station
Test Well: MW-29B - OUT
Test Date: 09/02/21

AQUIFER DATA

Saturated Thickness: 16. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-29B - OUT)

Initial Displacement: 2.91 ft
Total Well Penetration Depth: 13. ft
Casing Radius: 0.08 ft
Static Water Column Height: 16. ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

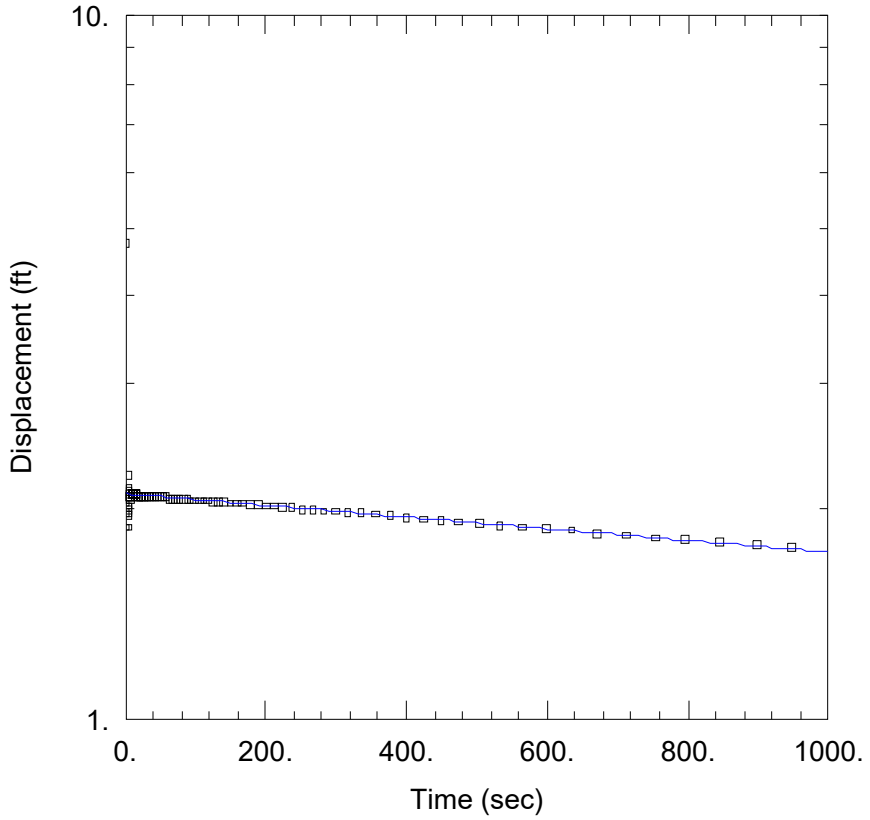
Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02258 cm/sec y0 = 2.136 ft

Table 2: Slug Test Summary
AES
Petersburg Generating Station
ATC Project No. 170LF001166

Monitoring Well	Type of Test	D, ft	Kv/Kh	L, ft	r_c, ft	r_w, ft	Φ	K, cm/sec
MW-30D2	Falling Head	12	1	10	0.083	0.33	0.30	9.18E-06
	Rising Head	12	1	10	0.083	0.33	0.30	3.93E-06
MW-31D2	Falling Head	8	1	10	0.083	0.33	0.30	2.01E-04
	Rising Head	8	1	10	0.083	0.33	0.30	1.90E-04
MW-32D1	Falling Head	7	1	10	0.083	0.50	0.30	6.52E-04
	Rising Head	7	1	10	0.083	0.50	0.30	8.92E-04
MW-32D2	Falling Head	9.6	1	10	0.083	0.33	0.30	2.46E-05
	Rising Head	9.6	1	10	0.083	0.33	0.30	1.11E-05
MW-33I	Falling Head	27.47	1	10	0.083	0.50	0.30	7.70E-05
	Rising Head	27.47	1	10	0.083	0.50	0.30	6.51E-05
MW-33D2	Falling Head	14.7	1	10	0.083	0.33	0.30	2.16E-05
	Rising Head	14.7	1	10	0.083	0.33	0.30	1.64E-05
MW-34A	Falling Head	38.64	1	5	0.083	0.50	0.30	1.67E-04
	Rising Head	38.64	1	5	0.083	0.50	0.30	1.36E-04
MW34D1	Falling Head	14	1	10	0.083	0.33	0.30	1.58E-03
	Rising Head	14	1	10	0.083	0.33	0.30	2.03E-03
MW-34SS	Falling Head	6.5	1	5	0.083	0.33	0.30	2.61E-05
	Rising Head	6.5	1	5	0.083	0.33	0.30	9.41E-05
MW-34D2	Falling Head	19	1	15	0.083	0.33	0.30	5.86E-06
	Rising Head	19	1	15	0.083	0.33	0.30	3.22E-06
MW-35D1	Falling Head	5	1	10	0.083	0.50	0.30	4.19E-02
	Rising Head	5	1	10	0.083	0.50	0.30	1.07E-02
MW-35SS	Falling Head	5	1	5	0.083	0.50	0.30	1.04E-05
	Rising Head	5	1	5	0.083	0.50	0.30	3.71E-05
MW-35D2	Falling Head	14.20	1	10	0.083	0.33	0.30	1.44E-05
	Rising Head	14.20	1	10	0.083	0.33	0.30	1.11E-05

D = Approximate saturated aquifer thickness
Kv/Kh = Aquifer anisotropy ratio (vertical to horizontal)
L = Monitoring well screen length
r_c = Monitoring well casing radius
r_w = Monitoring wellbore radius
Φ = Effective gravel pack porosity
K = Hydraulic conductivity



WELL TEST ANALYSIS

Data Set: G:\...\MW-30D2 - IN.aqt
Date: 02/04/22 Time: 12:20:37

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-30D2 - IN
Test Date: 01/18/2022

AQUIFER DATA

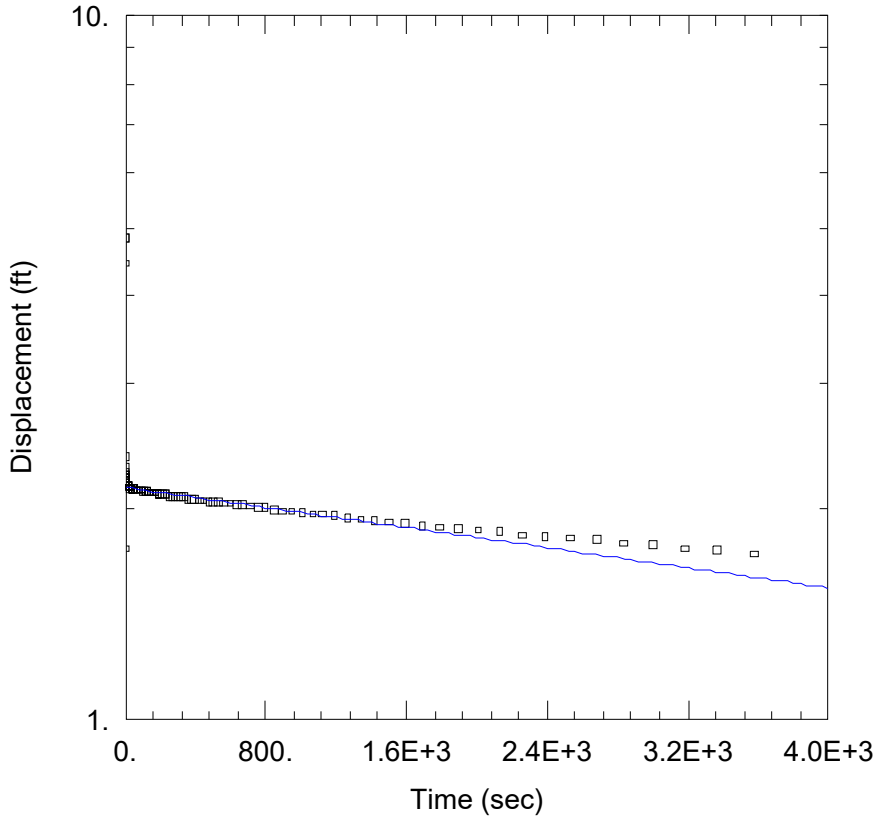
Saturated Thickness: 36. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-30D2 - IN)

Initial Displacement: 4.76 ft Static Water Column Height: 66.74 ft
Total Well Penetration Depth: 67.14 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 9.176E-6 cm/sec y0 = 2.096 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-30D2 - OUT.aqt
Date: 01/31/22 Time: 11:01:17

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-30D2 - OUT
Test Date: 01/18/2022

AQUIFER DATA

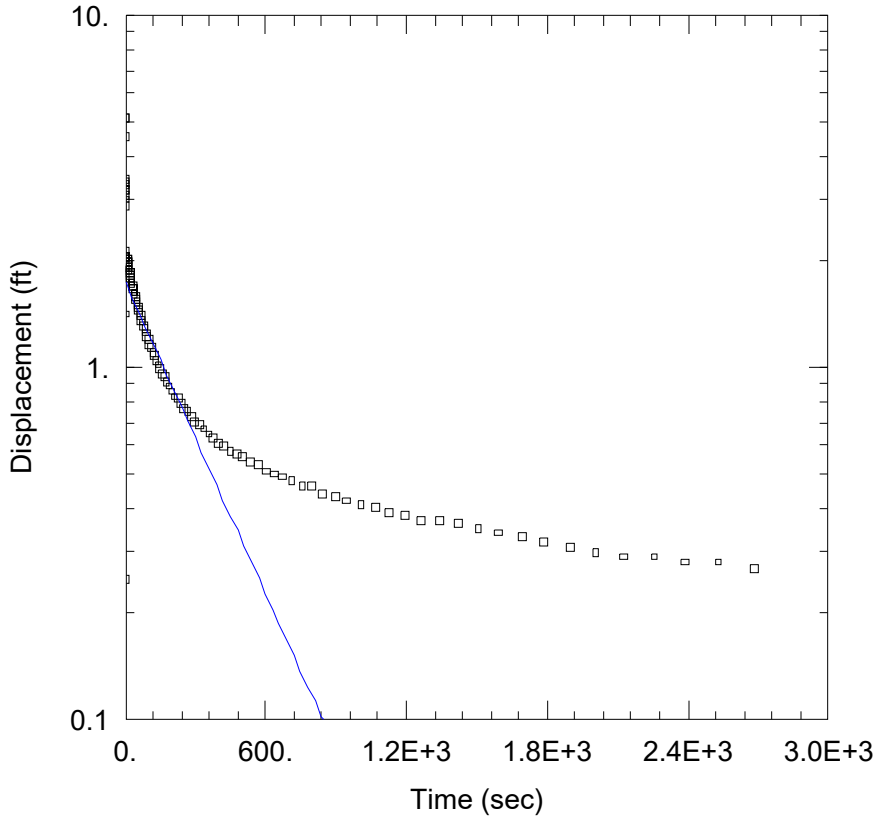
Saturated Thickness: 12. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-30D2 - OUT)

Initial Displacement: 4.85 ft Static Water Column Height: 66.74 ft
Total Well Penetration Depth: 67.14 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 3.932E-6 cm/sec y0 = 2.139 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-31D2 - IN.aqt
Date: 01/31/22 Time: 11:01:24

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-31D2 - IN
Test Date: 01/18/2022

AQUIFER DATA

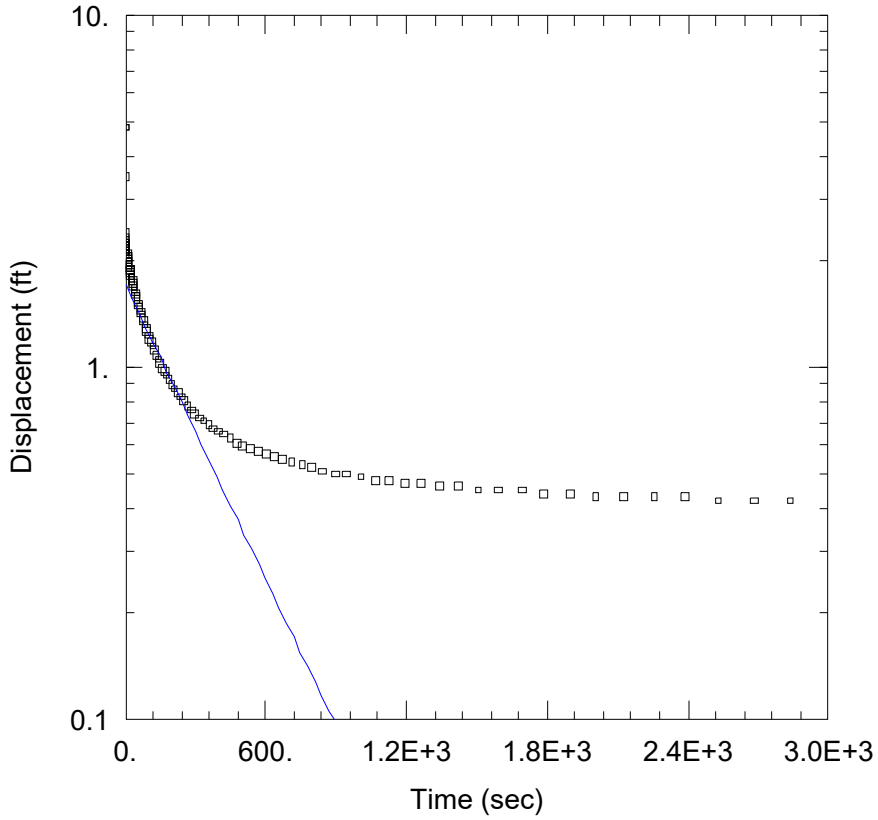
Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-31D2 - IN)

Initial Displacement: 5.13 ft Static Water Column Height: 69.62 ft
Total Well Penetration Depth: 70.02 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0002012 cm/sec y0 = 1.754 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-31D2 - OUT.aqt
Date: 01/31/22 Time: 11:01:27

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-31D2 - OUT
Test Date: 01/18/2022

AQUIFER DATA

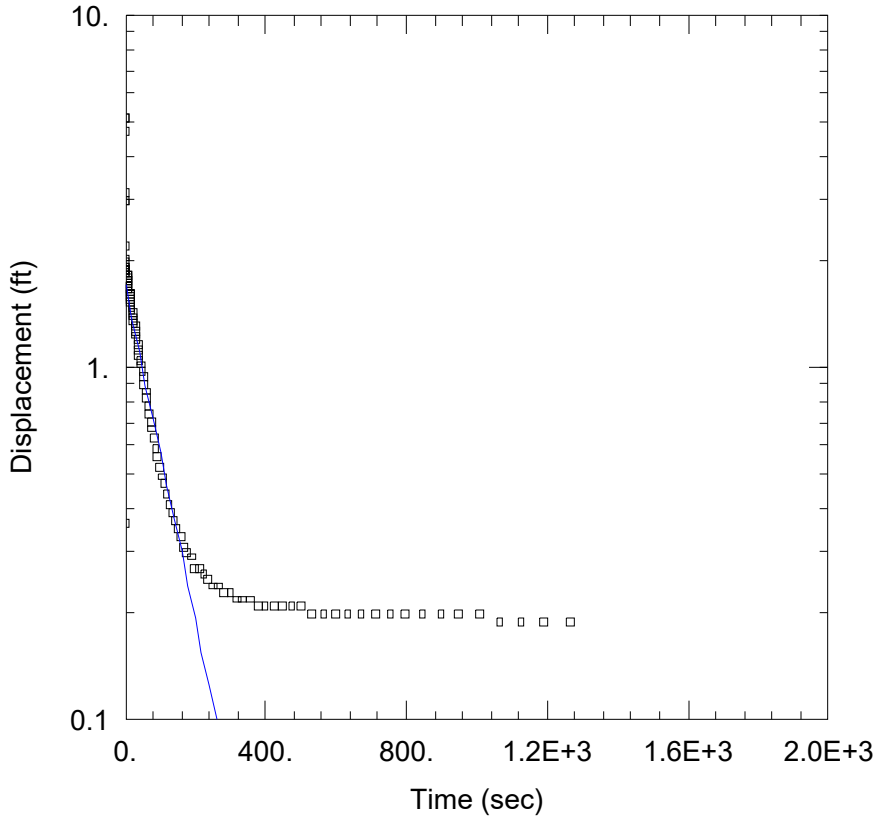
Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-31D2 - OUT)

Initial Displacement: 4.83 ft Static Water Column Height: 69.62 ft
Total Well Penetration Depth: 70.02 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0001903 cm/sec y0 = 1.73 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-32D1 - IN.aqt
Date: 01/31/22 Time: 11:01:30

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-32D1 - IN
Test Date: 01/19/2022

AQUIFER DATA

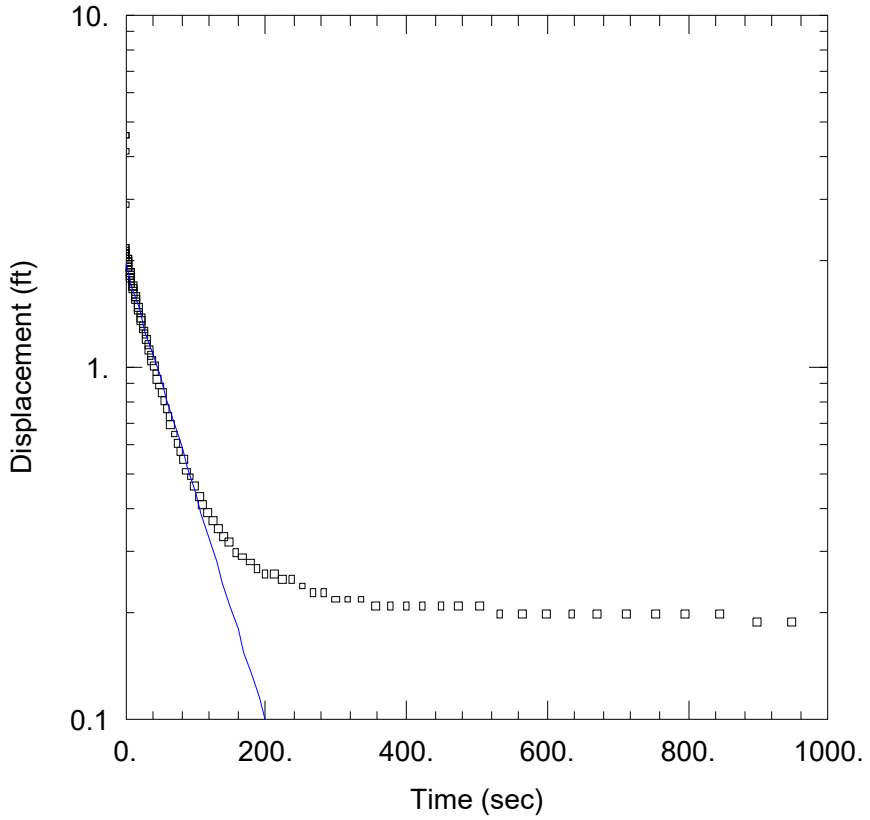
Saturated Thickness: 7. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-32D1 - IN)

Initial Displacement: 5.11 ft Static Water Column Height: 26.63 ft
Total Well Penetration Depth: 27.03 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.000652 cm/sec y0 = 1.722 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-32D1 - OUT.aqt
Date: 01/31/22 Time: 11:01:33

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-32D1 - OUT
Test Date: 01/19/2022

AQUIFER DATA

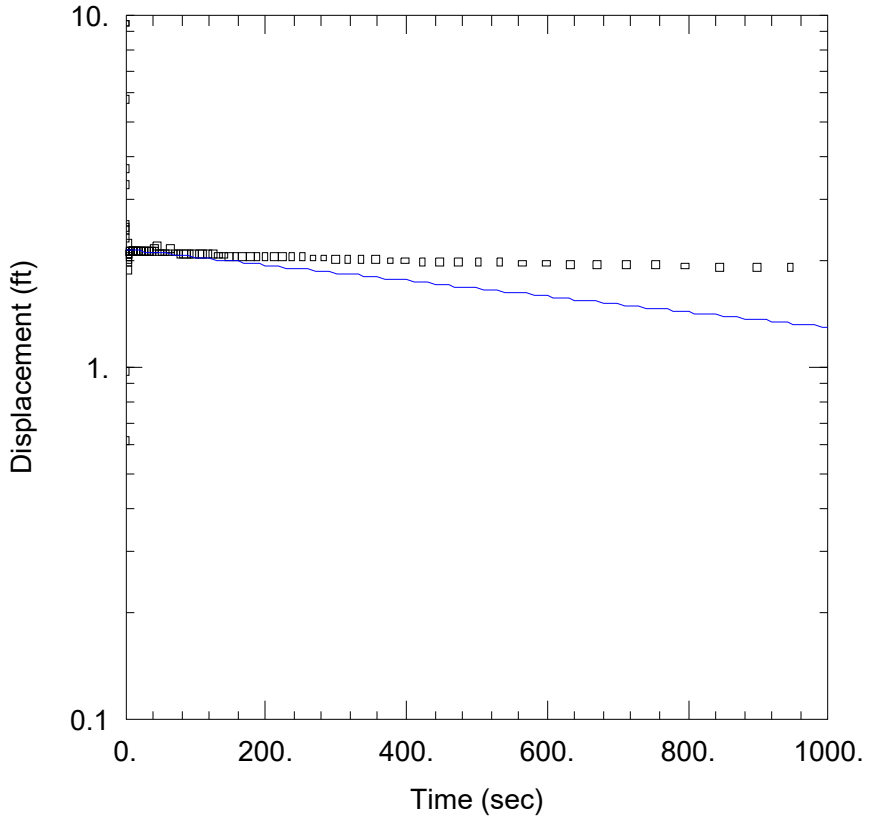
Saturated Thickness: 7. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-32D1 - OUT)

Initial Displacement: 4.59 ft Static Water Column Height: 26.63 ft
Total Well Penetration Depth: 27.03 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0008922 cm/sec y0 = 1.982 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-32D2 - IN.aqt
Date: 01/31/22 Time: 12:34:46

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-32D2 - IN
Test Date: 01/19/2022

AQUIFER DATA

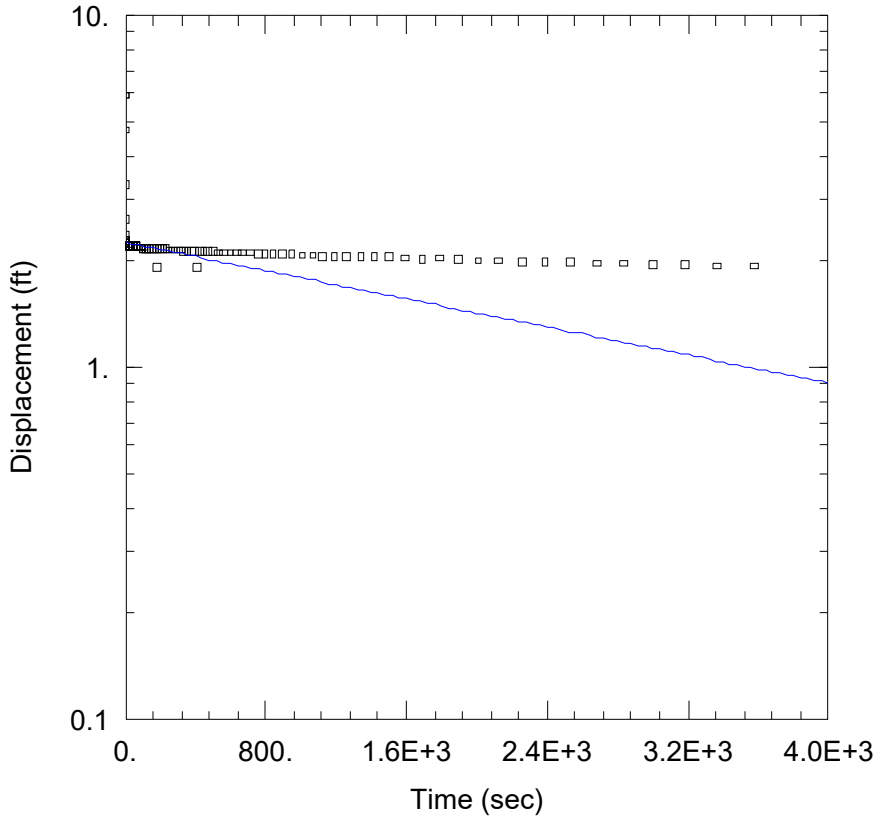
Saturated Thickness: 9.6 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-32D2 - IN)

Initial Displacement: 9.53 ft Static Water Column Height: 50.54 ft
Total Well Penetration Depth: 50.94 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 2.459E-5 cm/sec y0 = 2.172 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-32D2 - OUT.aqt
Date: 01/31/22 Time: 12:34:51

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-32D2 - OUT
Test Date: 01/19/2022

AQUIFER DATA

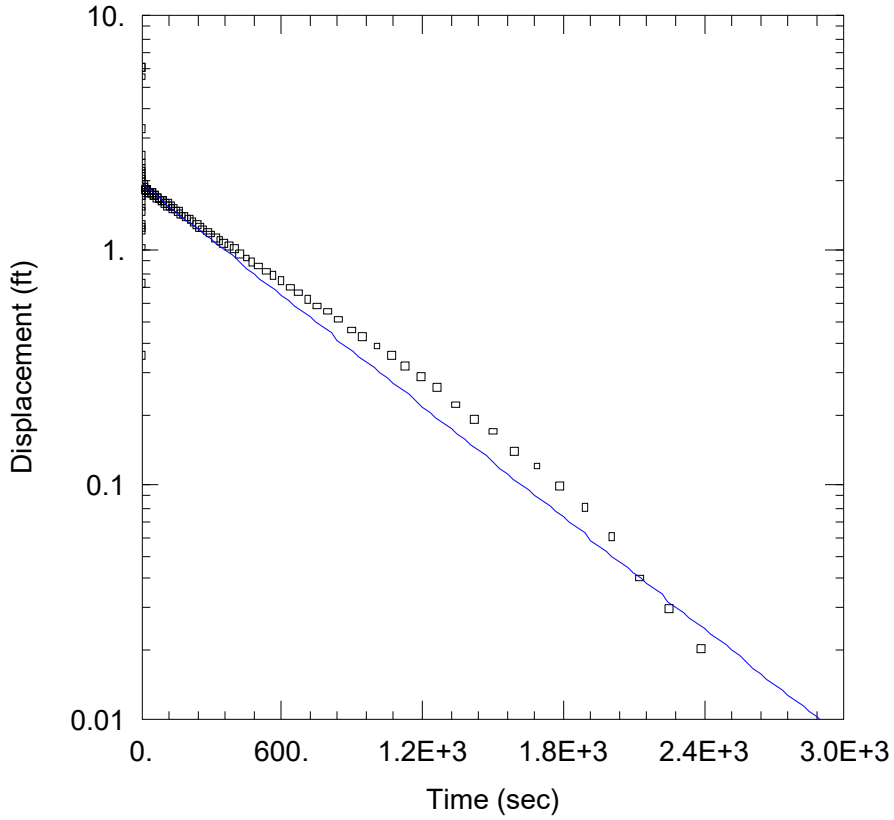
Saturated Thickness: 9.6 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-32D2 - OUT)

Initial Displacement: 5.94 ft Static Water Column Height: 50.54 ft
Total Well Penetration Depth: 50.94 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.106E-5 cm/sec y0 = 2.271 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-33I - IN.aqt
Date: 01/31/22 Time: 11:16:29

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-33I - IN
Test Date: 01/18/2022

AQUIFER DATA

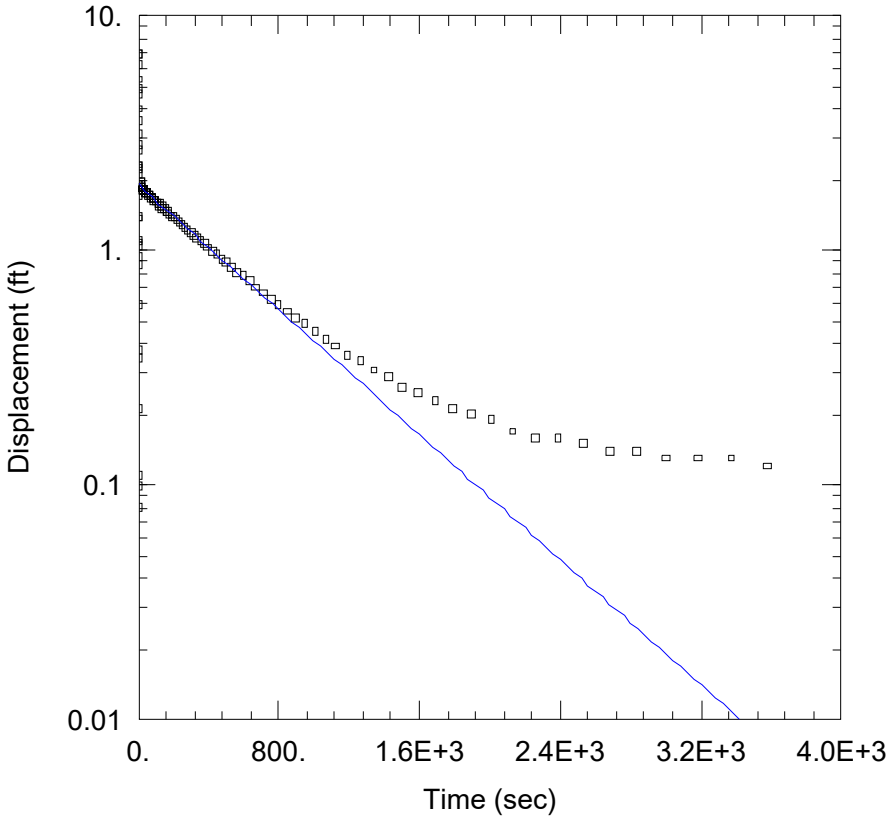
Saturated Thickness: 27.47 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-33I - IN)

Initial Displacement: 6.06 ft Static Water Column Height: 26.96 ft
Total Well Penetration Depth: 27.36 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.703E-5 cm/sec y0 = 1.924 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-33I - OUT.aqt
Date: 01/31/22 Time: 11:16:34

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-33I - OUT
Test Date: 01/18/2022

AQUIFER DATA

Saturated Thickness: 27.47 ft Anisotropy Ratio (Kz/Kr): 1.

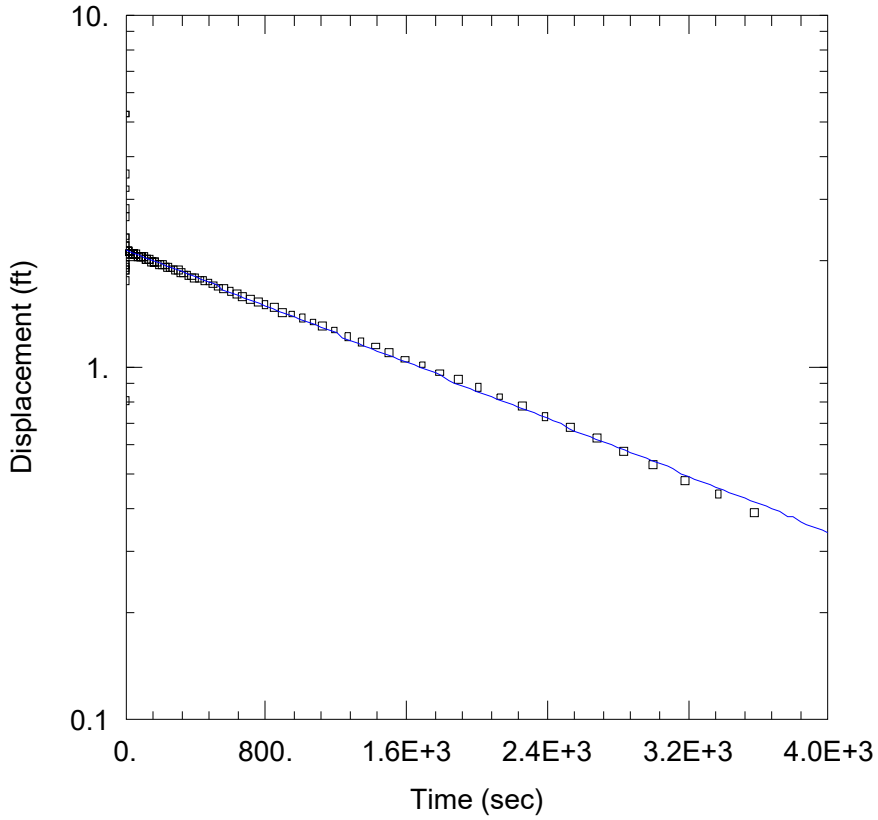
WELL DATA (MW-33I - OUT)

Initial Displacement: 6.86 ft
Total Well Penetration Depth: 27.36 ft
Casing Radius: 0.08 ft
Static Water Column Height: 26.96 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 6.505E-5 cm/sec y0 = 1.914 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-33D2 - IN.aqt
Date: 01/31/22 Time: 11:02:44

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-33D2 - IN
Test Date: 01/18/2022

AQUIFER DATA

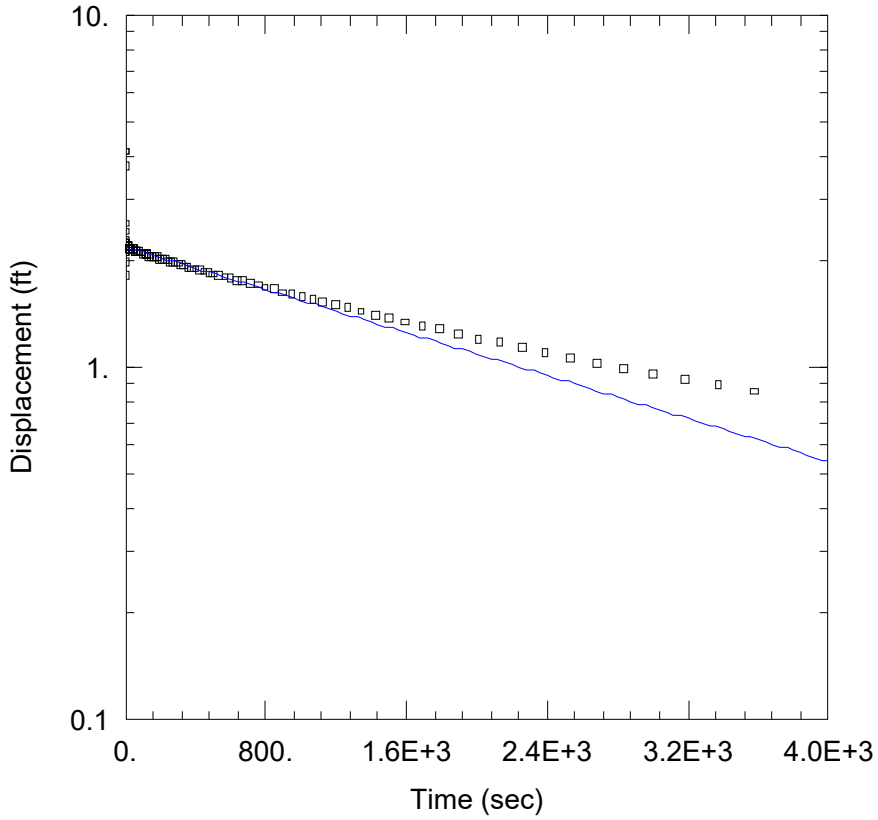
Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-33D2 - IN)

Initial Displacement: 5.25 ft Static Water Column Height: 54.36 ft
Total Well Penetration Depth: 54.76 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 2.161E-5 cm/sec y0 = 2.176 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-33D2 - OUT.aqt
Date: 01/31/22 Time: 11:02:47

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-33D2 - OUT
Test Date: 01/18/2022

AQUIFER DATA

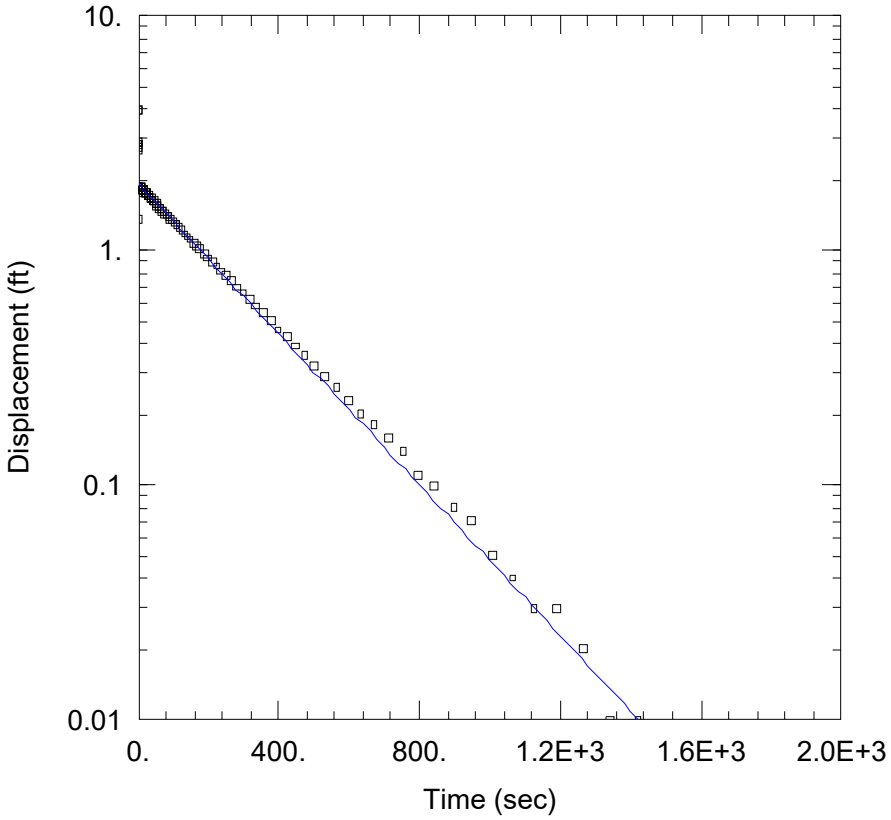
Saturated Thickness: 14.7 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-33D2 - OUT)

Initial Displacement: 4.14 ft Static Water Column Height: 54.36 ft
Total Well Penetration Depth: 54.76 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.639E-5 cm/sec y0 = 2.21 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34A - IN.aqt
Date: 01/31/22 Time: 12:37:48

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34A - IN
Test Date: 01/17/2022

AQUIFER DATA

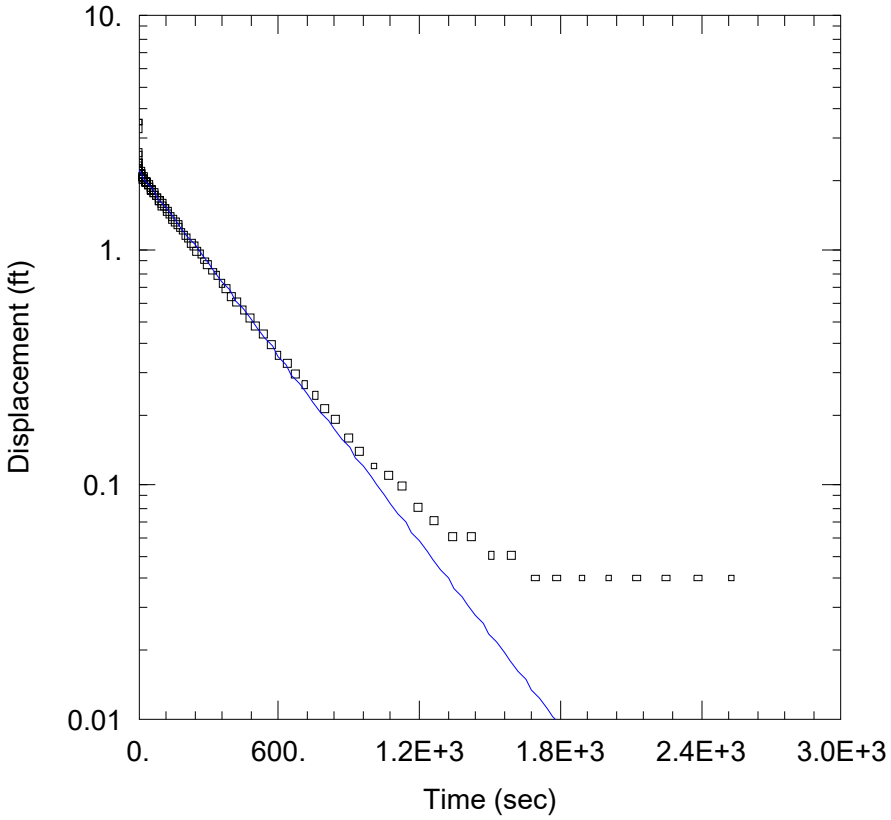
Saturated Thickness: 38.64 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34A - IN)

Initial Displacement: 4. ft
Static Water Column Height: 40.36 ft
Total Well Penetration Depth: 40.76 ft
Screen Length: 10. ft
Casing Radius: 0.08 ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0001663 cm/sec
y0 = 1.94 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34A - OUT.aqt
Date: 01/31/22 Time: 12:37:52

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34A - OUT
Test Date: 01/17/2022

AQUIFER DATA

Saturated Thickness: 38.64 ft Anisotropy Ratio (Kz/Kr): 1.

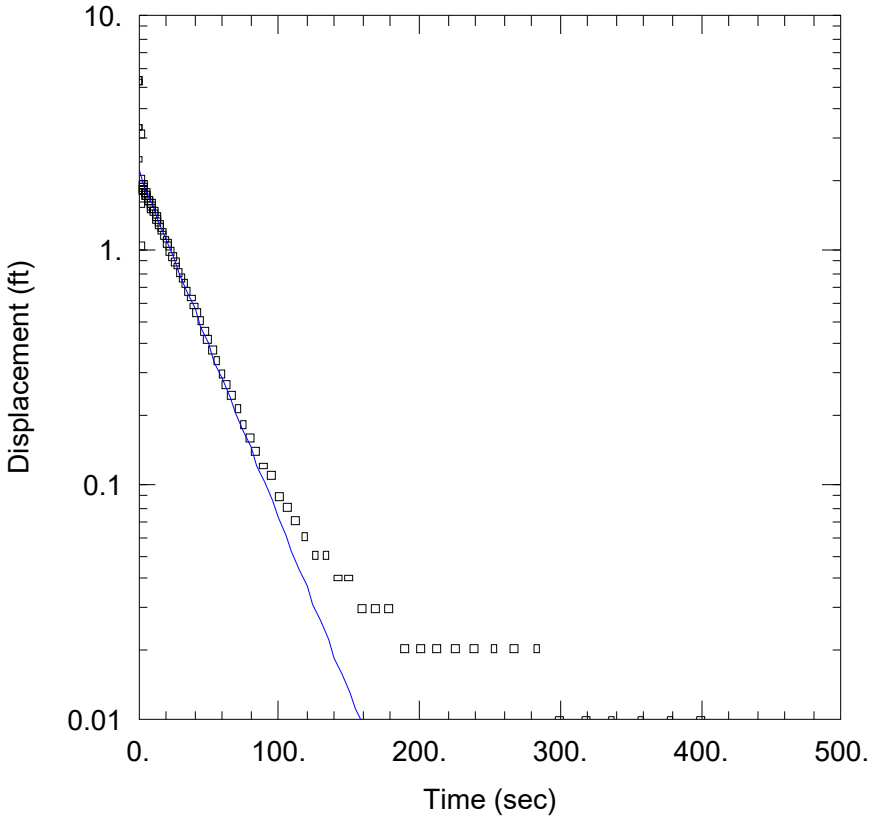
WELL DATA (MW-34A - OUT)

Initial Displacement: 3.52 ft
Total Well Penetration Depth: 40.76 ft
Casing Radius: 0.08 ft
Static Water Column Height: 40.36 ft
Screen Length: 10. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0001361 cm/sec y0 = 2.192 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34D1 - IN.aqt
Date: 01/31/22 Time: 11:05:05

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34D1 - IN
Test Date: 01/18/2022

AQUIFER DATA

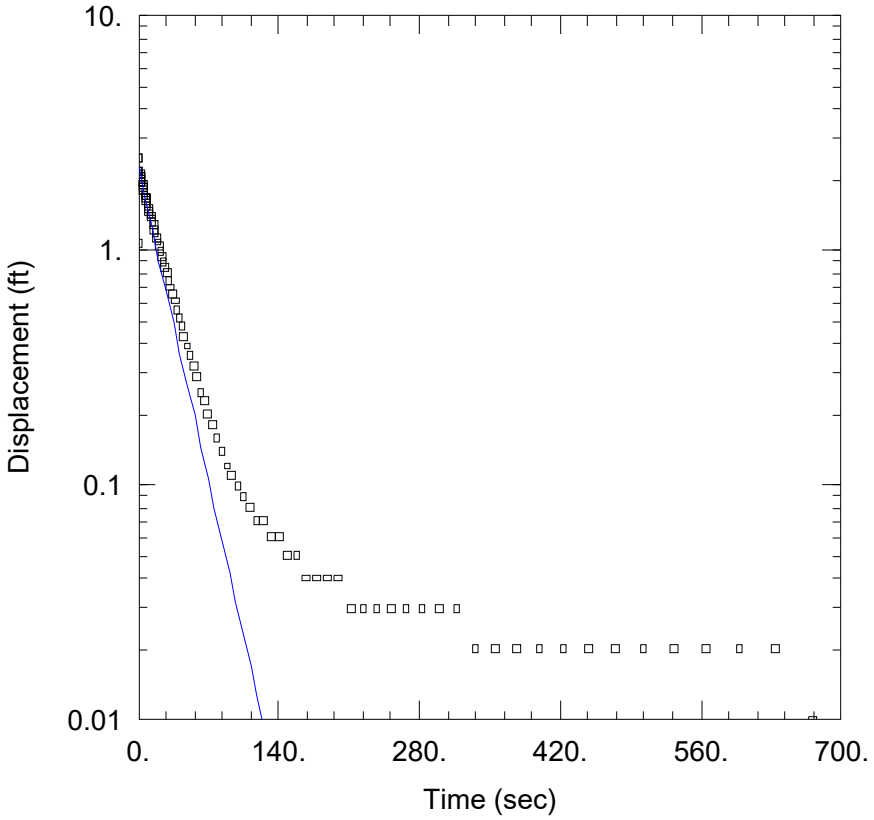
Saturated Thickness: 14. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34D1 - IN)

Initial Displacement: 5.3 ft Static Water Column Height: 52.17 ft
Total Well Penetration Depth: 52.57 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.001584 cm/sec y0 = 2.208 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34D1 - OUT.aqt
Date: 01/31/22 Time: 12:45:03

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34D1 - OUT
Test Date: 01/18/2022

AQUIFER DATA

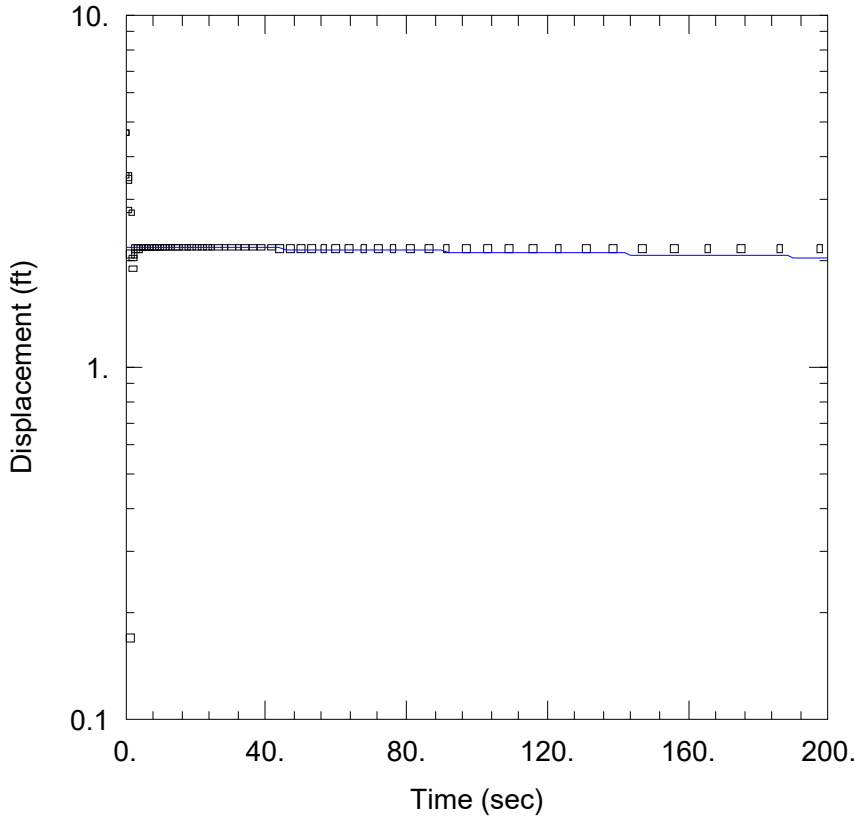
Saturated Thickness: 14. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34D1 - OUT)

Initial Displacement: 2.5 ft Static Water Column Height: 52.17 ft
Total Well Penetration Depth: 52.57 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.002029 cm/sec y0 = 2.283 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34SS - IN.aqt
Date: 01/31/22 Time: 11:05:19

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34SS - IN
Test Date: 01/20/2022

AQUIFER DATA

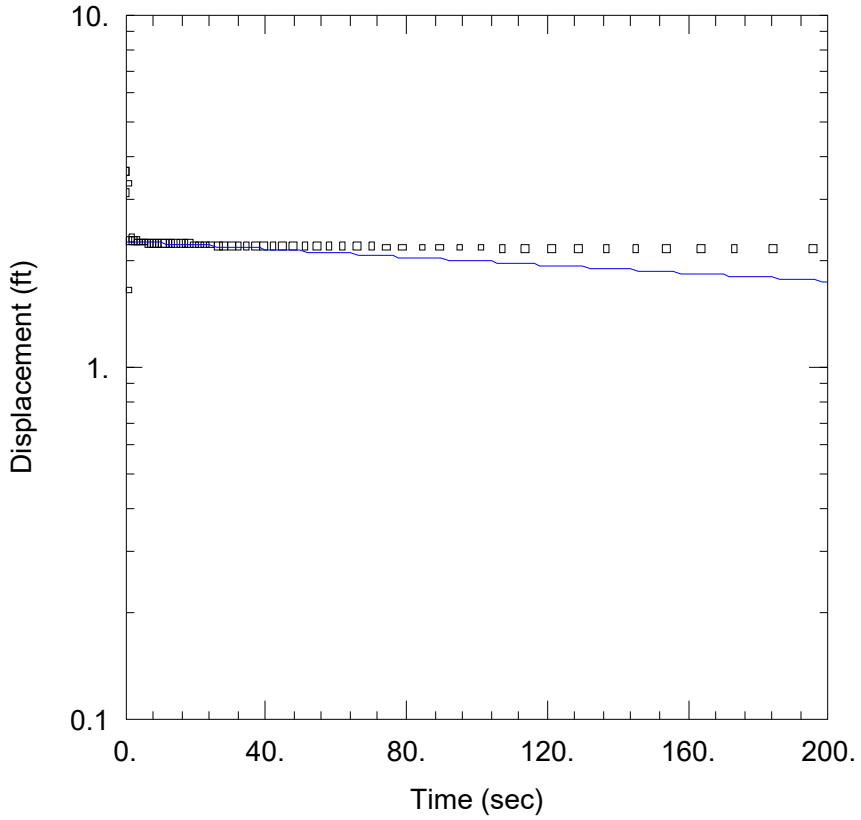
Saturated Thickness: 6.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34SS - IN)

Initial Displacement: 4.65 ft Static Water Column Height: 10.53 ft
Total Well Penetration Depth: 10.93 ft Screen Length: 5. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 2.613E-5 cm/sec y0 = 2.218 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34SS - OUT.aqt
Date: 01/31/22 Time: 11:32:29

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34SS - OUT
Test Date: 01/20/2022

AQUIFER DATA

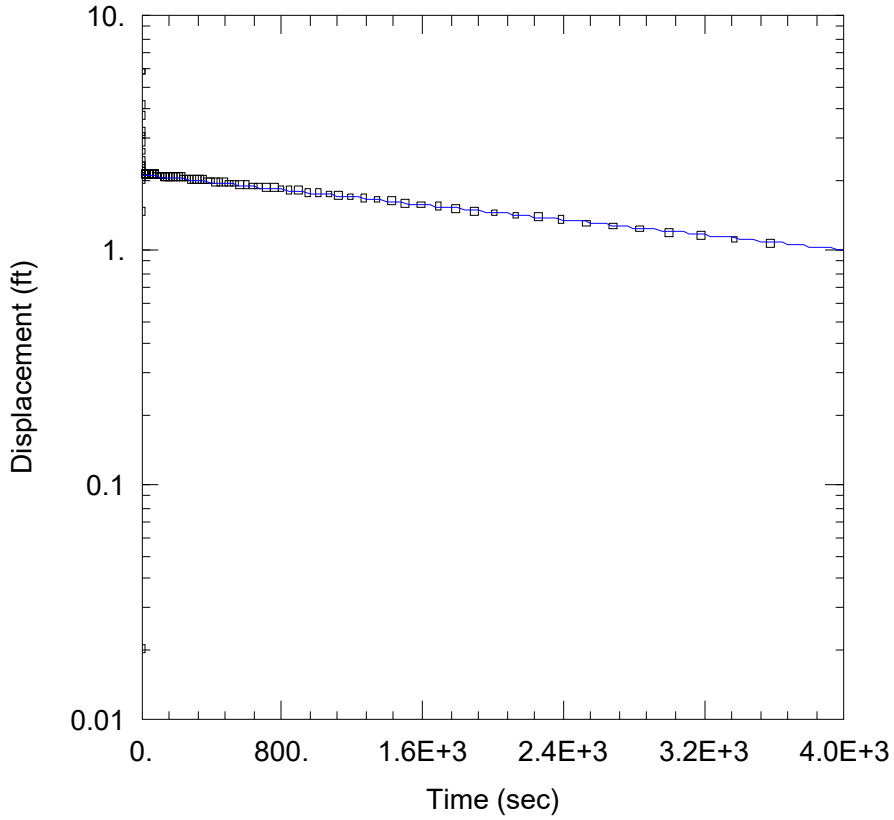
Saturated Thickness: 6.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34SS - OUT)

Initial Displacement: 3.61 ft Static Water Column Height: 10.53 ft
Total Well Penetration Depth: 10.93 ft Screen Length: 5. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 9.406E-5 cm/sec y0 = 2.294 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34D2 - IN.aqt
Date: 01/31/22 Time: 11:05:12

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34D2 - IN
Test Date: 01/18/2022

AQUIFER DATA

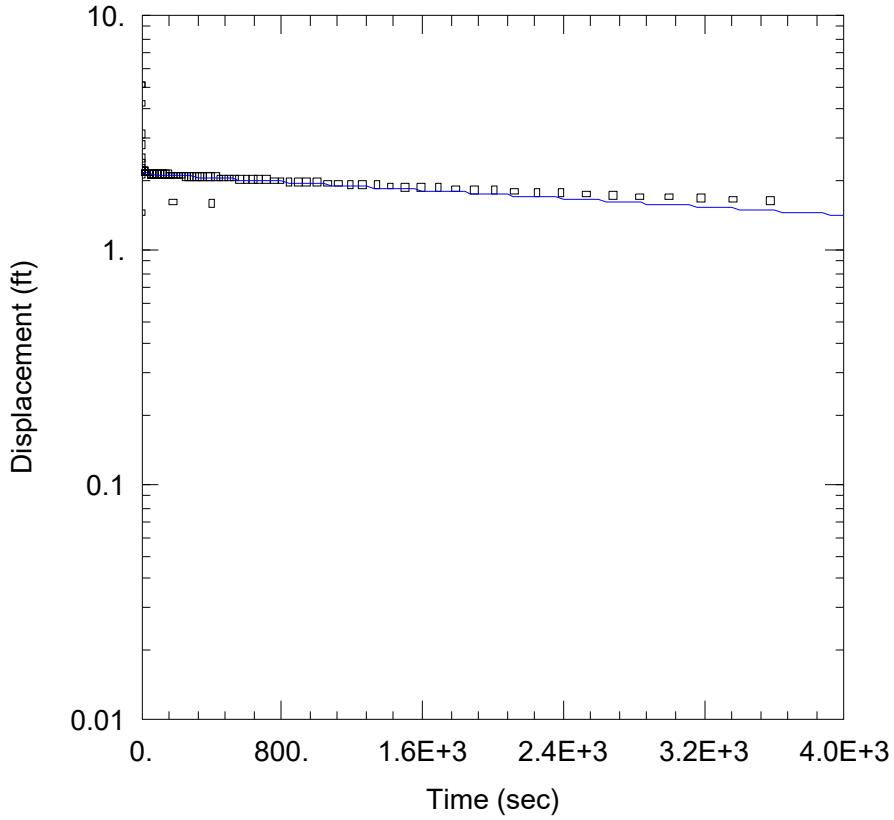
Saturated Thickness: 19. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-34D2 - IN)

Initial Displacement: 5.82 ft Static Water Column Height: 51.57 ft
Total Well Penetration Depth: 51.97 ft Screen Length: 15. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 5.859E-6 cm/sec y0 = 2.108 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-34D2 - OUT.aqt
Date: 01/31/22 Time: 13:02:34

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-34D2 - OUT
Test Date: 01/18/2022

AQUIFER DATA

Saturated Thickness: 19. ft Anisotropy Ratio (Kz/Kr): 1.

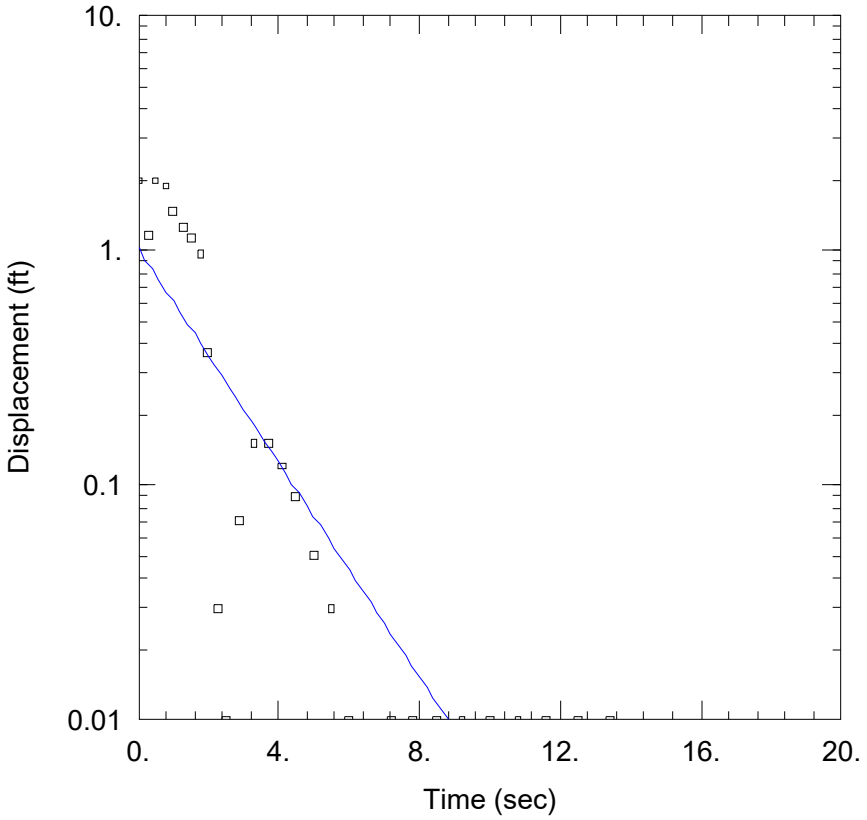
WELL DATA (MW-34D2 - OUT)

Initial Displacement: 5.1 ft
Total Well Penetration Depth: 51.97 ft
Casing Radius: 0.08 ft
Static Water Column Height: 51.57 ft
Screen Length: 15. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 3.219E-6 cm/sec y0 = 2.129 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35D1 - IN.aqt
Date: 01/31/22 Time: 11:06:00

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35D1 - IN
Test Date: 01/19/2022

AQUIFER DATA

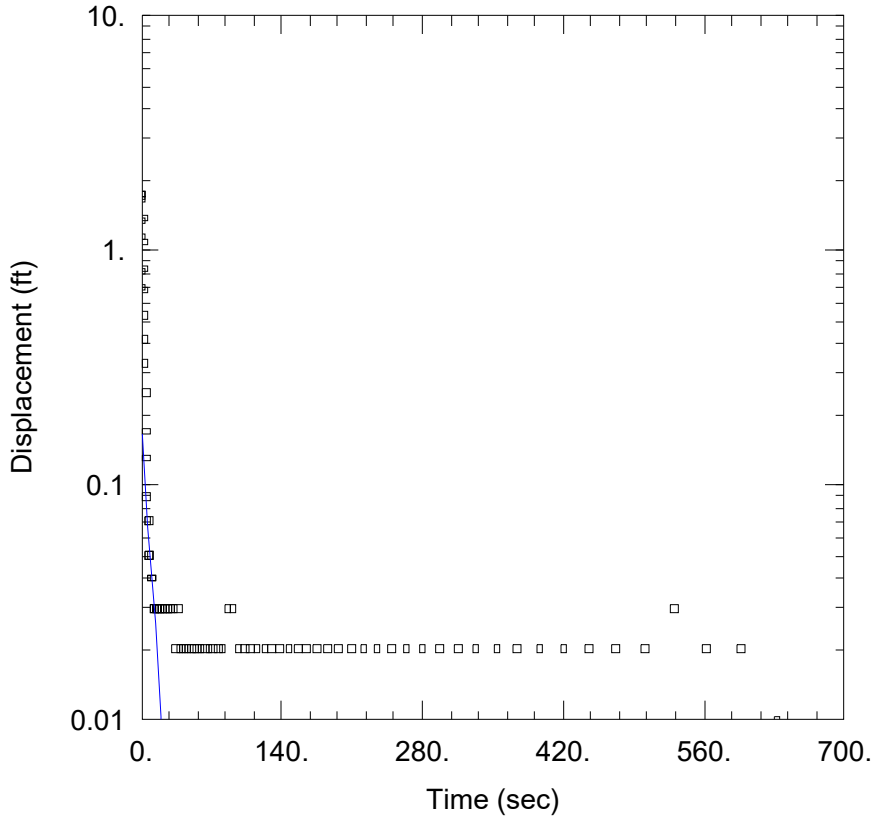
Saturated Thickness: 5. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-35D1 - IN)

Initial Displacement: 1.98 ft Static Water Column Height: 22.34 ft
Total Well Penetration Depth: 22.74 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.0419 cm/sec y0 = 1.02 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35D1 - OUT.aqt
Date: 01/31/22 Time: 11:06:03

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35D1 - OUT
Test Date: 01/19/2022

AQUIFER DATA

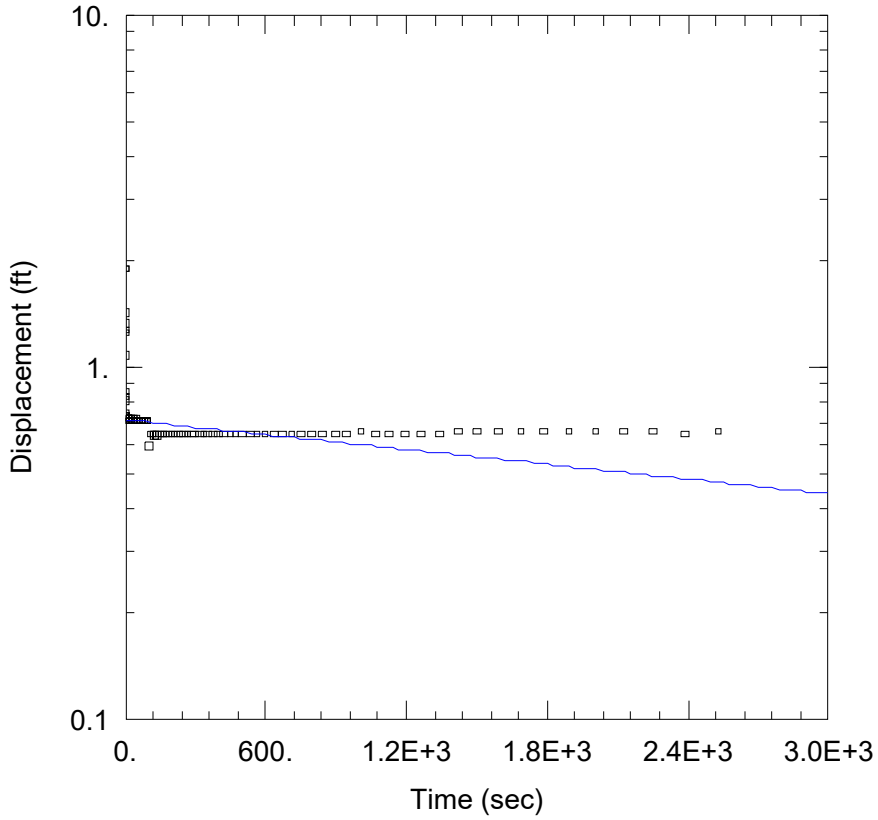
Saturated Thickness: 5. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-35D1 - OUT)

Initial Displacement: 1.74 ft Static Water Column Height: 22.34 ft
Total Well Penetration Depth: 22.74 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 0.01066 cm/sec y0 = 0.1668 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35SS - IN.aqt
Date: 01/31/22 Time: 11:06:14

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35SS - IN
Test Date: 01/20/2022

AQUIFER DATA

Saturated Thickness: 5. ft Anisotropy Ratio (Kz/Kr): 1.

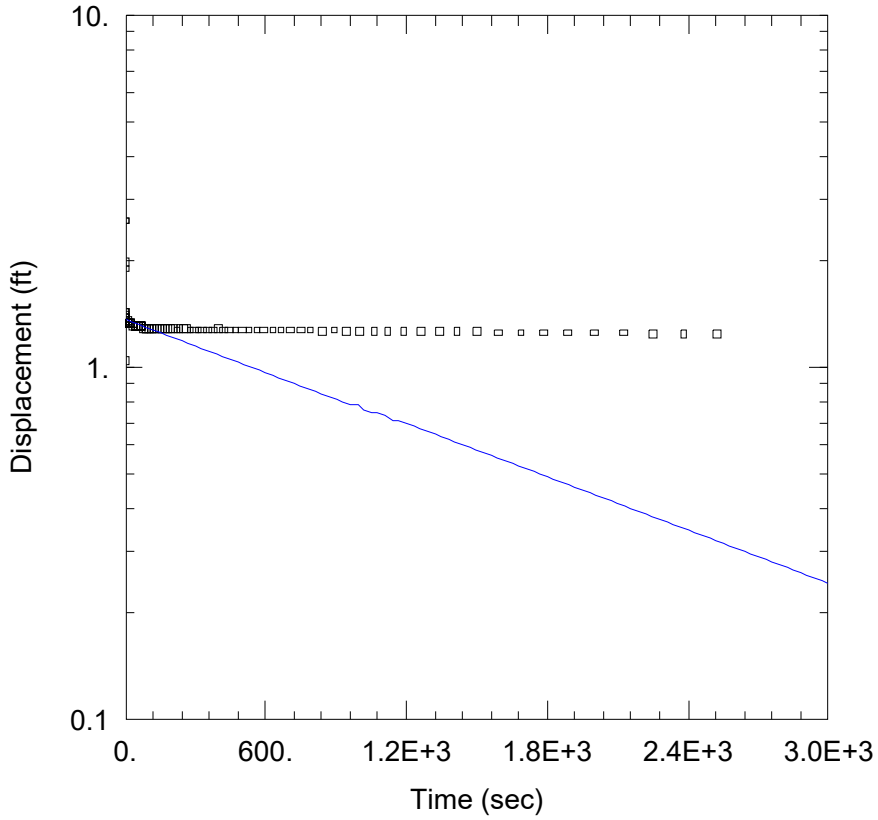
WELL DATA (MW-35SS - IN)

Initial Displacement: 1.91 ft
Total Well Penetration Depth: 6.13 ft
Casing Radius: 0.08 ft
Static Water Column Height: 5.73 ft
Screen Length: 5. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 1.041E-5 cm/sec y0 = 0.7115 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35SS - OUT.aqt
Date: 01/31/22 Time: 12:42:40

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35SS - OUT
Test Date: 01/20/2022

AQUIFER DATA

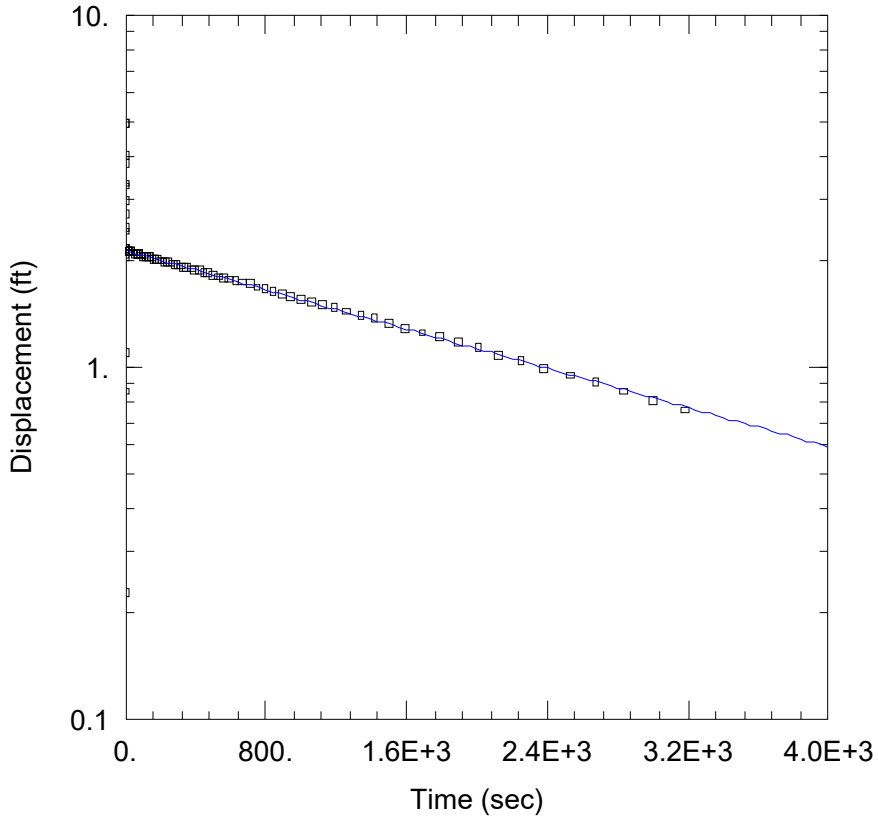
Saturated Thickness: 5. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-35SS - OUT)

Initial Displacement: 2.62 ft
Total Well Penetration Depth: 6.13 ft
Casing Radius: 0.08 ft
Static Water Column Height: 5.73 ft
Screen Length: 5. ft
Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 3.71E-5 cm/sec
y0 = 1.377 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35D2 - IN.aqt
Date: 01/31/22 Time: 11:06:07

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35D2 - IN
Test Date: 01/19/2022

AQUIFER DATA

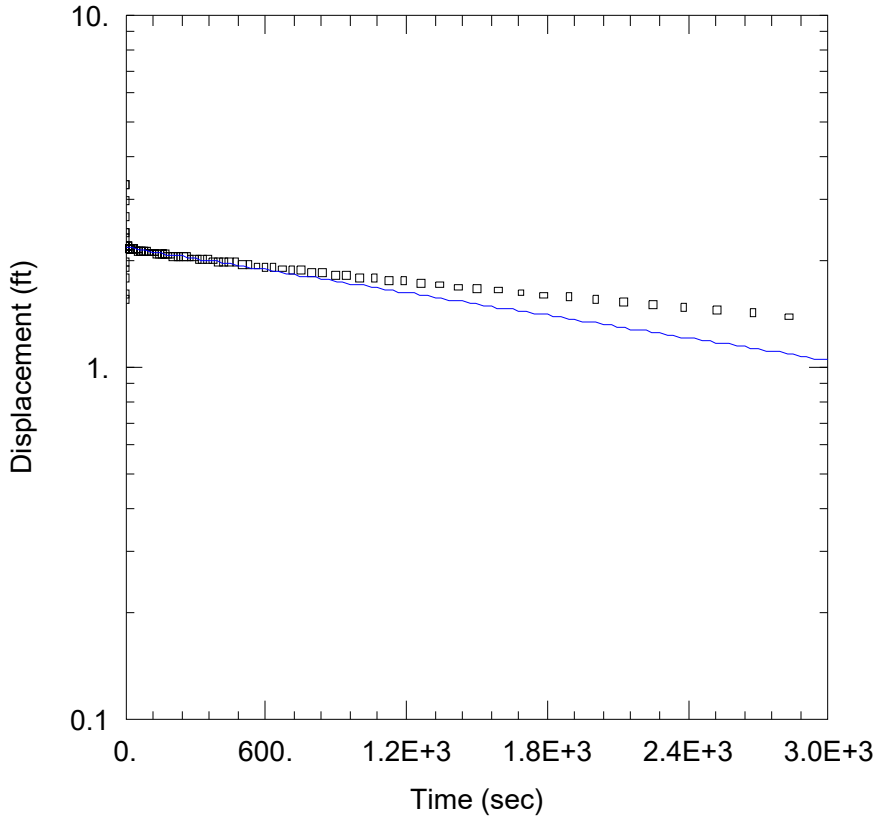
Saturated Thickness: 14.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-35D2 - IN)

Initial Displacement: 4.97 ft Static Water Column Height: 39.38 ft
Total Well Penetration Depth: 39.78 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.439E-5 cm/sec y0 = 2.156 ft



WELL TEST ANALYSIS

Data Set: G:\...\MW-35D2 - OUT.aqt
Date: 01/31/22 Time: 12:46:51

PROJECT INFORMATION

Company: Atlas Technical Consultants
Client: AES
Project: 170LF01166
Location: Petersburg Generating Station
Test Well: MW-35D2 - OUT
Test Date: 01/19/2022

AQUIFER DATA

Saturated Thickness: 14.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-35D2 - OUT)

Initial Displacement: 3.3 ft Static Water Column Height: 39.38 ft
Total Well Penetration Depth: 39.78 ft Screen Length: 10. ft
Casing Radius: 0.08 ft Well Radius: 0.08 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice
K = 1.105E-5 cm/sec y0 = 2.201 ft

TABLE X
SUMMARY OF HYDRAULIC CONDUCTIVITY VALUES - PHASE 1 N&E WELLS
PETERSBURG GENERATING STATION - PETERSBURG, IN

Well	Falling Head 1	Falling Head 2	Falling Head Geo. Mean	Rising Head 1	Rising Head 2	Rising Head Geo. Mean	Overall Geo. Mean
MW-36A	-	4.45E-02	4.45E-02	4.68E-02	5.67E-02	5.15E-02	**4.90E-02**
MW-36I	4.23E-02	-	4.23E-02	3.87E-02	3.54E-02	3.70E-02	**3.87E-02**
MW-36B	1.79E-02	1.52E-02	1.65E-02	1.39E-02	1.26E-02	1.32E-02	**1.48E-02**
MW-37A	4.50E-02	-	4.50E-02	4.43E-02	3.78E-02	4.09E-02	**4.22E-02**
MW-37I	8.95E-02	9.07E-02	9.01E-02	9.55E-02	1.05E-01	1.00E-01	**9.49E-02**
MW-37B	1.30E-01	1.11E-01	1.20E-01	6.05E-02	8.14E-02	7.02E-02	**9.18E-02**
MW-38A	-	-	-	6.36E-02	8.05E-02	7.15E-02	**7.15E-02**
MW-38I	5.44E-02	3.59E-02	4.42E-02	3.26E-02	3.88E-02	3.55E-02	**3.96E-02**
MW-38B	2.04E-01	1.58E-01	1.80E-01	1.61E-01	1.76E-01	1.68E-01	**1.74E-01**
MW-39A	5.83E-02	-	5.83E-02	6.50E-02	6.36E-02	6.43E-02	**6.22E-02**
MW-39I	-	4.75E-02	4.75E-02	5.19E-02	4.58E-02	4.88E-02	**4.83E-02**
MW-39B	6.42E-02	4.37E-02	5.30E-02	4.28E-02	5.76E-02	4.97E-02	**5.13E-02**
MW-40A	2.00E-02	-	2.00E-02	2.20E-02	2.24E-02	2.22E-02	**2.14E-02**
MW-40I	3.77E-02	3.64E-02	3.71E-02	4.55E-02	4.80E-02	4.67E-02	**4.16E-02**
MW-40B	6.33E-02	4.62E-02	5.40E-02	4.27E-02	7.03E-02	5.48E-02	**5.44E-02**
MW-41A	-	8.47E-02	8.47E-02	1.03E-02	9.80E-02	3.18E-02	**4.41E-02**
MW-41I	-	3.87E-02	3.87E-02	3.70E-02	4.02E-02	3.86E-02	**3.86E-02**
MW-41B	2.82E-02	3.05E-02	2.94E-02	2.83E-02	2.78E-02	2.80E-02	**2.87E-02**
MW-42A	3.31E-01	-	3.31E-01	2.78E-01	2.95E-01	2.86E-01	**3.00E-01**
MW-42I	7.29E-02	2.75E-02	4.48E-02	3.46E-02	3.00E-02	3.22E-02	**3.80E-02**
MW-42B	2.66E-01	2.21E-01	2.42E-01	2.04E-01	2.03E-01	2.03E-01	**2.22E-01**
MW-43A	-	-	-	1.22E-01	9.37E-02	1.07E-01	**1.07E-01**
MW-43I	-	6.47E-02	6.47E-02	6.70E-02	6.72E-02	6.71E-02	**6.63E-02**
MW-43B	-	7.15E-02	7.15E-02	-	6.28E-02	6.28E-02	**6.70E-02**
MW-44A	-	3.06E-02	3.06E-02	2.67E-02	3.93E-02	3.23E-02	**3.17E-02**
MW-44I	4.44E-02	4.11E-02	4.27E-02	3.82E-02	4.01E-02	3.91E-02	**4.09E-02**
MW-44B	6.49E-02	6.81E-02	6.64E-02	6.89E-02	6.18E-02	6.52E-02	**6.58E-02**
MW-45A	-	-	-	5.95E-02	5.91E-02	5.93E-02	**5.93E-02**
MW-45I	1.39E-03	-	1.39E-03	2.94E-03	2.68E-03	2.81E-03	**2.22E-03**
MW-45B	-	4.28E-03	4.28E-03	4.92E-03	4.68E-03	4.80E-03	**4.62E-03**
MW-46A	-	-	-	5.89E-02	3.85E-02	4.76E-02	**4.76E-02**
MW-46I	2.38E-02	1.76E-02	2.04E-02	3.11E-02	2.91E-02	3.01E-02	**2.48E-02**
MW-46B	6.65E-03	6.01E-03	6.32E-03	4.93E-03	5.46E-03	5.19E-03	**5.73E-03**
MW-47A	3.85E-02	2.71E-02	3.23E-02	3.02E-02	2.82E-02	2.92E-02	**3.07E-02**
MW-47I	-	-	-	6.17E-02	5.56E-02	5.85E-02	**5.85E-02**
MW-47B	2.29E-02	2.27E-02	2.28E-02	2.17E-02	2.19E-02	2.18E-02	**2.23E-02**

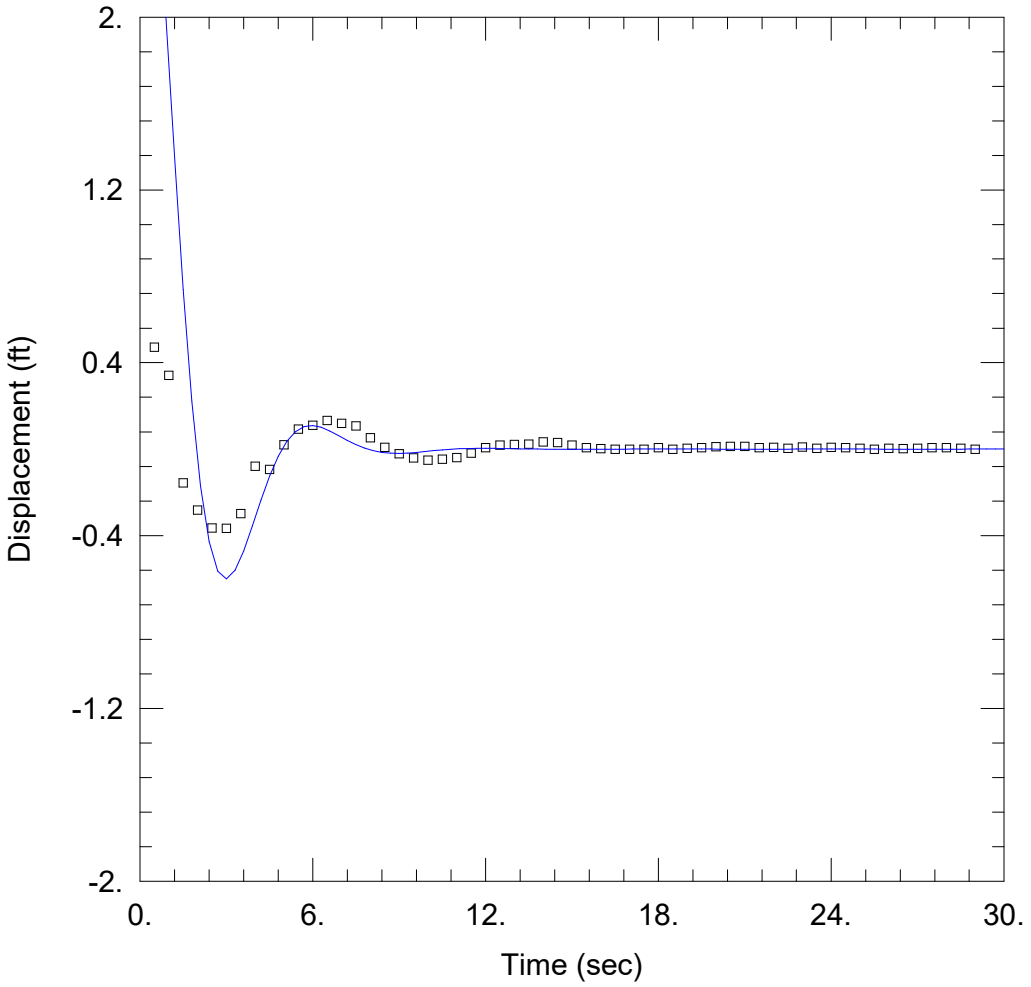
Notes

Slug Testing completed 12/20/22 through 12/21/22

Values reported in cm/sec.

"-" test was dropped after evaluating the data set.

HALEY ALDRICH



WELL TEST ANALYSIS

Data Set: \...\MW36A_F2.aqt
Date: 02/23/23 Time: 19:15:41

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 48.71 ft Anisotropy Ratio (Kz/Kr): 1.

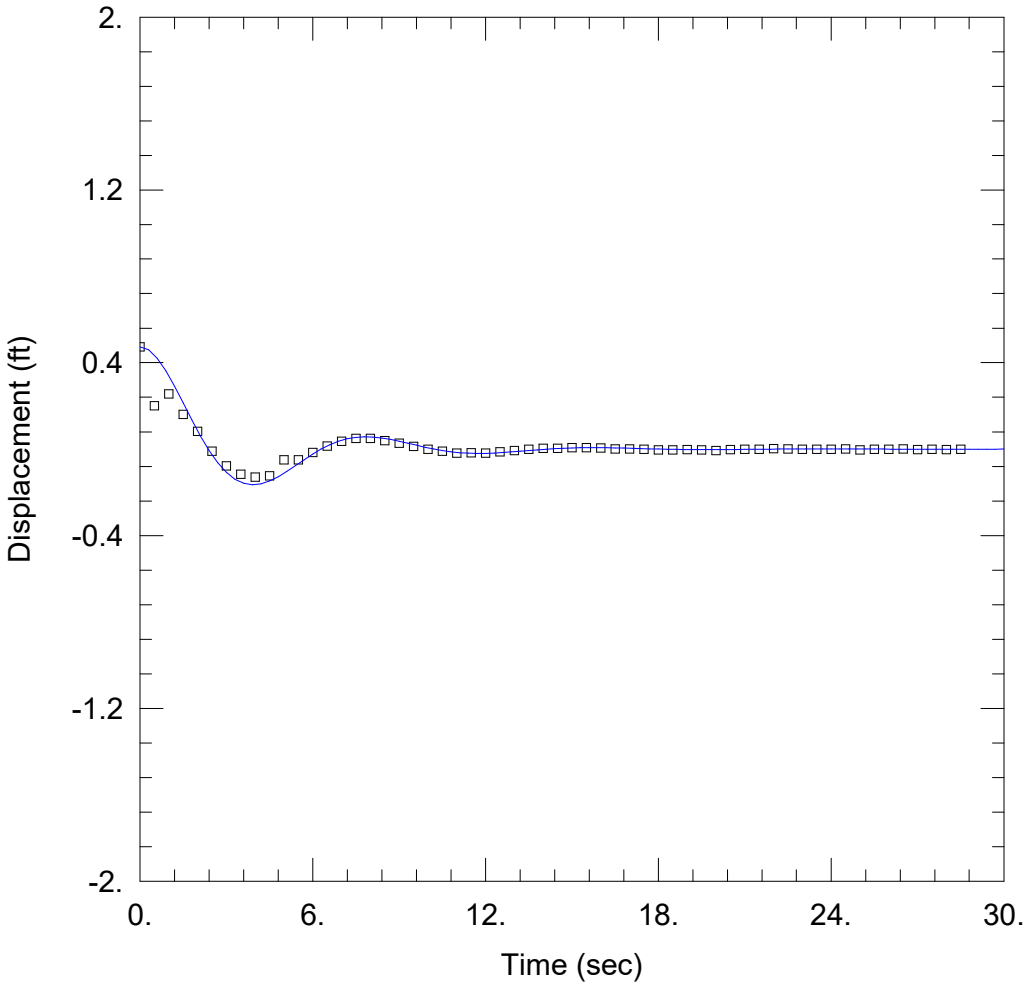
WELL DATA (MW-36A)

Initial Displacement: 3.299 ft
Total Well Penetration Depth: 46.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 48.71 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04448 cm/sec Le = 22.29 ft



WELL TEST ANALYSIS

Data Set: \...\MW36A_R1.aqt
Date: 02/23/23 Time: 19:16:08

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 48.71 ft Anisotropy Ratio (Kz/Kr): 1.

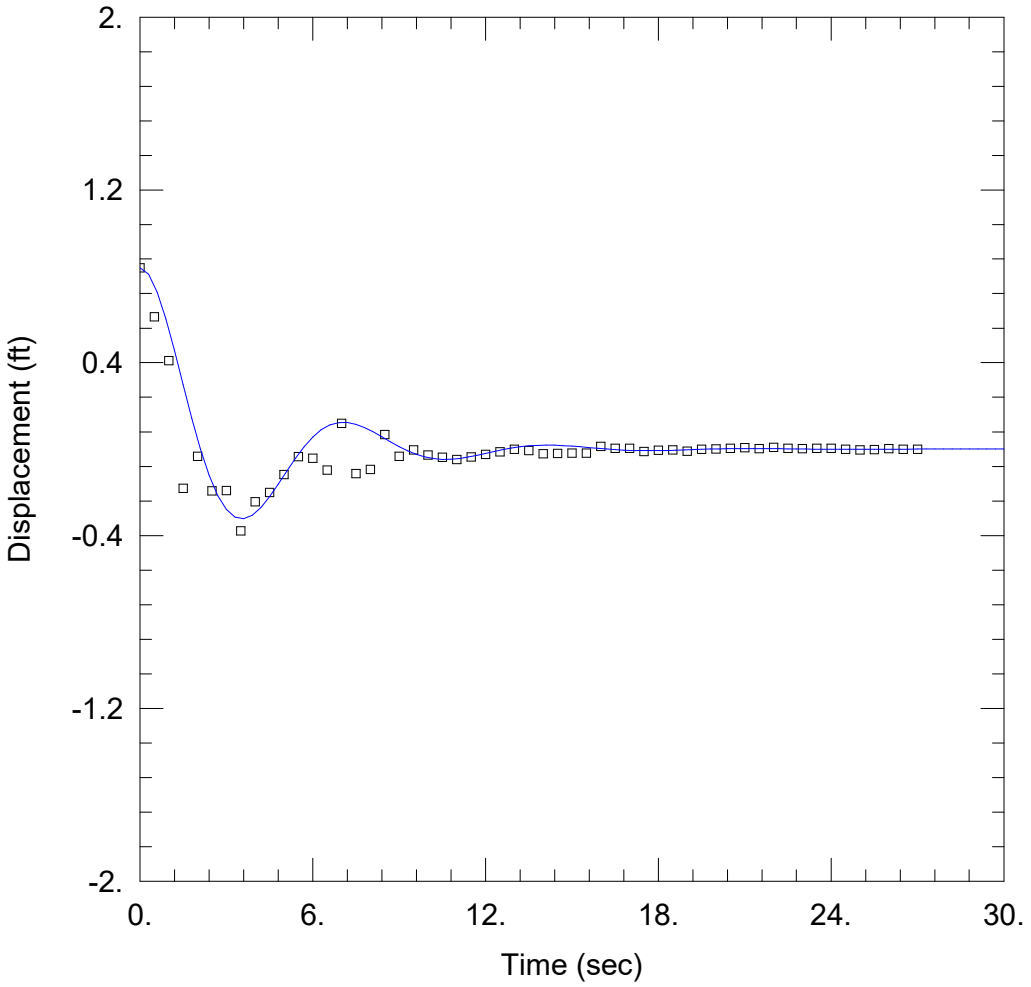
WELL DATA (MW-36A)

Initial Displacement: 0.474 ft
Total Well Penetration Depth: 46.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 48.71 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.0468 cm/sec Le = 45.1 ft



WELL TEST ANALYSIS

Data Set: \...\MW36A_R2.aqt
Date: 02/23/23 Time: 19:16:41

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 48.71 ft Anisotropy Ratio (Kz/Kr): 1.

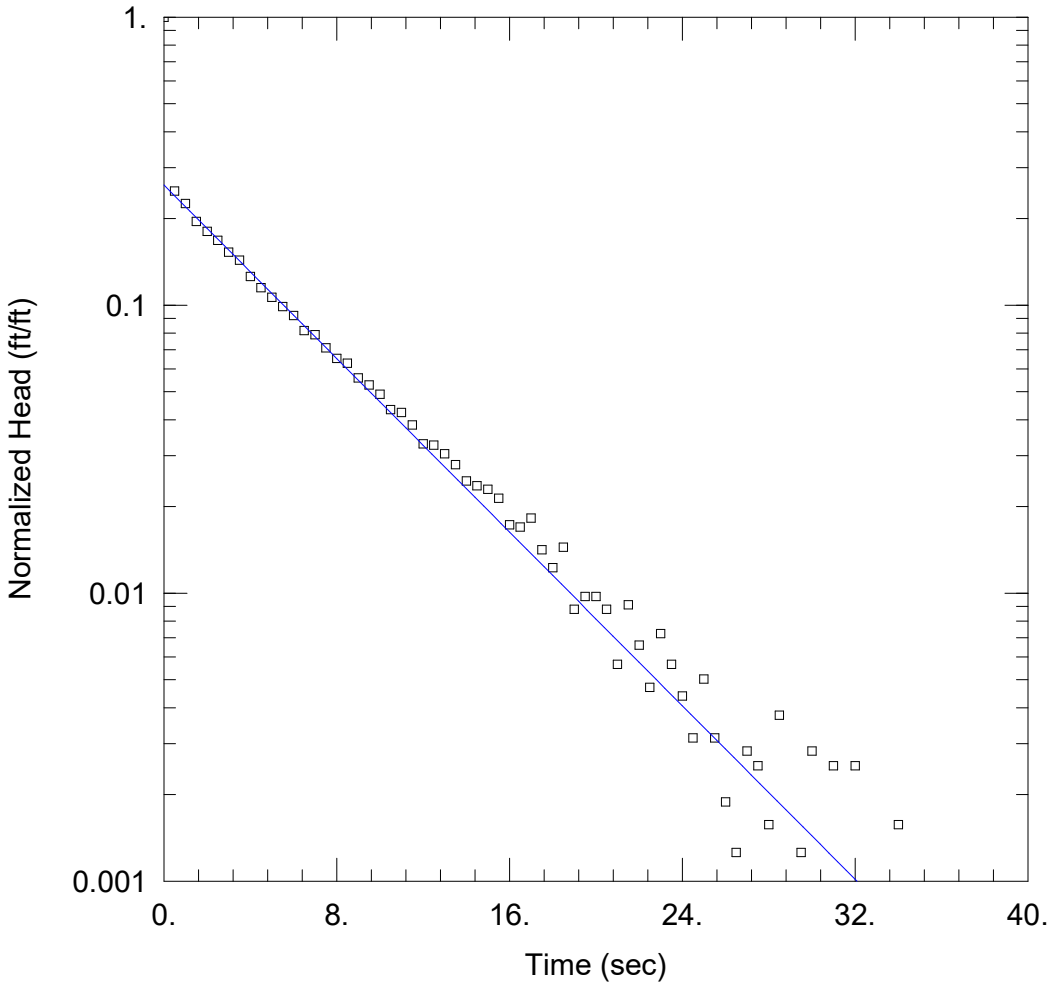
WELL DATA (MW-36A)

Initial Displacement: 0.84 ft
Total Well Penetration Depth: 46.01 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 48.71 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05668 cm/sec Le = 37.29 ft



WELL TEST ANALYSIS

Data Set: \...\MW36B_F1.aqt
Date: 02/03/23 Time: 12:36:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.7 ft Anisotropy Ratio (Kz/Kr): 1.

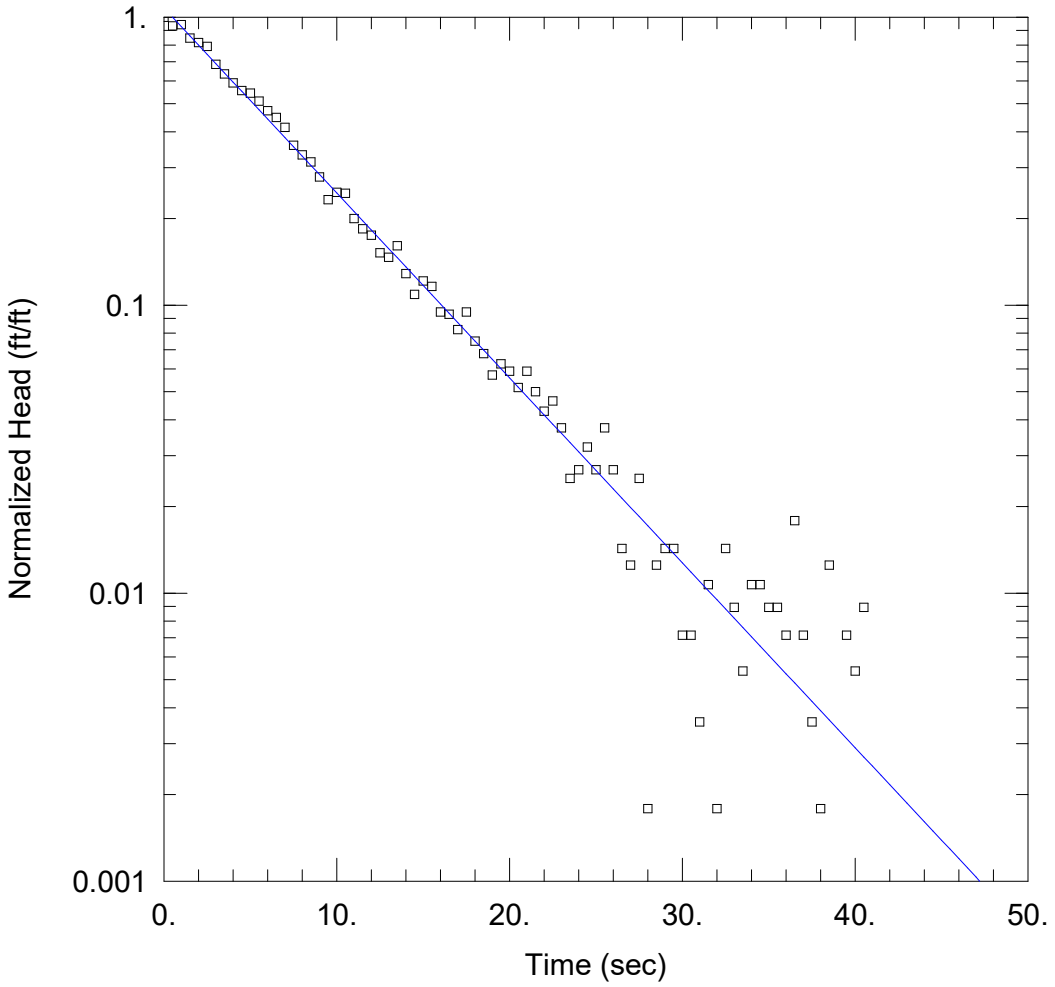
WELL DATA (MW-36B)

Initial Displacement: 3.183 ft
Total Well Penetration Depth: 12.31 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01785 cm/sec y0 = 0.8309 ft



WELL TEST ANALYSIS

Data Set: \...\MW36B_F2.aqt
Date: 02/24/23 Time: 10:24:29

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.7 ft Anisotropy Ratio (Kz/Kr): 1.

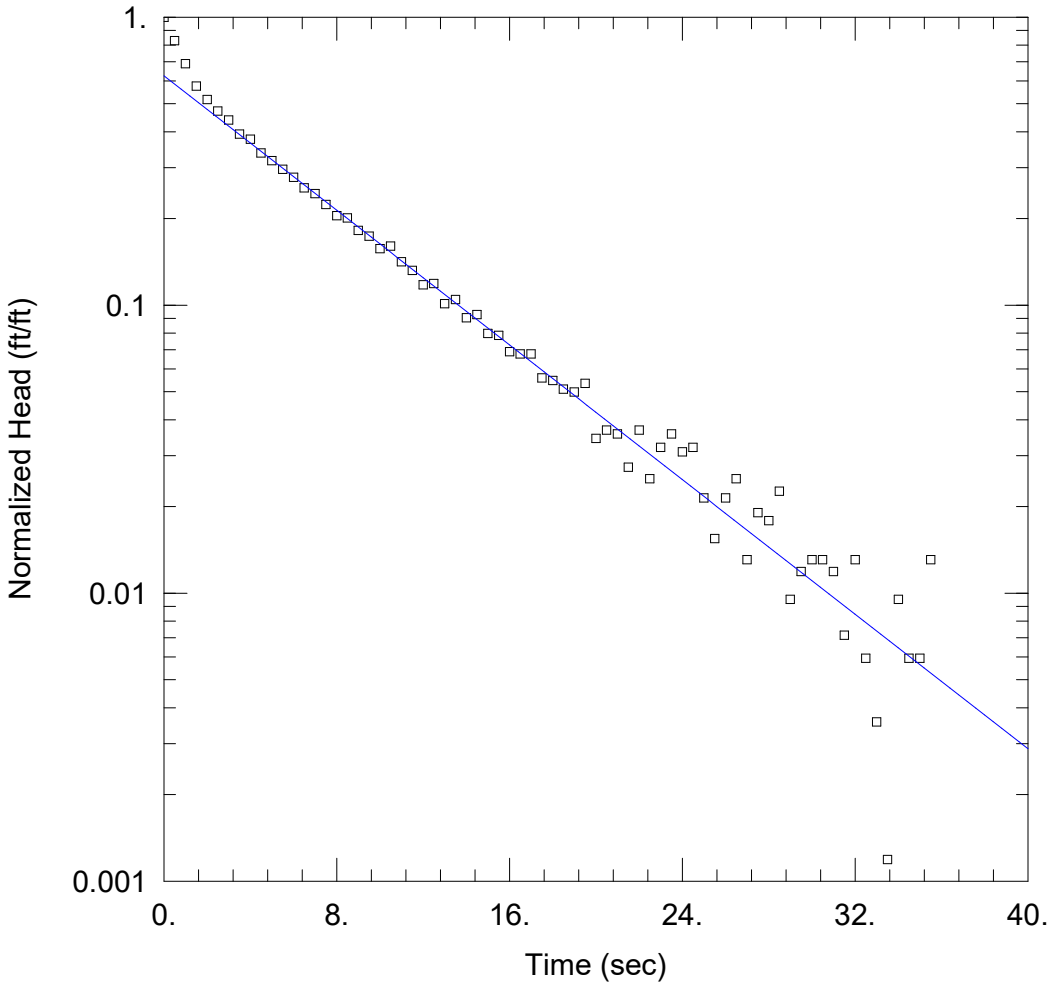
WELL DATA (MW-36B)

Initial Displacement: 0.56 ft
Total Well Penetration Depth: 12.31 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01522 cm/sec y0 = 0.6017 ft



WELL TEST ANALYSIS

Data Set: \...\MW36B_R1.aqt
Date: 02/03/23 Time: 14:23:15

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.7 ft Anisotropy Ratio (Kz/Kr): 1.

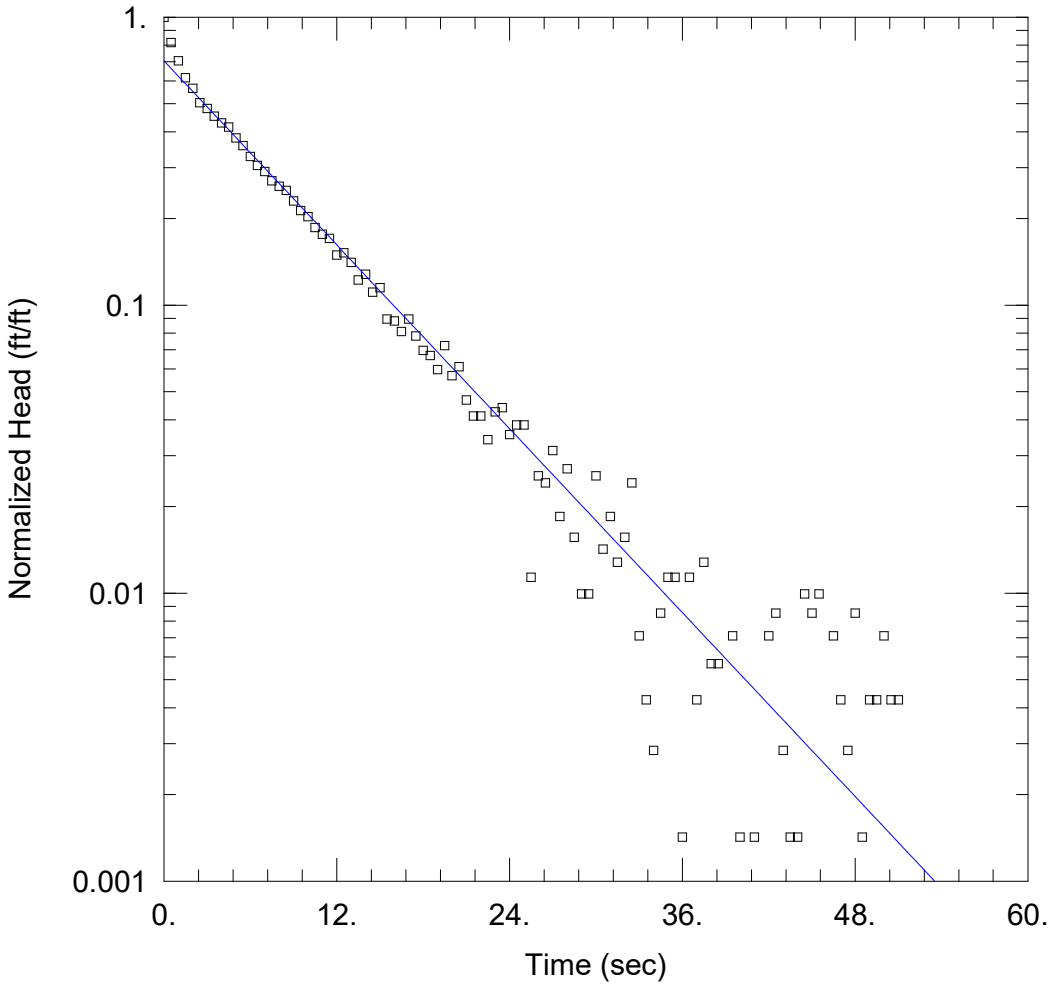
WELL DATA (MW-36B)

Initial Displacement: 0.841 ft
Total Well Penetration Depth: 12.31 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01385 cm/sec y0 = 0.5262 ft



WELL TEST ANALYSIS

Data Set: \...\MW36B_R2.aqt
Date: 02/03/23 Time: 14:31:25

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.7 ft Anisotropy Ratio (Kz/Kr): 1.

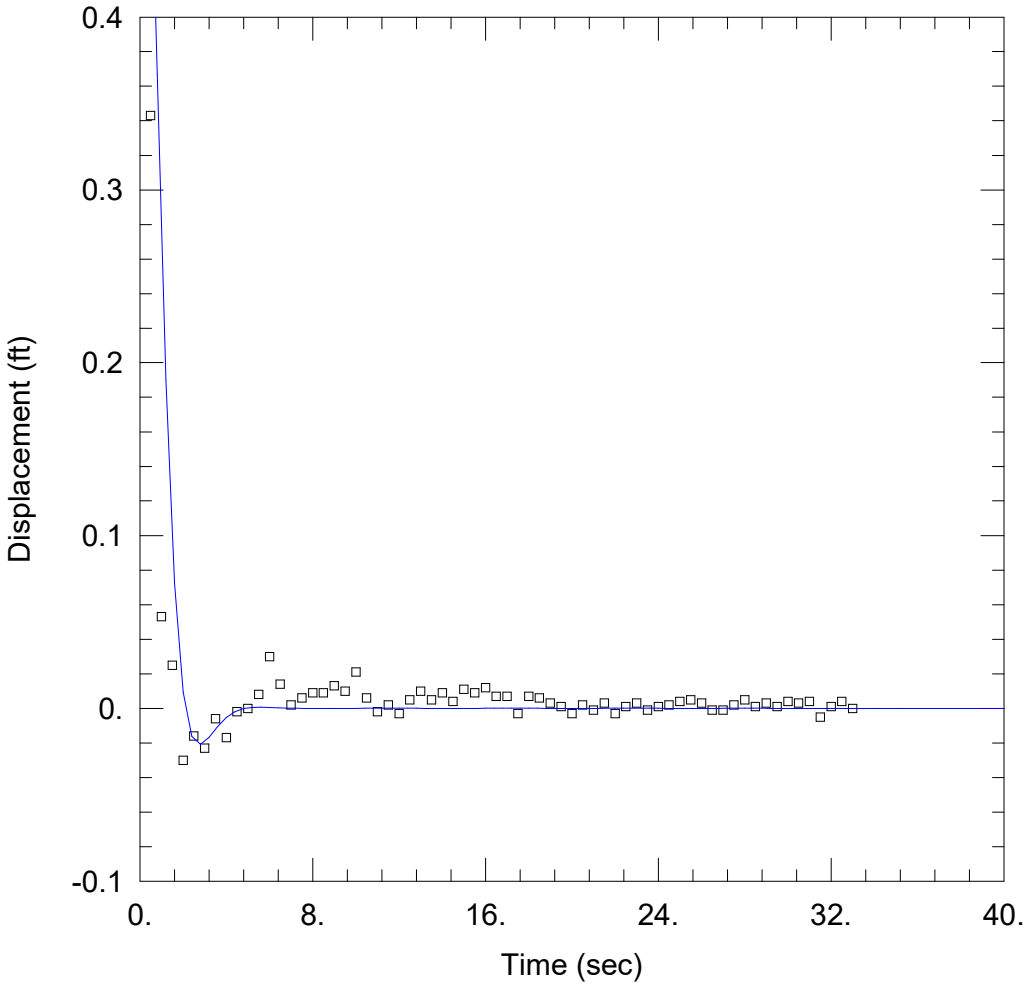
WELL DATA (MW-36B)

Initial Displacement: 0.704 ft
Total Well Penetration Depth: 12.31 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01262 cm/sec y0 = 0.4963 ft



WELL TEST ANALYSIS

Data Set: \...\MW36I_F1.aqt
Date: 02/24/23 Time: 11:16:26

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.7 ft Anisotropy Ratio (Kz/Kr): 1.

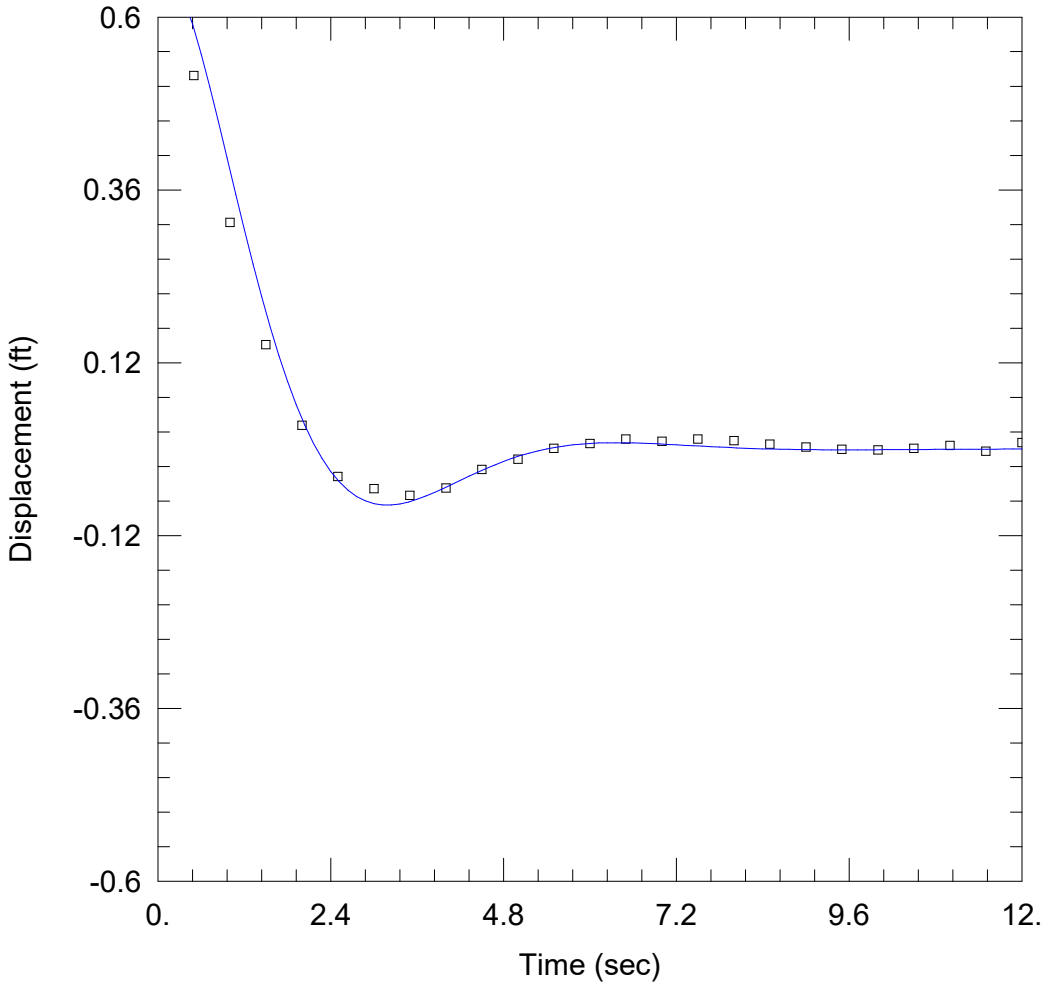
WELL DATA (MW-36I)

Initial Displacement: 0.68 ft
Total Well Penetration Depth: 27.73 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04227 cm/sec Le = 11.01 ft



WELL TEST ANALYSIS

Data Set: \...\MW36I_R1.aqt
Date: 02/23/23 Time: 20:52:00

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.7 ft Anisotropy Ratio (Kz/Kr): 1.

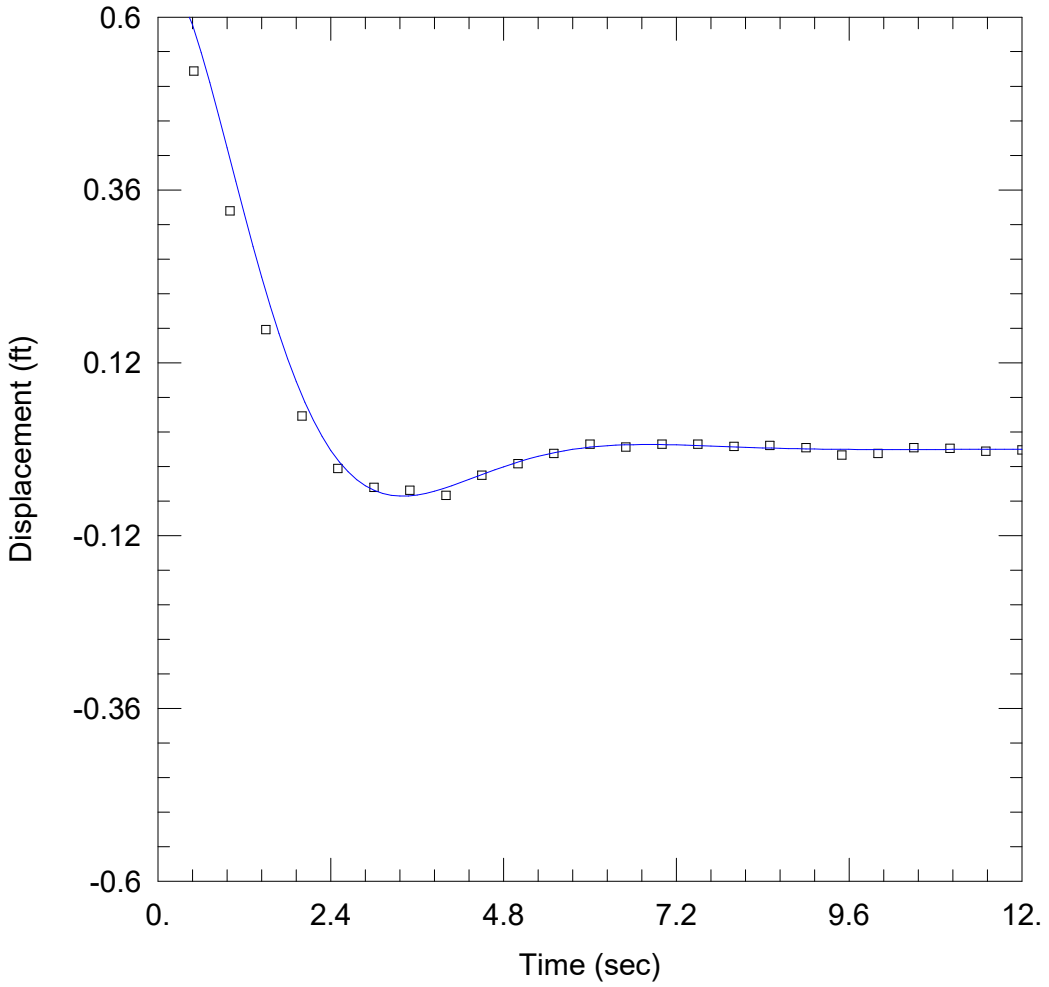
WELL DATA (MW-36I)

Initial Displacement: 0.68 ft
Total Well Penetration Depth: 27.73 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03874 cm/sec Le = 22.35 ft



WELL TEST ANALYSIS

Data Set: \...\MW36I_R2.aqt
Date: 02/23/23 Time: 20:52:49

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-36I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.7 ft Anisotropy Ratio (Kz/Kr): 1.

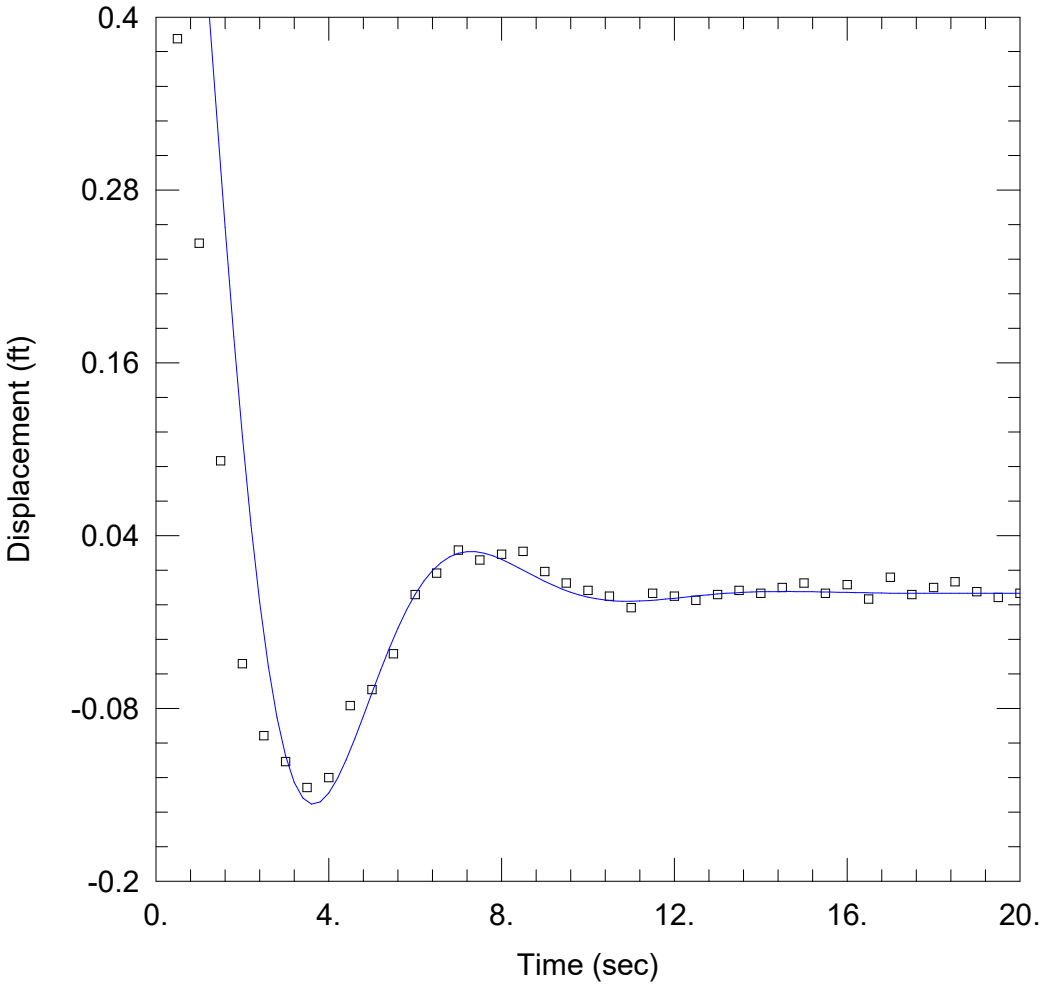
WELL DATA (MW-36I)

Initial Displacement: 0.67 ft
Total Well Penetration Depth: 27.73 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03543 cm/sec Le = 24.28 ft



WELL TEST ANALYSIS

Data Set: \...\MW37A_F1.aqt
Date: 02/23/23 Time: 20:55:02

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.2 ft Anisotropy Ratio (Kz/Kr): 1.

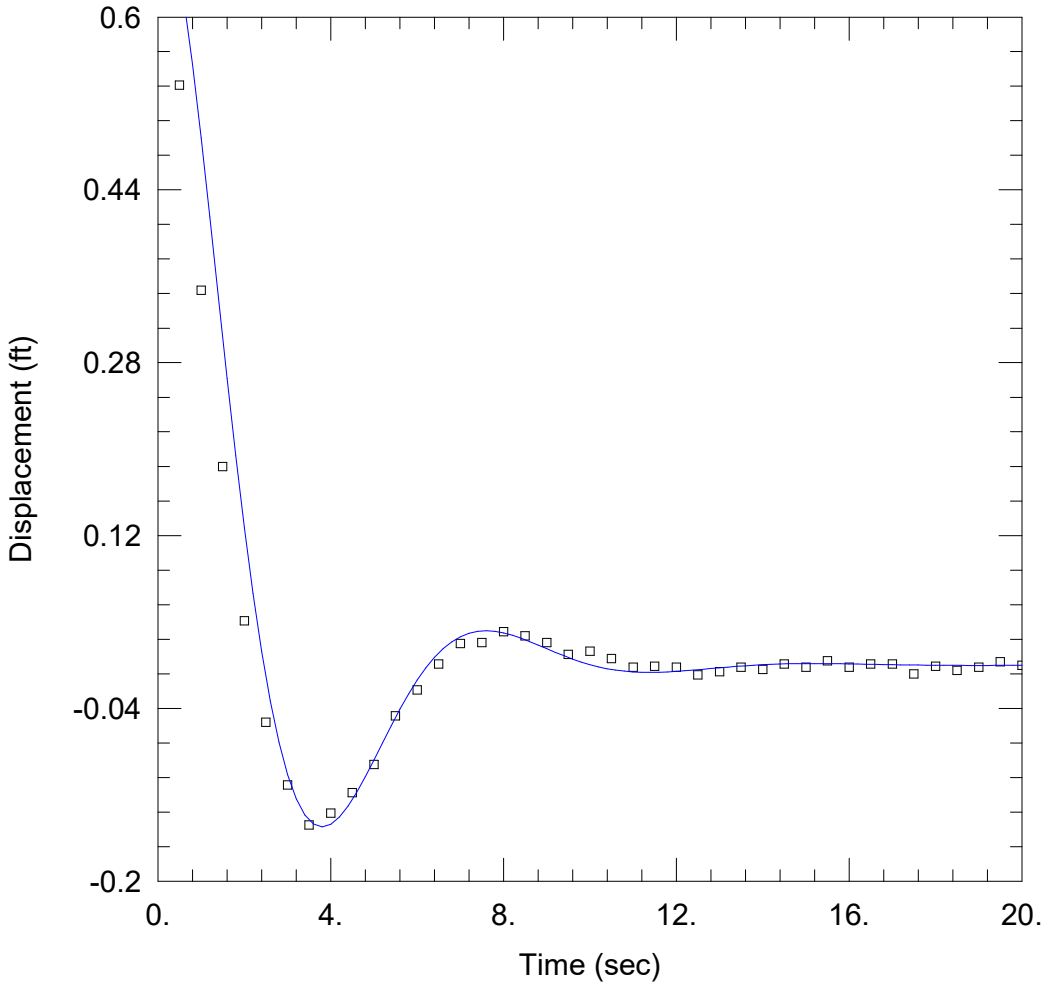
WELL DATA (MW-37A)

Initial Displacement: 0.744 ft
Total Well Penetration Depth: 49.17 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04496 cm/sec Le = 34.13 ft



WELL TEST ANALYSIS

Data Set: \...\MW37A_R1.aqt
Date: 02/23/23 Time: 20:56:01

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.2 ft Anisotropy Ratio (Kz/Kr): 1.

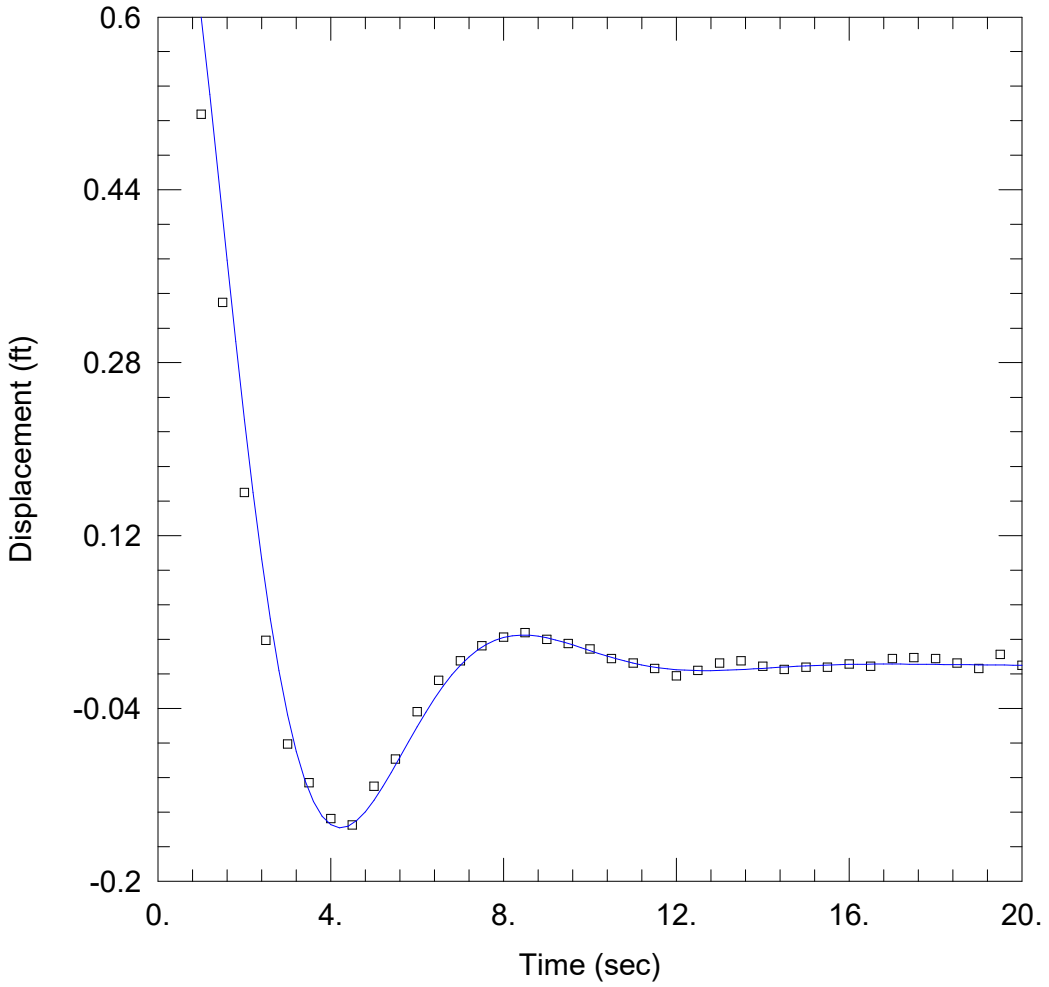
WELL DATA (MW-37A)

Initial Displacement: 0.706 ft
Total Well Penetration Depth: 49.17 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04434 cm/sec Le = 37.78 ft



WELL TEST ANALYSIS

Data Set: \...\MW37A_R2.aqt
Date: 02/23/23 Time: 20:56:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.2 ft Anisotropy Ratio (Kz/Kr): 1.

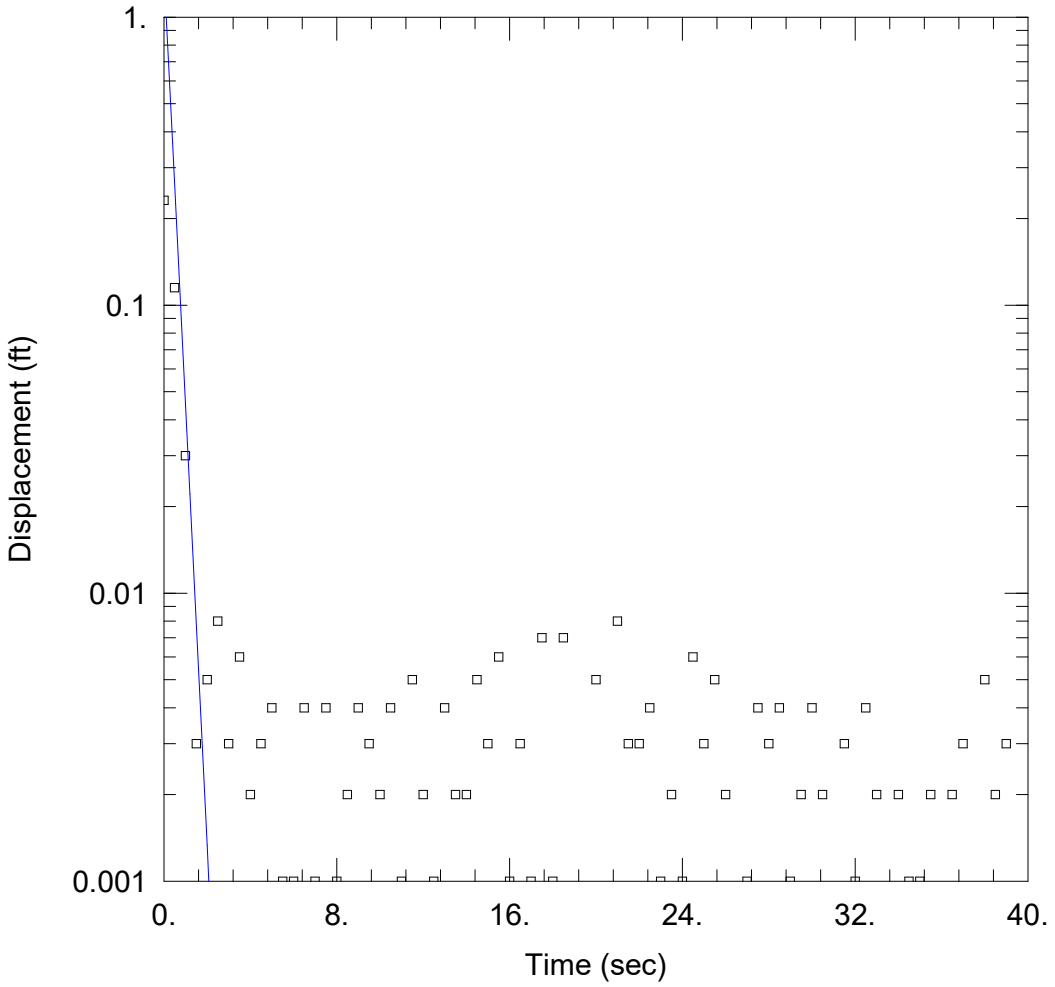
WELL DATA (MW-37A)

Initial Displacement: 0.816 ft
Total Well Penetration Depth: 49.17 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03778 cm/sec Le = 45.16 ft



WELL TEST ANALYSIS

Data Set: \...\MW37B_F1.aqt
Date: 01/23/23 Time: 18:06:34

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.2 ft Anisotropy Ratio (Kz/Kr): 1.

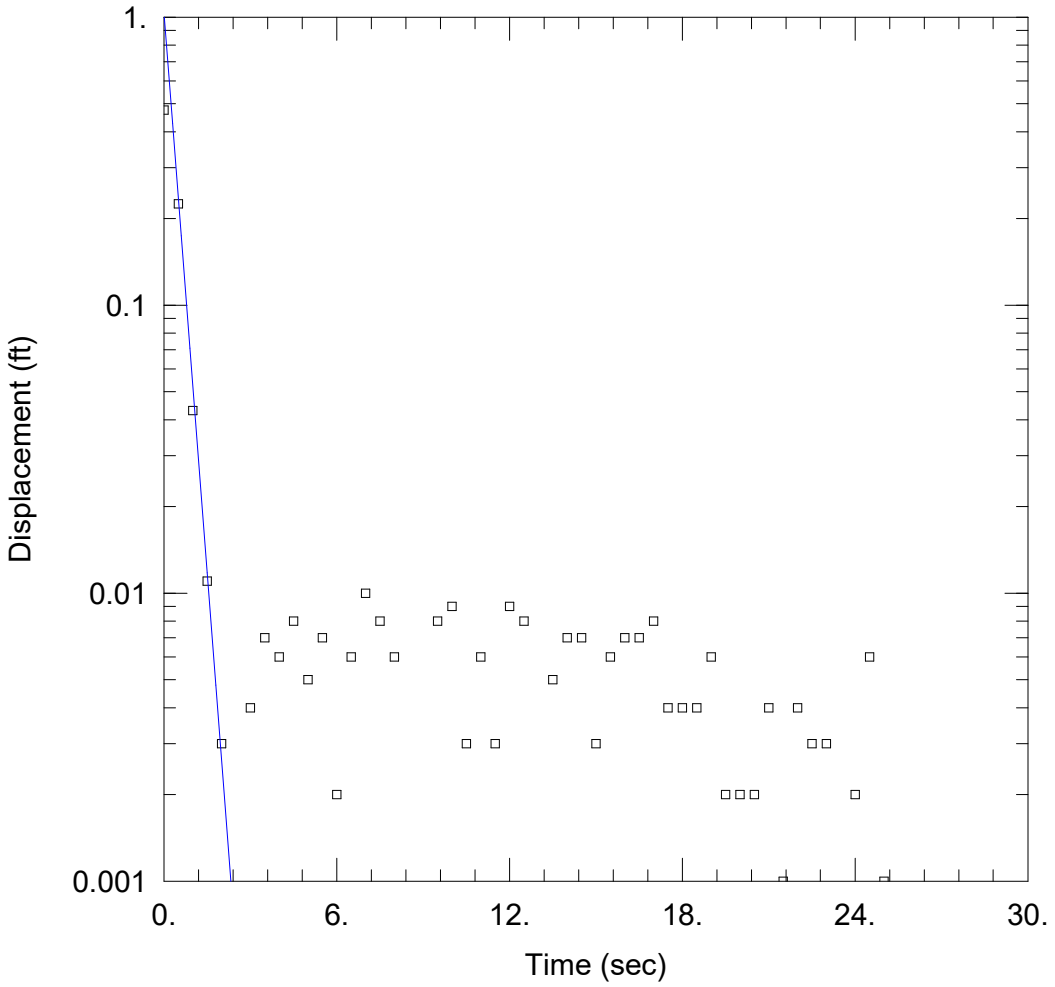
WELL DATA (MW-37B)

Initial Displacement: 0.231 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1299 cm/sec y0 = 1.482 ft



WELL TEST ANALYSIS

Data Set: \...\MW37B_F2.aqt
Date: 01/23/23 Time: 18:08:17

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.2 ft Anisotropy Ratio (Kz/Kr): 1.

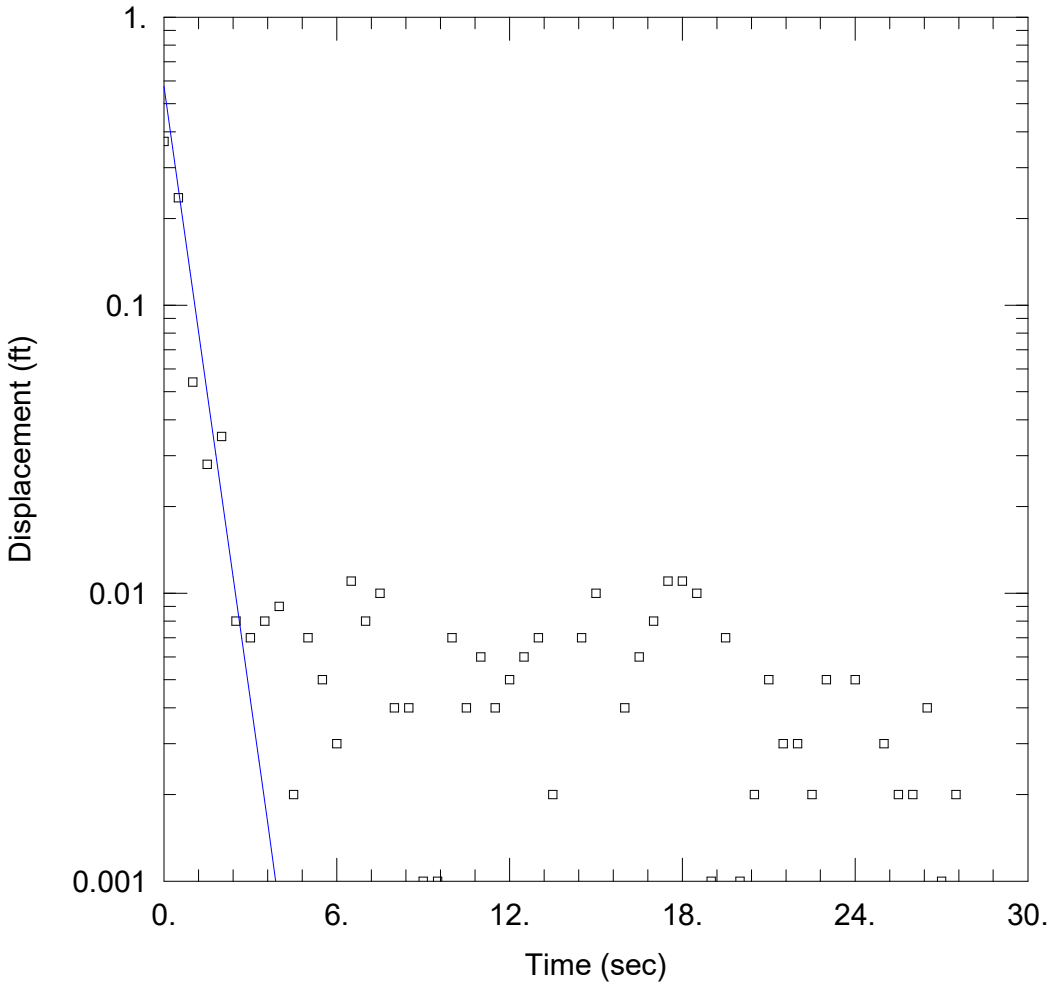
WELL DATA (MW-37B)

Initial Displacement: 0.475 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1109 cm/sec y0 = 1.049 ft



WELL TEST ANALYSIS

Data Set: \...\MW37B_R1.aqt
Date: 01/23/23 Time: 18:09:36

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.2 ft Anisotropy Ratio (Kz/Kr): 1.

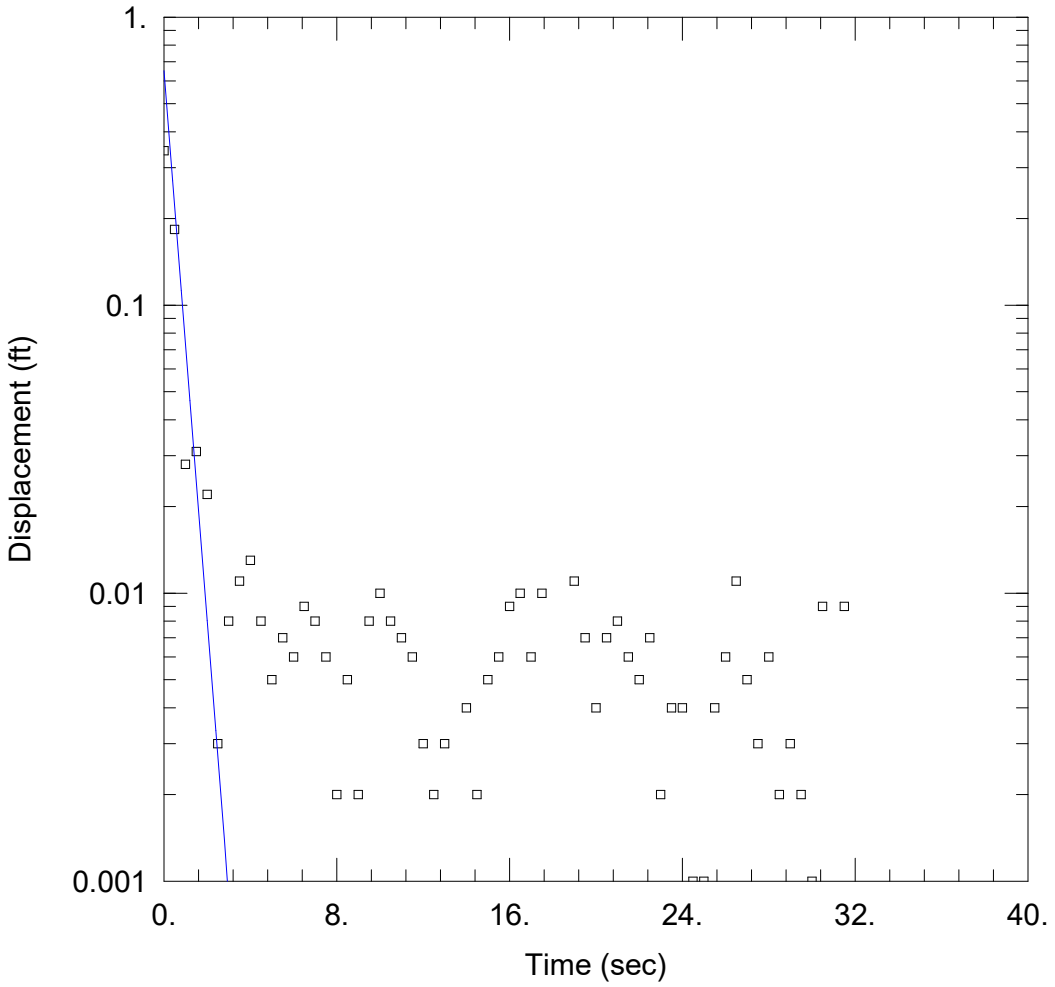
WELL DATA (MW-37B)

Initial Displacement: 0.37 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.06053 cm/sec y0 = 0.574 ft



WELL TEST ANALYSIS

Data Set: \...\MW37B_R2.aqt
Date: 01/23/23 Time: 18:11:01

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.2 ft Anisotropy Ratio (Kz/Kr): 1.

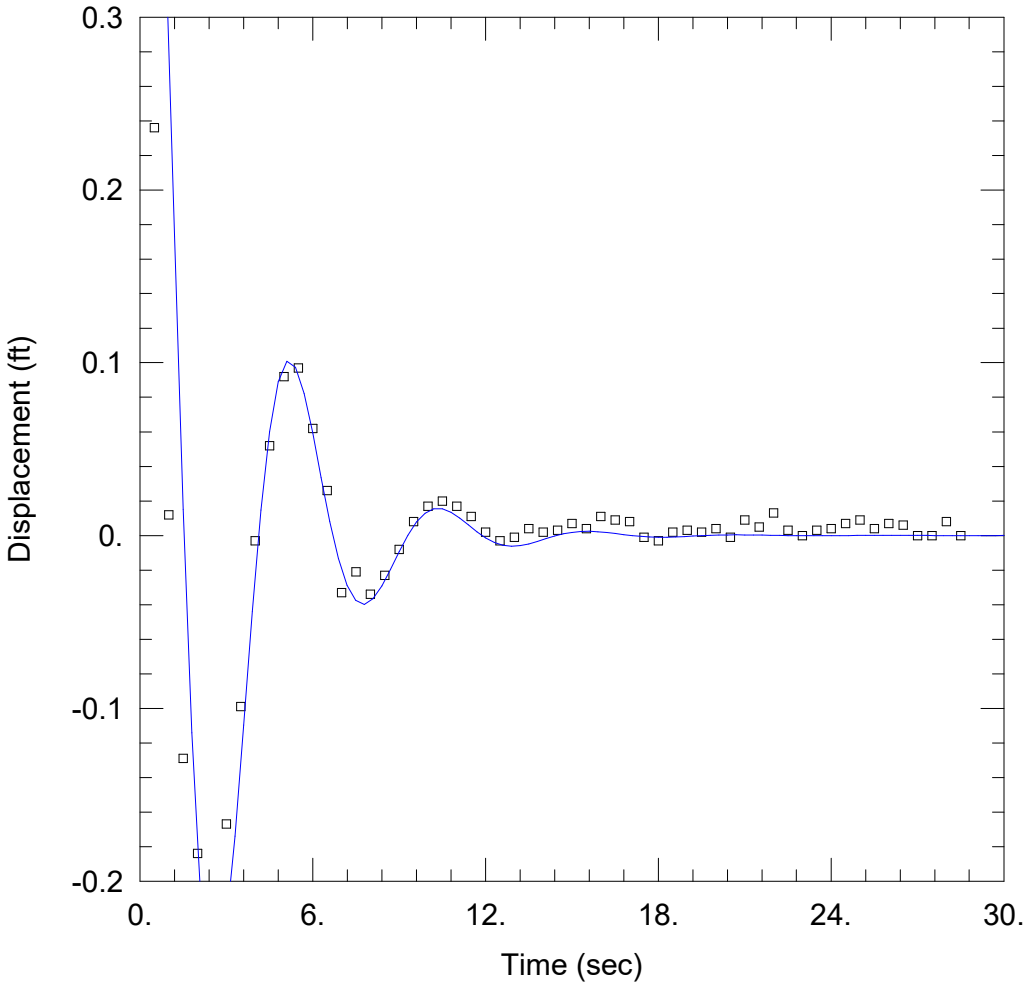
WELL DATA (MW-37B)

Initial Displacement: 0.344 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.08141 cm/sec y0 = 0.6512 ft



WELL TEST ANALYSIS

Data Set: \...\MW37I_F1.aqt
Date: 02/23/23 Time: 21:02:27

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 31.1 ft Anisotropy Ratio (Kz/Kr): 1.

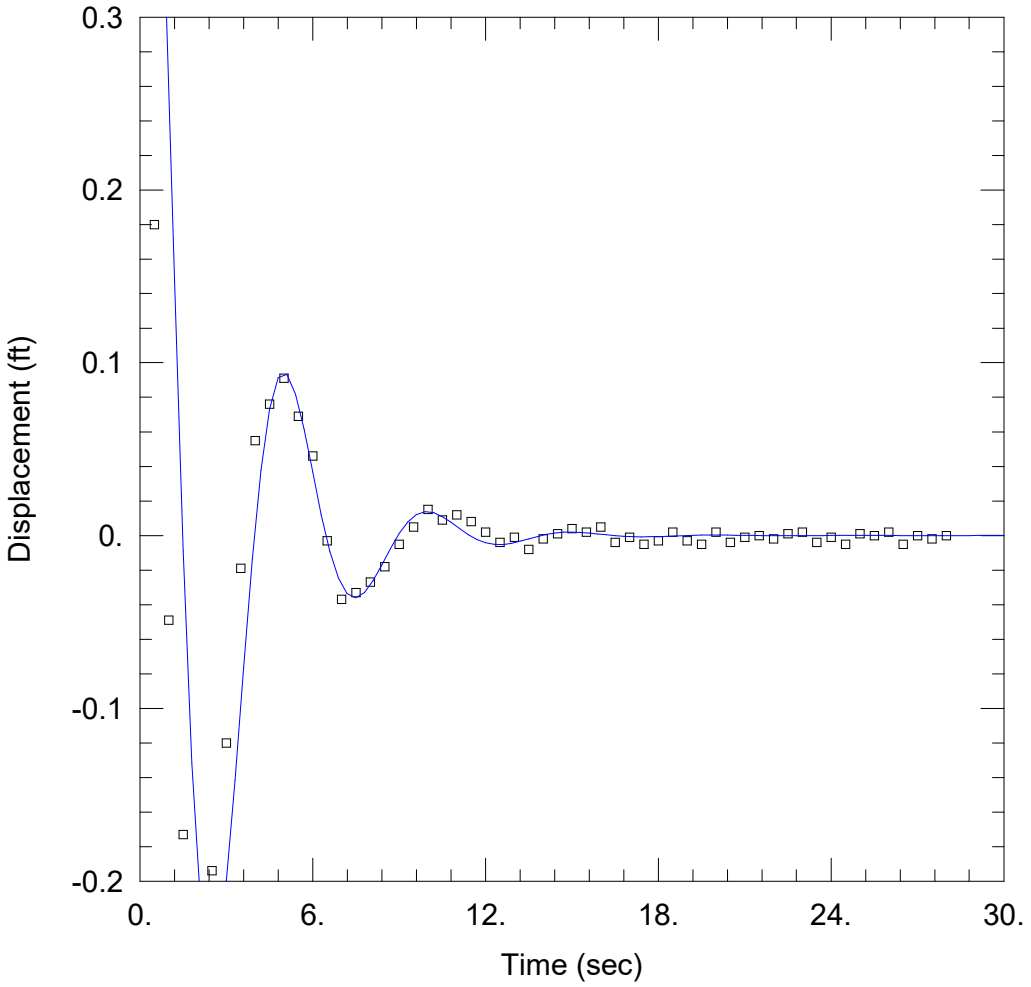
WELL DATA (MW-37I)

Initial Displacement: 0.653 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.08954 cm/sec Le = 20.06 ft



WELL TEST ANALYSIS

Data Set: \...\MW37I_F2.aqt
Date: 02/23/23 Time: 21:02:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 31.1 ft Anisotropy Ratio (Kz/Kr): 1.

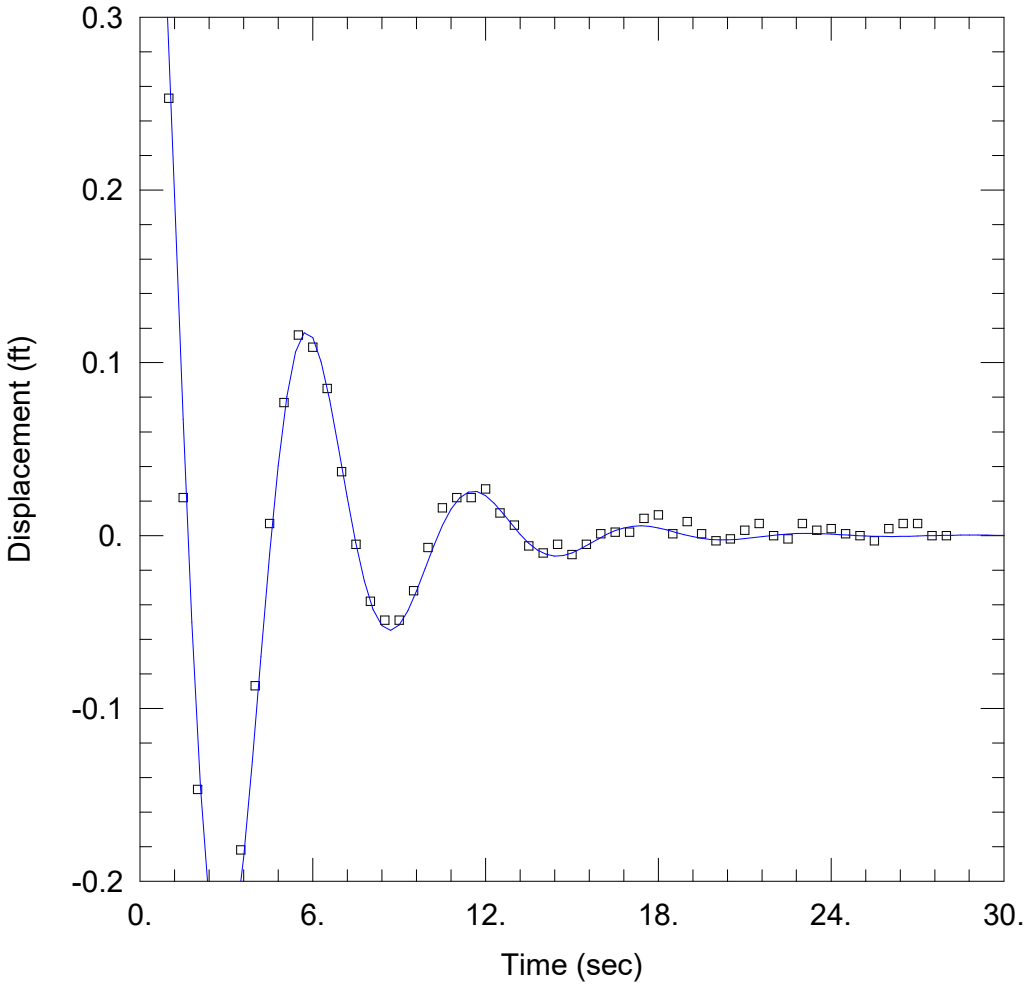
WELL DATA (MW-37I)

Initial Displacement: 0.645 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.09066 cm/sec Le = 18.51 ft



WELL TEST ANALYSIS

Data Set: \...\MW37I_R1.aqt
Date: 02/23/23 Time: 21:03:01

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 31.1 ft Anisotropy Ratio (Kz/Kr): 1.

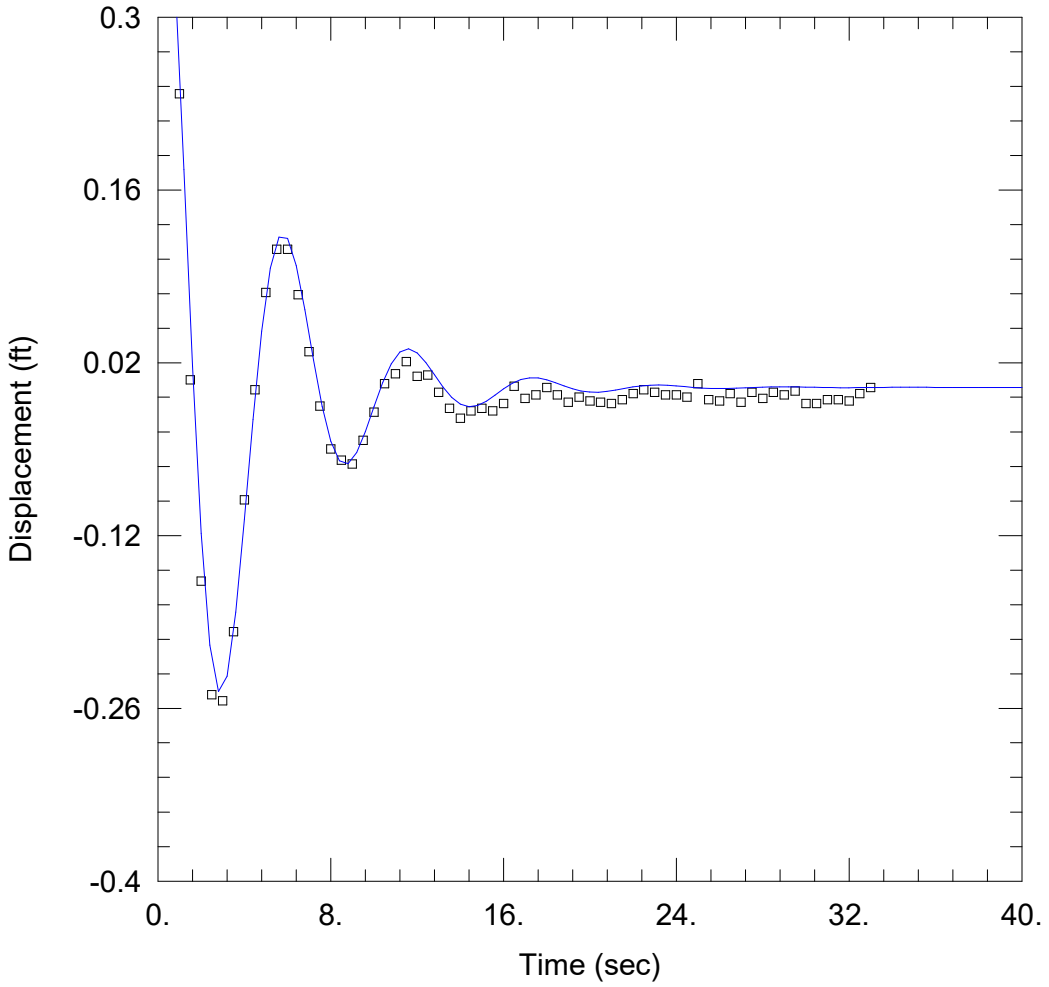
WELL DATA (MW-37I)

Initial Displacement: 0.541 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.09545 cm/sec Le = 25.77 ft



WELL TEST ANALYSIS

Data Set: \...\MW37I_R2.aqt
Date: 02/23/23 Time: 21:04:33

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-37I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 31.1 ft Anisotropy Ratio (Kz/Kr): 1.

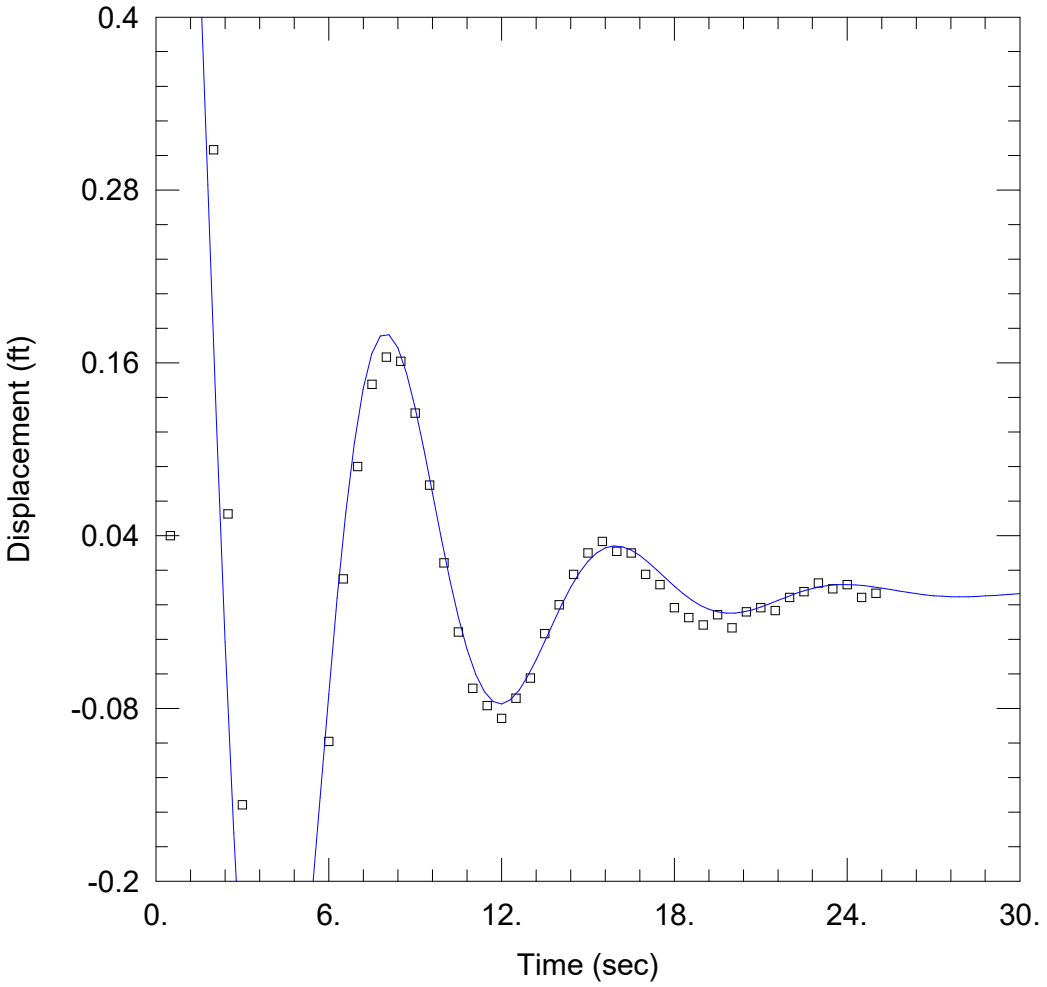
WELL DATA (MW-37I)

Initial Displacement: 0.494 ft
Total Well Penetration Depth: 31.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 31.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.1047 cm/sec Le = 25.99 ft



WELL TEST ANALYSIS

Data Set: \...\MW38A_R1.aqt
Date: 02/23/23 Time: 21:05:36

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 47.6 ft Anisotropy Ratio (Kz/Kr): 1.

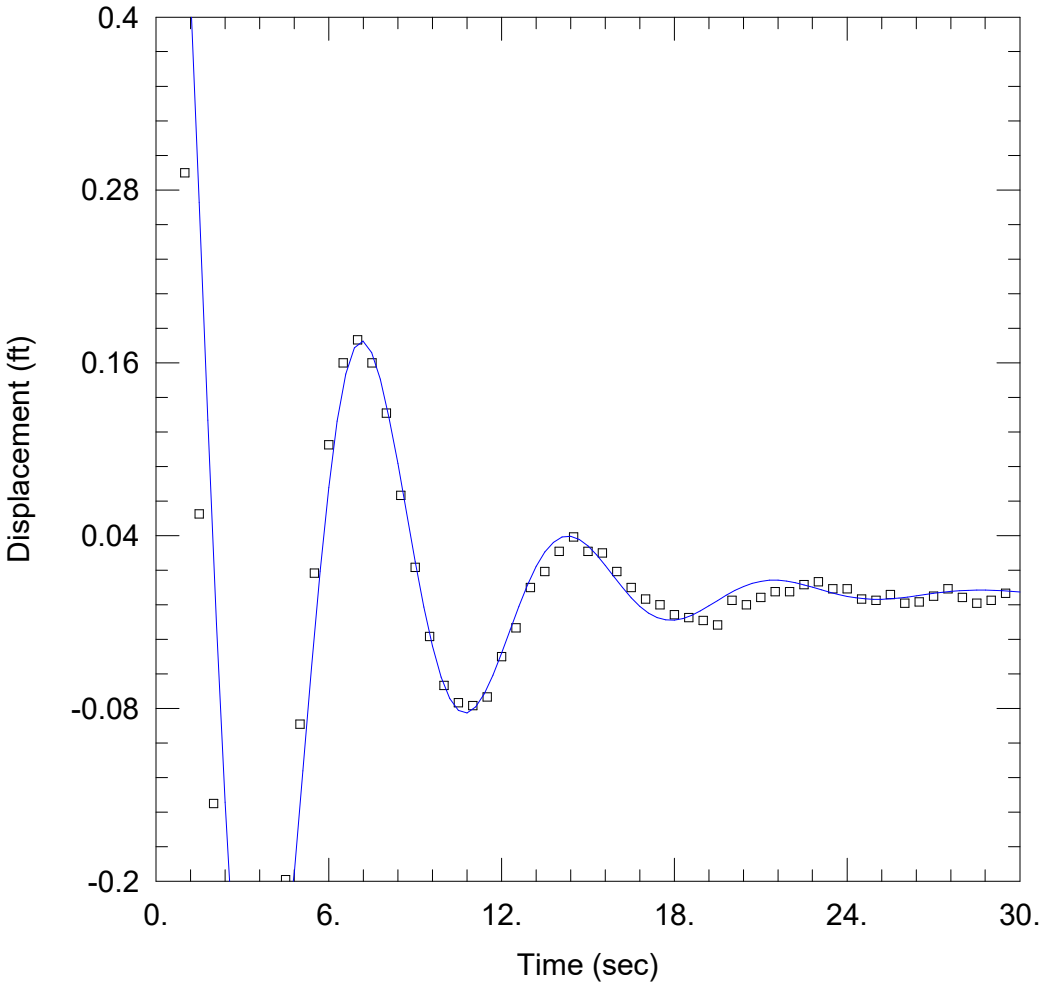
WELL DATA (MW-38A)

Initial Displacement: 0.992 ft
Total Well Penetration Depth: 47.62 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 47.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06355 cm/sec Le = 48.26 ft



WELL TEST ANALYSIS

Data Set: \...\MW38A_R2.aqt
Date: 02/23/23 Time: 21:05:55

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 47.6 ft Anisotropy Ratio (Kz/Kr): 1.

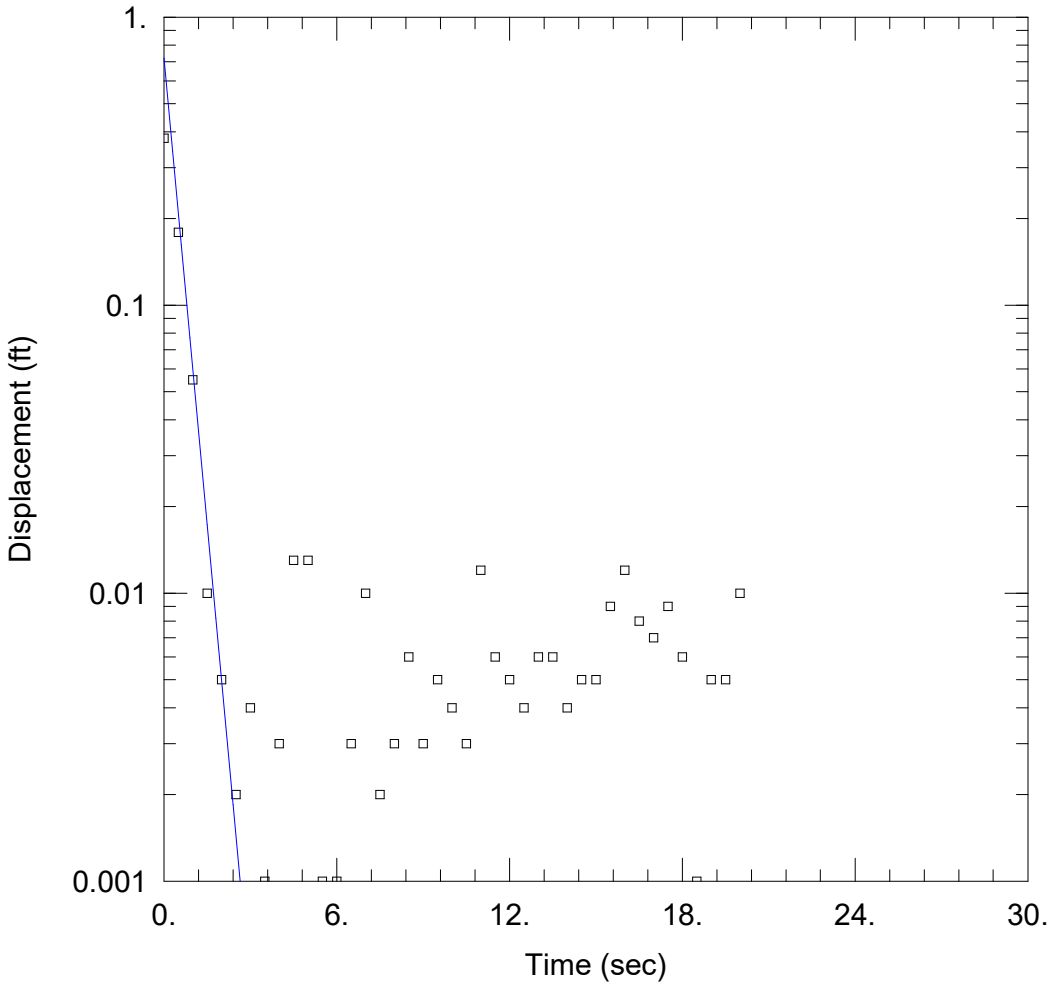
WELL DATA (MW-38A)

Initial Displacement: 0.773 ft
Total Well Penetration Depth: 47.62 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 47.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.08054 cm/sec Le = 39.49 ft



WELL TEST ANALYSIS

Data Set: \...\MW38B_F1.aqt
Date: 01/25/23 Time: 16:38:11

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.5 ft Anisotropy Ratio (Kz/Kr): 1.

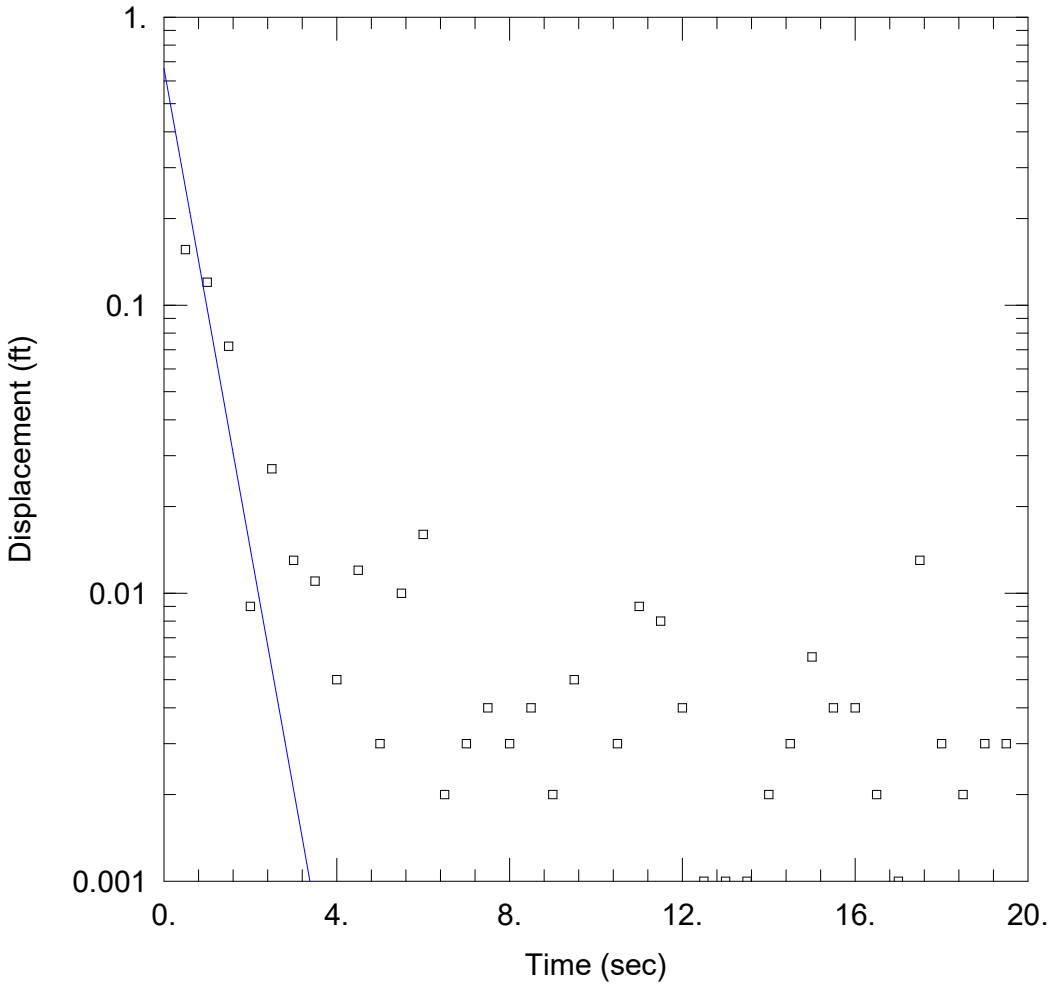
WELL DATA (MW-38B)

Initial Displacement: 0.38 ft
Total Well Penetration Depth: 10.55 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2044 cm/sec y0 = 0.7218 ft



WELL TEST ANALYSIS

Data Set: \...\MW38B_F2.aqt
Date: 01/25/23 Time: 16:38:44

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.5 ft Anisotropy Ratio (Kz/Kr): 1.

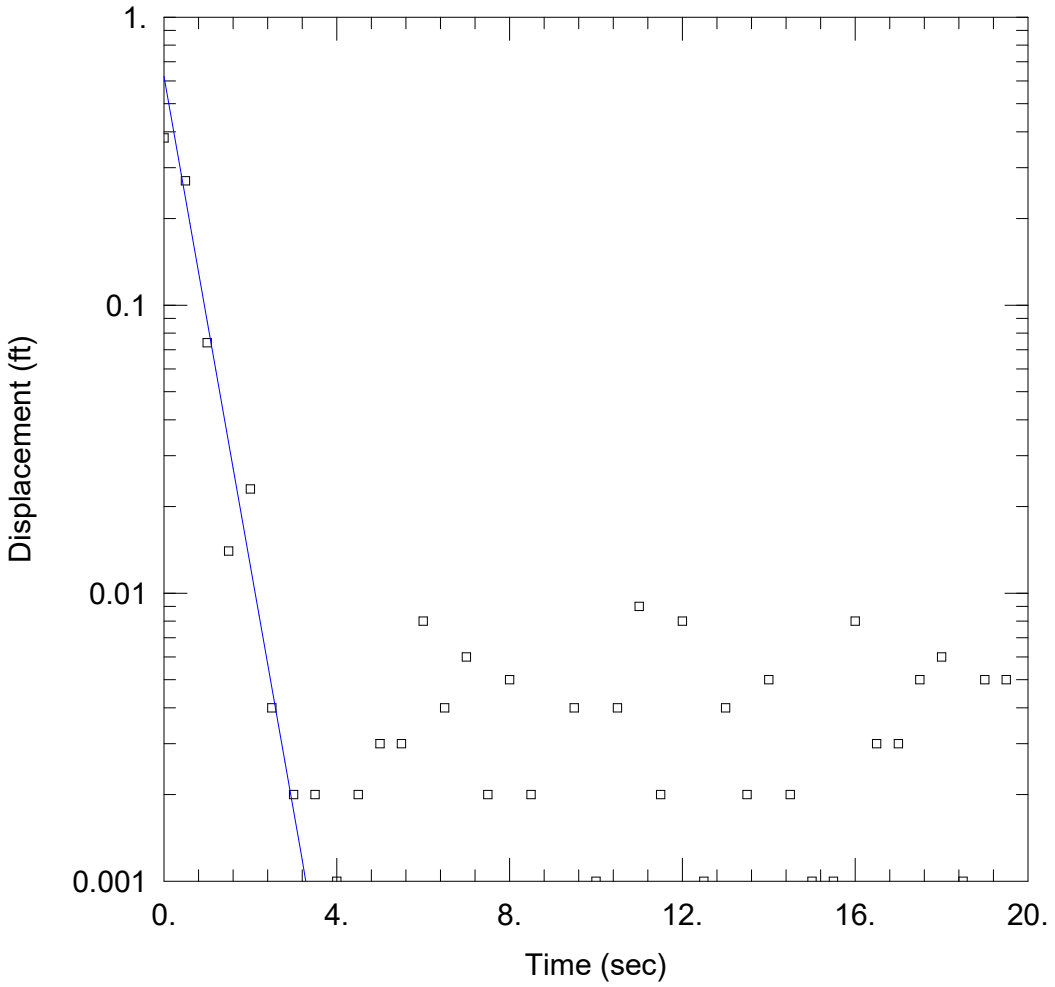
WELL DATA (MW-38B)

Initial Displacement: 1.416 ft
Total Well Penetration Depth: 10.55 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1579 cm/sec y0 = 0.6639 ft



WELL TEST ANALYSIS

Data Set: \...\MW38B_R1.aqt
Date: 01/25/23 Time: 16:39:36

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.5 ft Anisotropy Ratio (Kz/Kr): 1.

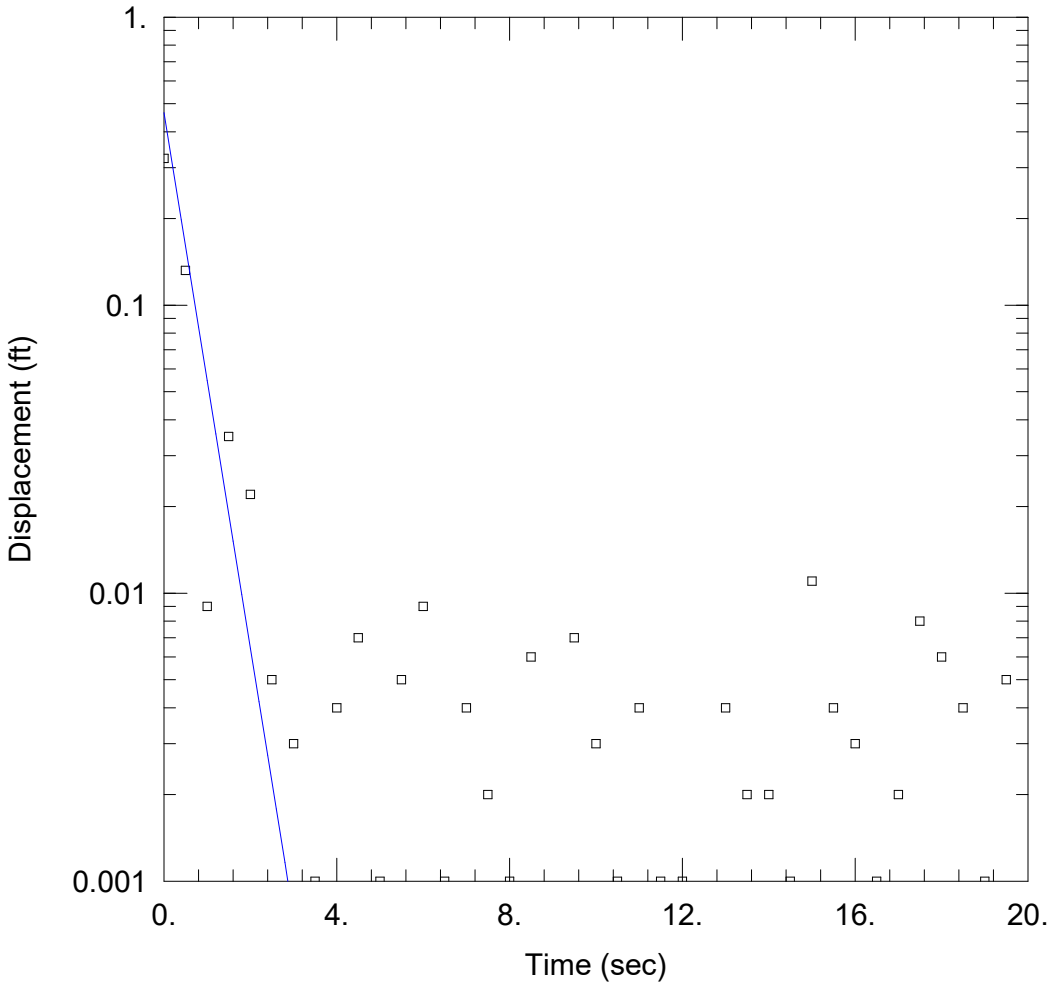
WELL DATA (MW-38B)

Initial Displacement: 0.381 ft
Total Well Penetration Depth: 10.55 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1608 cm/sec y0 = 0.6223 ft



WELL TEST ANALYSIS

Data Set: \...\MW38B_R2.aqt
Date: 01/25/23 Time: 16:40:46

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.5 ft Anisotropy Ratio (Kz/Kr): 1.

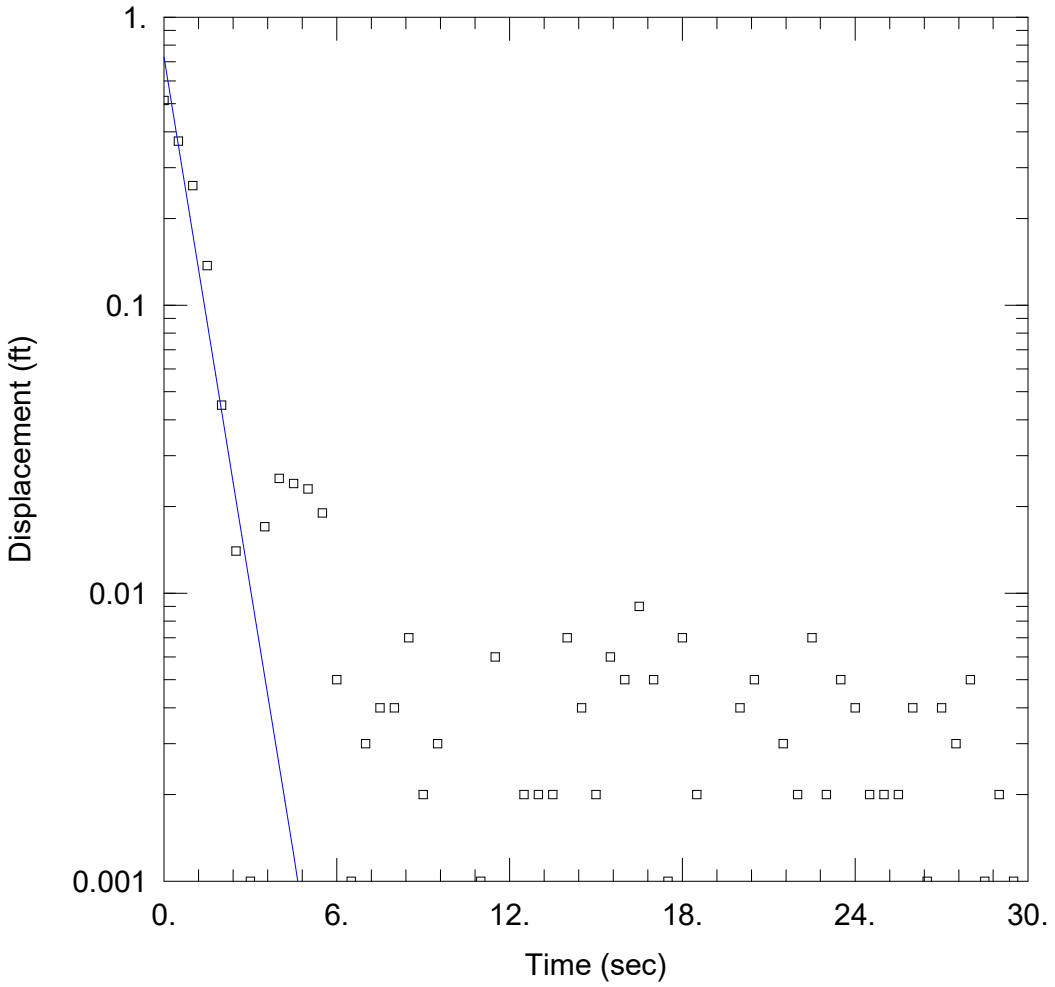
WELL DATA (MW-38B)

Initial Displacement: 0.323 ft
Total Well Penetration Depth: 10.55 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 9.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.1758 cm/sec y0 = 0.4656 ft



WELL TEST ANALYSIS

Data Set: \...\MW38I_F1.aqt
Date: 01/25/23 Time: 16:45:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

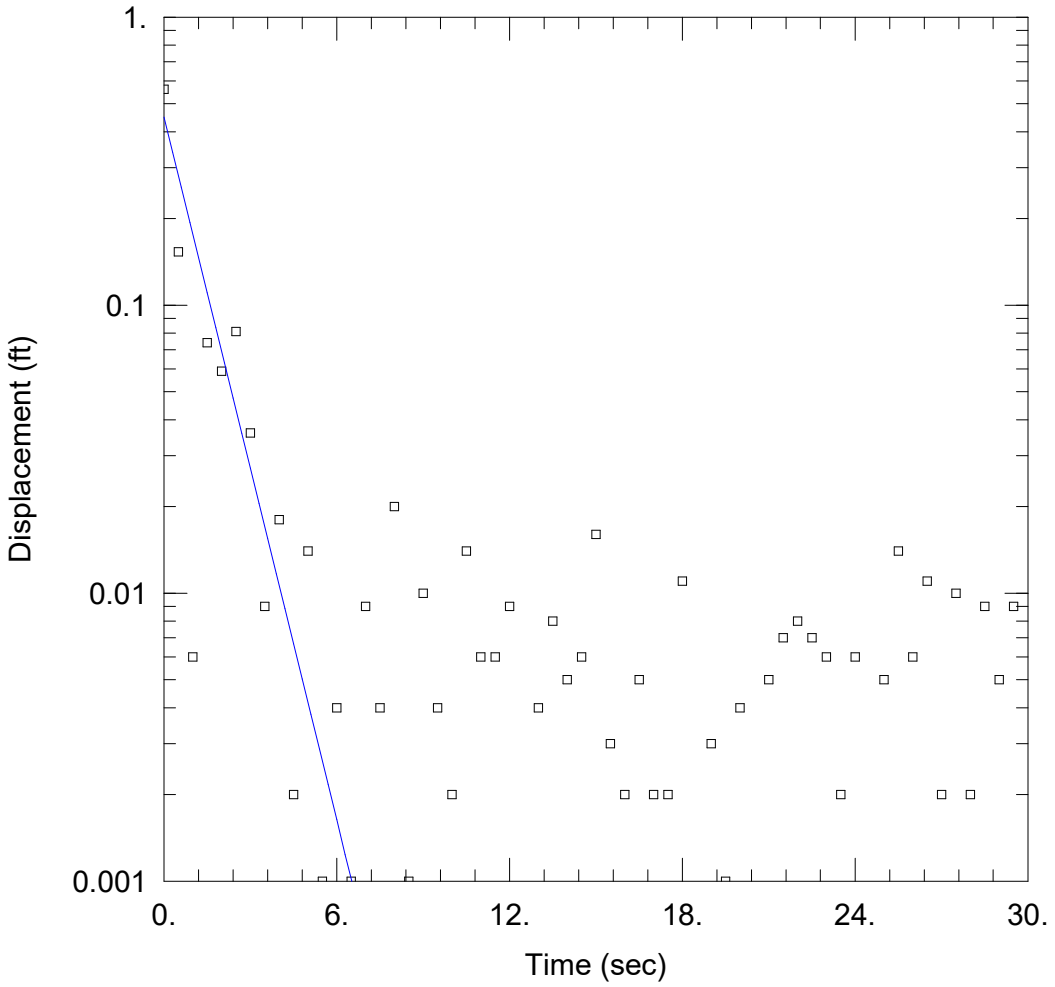
WELL DATA (MW-38I)

Initial Displacement: 0.513 ft
Total Well Penetration Depth: 29.67 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.05437 cm/sec y0 = 0.7281 ft



WELL TEST ANALYSIS

Data Set: \...\MW38I_F2.aqt
Date: 02/24/23 Time: 10:35:57

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

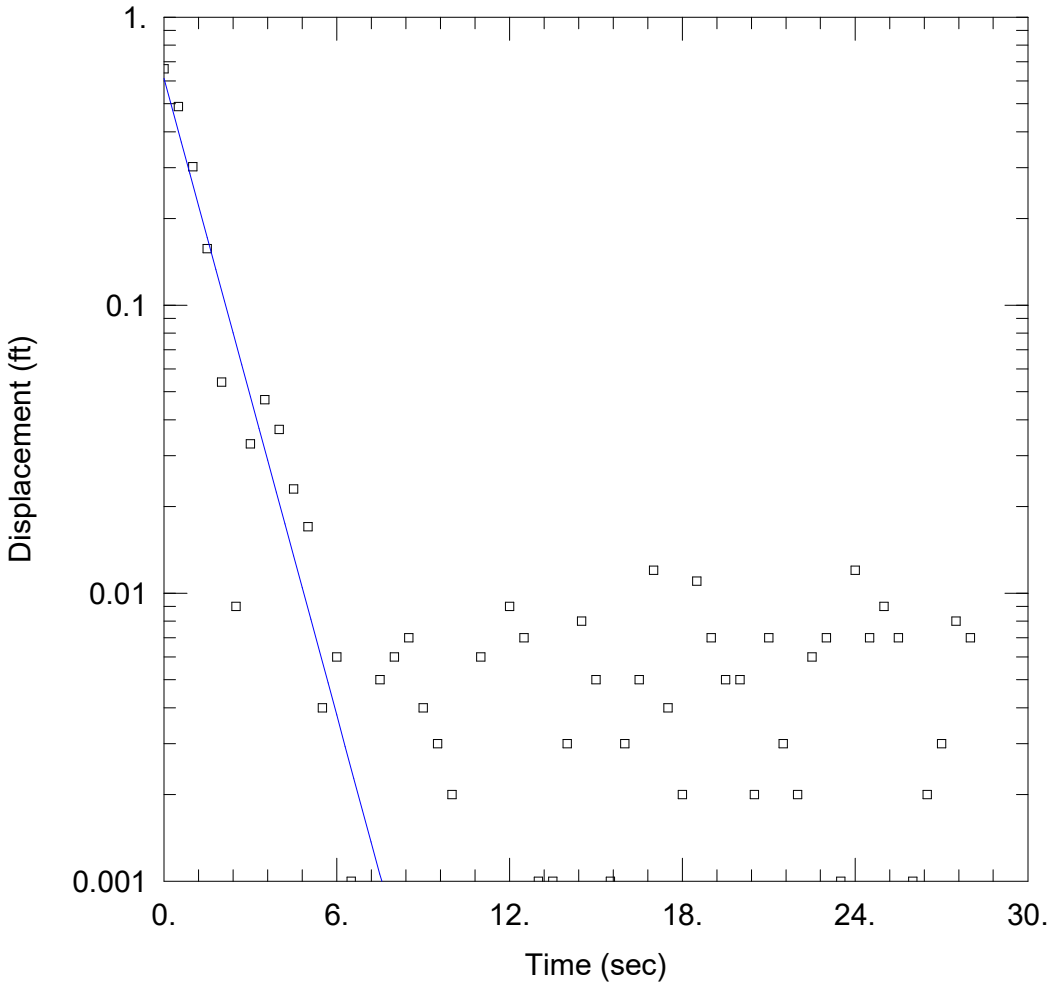
WELL DATA (MW-38I)

Initial Displacement: 0.561 ft
Total Well Penetration Depth: 29.67 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03592 cm/sec y0 = 0.4495 ft



WELL TEST ANALYSIS

Data Set: \...\MW38I_R1.aqt
Date: 02/03/23 Time: 14:53:55

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

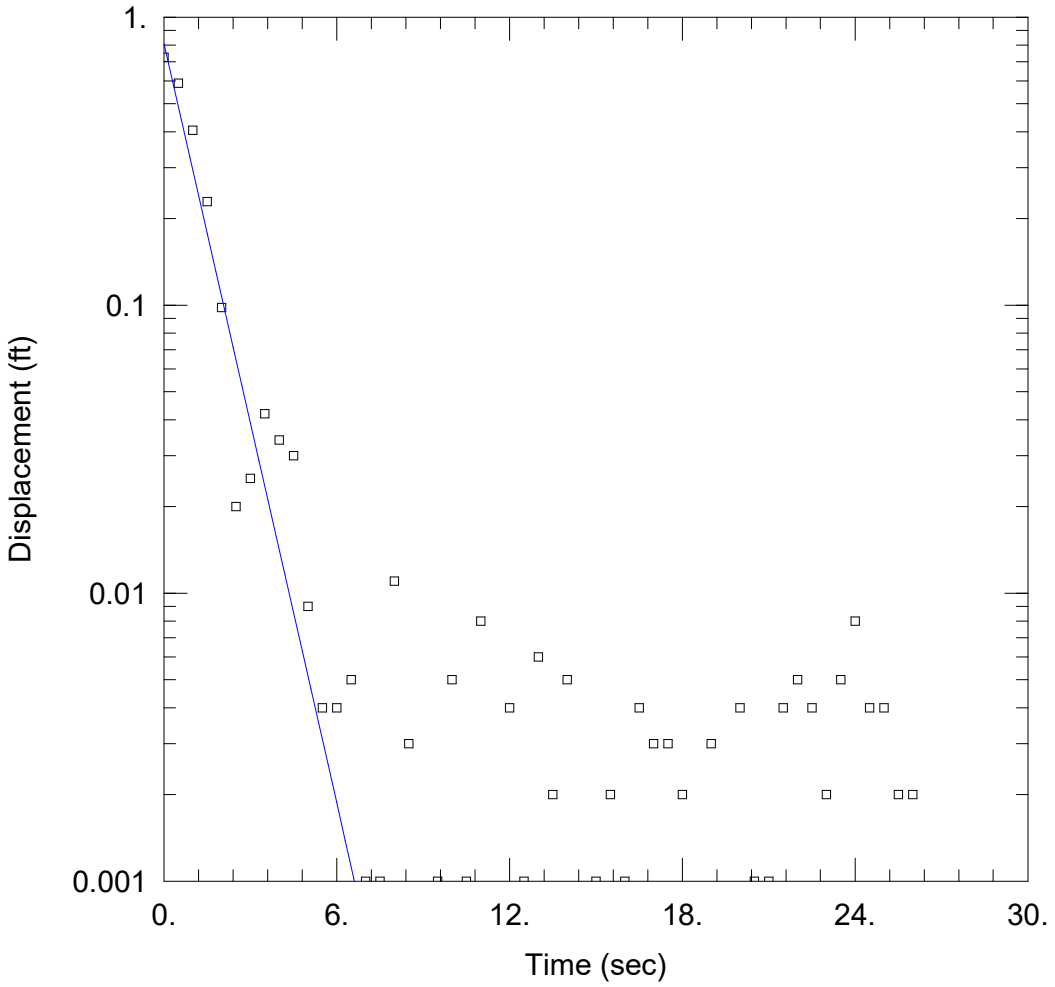
WELL DATA (MW-38I)

Initial Displacement: 0.661 ft
Total Well Penetration Depth: 29.67 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03255 cm/sec y0 = 0.6127 ft



WELL TEST ANALYSIS

Data Set: \...\MW38I_R2.aqt
Date: 02/03/23 Time: 14:56:49

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-38I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

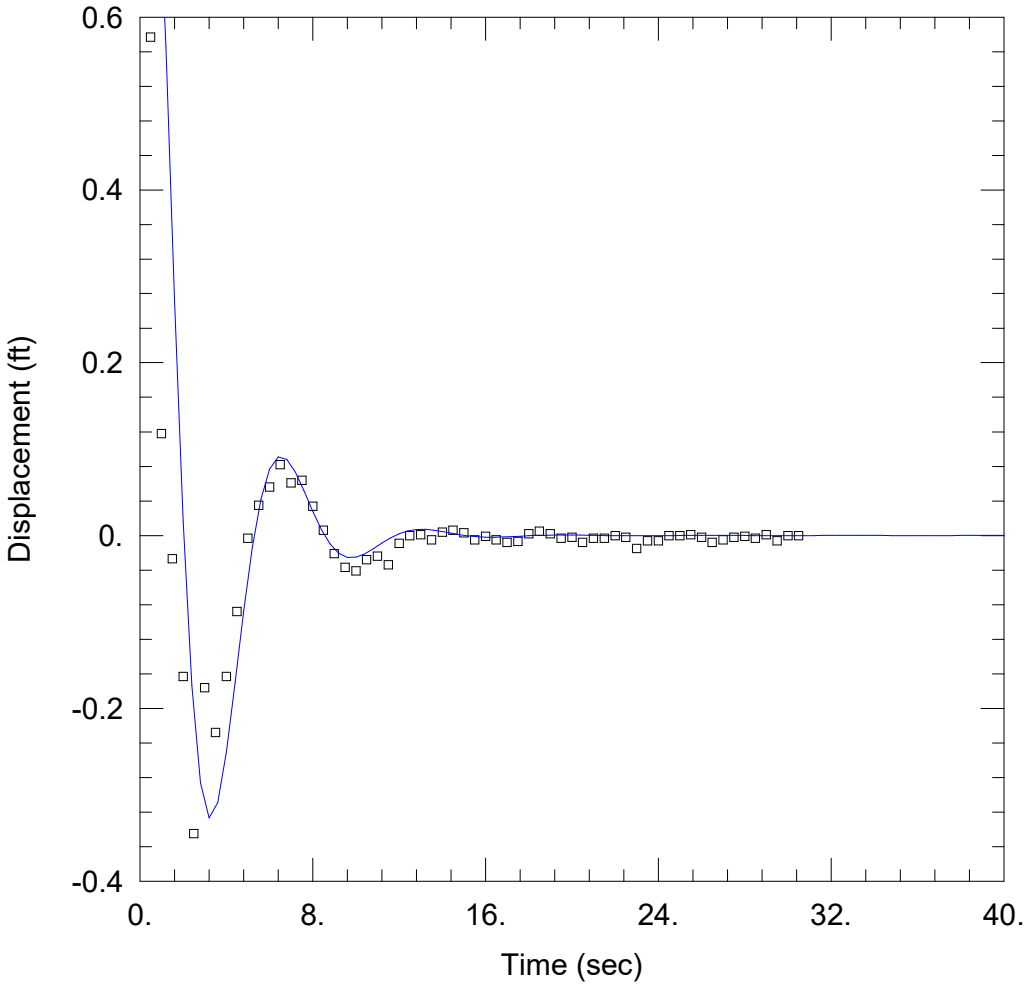
WELL DATA (MW-38I)

Initial Displacement: 0.726 ft
Total Well Penetration Depth: 29.67 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03881 cm/sec y0 = 0.8095 ft



WELL TEST ANALYSIS

Data Set: \...\MW39A_F1.aqt
Date: 02/23/23 Time: 21:06:24

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 45.1 ft Anisotropy Ratio (Kz/Kr): 1.

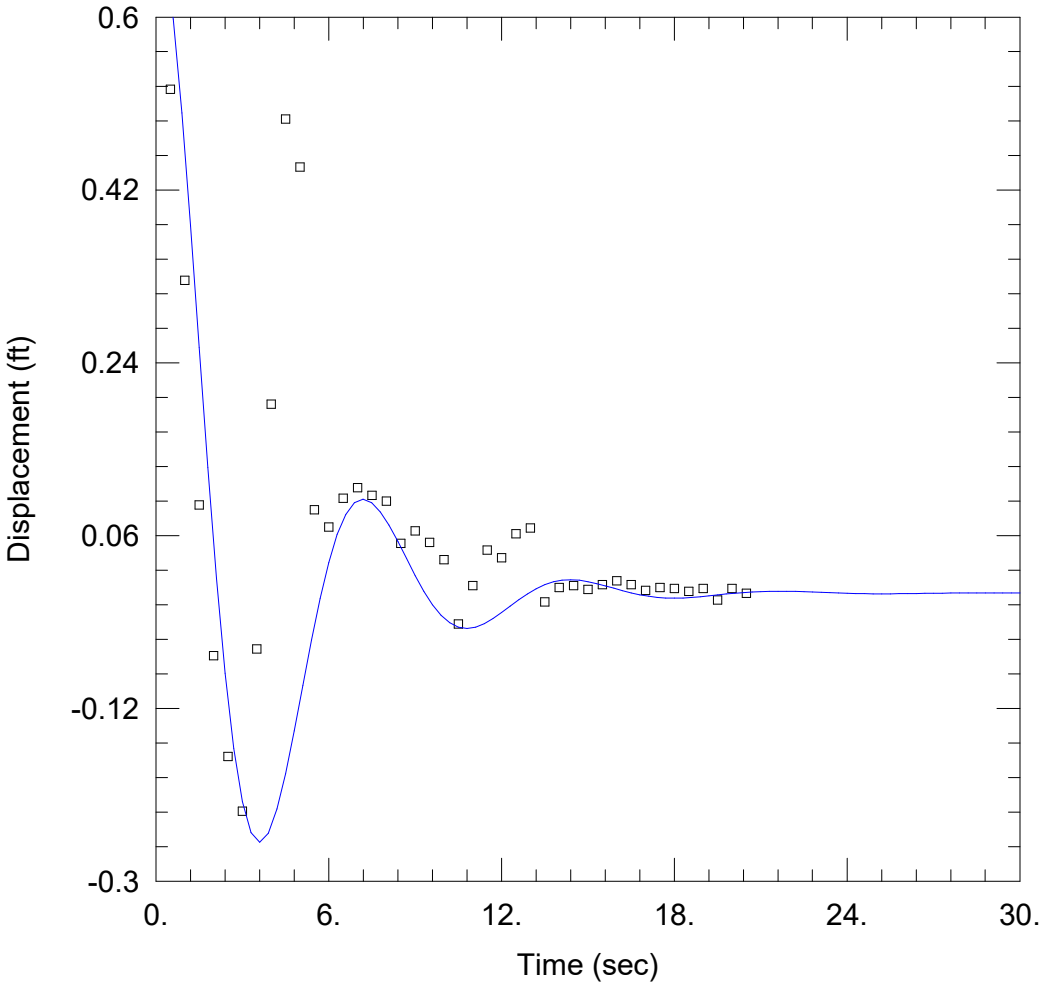
WELL DATA (MW-39A)

Initial Displacement: 1.171 ft
Total Well Penetration Depth: 45.07 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05827 cm/sec Le = 29.73 ft



WELL TEST ANALYSIS

Data Set: \...\MW39A_R1.aqt
Date: 02/23/23 Time: 21:07:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 45.1 ft Anisotropy Ratio (Kz/Kr): 1.

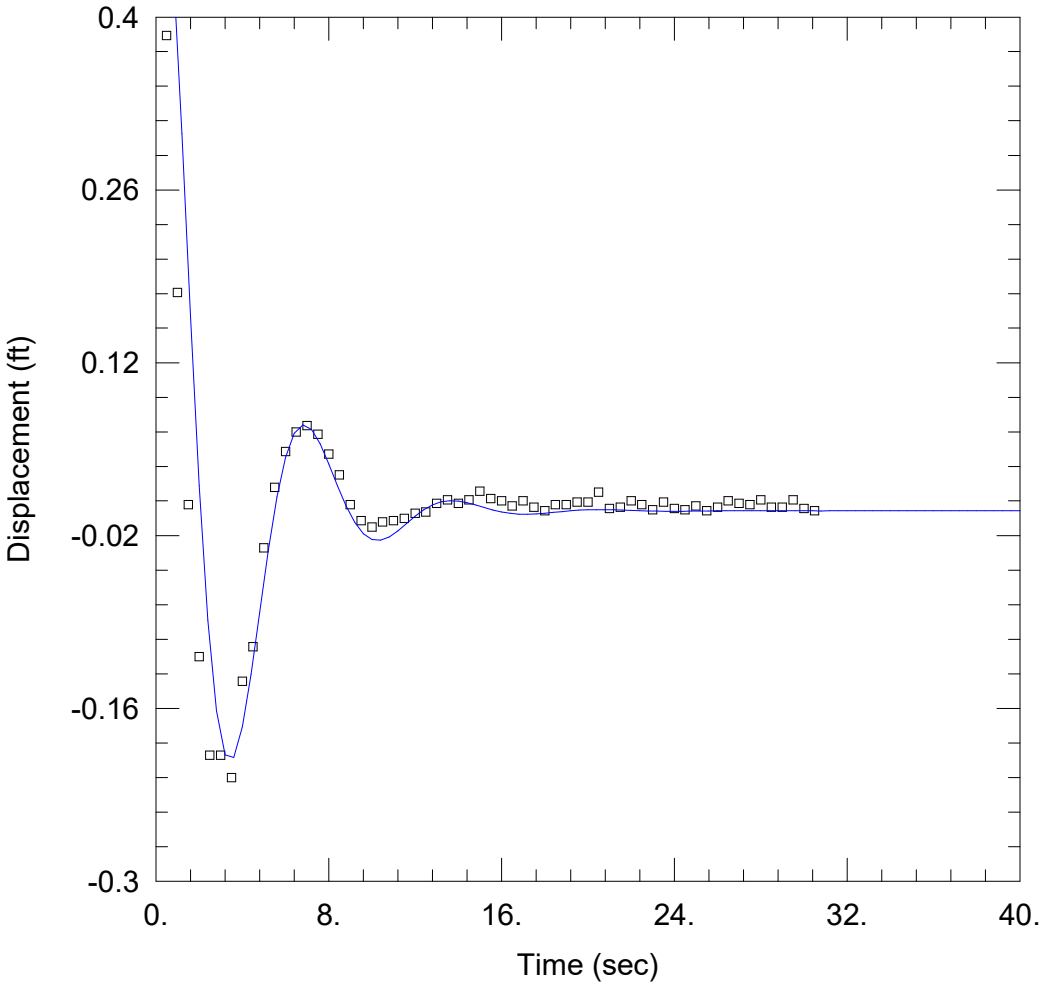
WELL DATA (MW-39A)

Initial Displacement: 0.689 ft
Total Well Penetration Depth: 45.07 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06502 cm/sec Le = 38.47 ft



WELL TEST ANALYSIS

Data Set: \...\MW39A_R2.aqt
Date: 02/23/23 Time: 21:09:07

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 45.1 ft Anisotropy Ratio (Kz/Kr): 1.

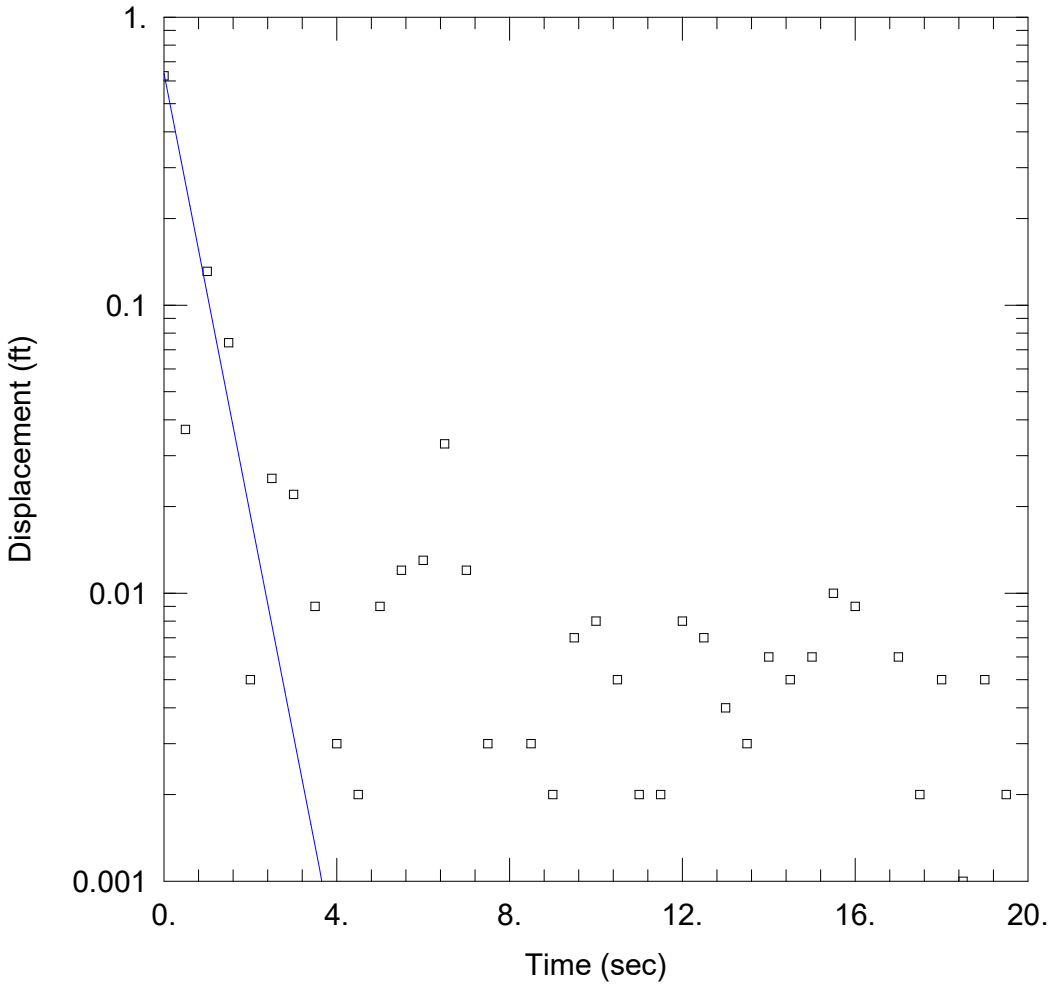
WELL DATA (MW-39A)

Initial Displacement: 0.589 ft
Total Well Penetration Depth: 45.07 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06361 cm/sec Le = 34.21 ft



WELL TEST ANALYSIS

Data Set: \...\MW39B_F1.aqt
Date: 02/03/23 Time: 15:06:29

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.6 ft Anisotropy Ratio (Kz/Kr): 1.

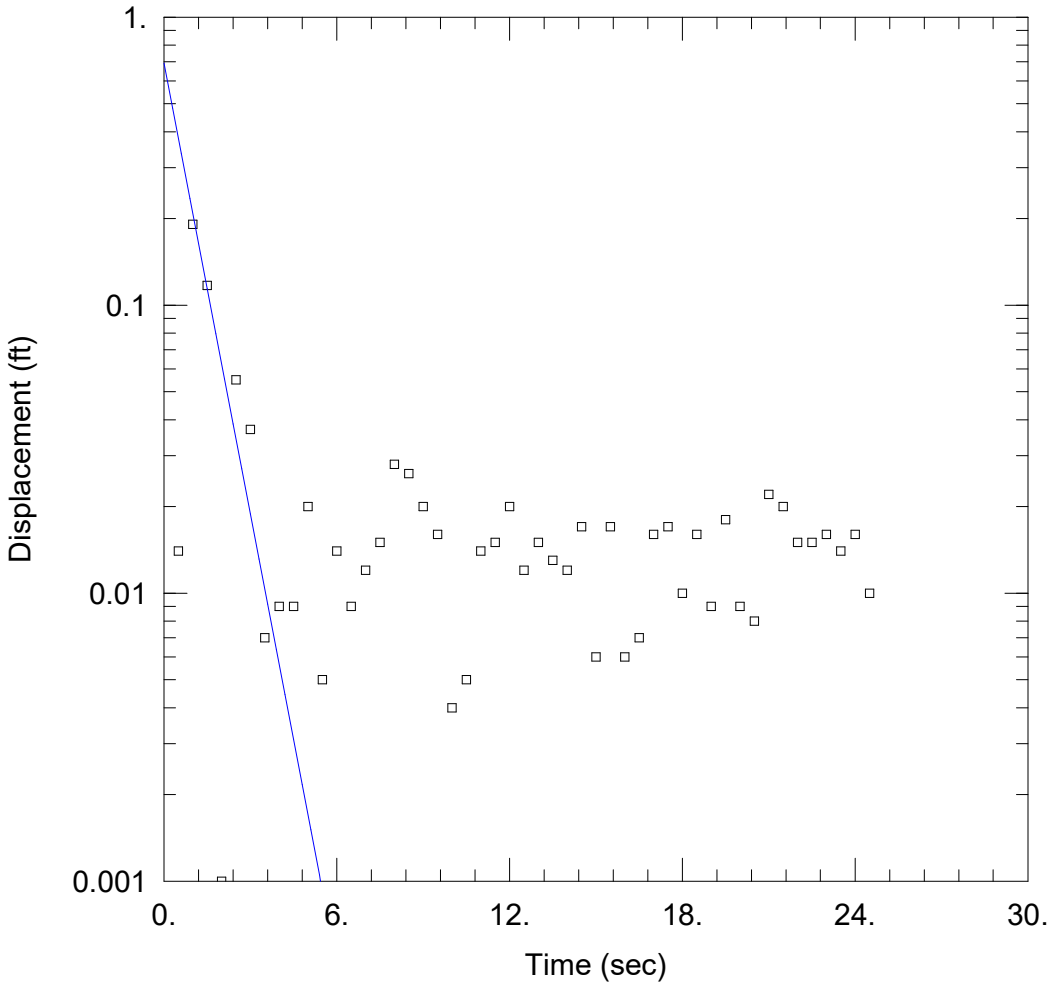
WELL DATA (MW-39B)

Initial Displacement: 0.626 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.06422 cm/sec y0 = 0.6391 ft



WELL TEST ANALYSIS

Data Set: \...\MW39B_F2.aqt
Date: 02/03/23 Time: 15:13:10

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.6 ft Anisotropy Ratio (Kz/Kr): 1.

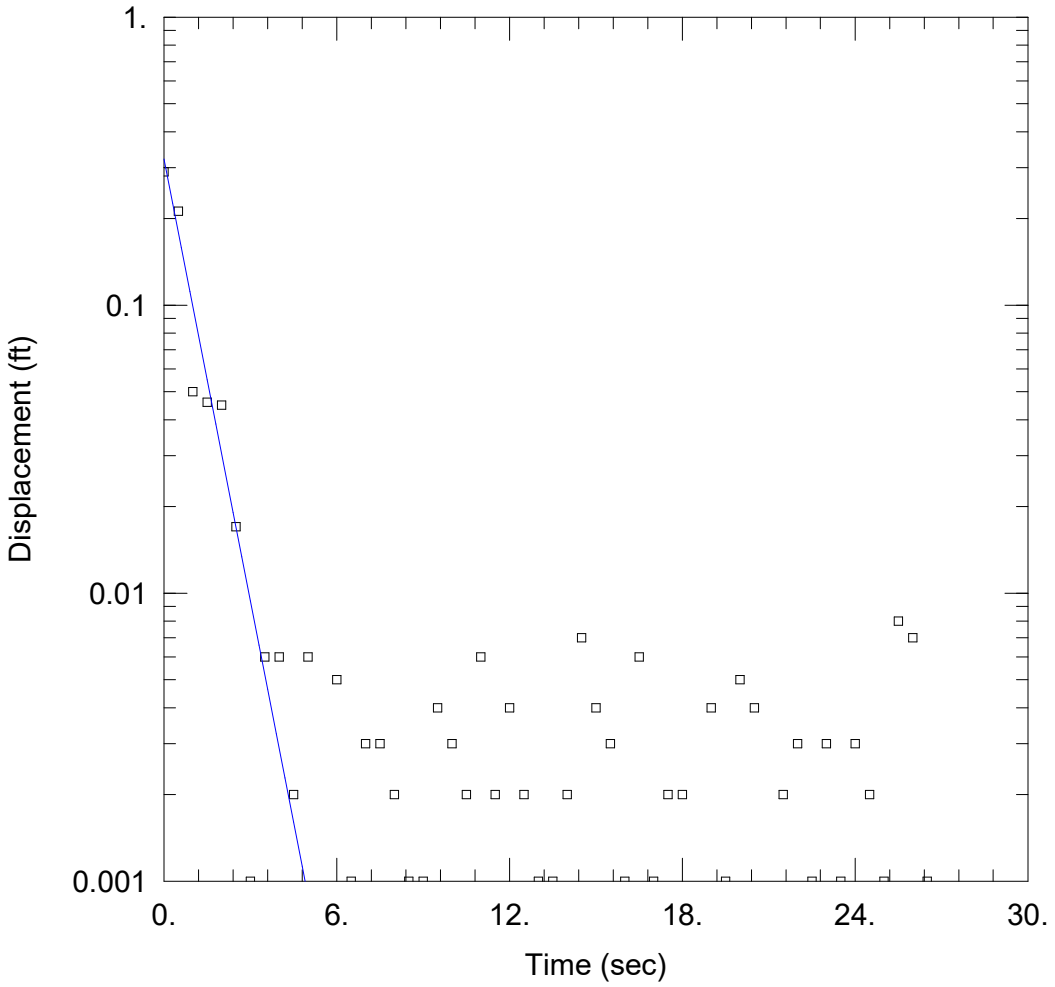
WELL DATA (MW-39B)

Initial Displacement: 1.476 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04369 cm/sec y0 = 0.6923 ft



WELL TEST ANALYSIS

Data Set: \...\MW39B_R1.aqt
Date: 02/24/23 Time: 10:39:08

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.6 ft Anisotropy Ratio (Kz/Kr): 1.

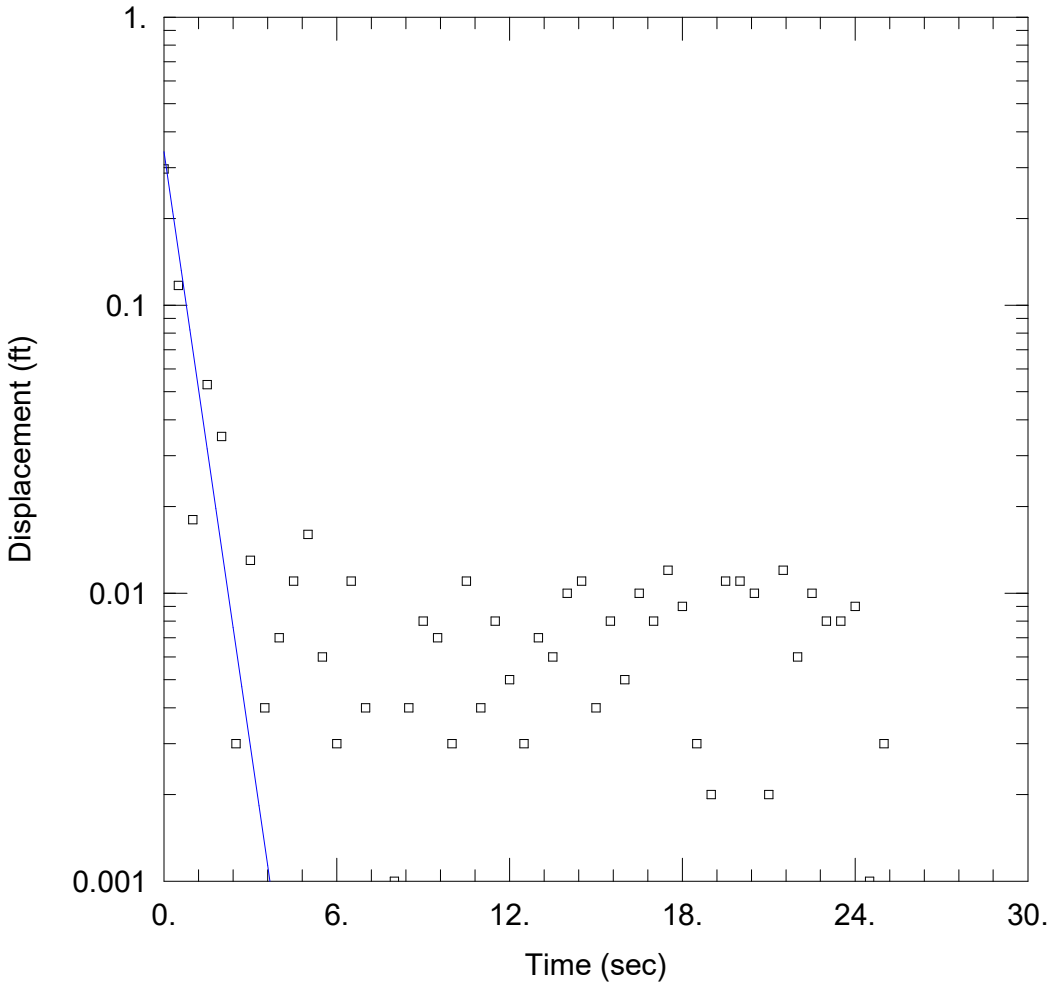
WELL DATA (MW-39B)

Initial Displacement: 0.29 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04283 cm/sec y0 = 0.3219 ft



WELL TEST ANALYSIS

Data Set: \...\MW39B_R2.aqt
Date: 02/03/23 Time: 15:17:41

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 11.6 ft Anisotropy Ratio (Kz/Kr): 1.

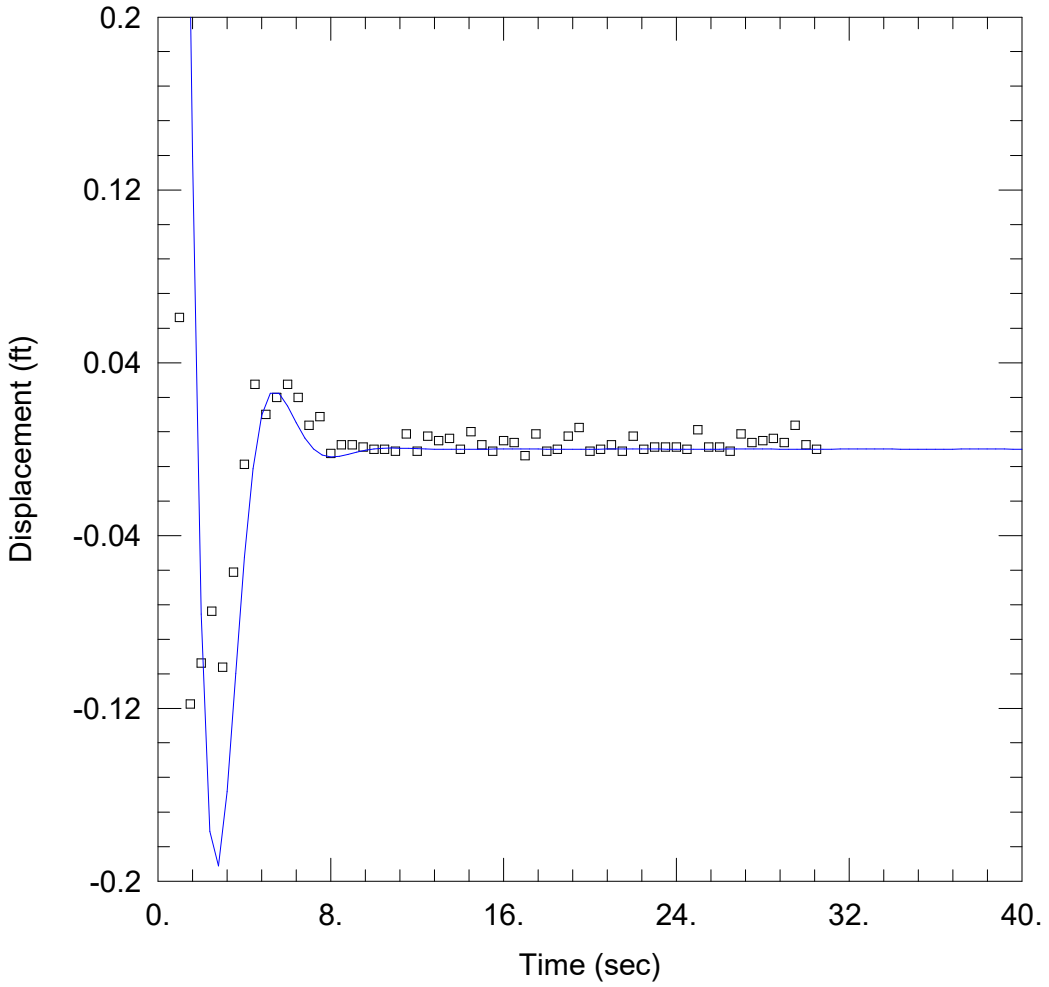
WELL DATA (MW-39B)

Initial Displacement: 0.297 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.05762 cm/sec y0 = 0.3413 ft



WELL TEST ANALYSIS

Data Set: \...\MW-39I_F2.aqt
Date: 02/23/23 Time: 21:10:22

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.8 ft Anisotropy Ratio (Kz/Kr): 1.

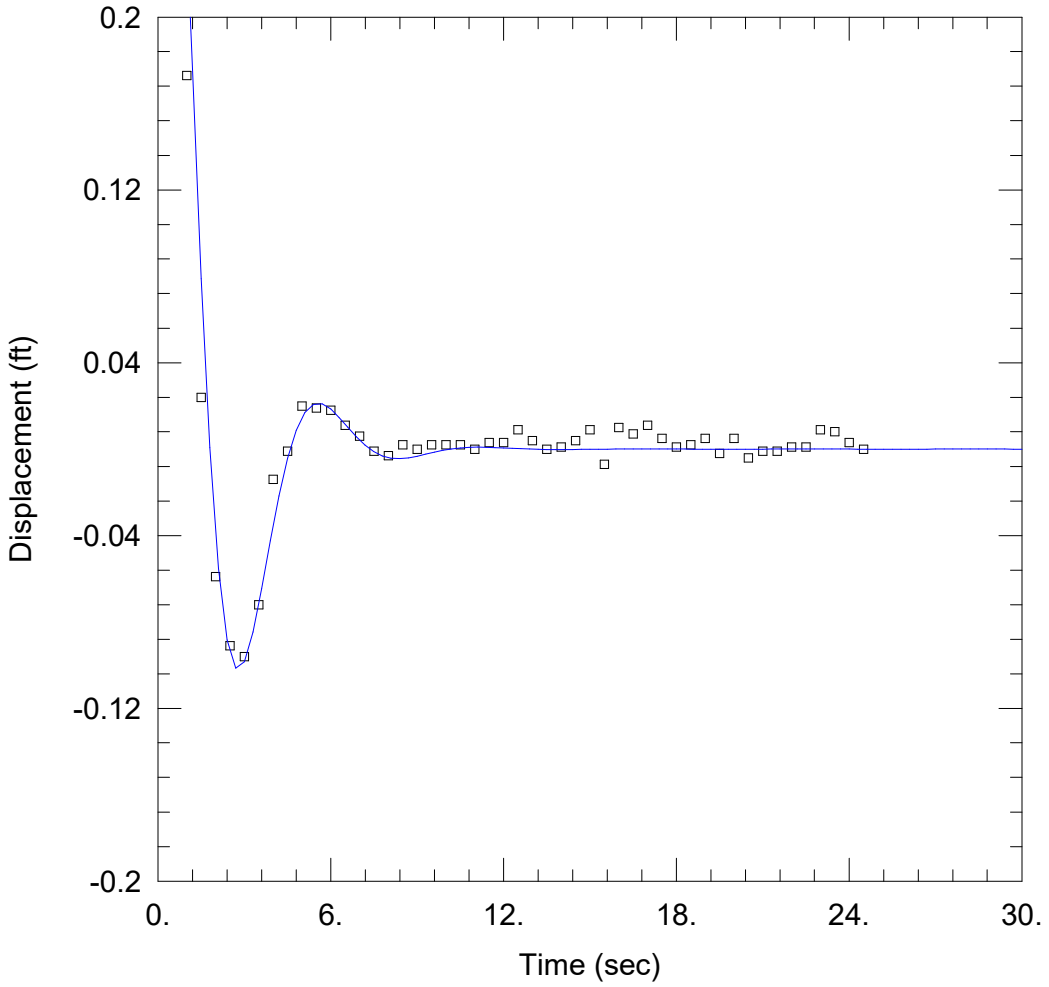
WELL DATA (MW-39I)

Initial Displacement: 1.416 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 27.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04751 cm/sec Le = 16.9 ft



WELL TEST ANALYSIS

Data Set: \...\MW-39I_R1.aqt
Date: 02/23/23 Time: 21:10:38

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.8 ft Anisotropy Ratio (Kz/Kr): 1.

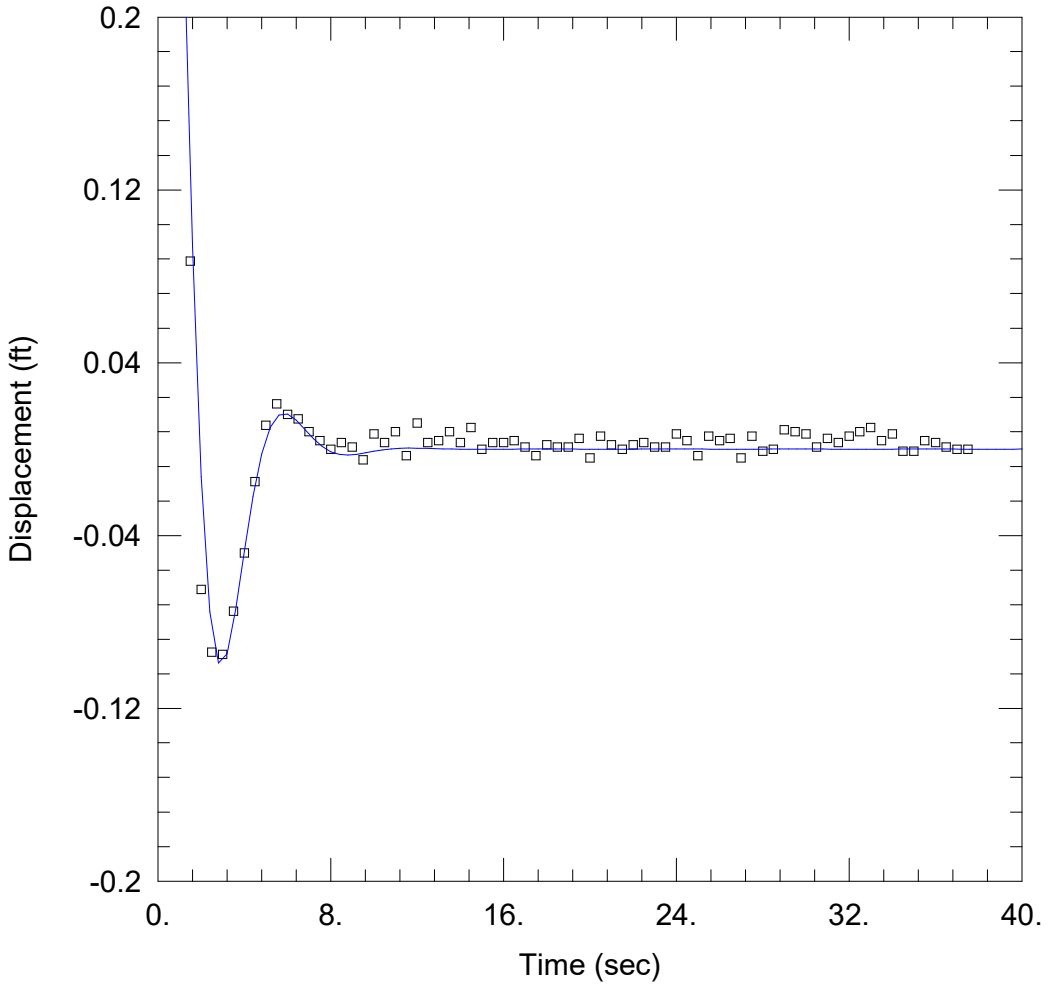
WELL DATA (MW-39I)

Initial Displacement: 0.491 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 27.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05188 cm/sec Le = 20.2 ft



WELL TEST ANALYSIS

Data Set: \...\MW-39I_R2.aqt
Date: 02/23/23 Time: 21:10:53

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-39I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.8 ft Anisotropy Ratio (Kz/Kr): 1.

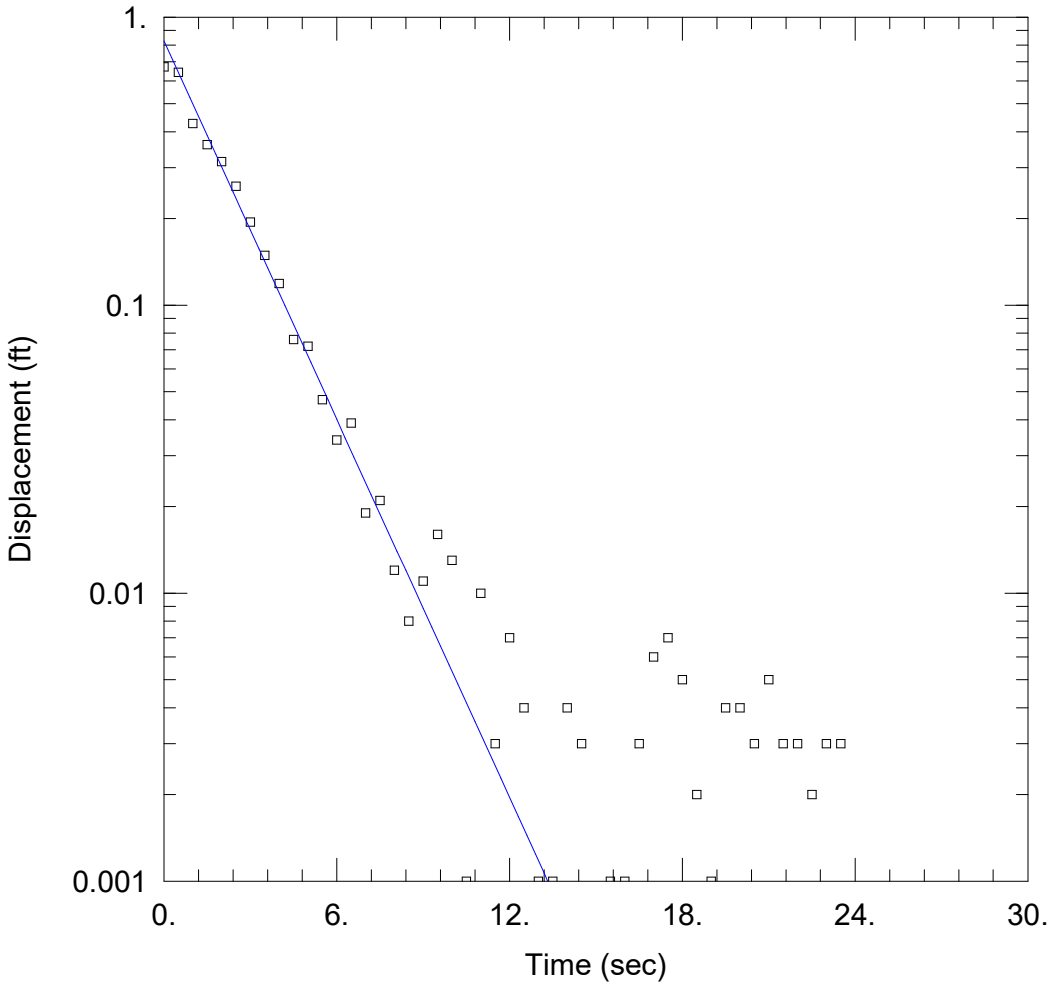
WELL DATA (MW-39I)

Initial Displacement: 0.607 ft
Total Well Penetration Depth: 27.81 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 27.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04584 cm/sec Le = 20.87 ft



WELL TEST ANALYSIS

Data Set: \...\MW40A_F1.aqt
Date: 01/25/23 Time: 17:17:11

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 47.8 ft Anisotropy Ratio (Kz/Kr): 1.

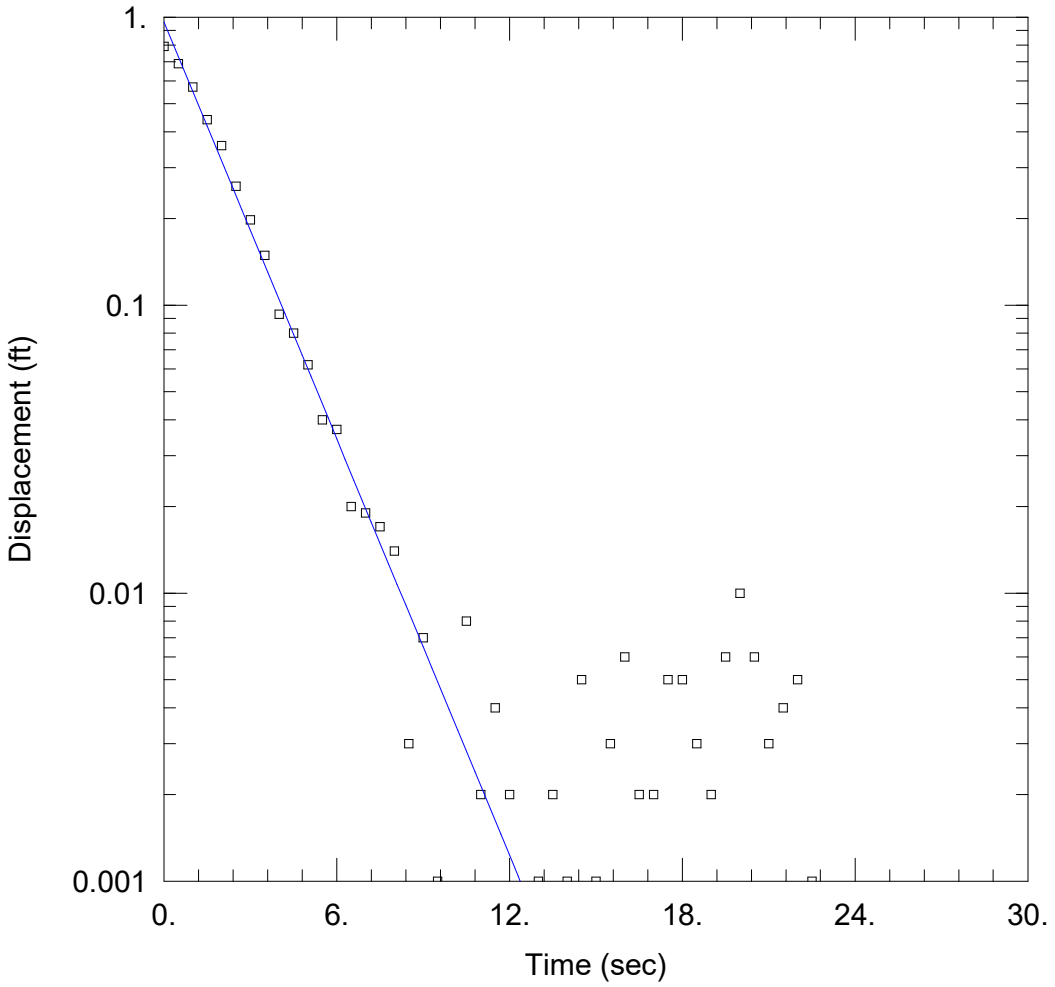
WELL DATA (MW-40A)

Initial Displacement: 0.671 ft
Total Well Penetration Depth: 47.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 47.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01999 cm/sec y0 = 0.8273 ft



WELL TEST ANALYSIS

Data Set: \...\MW40A_R1.aqt
Date: 01/25/23 Time: 17:20:33

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 47.8 ft Anisotropy Ratio (Kz/Kr): 1.

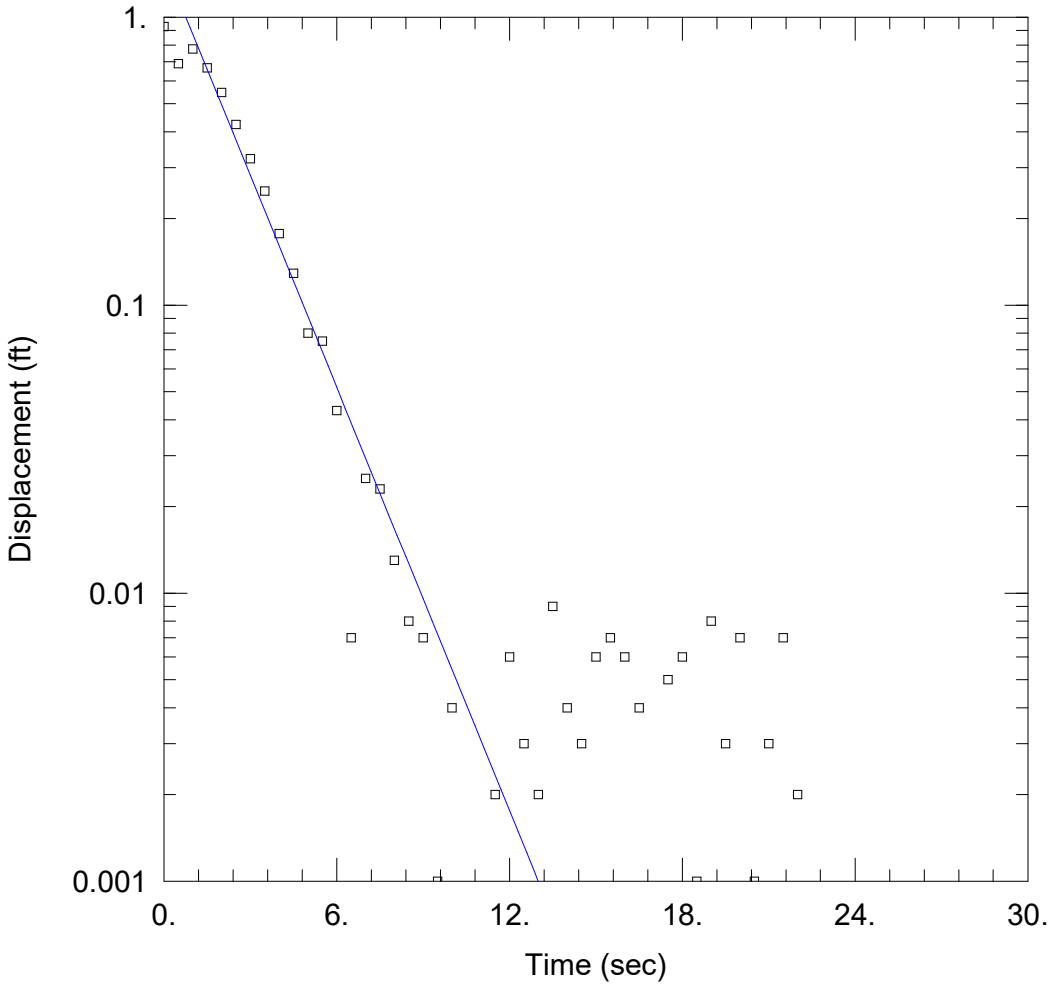
WELL DATA (MW-40A)

Initial Displacement: 0.792 ft
Total Well Penetration Depth: 47.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 47.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02202 cm/sec y0 = 0.9619 ft



WELL TEST ANALYSIS

Data Set: \...\MW40A_R2.aqt
Date: 01/25/23 Time: 17:21:10

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 47.8 ft Anisotropy Ratio (Kz/Kr): 1.

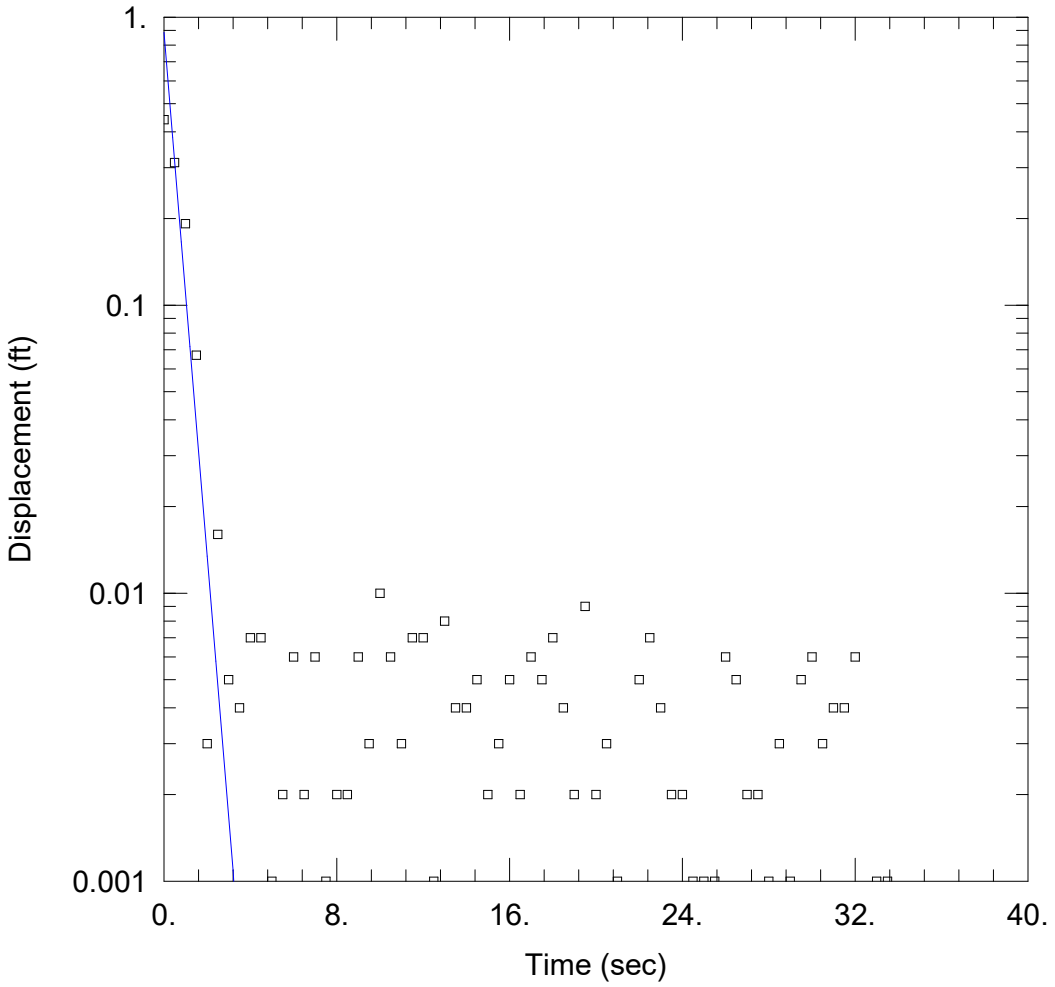
WELL DATA (MW-40A)

Initial Displacement: 0.927 ft
Total Well Penetration Depth: 47.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 47.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02239 cm/sec y0 = 1.535 ft



WELL TEST ANALYSIS

Data Set: \...\MW40B_F1.aqt
Date: 01/25/23 Time: 17:21:46

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

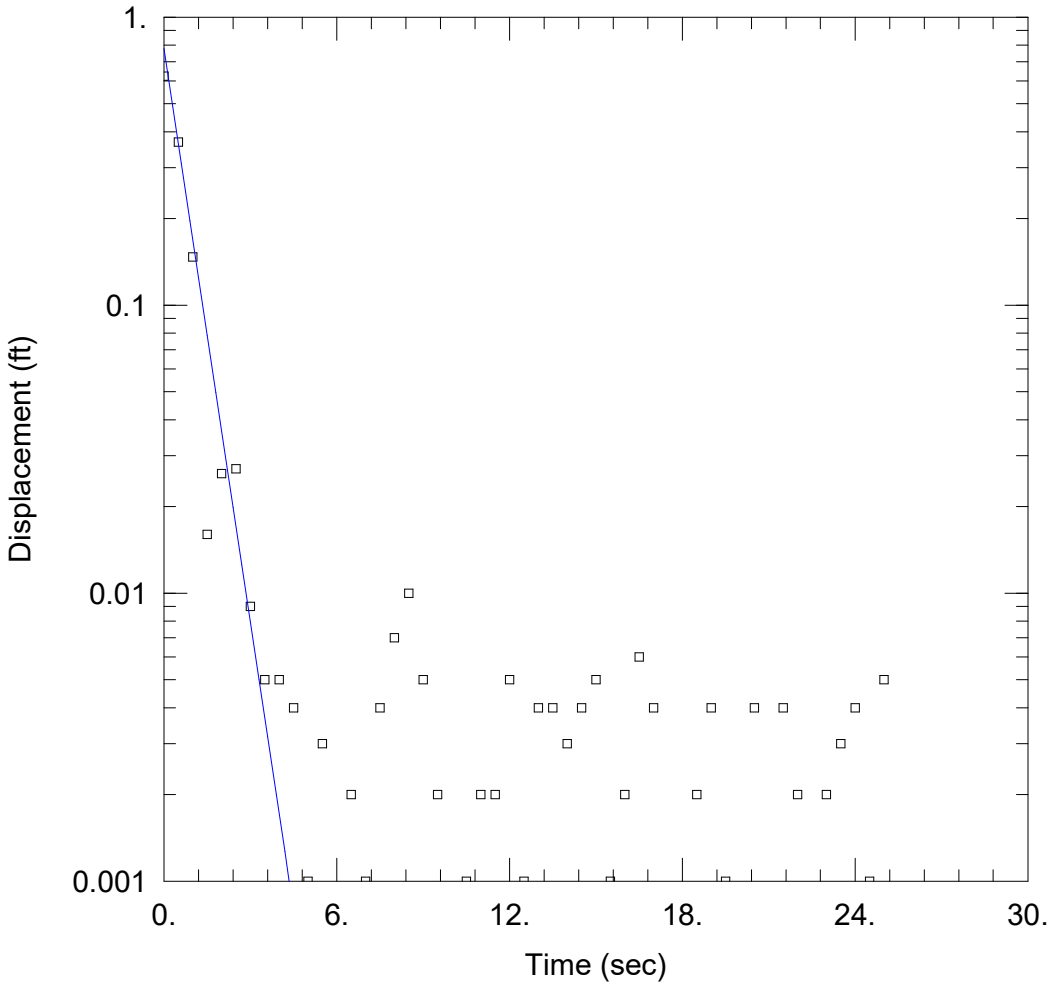
WELL DATA (MW40B)

Initial Displacement: 0.441 ft
Total Well Penetration Depth: 10.71 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 10.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.06325 cm/sec y0 = 0.8852 ft



WELL TEST ANALYSIS

Data Set: \...\MW40B_F2.aqt
Date: 02/03/23 Time: 15:29:18

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

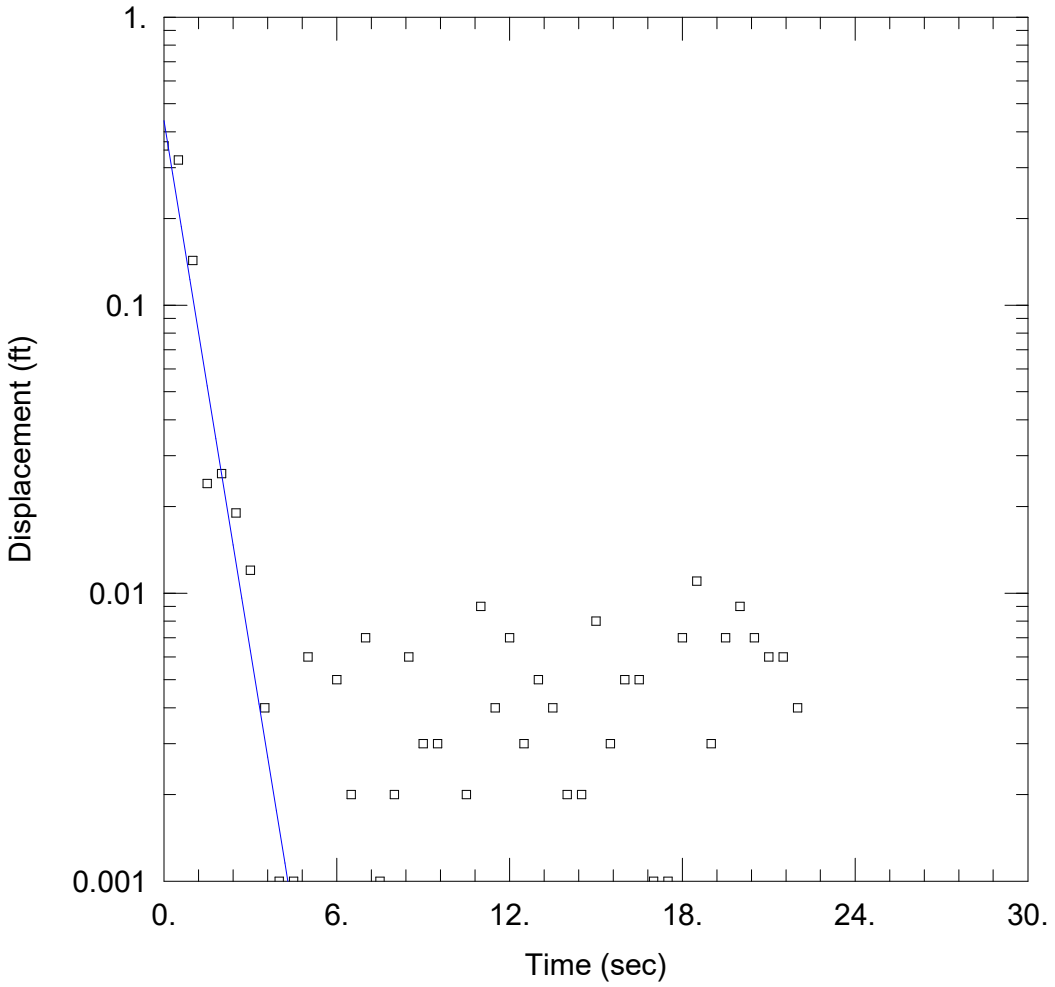
WELL DATA (MW40B)

Initial Displacement: 0.624 ft
Total Well Penetration Depth: 10.71 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 10.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04617 cm/sec y0 = 0.7777 ft



WELL TEST ANALYSIS

Data Set: \...\MW40B_R1.aqt
Date: 02/03/23 Time: 15:33:05

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

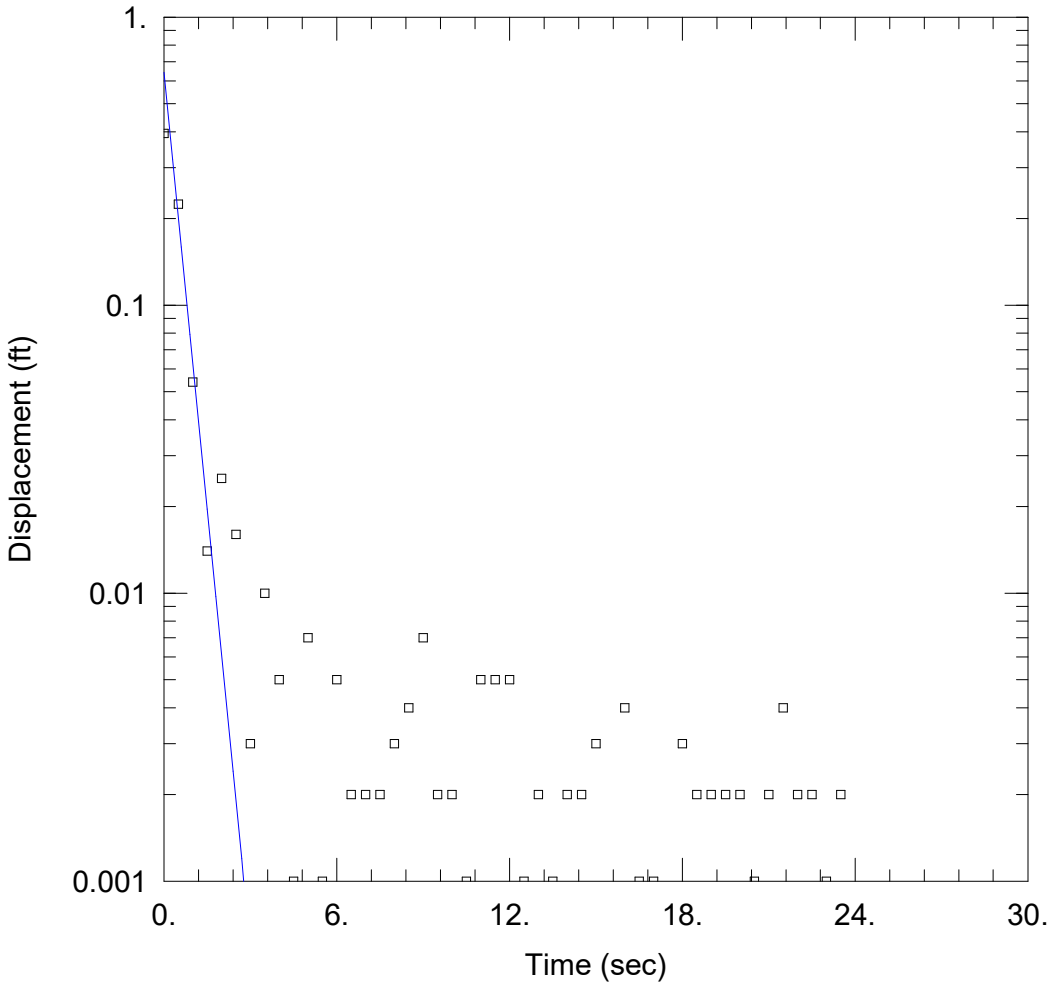
WELL DATA (MW40B)

Initial Displacement: 0.357 ft
Total Well Penetration Depth: 10.71 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 10.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.04269 cm/sec y0 = 0.4373 ft



WELL TEST ANALYSIS

Data Set: \...\MW40B_R2.aqt
Date: 01/25/23 Time: 17:22:48

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

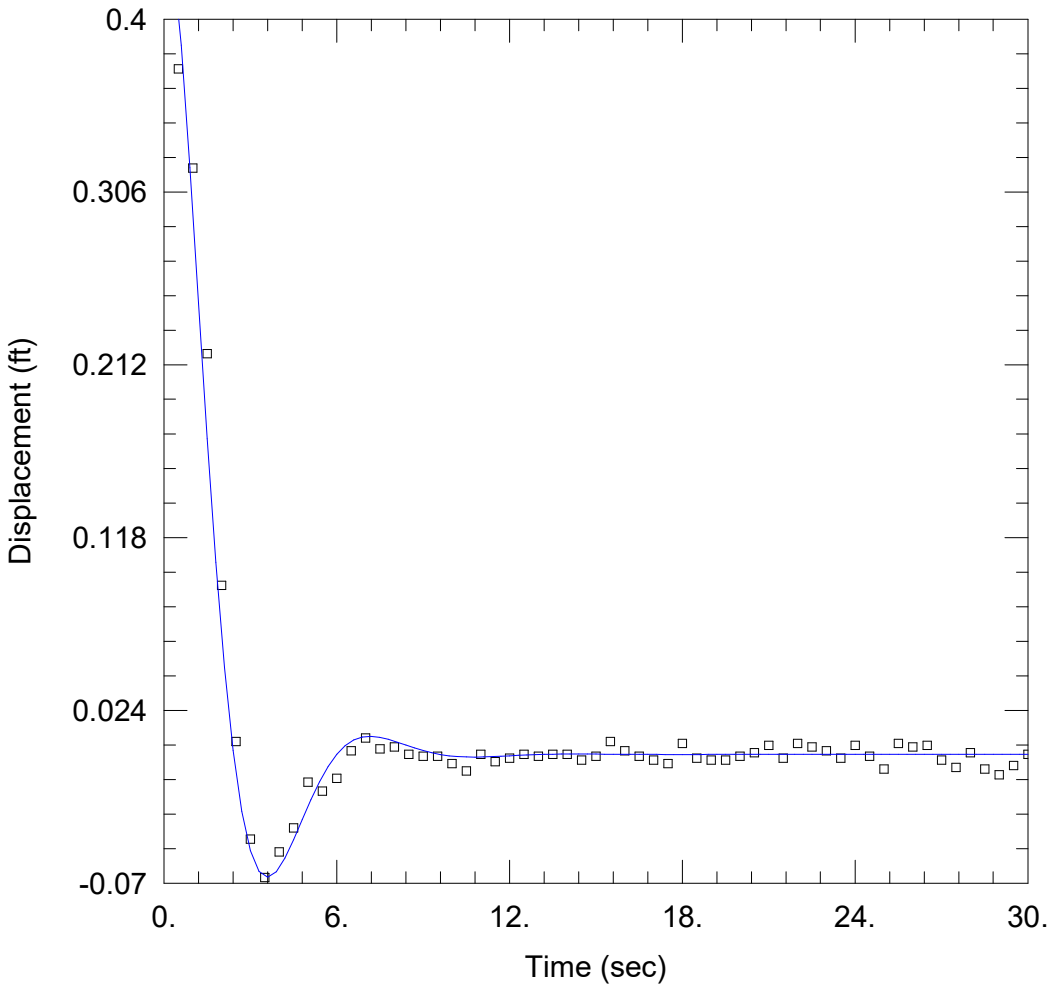
WELL DATA (MW40B)

Initial Displacement: 0.395 ft
Total Well Penetration Depth: 10.71 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 10.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0703 cm/sec y0 = 0.6424 ft



WELL TEST ANALYSIS

Data Set: \...\MW40I_F1.aqt
Date: 02/23/23 Time: 21:11:31

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

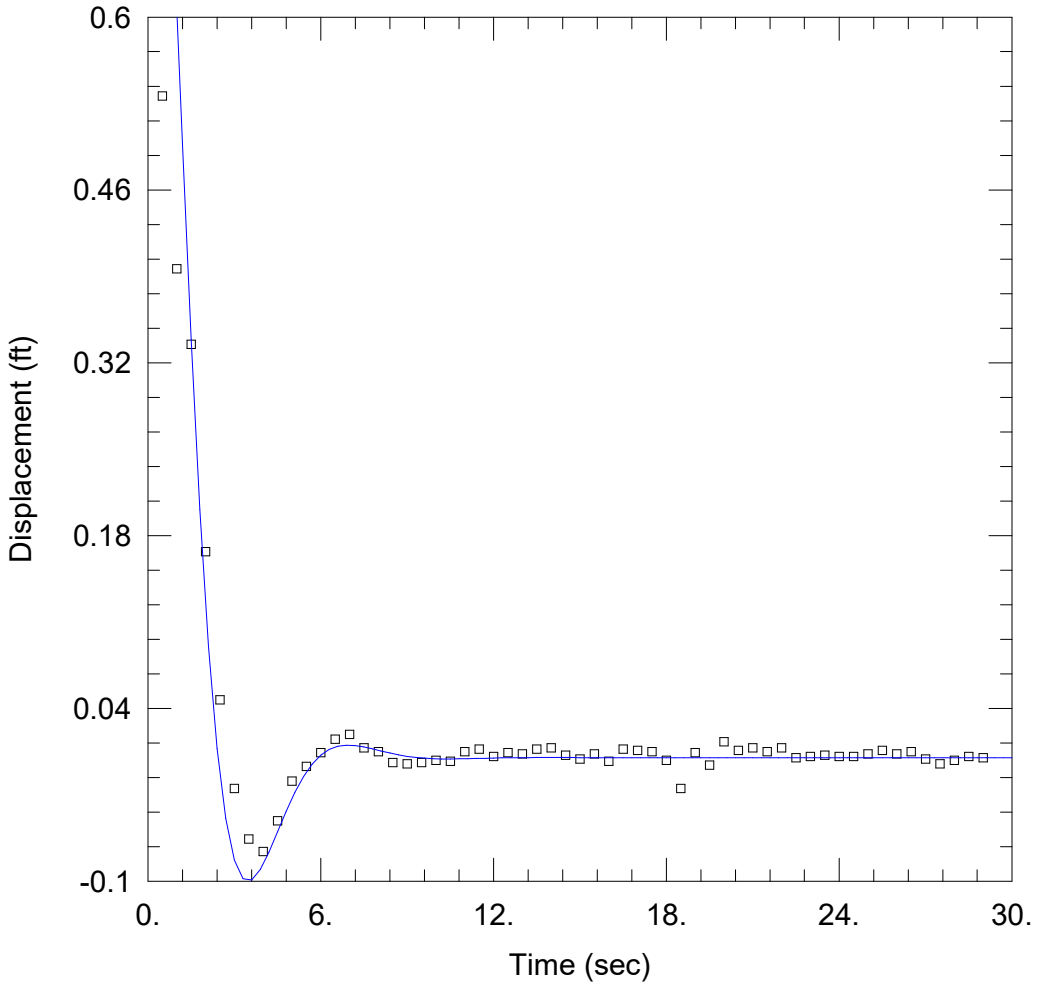
WELL DATA (MW-40I)

Initial Displacement: 0.454 ft
Total Well Penetration Depth: 29.66 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03774 cm/sec Le = 30.53 ft



WELL TEST ANALYSIS

Data Set: \...\MW40I_F2.aqt
Date: 02/23/23 Time: 21:11:48

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

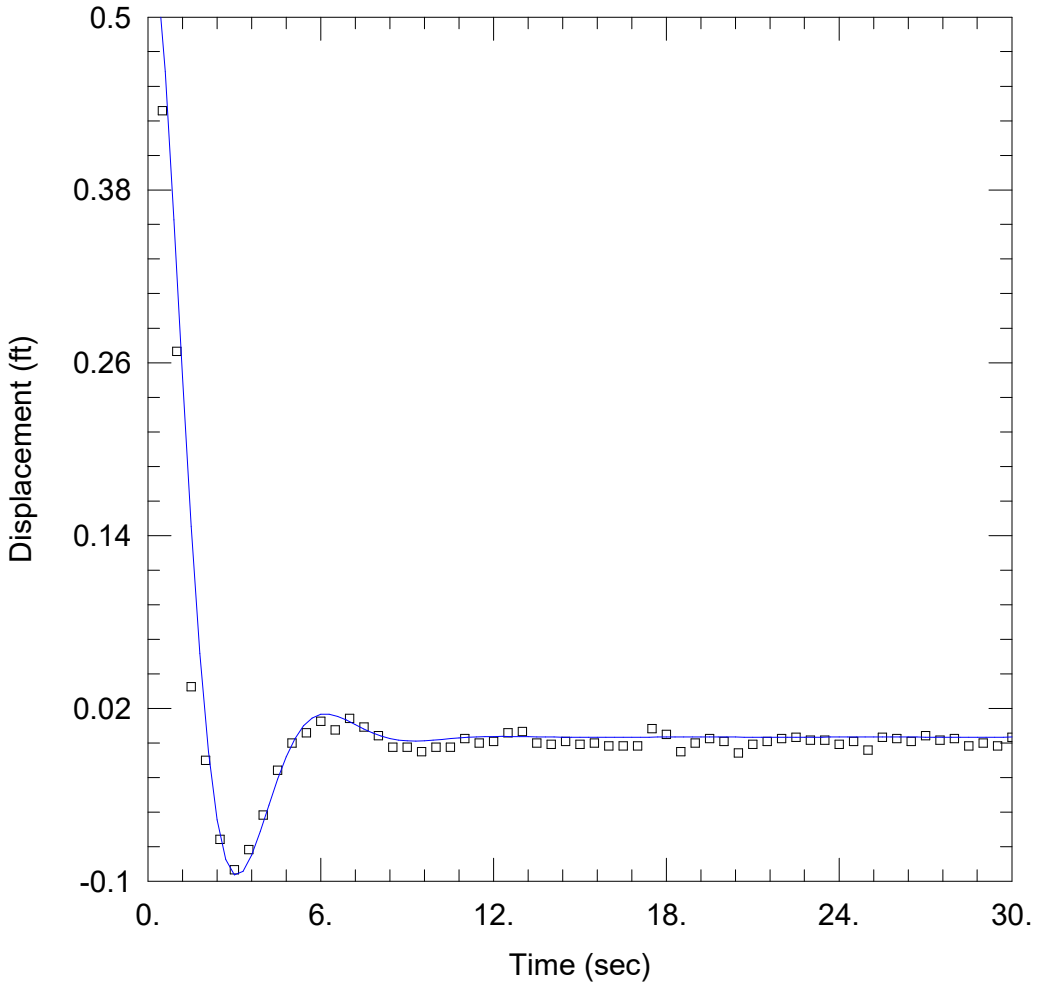
WELL DATA (MW-40I)

Initial Displacement: 0.984 ft
Total Well Penetration Depth: 29.66 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03638 cm/sec Le = 25.69 ft



WELL TEST ANALYSIS

Data Set: \...\MW40I_R1.aqt
Date: 02/23/23 Time: 21:12:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

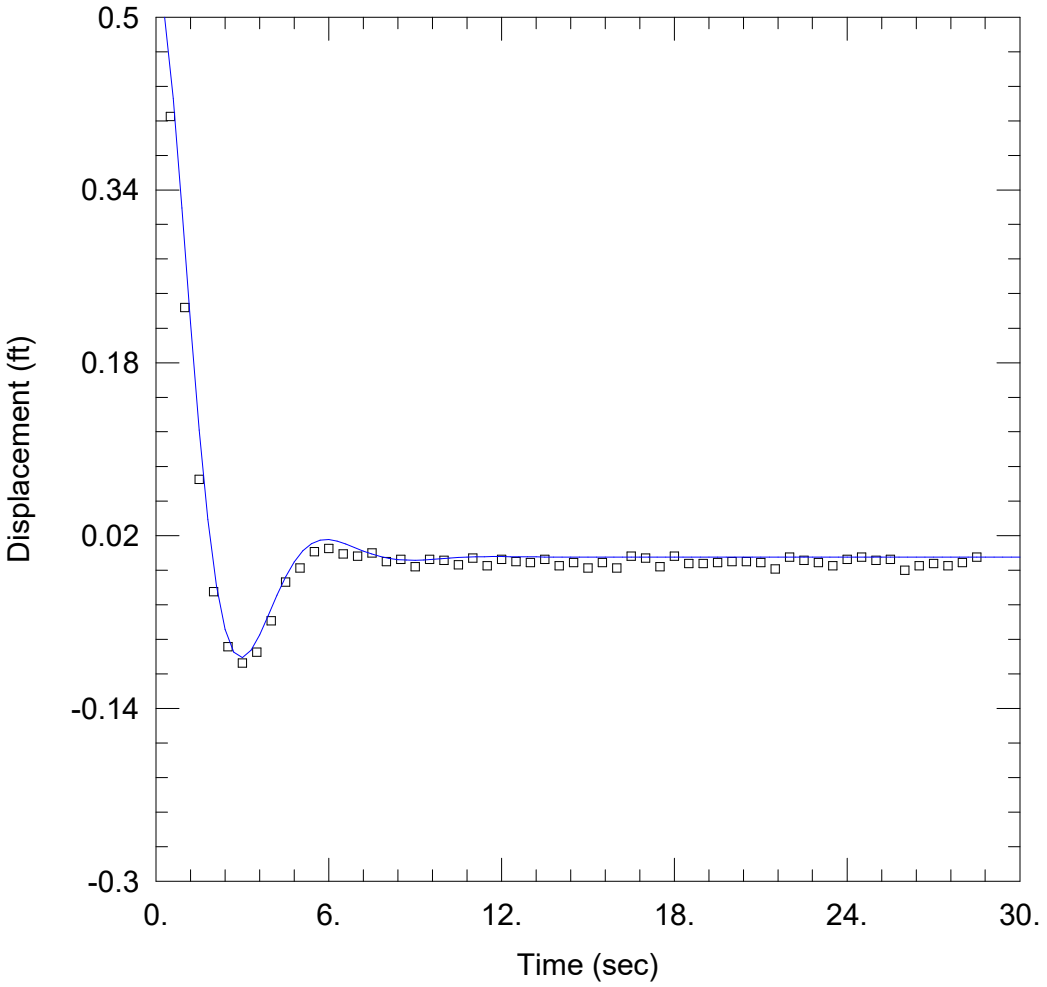
WELL DATA (MW-40I)

Initial Displacement: 0.571 ft
Total Well Penetration Depth: 29.66 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04551 cm/sec Le = 23.45 ft



WELL TEST ANALYSIS

Data Set: \...\MW40I_R2.aqt
Date: 02/23/23 Time: 21:12:55

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-40I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 29.7 ft Anisotropy Ratio (Kz/Kr): 1.

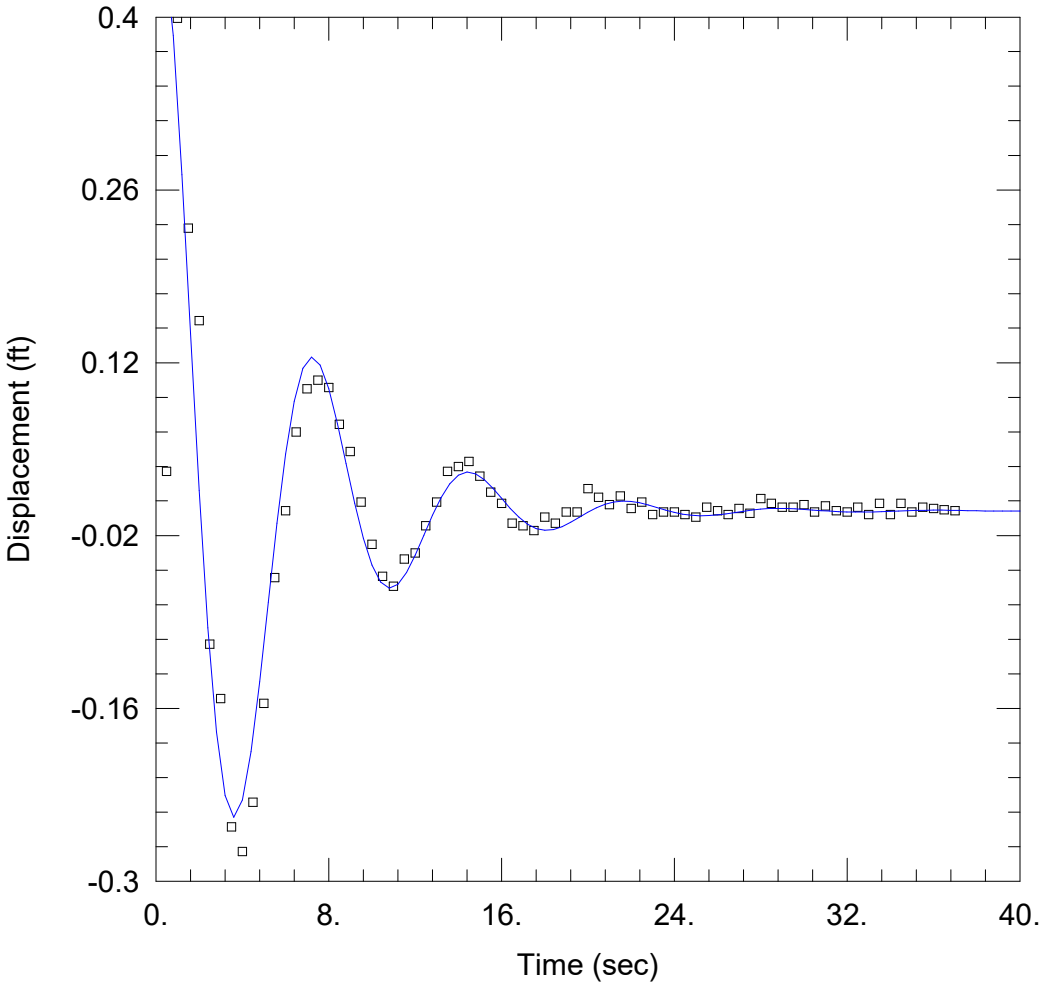
WELL DATA (MW-40I)

Initial Displacement: 0.533 ft
Total Well Penetration Depth: 29.66 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.7 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04798 cm/sec Le = 21.83 ft



WELL TEST ANALYSIS

Data Set: \...\MW41A_F2.aqt
Date: 02/23/23 Time: 21:13:38

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 45.4 ft Anisotropy Ratio (Kz/Kr): 1.

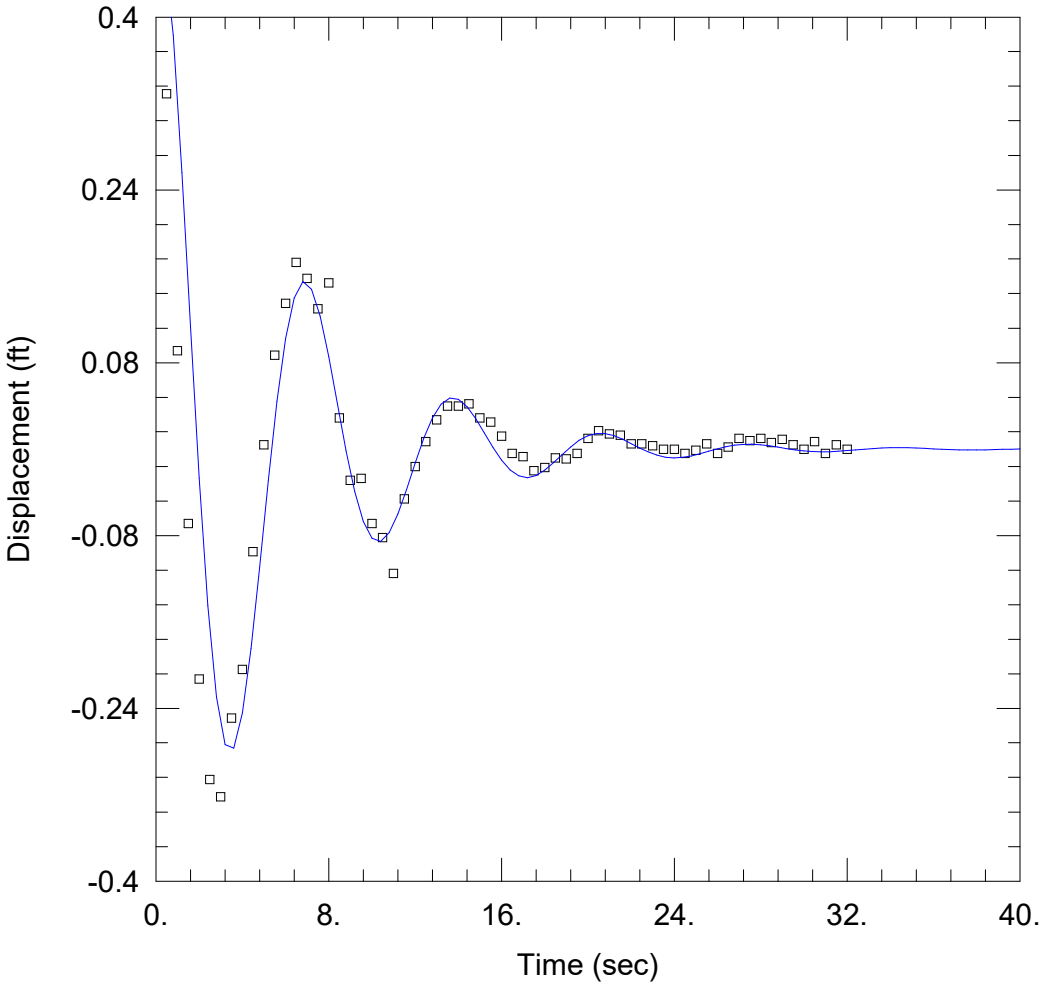
WELL DATA (MW-41A)

Initial Displacement: 0.494 ft
Total Well Penetration Depth: 45.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.08468 cm/sec Le = 40.6 ft



WELL TEST ANALYSIS

Data Set: \...\MW41A_R1.aqt
Date: 02/23/23 Time: 21:14:12

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 45.4 ft Anisotropy Ratio (Kz/Kr): 1.

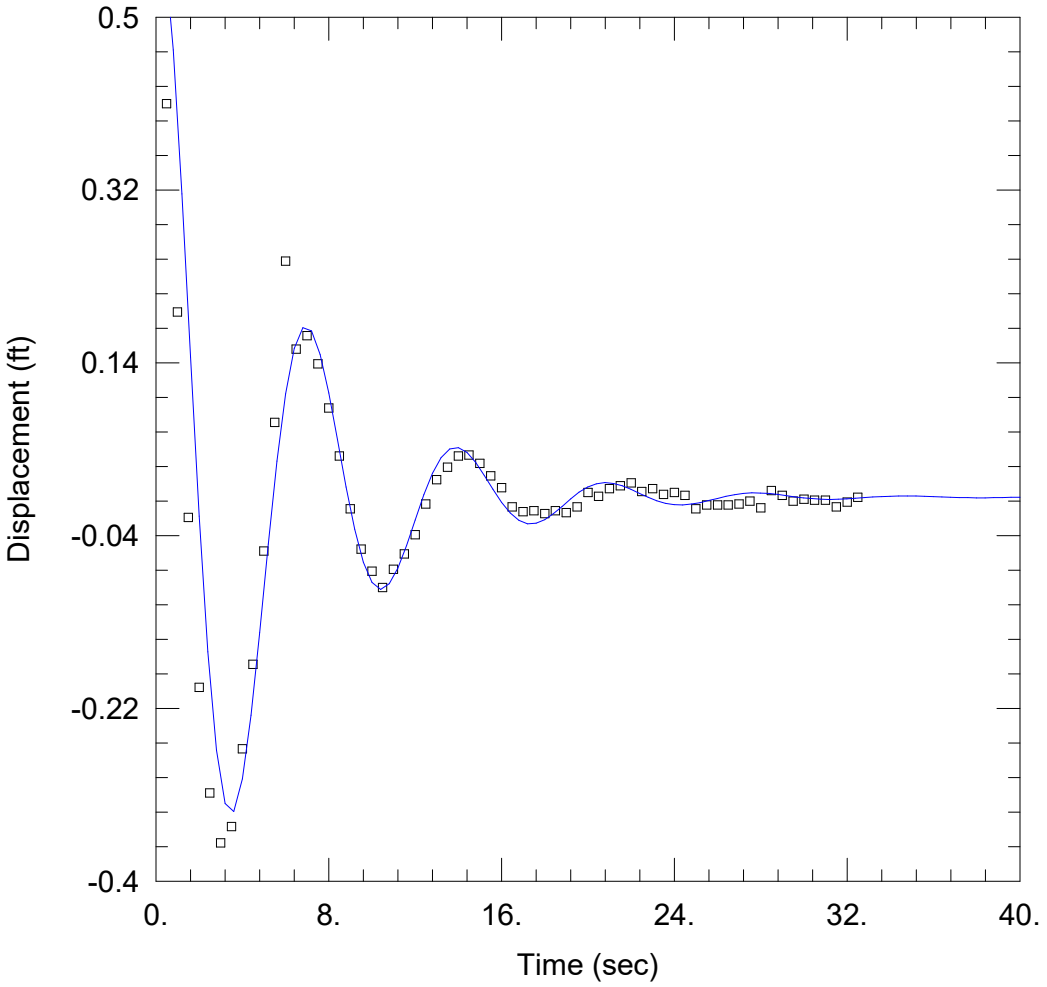
WELL DATA (MW-41A)

Initial Displacement: 0.506 ft
Total Well Penetration Depth: 45.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.1034 cm/sec Le = 37.1 ft



WELL TEST ANALYSIS

Data Set: \...\MW41A_R2.aqt
Date: 02/23/23 Time: 21:14:44

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41A
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 45.4 ft Anisotropy Ratio (Kz/Kr): 1.

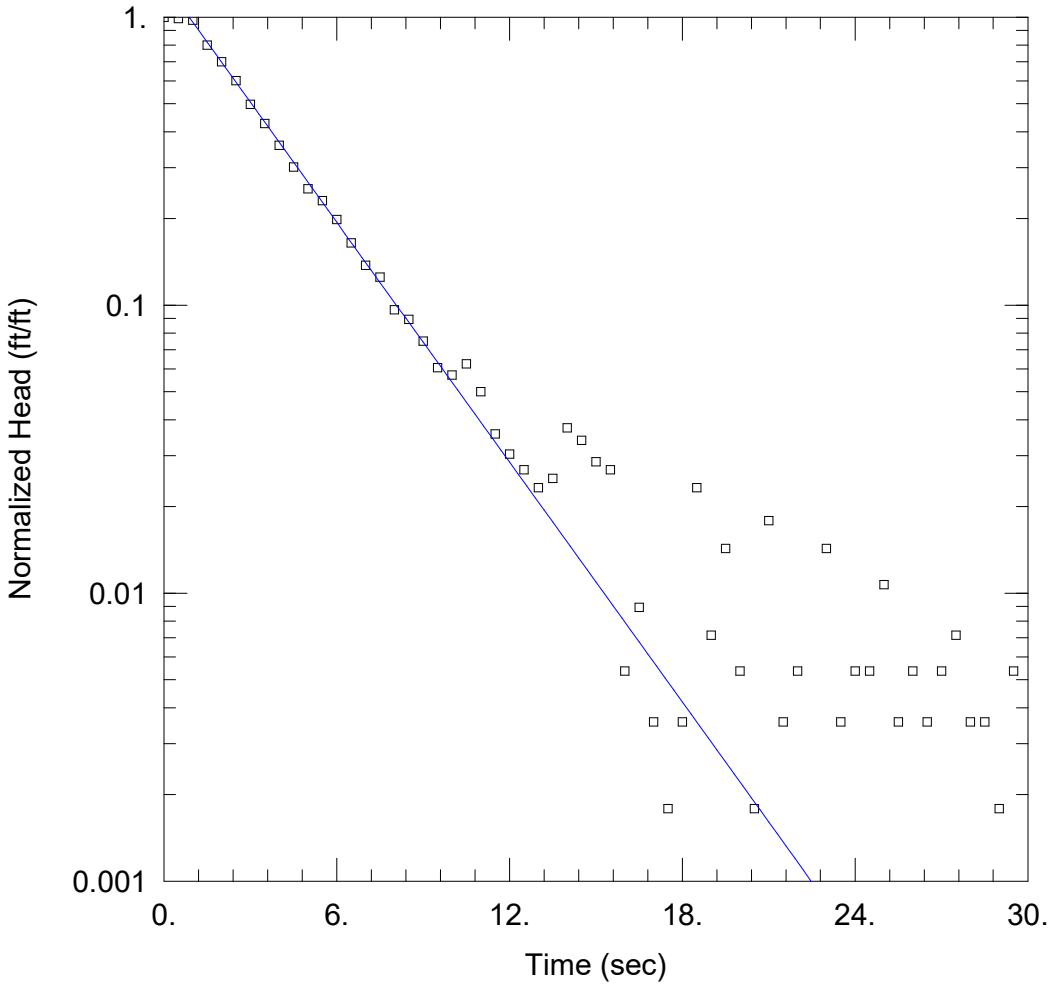
WELL DATA (MW-41A)

Initial Displacement: 0.611 ft
Total Well Penetration Depth: 45.4 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 45.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.098 cm/sec Le = 37.81 ft



WELL TEST ANALYSIS

Data Set: \...\MW41B_F1.aqt
Date: 01/25/23 Time: 18:10:12

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 8.9 ft Anisotropy Ratio (Kz/Kr): 1.

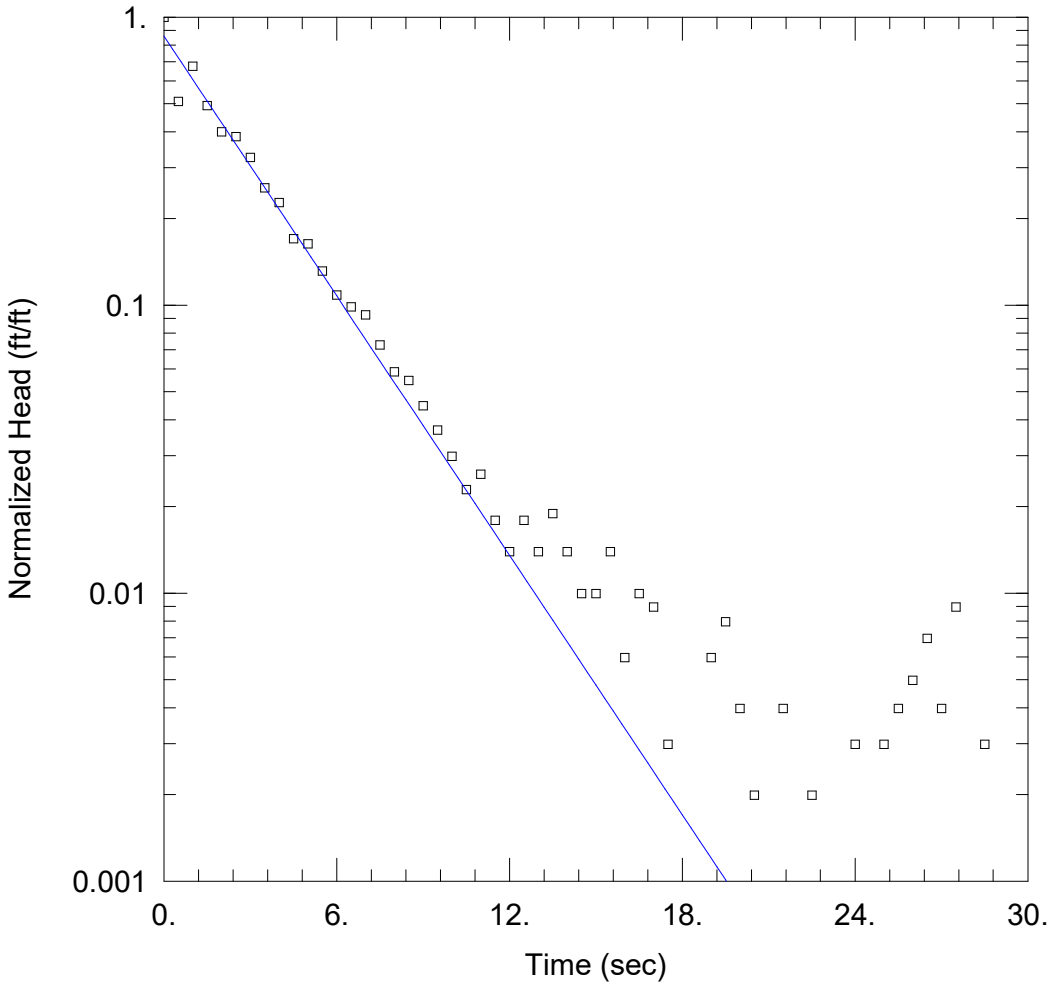
WELL DATA (MW-41B)

Initial Displacement: 0.56 ft
Total Well Penetration Depth: 11.14 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02824 cm/sec y0 = 0.7406 ft



WELL TEST ANALYSIS

Data Set: \...\MW41B_F2.aqt
Date: 01/25/23 Time: 18:10:34

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 8.9 ft Anisotropy Ratio (Kz/Kr): 1.

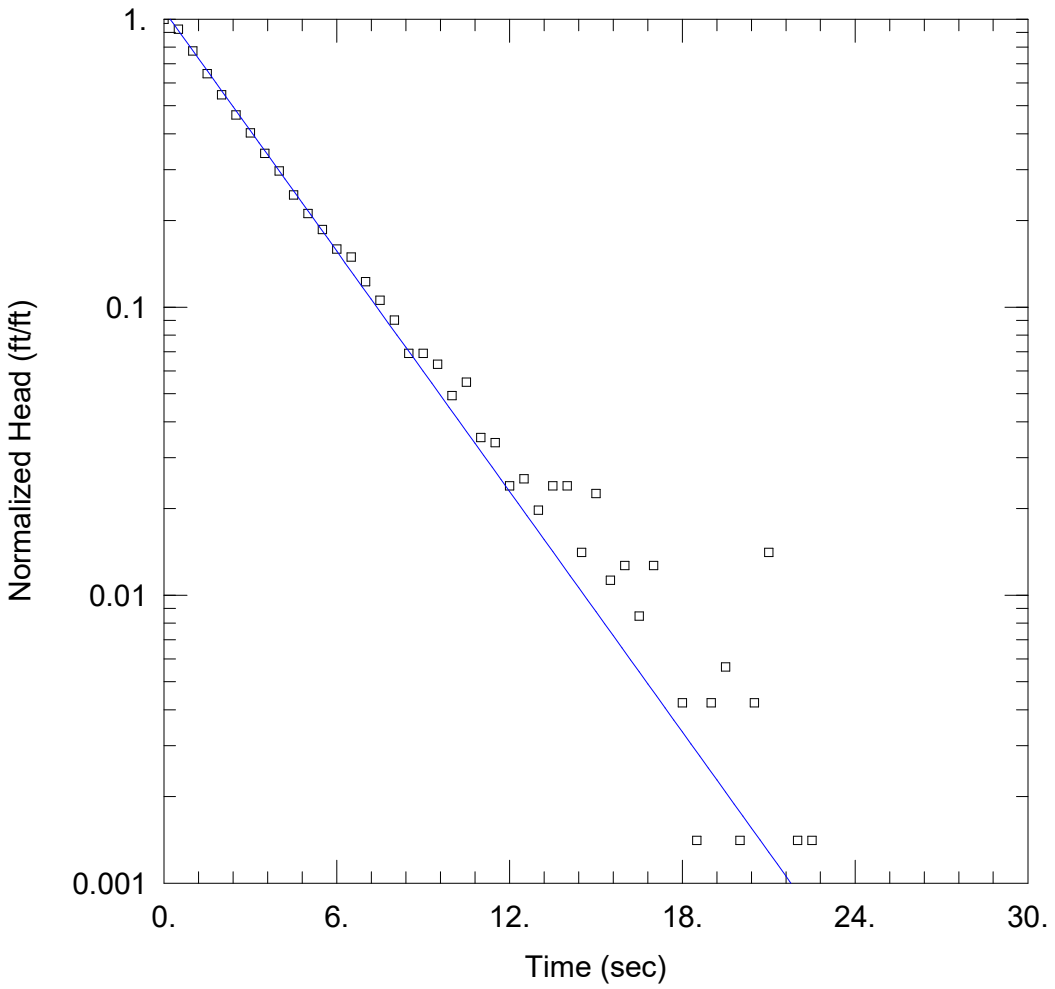
WELL DATA (MW-41B)

Initial Displacement: 1.005 ft
Total Well Penetration Depth: 11.14 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03054 cm/sec y0 = 0.8624 ft



WELL TEST ANALYSIS

Data Set: \...\MW41B_R1.aqt
Date: 01/25/23 Time: 18:10:52

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 8.9 ft Anisotropy Ratio (Kz/Kr): 1.

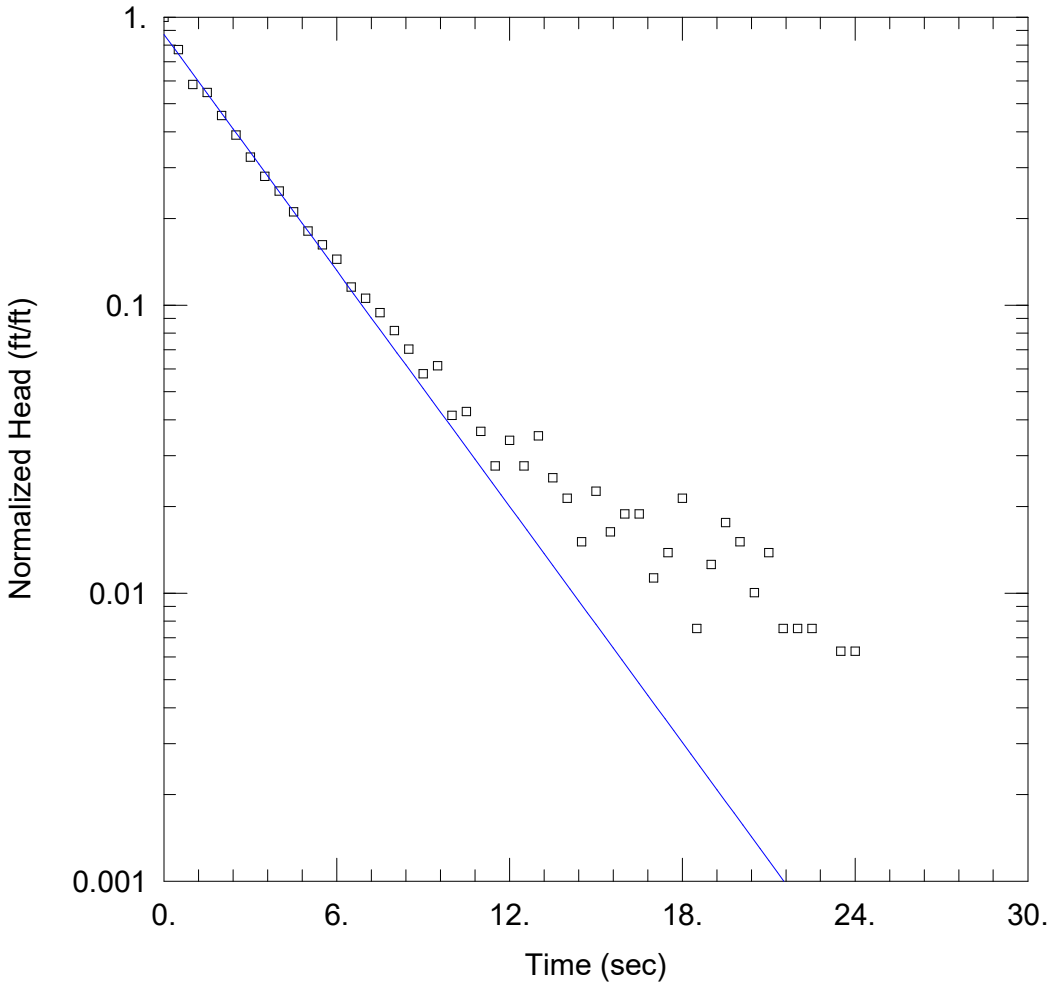
WELL DATA (MW-41B)

Initial Displacement: 0.71 ft
Total Well Penetration Depth: 11.14 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0283 cm/sec y0 = 0.7607 ft



WELL TEST ANALYSIS

Data Set: \...\MW41B_R2.aqt
Date: 01/25/23 Time: 18:11:15

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41B
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 8.9 ft Anisotropy Ratio (Kz/Kr): 1.

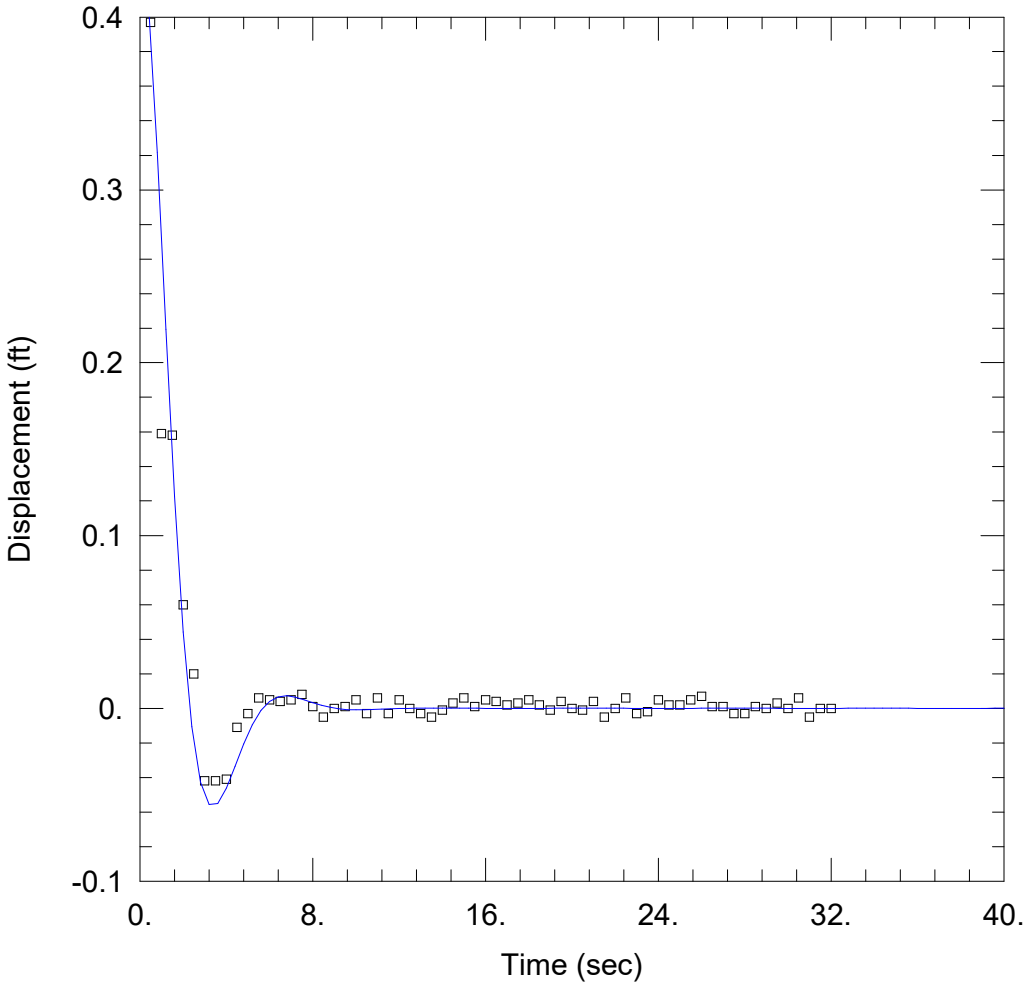
WELL DATA (MW-41B)

Initial Displacement: 0.796 ft
Total Well Penetration Depth: 11.14 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02777 cm/sec y0 = 0.6932 ft



WELL TEST ANALYSIS

Data Set: \...\MW41I_F2.aqt
Date: 02/23/23 Time: 21:15:15

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 28.6 ft Anisotropy Ratio (Kz/Kr): 1.

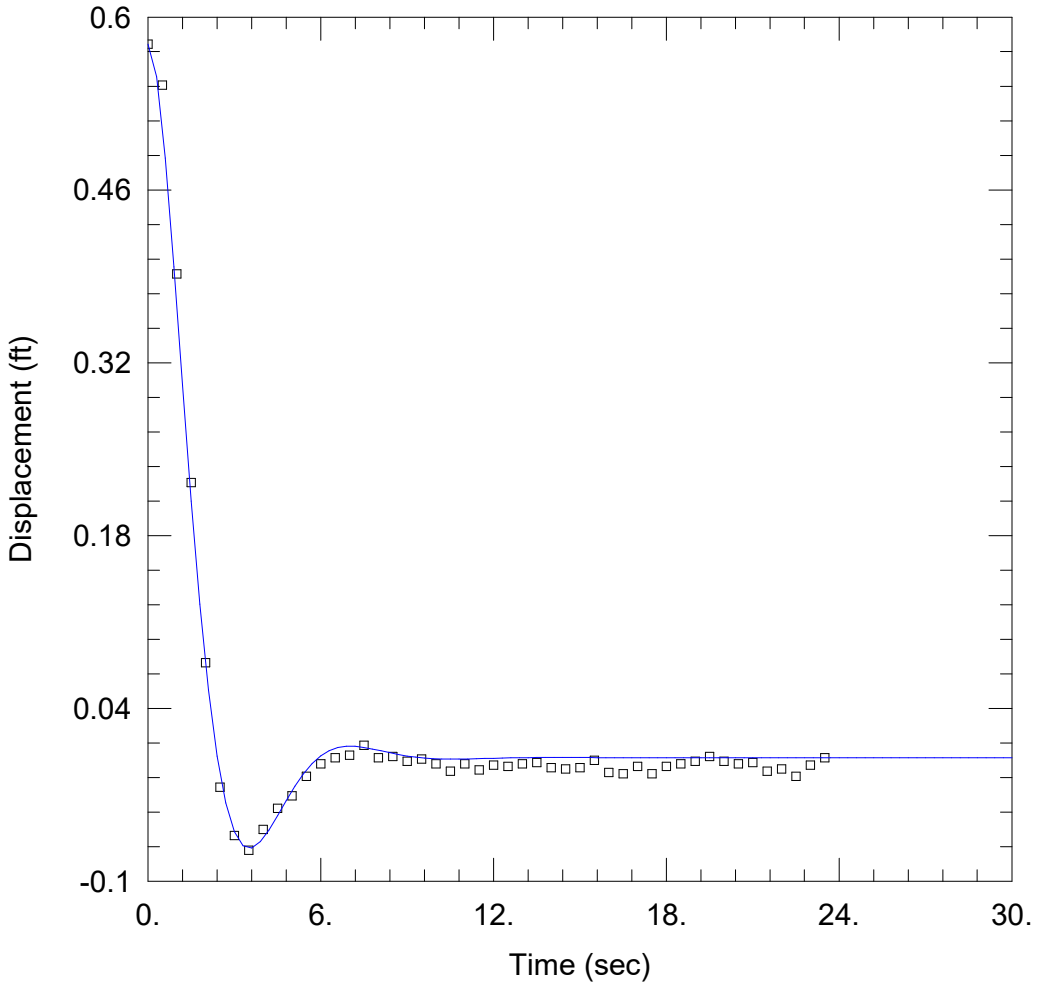
WELL DATA (MW-41I)

Initial Displacement: 0.445 ft
Total Well Penetration Depth: 28.56 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 28.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03866 cm/sec Le = 25.88 ft



WELL TEST ANALYSIS

Data Set: \...\MW41I_R1.aqt
Date: 02/23/23 Time: 21:15:29

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 28.6 ft Anisotropy Ratio (Kz/Kr): 1.

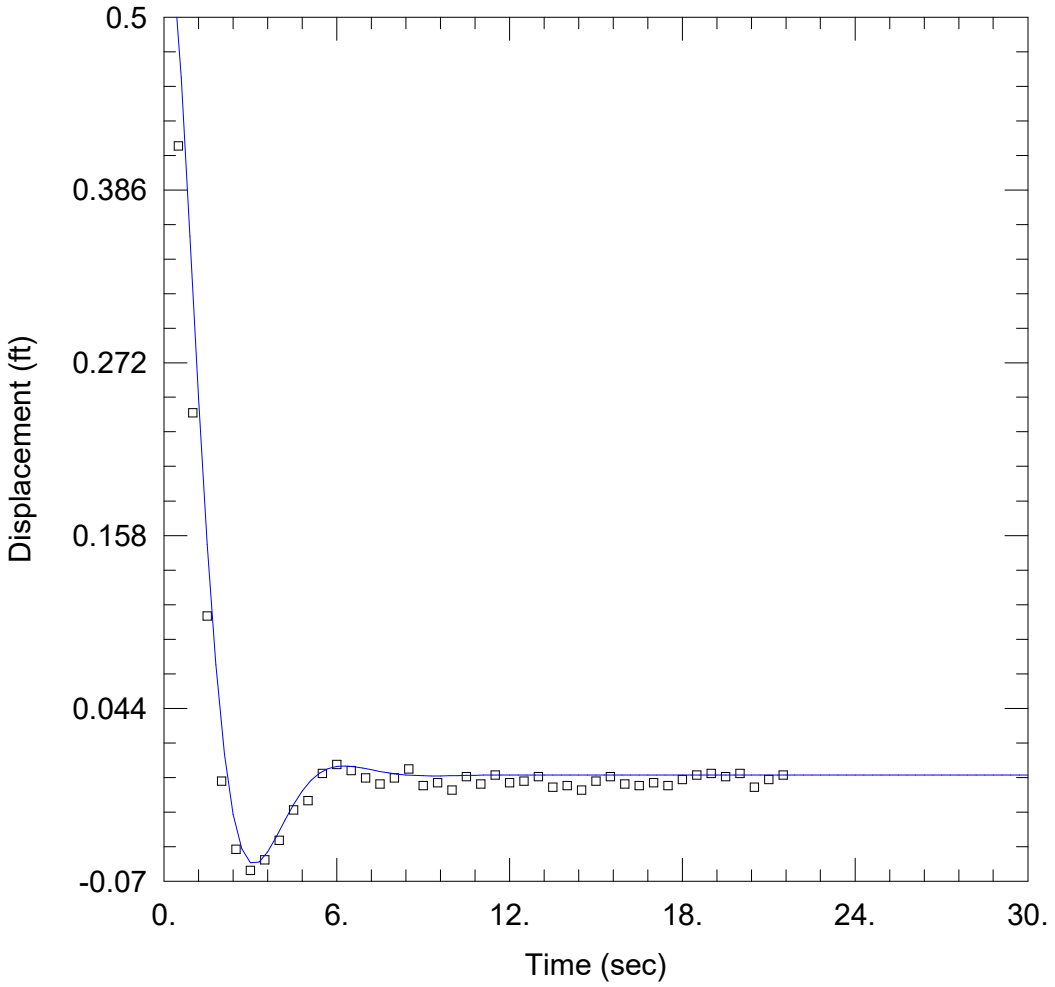
WELL DATA (MW-41I)

Initial Displacement: 0.578 ft
Total Well Penetration Depth: 28.56 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 28.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03701 cm/sec Le = 28.14 ft



WELL TEST ANALYSIS

Data Set: \...\MW41I_R2.aqt
Date: 02/23/23 Time: 21:15:47

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-41I
Test Date: 12/20/22

AQUIFER DATA

Saturated Thickness: 28.6 ft Anisotropy Ratio (Kz/Kr): 1.

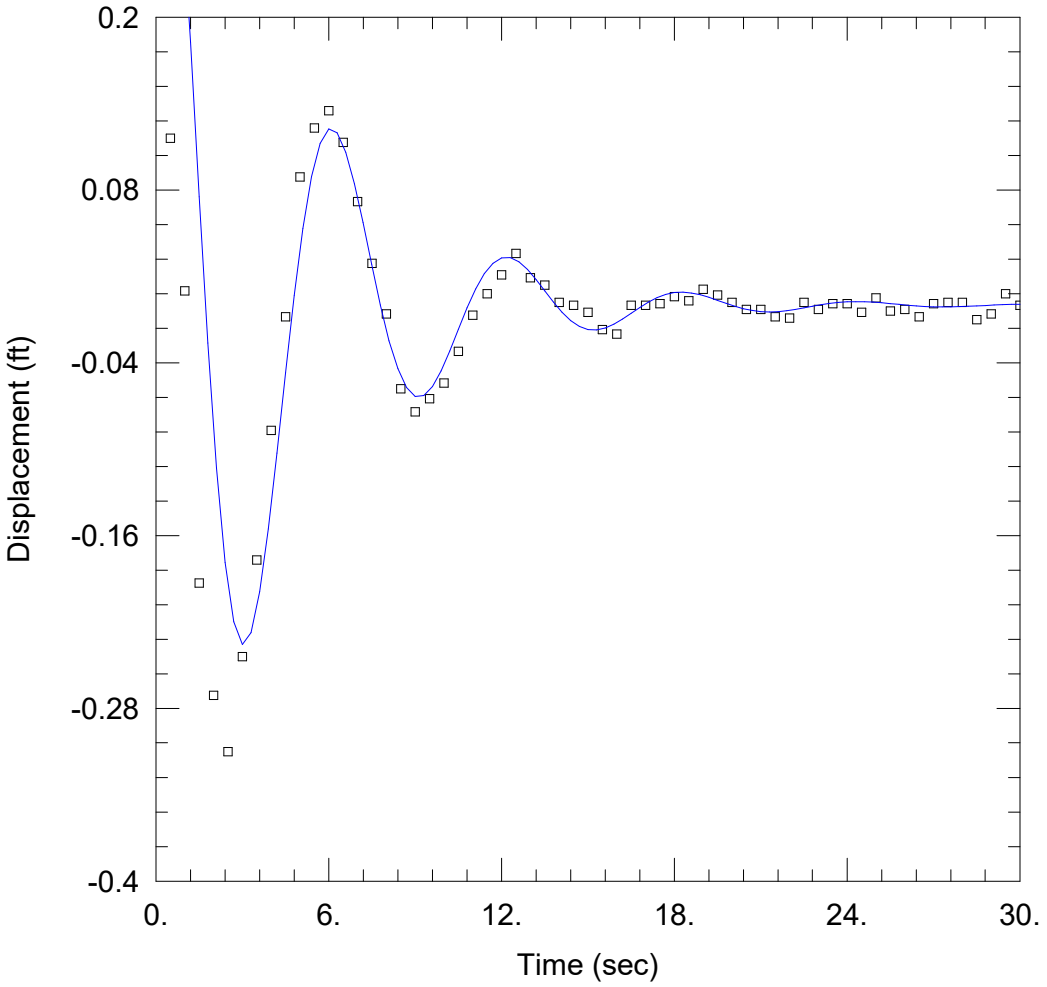
WELL DATA (MW-41I)

Initial Displacement: 0.577 ft
Total Well Penetration Depth: 28.56 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 28.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04016 cm/sec Le = 20.83 ft



WELL TEST ANALYSIS

Data Set: \...\MW42A_F1.aqt
Date: 02/23/23 Time: 21:18:29

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 41.4 ft Anisotropy Ratio (Kz/Kr): 1.

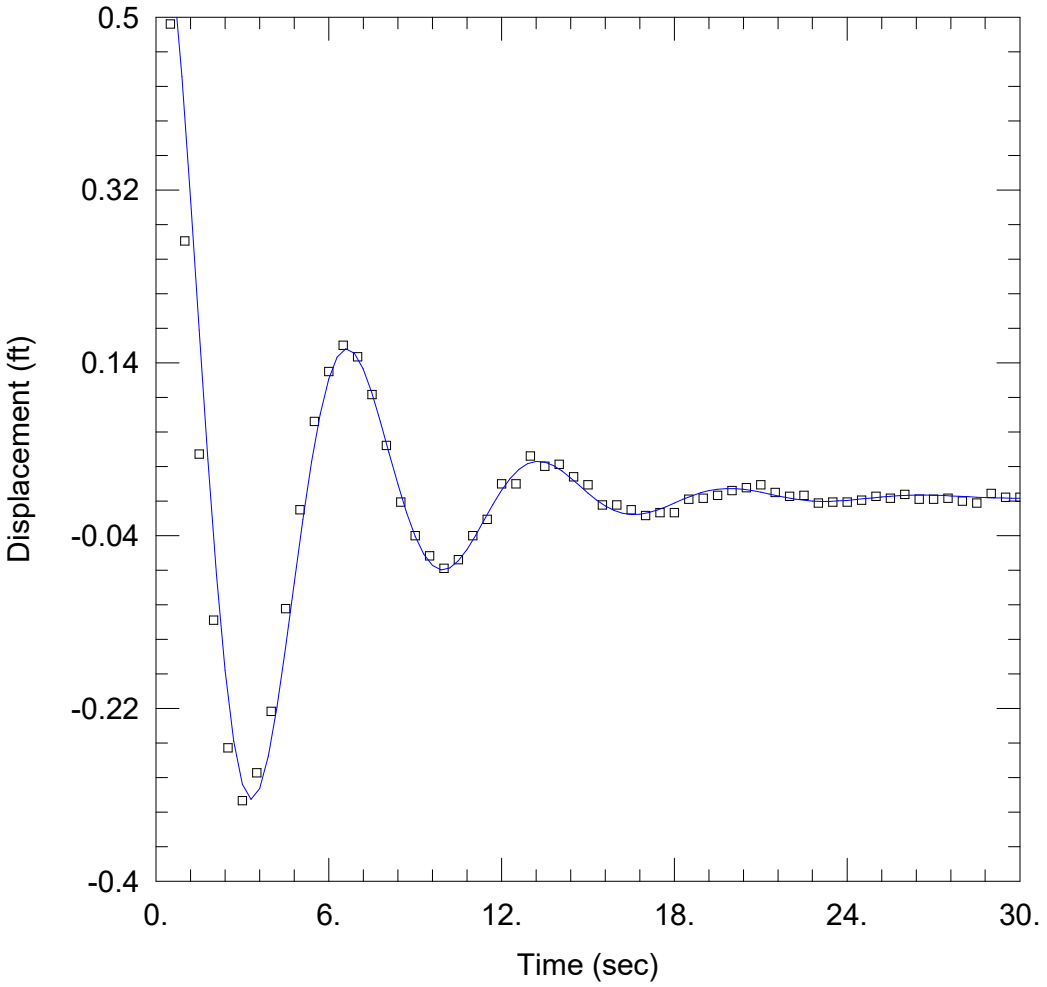
WELL DATA (MW-41A)

Initial Displacement: 0.453 ft
Total Well Penetration Depth: 32.41 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 41.4 ft
Screen Length: 1. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.3306 cm/sec Le = 28.9 ft



WELL TEST ANALYSIS

Data Set: \...\MW42A_R1.aqt
Date: 02/23/23 Time: 21:17:09

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 41.4 ft Anisotropy Ratio (Kz/Kr): 1.

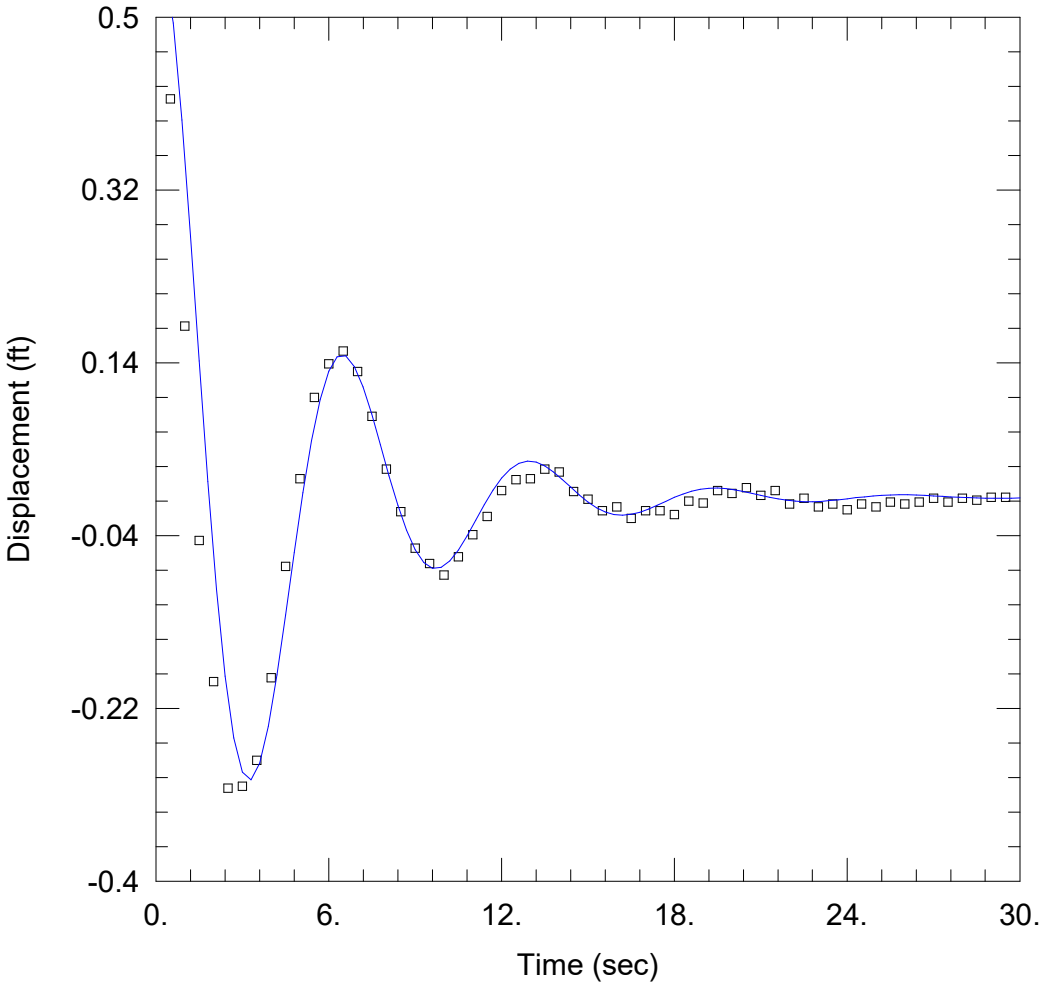
WELL DATA (MW-41A)

Initial Displacement: 0.641 ft
Total Well Penetration Depth: 32.41 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 41.4 ft
Screen Length: 1. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.278 cm/sec Le = 34.15 ft



WELL TEST ANALYSIS

Data Set: \...\MW42A_R2.aqt
Date: 02/23/23 Time: 21:17:25

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 41.4 ft Anisotropy Ratio (Kz/Kr): 1.

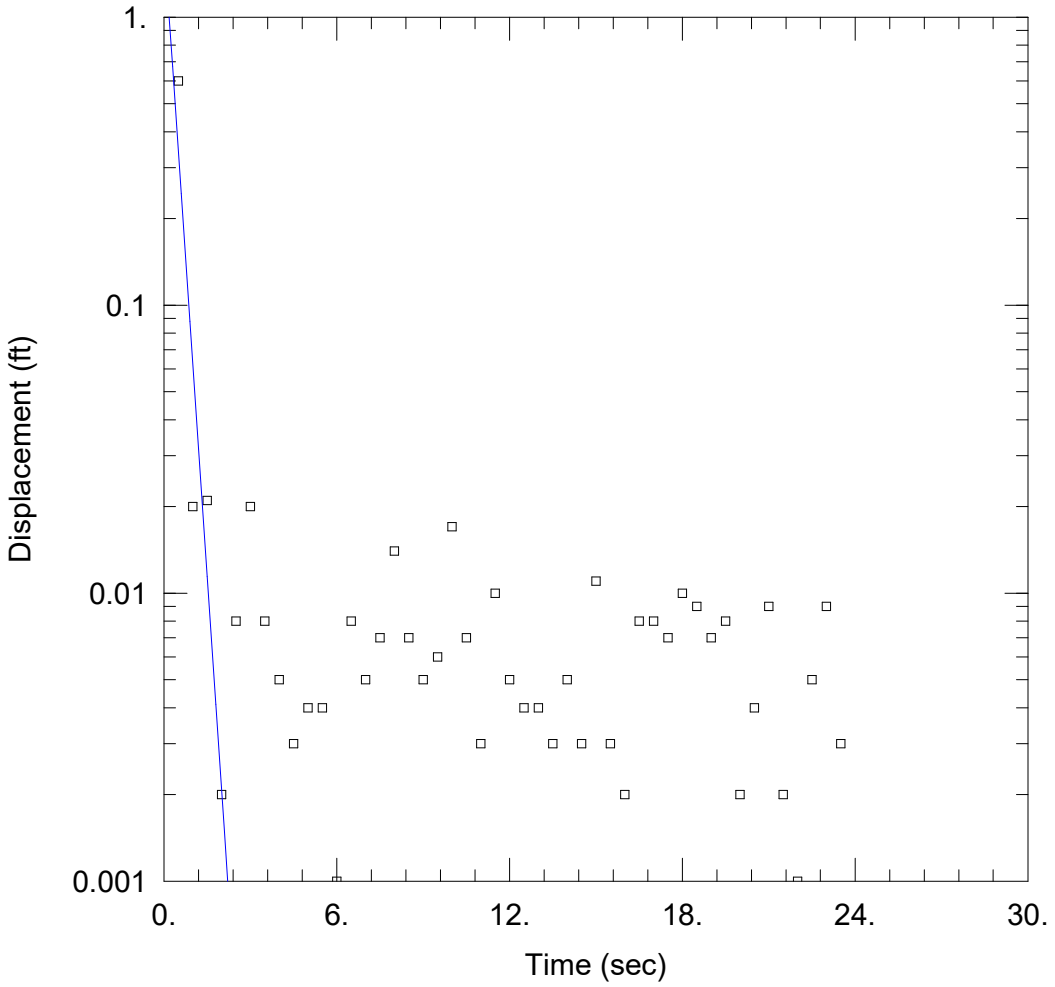
WELL DATA (MW-41A)

Initial Displacement: 0.587 ft
Total Well Penetration Depth: 32.41 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 41.4 ft
Screen Length: 1. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.2945 cm/sec Le = 32.59 ft



WELL TEST ANALYSIS

Data Set: \...\MW42B_F1.aqt
Date: 01/25/23 Time: 19:33:45

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

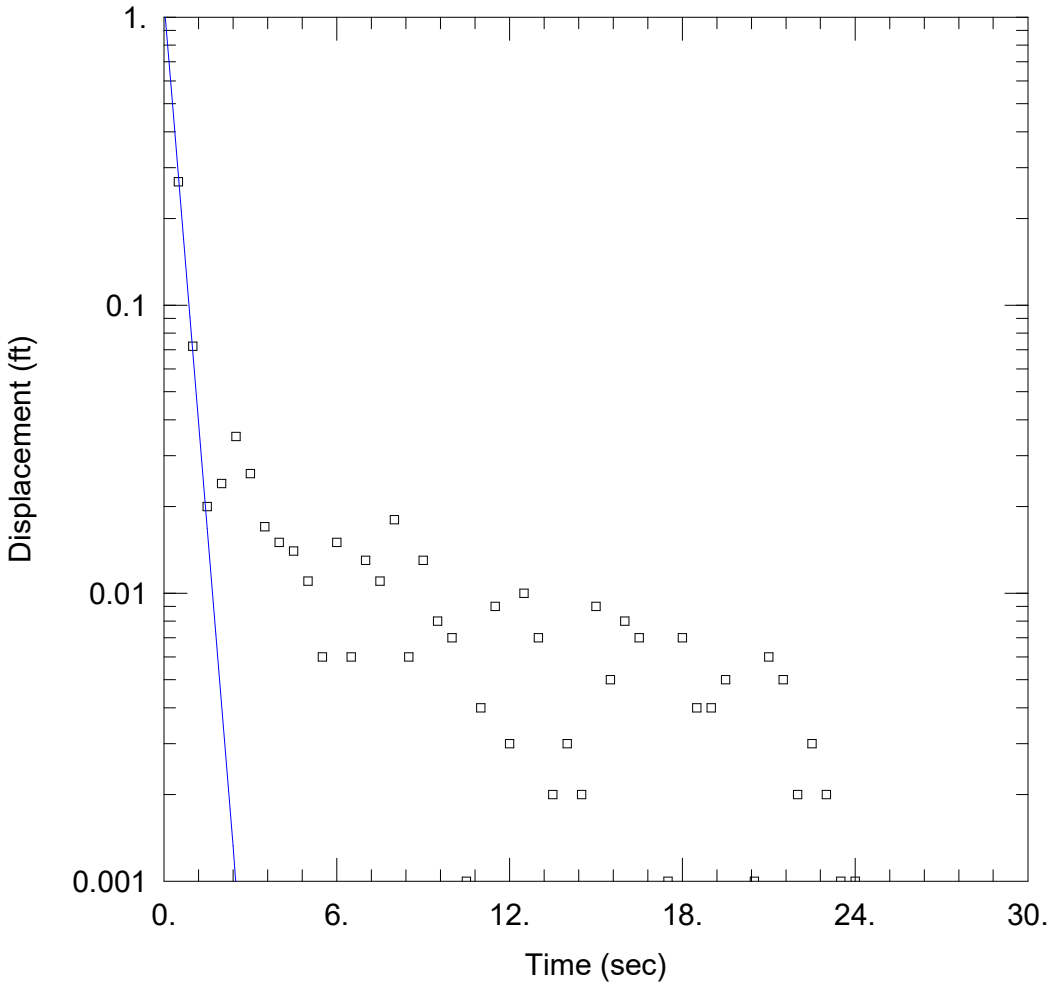
WELL DATA (MW-42B)

Initial Displacement: 1.672 ft
Total Well Penetration Depth: 10.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2662 cm/sec y0 = 1.875 ft



WELL TEST ANALYSIS

Data Set: \...\MW42B_F2.aqt
Date: 01/25/23 Time: 19:34:15

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

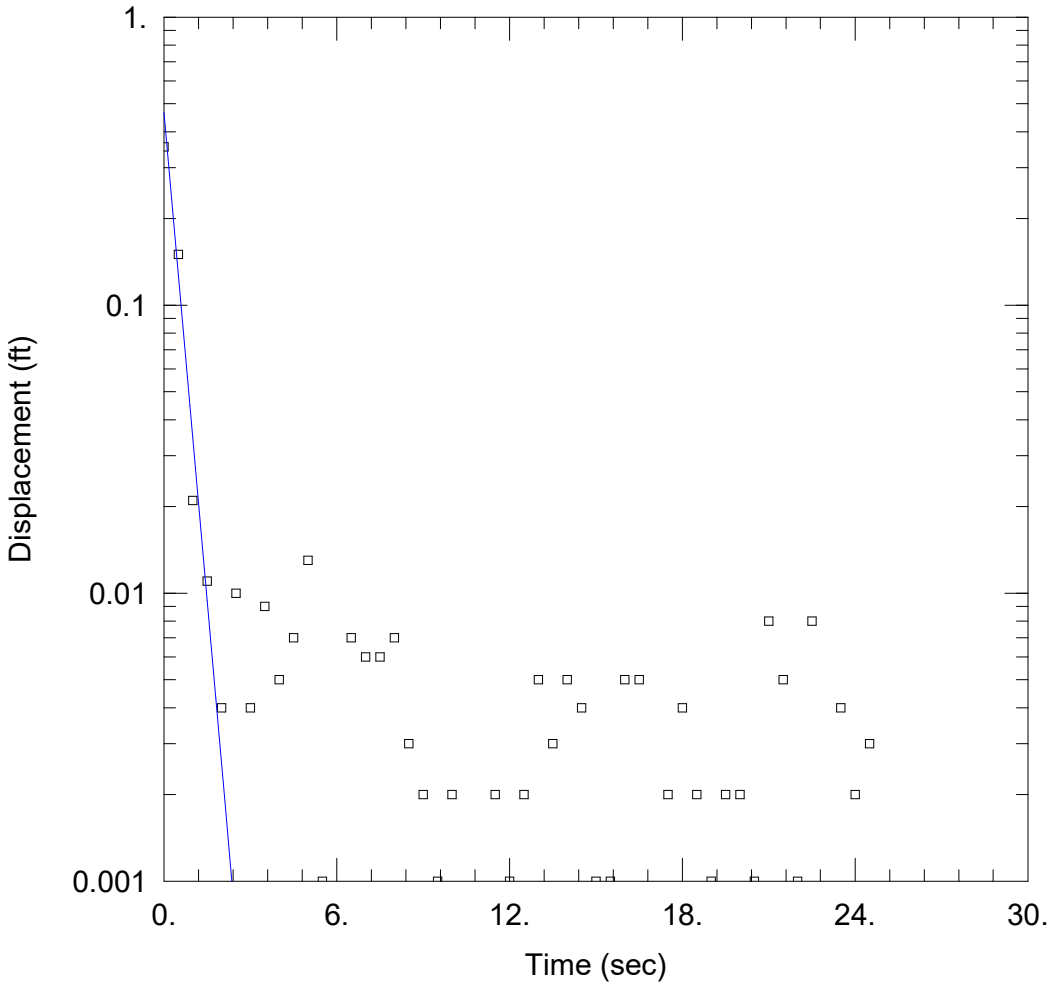
WELL DATA (MW-42B)

Initial Displacement: 1.491 ft
Total Well Penetration Depth: 10.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2208 cm/sec y0 = 1.155 ft



WELL TEST ANALYSIS

Data Set: \...\MW42B_R1.aqt
Date: 01/25/23 Time: 19:34:52

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

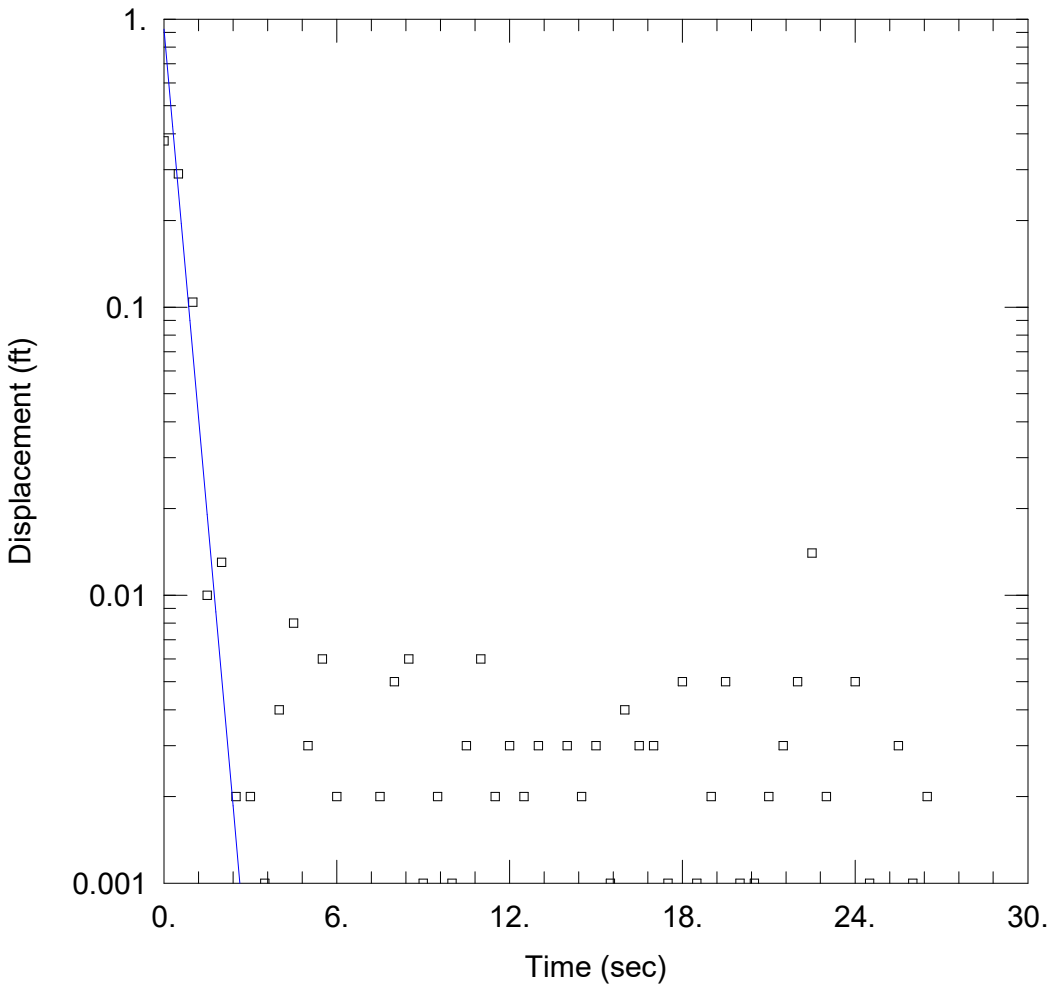
WELL DATA (MW-42B)

Initial Displacement: 0.354 ft
Total Well Penetration Depth: 10.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2038 cm/sec y0 = 0.4664 ft



WELL TEST ANALYSIS

Data Set: \...\MW42B_R2.aqt
Date: 01/25/23 Time: 19:35:14

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 9.9 ft Anisotropy Ratio (Kz/Kr): 1.

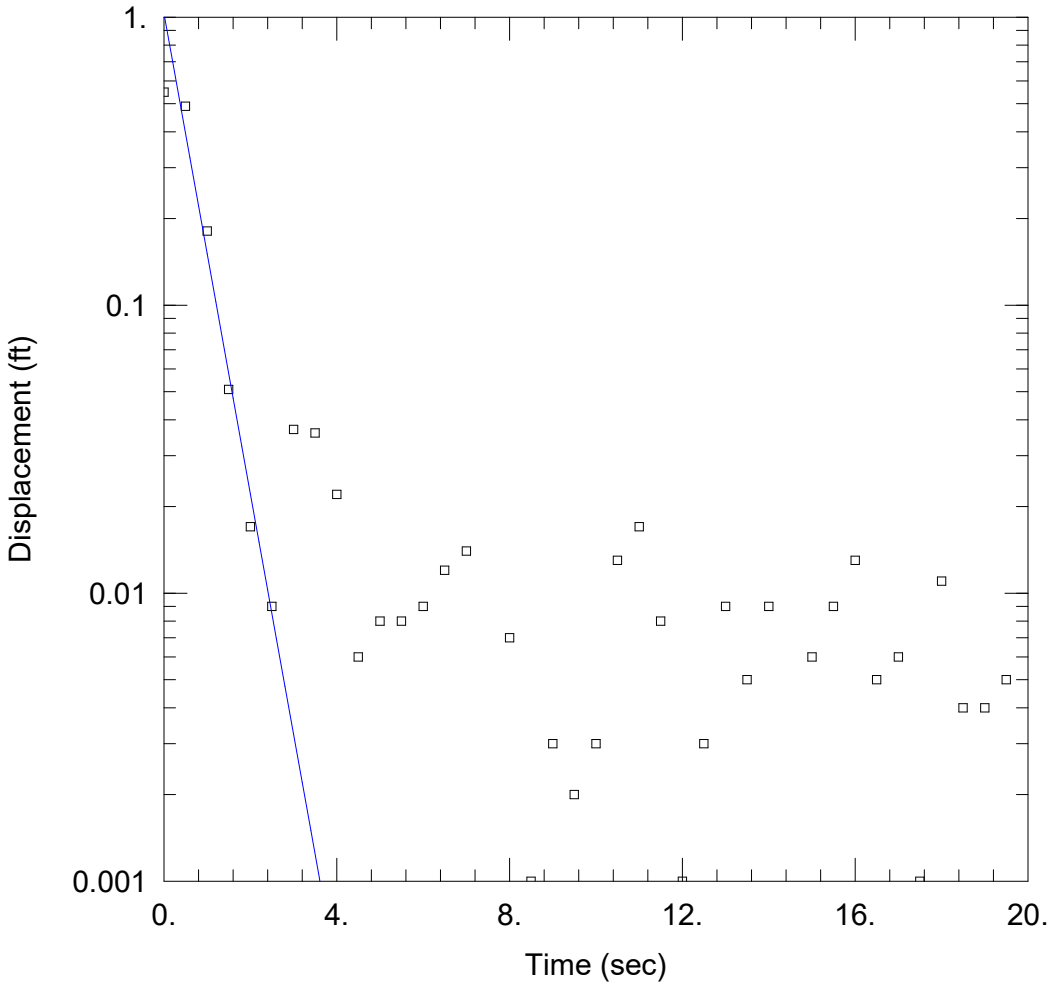
WELL DATA (MW-42B)

Initial Displacement: 0.378 ft
Total Well Penetration Depth: 10.11 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 9.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.2026 cm/sec y0 = 0.9223 ft



WELL TEST ANALYSIS

Data Set: \...\MW42I_F1.aqt
Date: 01/25/23 Time: 19:35:35

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.3 ft Anisotropy Ratio (Kz/Kr): 1.

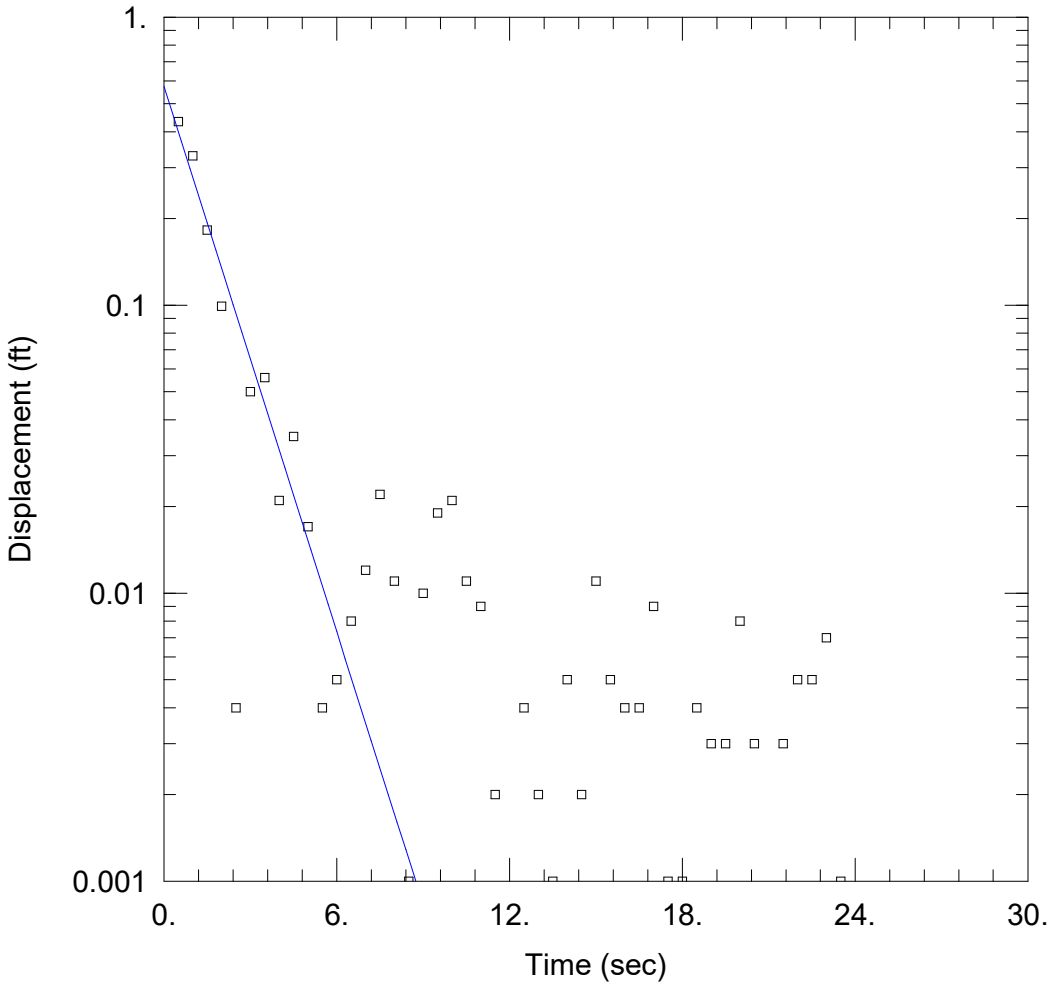
WELL DATA (MW-42I)

Initial Displacement: 0.549 ft
Total Well Penetration Depth: 27.27 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0727 cm/sec y0 = 1.029 ft



WELL TEST ANALYSIS

Data Set: \...\MW42I_F2.aqt
Date: 02/03/23 Time: 15:36:19

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.3 ft Anisotropy Ratio (Kz/Kr): 1.

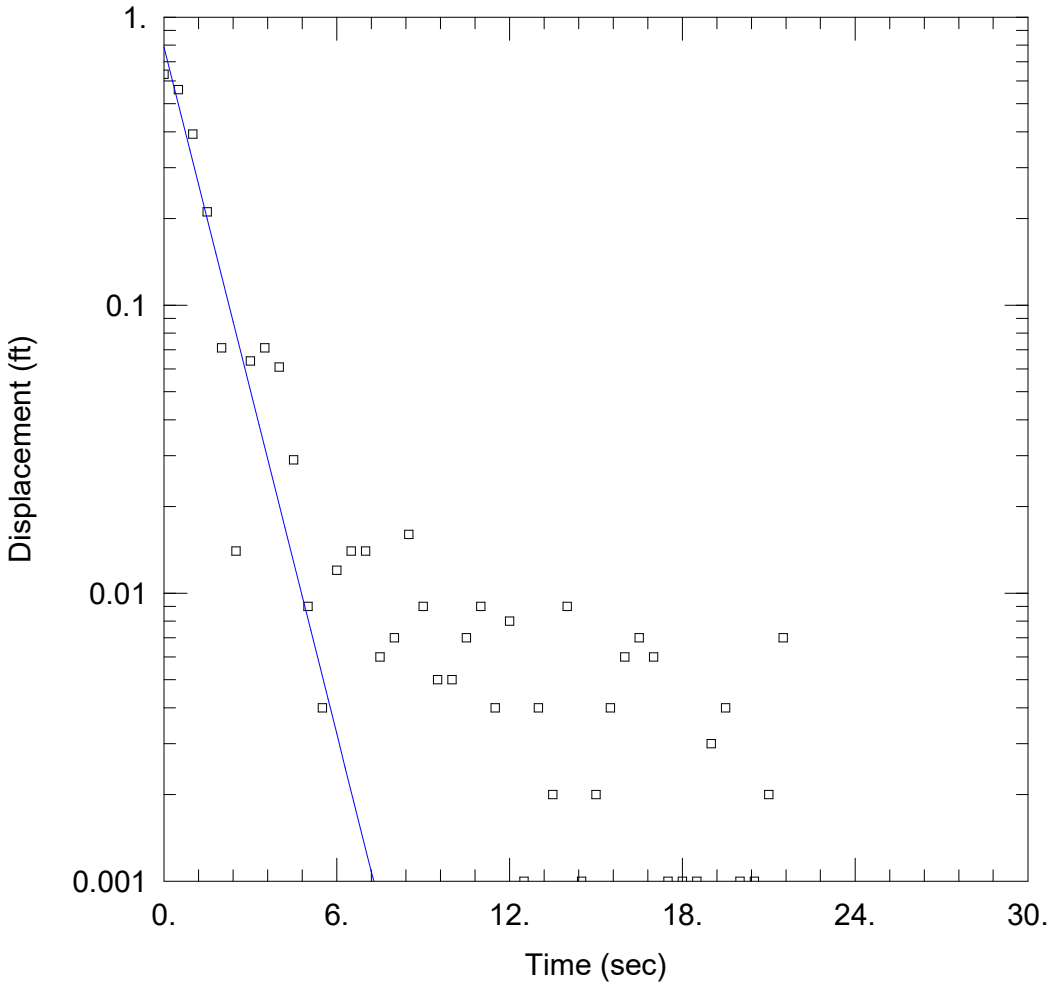
WELL DATA (MW-42I)

Initial Displacement: 2.792 ft
Total Well Penetration Depth: 27.27 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02748 cm/sec y0 = 0.5742 ft



WELL TEST ANALYSIS

Data Set: \...\MW42I_R1.aqt
Date: 02/03/23 Time: 15:39:17

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.3 ft Anisotropy Ratio (Kz/Kr): 1.

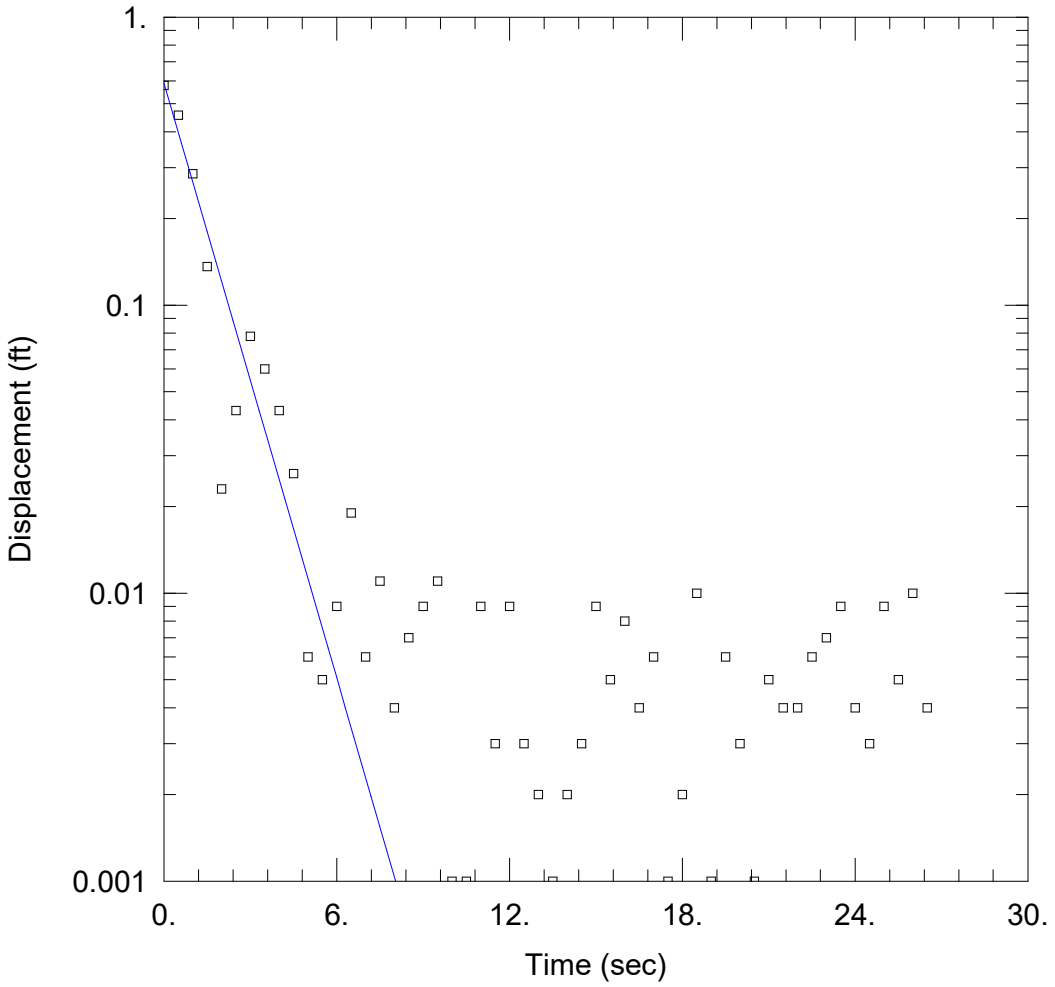
WELL DATA (MW-42I)

Initial Displacement: 0.633 ft
Total Well Penetration Depth: 27.27 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0346 cm/sec y0 = 0.7864 ft



WELL TEST ANALYSIS

Data Set: \...\MW42I_R2.aqt
Date: 02/03/23 Time: 15:42:21

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-42I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 27.3 ft Anisotropy Ratio (Kz/Kr): 1.

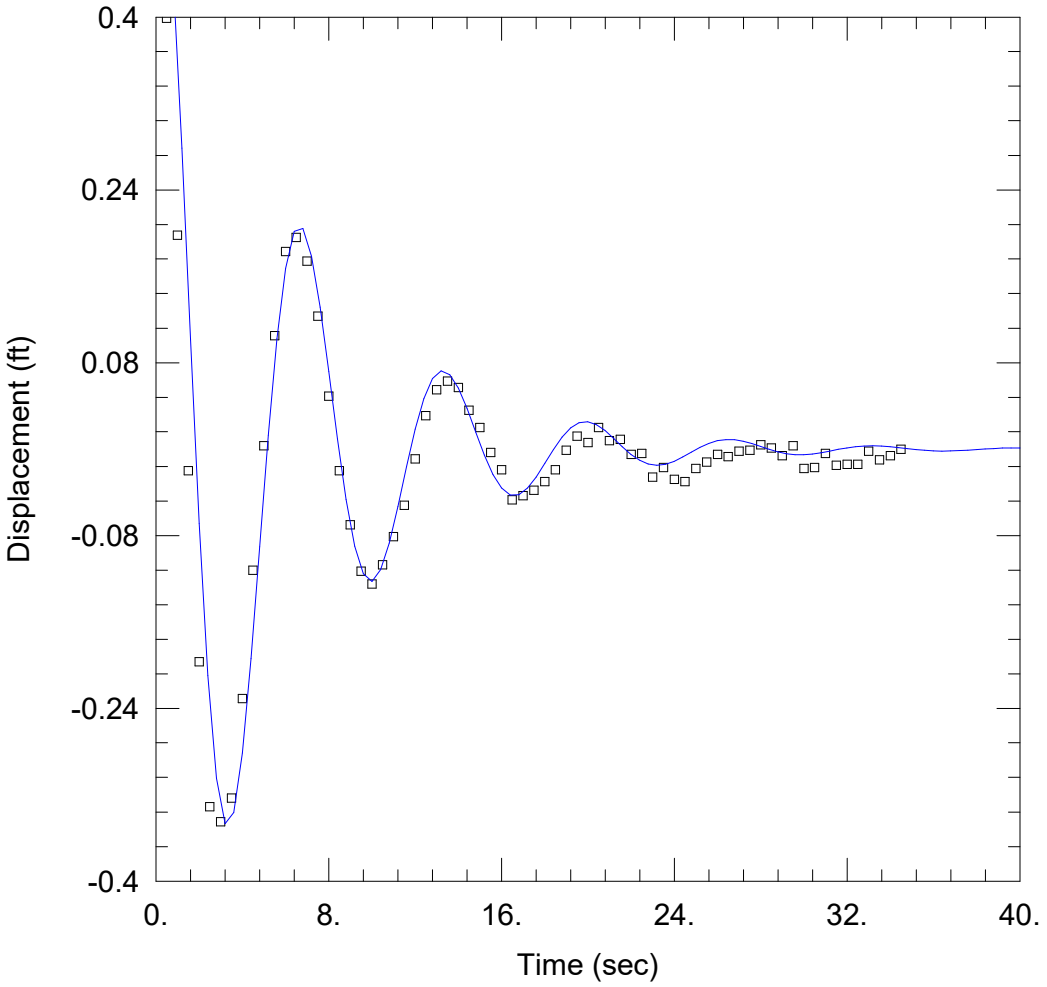
WELL DATA (MW-42I)

Initial Displacement: 0.579 ft
Total Well Penetration Depth: 27.27 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 27.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02997 cm/sec y0 = 0.59 ft



WELL TEST ANALYSIS

Data Set: \...\MW43A_R1.aqt
Date: 02/23/23 Time: 21:21:19

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.2 ft Anisotropy Ratio (Kz/Kr): 1.

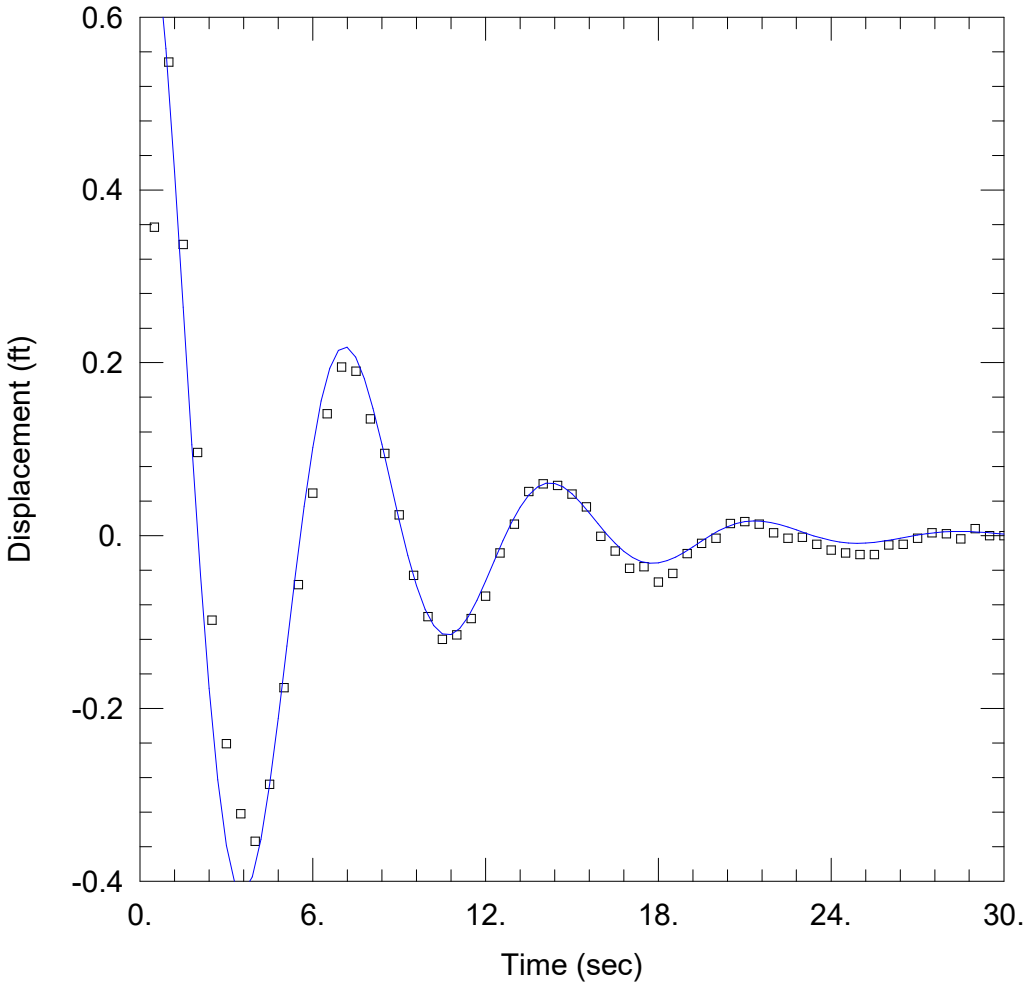
WELL DATA (MW-43A)

Initial Displacement: 0.589 ft
Total Well Penetration Depth: 43.15 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.1224 cm/sec Le = 34.87 ft



WELL TEST ANALYSIS

Data Set: \...\MW43A_R2.aqt
Date: 02/23/23 Time: 21:21:42

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.2 ft Anisotropy Ratio (Kz/Kr): 1.

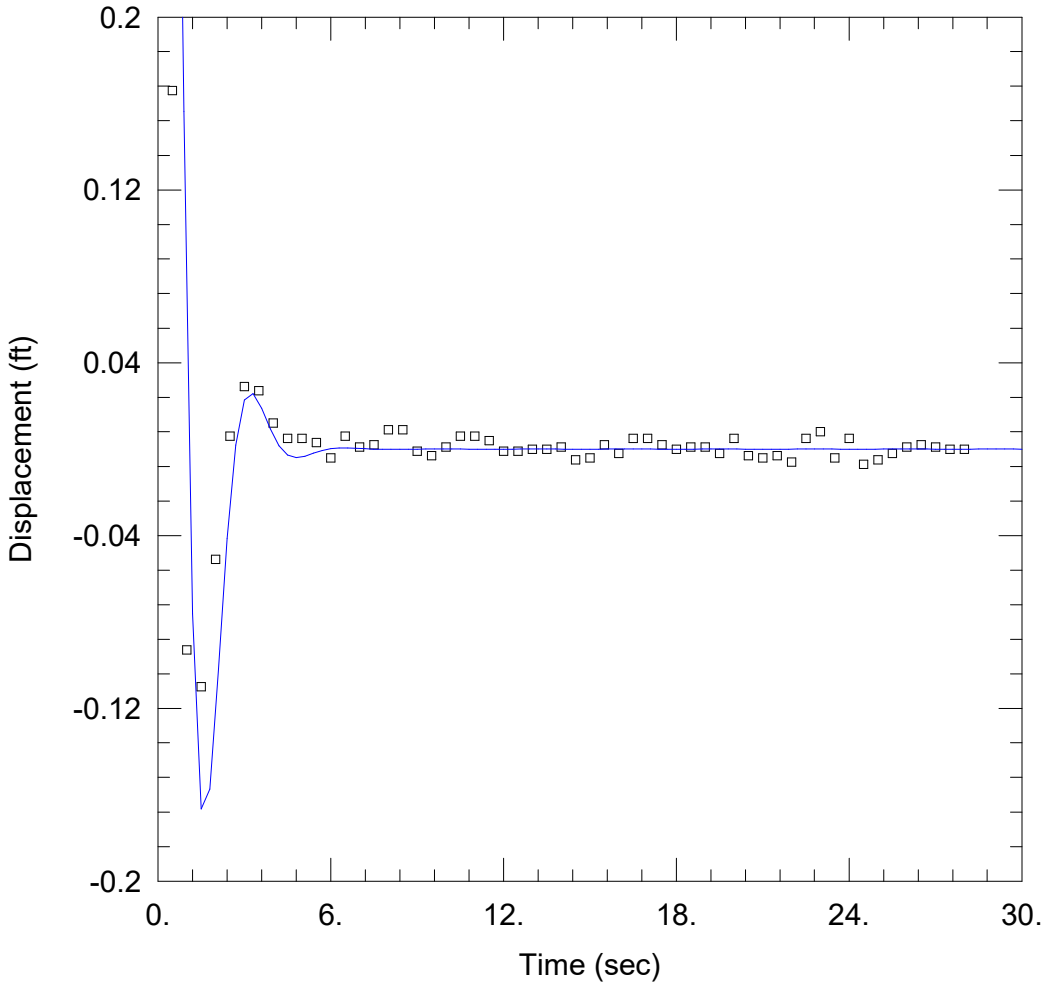
WELL DATA (MW-43A)

Initial Displacement: 0.783 ft
Total Well Penetration Depth: 43.15 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.2 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.09369 cm/sec Le = 39.67 ft



WELL TEST ANALYSIS

Data Set: \...\MW43B_F2.aqt
Date: 02/23/23 Time: 21:22:54

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 14.1 ft Anisotropy Ratio (Kz/Kr): 1.

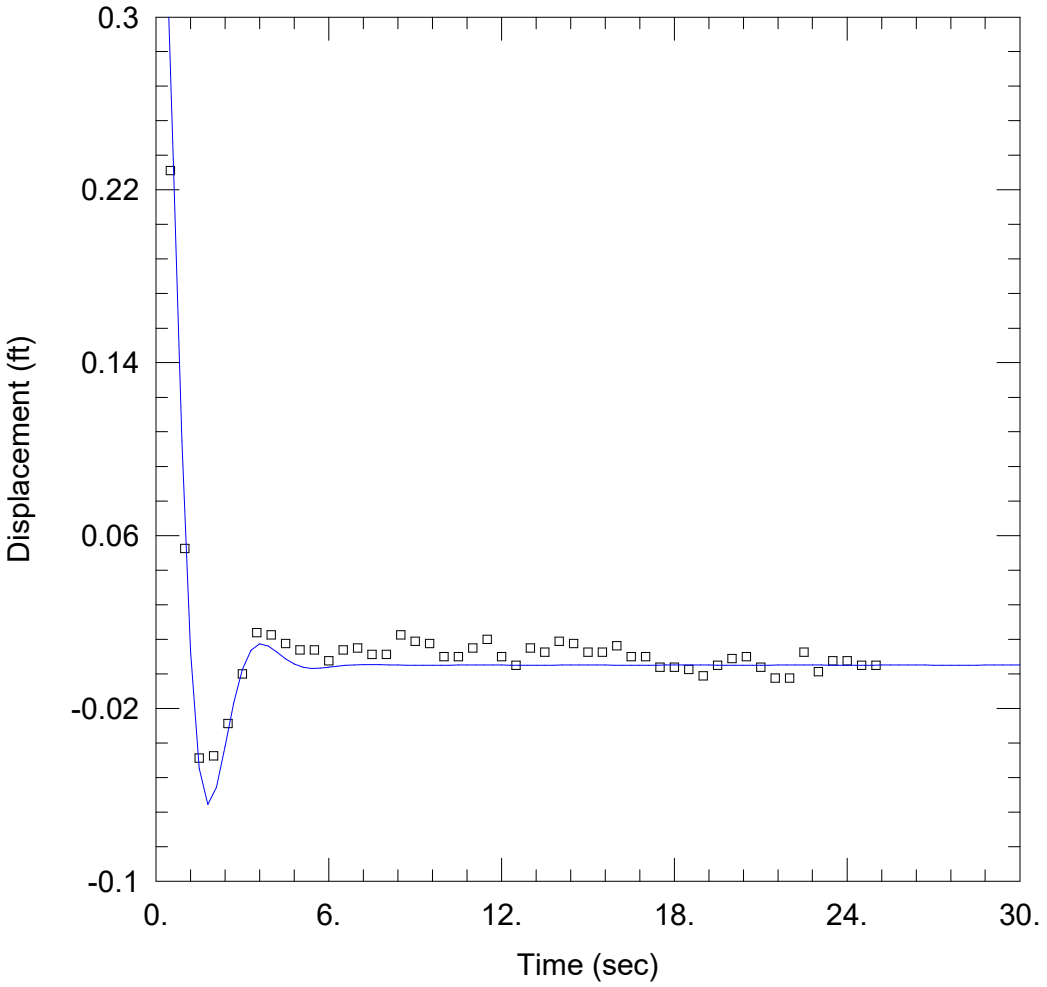
WELL DATA (MW-43B)

Initial Displacement: 1.129 ft
Total Well Penetration Depth: 14.14 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 14.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.07146 cm/sec Le = 6.178 ft



WELL TEST ANALYSIS

Data Set: \...\MW43B_R2.aqt
Date: 02/23/23 Time: 21:24:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 14.1 ft Anisotropy Ratio (Kz/Kr): 1.

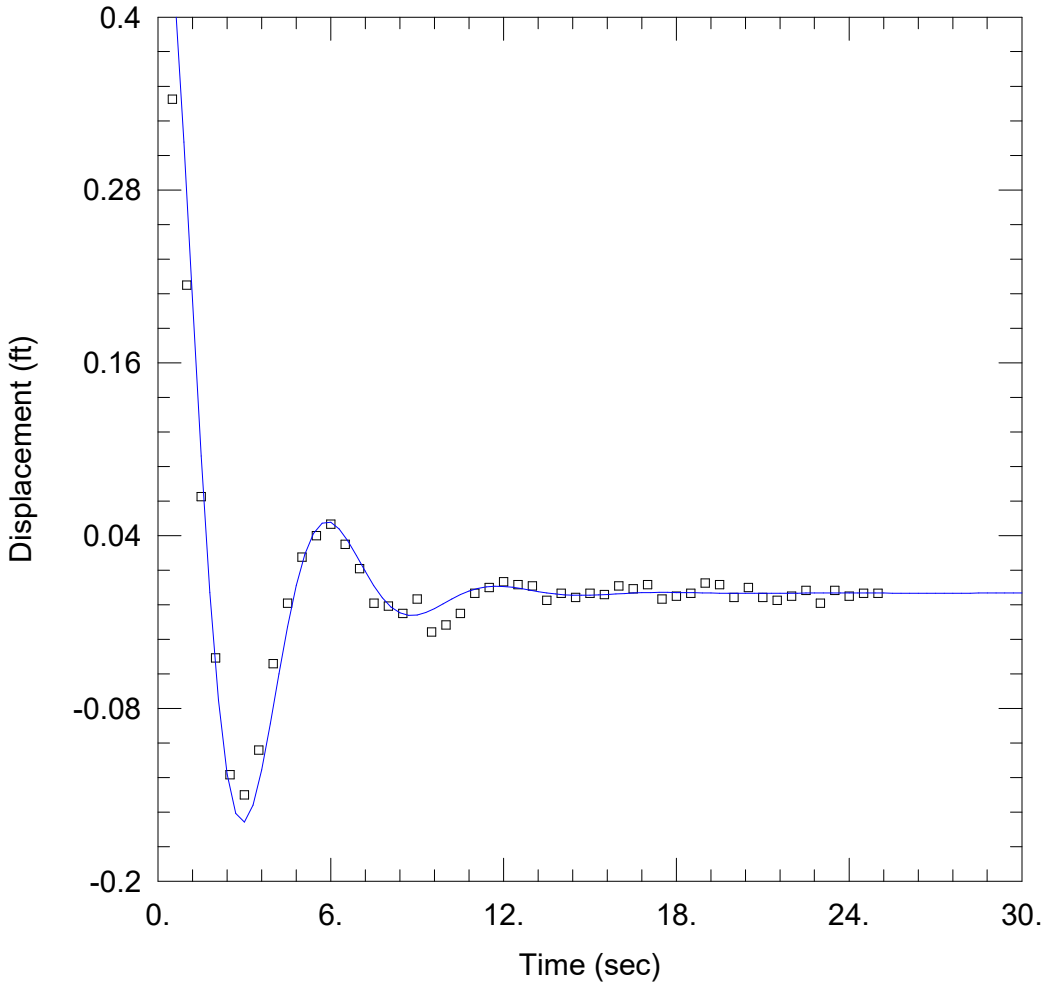
WELL DATA (MW-43B)

Initial Displacement: 0.423 ft
Total Well Penetration Depth: 14.14 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 14.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06282 cm/sec Le = 7.999 ft



WELL TEST ANALYSIS

Data Set: \...\MW43I_F2.aqt
Date: 02/23/23 Time: 21:27:03

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.1 ft Anisotropy Ratio (Kz/Kr): 1.

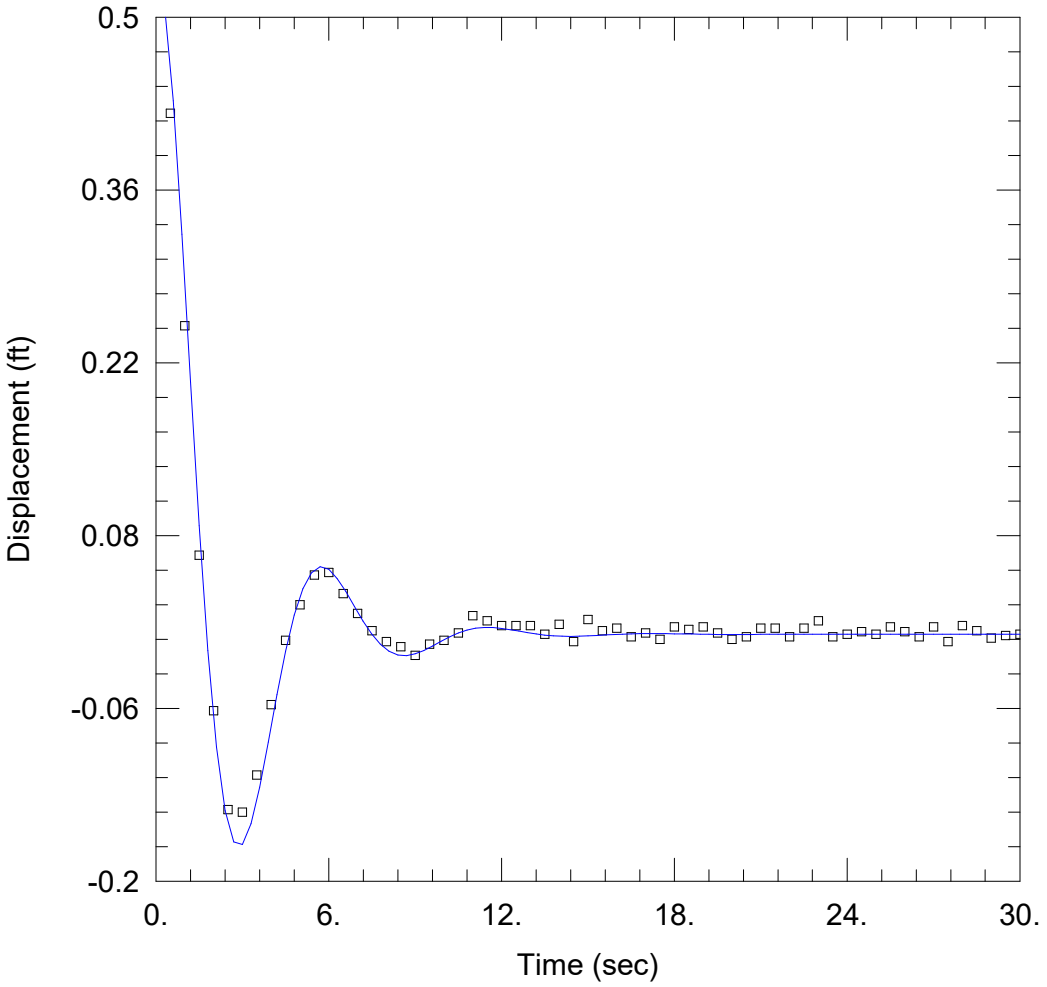
WELL DATA (MW-43I)

Initial Displacement: 0.511 ft
Total Well Penetration Depth: 29.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06469 cm/sec Le = 24.74 ft



WELL TEST ANALYSIS

Data Set: \...\MW43I_R1.aqt
Date: 02/23/23 Time: 21:27:17

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.1 ft Anisotropy Ratio (Kz/Kr): 1.

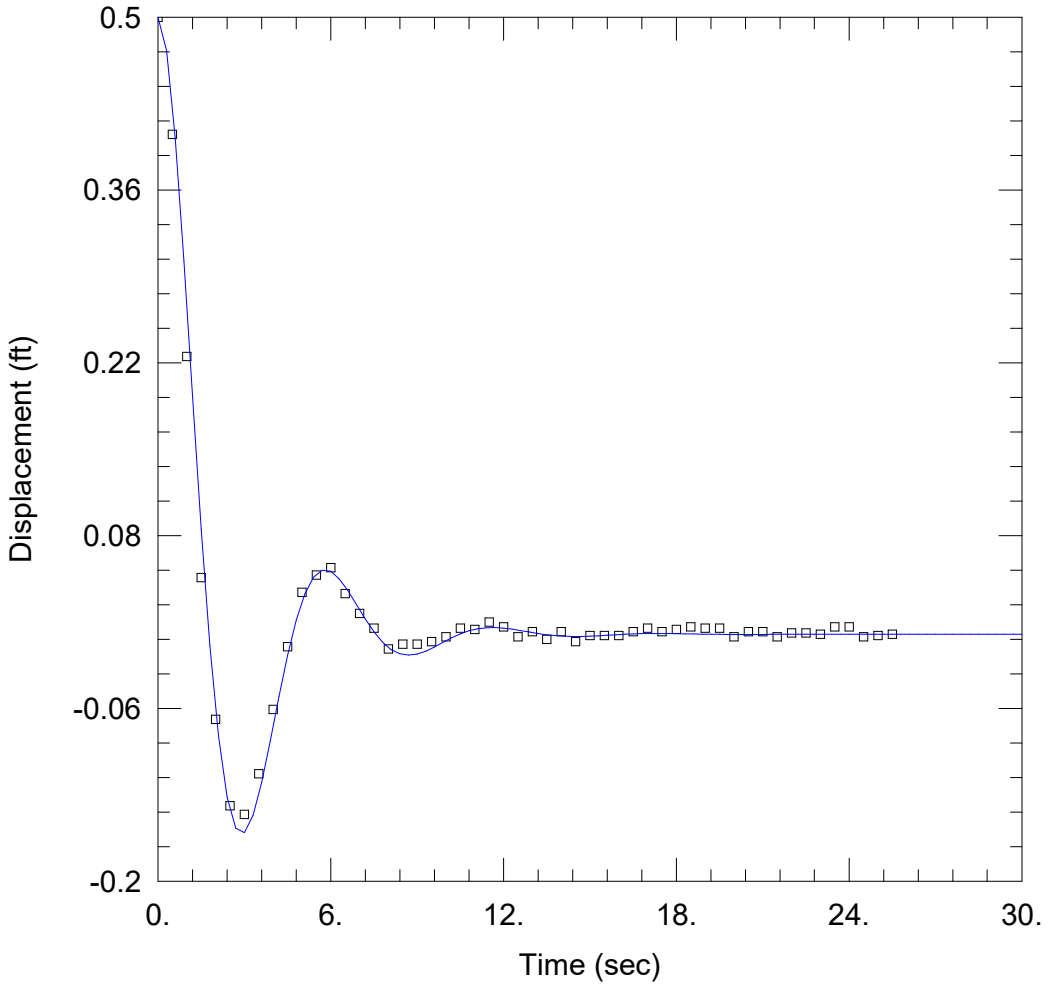
WELL DATA (MW-43I)

Initial Displacement: 0.541 ft
Total Well Penetration Depth: 29.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06701 cm/sec Le = 23.77 ft



WELL TEST ANALYSIS

Data Set: \...\MW43I_R2.aqt
Date: 02/23/23 Time: 21:27:35

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-43I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.1 ft Anisotropy Ratio (Kz/Kr): 1.

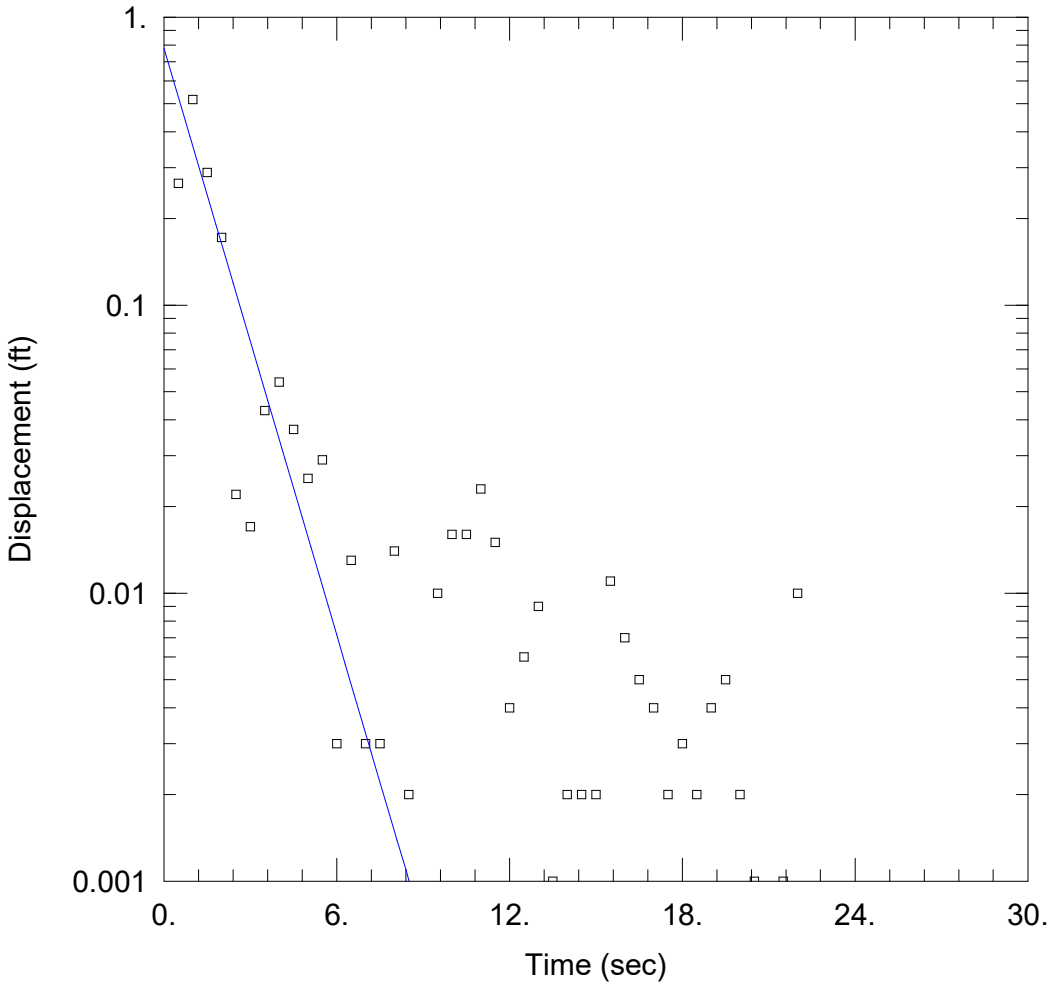
WELL DATA (MW-43I)

Initial Displacement: 0.5 ft
Total Well Penetration Depth: 29.08 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06717 cm/sec Le = 24.31 ft



WELL TEST ANALYSIS

Data Set: \...\MW44A_F2.aqt
Date: 02/03/23 Time: 15:53:42

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.9 ft Anisotropy Ratio (Kz/Kr): 1.

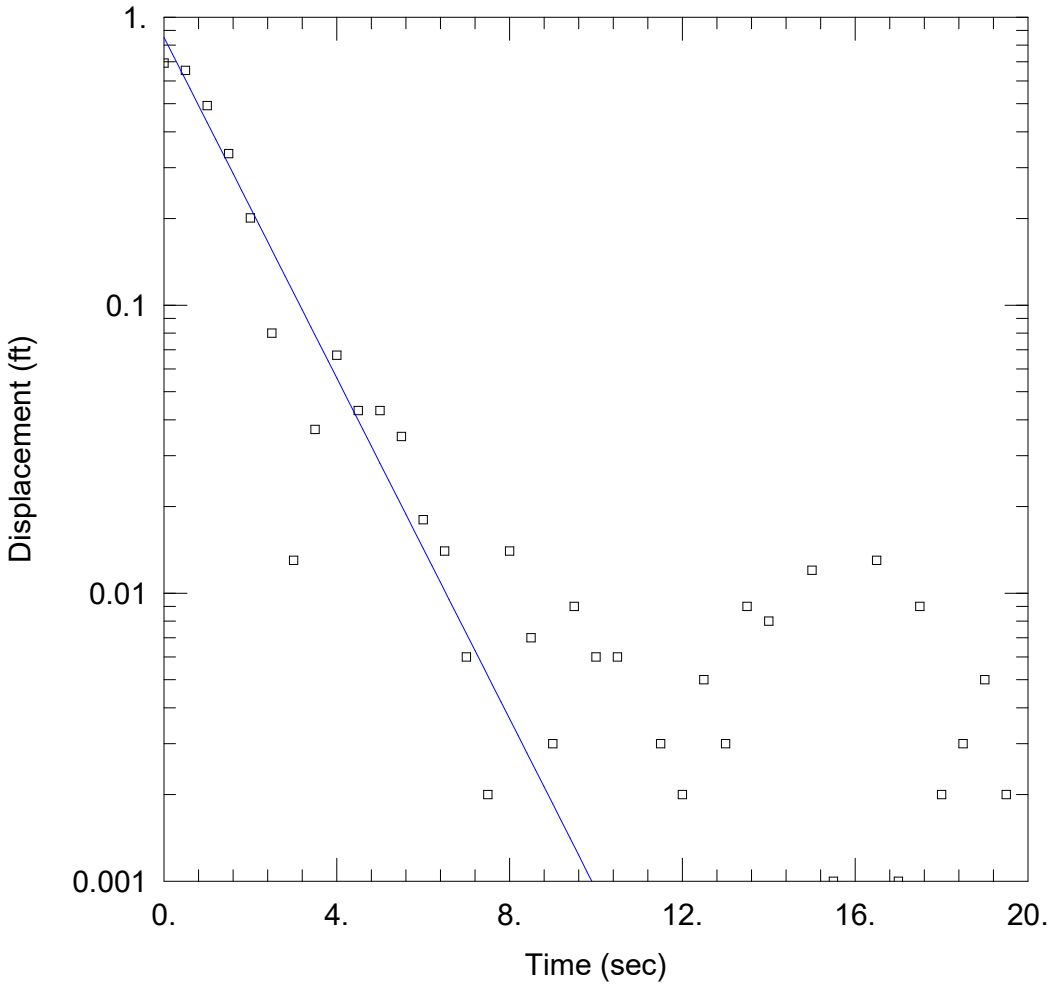
WELL DATA (MW-44A)

Initial Displacement: 2.027 ft
Total Well Penetration Depth: 43.9 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03057 cm/sec y0 = 0.7791 ft



WELL TEST ANALYSIS

Data Set: \...\MW44A_R1.aqt
Date: 01/25/23 Time: 19:49:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.9 ft Anisotropy Ratio (Kz/Kr): 1.

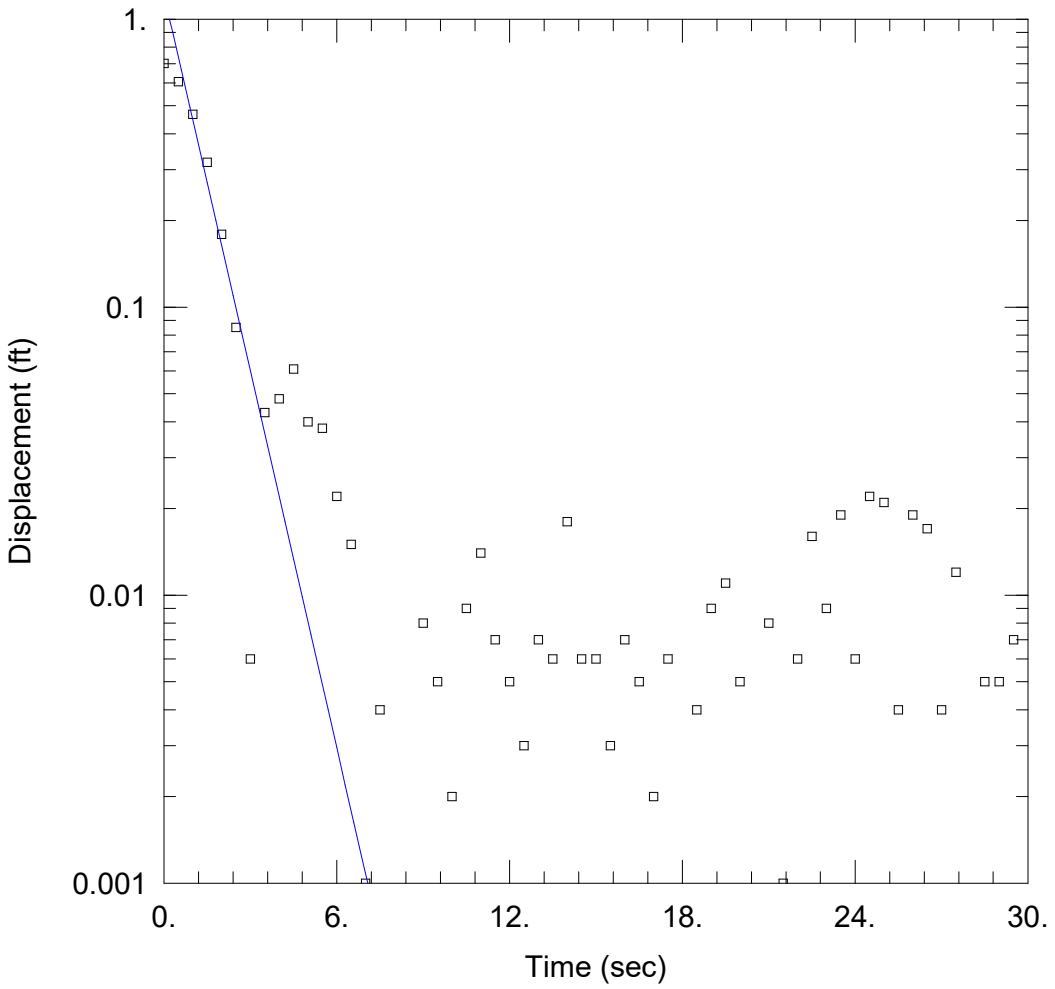
WELL DATA (MW-44A)

Initial Displacement: 0.692 ft
Total Well Penetration Depth: 43.9 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02665 cm/sec y0 = 0.8511 ft



WELL TEST ANALYSIS

Data Set: \...\MW44A_R2.aqt
Date: 01/25/23 Time: 19:50:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.9 ft Anisotropy Ratio (Kz/Kr): 1.

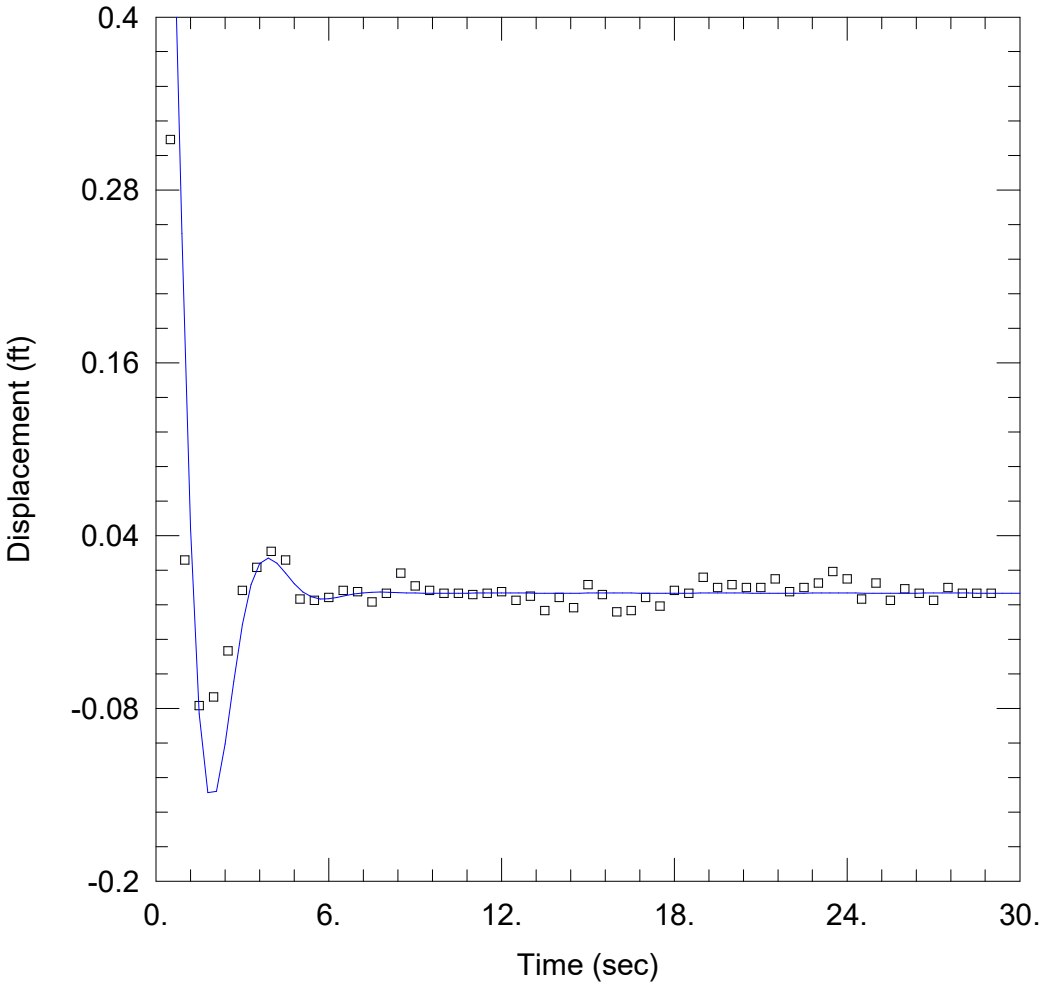
WELL DATA (MW-44A)

Initial Displacement: 0.702 ft
Total Well Penetration Depth: 43.9 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.9 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.03926 cm/sec
y0 = 1.22 ft



WELL TEST ANALYSIS

Data Set: \...\MW44B_F1.aqt
Date: 02/23/23 Time: 21:28:13

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 17.3 ft Anisotropy Ratio (Kz/Kr): 1.

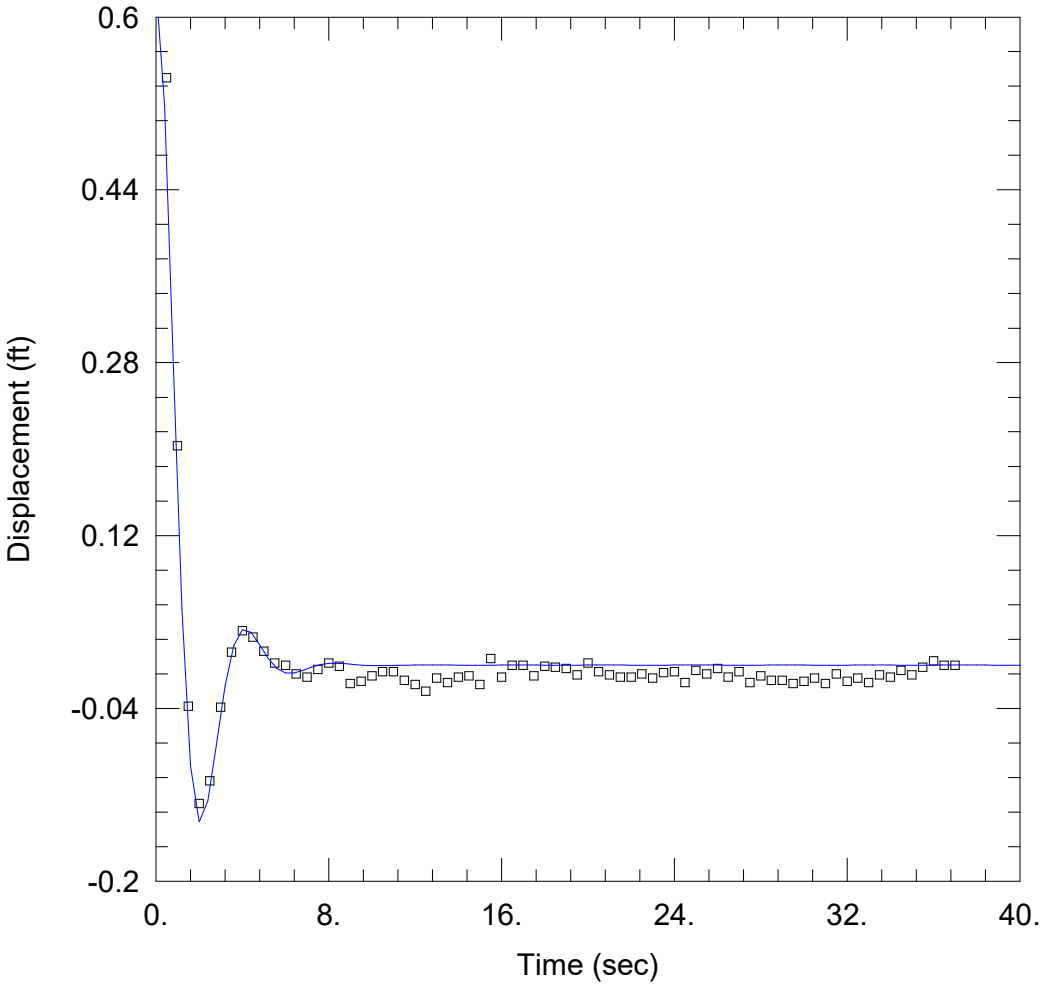
WELL DATA (MW-44B)

Initial Displacement: 0.847 ft
Total Well Penetration Depth: 17.25 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06485 cm/sec Le = 9.27 ft



WELL TEST ANALYSIS

Data Set: \...\MW44B_F2.aqt
Date: 02/23/23 Time: 21:28:30

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 17.3 ft Anisotropy Ratio (Kz/Kr): 1.

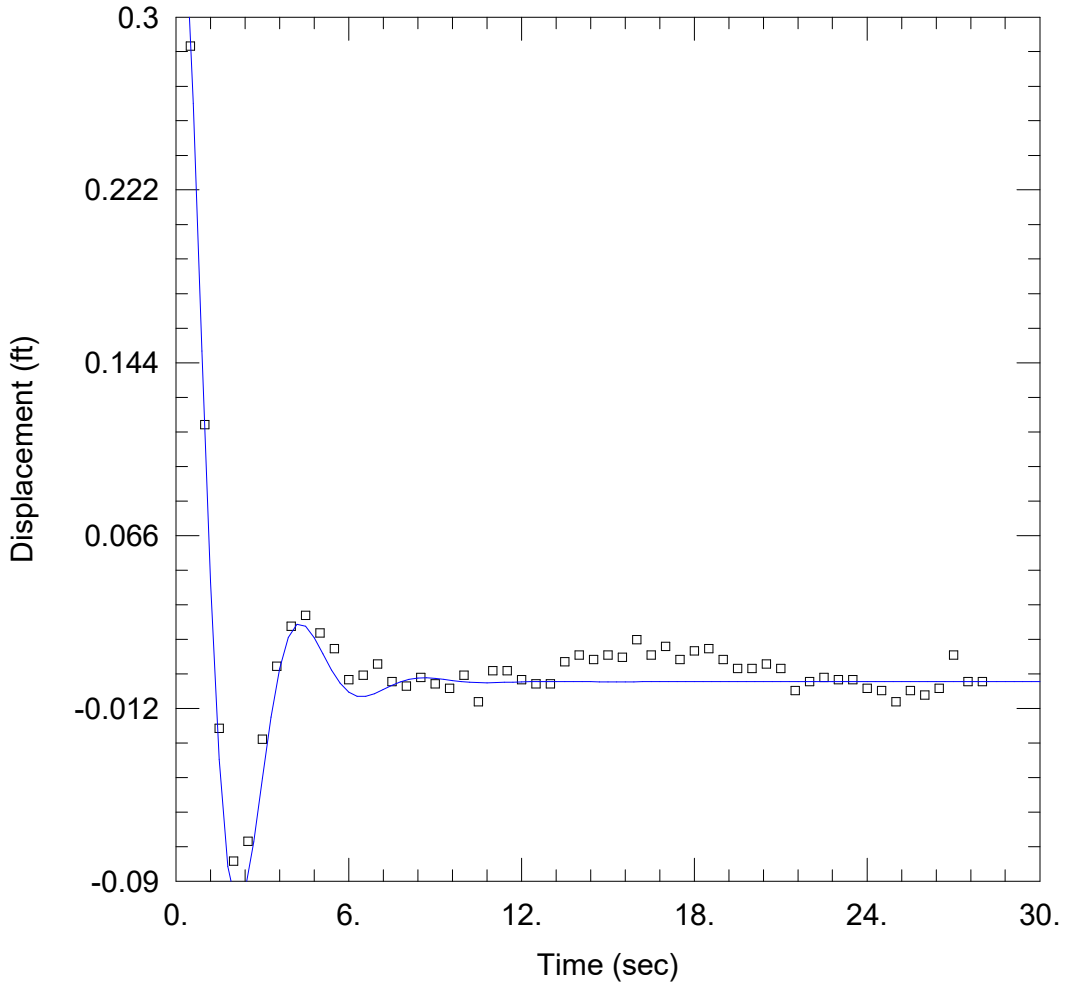
WELL DATA (MW-44B)

Initial Displacement: 0.633 ft
Total Well Penetration Depth: 17.25 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06808 cm/sec Le = 11.36 ft



WELL TEST ANALYSIS

Data Set: \...\MW44B_R1.aqt
Date: 02/23/23 Time: 21:29:10

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 17.3 ft Anisotropy Ratio (Kz/Kr): 1.

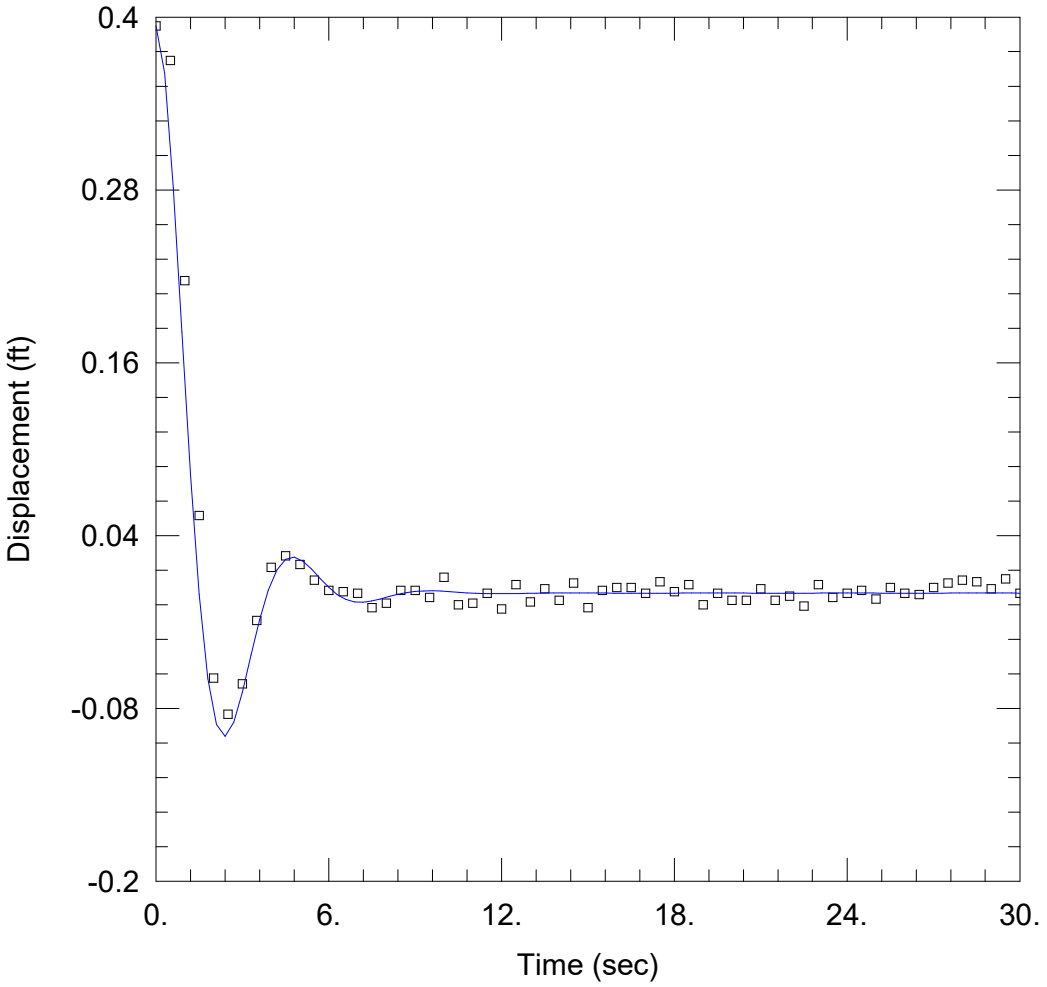
WELL DATA (MW-44B)

Initial Displacement: 0.392 ft
Total Well Penetration Depth: 17.25 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06887 cm/sec Le = 12.74 ft



WELL TEST ANALYSIS

Data Set: \...\MW44B_R2.aqt
Date: 02/23/23 Time: 21:29:24

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 17.3 ft Anisotropy Ratio (Kz/Kr): 1.

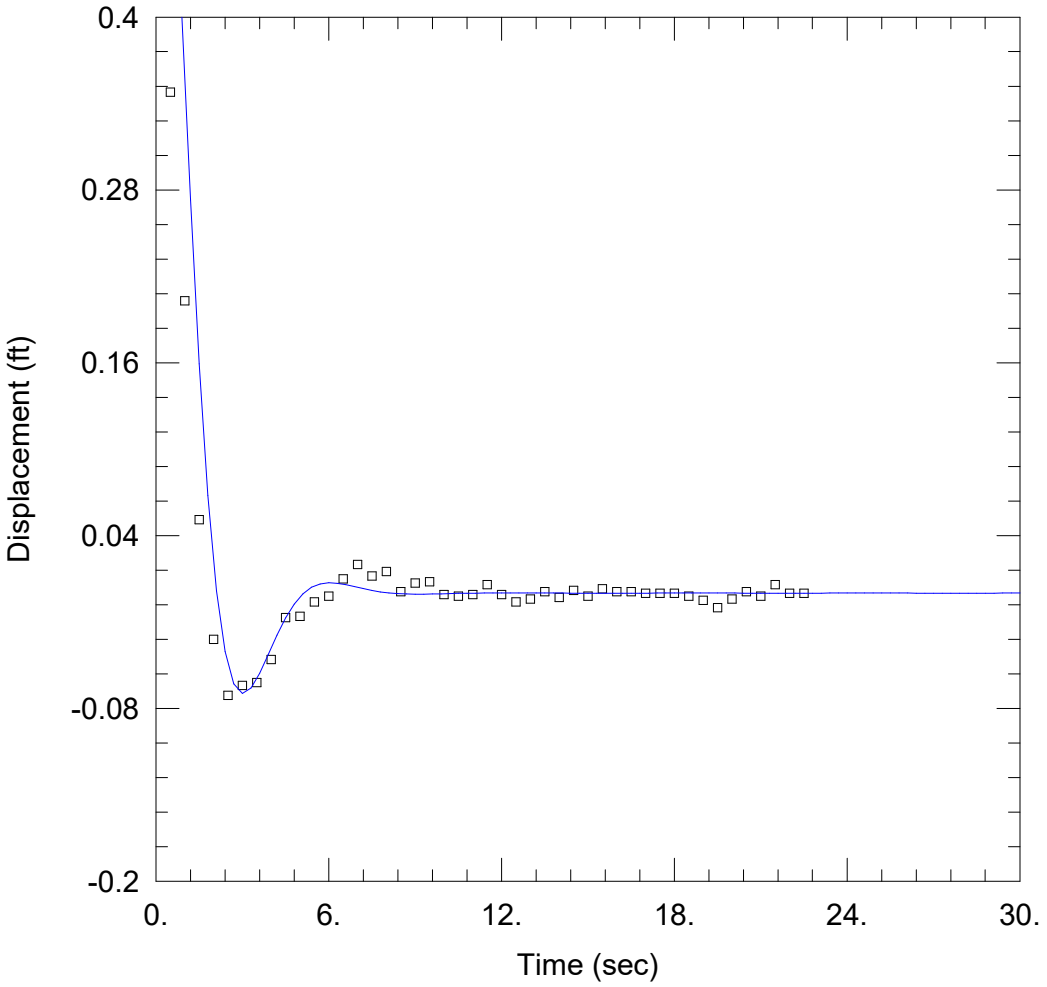
WELL DATA (MW-44B)

Initial Displacement: 0.394 ft
Total Well Penetration Depth: 17.25 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 17.3 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.0618 cm/sec Le = 15.35 ft



WELL TEST ANALYSIS

Data Set: \...\MW44I_F1.aqt
Date: 02/23/23 Time: 21:30:01

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

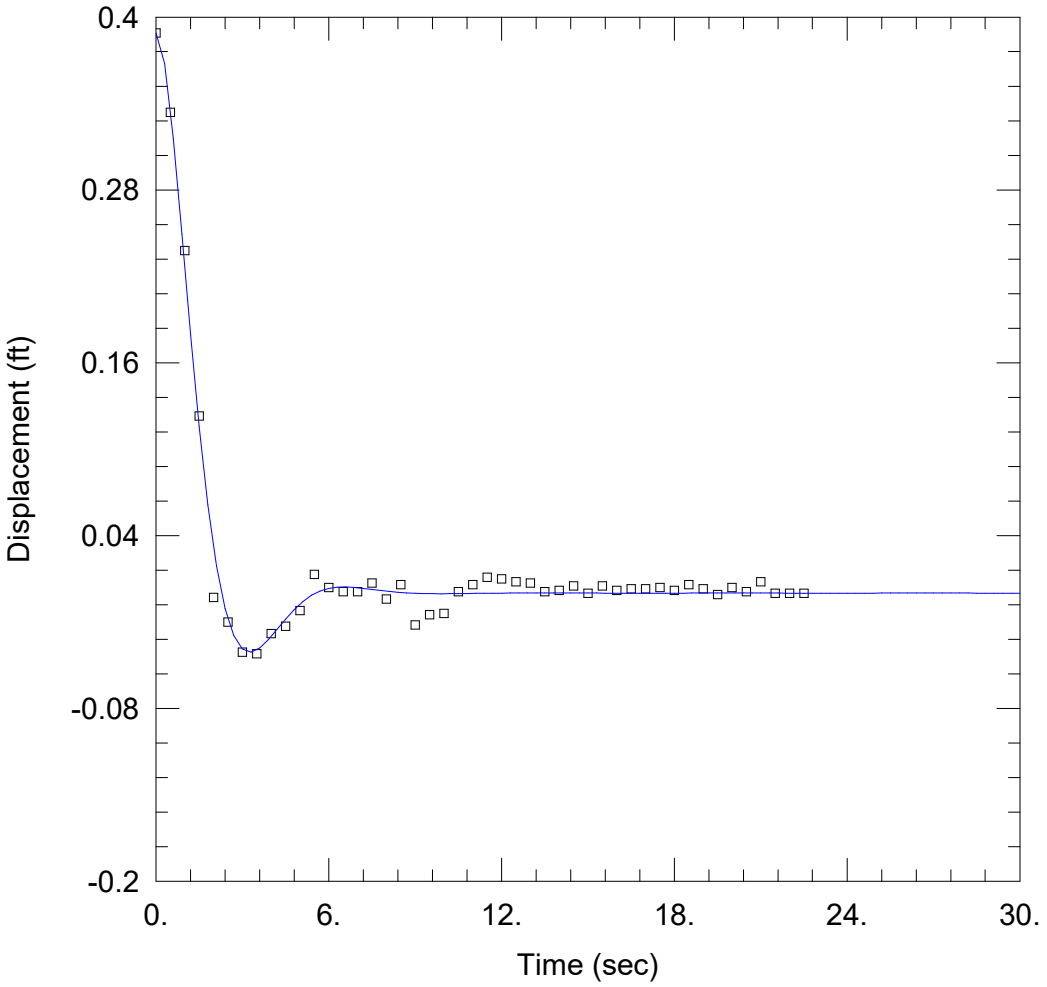
WELL DATA (MW-44I)

Initial Displacement: 0.671 ft
Total Well Penetration Depth: 33.98 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 34. ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04437 cm/sec Le = 19.56 ft



WELL TEST ANALYSIS

Data Set: \...\MW44I_F2.aqt
Date: 02/23/23 Time: 21:30:18

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

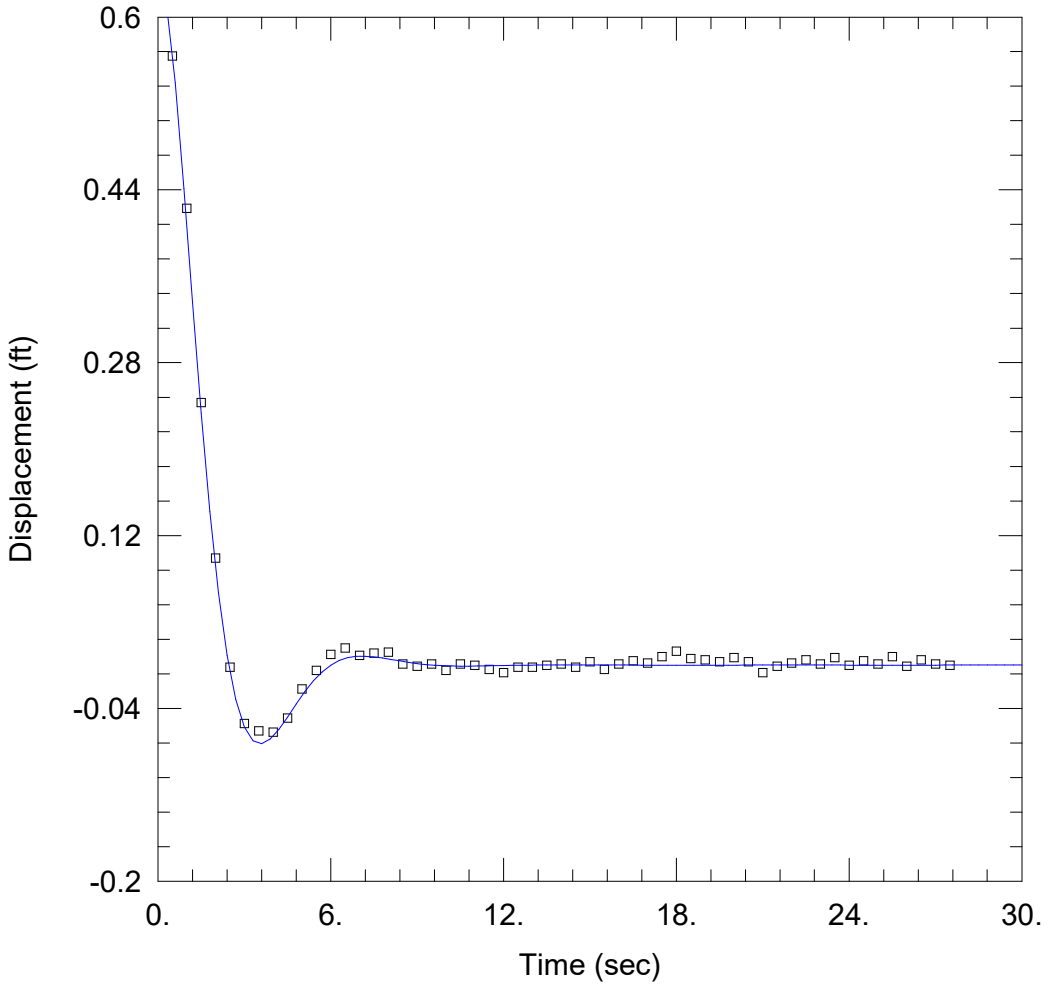
WELL DATA (MW-44I)

Initial Displacement: 0.389 ft
Total Well Penetration Depth: 33.98 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 34. ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04111 cm/sec Le = 22.91 ft



WELL TEST ANALYSIS

Data Set: \...\MW44I_R1.aqt
Date: 02/23/23 Time: 21:30:33

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

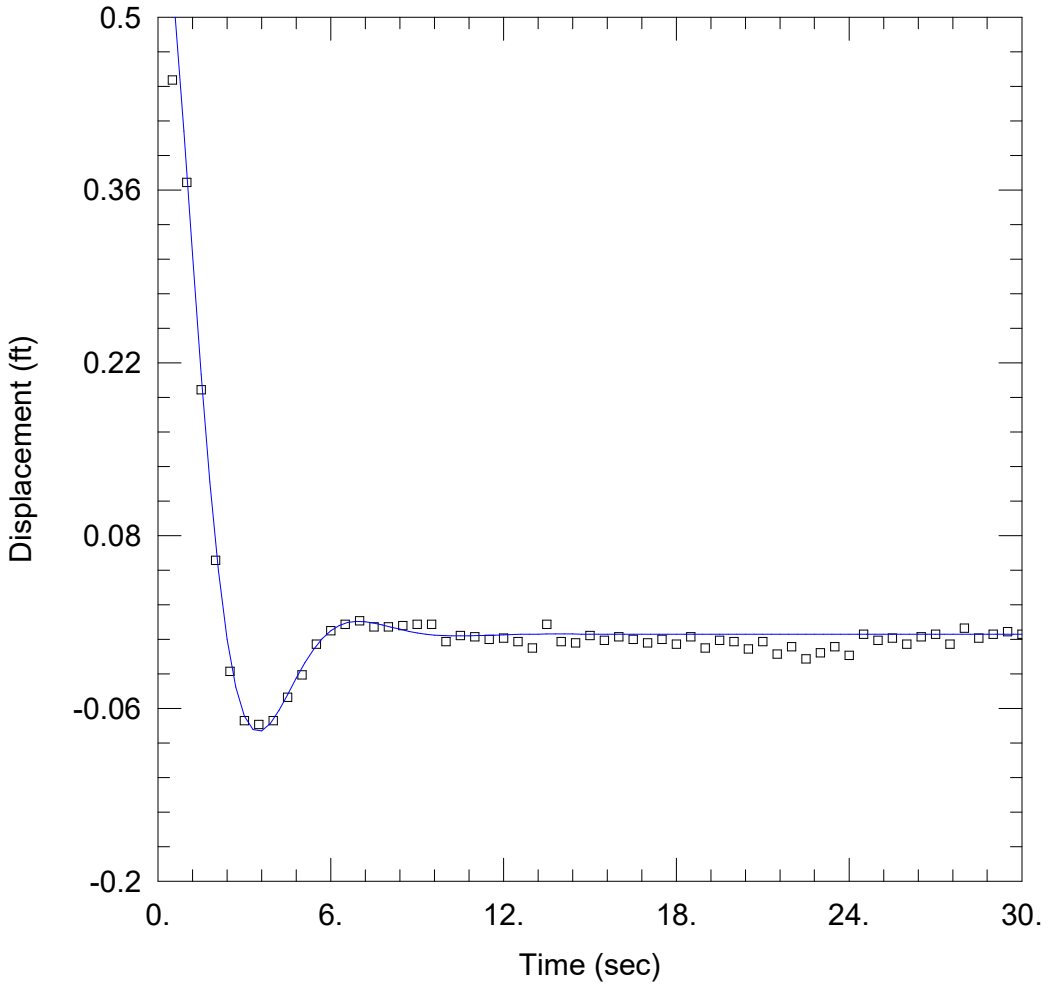
WELL DATA (MW-44I)

Initial Displacement: 0.642 ft
Total Well Penetration Depth: 33.98 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 34. ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03822 cm/sec Le = 27.72 ft



WELL TEST ANALYSIS

Data Set: \...\MW44I_R2.aqt
Date: 02/23/23 Time: 21:30:49

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-44I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 34. ft Anisotropy Ratio (Kz/Kr): 1.

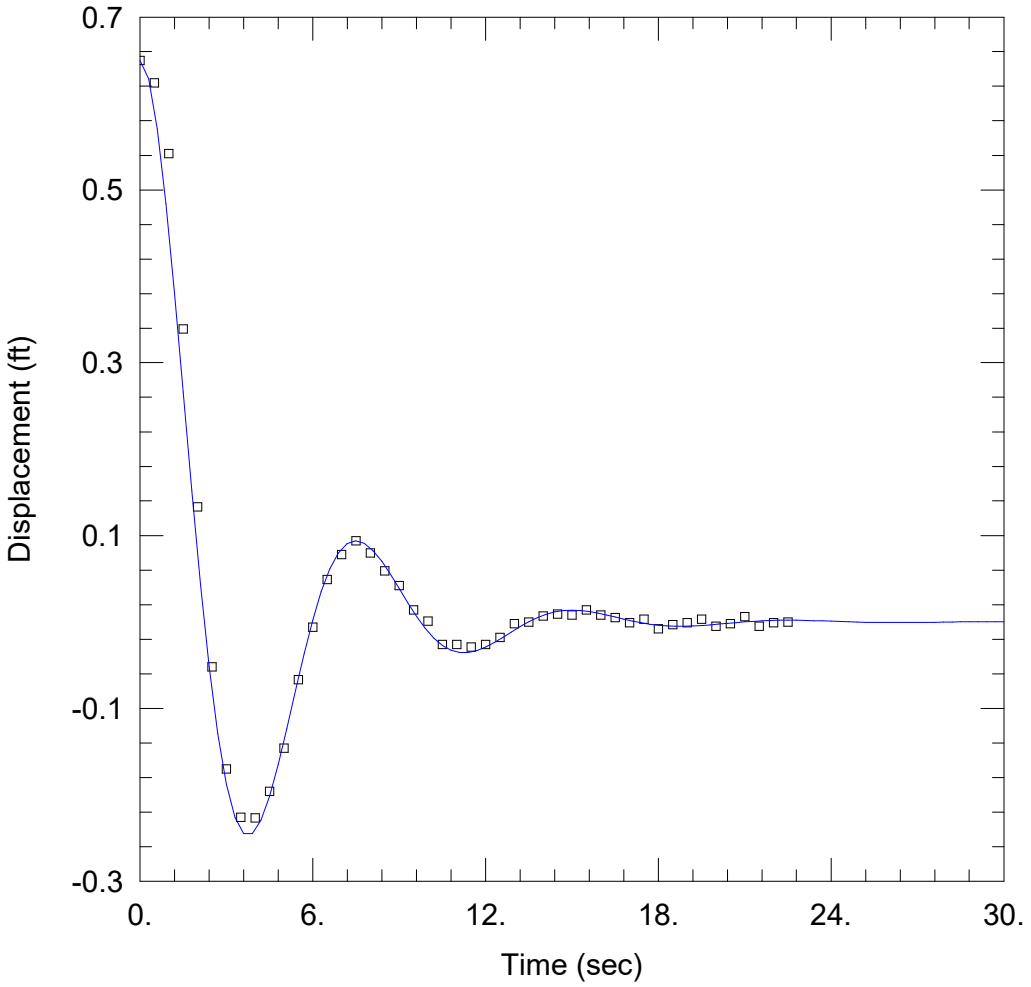
WELL DATA (MW-44I)

Initial Displacement: 0.595 ft
Total Well Penetration Depth: 33.98 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 34. ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.04007 cm/sec Le = 27.97 ft



WELL TEST ANALYSIS

Data Set: \...\MW45A_R1.aqt
Date: 02/23/23 Time: 21:32:02

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.1 ft Anisotropy Ratio (Kz/Kr): 1.

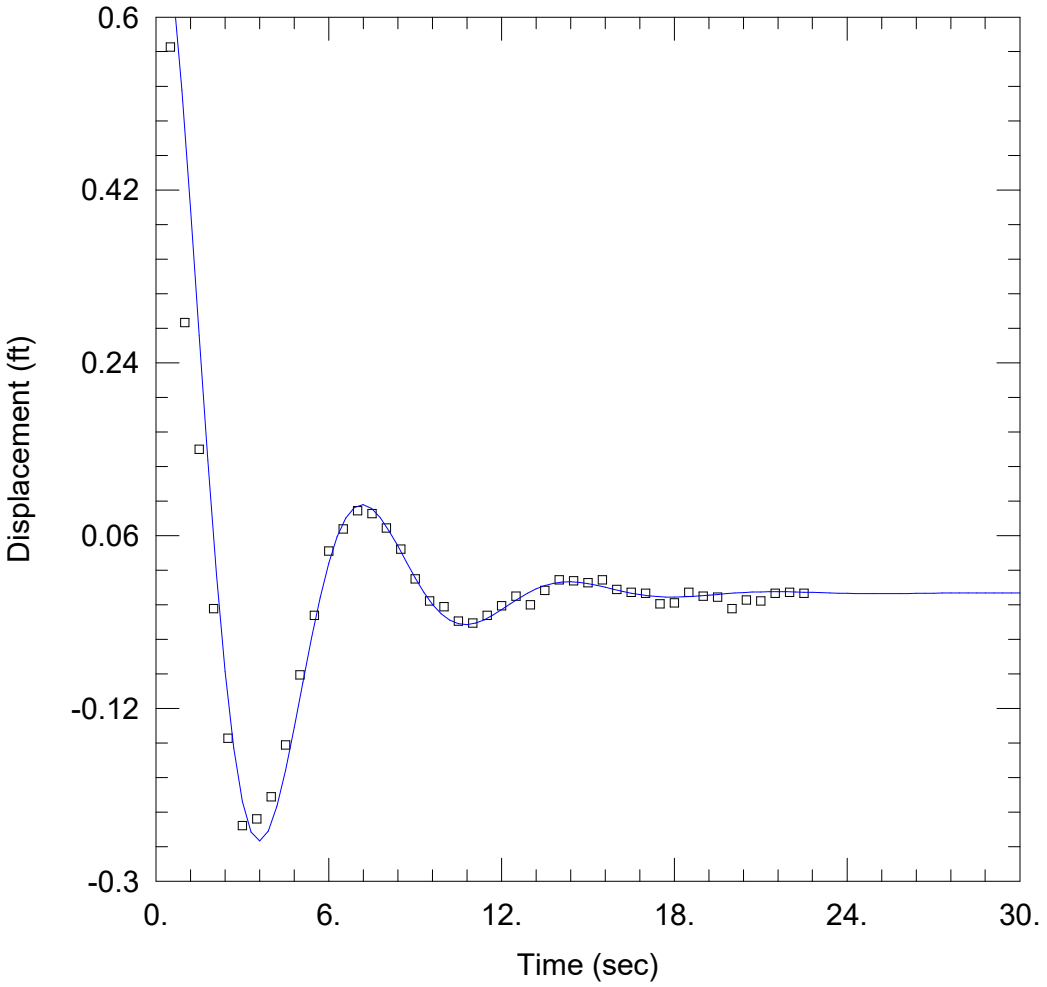
WELL DATA (MW-45A)

Initial Displacement: 0.65 ft
Total Well Penetration Depth: 43.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05945 cm/sec Le = 41.91 ft



WELL TEST ANALYSIS

Data Set: \...\MW45A_R2.aqt
Date: 02/23/23 Time: 21:32:21

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 43.1 ft Anisotropy Ratio (Kz/Kr): 1.

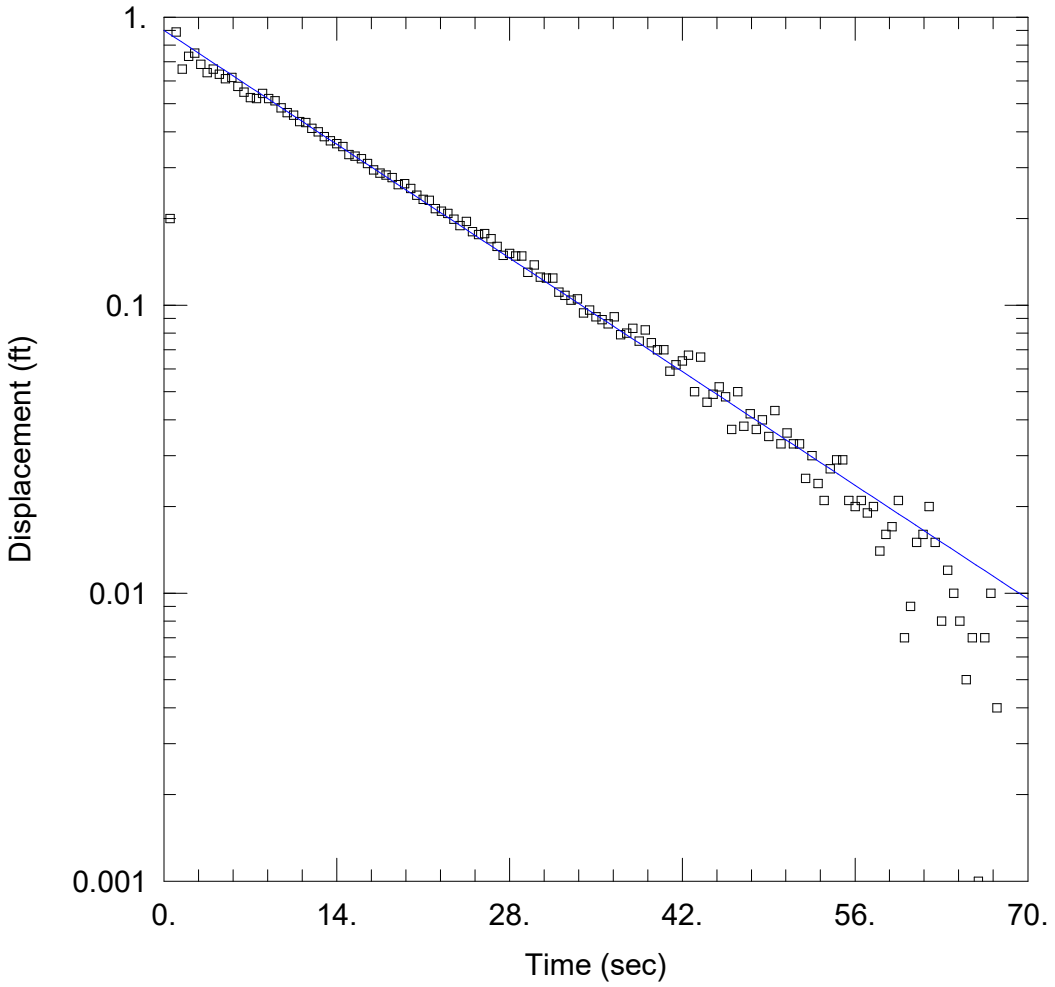
WELL DATA (MW-45A)

Initial Displacement: 0.724 ft
Total Well Penetration Depth: 43.1 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 43.1 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05907 cm/sec Le = 37.79 ft



WELL TEST ANALYSIS

Data Set: \...\MW45B_F1.aqt
Date: 01/25/23 Time: 19:58:37

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 18.1 ft Anisotropy Ratio (Kz/Kr): 1.

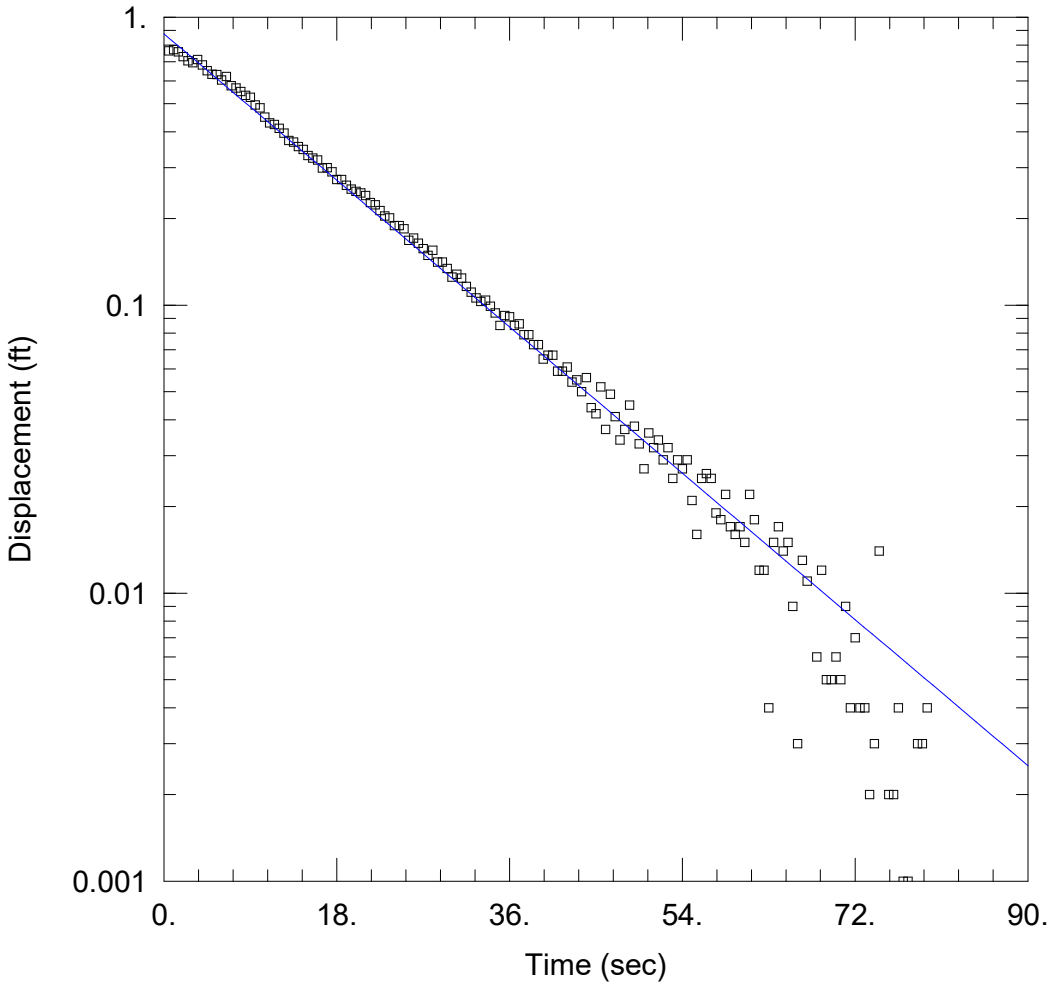
WELL DATA (MW-45B)

Initial Displacement: 3.35 ft
Total Well Penetration Depth: 18.08 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.1 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004272 cm/sec y0 = 0.8995 ft



WELL TEST ANALYSIS

Data Set: \...\MW45B_F2.aqt
Date: 01/25/23 Time: 19:59:00

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 18.1 ft Anisotropy Ratio (Kz/Kr): 1.

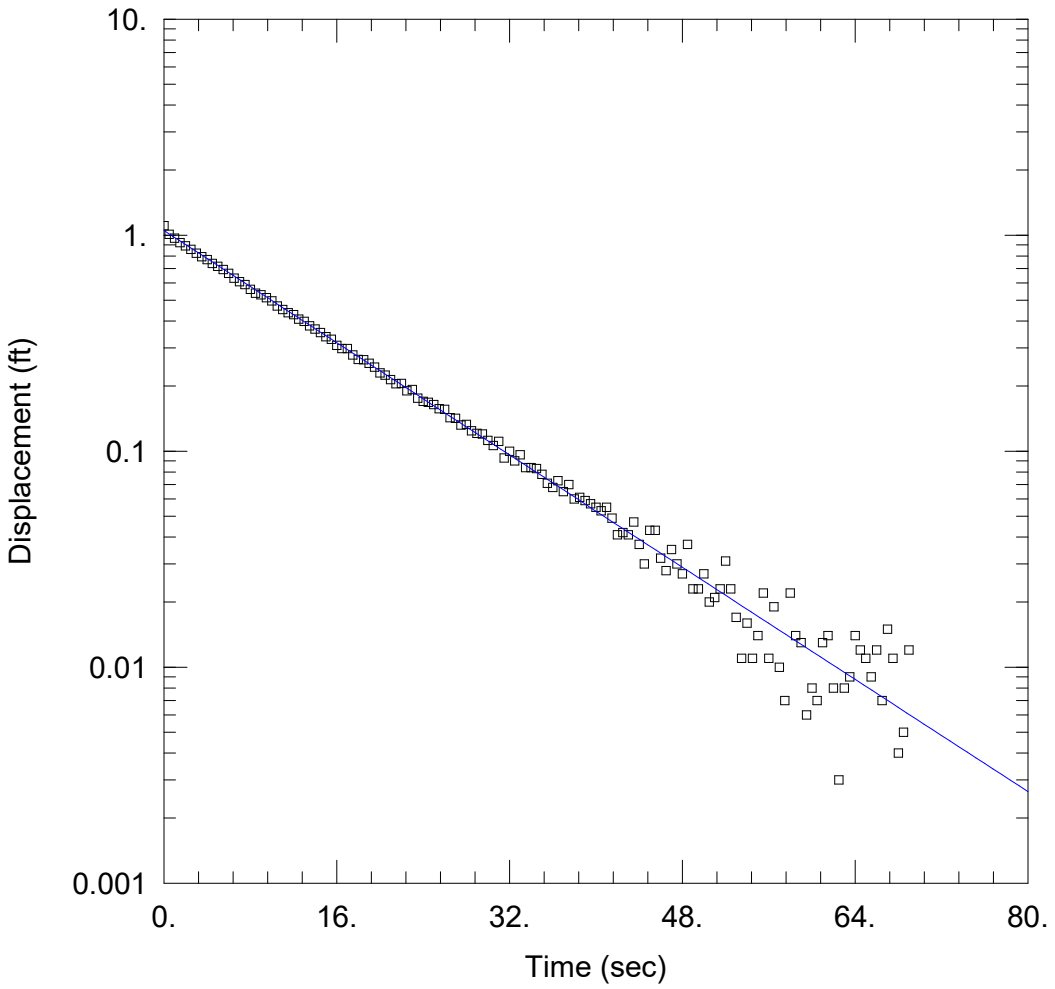
WELL DATA (MW-45B)

Initial Displacement: 1.331 ft
Total Well Penetration Depth: 18.08 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.1 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004276 cm/sec y0 = 0.875 ft



WELL TEST ANALYSIS

Data Set: \...\MW45B_R1.aqt
Date: 01/25/23 Time: 19:59:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 18.1 ft Anisotropy Ratio (Kz/Kr): 1.

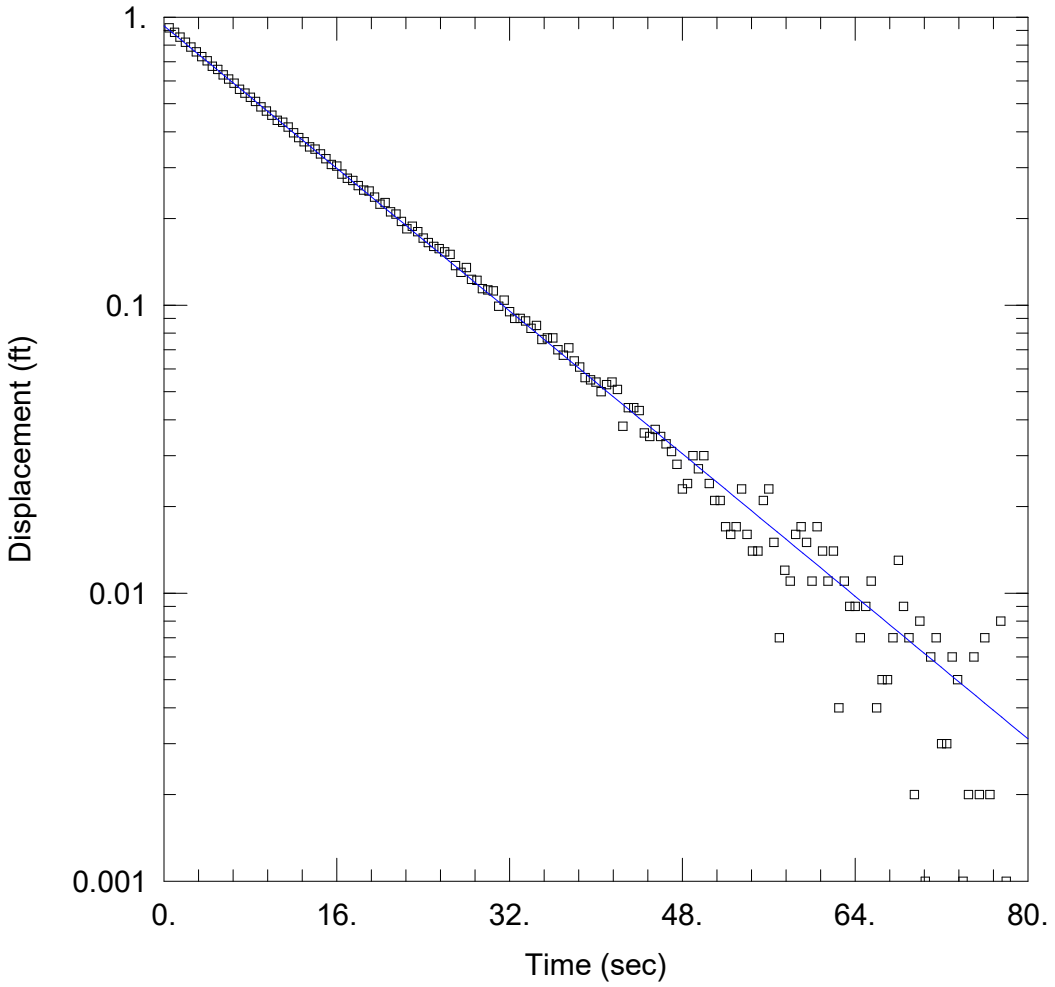
WELL DATA (MW-45B)

Initial Displacement: 1.104 ft
Total Well Penetration Depth: 18.08 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.1 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004915 cm/sec y0 = 1.05 ft



WELL TEST ANALYSIS

Data Set: \...\MW45B_R2.aqt
Date: 01/25/23 Time: 19:59:43

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 18.1 ft Anisotropy Ratio (Kz/Kr): 1.

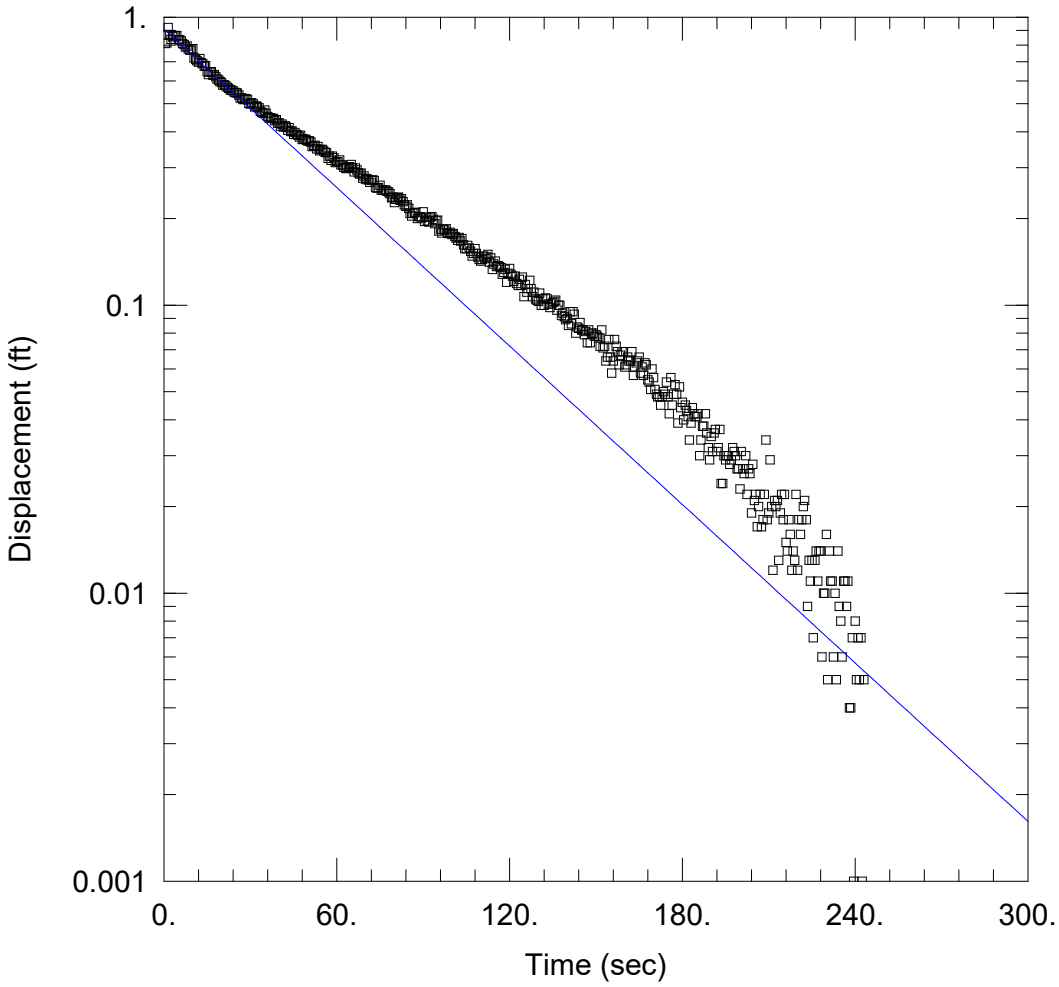
WELL DATA (MW-45B)

Initial Displacement: 1.025 ft
Total Well Penetration Depth: 18.08 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 18.1 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004684 cm/sec y0 = 0.9327 ft



WELL TEST ANALYSIS

Data Set: \...\MW45I_F1.aqt
Date: 02/03/23 Time: 15:56:19

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 24.8 ft Anisotropy Ratio (Kz/Kr): 1.

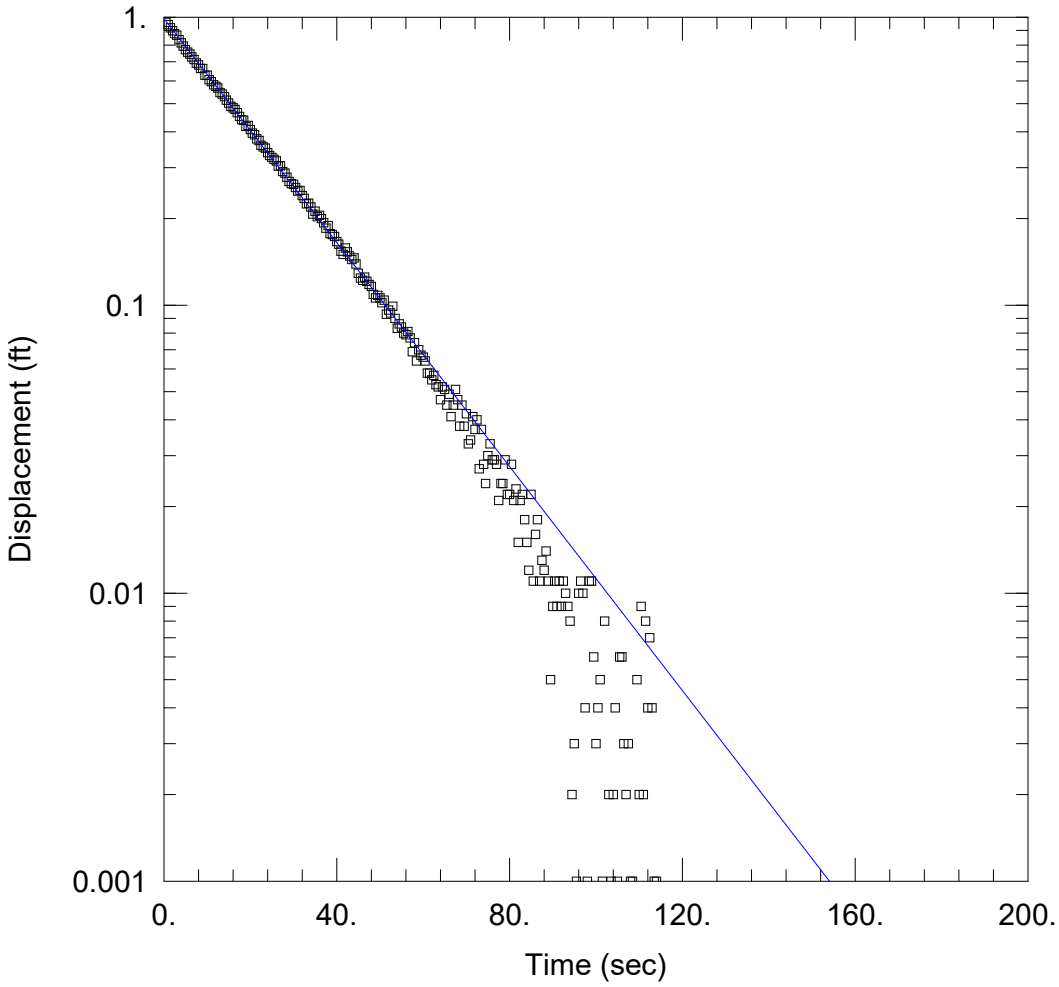
WELL DATA (MW-45I)

Initial Displacement: 1.276 ft
Total Well Penetration Depth: 24.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 24.8 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.001387 cm/sec y0 = 0.9085 ft



WELL TEST ANALYSIS

Data Set: \...\MW45I_R1.aqt
Date: 01/25/23 Time: 20:00:51

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 24.8 ft Anisotropy Ratio (Kz/Kr): 1.

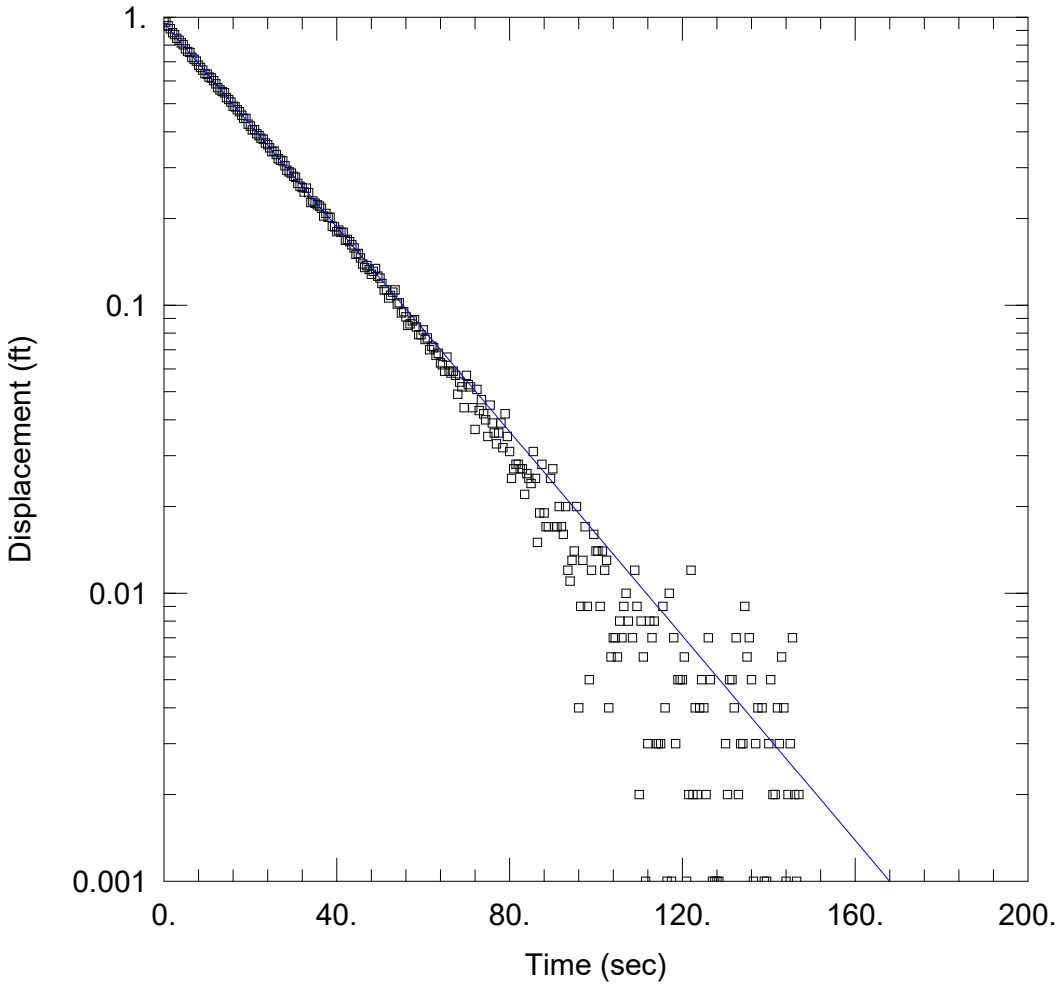
WELL DATA (MW-45I)

Initial Displacement: 1.003 ft
Total Well Penetration Depth: 24.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 24.8 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.00294 cm/sec y0 = 0.9888 ft



WELL TEST ANALYSIS

Data Set: \...\MW45I_R2.aqt
Date: 01/25/23 Time: 20:01:12

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-45I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 24.8 ft Anisotropy Ratio (Kz/Kr): 1.

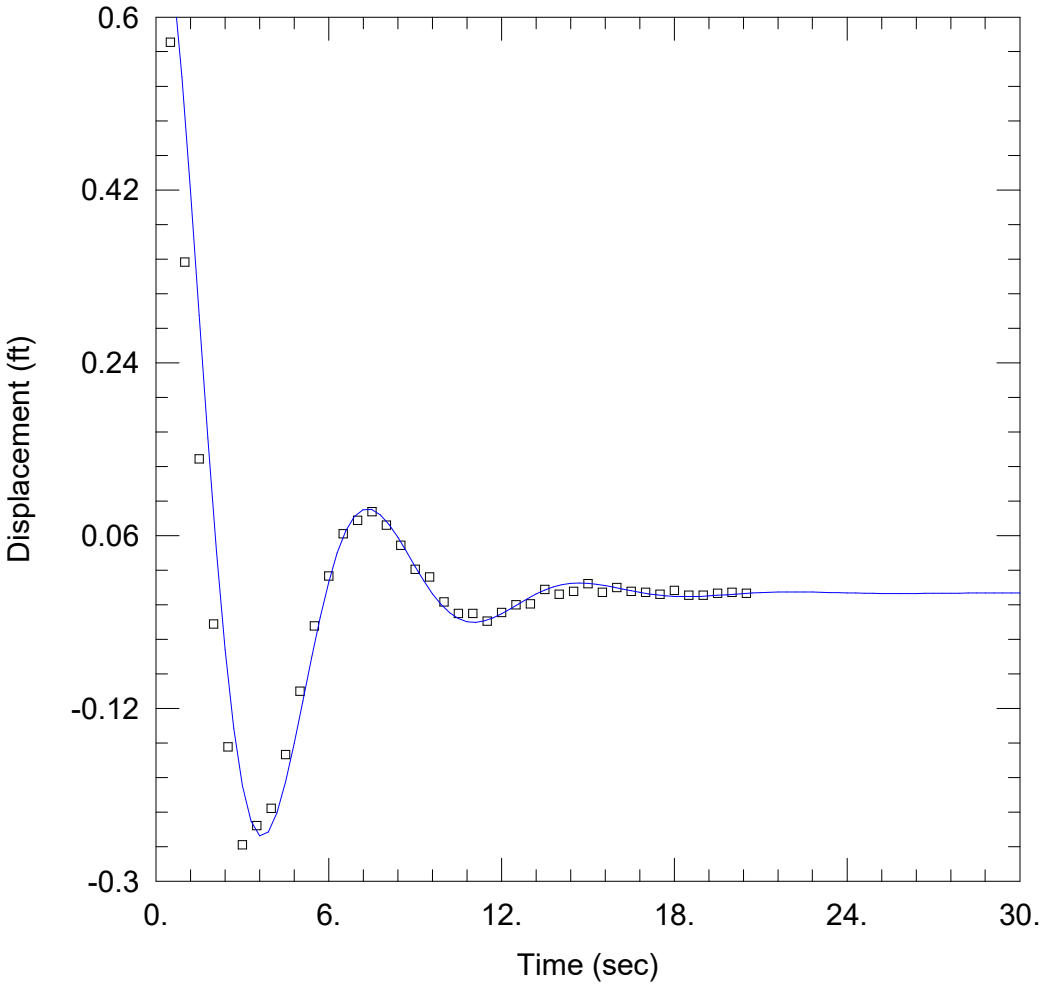
WELL DATA (MW-45I)

Initial Displacement: 0.983 ft
Total Well Penetration Depth: 24.82 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 24.8 ft
Screen Length: 5. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.002683 cm/sec y0 = 0.956 ft



WELL TEST ANALYSIS

Data Set: \...\MW46A_R1.aqt
Date: 02/23/23 Time: 21:34:21

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 48.8 ft Anisotropy Ratio (Kz/Kr): 1.

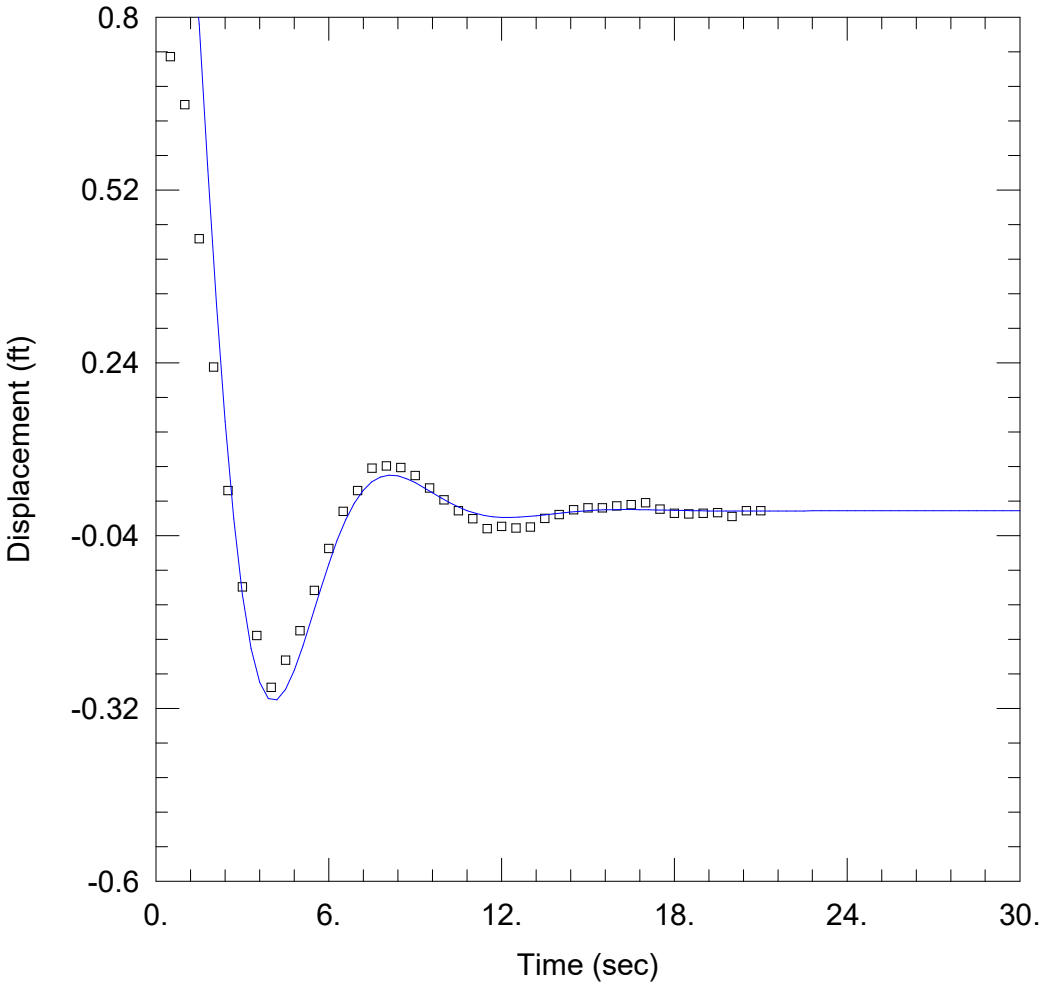
WELL DATA (MW-46A)

Initial Displacement: 0.731 ft
Total Well Penetration Depth: 48.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 48.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05892 cm/sec Le = 39.65 ft



WELL TEST ANALYSIS

Data Set: \...\MW46A_R2.aqt
Date: 02/23/23 Time: 21:34:58

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 48.8 ft Anisotropy Ratio (Kz/Kr): 1.

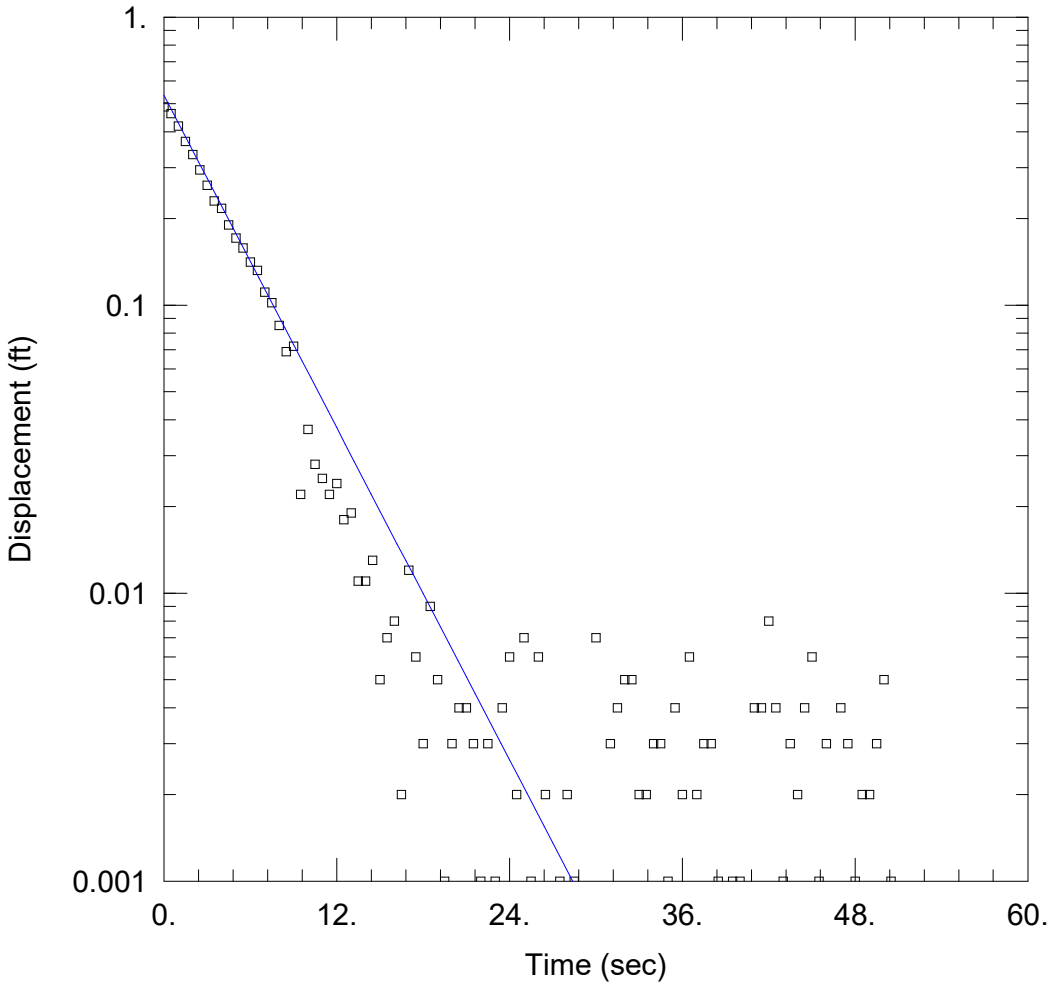
WELL DATA (MW-46A)

Initial Displacement: 1.64 ft
Total Well Penetration Depth: 48.75 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 48.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.03849 cm/sec Le = 42.2 ft



WELL TEST ANALYSIS

Data Set: \...\MW46B_F1.aqt
Date: 01/25/23 Time: 20:13:57

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 10.4 ft Anisotropy Ratio (Kz/Kr): 1.

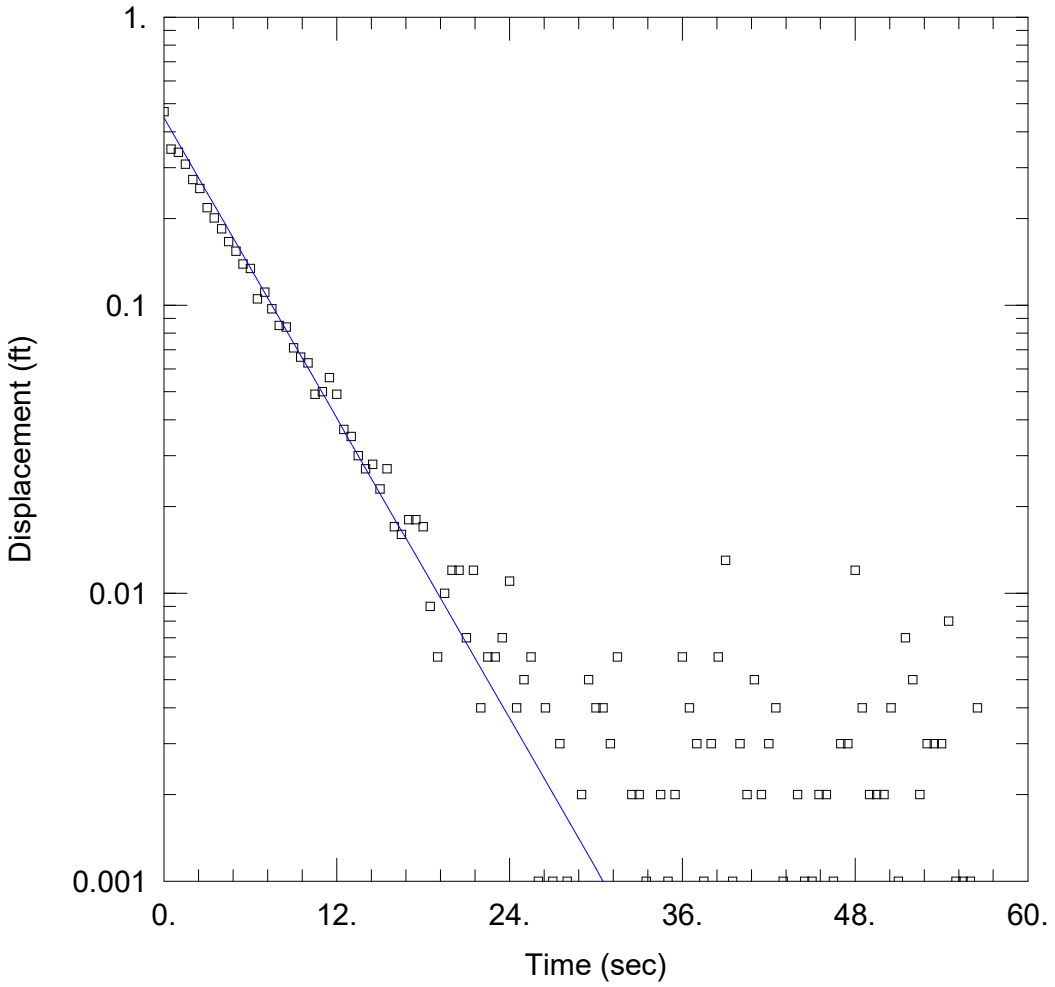
WELL DATA (MW46B)

Initial Displacement: 0.488 ft
Total Well Penetration Depth: 10.44 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.006652 cm/sec y0 = 0.5351 ft



WELL TEST ANALYSIS

Data Set: \...\MW46B_F2.aqt
Date: 01/25/23 Time: 20:14:22

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 10.4 ft Anisotropy Ratio (Kz/Kr): 1.

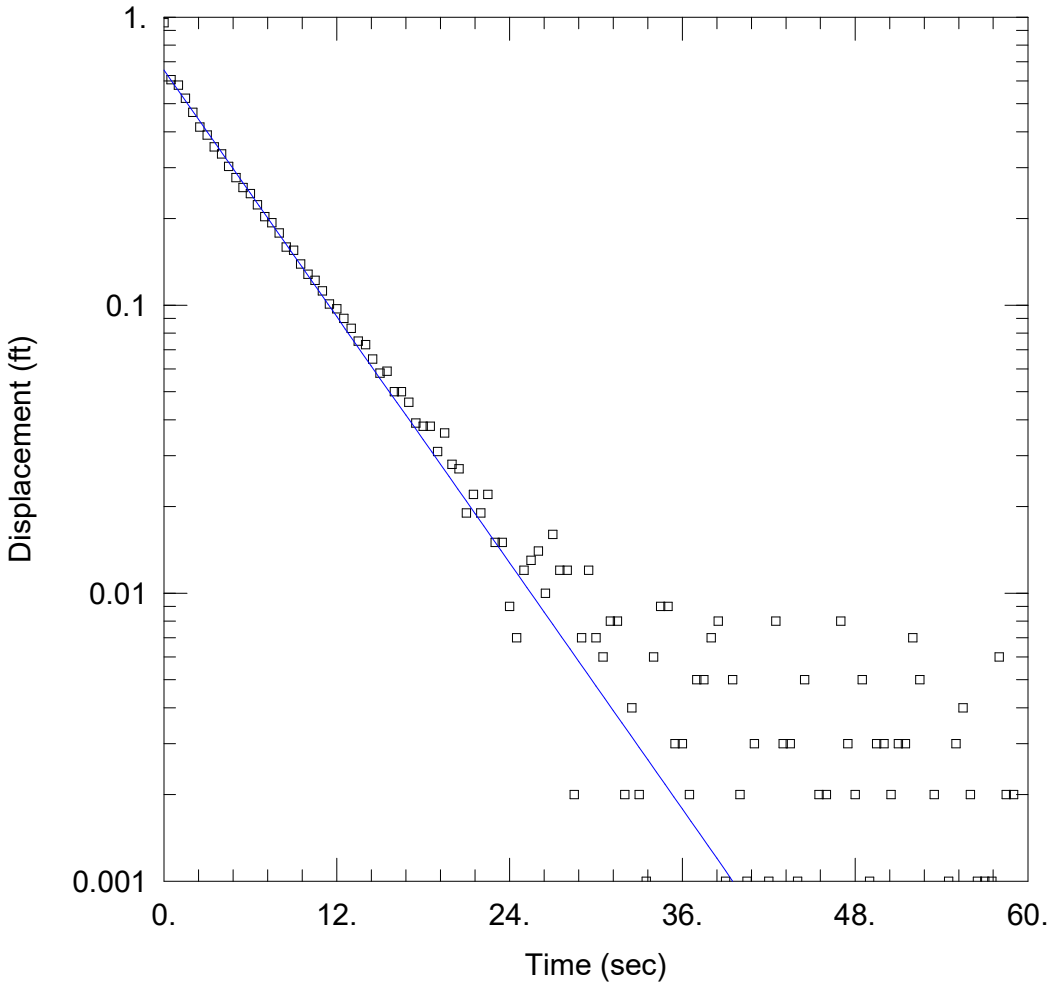
WELL DATA (MW46B)

Initial Displacement: 0.469 ft
Total Well Penetration Depth: 10.44 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.006011 cm/sec y0 = 0.4473 ft



WELL TEST ANALYSIS

Data Set: \...\MW46B_R1.aqt
Date: 01/25/23 Time: 20:14:44

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 10.4 ft Anisotropy Ratio (Kz/Kr): 1.

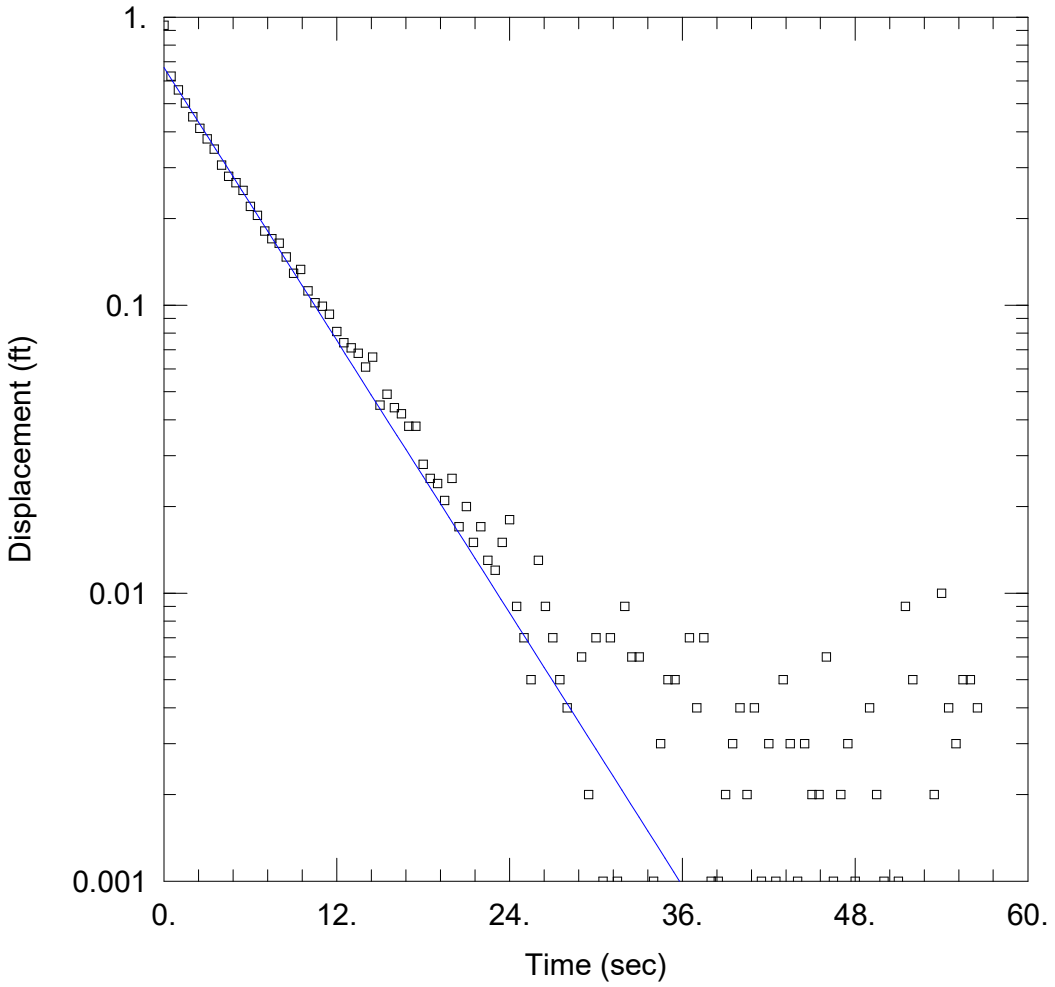
WELL DATA (MW46B)

Initial Displacement: 0.956 ft
Total Well Penetration Depth: 10.44 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.004931 cm/sec y0 = 0.654 ft



WELL TEST ANALYSIS

Data Set: \...\MW46B_R2.aqt
Date: 01/25/23 Time: 20:15:07

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 10.4 ft Anisotropy Ratio (Kz/Kr): 1.

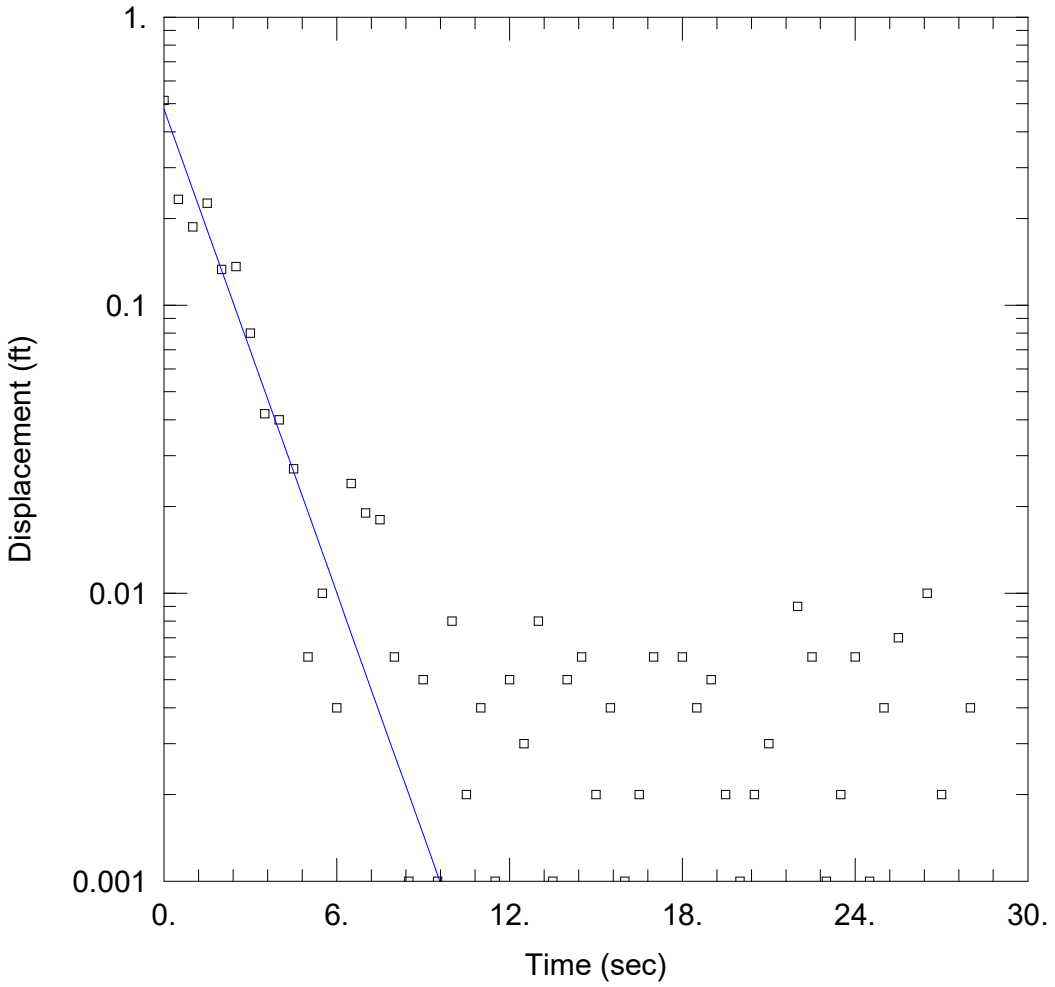
WELL DATA (MW46B)

Initial Displacement: 0.937 ft
Total Well Penetration Depth: 10.44 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 10.4 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.005458 cm/sec y0 = 0.6678 ft



WELL TEST ANALYSIS

Data Set: \...\MW46I_F1.aqt
Date: 02/03/23 Time: 16:01:23

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 30.5 ft Anisotropy Ratio (Kz/Kr): 1.

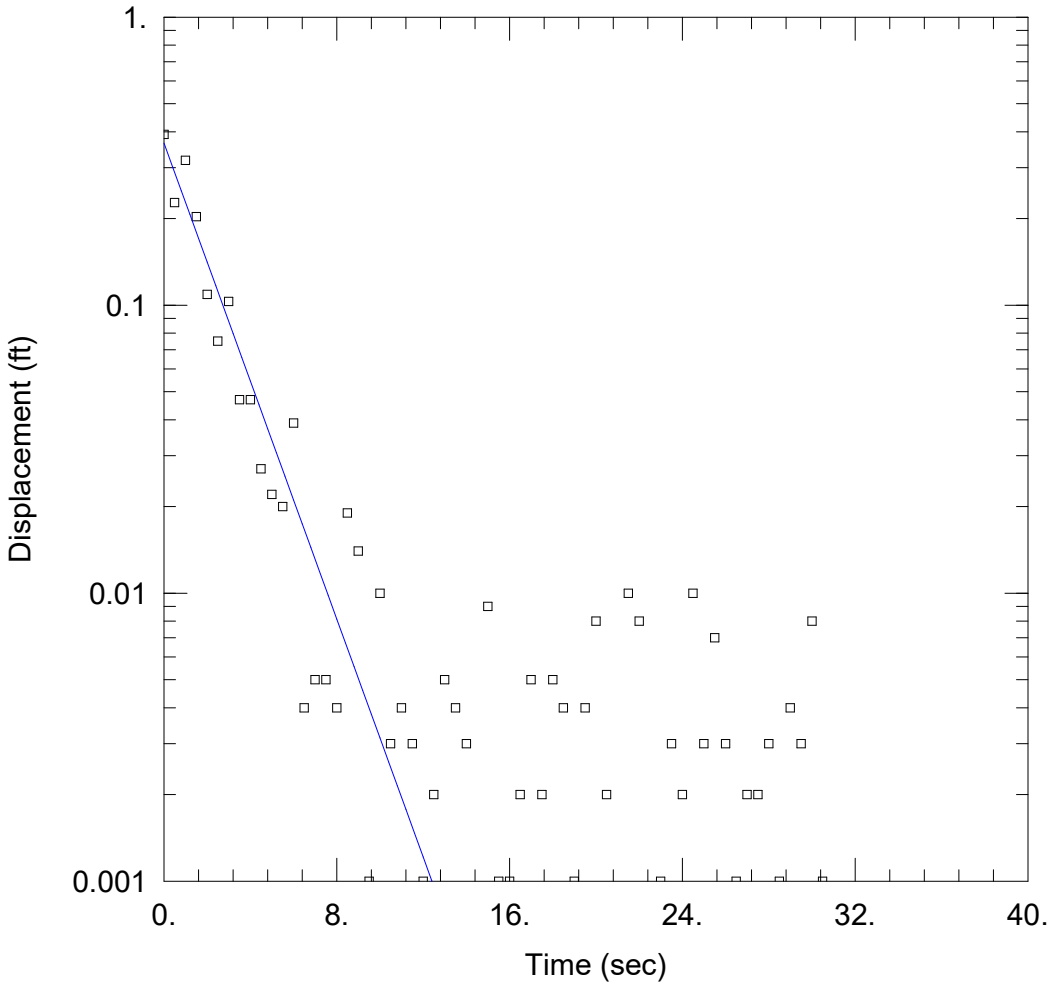
WELL DATA (MW-46I)

Initial Displacement: 0.513 ft
Total Well Penetration Depth: 30.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02379 cm/sec y0 = 0.4792 ft



WELL TEST ANALYSIS

Data Set: \...\MW46I_F2.aqt
Date: 02/03/23 Time: 16:04:29

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 30.5 ft Anisotropy Ratio (Kz/Kr): 1.

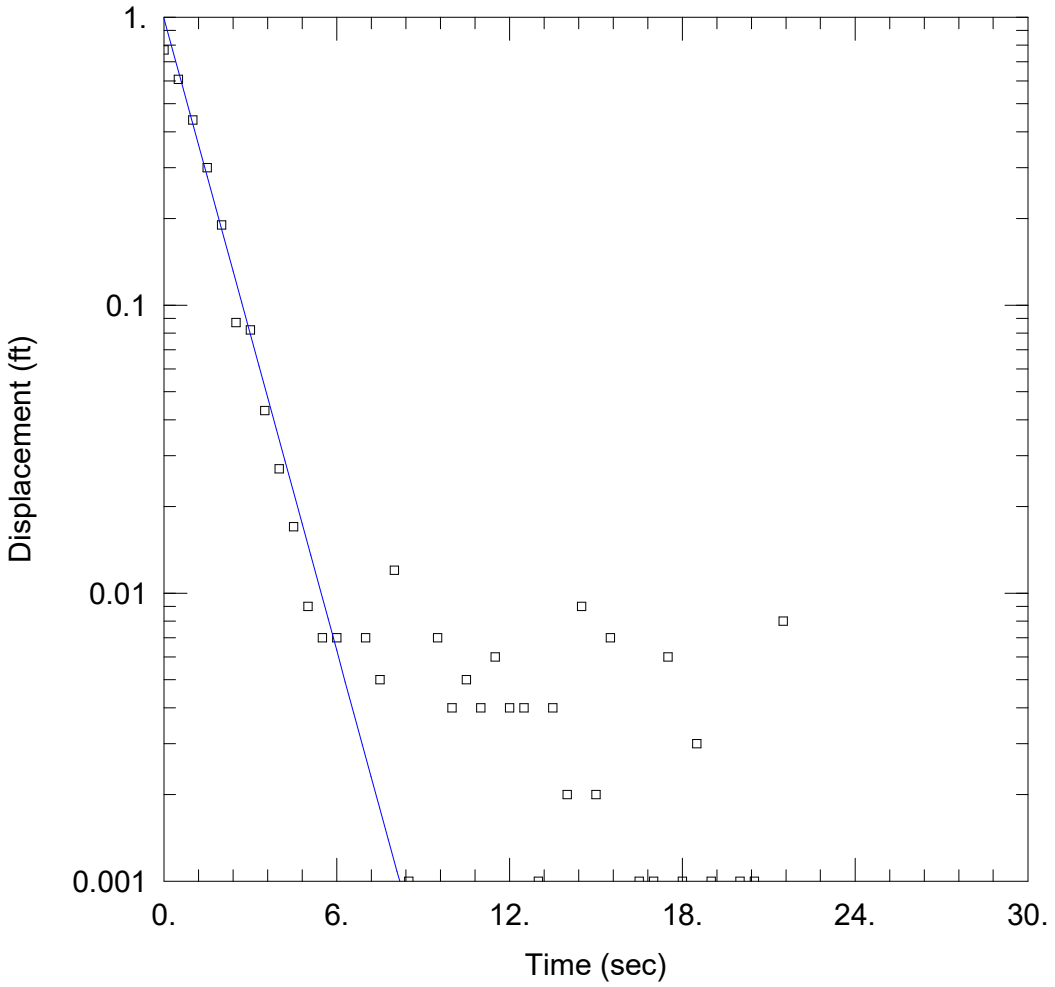
WELL DATA (MW-46I)

Initial Displacement: 0.392 ft
Total Well Penetration Depth: 30.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.01756 cm/sec y0 = 0.3652 ft



WELL TEST ANALYSIS

Data Set: \...\MW46I_R1.aqt
Date: 01/25/23 Time: 20:18:07

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 30.5 ft Anisotropy Ratio (Kz/Kr): 1.

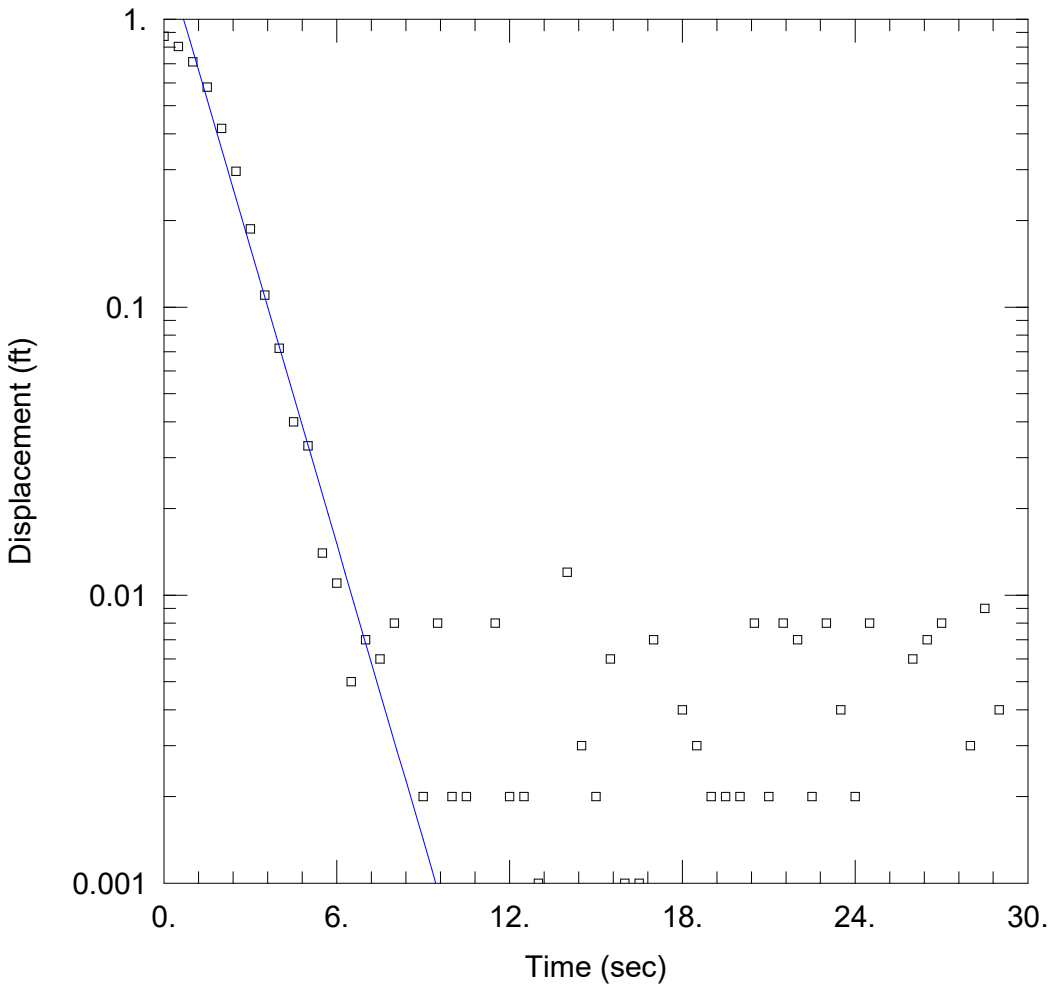
WELL DATA (MW-46I)

Initial Displacement: 0.769 ft
Total Well Penetration Depth: 30.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03108 cm/sec y0 = 0.989 ft



WELL TEST ANALYSIS

Data Set: \...\MW46I_R2.aqt
Date: 01/25/23 Time: 20:18:35

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-46I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 30.5 ft Anisotropy Ratio (Kz/Kr): 1.

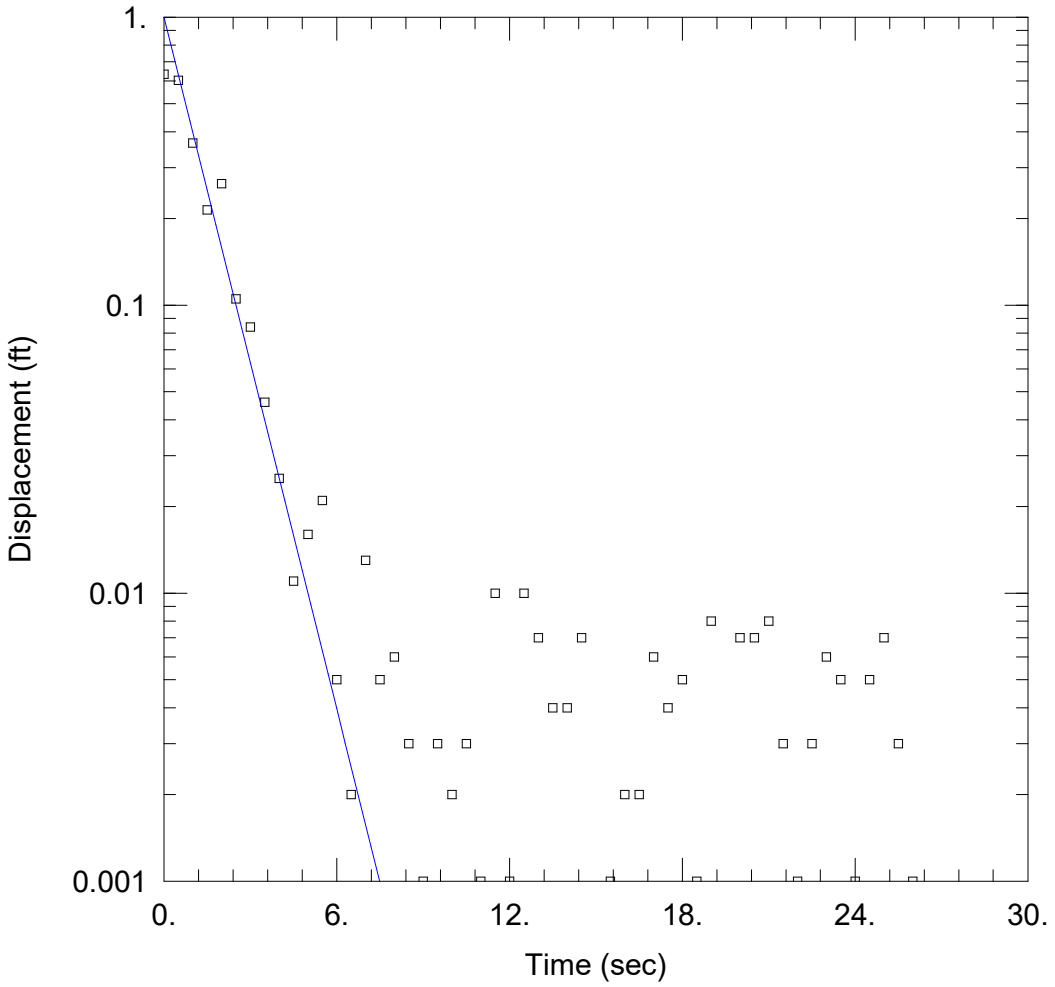
WELL DATA (MW-46I)

Initial Displacement: 0.872 ft
Total Well Penetration Depth: 30.5 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 30.5 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02912 cm/sec y0 = 1.713 ft



WELL TEST ANALYSIS

Data Set: \...\MW47A_F1.aqt
Date: 01/25/23 Time: 20:19:12

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 1.

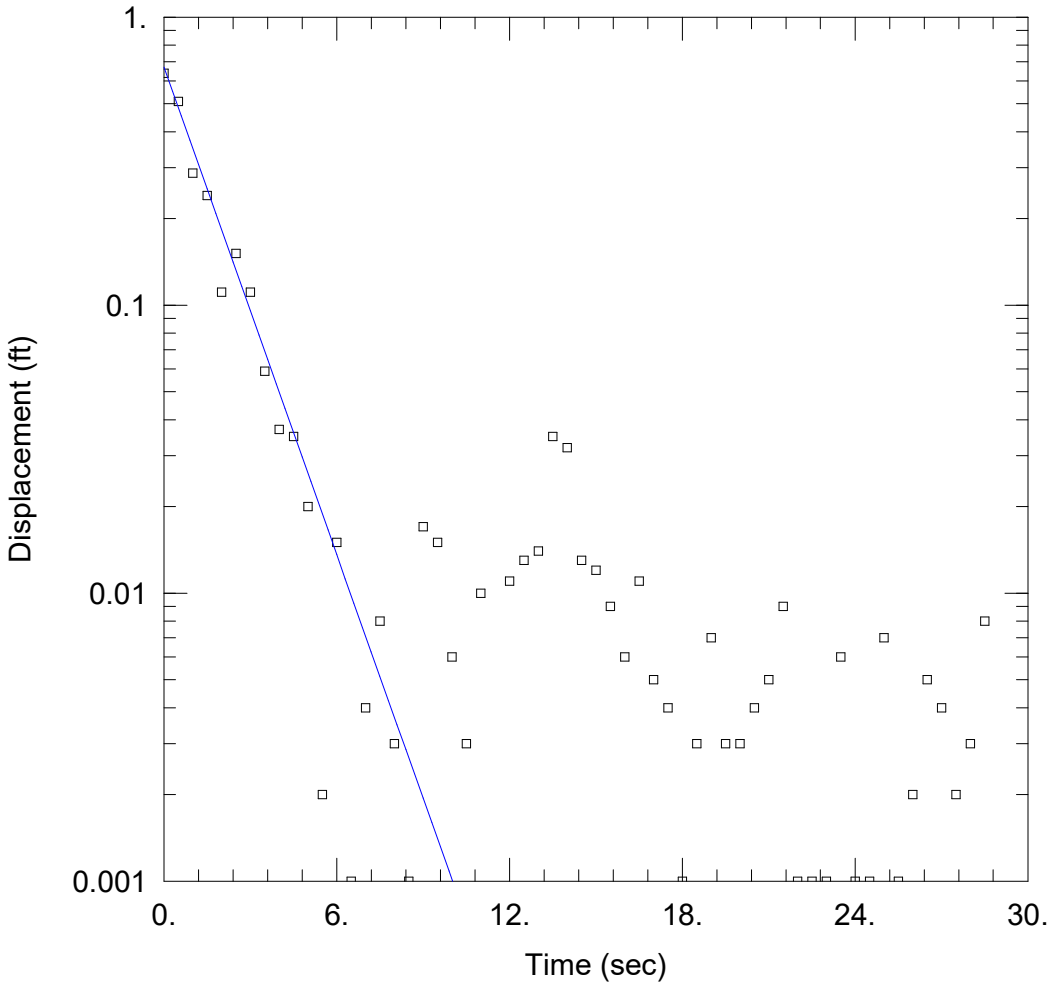
WELL DATA (MW-47A)

Initial Displacement: 0.634 ft
Total Well Penetration Depth: 49.77 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0385 cm/sec y0 = 1. ft



WELL TEST ANALYSIS

Data Set: \...\MW47A_F2.aqt
Date: 02/24/23 Time: 11:18:25

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 1.

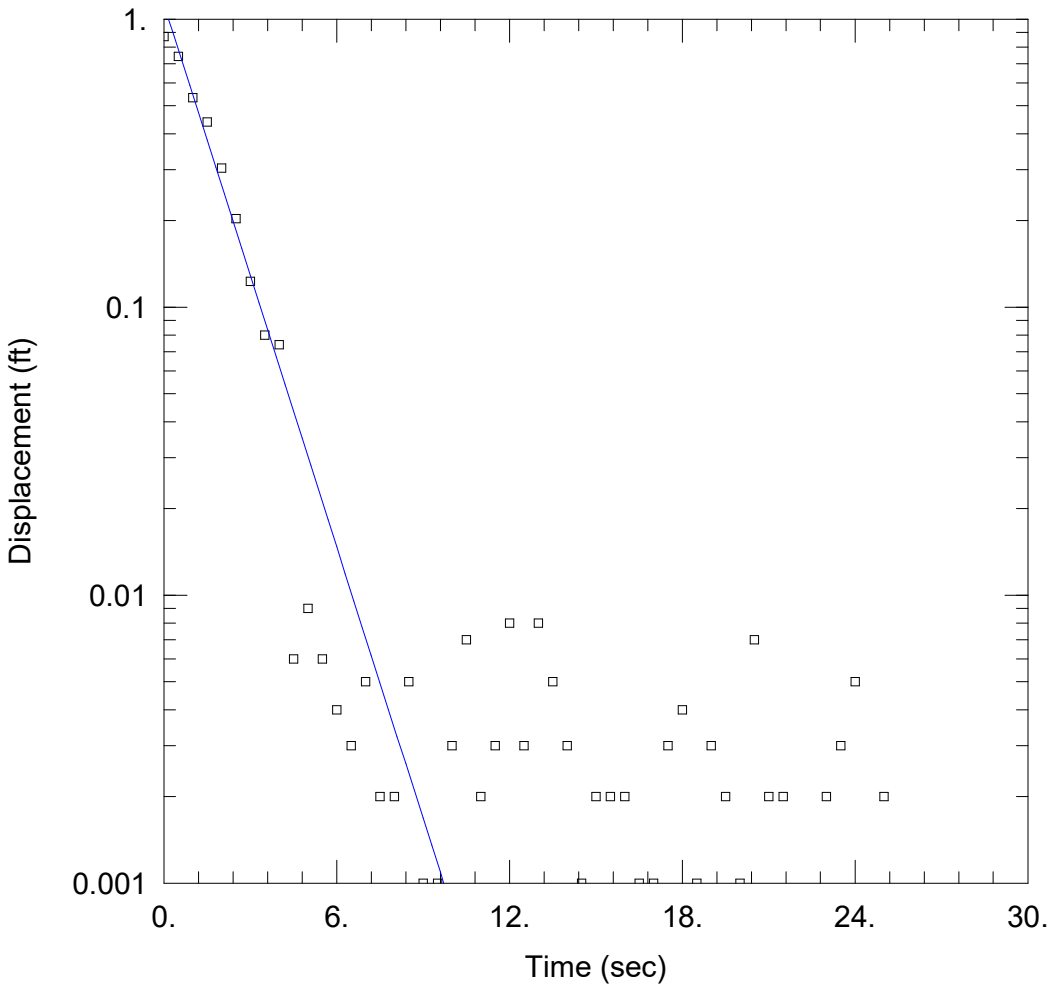
WELL DATA (MW-47A)

Initial Displacement: 0.639 ft
Total Well Penetration Depth: 49.77 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02714 cm/sec y0 = 0.6705 ft



WELL TEST ANALYSIS

Data Set: \...\MW47A_R1.aqt
Date: 01/25/23 Time: 20:19:52

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 1.

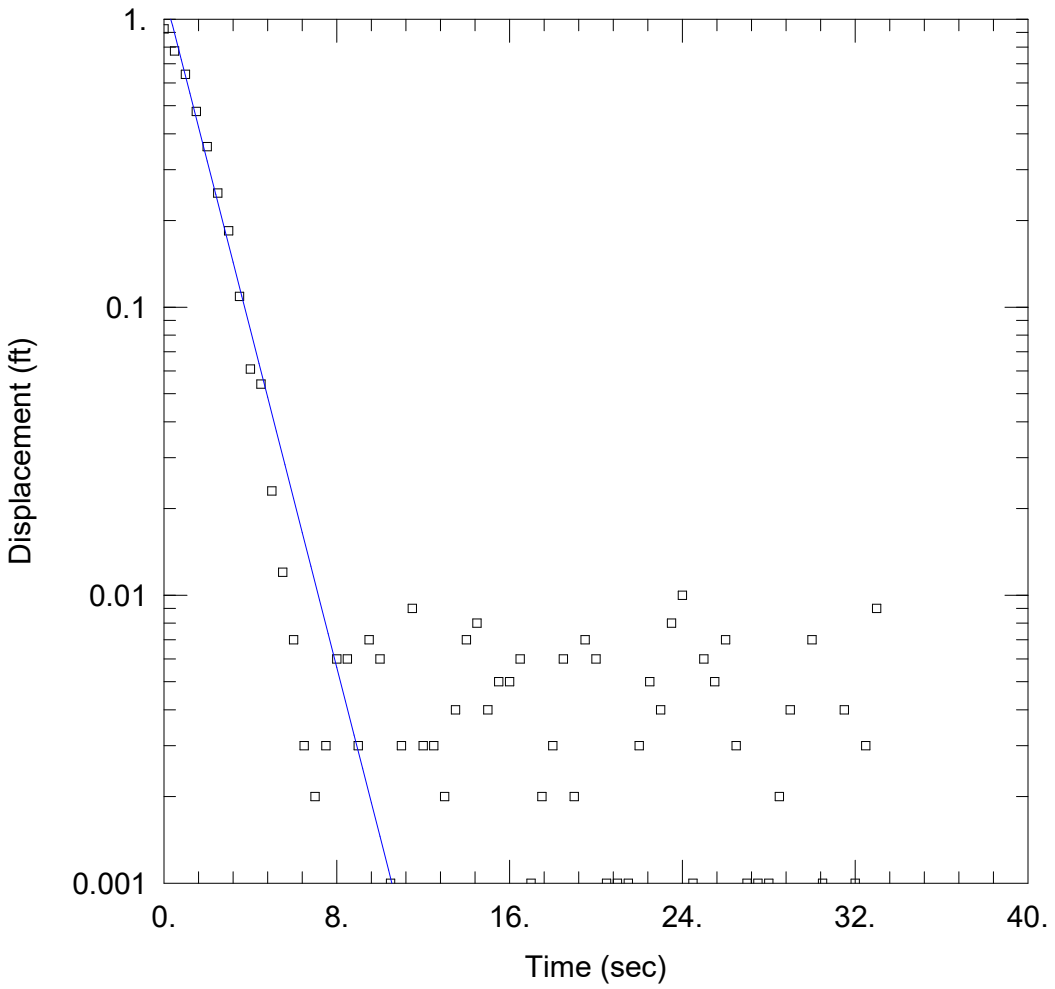
WELL DATA (MW-47A)

Initial Displacement: 0.87 ft
Total Well Penetration Depth: 49.77 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03021 cm/sec y0 = 1.126 ft



WELL TEST ANALYSIS

Data Set: \...\MW47A_R2.aqt
Date: 01/25/23 Time: 20:20:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47A
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 1.

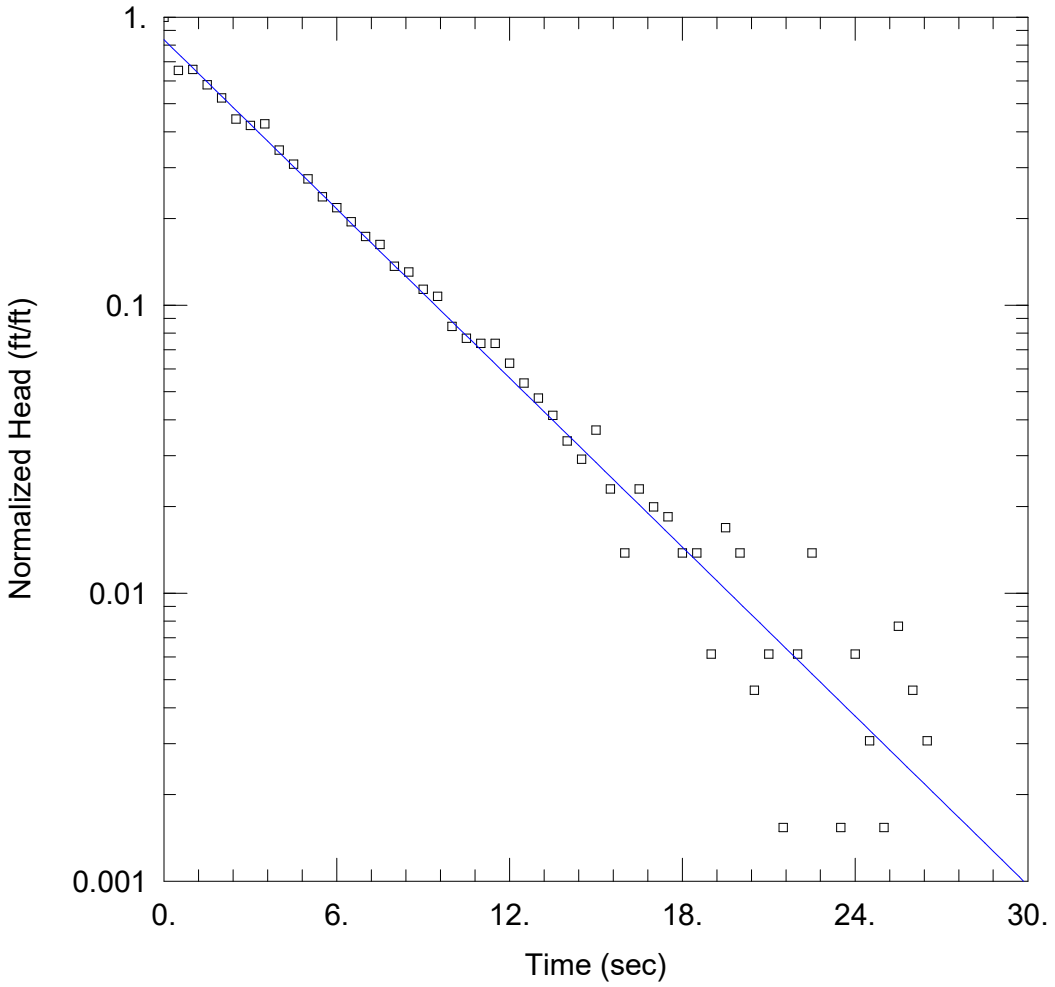
WELL DATA (MW-47A)

Initial Displacement: 0.926 ft
Total Well Penetration Depth: 49.77 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 49.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02821 cm/sec y0 = 1.242 ft



WELL TEST ANALYSIS

Data Set: \...\MW47B_F1.aqt
Date: 01/25/23 Time: 20:20:57

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.8 ft Anisotropy Ratio (Kz/Kr): 1.

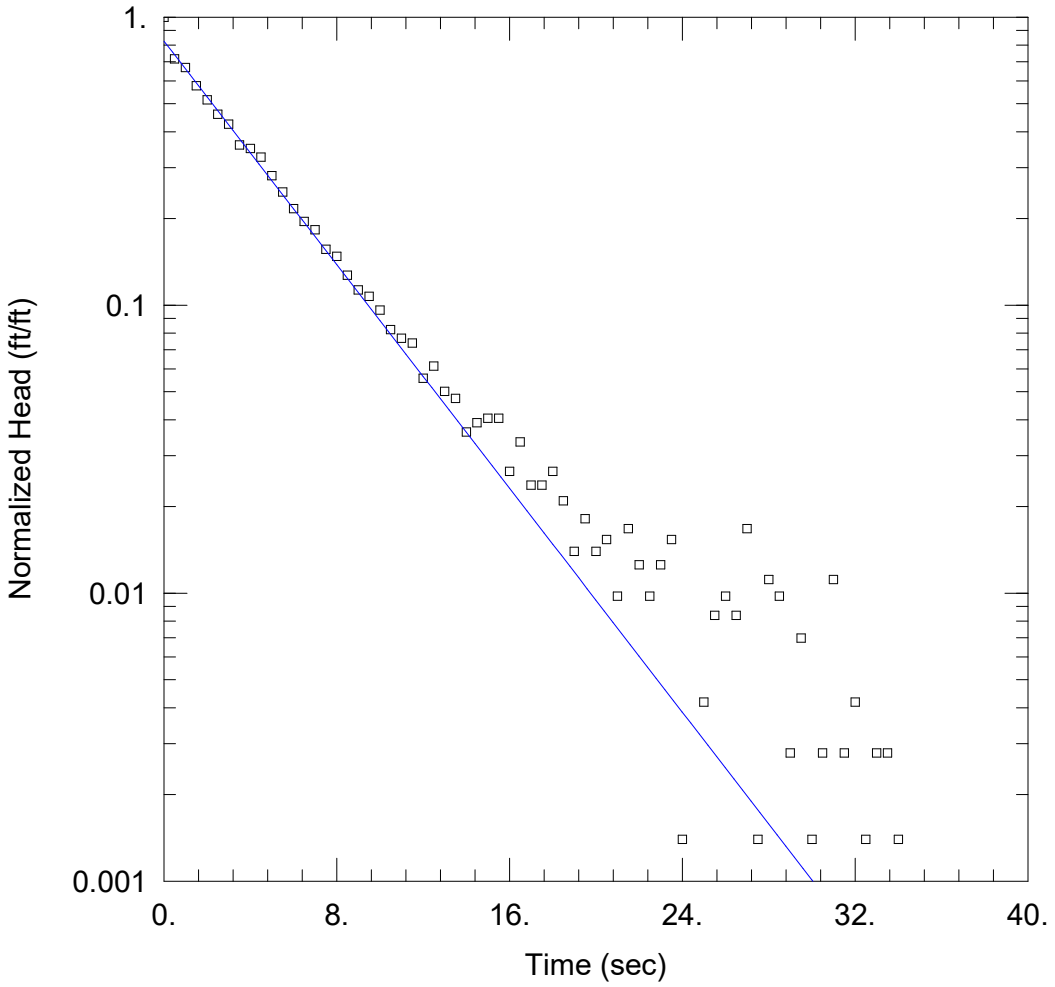
WELL DATA (MW47B)

Initial Displacement: 0.652 ft
Total Well Penetration Depth: 12.25 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02291 cm/sec y0 = 0.5441 ft



WELL TEST ANALYSIS

Data Set: \...\MW47B_F2.aqt
Date: 01/25/23 Time: 20:21:22

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.8 ft Anisotropy Ratio (Kz/Kr): 1.

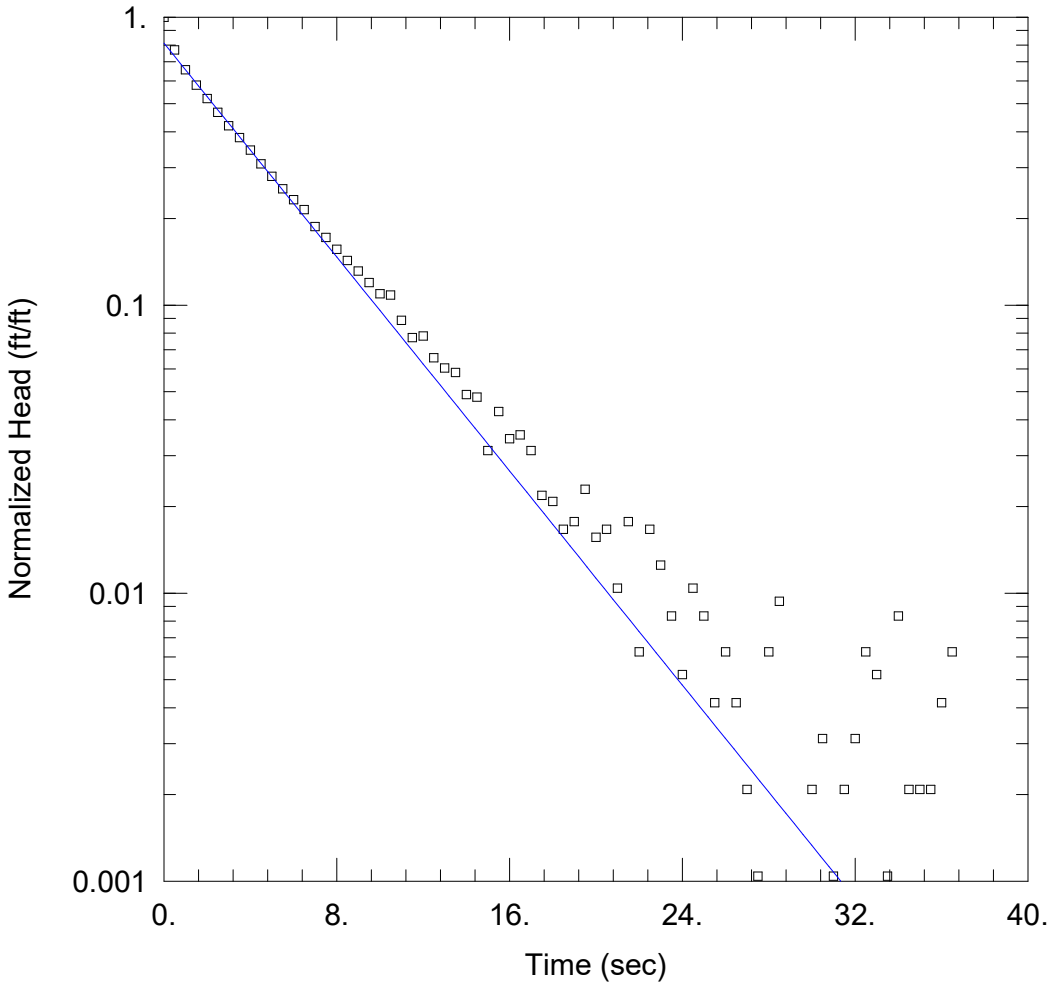
WELL DATA (MW47B)

Initial Displacement: 0.717 ft
Total Well Penetration Depth: 12.25 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02272 cm/sec y0 = 0.5918 ft



WELL TEST ANALYSIS

Data Set: \...\MW47B_R1.aqt
Date: 01/25/23 Time: 20:21:38

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.8 ft Anisotropy Ratio (Kz/Kr): 1.

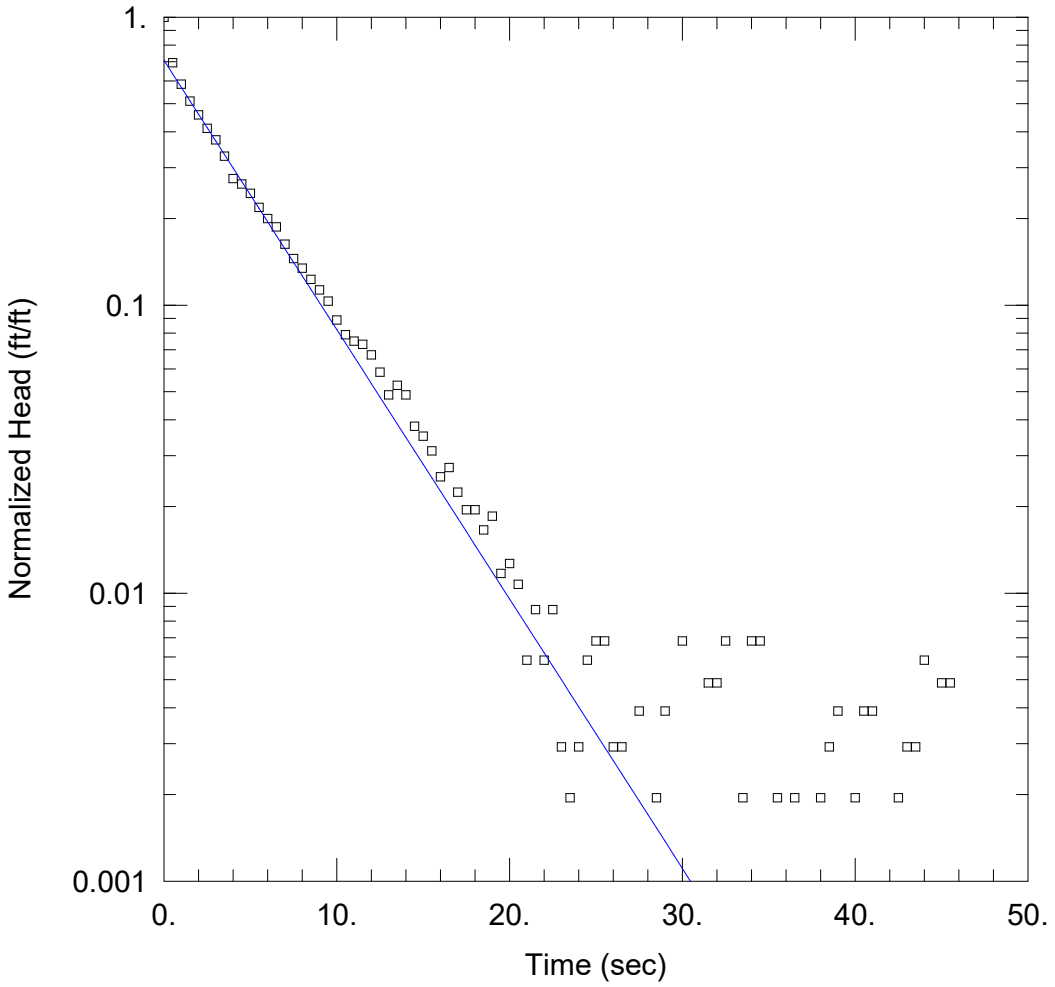
WELL DATA (MW47B)

Initial Displacement: 0.96 ft
Total Well Penetration Depth: 12.25 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02173 cm/sec y0 = 0.7792 ft



WELL TEST ANALYSIS

Data Set: \...\MW47B_R2.aqt
Date: 01/25/23 Time: 20:22:03

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47B
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 7.8 ft Anisotropy Ratio (Kz/Kr): 1.

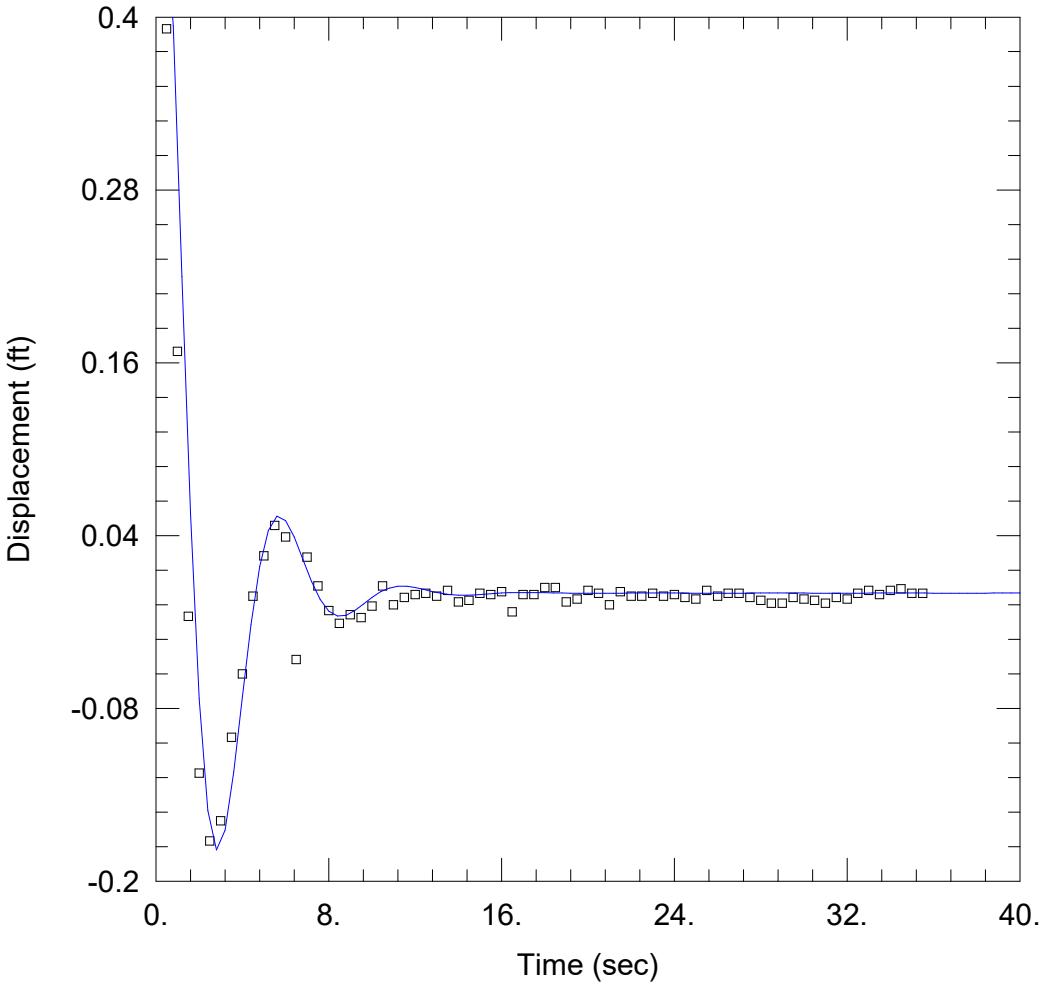
WELL DATA (MW47B)

Initial Displacement: 1.026 ft
Total Well Penetration Depth: 12.25 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 7.8 ft
Screen Length: 10. ft
Well Radius: 0.25 ft
Gravel Pack Porosity: 0.2

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.02189 cm/sec y0 = 0.7265 ft



WELL TEST ANALYSIS

Data Set: \...\MW47I_R1.aqt
Date: 02/23/23 Time: 21:37:20

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.6 ft Anisotropy Ratio (Kz/Kr): 1.

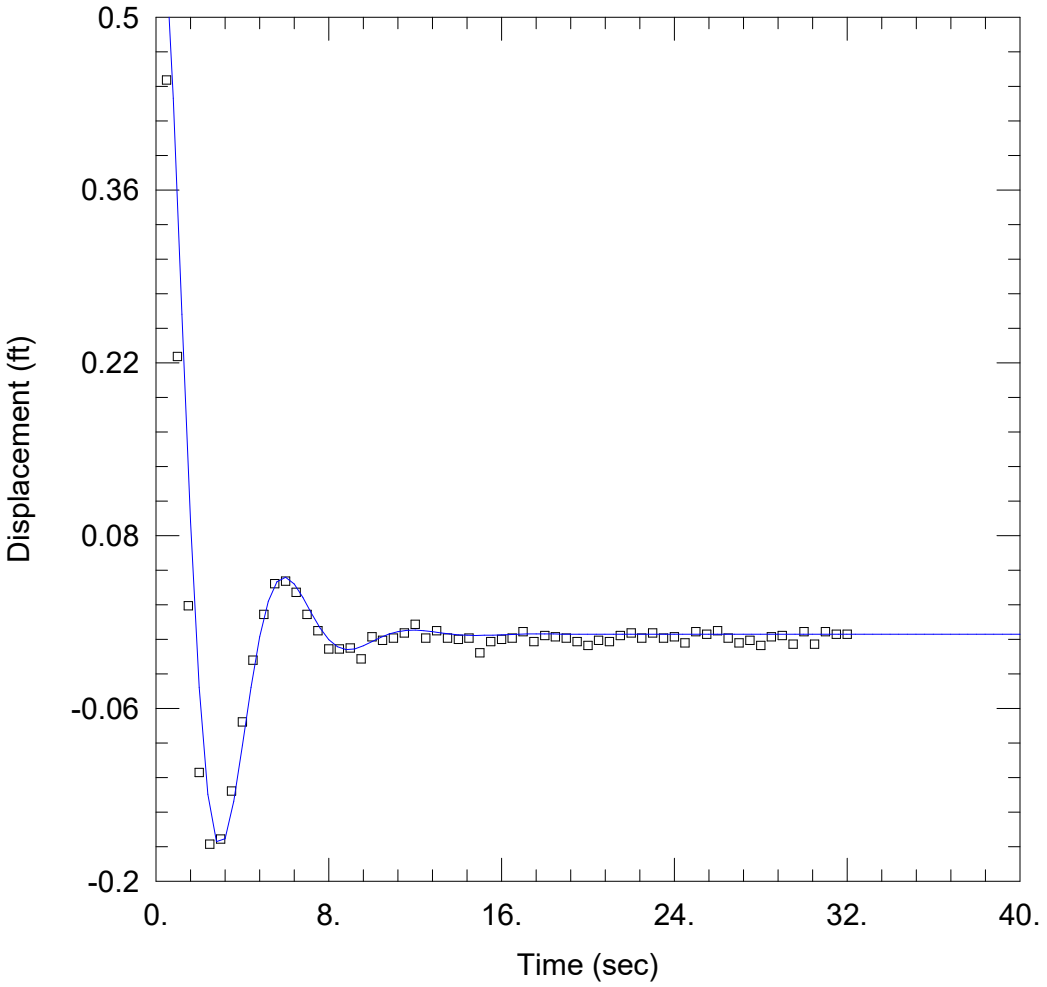
WELL DATA (MW-47I)

Initial Displacement: 0.594 ft
Total Well Penetration Depth: 29.63 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.06171 cm/sec Le = 23.03 ft



WELL TEST ANALYSIS

Data Set: \...\MW47I_R2.aqt
Date: 02/23/23 Time: 21:37:57

PROJECT INFORMATION

Company: Haley & Aldrich
Client: AES
Project: 0133274-027
Location: Petersburg, IN
Test Well: MW-47I
Test Date: 12/21/22

AQUIFER DATA

Saturated Thickness: 29.6 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-47I)

Initial Displacement: 0.634 ft
Total Well Penetration Depth: 29.63 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 29.6 ft
Screen Length: 10. ft
Well Radius: 0.25 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Springer-Gelhar

K = 0.05555 cm/sec Le = 24.47 ft

Horizontal Hydraulic Conductivity Testing Data
(Packer Testing Horslev Solution)

TABLE 1
HORIZONTAL HYDRAULIC CONDUCTIVITY DATA
AESI PETERSBURG GENERATING STATION

Packer Test Results					
Well ID	**Depth Packer Placed (ft BGS)**	**Test Interval (ft BGS)**	**Boring Depth (ft BGS)**	**Horizontal Hydraulic Conductivity (cm/s)**	**Horizontal Hydraulic Conductivity (ft/day)**
MW-37	70 - 72	72 - 79	89.0	1.80E-05	0.0512
MW-42	68 - 70	70 - 75	80.5	4.03E-07	0.0011
MW-42B	70 - 72	72 - 78	80.5	1.72E-07	0.0005
MW-44	67 - 69	69 - 74	81.4	2.26E-06	0.0064
MW-47	77 - 79	79 - 84	86.0	1.70E-03	4.8116

Notes:
cm/s = centimeter per second
ft BGS = feet below ground surface
ft/day = feet per day

HALEY ALDRICH

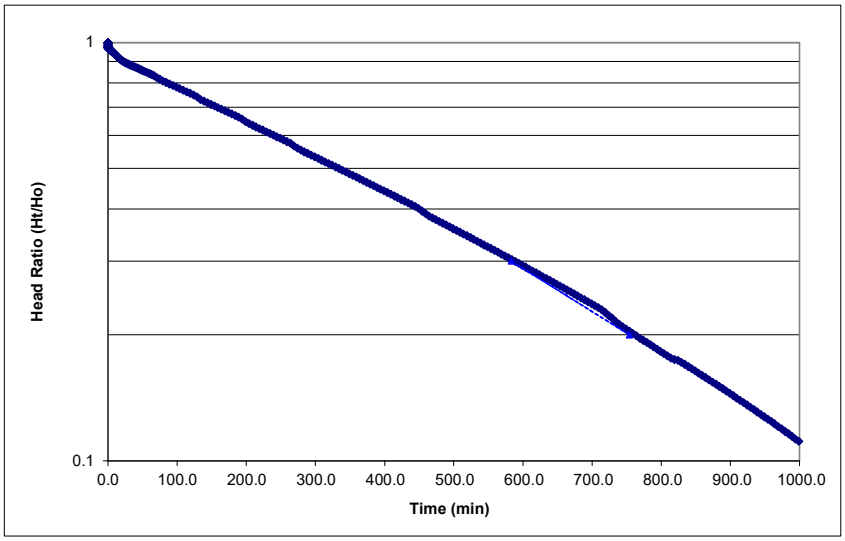
VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-37
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Boring Location:	MW-37	
Type of Installation:	Cased Borehole	
Reference Point:	Data Logger	
Reference Elevation:		
Initial Depth to Groundwater:		feet
Initial Head of Water, Ho:	58.033	feet
Type of Test	Rising Head	
Test Depth:	72-79	
Test Zone Material:	Bedrock	
Length of Test Zone:	5.0	feet
Diameter of Test Zone:	5.3	inches
Diameter of Cased Length	5.3	inches



Plotting values used in curve match:

Y (Ht/Ho)	X (Time mins)
0.300	583
0.200	753.9

Hydraulic Conductivity: 1.80E-05 **cm/s**

Equation Used:

$$K_h = \frac{d^2 ln\left[\frac{mL}{D} + \sqrt{1 + \left(\frac{mL}{D}\right)^2}\right]}{8L(t_2 - t_1)} ln\frac{H_1}{H_2}$$

$$K_h = \frac{d^2 ln}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} for = \frac{mL}{D} > 4$$

$K_h = horizontal\ coefficient\ of\ permeability$
$H_1 = piezometer\ head\ at\ time\ t_1$
$H_2 = piezometer\ head\ at\ time\ t_2$
$L = length\ intake\ of\ sample$
$D = diameter\ intake\ of\ sample$
$d = diameter\ of\ standpipe$
$m = transformation\ ratio$

$K_m = \sqrt{k_h k_v}; m = \sqrt{\frac{k_h}{k_v}}$

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

Elapsed time, t (min)	Head of water at time t, Ht (feet)	Head Ratio at time t, Ht/Ho
0.0	58.033	1
0.0	57.995	0.9993452
0.0	57.949	0.998552548
0.0	57.916	0.997983906
0.0	57.877	0.997311874
0.1	57.798	0.99595058
0.1	57.659	0.993555391
0.1	57.531	0.991349749
0.1	57.398	0.98905795
0.1	57.276	0.986955698
0.1	57.154	0.984853445
0.1	57.033	0.982768425
0.2	56.907	0.980597246
0.2	56.792	0.978615615
0.2	56.68	0.976685679
0.2	56.592	0.9751693
0.2	56.521	0.973945858
0.3	56.46	0.972894732
0.3	56.424	0.972274396
0.3	56.412	0.972067617
0.3	56.391	0.971705754
0.4	56.376	0.97144728
0.4	56.354	0.971068185
0.4	56.34	0.970826943
0.5	56.318	0.970447849
0.5	56.294	0.970034291
0.5	56.281	0.96981028
0.6	56.277	0.969741354
0.6	56.334	0.970723554
0.7	56.317	0.970430617
0.7	56.312	0.970344459
0.8	56.3	0.97013768
0.8	56.279	0.969775817
0.9	56.275	0.969706891
1.0	56.263	0.969500112
1.0	56.25	0.969276102
1.1	56.228	0.968897007
1.2	56.214	0.968655765
1.3	56.2	0.968414523
1.3	56.177	0.968018197
1.4	56.164	0.967794186
1.5	56.141	0.96739786
1.6	56.123	0.967087691
1.7	56.099	0.966674134
1.8	56.078	0.966312271
2.0	56.055	0.965915944
2.1	56.029	0.965467923
2.2	55.995	0.96488205
2.4	55.967	0.964399566
2.5	55.94	0.963934313
2.7	55.903	0.963296745
2.8	55.874	0.962797029
3.0	55.836	0.962142229
3.2	55.798	0.96148743
3.4	55.761	0.960849861
3.6	55.716	0.96007444
3.8	55.67	0.959281788
4.1	55.621	0.958437441
4.3	55.578	0.957696483
4.6	55.523	0.956748746
4.9	55.463	0.955714852
5.2	55.399	0.954612031
5.5	55.331	0.953440284
5.8	55.264	0.952285768
6.2	55.199	0.951165716
6.5	55.124	0.949873348
6.9	55.045	0.948512053
7.3	54.954	0.94694398
7.8	54.864	0.945393138
8.3	54.766	0.943704444
8.8	54.666	0.941981287
9.3	54.556	0.940085813
9.8	54.444	0.938155877
10.4	54.326	0.936122551
11.0	54.23	0.93446832
11.7	54.096	0.932159289
12.4	53.958	0.929781331
13.1	53.824	0.9274723
13.9	53.673	0.924870332

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-37
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

14.8	53.506	0.921992659
15.6	53.338	0.919097755
16.6	53.12	0.915341271
17.6	52.928	0.912032809
18.6	52.782	0.909516999
19.7	52.618	0.906691021
20.9	52.469	0.904123516
22.2	52.305	0.901297538
23.5	52.066	0.897179191
24.9	51.944	0.895076939
26.4	51.813	0.892819603
28.0	51.668	0.890321024
29.6	51.523	0.887822446
31.4	51.36	0.885013699
33.3	51.207	0.882377268
35.3	51.033	0.879378974
37.4	50.842	0.876087743
39.6	50.659	0.872934365
42.0	50.446	0.869264039
44.5	50.231	0.865559251
47.1	50.011	0.861768304
49.9	49.761	0.85746041
52.9	49.505	0.853049127
56.0	49.248	0.848620612
59.4	48.953	0.843537298
62.9	48.67	0.838660762
66.6	48.353	0.833198353
70.6	47.886	0.825151207
74.8	47.412	0.81698344
79.2	46.991	0.809728947
83.9	46.58	0.80264677
88.9	46.173	0.795633519
93.9	45.785	0.788947668
98.9	45.393	0.78219289
103.9	44.999	0.77540365
108.9	44.624	0.768941809
113.9	44.227	0.762100874
118.9	43.852	0.755639033
123.9	43.472	0.749091034
128.9	42.977	0.740561405
133.9	42.428	0.73110127
138.9	42.027	0.724191408
143.9	41.654	0.717764031
148.9	41.269	0.711129874
153.9	40.933	0.705340065
158.9	40.581	0.699274551
163.9	40.224	0.693122878
168.9	39.86	0.686850585
173.9	39.513	0.680871228
178.9	39.161	0.674805714
183.9	38.817	0.668878052
188.9	38.477	0.663019317
193.9	38.056	0.655764823
198.9	37.556	0.647149036
203.9	37.124	0.639704995
208.9	36.796	0.634053039
213.9	36.465	0.628349387
218.9	36.136	0.622680199
223.9	35.816	0.617166095
228.9	35.495	0.61163476
233.9	35.176	0.606137887
238.9	34.865	0.600778867
243.9	34.547	0.595299226
248.9	34.239	0.589991901
253.9	33.927	0.58461565
258.9	33.618	0.579291093
263.9	33.294	0.573708063
268.9	32.864	0.566298485
273.9	32.438	0.558957834
278.9	32.099	0.55311633
283.9	31.795	0.547877932
288.9	31.506	0.542898006
293.9	31.219	0.537952544
298.9	30.932	0.533007082
303.9	30.648	0.528113315
308.9	30.365	0.523236779
313.9	30.081	0.518343012
318.9	29.811	0.513690486
323.9	29.533	0.508900109
328.9	29.257	0.504144194
333.9	28.99	0.499543363
338.9	28.723	0.494942533
343.9	28.456	0.490341702
348.9	28.193	0.485809798
353.9	27.929	0.481260662
358.9	27.665	0.476711526
363.9	27.404	0.472214085
368.9	27.151	0.467854497
373.9	26.896	0.463460445

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-37
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

378.9	26.641	0.459066393
383.9	26.393	0.454792963
388.9	26.14	0.450433374
393.9	25.896	0.44622887
398.9	25.653	0.442041597
403.9	25.409	0.437837093
408.9	25.168	0.433684283
413.9	24.931	0.4296004
418.9	24.69	0.42544759
423.9	24.452	0.421346475
428.9	24.219	0.417331518
433.9	23.993	0.413437182
438.9	23.761	0.409439457
443.9	23.534	0.405527889
448.9	23.283	0.401202764
453.9	22.959	0.395619734
458.9	22.647	0.390243482
463.9	22.329	0.384763841
468.9	22.093	0.38069719
473.9	21.883	0.377078559
478.9	21.67	0.373408233
483.9	21.455	0.369703445
488.9	21.246	0.366102045
493.9	21.033	0.36243172
498.9	20.827	0.358882015
503.9	20.626	0.355418469
508.9	20.422	0.351903227
513.9	20.218	0.348387986
518.9	20.022	0.345010597
523.9	19.818	0.341495356
528.9	19.624	0.338152431
533.9	19.428	0.334775042
538.9	19.235	0.331449348
543.9	19.039	0.328071959
548.9	18.85	0.324815191
553.9	18.664	0.321610118
558.9	18.478	0.318405045
563.9	18.284	0.31506212
568.9	18.1	0.31189151
573.9	17.915	0.308703669
578.9	17.739	0.305670911
583.9	17.558	0.302551996
588.9	17.381	0.299502007
593.9	17.203	0.296434787
598.9	17.029	0.293436493
603.9	16.849	0.29033481
608.9	16.67	0.287250358
613.9	16.494	0.2842176
618.9	16.335	0.28147778
623.9	16.163	0.278513949
628.9	15.99	0.275532886
633.9	15.827	0.27272414
638.9	15.662	0.26988093
643.9	15.501	0.267106646
648.9	15.337	0.264280668
653.9	15.174	0.261471921
658.9	15.017	0.258766564
663.9	14.853	0.255940586
668.9	14.699	0.253286923
673.9	14.539	0.250529871
678.9	14.389	0.247945135
683.9	14.23	0.245205314
688.9	14.081	0.24263781
693.9	13.926	0.239966915
698.9	13.78	0.237451105
703.9	13.633	0.234918064
708.9	13.482	0.232316096
713.9	13.322	0.229559044
718.9	13.122	0.226112729
723.9	12.905	0.222373477
728.9	12.713	0.219065015
733.9	12.499	0.215377458
738.9	12.303	0.212000069
743.9	12.146	0.209294712
748.9	11.991	0.206623817
753.9	11.837	0.203970155
758.9	11.691	0.201454345
763.9	11.543	0.198904072
768.9	11.398	0.196405493
773.9	11.262	0.194061999
778.9	11.128	0.191752968
783.9	10.994	0.189443937
788.9	10.856	0.18706598
793.9	10.732	0.184929264
798.9	10.597	0.182603002
803.9	10.467	0.180362897
808.9	10.339	0.178157255
813.9	10.212	0.175968845
818.9	10.132	0.174590319

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-37
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

823.9	10.093	0.173918288
828.9	9.979	0.171953888
833.9	9.864	0.169972257
838.9	9.748	0.167973394
843.9	9.633	0.165991763
848.9	9.517	0.163992901
853.9	9.397	0.161925112
858.9	9.286	0.160012407
863.9	9.174	0.15808247
868.9	9.059	0.156100839
873.9	8.947	0.154170903
878.9	8.842	0.152361587
883.9	8.733	0.150483346
888.9	8.627	0.148656799
893.9	8.52	0.14681302
898.9	8.415	0.145003705
903.9	8.301	0.143039305
908.9	8.192	0.141161064
913.9	8.092	0.139437906
918.9	7.992	0.137714749
923.9	7.889	0.135939896
928.9	7.787	0.134182276
933.9	7.691	0.132528044
938.9	7.59	0.130787655
943.9	7.484	0.128961108
948.9	7.39	0.12734134
953.9	7.291	0.125635414
958.9	7.201	0.124084573
963.9	7.104	0.12241311
968.9	7.006	0.120724415
973.9	6.912	0.119104647
978.9	6.817	0.117467648
983.9	6.732	0.116002964
988.9	6.633	0.114297038
993.9	6.539	0.11267727
998.9	6.455	0.111229818
1003.9	6.361	0.109610049
1008.9	6.274	0.108110902
1013.9	6.182	0.106525598
1018.9	6.099	0.105095377
1023.9	6.012	0.10359623
1028.9	5.923	0.10206262
1033.9	5.837	0.100580704
1038.9	5.755	0.099167715
1043.9	5.667	0.097651336
1048.9	5.586	0.096255579
1053.9	5.504	0.09484259
1058.9	5.419	0.093377906
1063.9	5.342	0.092051074
1068.9	5.261	0.090655317
1073.9	5.18	0.089259559
1078.9	5.102	0.087915496
1083.9	5.021	0.086519739
1088.9	4.957	0.085416918
1093.9	4.878	0.084055624
1098.9	4.802	0.082746024
1103.9	4.734	0.081574277
1108.9	4.656	0.080230214
1113.9	4.586	0.079024004
1118.9	4.519	0.077869488
1123.9	4.445	0.076594351
1128.9	4.504	0.077611014
1133.9	4.425	0.07624972
1138.9	4.358	0.075095204
1143.9	4.285	0.073837299
1148.9	4.218	0.072682784
1153.9	4.147	0.071459342
1158.9	4.086	0.070408216
1163.9	4.009	0.069081385
1168.9	3.945	0.067978564
1173.9	3.874	0.066755122
1178.9	3.809	0.06563507
1183.9	3.747	0.064566712
1188.9	3.676	0.06334327
1193.9	3.613	0.062257681
1198.9	3.54	0.060999776

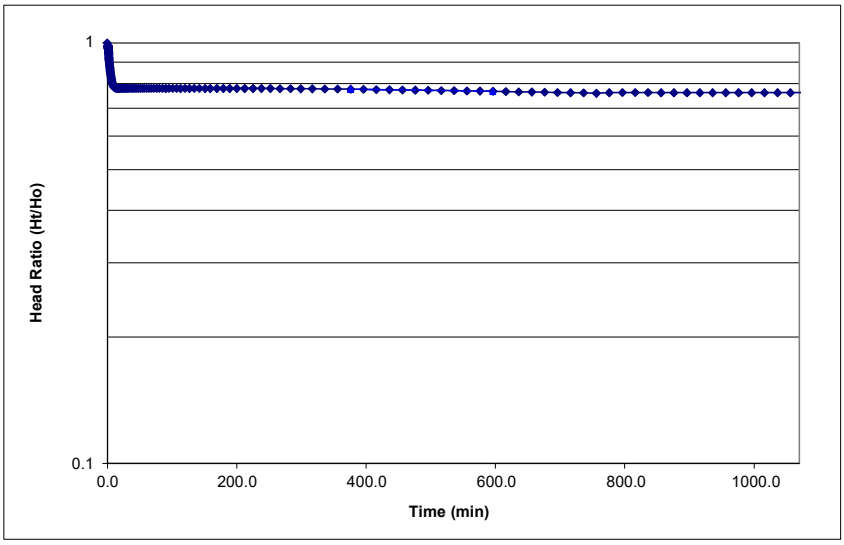
VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-42
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Boring Location:	MW-42	
Type of Installation:	Cased Borehole	
Reference Point:	Data Logger	
Reference Elevation:		
Initial Depth to Groundwater:		feet
Initial Head of Water, Ho:	53.136	feet
Type of Test	Rising Head	
Test Depth:	70-75	
Test Zone Material:	Bedrock	
Length of Test Zone:	5.0	feet
Diameter of Test Zone:	5.3	inches
Diameter of Cased Length	5.3	inches



Plotting values used in curve match:

Y (Ht/Ho)	X (Time mins)
0.776	376
0.767	596

Hydraulic Conductivity: 4.03E-07 **cm/s**

Equation Used:

$$K_h = \frac{d^2 ln\left[\frac{mL}{D} + \sqrt{1 + \left(\frac{mL}{D}\right)^2}\right]}{8L(t_2 - t_1)} ln\frac{H_1}{H_2}$$

$$K_h = \frac{d^2 ln}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} for = \frac{mL}{D} > 4$$

$K_h = horizontal\ coefficient\ of\ permeability$
$H_1 = piezometer\ head\ at\ time\ t_1$
$H_2 = piezometer\ head\ at\ time\ t_2$
$L = length\ intake\ of\ sample$
$D = diameter\ intake\ of\ sample$
$d = diameter\ of\ standpipe$
$m = transformation\ ratio$

$K_m = \sqrt{k_h k_v}; m = \sqrt{\frac{k_h}{k_v}}$

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

Elapsed time, t (min)	Head of water at time t, Ht (feet)	Head Ratio at time t, Ht/Ho
0.0	53.136	1
1.1	52.282	0.983928034
1.1	52.263	0.983570461
1.1	52.258	0.983476363
1.1	52.244	0.983212888
1.1	52.236	0.983062331
1.1	52.221	0.982780036
1.1	52.217	0.982704758
1.1	52.201	0.982403643
1.1	52.185	0.982102529
1.1	52.179	0.981989612
1.1	52.172	0.981857874
1.1	52.155	0.98153794
1.1	52.15	0.981443842
1.1	52.14	0.981255646
1.1	52.126	0.980992171
1.1	52.113	0.980747516
1.1	52.107	0.980634598
1.2	52.093	0.980371123
1.2	52.083	0.980182927
1.2	52.071	0.979957091
1.2	52.06	0.979750075
1.2	52.045	0.979467781
1.2	52.04	0.979373683
1.2	52.029	0.979166667
1.2	52.021	0.97901611
1.2	51.998	0.978583258
1.2	51.989	0.978413881
1.2	51.964	0.977943391
1.2	51.956	0.977792833
1.2	51.934	0.977378802
1.2	51.915	0.977021229
1.2	51.888	0.976513098
1.2	51.87	0.976174345
1.2	51.847	0.975741494
1.3	51.817	0.975176905
1.3	51.79	0.974668774
1.3	51.764	0.974179464
1.3	51.727	0.973483138
1.3	51.695	0.972880909
1.3	51.664	0.972297501
1.3	51.632	0.971695273
1.3	51.592	0.970942487
1.4	51.549	0.970133243
1.4	51.511	0.969418097
1.4	51.462	0.968495935
1.4	51.419	0.967686691
1.4	51.374	0.966839807
1.5	51.319	0.965804727
1.5	51.266	0.964807287
1.5	51.209	0.963734568
1.5	51.15	0.96262421
1.6	51.086	0.961419753
1.6	51.017	0.960121198
1.6	50.952	0.958897922
1.6	50.875	0.957448811
1.7	50.792	0.955886781
1.7	50.712	0.95438121
1.7	50.619	0.952630985
1.8	50.527	0.950899578
1.8	50.43	0.949074074
1.9	50.33	0.947192111
1.9	50.226	0.945234869
2.0	50.107	0.942995333
2.0	49.988	0.940755796
2.1	49.863	0.938403342
2.1	49.706	0.93544866
2.2	49.516	0.93187293
2.3	49.287	0.927563234
2.3	49.074	0.923554652
2.4	48.864	0.919602529
2.5	48.661	0.915782144
2.6	48.481	0.91239461
2.7	48.323	0.909421108
2.8	48.136	0.905901837
2.9	47.944	0.902288467
3.0	47.76	0.898825655
3.1	47.559	0.895042909
3.2	47.339	0.89090259

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-42
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

3.3	47.115	0.886686992
3.5	46.896	0.882565492
3.6	46.669	0.878293436
3.7	46.431	0.873814363
3.9	46.191	0.869297651
4.1	45.957	0.864893857
4.2	45.711	0.860264228
4.4	45.461	0.855559319
4.6	45.198	0.850609756
4.8	44.947	0.845886028
5.1	44.694	0.841124661
5.3	44.435	0.836250376
5.6	44.173	0.831319633
5.8	43.928	0.826708823
6.1	43.671	0.821872177
6.4	43.428	0.817299006
6.7	43.211	0.813215146
7.0	42.975	0.808773713
7.4	42.759	0.804708672
7.8	42.563	0.801020024
8.2	42.373	0.797444294
8.6	42.213	0.794433153
9.0	42.057	0.79149729
9.5	41.931	0.789126016
10.0	41.825	0.787131135
10.5	41.726	0.785267992
11.1	41.658	0.783988257
11.7	41.596	0.782821439
12.3	41.553	0.782012195
13.0	41.529	0.781560524
13.7	41.499	0.780995935
14.4	41.49	0.780826558
15.2	41.469	0.780431346
16.1	41.47	0.780450166
16.9	41.46	0.780261969
17.9	41.458	0.78022433
18.9	41.456	0.780186691
19.9	41.454	0.780149051
21.0	41.449	0.780054953
22.2	41.453	0.780130232
23.5	41.441	0.779904396
24.8	41.445	0.779979675
26.2	41.447	0.780017314
27.7	41.445	0.779979675
29.3	41.437	0.779829118
30.9	41.442	0.779923216
32.7	41.444	0.779960855
34.6	41.438	0.779847937
36.6	41.444	0.779960855
38.7	41.445	0.779979675
40.9	41.441	0.779904396
43.3	41.448	0.780036134
45.8	41.441	0.779904396
48.4	41.442	0.779923216
51.2	41.444	0.779960855
54.2	41.437	0.779829118
57.3	41.44	0.779885577
60.7	41.437	0.779829118
64.2	41.437	0.779829118
67.9	41.442	0.779923216
71.9	41.434	0.779772659
76.1	41.44	0.779885577
80.5	41.44	0.779885577
85.2	41.434	0.779772659
90.2	41.427	0.779640921
95.5	41.432	0.77973502
101.1	41.433	0.779753839
107.1	41.433	0.779753839
113.1	41.425	0.779603282
120.1	41.433	0.779753839
127.1	41.425	0.779603282
134.1	41.43	0.77969738
142.1	41.429	0.779678561
151.1	41.424	0.779584463
159.1	41.414	0.779396266
169.1	41.419	0.779490364
179.1	41.421	0.779528004
189.1	41.42	0.779509184
200.1	41.419	0.779490364
212.1	41.407	0.779264529
225.1	41.404	0.77920807
238.1	41.398	0.779095152
252.1	41.391	0.778963415
267.1	41.374	0.778643481
283.1	41.356	0.778304727
299.1	41.337	0.777947154
317.1	41.309	0.777420205
336.1	41.295	0.77715673
356.1	41.27	0.776686239

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

		Boring No.	MW-42
		Test No.	1
Project	Petersburg Generating Station - Ash Pond System	File Number	133274-027
Location	Petersburg, Indiana	Field Rep.	Atlas
Client	AES Indiana	Test Date	10/25/2022

376.1	41.24	0.77612165
396.1	41.205	0.775462963
416.1	41.161	0.774634899
436.1	41.121	0.773882114
456.1	41.082	0.773148148
476.1	41.044	0.772433002
496.1	40.994	0.77149202
516.1	40.958	0.770814514
536.1	40.903	0.769779434
556.1	40.855	0.768876092
576.1	40.814	0.768104487
596.1	40.775	0.767370521
616.1	40.716	0.766260163
636.1	40.67	0.76539446
656.1	40.609	0.764246462
676.1	40.558	0.763286661
696.1	40.498	0.762157483
716.1	40.452	0.76129178
736.1	40.393	0.760181421
756.1	40.342	0.75922162
776.1	40.464	0.761517615
796.1	40.497	0.762138663
816.1	40.477	0.76176227
836.1	40.474	0.761705812
856.1	40.471	0.761649353
876.1	40.471	0.761649353
896.1	40.463	0.761498796
916.1	40.468	0.761592894
936.1	40.464	0.761517615
956.1	40.467	0.761574074
976.1	40.468	0.761592894
996.1	40.463	0.761498796
1016.1	40.464	0.761517615
1036.1	40.463	0.761498796
1056.1	40.459	0.761423517
1076.1	40.46	0.761442337

Notes:
1. Test performed using open test section

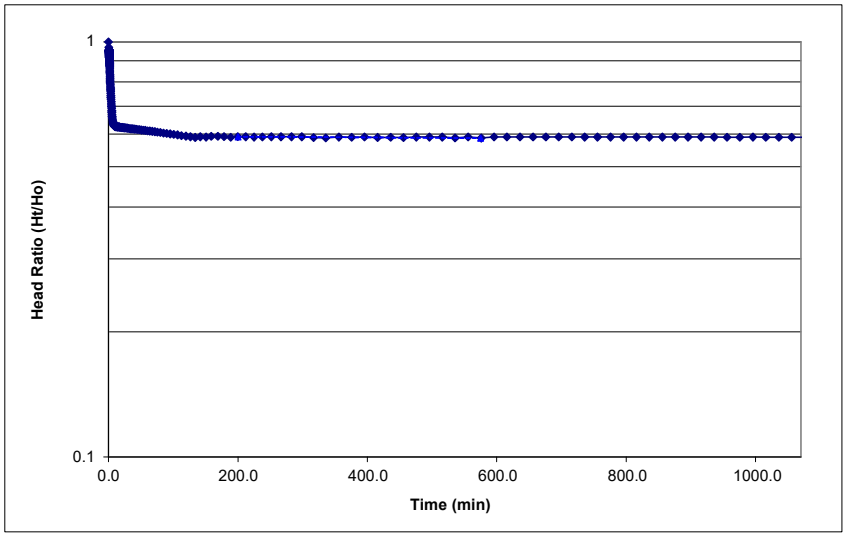
2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-42B
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Boring Location:	MW-42B	
Type of Installation:	Cased Borehole	
Reference Point:	Data Logger	
Reference Elevation:		
Initial Depth to Groundwater:		feet
Initial Head of Water, Ho:	19.2	feet
Type of Test	Rising Head	
Test Depth:	72-78	
Test Zone Material:	Bedrock	
Length of Test Zone:	5.0	feet
Diameter of Test Zone:	5.3	inches
Diameter of Cased Length	5.3	inches



Plotting values used in curve match:

Y (Ht/Ho)	X (Time mins)
0.591	200
0.586	575

Hydraulic Conductivity: 1.72E-07 **cm/s**

Equation Used:

$$K_h = \frac{d^2 ln\left[\frac{mL}{D} + \sqrt{1 + \left(\frac{mL}{D}\right)^2}\right]}{8L(t_2 - t_1)} ln\frac{H_1}{H_2}$$

$$K_h = \frac{d^2 ln}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} \text{ for } = \frac{mL}{D} > 4$$

$K_h = horizontal\ coefficient\ of\ permeability$
$H_1 = piezometer\ head\ at\ time\ t_1$
$H_2 = piezometer\ head\ at\ time\ t_2$
$L = length\ intake\ of\ sample$
$D = diameter\ intake\ of\ sample$
$d = diameter\ of\ standpipe$
$m = transformation\ ratio$

$K_m = \sqrt{k_h k_v}; m = \sqrt{\frac{k_h}{k_v}}$

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

Elapsed time, t (min)	Head of water at time t, Ht (feet)	Head Ratio at time t, Ht/Ho
0.0	19.2	1
0.6	18.605	0.969010417
0.7	18.363	0.95640625
0.8	18.358	0.956145833
0.8	18.346	0.955520833
0.8	18.343	0.955364583
0.8	18.334	0.954895833
0.8	18.33	0.9546875
0.8	18.318	0.9540625
0.8	18.314	0.953854167
0.8	18.305	0.953385417
0.8	18.304	0.953333333
0.8	18.292	0.952708333
0.8	18.287	0.952447917
0.8	18.281	0.952135417
0.8	18.273	0.95171875
0.8	18.269	0.951510417
0.8	18.257	0.950885417
0.8	18.253	0.950677083
0.8	18.246	0.9503125
0.8	18.235	0.949739583
0.8	18.229	0.949427083
0.8	18.216	0.94875
0.8	18.22	0.948958333
0.8	18.203	0.948072917
0.8	18.204	0.948125
0.8	18.193	0.947552083
0.9	18.183	0.94703125
0.9	18.179	0.946822917
0.9	18.169	0.946302083
0.9	18.155	0.945572917
0.9	18.143	0.944947917
0.9	18.129	0.94421875
0.9	18.12	0.94375
0.9	18.107	0.943072917
0.9	18.084	0.941875
0.9	18.068	0.941041667
0.9	18.055	0.940364583
0.9	18.039	0.93953125
1.0	18.016	0.938333333
1.0	18.003	0.93765625
1.0	17.977	0.936302083
1.0	17.961	0.93546875
1.0	17.931	0.93390625
1.0	17.907	0.93265625
1.0	17.887	0.931614583
1.1	17.85	0.9296875
1.1	17.823	0.92828125
1.1	17.794	0.926770833
1.1	17.757	0.92484375
1.1	17.728	0.923333333
1.2	17.693	0.921510417
1.2	17.648	0.919166667
1.2	17.605	0.916927083
1.2	17.561	0.914635417
1.3	17.519	0.912447917
1.3	17.476	0.910208333
1.3	17.42	0.907291667
1.4	17.371	0.904739583
1.4	17.305	0.901302083
1.5	17.253	0.89859375
1.5	17.188	0.895208333
1.5	17.12	0.891666667
1.6	17.038	0.887395833
1.6	16.976	0.884166667
1.7	16.893	0.87984375
1.7	16.805	0.875260417
1.8	16.711	0.870364583
1.9	16.591	0.864114583
1.9	16.435	0.855989583
2.0	16.278	0.8478125
2.1	16.149	0.84109375
2.2	15.991	0.832864583
2.2	15.818	0.823854167
2.3	15.674	0.816354167
2.4	15.537	0.80921875
2.5	15.411	0.80265625
2.6	15.286	0.796145833
2.7	15.18	0.790625

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-42B
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

2.9	15.017	0.782135417
3.0	14.856	0.77375
3.1	14.715	0.76640625
3.3	14.561	0.758385417
3.4	14.409	0.75046875
3.6	14.252	0.742291667
3.7	14.099	0.734322917
3.9	13.929	0.72546875
4.1	13.762	0.716770833
4.3	13.604	0.708541667
4.5	13.442	0.700104167
4.7	13.288	0.692083333
5.0	13.119	0.68328125
5.2	12.976	0.675833333
5.5	12.829	0.668177083
5.8	12.692	0.661041667
6.1	12.565	0.654427083
6.4	12.446	0.648229167
6.7	12.339	0.64265625
7.1	12.25	0.638020833
7.4	12.174	0.6340625
7.8	12.118	0.631145833
8.2	12.077	0.629010417
8.7	12.052	0.627708333
9.2	12.03	0.6265625
9.7	12.019	0.625989583
10.2	12.004	0.625208333
10.7	12.003	0.62515625
11.3	11.994	0.6246875
11.9	11.991	0.62453125
12.6	11.994	0.6246875
13.3	11.978	0.623854167
14.0	11.982	0.6240625
14.8	11.978	0.623854167
15.7	11.982	0.6240625
16.5	11.972	0.623541667
17.5	11.956	0.622708333
18.5	11.953	0.622552083
19.5	11.947	0.622239583
20.6	11.946	0.6221875
21.8	11.936	0.621666667
23.1	11.929	0.621302083
24.4	11.921	0.620885417
25.8	11.918	0.620729167
27.3	11.907	0.62015625
28.9	11.891	0.619322917
30.5	11.883	0.61890625
32.3	11.869	0.618177083
34.2	11.86	0.617708333
36.2	11.857	0.617552083
38.3	11.839	0.616614583
40.5	11.829	0.61609375
42.9	11.819	0.615572917
45.4	11.809	0.615052083
48.0	11.788	0.613958333
50.8	11.773	0.613177083
53.8	11.759	0.612447917
56.9	11.74	0.611458333
60.3	11.721	0.61046875
63.8	11.706	0.6096875
67.5	11.681	0.608385417
71.5	11.657	0.607135417
75.7	11.634	0.6059375
80.1	11.61	0.6046875
84.8	11.581	0.603177083
89.8	11.555	0.601822917
95.1	11.52	0.6
100.7	11.493	0.59859375
106.7	11.454	0.5965625
112.7	11.416	0.594583333
119.7	11.375	0.592447917
126.7	11.336	0.590416667
133.7	11.298	0.5884375
141.7	11.337	0.59046875
150.7	11.318	0.589479167
158.7	11.366	0.591979167
168.7	11.366	0.591979167
178.7	11.351	0.591197917
188.7	11.307	0.58890625
199.7	11.356	0.591458333
211.7	11.346	0.5909375
224.7	11.317	0.589427083
237.7	11.329	0.590052083
251.7	11.338	0.590520833
266.7	11.336	0.590416667
282.7	11.342	0.590729167
298.7	11.347	0.590989583
316.7	11.288	0.587916667
335.7	11.277	0.58734375

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-42B
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

355.7	11.313	0.58921875
375.7	11.311	0.589114583
395.7	11.326	0.589895833
415.7	11.299	0.588489583
435.7	11.301	0.58859375
455.7	11.286	0.5878125
475.7	11.321	0.589635417
495.7	11.318	0.589479167
515.7	11.316	0.589375
535.7	11.275	0.587239583
555.7	11.325	0.58984375
575.7	11.264	0.586666667
595.7	11.331	0.59015625
615.7	11.331	0.59015625
635.7	11.331	0.59015625
655.7	11.333	0.590260417
675.7	11.333	0.590260417
695.7	11.325	0.58984375
715.7	11.325	0.58984375
735.7	11.321	0.589635417
755.7	11.317	0.589427083
775.7	11.322	0.5896875
795.7	11.317	0.589427083
815.7	11.314	0.589270833
835.7	11.315	0.589322917
855.7	11.315	0.589322917
875.7	11.313	0.58921875
895.7	11.313	0.58921875
915.7	11.317	0.589427083
935.7	11.316	0.589375
955.7	11.312	0.589166667
975.7	11.307	0.58890625
995.7	11.314	0.589270833
1015.7	11.31	0.5890625
1035.7	11.306	0.588854167
1055.7	11.31	0.5890625
1075.7	11.308	0.588958333
1095.7	11.309	0.589010417
1115.7	11.306	0.588854167
1135.7	11.3	0.588541667
1155.7	11.308	0.588958333
1175.7	11.302	0.588645833
1195.7	11.306	0.588854167
1215.7	11.301	0.58859375
1235.7	11.305	0.588802083

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

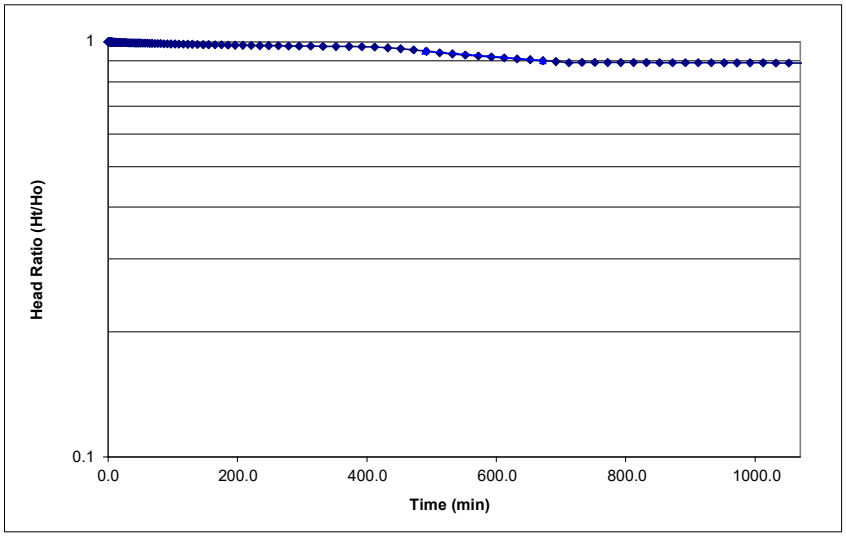
VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-44
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Boring Location:	MW-44	
Type of Installation:	Cased Borehole	
Reference Point:	Data Logger	
Reference Elevation:		
Initial Depth to Groundwater:		feet
Initial Head of Water, Ho:	56	feet
Type of Test	Rising Head	
Test Depth:	69-74	
Test Zone Material:	Bedrock	
Length of Test Zone:	5.0	feet
Diameter of Test Zone:	5.3	inches
Diameter of Cased Length	5.3	inches



Plotting values used in curve match:

Y (Ht/Ho)	X (Time mins)
0.950	490
0.900	672

Hydraulic Conductivity: 2.26E-06 **cm/s**

Equation Used:

$$K_h = \frac{d^2 ln\left[\frac{mL}{D} + \sqrt{1 + \left(\frac{mL}{D}\right)^2}\right]}{8L(t_2 - t_1)} ln\frac{H_1}{H_2}$$

$$K_h = \frac{d^2 ln}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} for = \frac{mL}{D} > 4$$

$K_h = horizontal\ coefficient\ of\ permeability$
$H_1 = piezometer\ head\ at\ time\ t_1$
$H_2 = piezometer\ head\ at\ time\ t_2$
$L = length\ intake\ of\ sample$
$D = diameter\ intake\ of\ sample$
$d = diameter\ of\ standpipe$
$m = transformation\ ratio$

$K_m = \sqrt{k_h k_v}; m = \sqrt{\frac{k_h}{k_v}}$

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

Elapsed time, t (min)	Head of water at time t, Ht (feet)	Head Ratio at time t, Ht/Ho
0.0	56	1
0.2	55.991	0.999839286
0.4	55.987	0.999767857
0.5	55.986	0.99975
0.7	55.978	0.999607143
1.0	55.98	0.999642857
1.2	55.975	0.999553571
1.4	55.973	0.999517857
1.7	55.964	0.999357143
1.9	55.965	0.999375
2.2	55.961	0.999303571
2.5	55.949	0.999089286
2.8	55.945	0.999017857
3.2	55.943	0.998982143
3.5	55.944	0.999
3.9	55.939	0.998910714
4.3	55.932	0.998785714
4.7	55.925	0.998660714
5.1	55.928	0.998714286
5.6	55.912	0.998428571
6.1	55.906	0.998321429
6.6	55.896	0.998142857
7.2	55.892	0.998071429
7.8	55.889	0.998017857
8.4	55.888	0.998
9.1	55.871	0.997696429
9.8	55.871	0.997696429
10.5	55.859	0.997482143
11.3	55.855	0.997410714
12.2	55.846	0.99725
13.0	55.841	0.997160714
14.0	55.833	0.997017857
15.0	55.823	0.996839286
16.0	55.809	0.996589286
17.1	55.798	0.996392857
18.3	55.79	0.99625
19.6	55.79	0.99625
20.9	55.783	0.996125
22.3	55.761	0.995732143
23.8	55.746	0.995464286
25.4	55.735	0.995267857
27.0	55.735	0.995267857
28.8	55.72	0.995
30.7	55.711	0.994839286
32.7	55.696	0.994571429
34.8	55.692	0.9945
37.0	55.678	0.99425
39.4	55.664	0.994
41.9	55.656	0.993857143
44.5	55.636	0.9935
47.3	55.623	0.993267857
50.3	55.609	0.993017857
53.4	55.591	0.992696429
56.8	55.572	0.992357143
60.3	55.556	0.992071429
64.0	55.529	0.991589286
68.0	55.505	0.991160714
72.2	55.485	0.990803571
76.6	55.461	0.990375
81.3	55.439	0.989982143
86.3	55.419	0.989625
91.6	55.397	0.989232143
97.2	55.365	0.988660714
103.2	55.341	0.988232143
109.2	55.307	0.987625
116.2	55.283	0.987196429
123.2	55.255	0.986696429
130.2	55.222	0.986107143
138.2	55.182	0.985392857
147.2	55.138	0.984607143
155.2	55.114	0.984178571
165.2	55.076	0.9835
175.2	55.041	0.982875
185.2	55.01	0.982321429
196.2	54.968	0.981571429
208.2	54.927	0.980839286
221.2	54.896	0.980285714
234.2	54.862	0.979678571
248.2	54.818	0.978892857

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-44
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

263.2	54.789	0.978375
279.2	54.742	0.977535714
295.2	54.713	0.977017857
313.2	54.665	0.976160714
332.2	54.624	0.975428571
352.2	54.581	0.974660714
372.2	54.533	0.973803571
392.2	54.48	0.972857143
412.2	54.385	0.971160714
432.2	54.16	0.967142857
452.2	53.89	0.962321429
472.2	53.539	0.956053571
492.2	53.122	0.948607143
512.2	52.675	0.940625
532.2	52.346	0.93475
552.2	52.019	0.928910714
572.2	51.758	0.92425
592.2	51.511	0.919839286
612.2	51.253	0.915232143
632.2	50.987	0.910482143
652.2	50.716	0.905642857
672.2	50.452	0.900928571
692.2	50.175	0.895982143
712.2	49.898	0.891035714
732.2	49.96	0.892142857
752.2	49.96	0.892142857
772.2	49.935	0.891696429
792.2	49.929	0.891589286
812.2	49.921	0.891446429
832.2	49.911	0.891267857
852.2	49.898	0.891035714
872.2	49.881	0.890732143
892.2	49.871	0.890553571
912.2	49.872	0.890571429
932.2	49.861	0.890375
952.2	49.854	0.89025
972.2	49.831	0.889839286
992.2	49.825	0.889732143
1012.2	49.814	0.889535714
1032.2	49.804	0.889357143
1052.2	49.797	0.889232143
1072.2	49.781	0.888946429

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

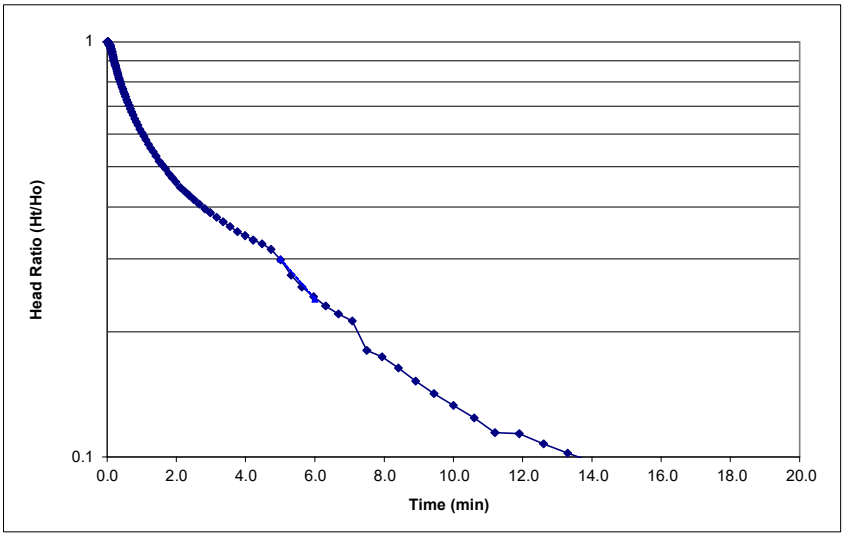
VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

HALEY ALDRICH

Boring No. MW-47
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Boring Location:	MW-47	
Type of Installation:	Cased Borehole	
Reference Point:	Data Logger	
Reference Elevation:		
Initial Depth to Groundwater:		feet
Initial Head of Water, Ho:	4.632	feet
Type of Test	Rising Head	
Test Depth:	79-84	
Test Zone Material:	Bedrock	
Length of Test Zone:	5.0	feet
Diameter of Test Zone:	5.3	inches
Diameter of Cased Length	5.3	inches



Plotting values used in curve match:

Y (Ht/Ho)	X (Time mins)
0.300	5
0.240	6

Hydraulic Conductivity: 1.70E-03 **cm/s**

Equation Used:

$$K_h = \frac{d^2 ln\left[\frac{mL}{D} + \sqrt{1 + \left(\frac{mL}{D}\right)^2}\right]}{8L(t_2 - t_1)} ln\frac{H_1}{H_2}$$

$$K_h = \frac{d^2 ln}{8L(t_2 - t_1)} ln\frac{H_1}{H_2} \text{ for } = \frac{mL}{D} > 4$$

$K_h = horizontal\ coefficient\ of\ permeability$
$H_1 = piezometer\ head\ at\ time\ t_1$
$H_2 = piezometer\ head\ at\ time\ t_2$
$L = length\ intake\ of\ sample$
$D = diameter\ intake\ of\ sample$
$d = diameter\ of\ standpipe$
$m = transformation\ ratio$

$K_m = \sqrt{k_h k_v}; m = \sqrt{\frac{k_h}{k_v}}$

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

Elapsed time, t (min)	Head of water at time t, Ht (feet)	Head Ratio at time t, Ht/Ho
0.0	4.632	1
0.0	4.63	0.999568221
0.0	4.623	0.998056995
0.0	4.628	0.999136442
0.0	4.63	0.999568221
0.0	4.632	1
0.0	4.626	0.998704663
0.0	4.627	0.998920553
0.0	4.621	0.997625216
0.0	4.606	0.994386874
0.0	4.583	0.989421416
0.0	4.58	0.988773748
0.1	4.56	0.984455959
0.1	4.547	0.981649396
0.1	4.546	0.981433506
0.1	4.541	0.980354059
0.1	4.54	0.980138169
0.1	4.541	0.980354059
0.1	4.555	0.983376511
0.1	4.559	0.984240069
0.1	4.551	0.982512953
0.1	4.529	0.977763385
0.1	4.515	0.974740933
0.1	4.5	0.971502591
0.1	4.478	0.966753022
0.1	4.455	0.961787565
0.1	4.45	0.960708117
0.1	4.411	0.952288428
0.1	4.392	0.948186528
0.1	4.379	0.945379965
0.1	4.378	0.945164076
0.2	4.326	0.933937824
0.2	4.303	0.928972366
0.2	4.261	0.919905009
0.2	4.238	0.914939551
0.2	4.198	0.906303972
0.2	4.171	0.900474957
0.2	4.126	0.890759931
0.2	4.086	0.882124352
0.2	4.059	0.876295337
0.3	4.035	0.87111399
0.3	3.981	0.859455959
0.3	3.934	0.849309154
0.3	3.889	0.839594128
0.3	3.849	0.830958549
0.3	3.795	0.819300518
0.4	3.759	0.811528497
0.4	3.716	0.80224525
0.4	3.662	0.790587219
0.4	3.607	0.778713299
0.4	3.57	0.770725389
0.5	3.513	0.758419689
0.5	3.468	0.748704663
0.5	3.417	0.737694301
0.6	3.357	0.724740933
0.6	3.309	0.714378238
0.6	3.26	0.703799655
0.7	3.196	0.689982729
0.7	3.14	0.677892919
0.8	3.085	0.666018998
0.8	3.023	0.652633851
0.8	2.971	0.641407599
0.9	2.918	0.629965458
0.9	2.851	0.615500864
1.0	2.8	0.604490501
1.1	2.746	0.59283247
1.1	2.688	0.580310881
1.2	2.622	0.566062176
1.3	2.57	0.554835924
1.3	2.519	0.543825561
1.4	2.459	0.530872193
1.5	2.389	0.515759931
1.6	2.344	0.506044905
1.7	2.292	0.494818653
1.8	2.23	0.481433506
1.9	2.18	0.470639033
2.0	2.127	0.459196891
2.1	2.064	0.445595855
2.2	2.021	0.436312608

VARIABLE HEAD PERMEABILITY TEST DATA SUMMARY

Boring No. MW-47
Test No. 1

Project	Petersburg Generating Station - Ash Pond System	**File Number**	133274-027
Location	Petersburg, Indiana	**Field Rep.**	Atlas
Client	AES Indiana	**Test Date**	10/25/2022

Notes:
1. Test performed using open test section

2. Calculation of the coefficient of permeability based on Case G as recommended in a publication by the U.S. Army Corps of Engineers, Waterways Experiment Station, Bulletin No. 35, "Time Lag and Soil Permeability in Groundwater Observations," Vicksburg, Mississippi, by M. Juul Hvorslev, April 1951.

2.4	1.976	0.426597582
2.5	1.931	0.416882556
2.7	1.883	0.406519862
2.8	1.835	0.396157168
3.0	1.796	0.387737478
3.2	1.751	0.378022453
3.4	1.707	0.368523316
3.6	1.662	0.35880829
3.8	1.615	0.348661485
4.0	1.581	0.341321244
4.2	1.542	0.332901554
4.5	1.51	0.325993092
4.7	1.464	0.316062176
5.0	1.383	0.29857513
5.3	1.27	0.27417962
5.6	1.19	0.256908463
6.0	1.128	0.243523316
6.3	1.07	0.231001727
6.7	1.024	0.221070812
7.1	0.985	0.212651123
7.5	0.837	0.180699482
7.9	0.807	0.174222798
8.4	0.759	0.163860104
8.9	0.705	0.152202073
9.4	0.658	0.142055268
10.0	0.616	0.13298791
10.6	0.575	0.124136442
11.2	0.53	0.114421416
11.9	0.527	0.113773748
12.6	0.498	0.107512953
13.3	0.473	0.102115717
14.1	0.448	0.09671848
15.0	0.443	0.095639033
15.8	0.426	0.091968912
16.8	0.422	0.091105354
17.8	0.42	0.090673575
18.8	0.387	0.083549223
19.9	0.4	0.086355786
21.1	0.408	0.088082902
22.4	0.423	0.091321244
23.7	0.389	0.083981002
25.1	0.36	0.077720207
26.6	0.326	0.070379965
28.2	0.287	0.061960276
29.8	0.266	0.057426598
31.6	0.236	0.050949914
33.5	0.224	0.04835924
35.5	0.172	0.037132988
37.6	0.14	0.030224525
39.8	0.184	0.039723661
42.2	0.18	0.038860104
44.7	0.113	0.024395509
47.3	0.112	0.02417962
50.1	0.065	0.014032815
53.1	0.03	0.006476684
56.2	0.028	0.006044905
59.6	0.041	0.008851468
63.1	0.065	0.014032815
66.8	0.048	0.010362694
70.8	0.002	0.000431779

Vertical Hydraulic Conductivity Lab Testing Data

BENCHMARK GEOTECHNICAL LABS

Hydraulic Conductivity
ASTM D 5084
Method C: Falling Head Rising Tailwater

BGL Job No:	063-011	**Boring:**	MW-37	**Date:**	05/06/23
Client:	Haley & Aldrich	**Sample:**	MW-37	**By:**	PJ
Proj. Name:	AESI Petersburg Generating Station	**Depth, ft.:**	74.5-75		
Proj. No.:	0133274-027 Task 1	**Remolding Data:**	Undisturbed		

Visual Classification: Dark Gray Rock (desiccated)

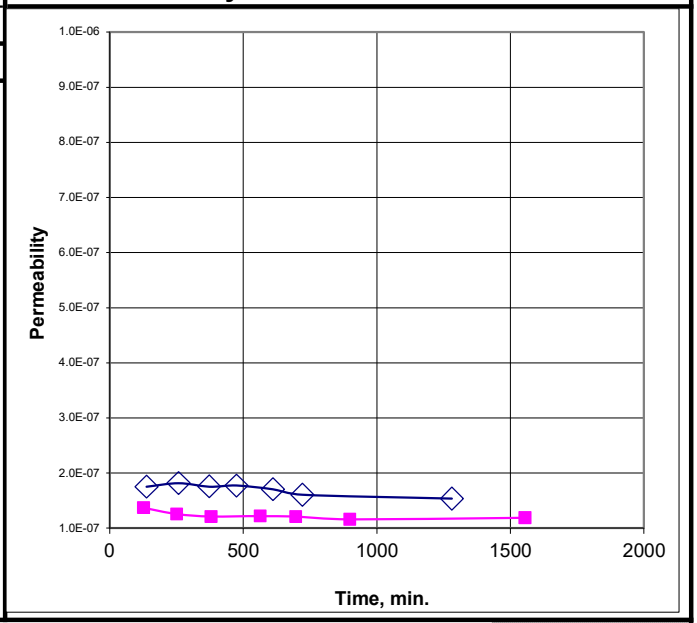
Max Sample Pressures, psi:

Cell:	Bottom	Top	Avg. Sigma3
25	20	20	5

B: = >0.95 **("B" is an indication of saturation)**

Max Hydraulic Gradient: = 7

Date	Minutes	Head, (cm)	K,cm/sec
4/30/2023	0.00	27.34	Start of Test
4/30/2023	138.00	26.21	1.8E-07
4/30/2023	258.00	25.18	1.8E-07
4/30/2023	372.00	24.38	1.8E-07
4/30/2023	475.00	23.58	1.8E-07
4/30/2023	611.00	22.79	1.7E-07
4/30/2023	722.00	22.33	1.6E-07
5/1/2023	1281.00	19.48	1.5E-07
5/1/2023	126.00	18.91	1.4E-07
5/1/2023	250.00	18.46	1.3E-07
5/1/2023	380.00	18.00	1.2E-07
5/1/2023	563.00	17.32	1.2E-07
5/1/2023	697.00	16.86	1.2E-07
5/1/2023	899.00	16.29	1.2E-07
5/2/2023	1554.00	14.16	1.2E-07



Average Hydraulic Conductivity: 1.E-07 cm/sec

Sample Data:	Initial (As-Received)		Final (At-Test)
Height, in	1.42		1.48
Diameter, in	3.05		3.07
Area, in2	7.30		7.39
Volume in3	10.39		10.95
Total Volume, cc	170.2		179.4
Volume Solids, cc	145.8		145.8
Volume Voids, cc	24.4		33.5
Void Ratio	0.2		0.2
Total Porosity, %	14.3		18.7
Air-Filled Porosity (θa),%	9.6		0.4
Water-Filled Porosity (θw),%	4.7		18.3
Saturation, %	32.9		98.0
Specific Gravity	2.75	Assumed	2.75
Wet Weight, gm	409.1		433.9
Dry Weight, gm	401.1		401.1
Tare, gm	0.00		0.00
Moisture, %	2.0		8.2
Wet Bulk Density, pcf	150.0		151.0
Dry Bulk Density, pcf	147.0		139.5
Wet Bulk Dens.ρb, (g/cm^3)	2.40		2.42
Dry Bulk Dens.ρb, (g/cm^3)	2.36		2.23

Remarks: Sample tested with 5 psi confining pressure. Ends of specimen flaking during trimming. Planar ends could not be achieved during trimming. Specimen height and associated values are close but approximate.

BENCHMARK GEOTECHNICAL LABS

Hydraulic Conductivity
ASTM D 5084
Method C: Falling Head Rising Tailwater

BGL Job No:	063-011	**Boring:**	MW-40	**Date:**	05/06/23
Client:	Haley & Aldrich	**Sample:**	MW-40	**By:**	PJ
Proj. Name:	AESI Petersburg Generating Station	**Depth, ft.:**	70.5-71		
Proj. No.:	0133274-027 Task 1	**Remolding Data:**	Undisturbed		

Visual Classification: Dark Gray Rock (desiccated)

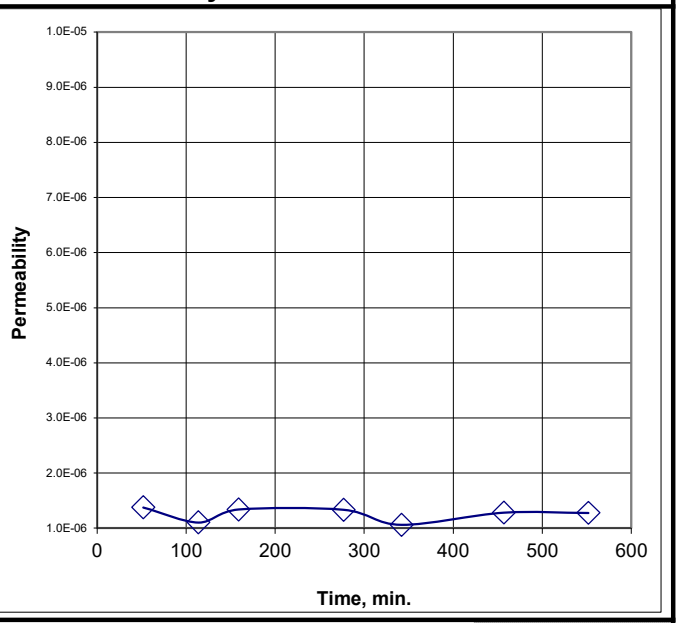
Max Sample Pressures, psi:

Cell:	Bottom	Top	Avg. Sigma3
25	20	20	5

B: = >0.95 **("B" is an indication of saturation)**

Max Hydraulic Gradient: = 3

Date	Minutes	Head, (cm)	K,cm/sec
4/29/2023	0.00	13.56	Start of Test
4/29/2023	52.00	11.85	1.4E-06
4/29/2023	114.00	10.71	1.1E-06
4/29/2023	159.00	9.11	1.3E-06
4/29/2023	277.00	6.84	1.3E-06
4/29/2023	342.00	6.95	1.1E-06
4/29/2023	457.00	4.56	1.3E-06
4/29/2023	552.00	3.65	1.3E-06



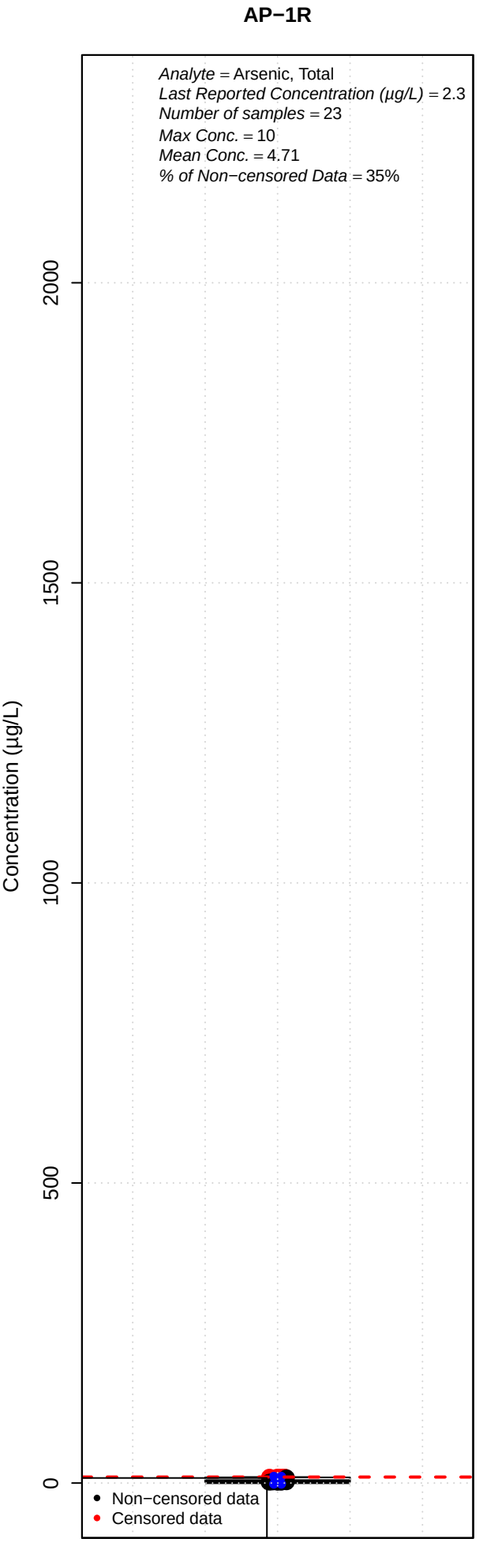
Average Hydraulic Conductivity: 1.E-06 cm/sec

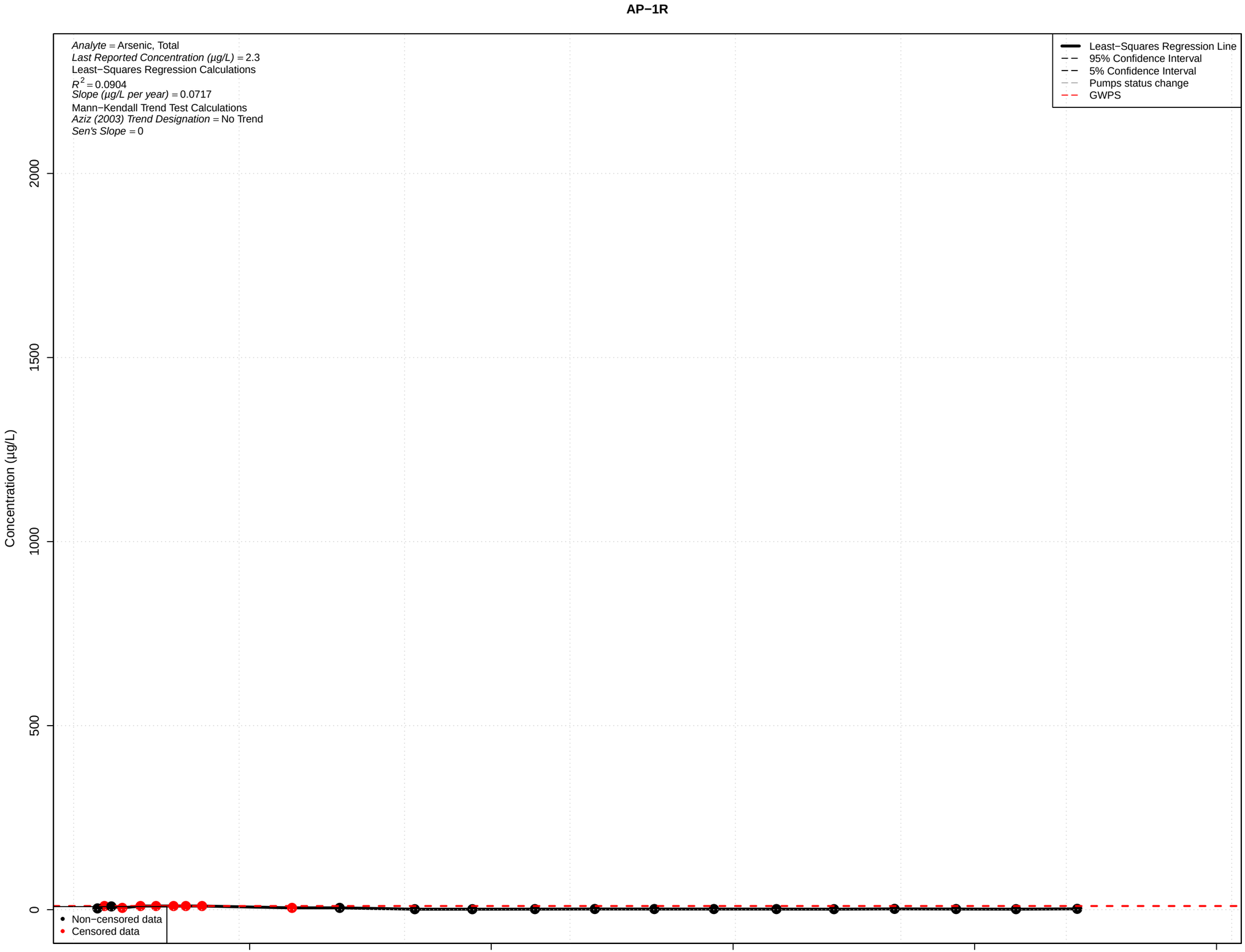
Sample Data:	Initial (As-Received)		Final (At-Test)
Height, in	1.52		1.58
Diameter, in	3.27		3.29
Area, in2	8.41		8.52
Volume in3	12.76		13.47
Total Volume, cc	209.1		220.7
Volume Solids, cc	184.2		184.2
Volume Voids, cc	24.9		36.5
Void Ratio	0.1		0.2
Total Porosity, %	11.9		16.6
Air-Filled Porosity (θa),%	8.4		0.3
Water-Filled Porosity (θw),%	3.5		16.3
Saturation, %	29.4		98.3
Specific Gravity	2.75	Assumed	2.75
Wet Weight, gm	513.8		542.4
Dry Weight, gm	506.5		506.5
Tare, gm	0.00		0.00
Moisture, %	1.4		7.1
Wet Bulk Density, pcf	153.3		153.3
Dry Bulk Density, pcf	151.1		143.2
Wet Bulk Dens.ρb, (g/cm^3)	2.46		2.46
Dry Bulk Dens.ρb, (g/cm^3)	2.42		2.29

Remarks: Sample tested with 5 psi confining pressure. . Ends of specimen flaking during trimming. Planar ends could not be achieved during trimming. Specimen height and associated values are close but approximate.

APPENDIX C
Time Trend Graphs

ARSENIC TRENDS
ASH POND **SYSTEM**


AP−1R
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.3
Number of samples = 23
Max Conc. = 10
Mean Conc. = 4.71
% of Non−censored Data = 35%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data


AP−1R
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.3
Least−Squares Regression Calculations
R2 = 0.0904
Slope (µg/L per year) = 0.0717
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date
D−1

AP−2A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1000
Number of samples = 24
Max Conc. = 2080
Mean Conc. = 275
% of Non−censored Data = 29%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−2A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1000
Least−Squares Regression Calculations
R^2 = 0.587
Slope (µg/L per year) = 636
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 204.95

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−2BO

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 3
Number of samples = 23
Max Conc. = 10
Mean Conc. = 5.2
% of Non−censored Data = 39%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−2BO

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 3
Least−Squares Regression Calculations
R^2 = 0.379
Slope (µg/L per year) = 0.658
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.2725

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−3

AP−3

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 10
Mean Conc. = 3.94
% of Non−censored Data = 87%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−3

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−3A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.9
Number of samples = 23
Max Conc. = 10
Mean Conc. = 4.55
% of Non−censored Data = 39%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

AP−3A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.9
Least−Squares Regression Calculations
R2 = 0.4
Slope (µg/L per year) = 0.117
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.1
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−4A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 10
Mean Conc. = 3.89
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−4A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−4B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 10
Mean Conc. = 3.93
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

AP−4B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

D−7

AP−4I

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.21
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−4I

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−5

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.11
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−5

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−9

AP−5A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.2
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.51
% of Non−censored Data = 74%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−5A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.2
Least−Squares Regression Calculations
R^2 = 0.00113
Slope (µg/L per year) = −0.00252
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−10

AP−6A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.61
% of Non−censored Data = 83%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−6A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.162
Slope (µg/L per year) = −0.166
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−6B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.93
% of Non−censored Data = 96%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−6B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.492
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−7

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.73
% of Non−censored Data = 57%

Non−censored data
Censored data

AP−7

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.279
Slope (µg/L per year) = −0.471
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.1733

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

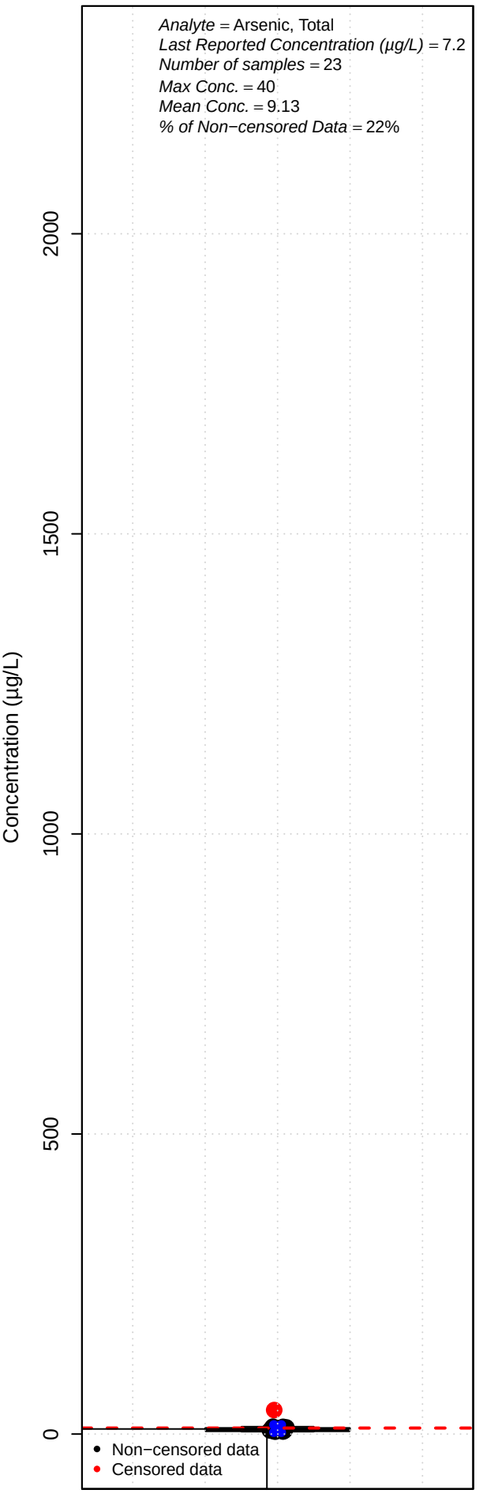
Concentration (µg/L)
0
500
1000
1500
2000

2018
2020
2022
2024
2026

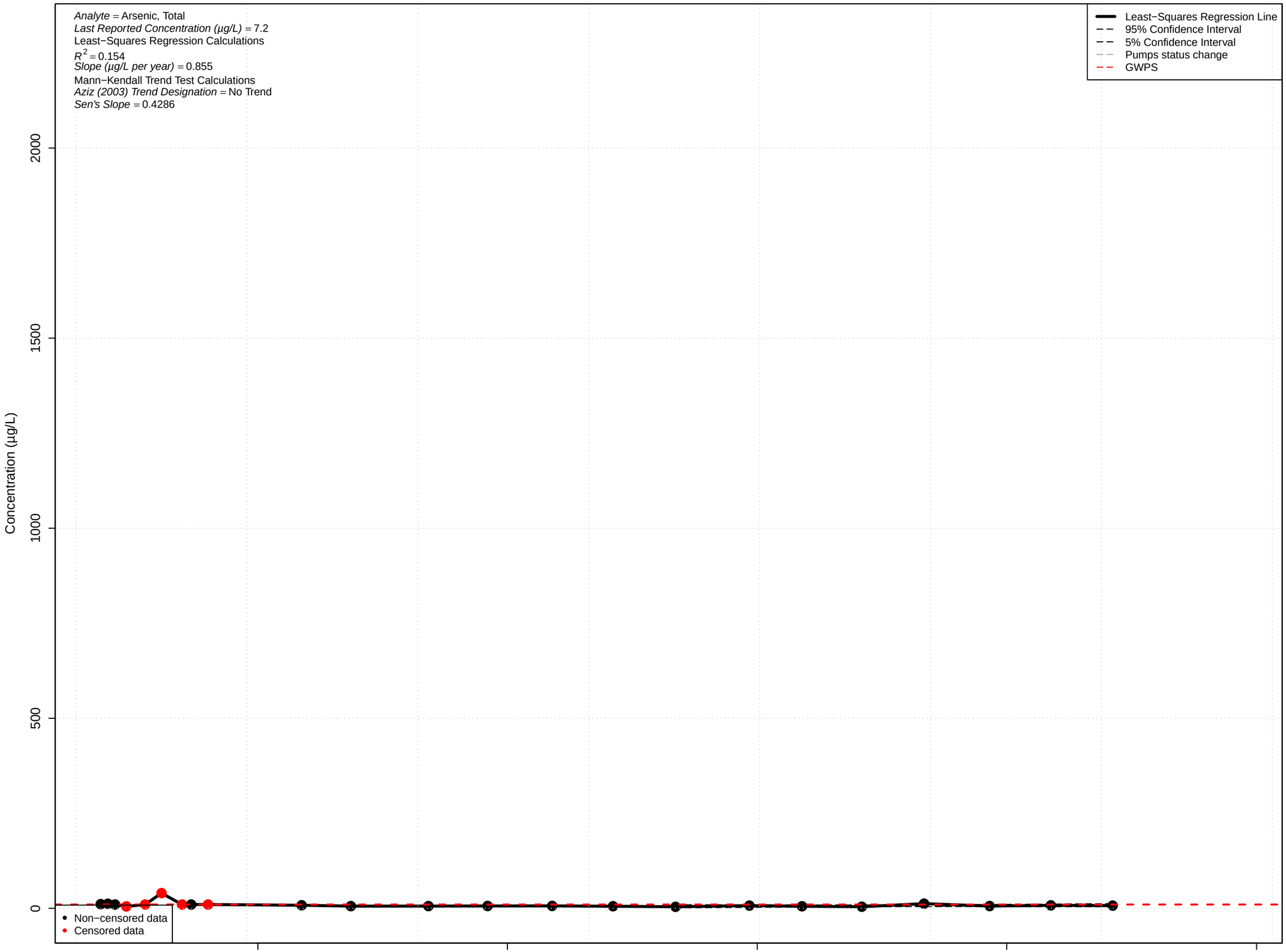
Date

D−13

AP−8


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 7.2
Number of samples = 23
Max Conc. = 40
Mean Conc. = 9.13
% of Non−censored Data = 22%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

AP−8


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 7.2
Least−Squares Regression Calculations
R2 = 0.154
Slope (µg/L per year) = 0.855
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.4286
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−9A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.3
Number of samples = 12
Max Conc. = 2.6
Mean Conc. = 1.45
% of Non−censored Data = 8%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−9A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.3
Least−Squares Regression Calculations
R^2 = 0.129
Slope (µg/L per year) = 0.0769
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−15

AP−10A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.2
Number of samples = 12
Max Conc. = 3.7
Mean Conc. = 1.31
% of Non−censored Data = 33%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

AP−10A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.2
Least−Squares Regression Calculations
R^2 = 0.35
Slope (µg/L per year) = 0.0401
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.02

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−2R

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 4.9
Number of samples = 21
Max Conc. = 78
Mean Conc. = 15.6
% of Non−censored Data = 38%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−2R

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 4.9
Least−Squares Regression Calculations
R^2 = 0.0121
Slope (µg/L per year) = 1.85
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.0042

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−3

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 46
Number of samples = 22
Max Conc. = 234
Mean Conc. = 27.3
% of Non−censored Data = 41%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−3

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 46
Least−Squares Regression Calculations
R^2 = 0.323
Slope (µg/L per year) = 28.6
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 6.4

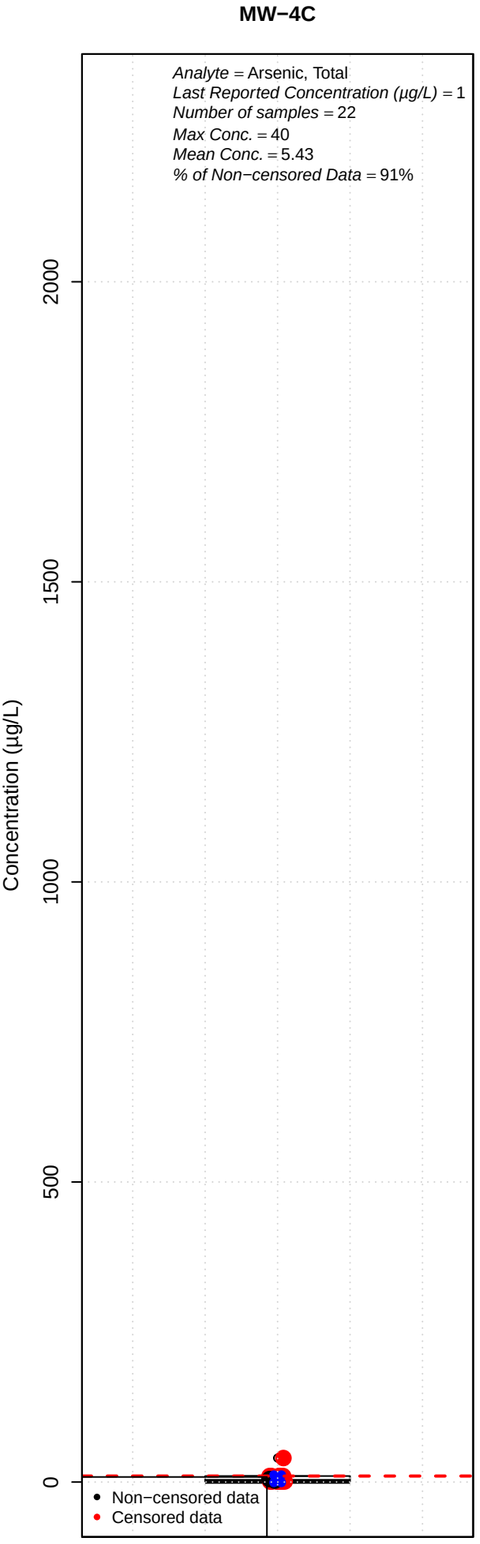
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

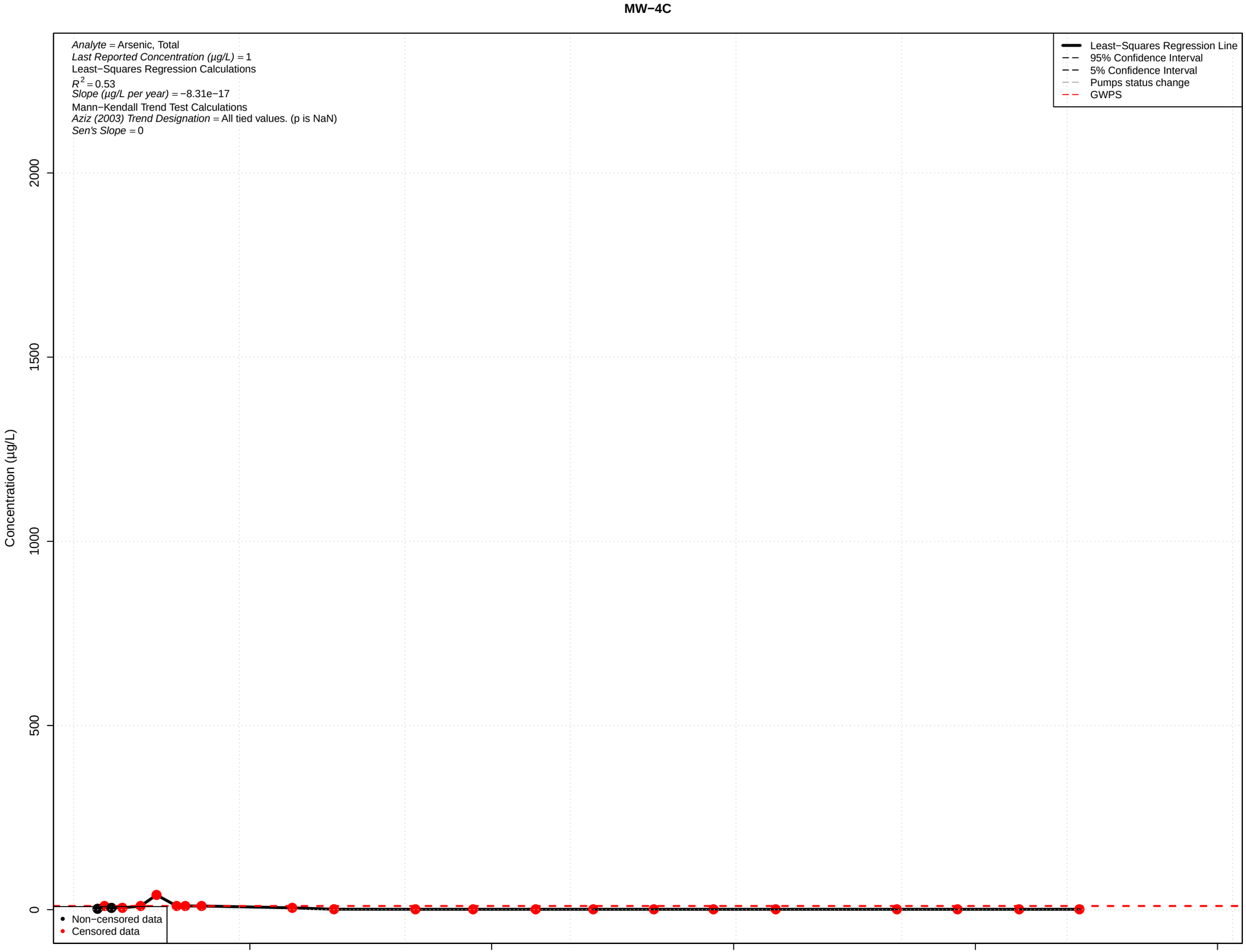
Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


MW−4C
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 22
Max Conc. = 40
Mean Conc. = 5.43
% of Non−censored Data = 91%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data


MW−4C
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.53
Slope (µg/L per year) = −8.31e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−19A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 12
Max Conc. = 3.8
Mean Conc. = 1.34
% of Non−censored Data = 17%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−19A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.71
Slope (µg/L per year) = −0.0355
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −0.0155

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−19B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 11
Max Conc. = 6
Mean Conc. = 1.45
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−19B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.601
Slope (µg/L per year) = −8.45e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

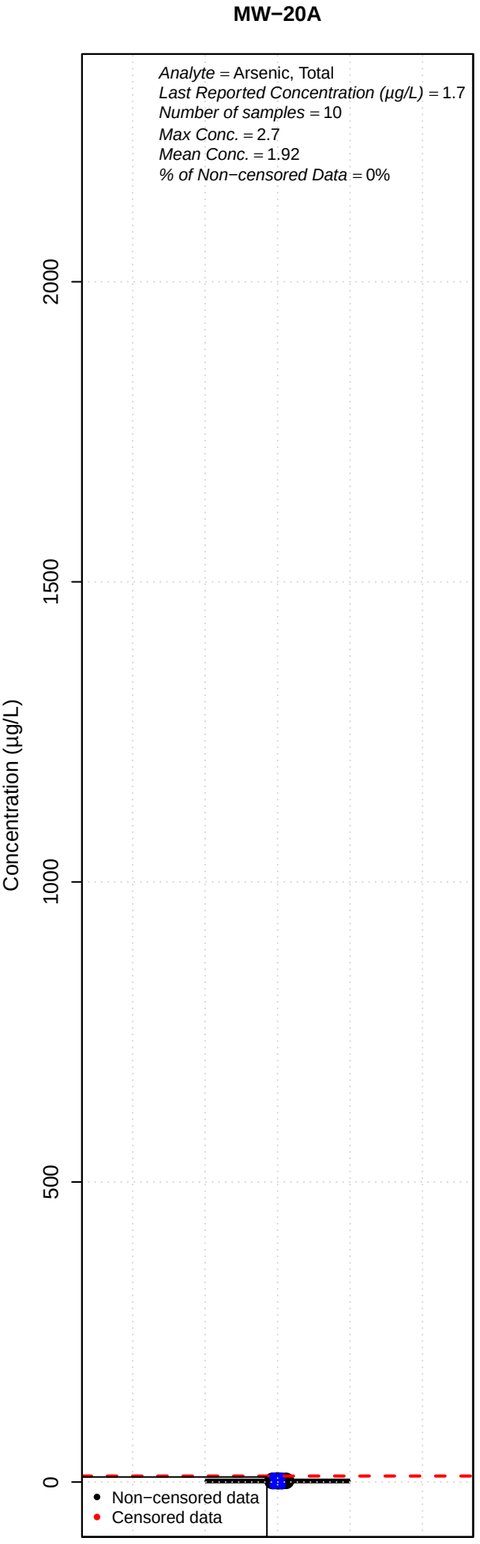
2018
2020
2022
2024
2026

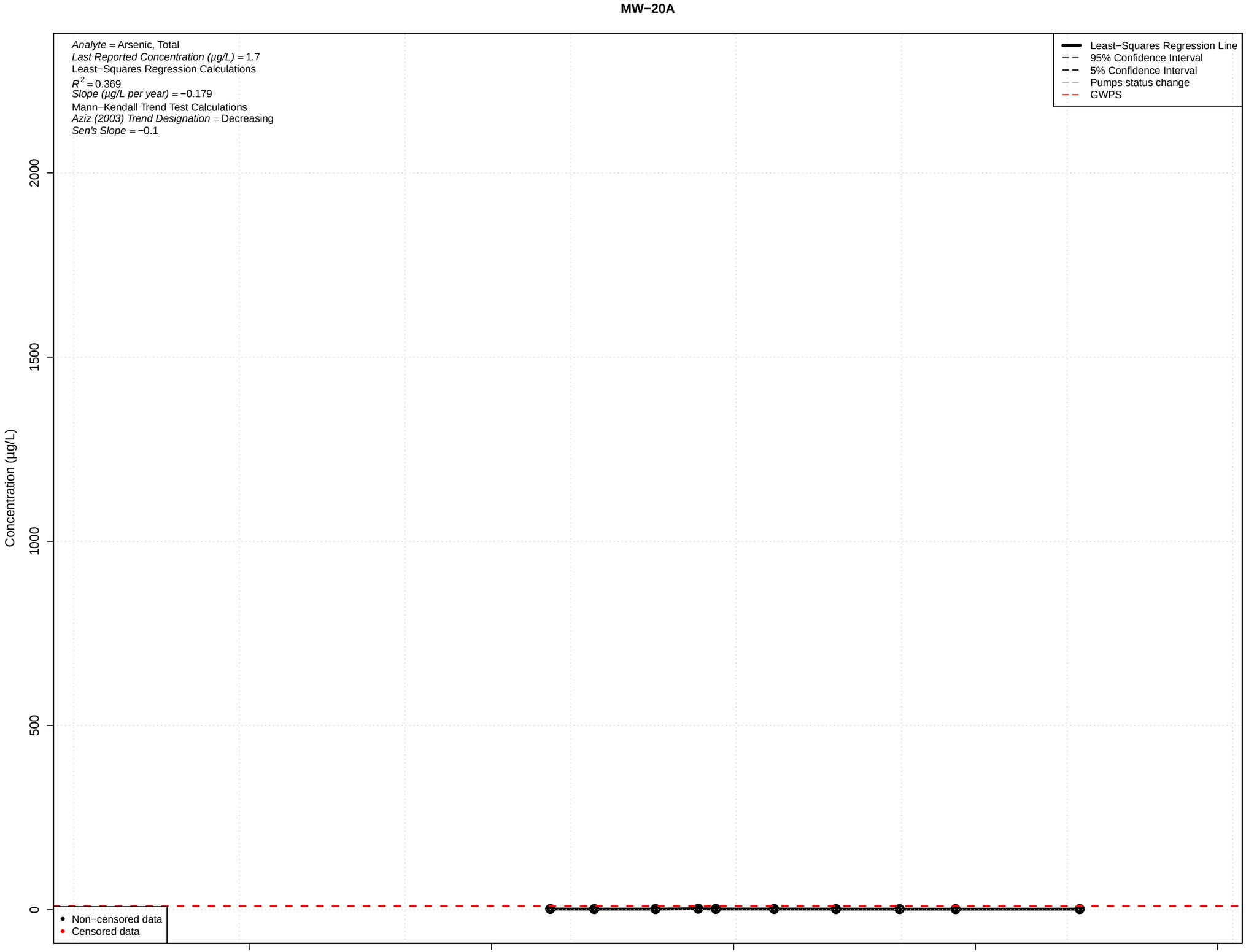
Date

D−21

MW−19I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 12
Max Conc. = 13.2
Mean Conc. = 2.02
% of Non−censored Data = 92%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

MW−19I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.49
Slope (µg/L per year) = −1.04e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


MW−20A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.7
Number of samples = 10
Max Conc. = 2.7
Mean Conc. = 1.92
% of Non−censored Data = 0%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data


MW−20A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.7
Least−Squares Regression Calculations
R2 = 0.369
Slope (µg/L per year) = −0.179
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −0.1
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−20B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 5.1
Mean Conc. = 1.56
% of Non−censored Data = 62%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−20B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.271
Slope (µg/L per year) = −0.573
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −0.05

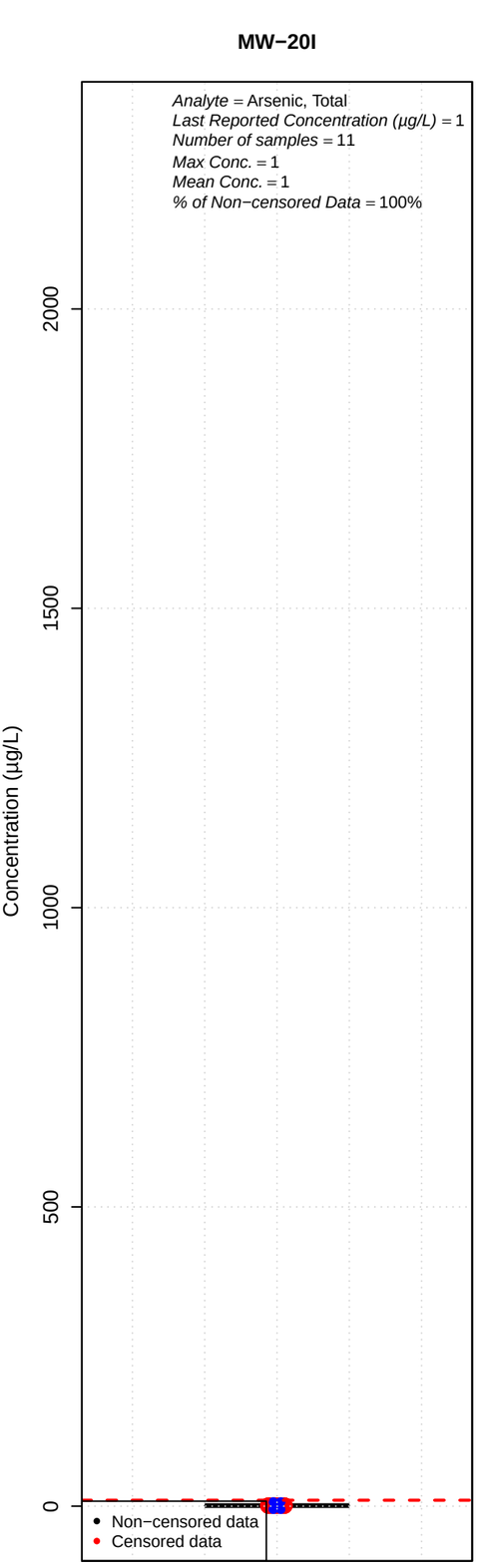
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

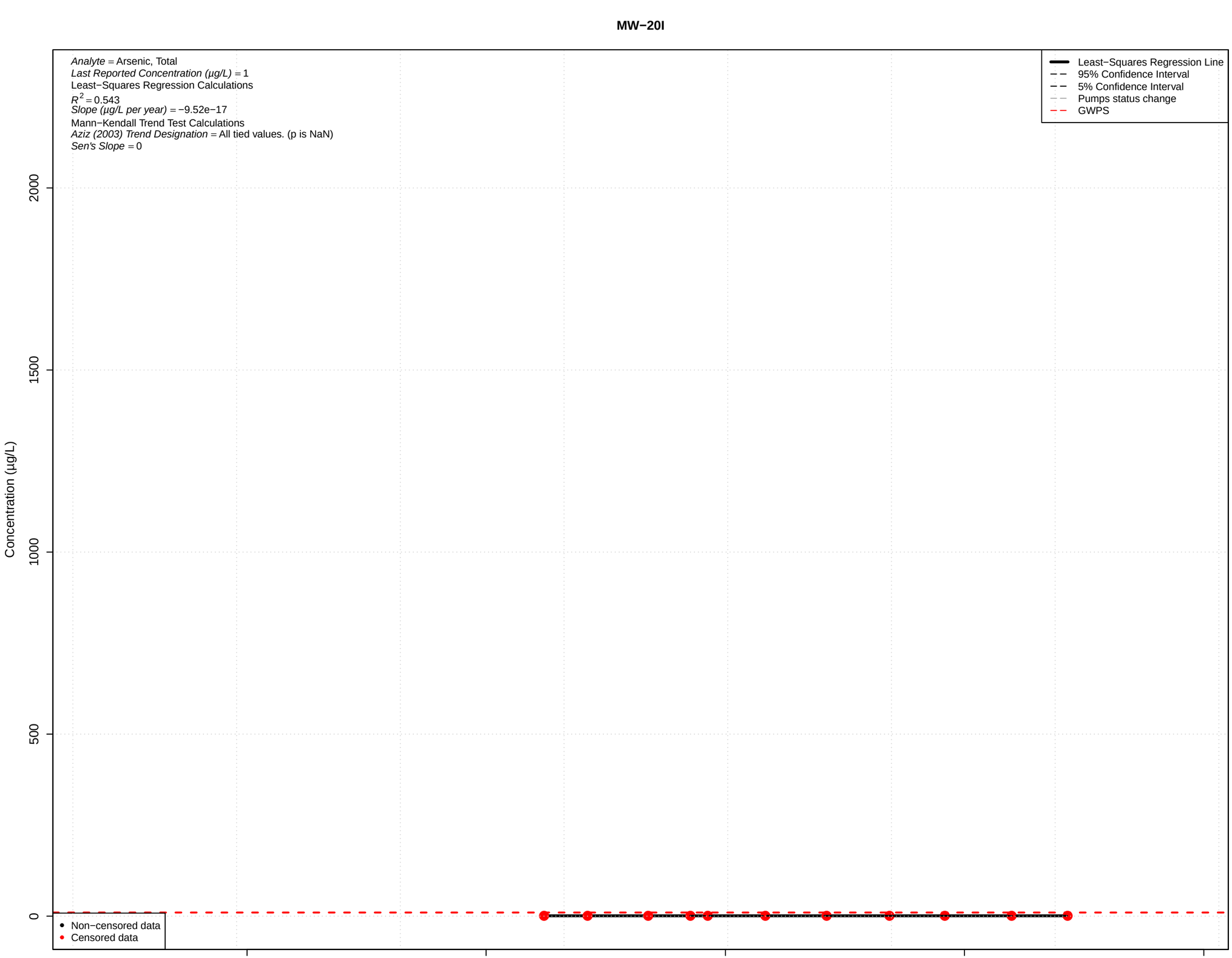
Concentration (µg/L)
0
500
1000
1500
2000

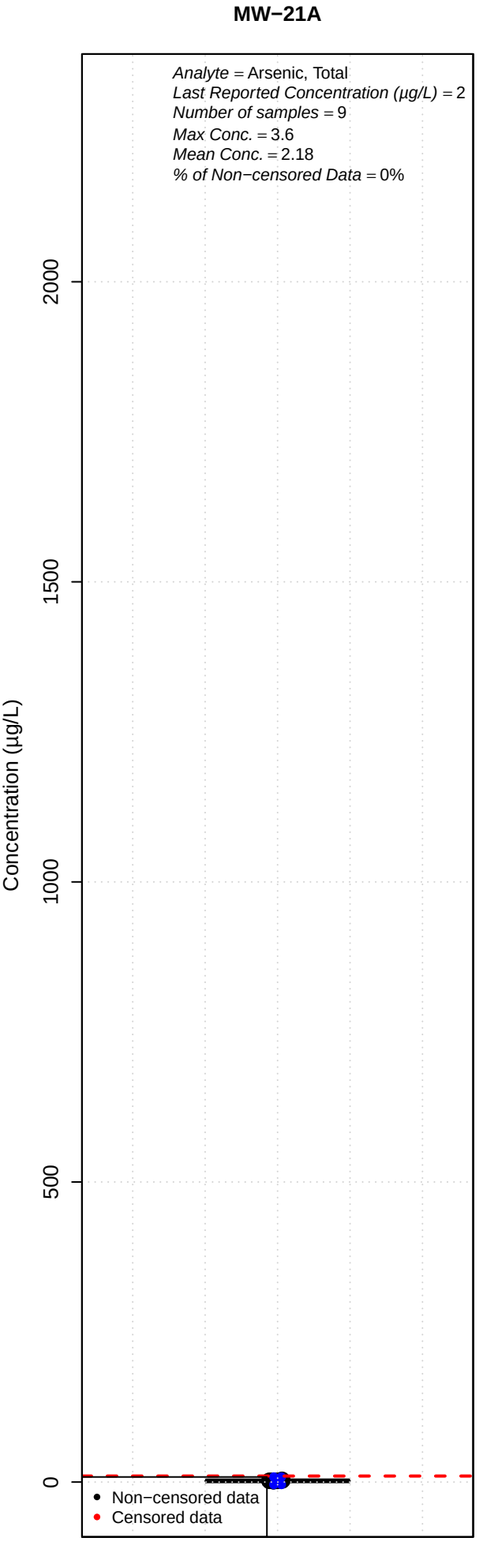
Non−censored data
Censored data

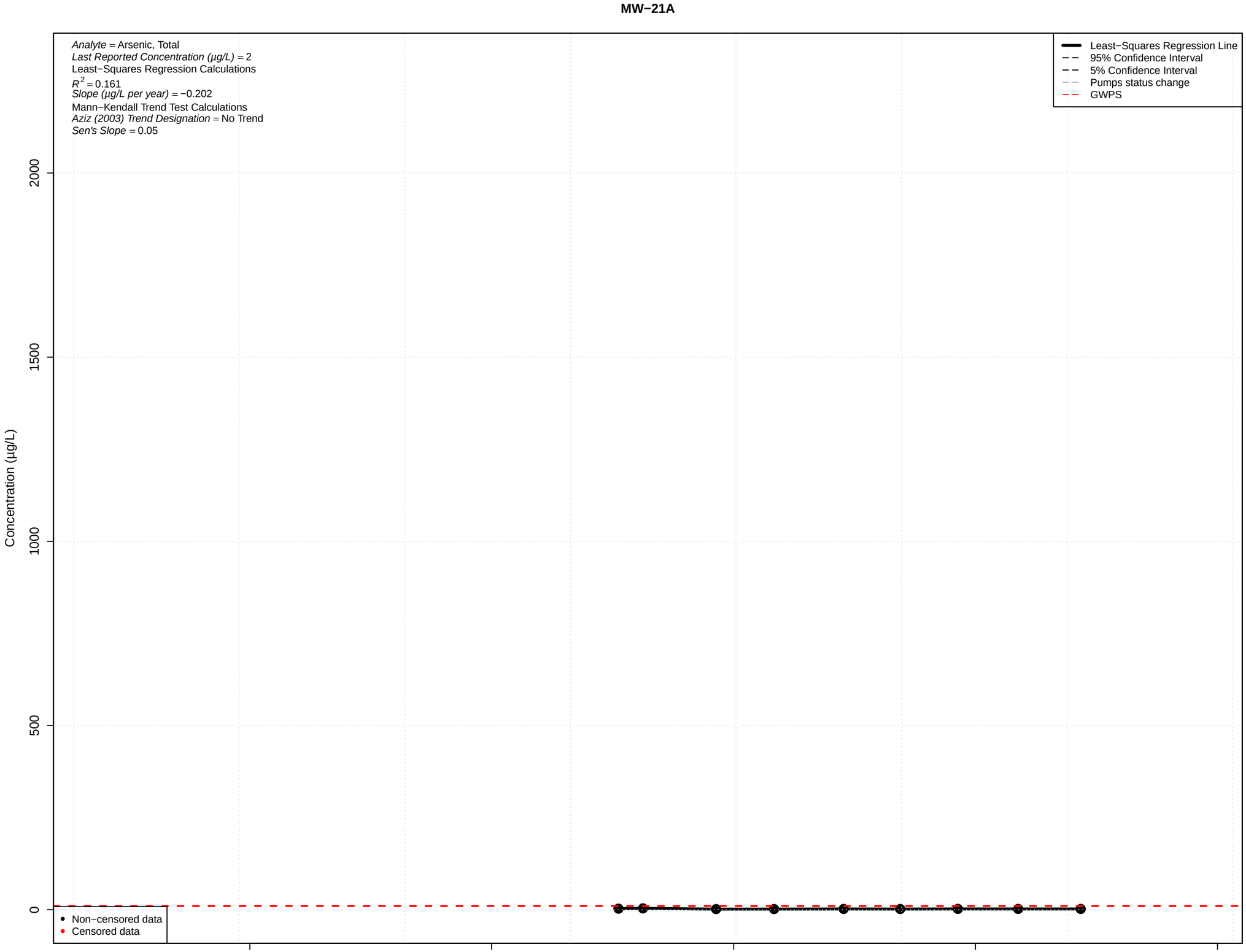
2018
2020
2022
2024
2026

Date


MW−20I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 11
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data


MW−20I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.543
Slope (µg/L per year) = −9.52e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


MW−21A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2
Number of samples = 9
Max Conc. = 3.6
Mean Conc. = 2.18
% of Non−censored Data = 0%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data


MW−21A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2
Least−Squares Regression Calculations
R2 = 0.161
Slope (µg/L per year) = −0.202
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.05
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−21B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 9
Max Conc. = 2.1
Mean Conc. = 1.12
% of Non−censored Data = 89%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−21B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.5
Slope (µg/L per year) = −1.06e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

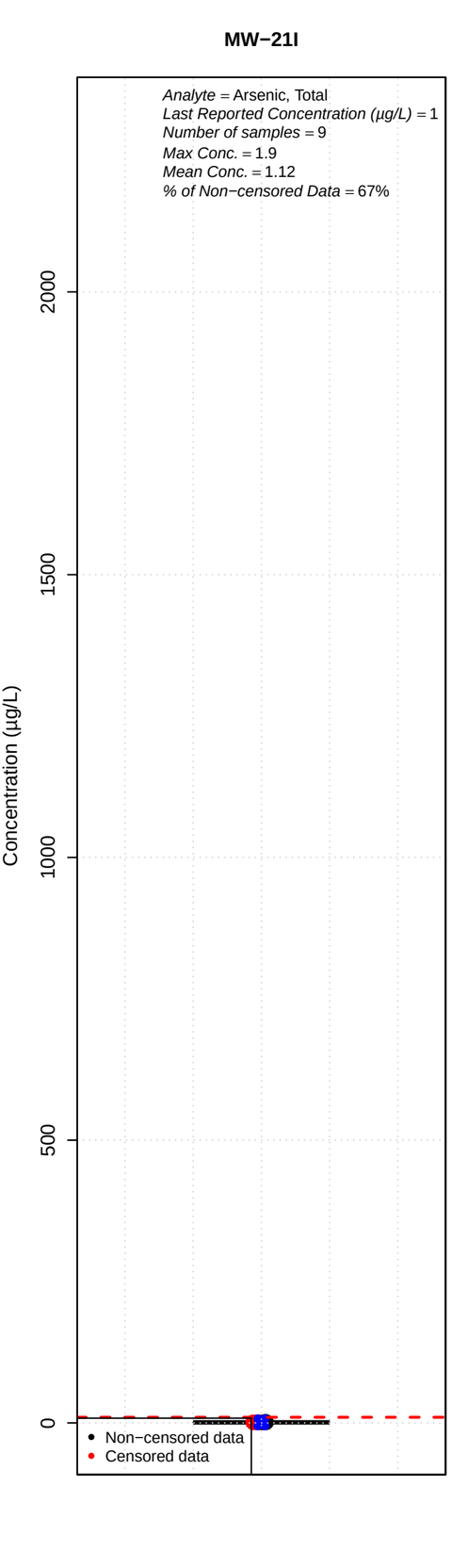
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

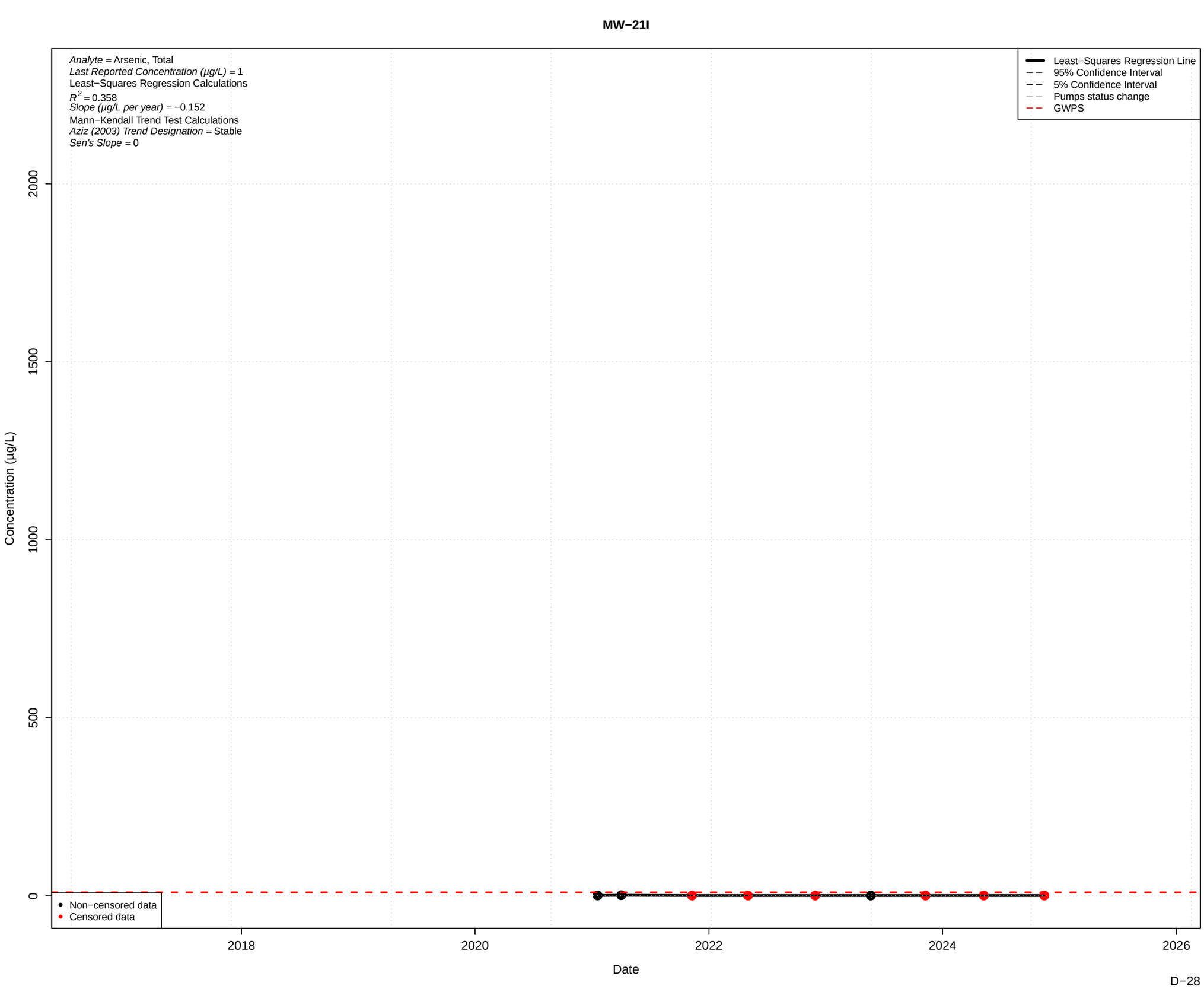
Concentration (µg/L)
0
500
1000
1500
2000

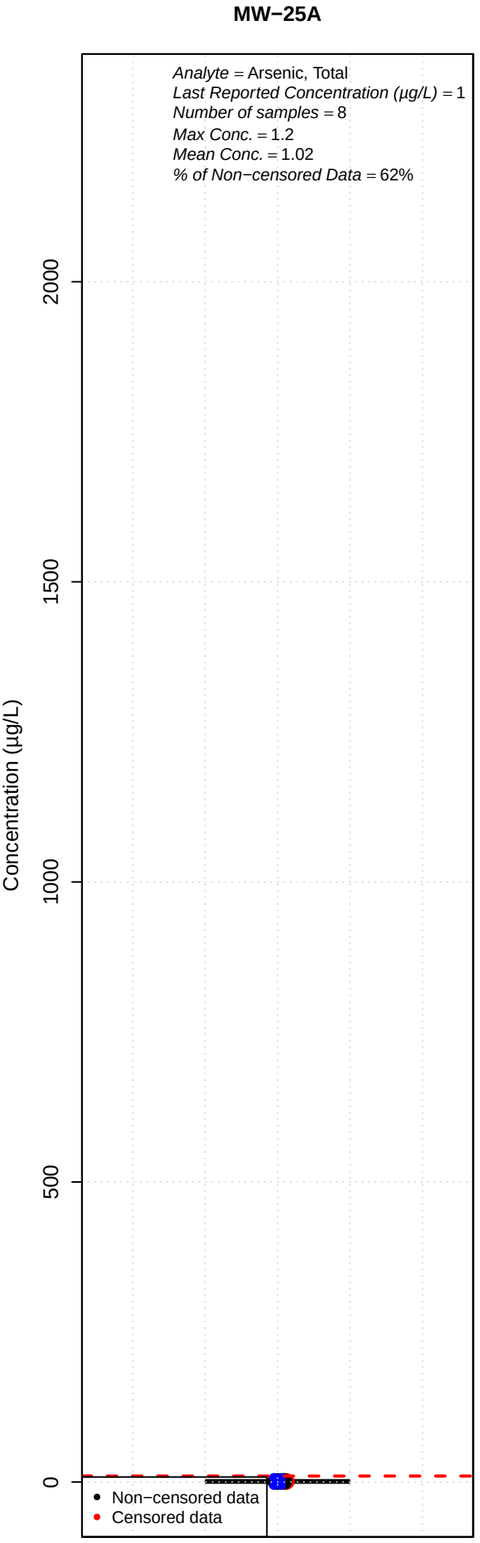
Non−censored data
Censored data

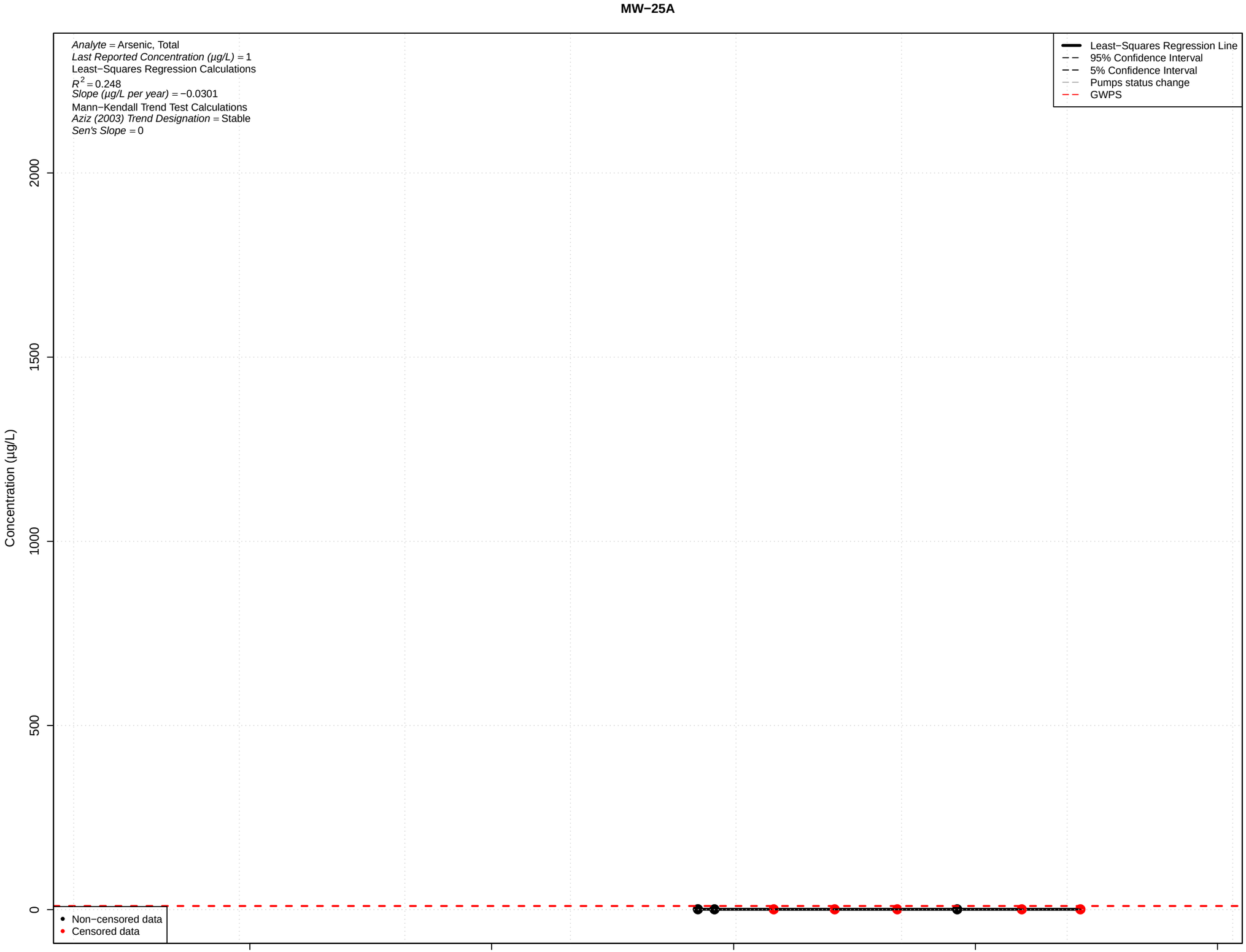
2018
2020
2022
2024
2026

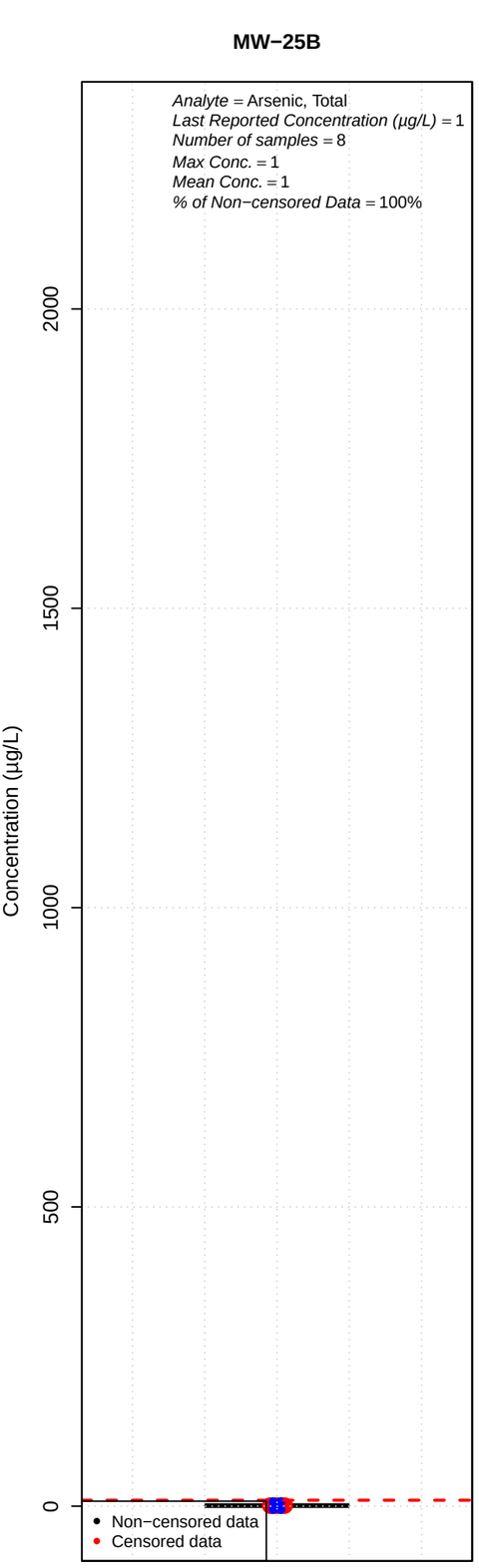
Date

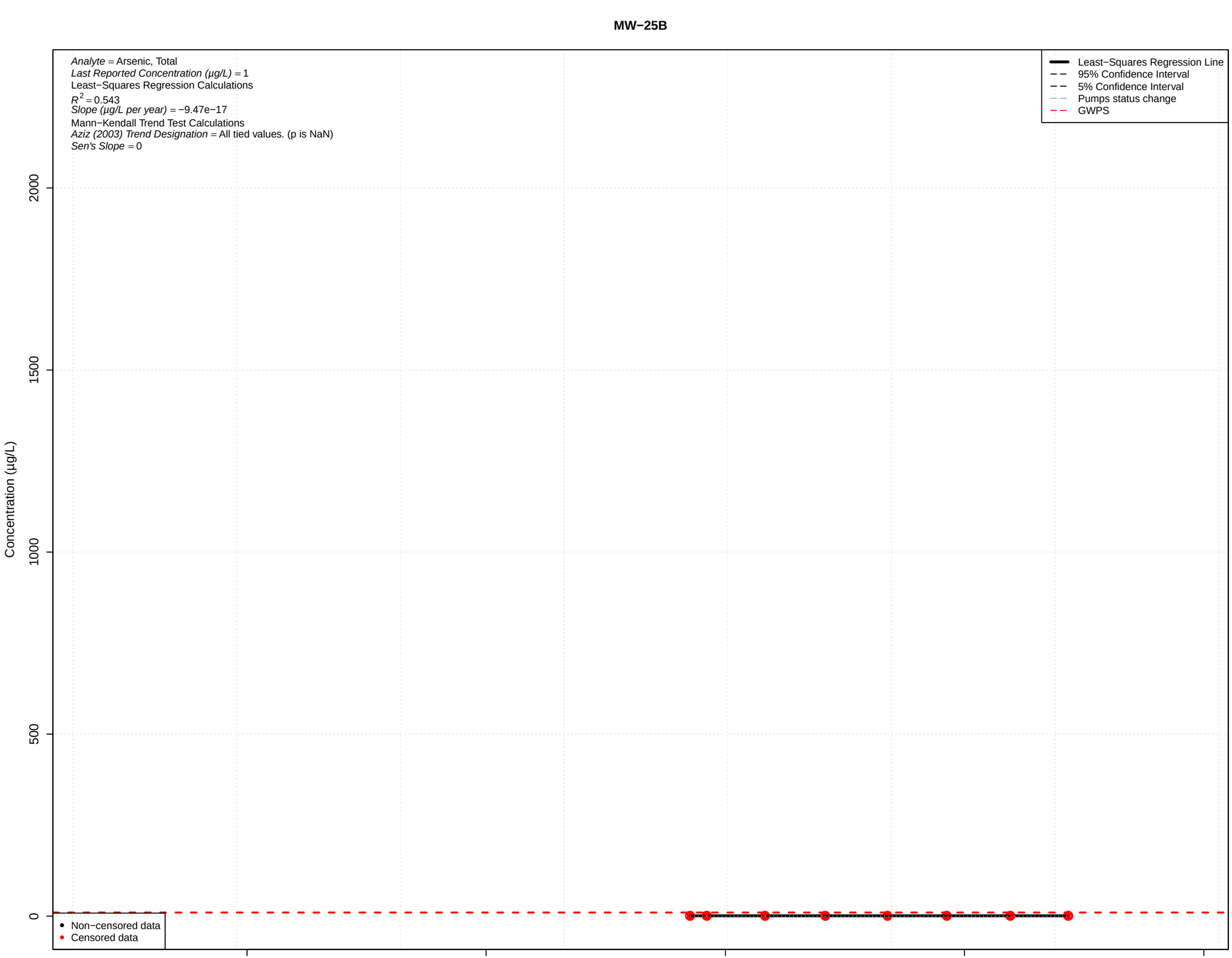

MW−21I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 9
Max Conc. = 1.9
Mean Conc. = 1.12
% of Non−censored Data = 67%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data

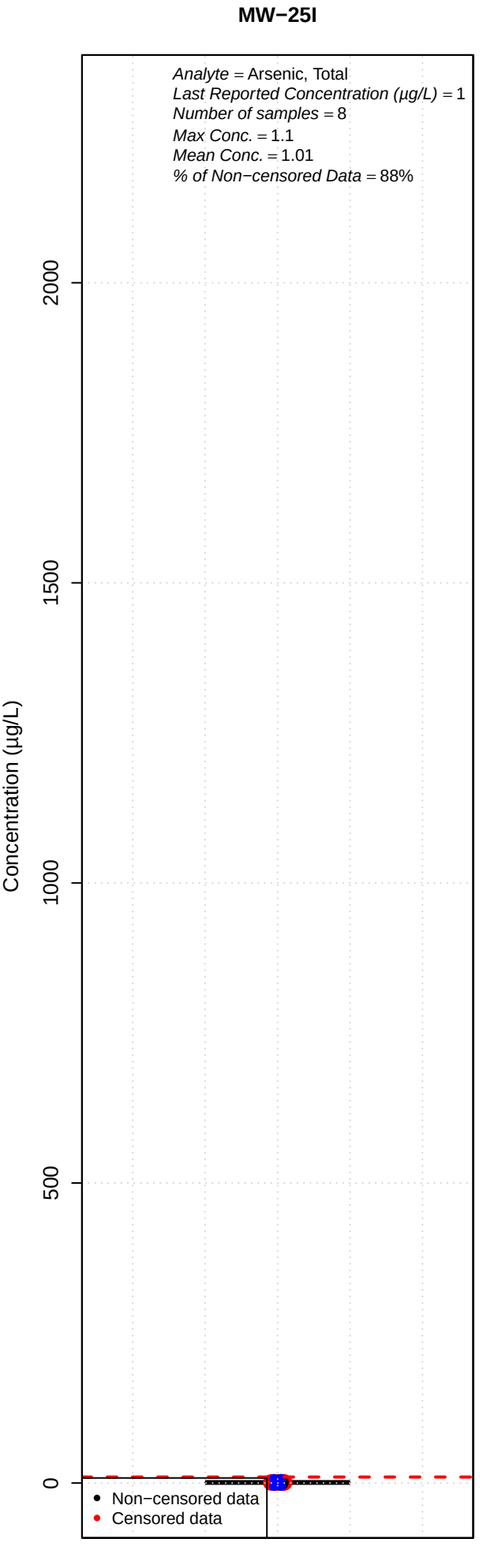

MW−21I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.358
Slope (µg/L per year) = −0.152
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

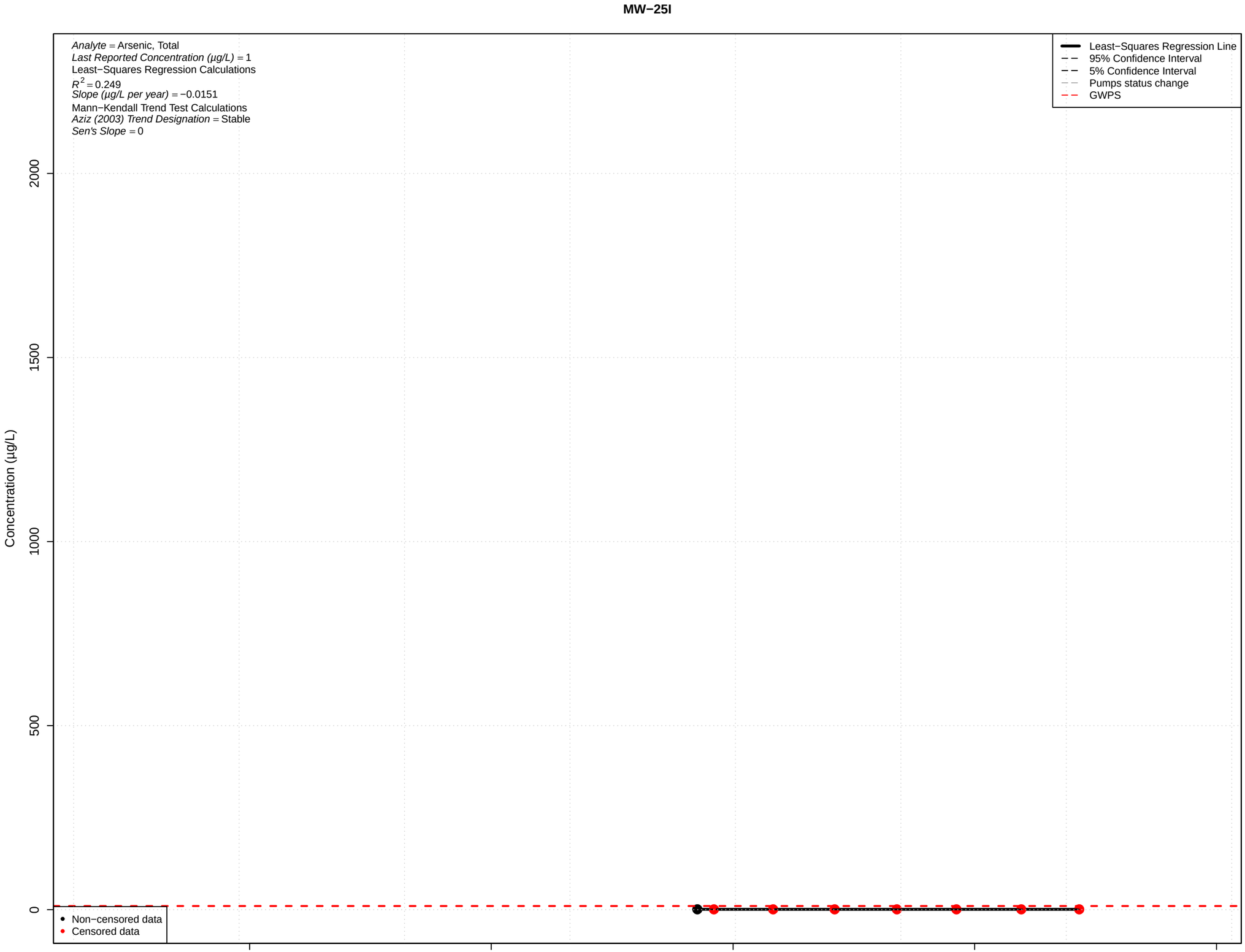

MW−25A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1.2
Mean Conc. = 1.02
% of Non−censored Data = 62%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data

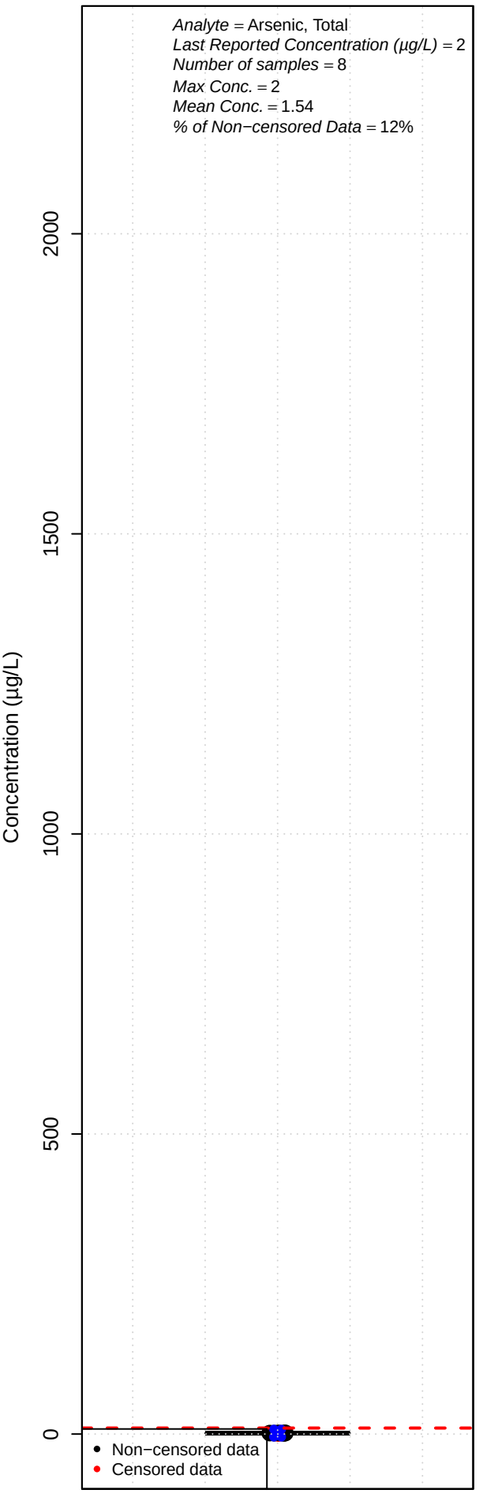

MW−25A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.248
Slope (µg/L per year) = −0.0301
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


MW−25B
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data


MW−25B
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.543
Slope (µg/L per year) = −9.47e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

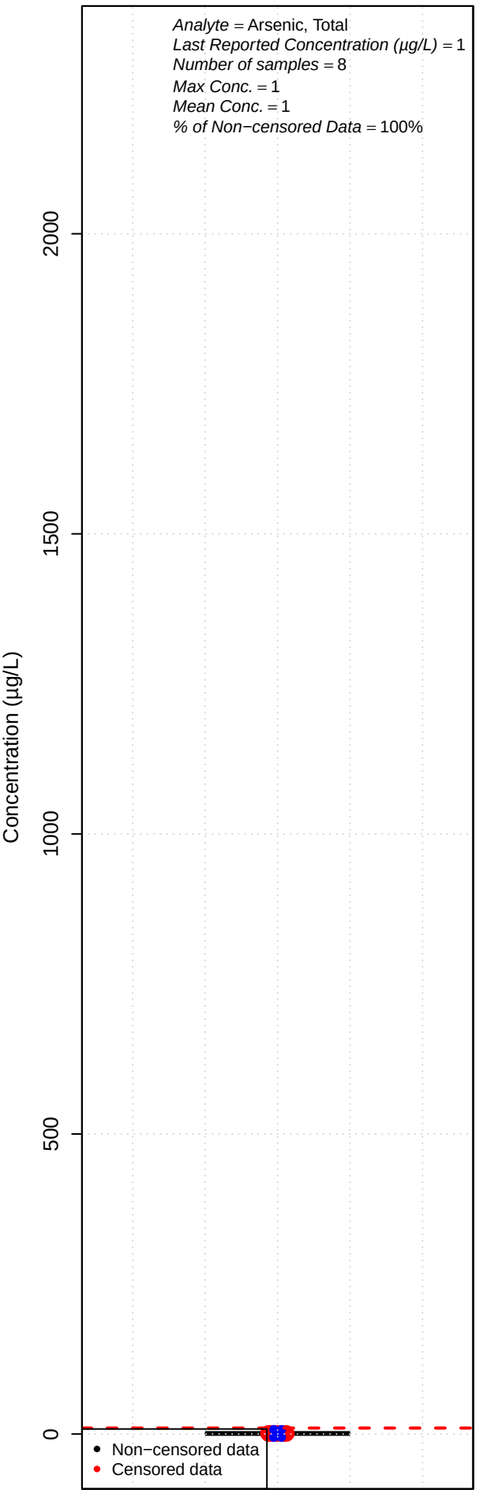

MW−25I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1.1
Mean Conc. = 1.01
% of Non−censored Data = 88%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data


MW−25I
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.249
Slope (µg/L per year) = −0.0151
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2
Number of samples = 8
Max Conc. = 2
Mean Conc. = 1.54
% of Non−censored Data = 12%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

MW−26A


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2
Least−Squares Regression Calculations
R2 = 0.617
Slope (µg/L per year) = 0.213
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Probably Increasing
Sen's Slope = 0.1
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

MW−26B


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.584
Slope (µg/L per year) = −9.79e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−26I

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.1
Number of samples = 8
Max Conc. = 2.2
Mean Conc. = 1.7
% of Non−censored Data = 12%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−26I

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.1
Least−Squares Regression Calculations
R^2 = 0.181
Slope (µg/L per year) = 0.146
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.065

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 54
Number of samples = 8
Max Conc. = 53.8
Mean Conc. = 39.7
% of Non−censored Data = 0%

Non−censored data
Censored data

MW−27B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 54
Least−Squares Regression Calculations
R^2 = 0.278
Slope (µg/L per year) = 3.15
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.95

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2018
2020
2022
2024
2026
Date

MW−28A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.4
Number of samples = 8
Max Conc. = 1.6
Mean Conc. = 1.38
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

MW−28A

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.4
Least−Squares Regression Calculations
R^2 = 0.218
Slope (µg/L per year) = 0.0469
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.0183

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.2
Number of samples = 8
Max Conc. = 3.9
Mean Conc. = 2.05
% of Non−censored Data = 12%

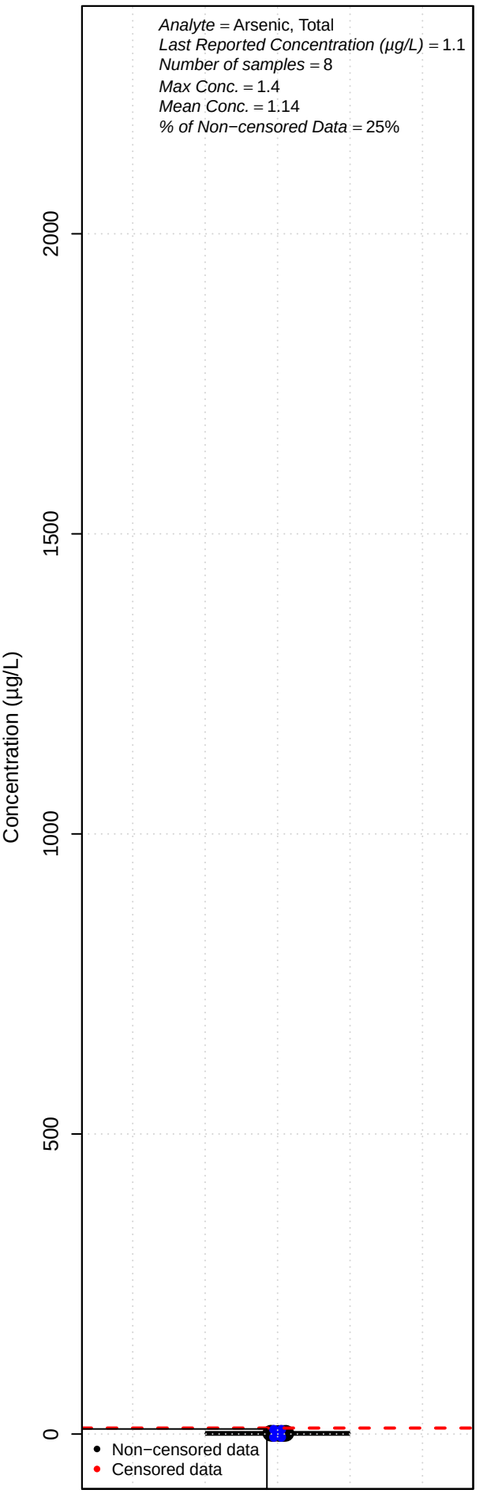
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

MW−28B

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.2
Least−Squares Regression Calculations
R^2 = 0.22
Slope (µg/L per year) = 0.352
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.1417

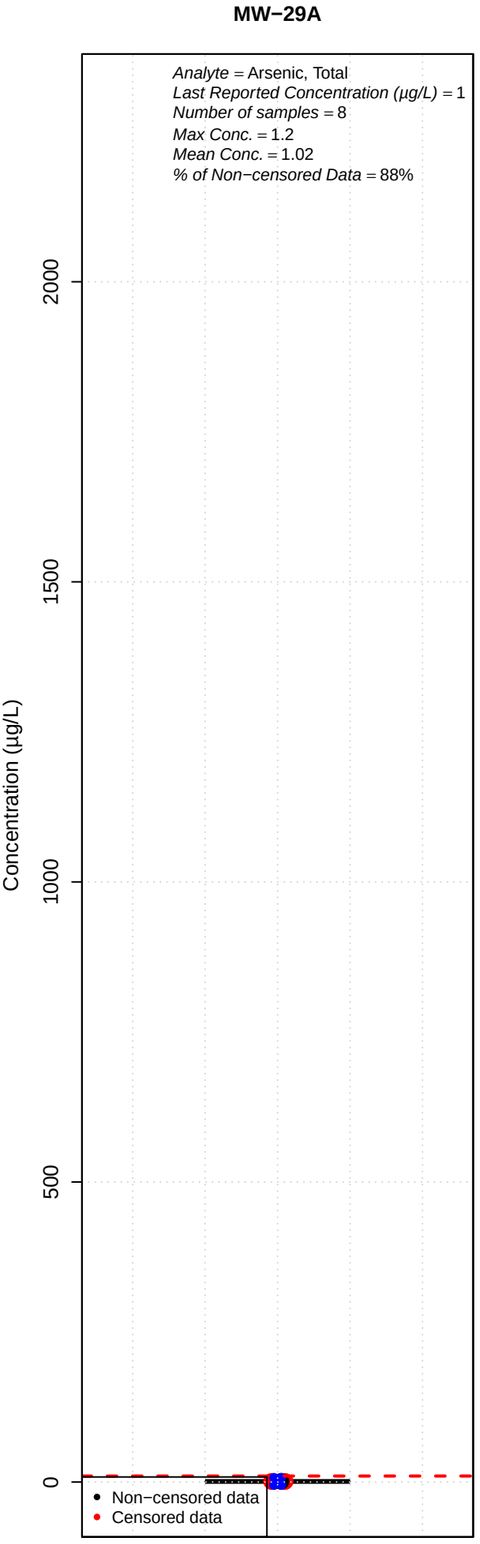
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

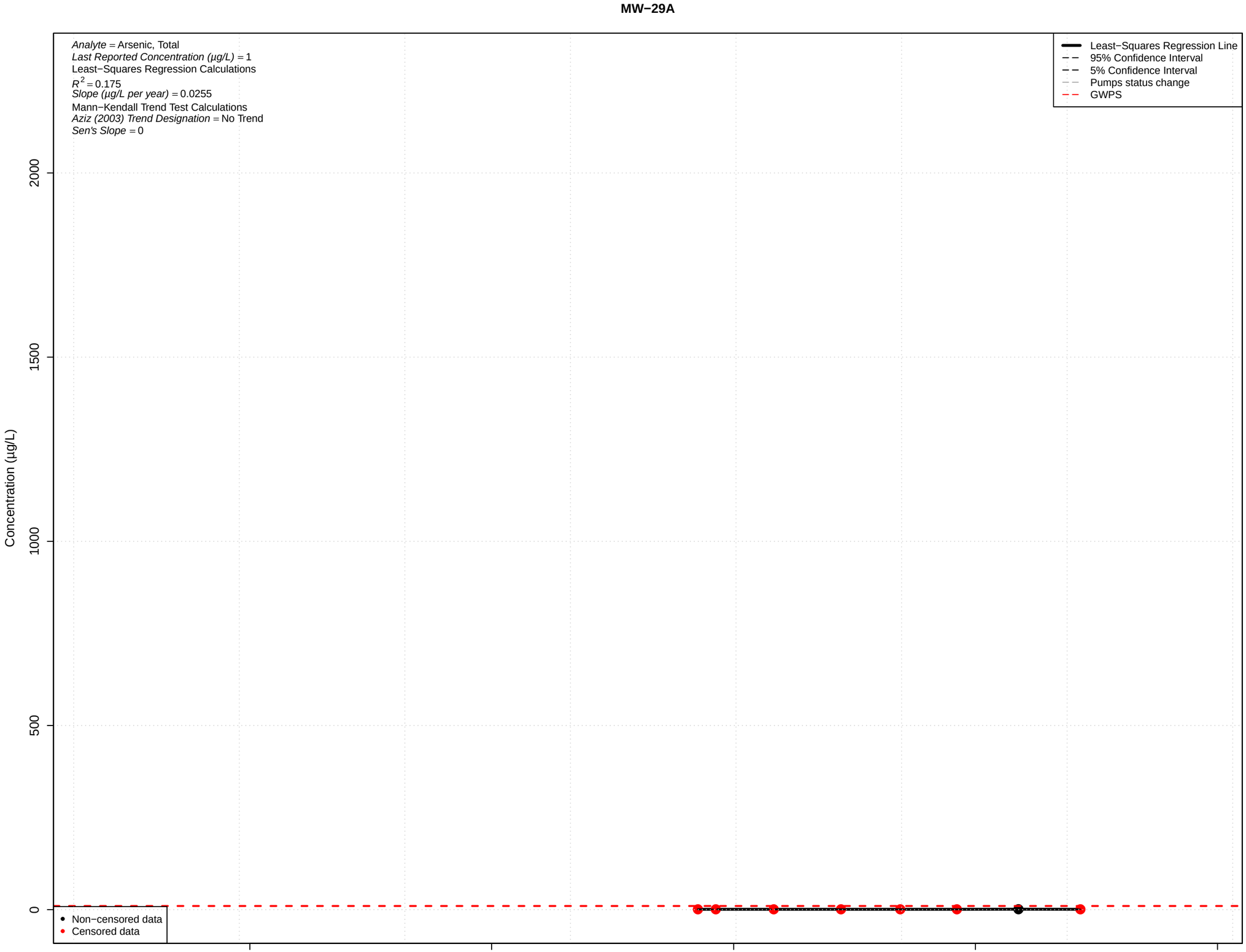
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

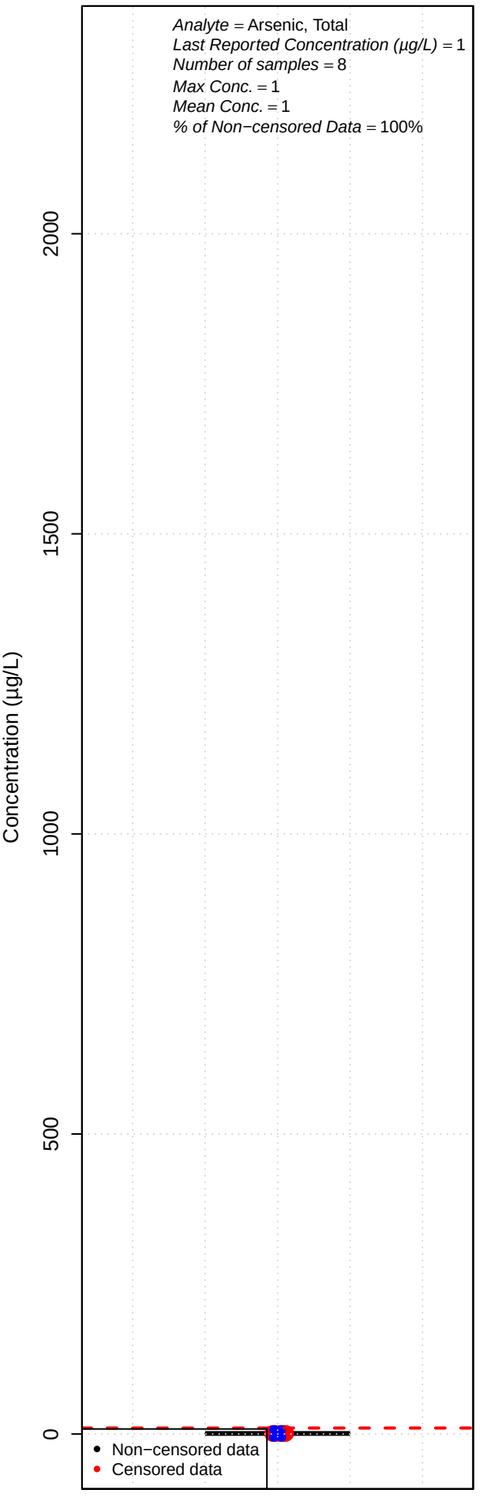

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.1
Number of samples = 8
Max Conc. = 1.4
Mean Conc. = 1.14
% of Non−censored Data = 25%
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data

MW−28I


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.1
Least−Squares Regression Calculations
R2 = 0.0163
Slope (µg/L per year) = 0.0155
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

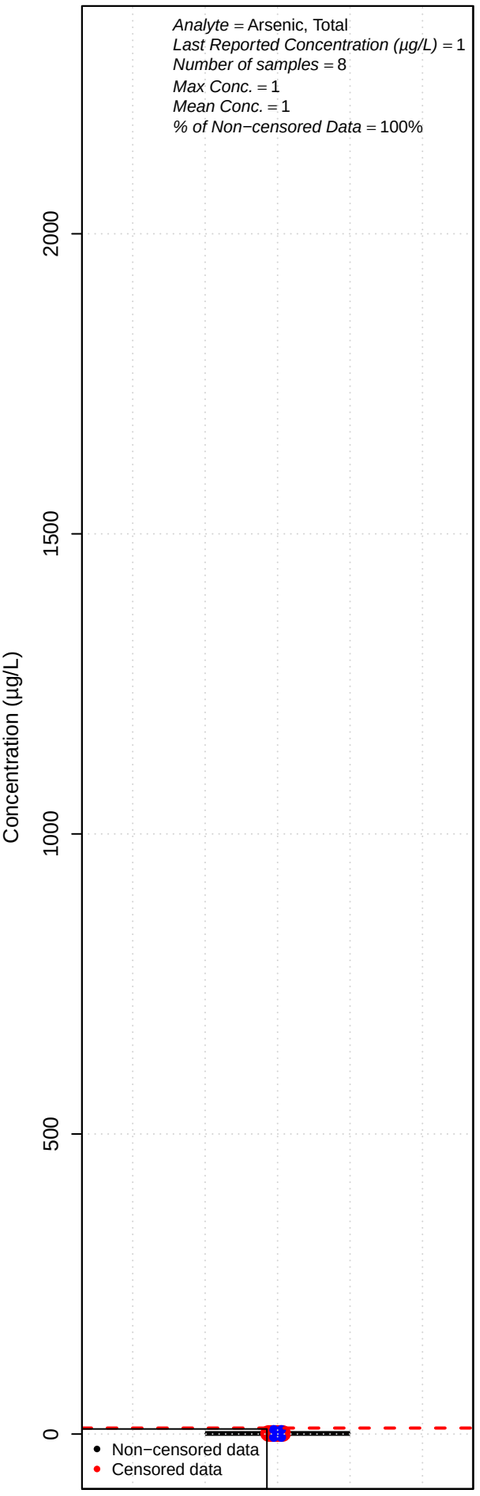

MW−29A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1.2
Mean Conc. = 1.02
% of Non−censored Data = 88%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data


MW−29A
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.175
Slope (µg/L per year) = 0.0255
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data

MW−29B


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.545
Slope (µg/L per year) = −9.64e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 8
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data

MW−29I


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.544
Slope (µg/L per year) = −9.62e−17
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

LITHIUM TRENDS
ASH POND **SYSTEM**

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50.3
% of Non−censored Data = 91%

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2500

AP−1R

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−2A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 59
Number of samples = 23
Max Conc. = 120
Mean Conc. = 89.4
% of Non−censored Data = 22%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−2A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 59
Least−Squares Regression Calculations
R^2 = 0.216
Slope (µg/L per year) = −4.91
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −1.61

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−2BO

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 51.5
% of Non−censored Data = 87%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−2BO

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.17
Slope (µg/L per year) = −0.69
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

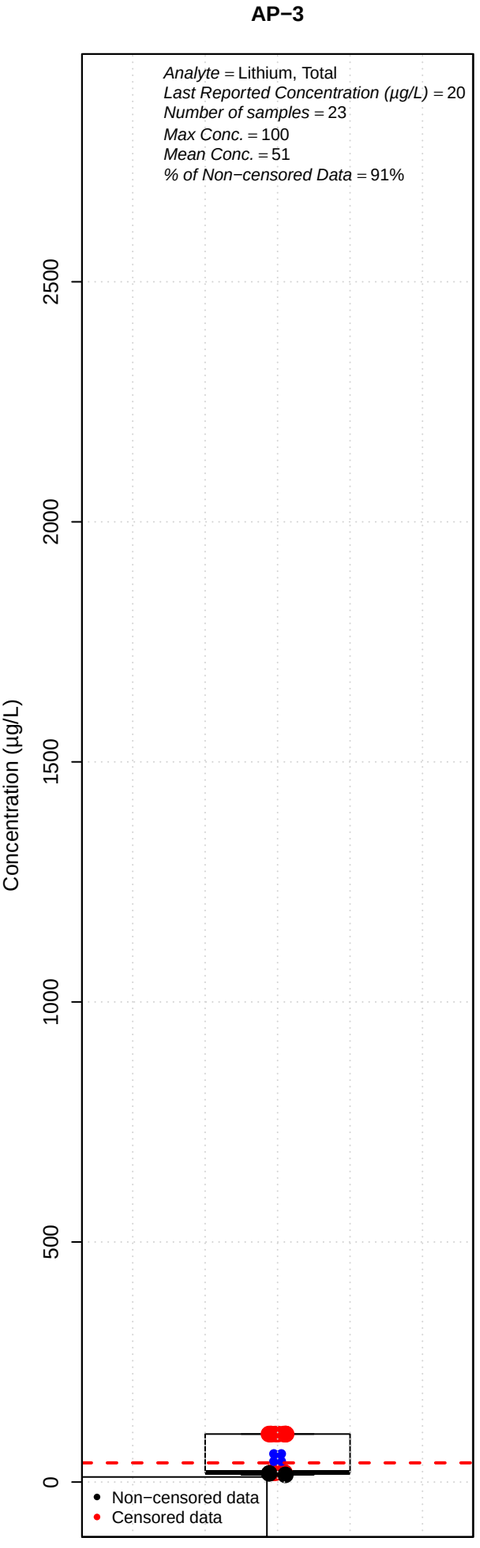
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

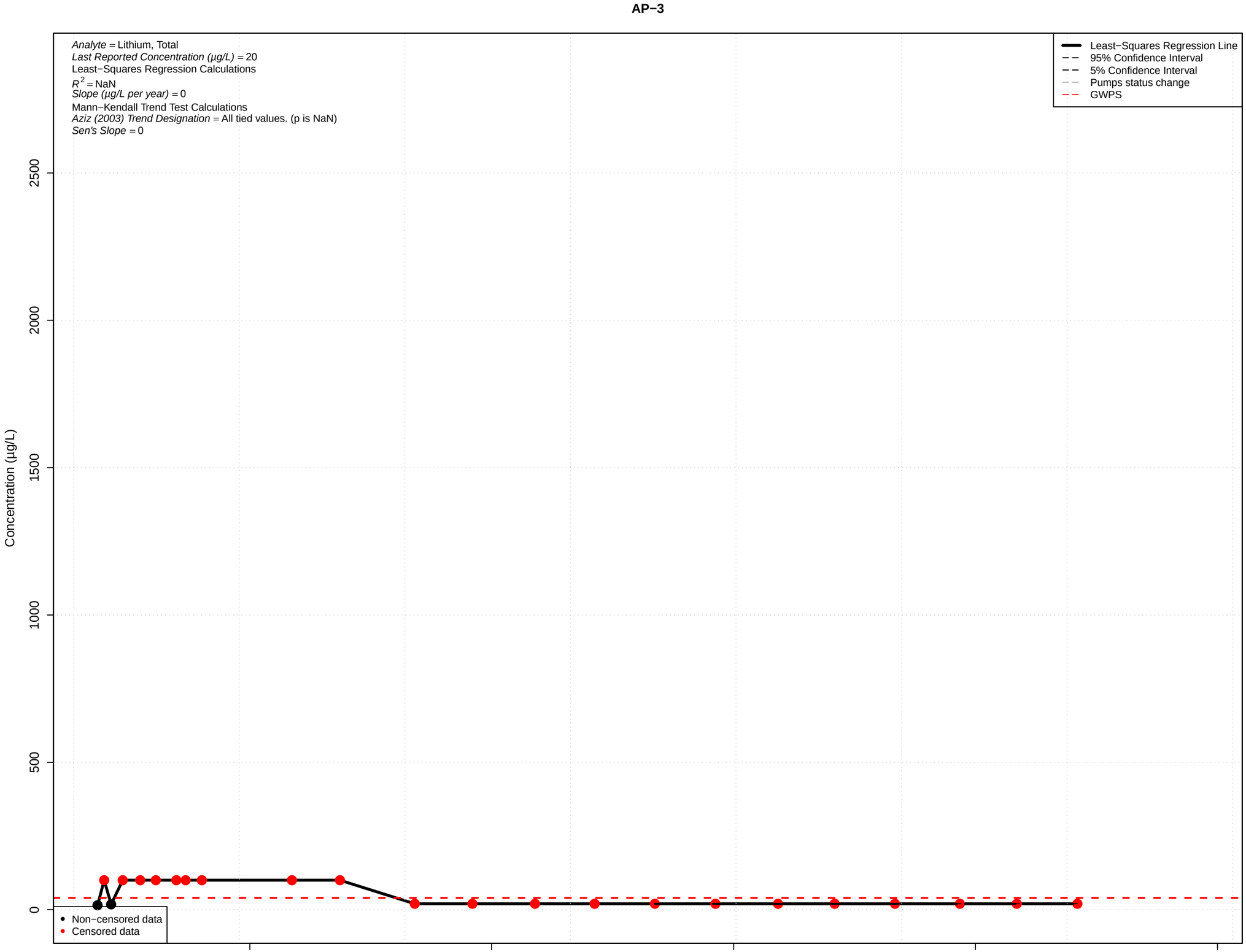
Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


AP−3
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 51
% of Non−censored Data = 91%
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data


AP−3
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50.7
% of Non−censored Data = 91%

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2500

AP−3A

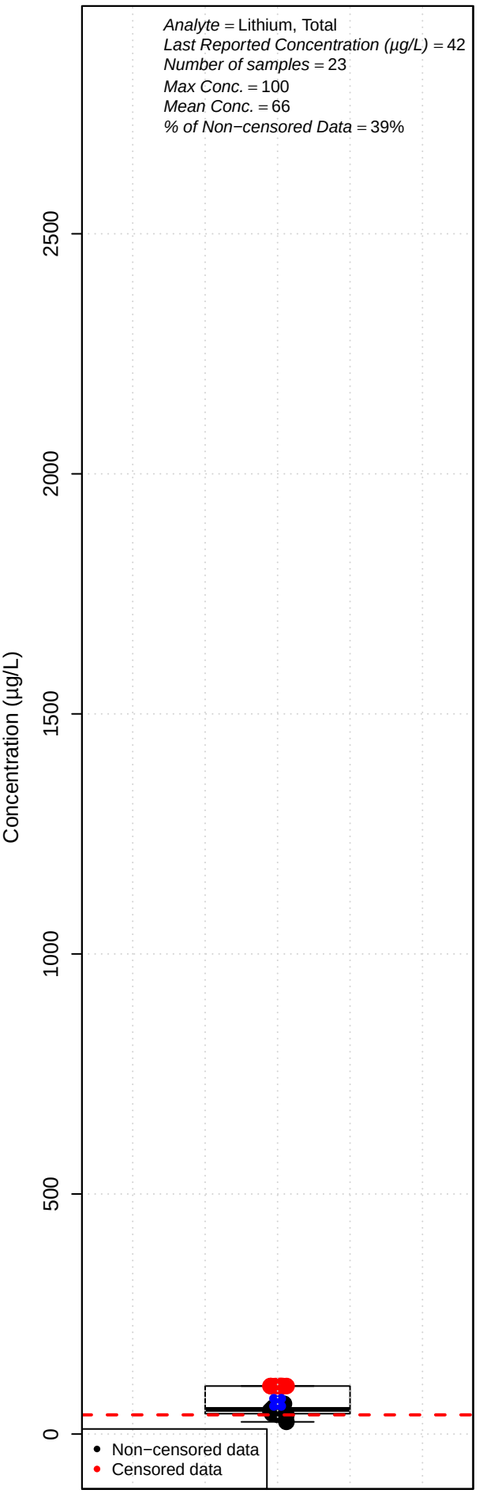
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

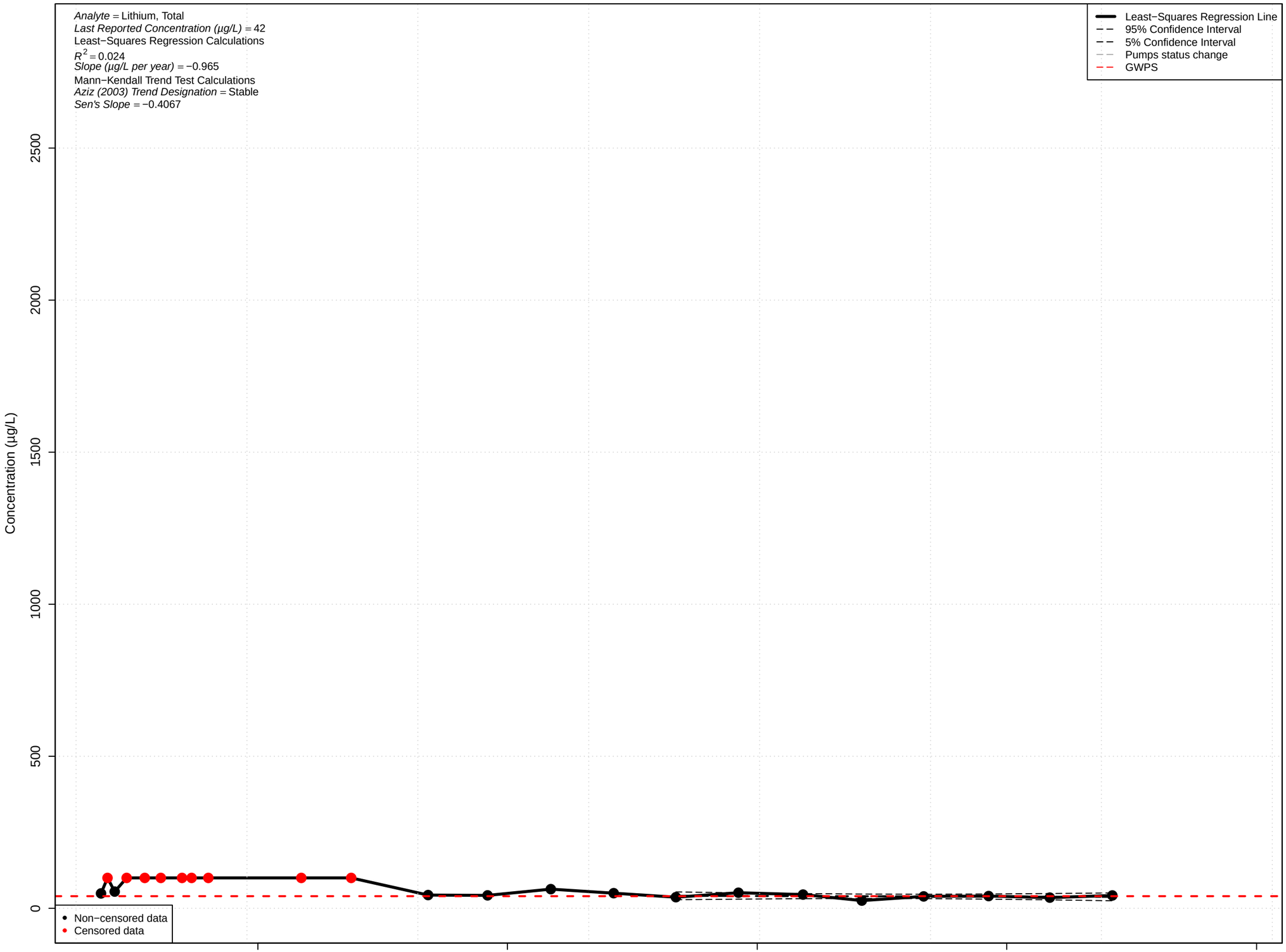
Non−censored data
Censored data

2018
2020
2022
2024
2026
Date

AP−4A


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 42
Number of samples = 23
Max Conc. = 100
Mean Conc. = 66
% of Non−censored Data = 39%
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data

AP−4A


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 42
Least−Squares Regression Calculations
R2 = 0.024
Slope (µg/L per year) = −0.965
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.4067
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−4B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−4B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−4I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 51.2
% of Non−censored Data = 87%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−4I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−5

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 53.7
% of Non−censored Data = 74%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−5

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

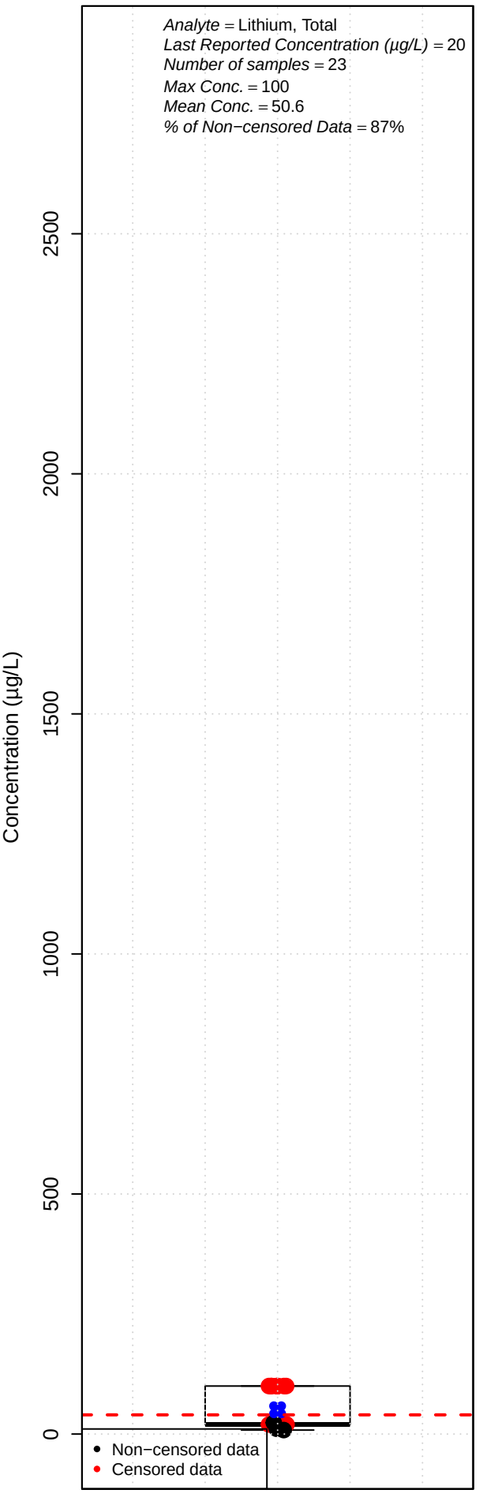
Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

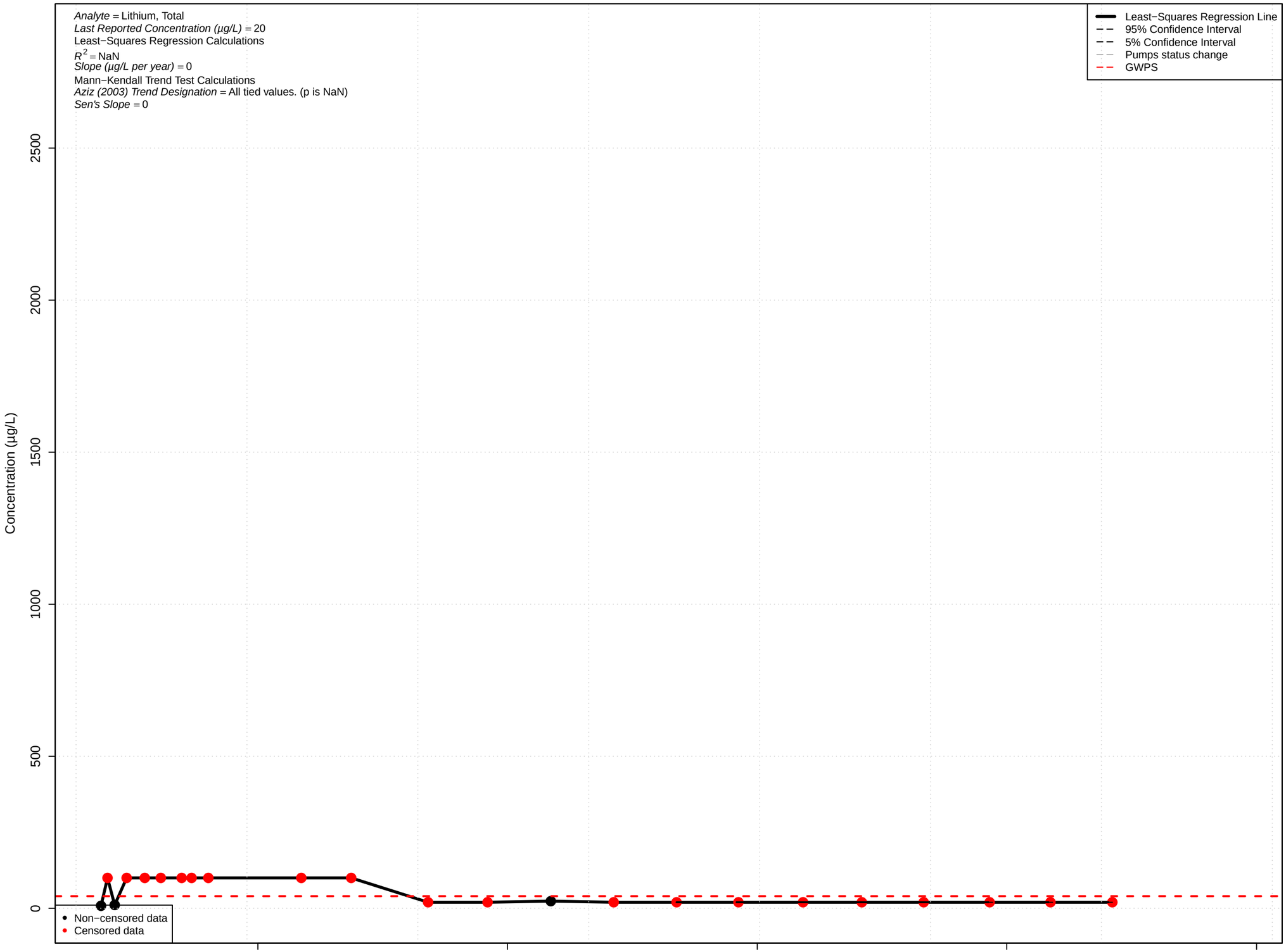
2018
2020
2022
2024
2026

Date

D−50


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50.6
% of Non−censored Data = 87%
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data

AP−5A


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−6A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50.1
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−6A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−6B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 49.9
% of Non−censored Data = 96%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−6B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−7

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 50.8
% of Non−censored Data = 91%

Non−censored data
Censored data

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

2018
2020
2022
2024
2026

Date

AP−8

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 38
Number of samples = 23
Max Conc. = 121
Mean Conc. = 76.9
% of Non−censored Data = 39%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−8

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 38
Least−Squares Regression Calculations
R^2 = 0.187
Slope (µg/L per year) = −10.5
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −5.1655

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−9A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 25
Number of samples = 12
Max Conc. = 200
Mean Conc. = 41.3
% of Non−censored Data = 33%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−9A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 25
Least−Squares Regression Calculations
R^2 = 0.425
Slope (µg/L per year) = −32.9
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −4.425

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−10A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 12
Max Conc. = 24.7
Mean Conc. = 20.5
% of Non−censored Data = 83%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

AP−10A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.169
Slope (µg/L per year) = −0.106
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−2R

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 512
Number of samples = 21
Max Conc. = 1100
Mean Conc. = 733
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−2R

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 512
Least−Squares Regression Calculations
R^2 = 0.111
Slope (µg/L per year) = −37.4
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −36.5833

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−3

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1420
Number of samples = 22
Max Conc. = 2600
Mean Conc. = 1899
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−3

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1420
Least−Squares Regression Calculations
R^2 = 0.613
Slope (µg/L per year) = −92.5
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −53.0357

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−4C

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 325
Number of samples = 22
Max Conc. = 442
Mean Conc. = 307
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−4C

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 325
Least−Squares Regression Calculations
R^2 = 0.00584
Slope (µg/L per year) = 2.27
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.75

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−19A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 12
Max Conc. = 22.6
Mean Conc. = 20.2
% of Non−censored Data = 92%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−19A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−19B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 11
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−19B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−19I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 12
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−19I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−20A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 10
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−20A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−20B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−20B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−20I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 11
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−20I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−21A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 70
Number of samples = 9
Max Conc. = 84.4
Mean Conc. = 73.6
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−21A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 70
Least−Squares Regression Calculations
R^2 = 0.372
Slope (µg/L per year) = −3.84
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −1.9286

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

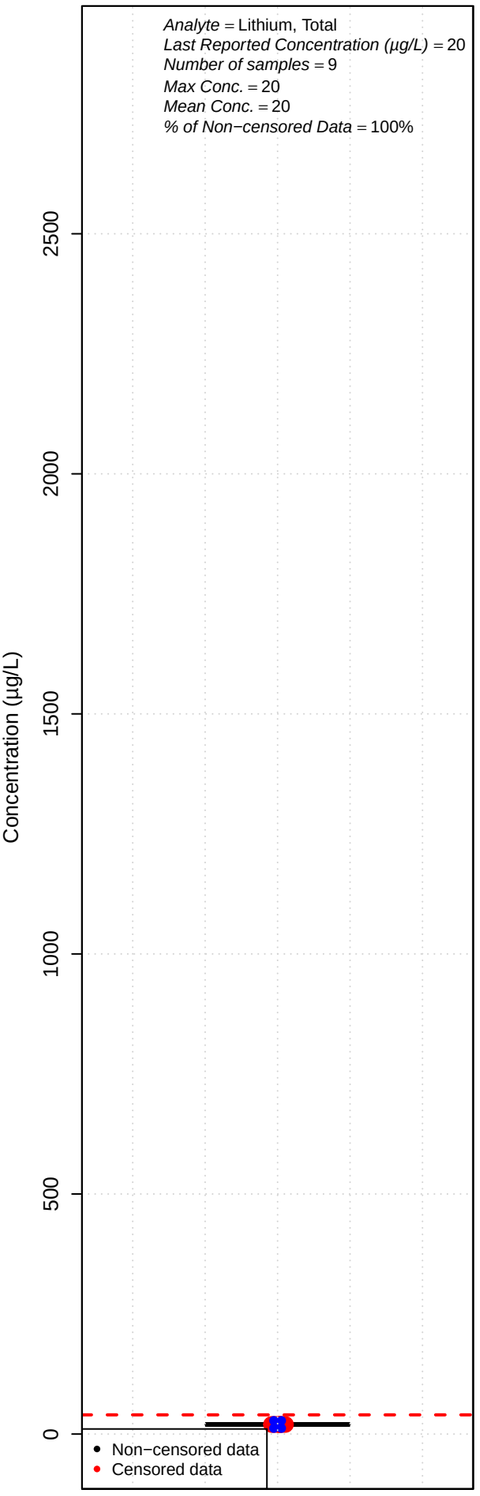
Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

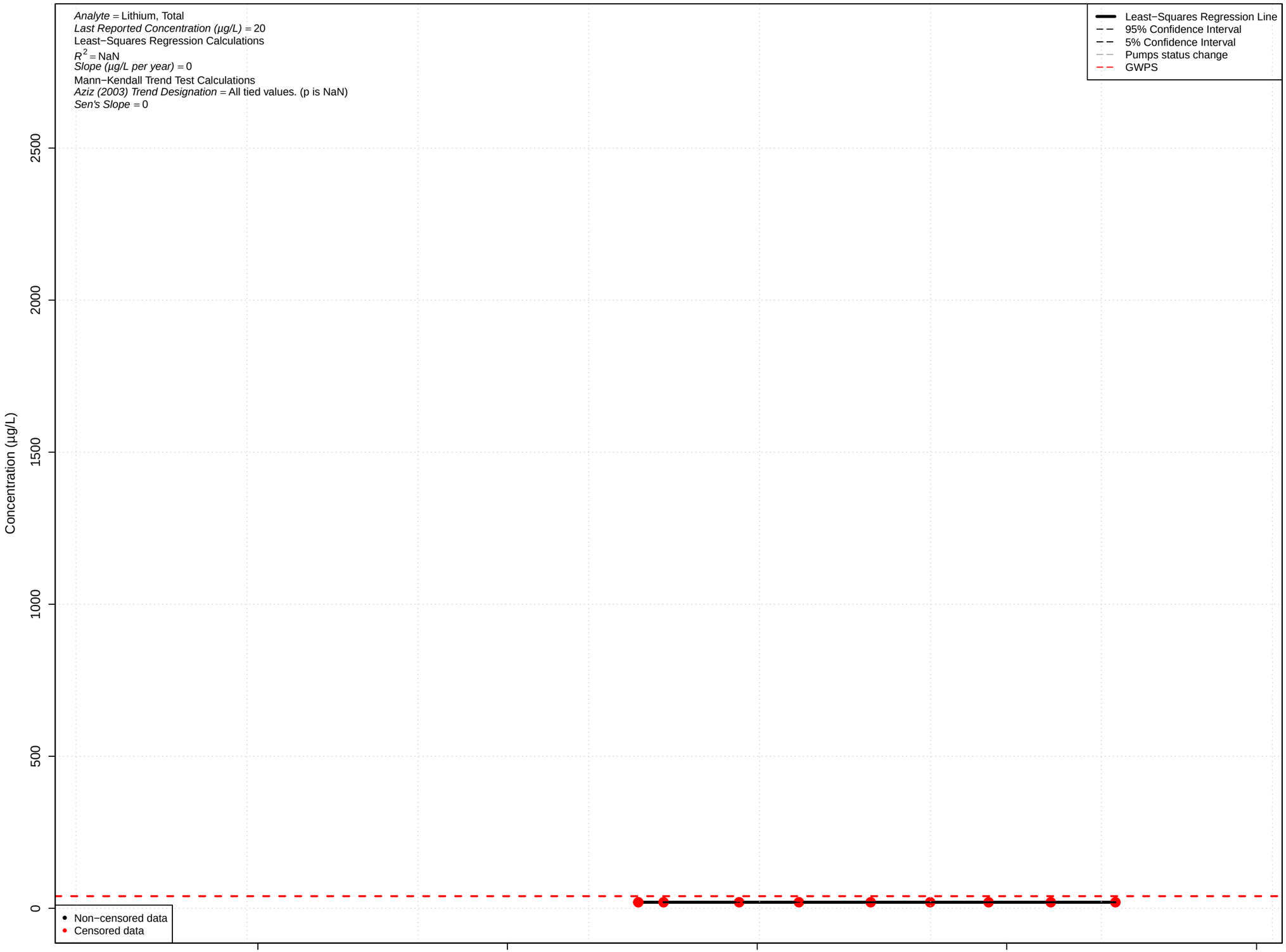
2018
2020
2022
2024
2026

Date

MW−21B


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 9
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data

MW−21B


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−21I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 22
Number of samples = 9
Max Conc. = 22.5
Mean Conc. = 20.4
% of Non−censored Data = 78%

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 22
Least−Squares Regression Calculations
R^2 = 0.434
Slope (µg/L per year) = 0.493
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)

0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−25A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−25A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−25B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−25B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−25I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−25I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 24.7
Mean Conc. = 20.6
% of Non−censored Data = 88%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−26A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.264
Slope (µg/L per year) = −0.733
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 28.2
Mean Conc. = 21.1
% of Non−censored Data = 75%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−26B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.26
Slope (µg/L per year) = −1.26
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 49.7
Mean Conc. = 30.8
% of Non−censored Data = 12%

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.684
Slope (µg/L per year) = −6.23
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −2.455

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)

0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−27B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−27B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−28A

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 322
Number of samples = 8
Max Conc. = 322
Mean Conc. = 105
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−28B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 322
Least−Squares Regression Calculations
R^2 = 0.699
Slope (µg/L per year) = 71.3
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 28.2

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−28I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

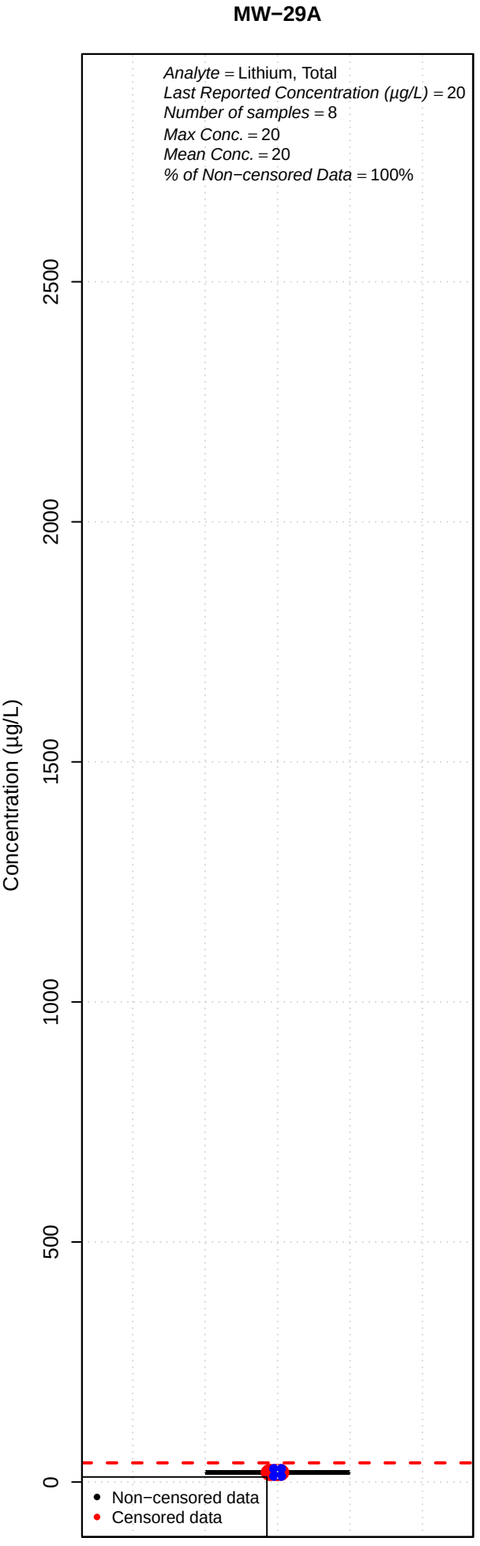
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

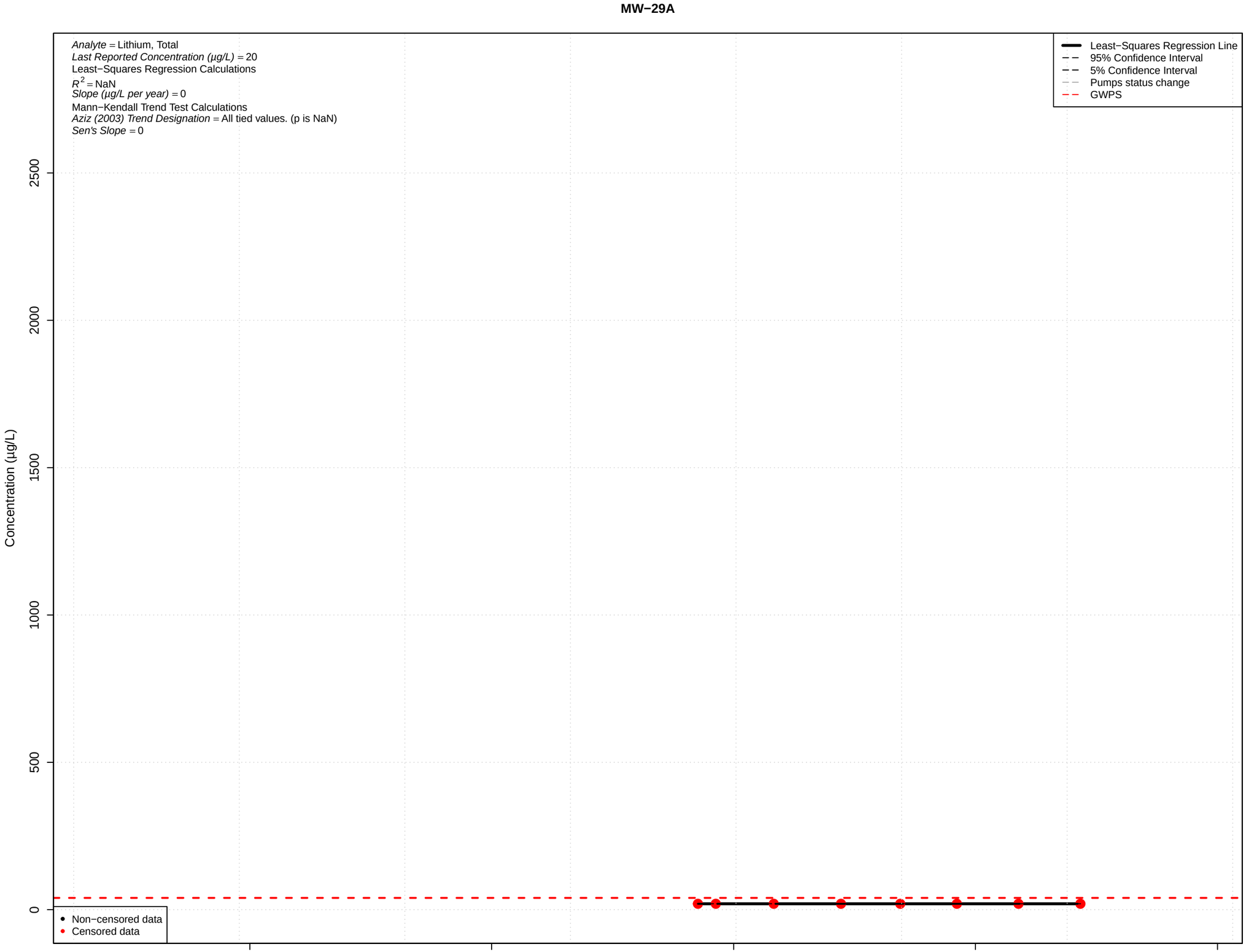
Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


MW−29A
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data


MW−29A
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−29B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−29B

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−29I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

MW−29I

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MOLYBDENUM TRENDS
ASH POND **SYSTEM**

AP−1R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 54.9
% of Non−censored Data = 61%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−1R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.468
Slope (µg/L per year) = −1.08
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −0.6292

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−2A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 943
Number of samples = 23
Max Conc. = 3000
Mean Conc. = 2137
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−2A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 943
Least−Squares Regression Calculations
R^2 = 0.836
Slope (µg/L per year) = −304
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −176

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−84

AP−2BO

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 458
Number of samples = 23
Max Conc. = 820
Mean Conc. = 487
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−2BO

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 458
Least−Squares Regression Calculations
R^2 = 0.685
Slope (µg/L per year) = 115
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 53.65

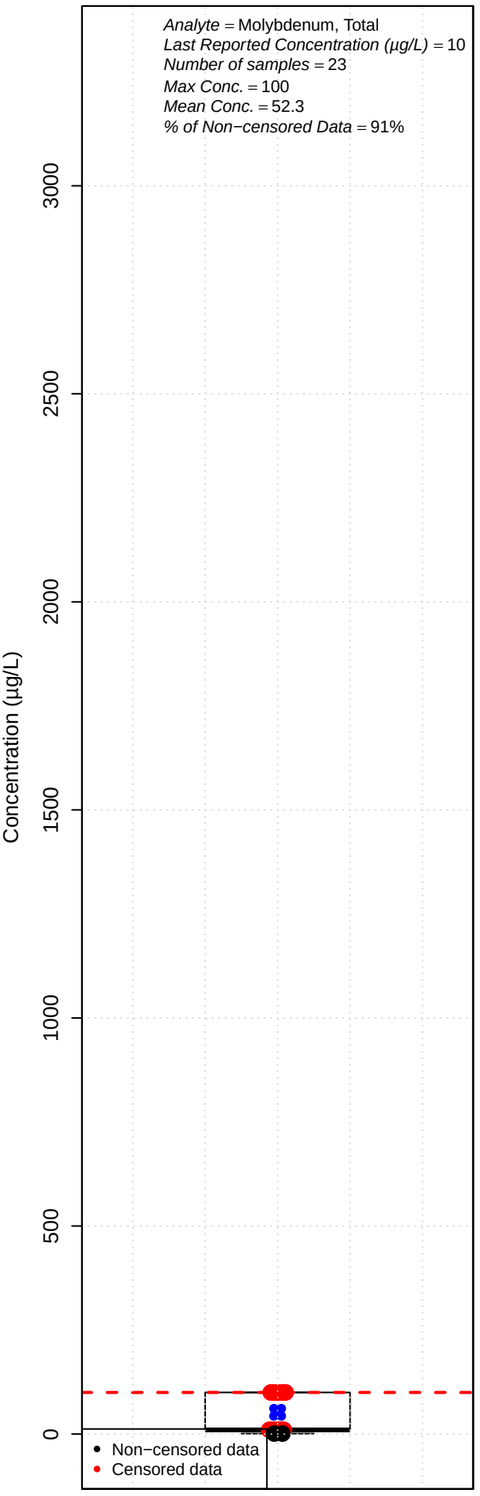
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

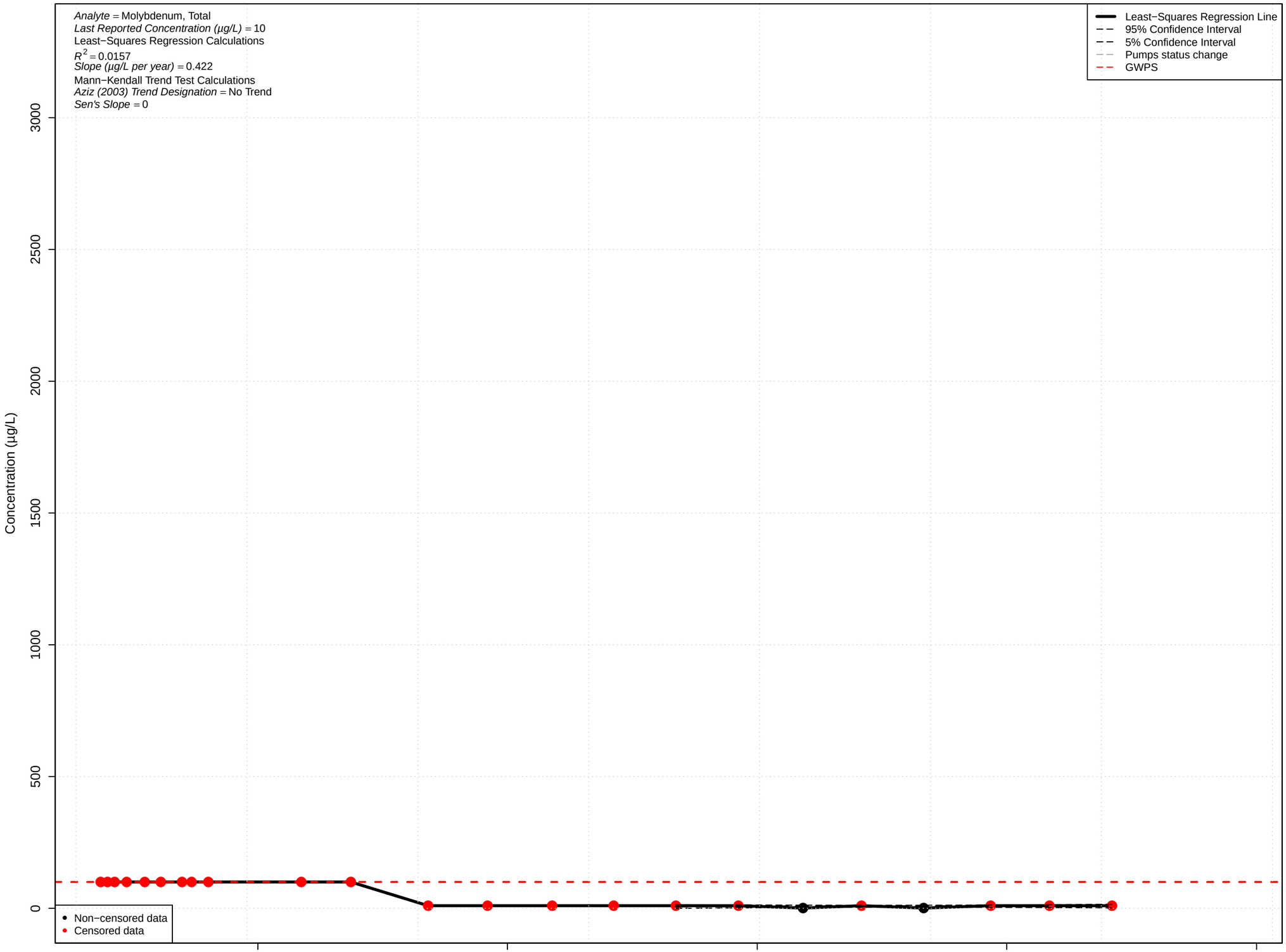
Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.3
% of Non−censored Data = 91%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

AP−3


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R2 = 0.0157
Slope (µg/L per year) = 0.422
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−3A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 460
Number of samples = 23
Max Conc. = 1100
Mean Conc. = 792
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−3A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 460
Least−Squares Regression Calculations
R^2 = 0.689
Slope (µg/L per year) = −35.5
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −24

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−4A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 245
Number of samples = 23
Max Conc. = 340
Mean Conc. = 239
% of Non−censored Data = 0%

Non−censored data
Censored data

AP−4A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 245
Least−Squares Regression Calculations
R^2 = 0.2
Slope (µg/L per year) = 8.25
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 3.3929

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

2018
2020
2022
2024
2026

Date

AP−4B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.3
% of Non−censored Data = 100%

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.016
Slope (µg/L per year) = 0.431
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−4I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 75
Number of samples = 23
Max Conc. = 182
Mean Conc. = 111
% of Non−censored Data = 9%

Non−censored data
Censored data

AP−4I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 75
Least−Squares Regression Calculations
R^2 = 0.136
Slope (µg/L per year) = −7.58
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −3.3464

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

2018
2020
2022
2024
2026

Date

AP−5

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 57
Number of samples = 23
Max Conc. = 229
Mean Conc. = 126
% of Non−censored Data = 4%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−5

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 57
Least−Squares Regression Calculations
R^2 = 0.177
Slope (µg/L per year) = −8.56
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −4.9833

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−5A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 438
Number of samples = 23
Max Conc. = 455
Mean Conc. = 233
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−5A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 438
Least−Squares Regression Calculations
R^2 = 0.727
Slope (µg/L per year) = 67.6
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 32.8333

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−6A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−6A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.0587
Slope (µg/L per year) = 0.63
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

AP−6B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%

Non−censored data
Censored data

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

AP−6B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.0606
Slope (µg/L per year) = 0.64
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

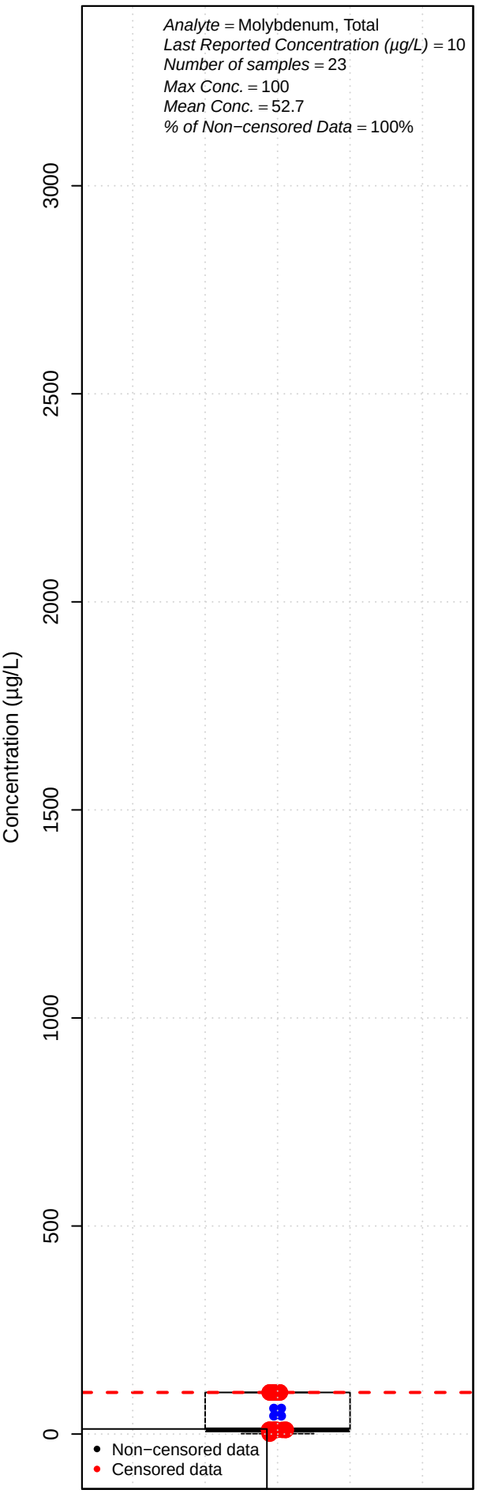
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Non−censored data
Censored data

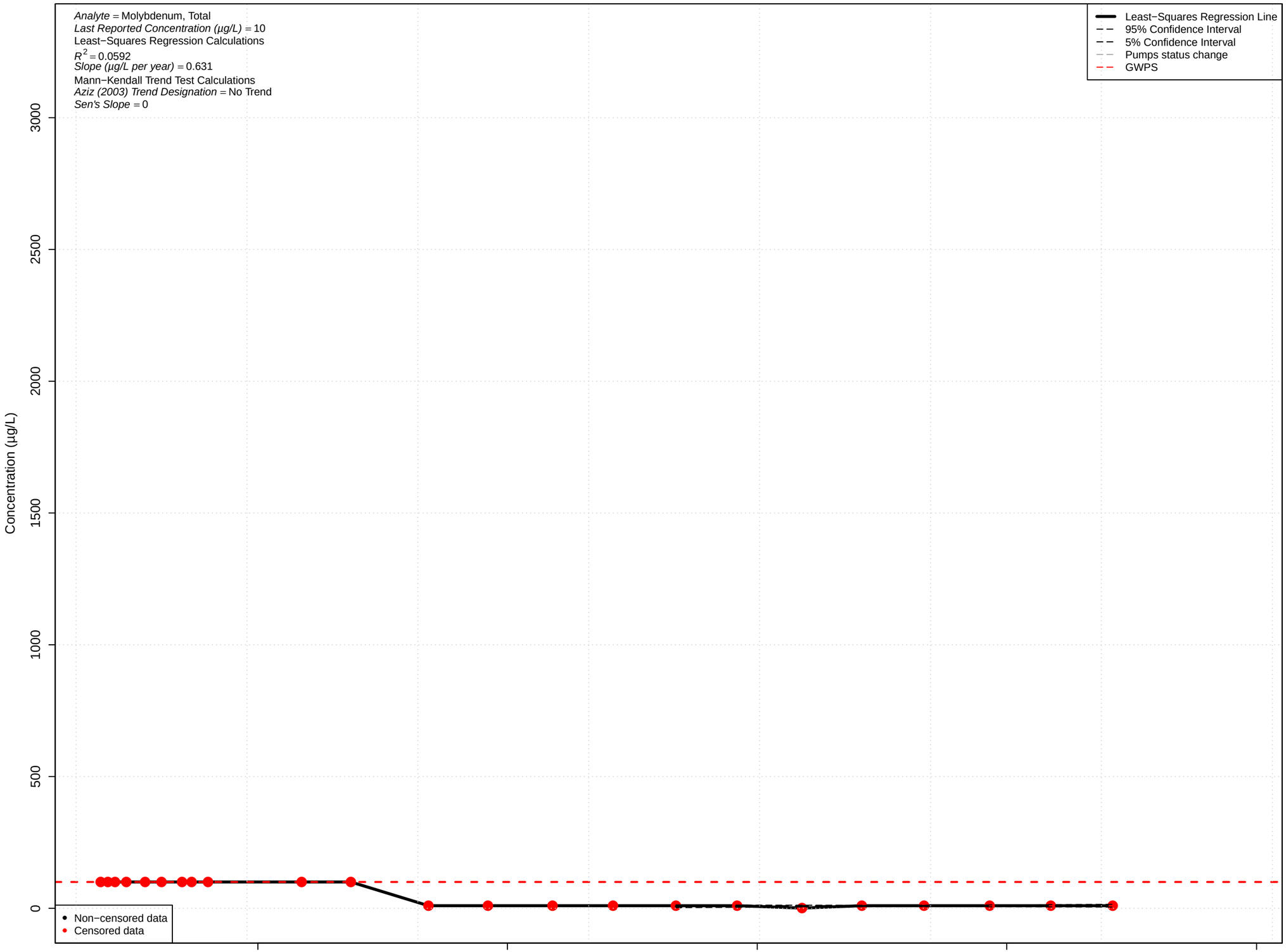
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

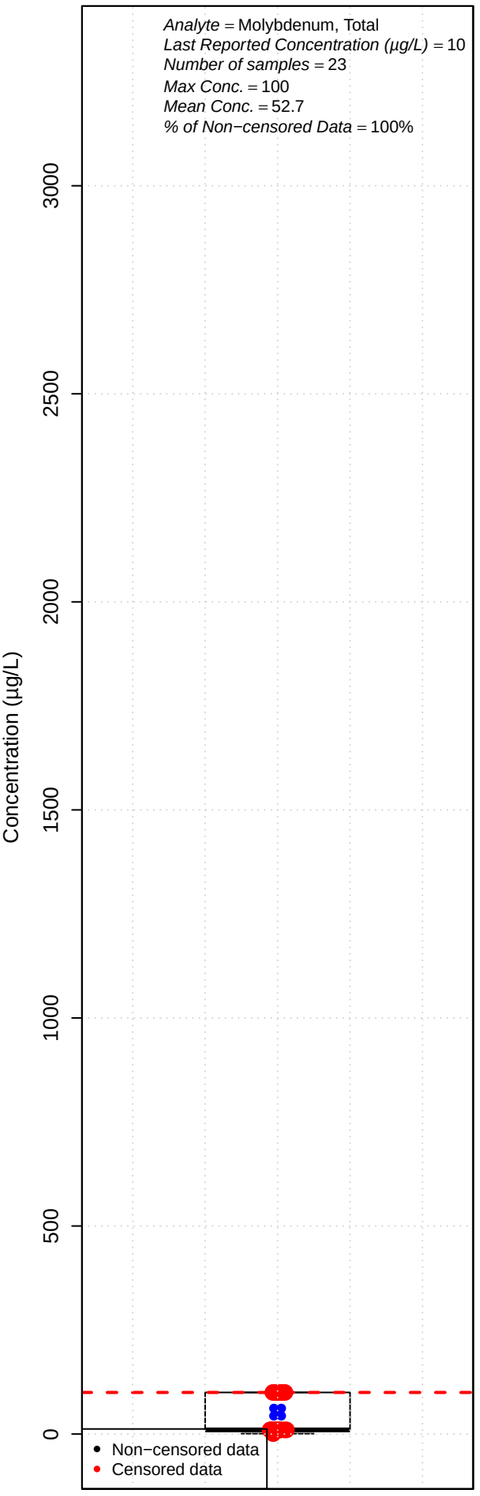
2018
2020
2022
2024
2026

Date

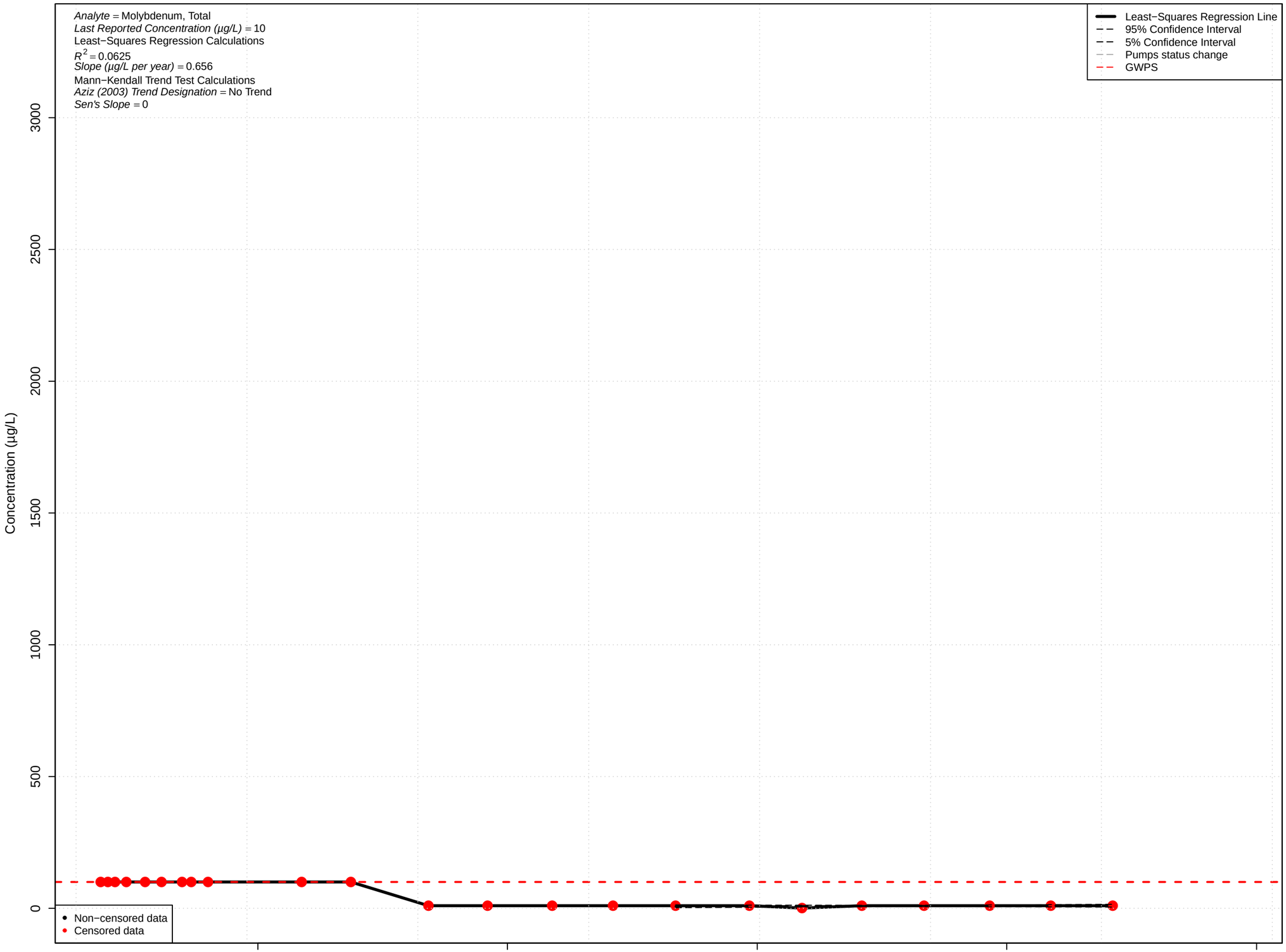

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

AP−7


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R2 = 0.0592
Slope (µg/L per year) = 0.631
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

AP−8


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R2 = 0.0625
Slope (µg/L per year) = 0.656
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

AP−9A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1700
Number of samples = 12
Max Conc. = 2300
Mean Conc. = 1902
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

AP−9A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1700
Least−Squares Regression Calculations
R^2 = 0.673
Slope (µg/L per year) = −178
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Probably Decreasing
Sen's Slope = −99.1667

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

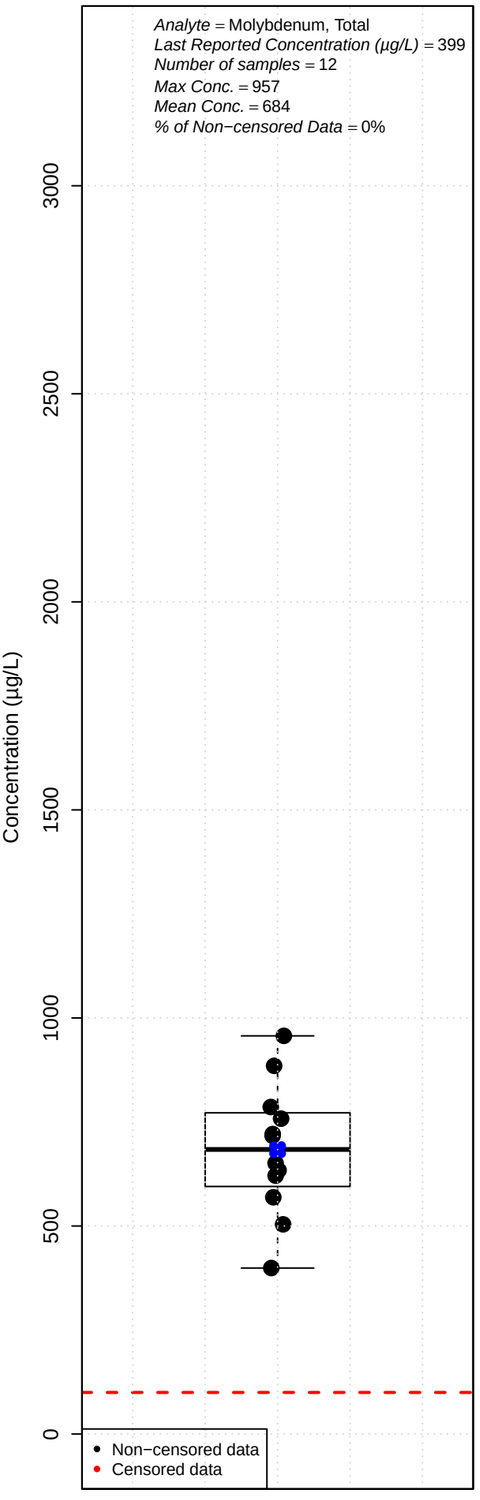
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

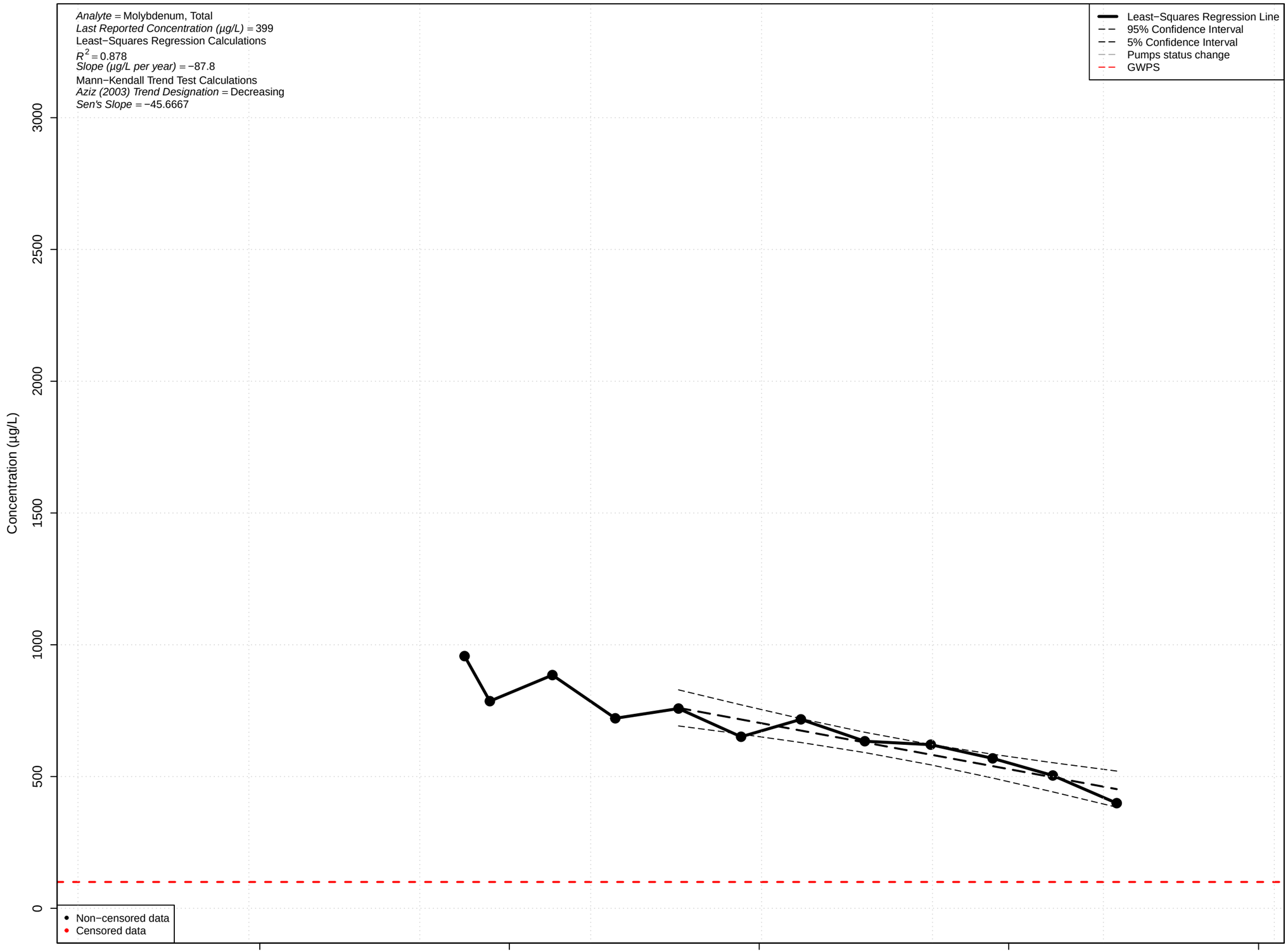
2018
2020
2022
2024
2026

Date

AP−10A


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 399
Number of samples = 12
Max Conc. = 957
Mean Conc. = 684
% of Non−censored Data = 0%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

AP−10A


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 399
Least−Squares Regression Calculations
R2 = 0.878
Slope (µg/L per year) = −87.8
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −45.6667
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−2R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 21
Max Conc. = 100
Mean Conc. = 53.3
% of Non−censored Data = 57%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−2R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.395
Slope (µg/L per year) = −0.383
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.1417

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−3

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 206
Number of samples = 22
Max Conc. = 660
Mean Conc. = 429
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−3

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 206
Least−Squares Regression Calculations
R^2 = 0.584
Slope (µg/L per year) = −70.6
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −47.6667

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−100

MW−4C

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 22
Max Conc. = 100
Mean Conc. = 54.8
% of Non−censored Data = 91%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−4C

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.000412
Slope (µg/L per year) = 0.0128
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−19A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 627
Number of samples = 12
Max Conc. = 1050
Mean Conc. = 821
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−19A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 627
Least−Squares Regression Calculations
R^2 = 0.53
Slope (µg/L per year) = −68.7
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Probably Decreasing
Sen's Slope = −38.3333

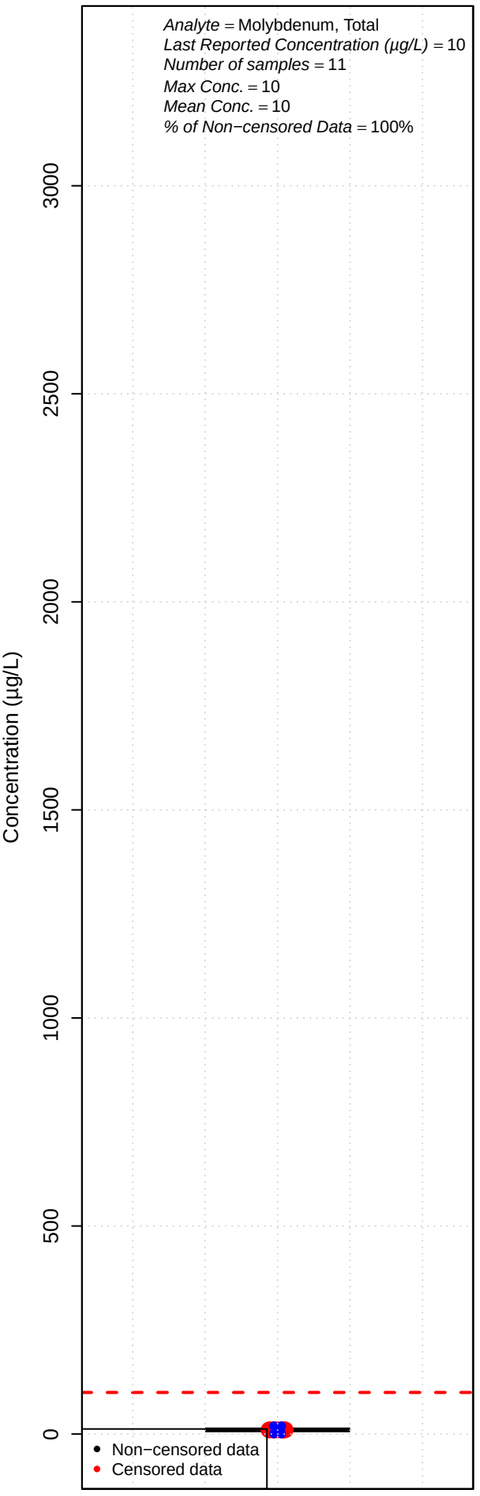
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

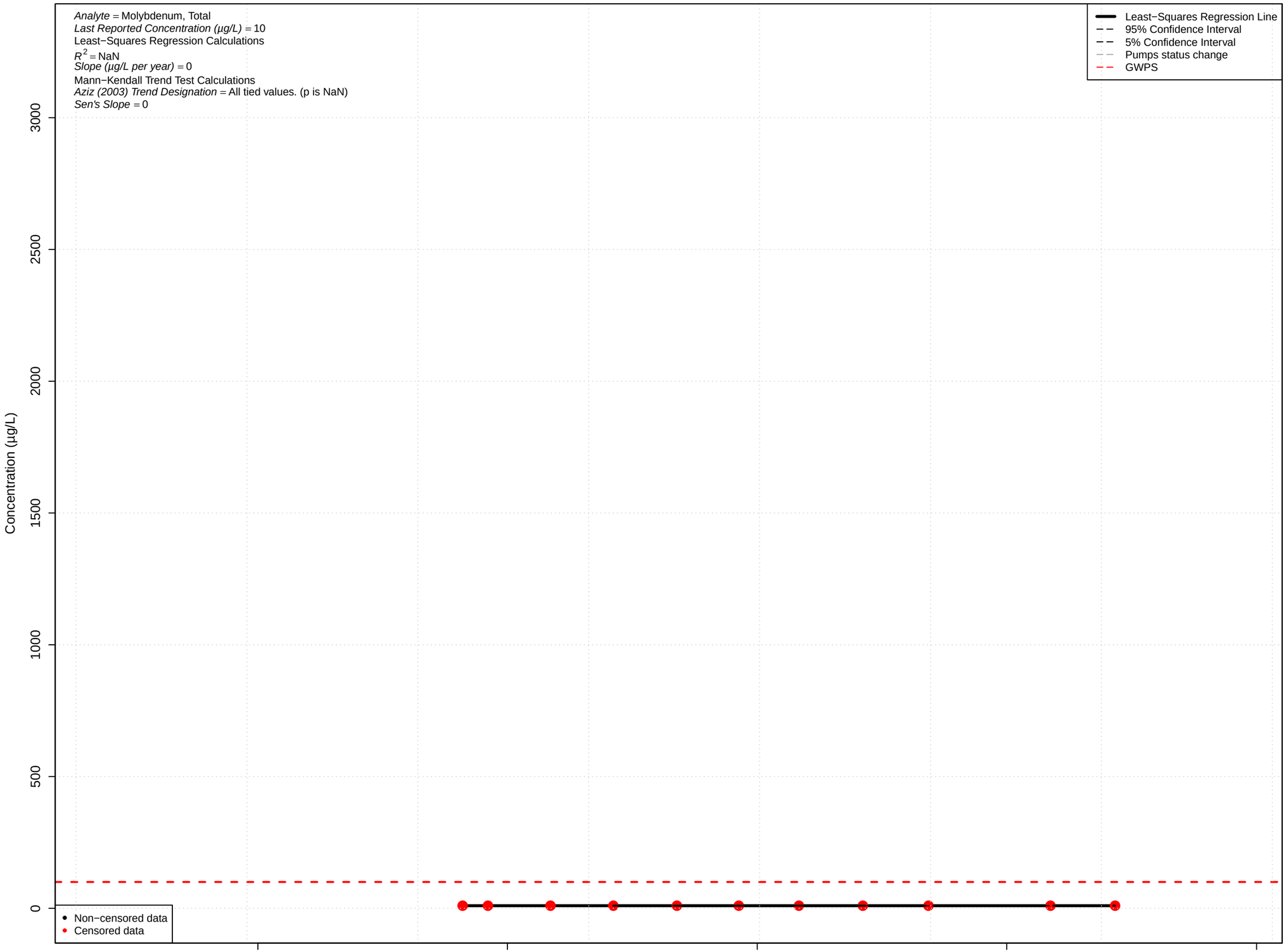
Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 11
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

MW−19B


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−19I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 12
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−19I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−20A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 384
Number of samples = 10
Max Conc. = 656
Mean Conc. = 407
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−20A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 384
Least−Squares Regression Calculations
R^2 = 0.272
Slope (µg/L per year) = −44.7
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −13.375

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

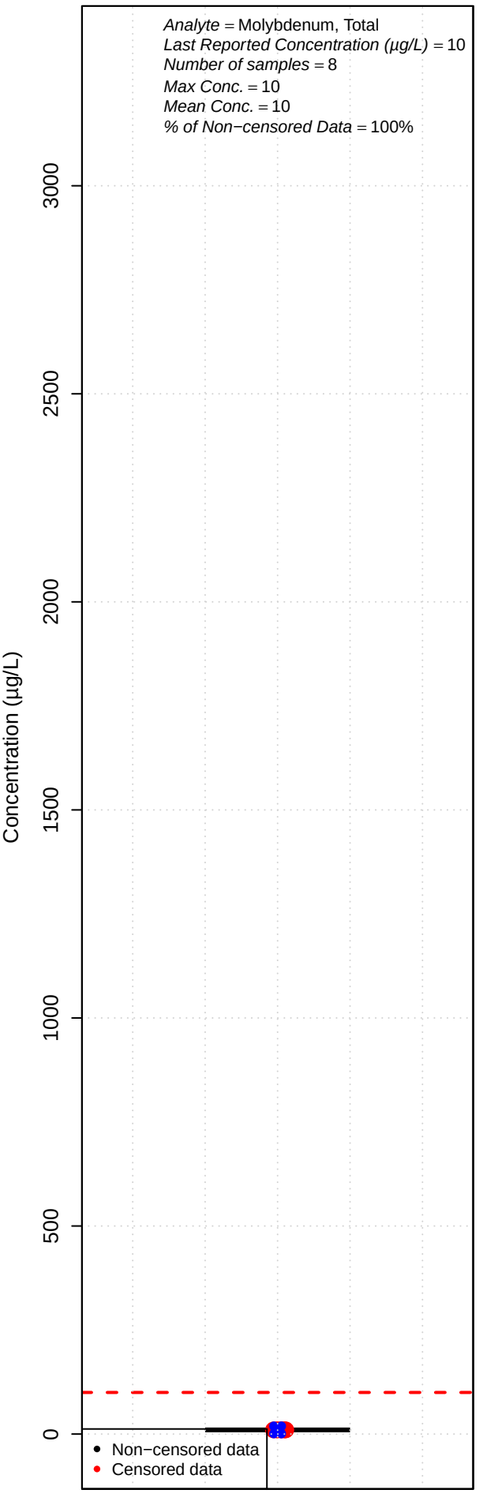
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

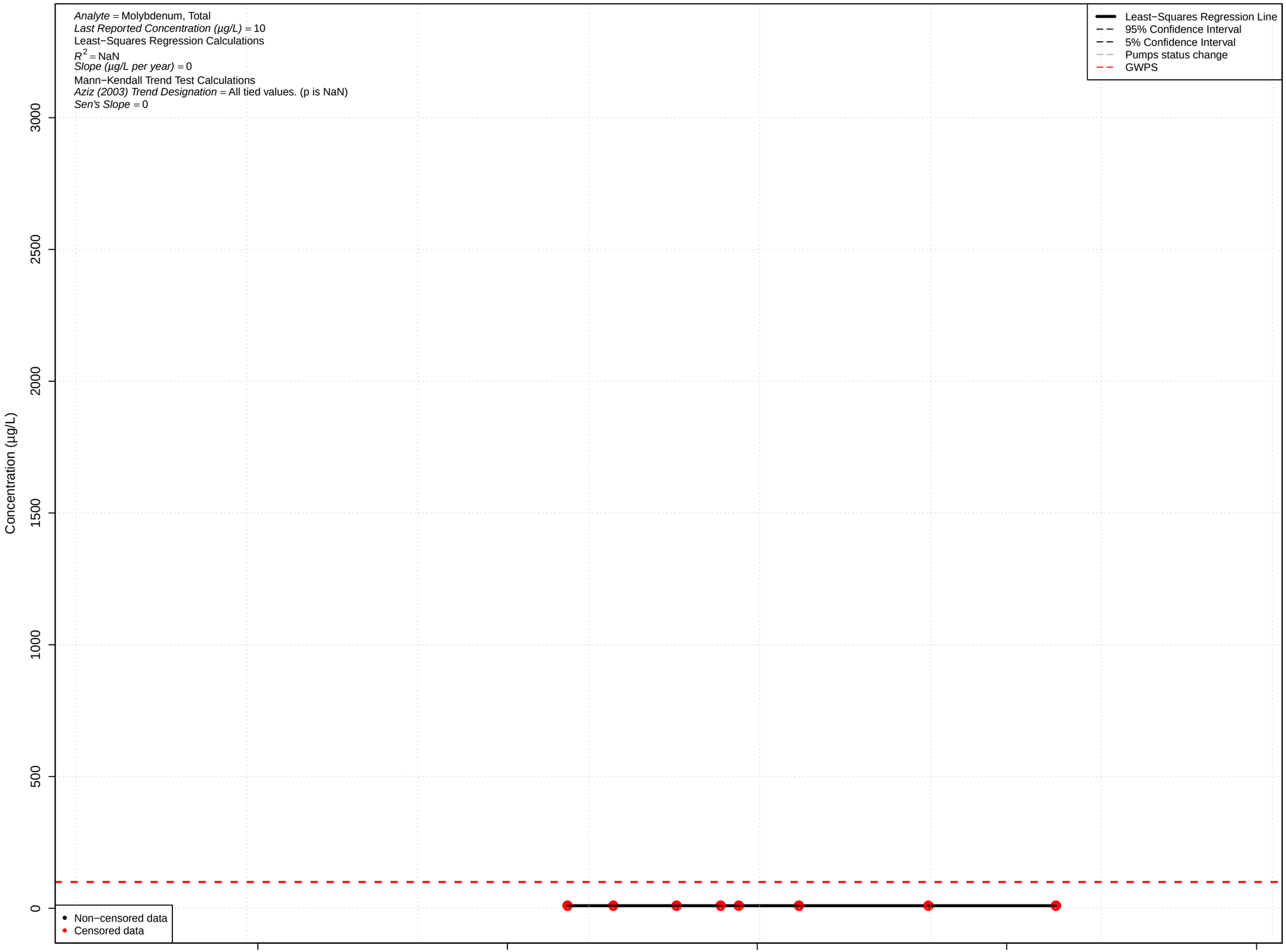
2018
2020
2022
2024
2026

Date

MW−20B


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

MW−20B


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−20I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 11
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−20I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−21A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 175
Number of samples = 9
Max Conc. = 215
Mean Conc. = 189
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−21A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 175
Least−Squares Regression Calculations
R^2 = 0.763
Slope (µg/L per year) = −11.9
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −5.5833

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−21B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 9
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−21B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−21I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 102
Number of samples = 9
Max Conc. = 138
Mean Conc. = 112
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−21I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 102
Least−Squares Regression Calculations
R^2 = 0.00215
Slope (µg/L per year) = −0.512
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −1.3667

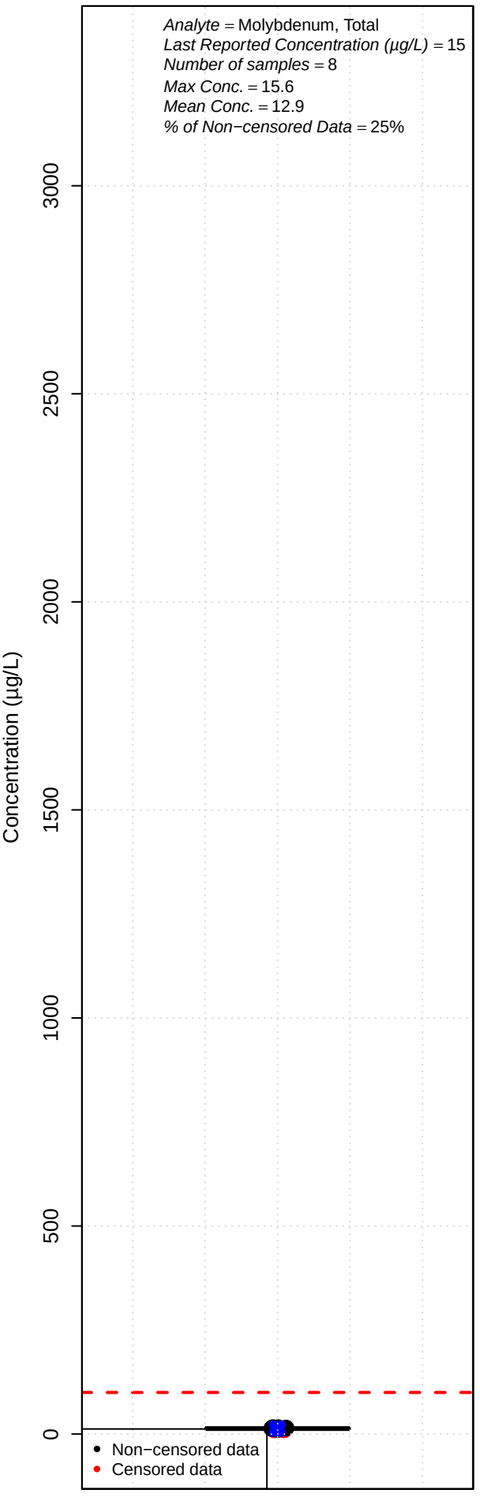
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

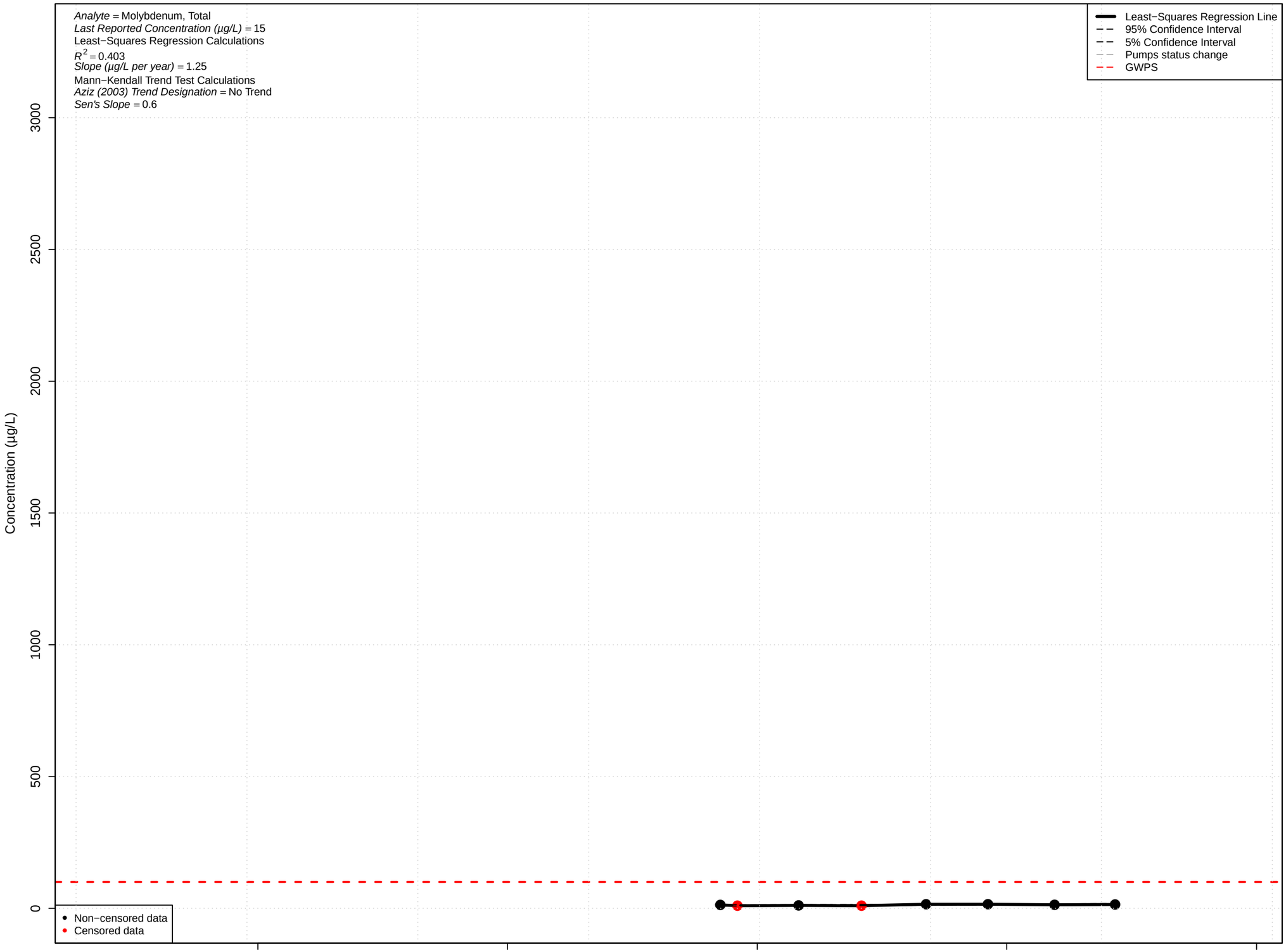
Non−censored data
Censored data

2018
2020
2022
2024
2026

Date


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 15
Number of samples = 8
Max Conc. = 15.6
Mean Conc. = 12.9
% of Non−censored Data = 25%
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data

MW−25A


Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 15
Least−Squares Regression Calculations
R2 = 0.403
Slope (µg/L per year) = 1.25
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.6
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
0
500
1000
1500
2000
2500
3000
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−25B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−25B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−25I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 52
Number of samples = 8
Max Conc. = 51.6
Mean Conc. = 26.6
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−25I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 52
Least−Squares Regression Calculations
R^2 = 0.869
Slope (µg/L per year) = 10.3
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 4.2325

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1570
Number of samples = 8
Max Conc. = 1620
Mean Conc. = 1361
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−26A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1570
Least−Squares Regression Calculations
R^2 = 0.225
Slope (µg/L per year) = 104
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 46.6667

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−26B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−26I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 660
Number of samples = 8
Max Conc. = 660
Mean Conc. = 266
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−26I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 660
Least−Squares Regression Calculations
R^2 = 0.153
Slope (µg/L per year) = 78
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 46.025

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−27B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−27B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1280
Number of samples = 8
Max Conc. = 2990
Mean Conc. = 2005
% of Non−censored Data = 0%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

MW−28A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 1280
Least−Squares Regression Calculations
R^2 = 0.883
Slope (µg/L per year) = −451
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −195

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
2026
Date

MW−28B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 493
Number of samples = 8
Max Conc. = 493
Mean Conc. = 352
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−28B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 493
Least−Squares Regression Calculations
R^2 = 0.197
Slope (µg/L per year) = 47.3
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 30.8333

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−28I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 609
Number of samples = 8
Max Conc. = 2520
Mean Conc. = 1264
% of Non−censored Data = 0%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−28I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 609
Least−Squares Regression Calculations
R^2 = 0.367
Slope (µg/L per year) = −408
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −205.1667

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

D−120

MW−29A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 150
Number of samples = 8
Max Conc. = 235
Mean Conc. = 109
% of Non−censored Data = 0%

Non−censored data
Censored data

MW−29A

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 150
Least−Squares Regression Calculations
R^2 = 0.481
Slope (µg/L per year) = 35.2
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 12.835

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−29B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−29B

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

2018
2020
2022
2024
2026

Date

MW−29I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

Non−censored data
Censored data

MW−29I

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
500
1000
1500
2000
2500
3000

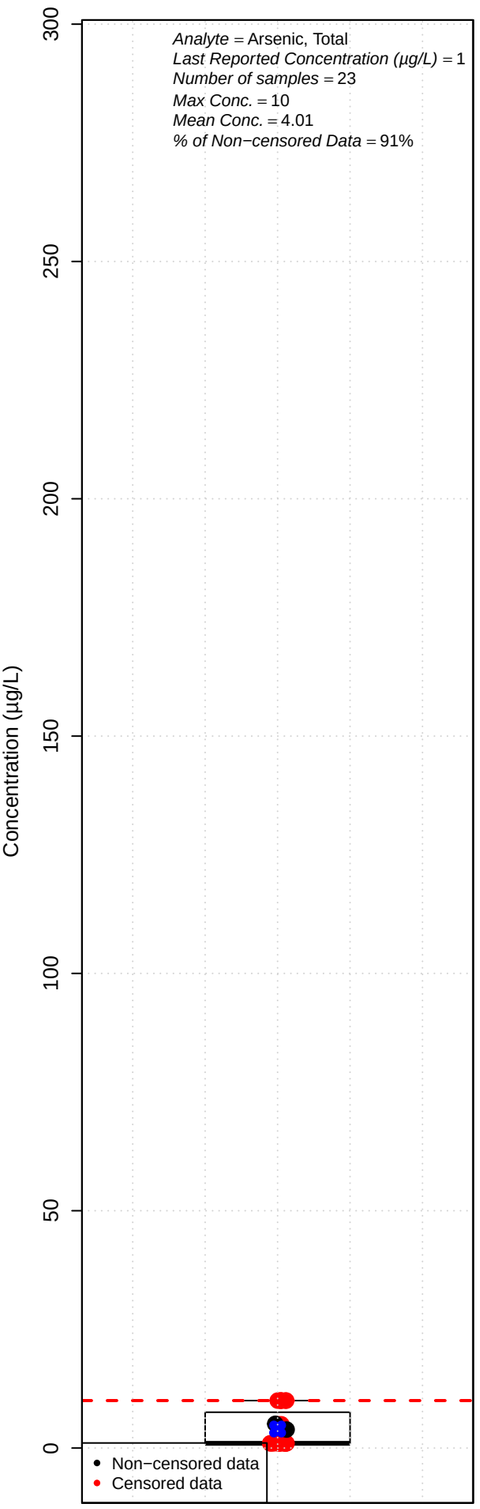
Non−censored data
Censored data

2018
2020
2022
2024
2026

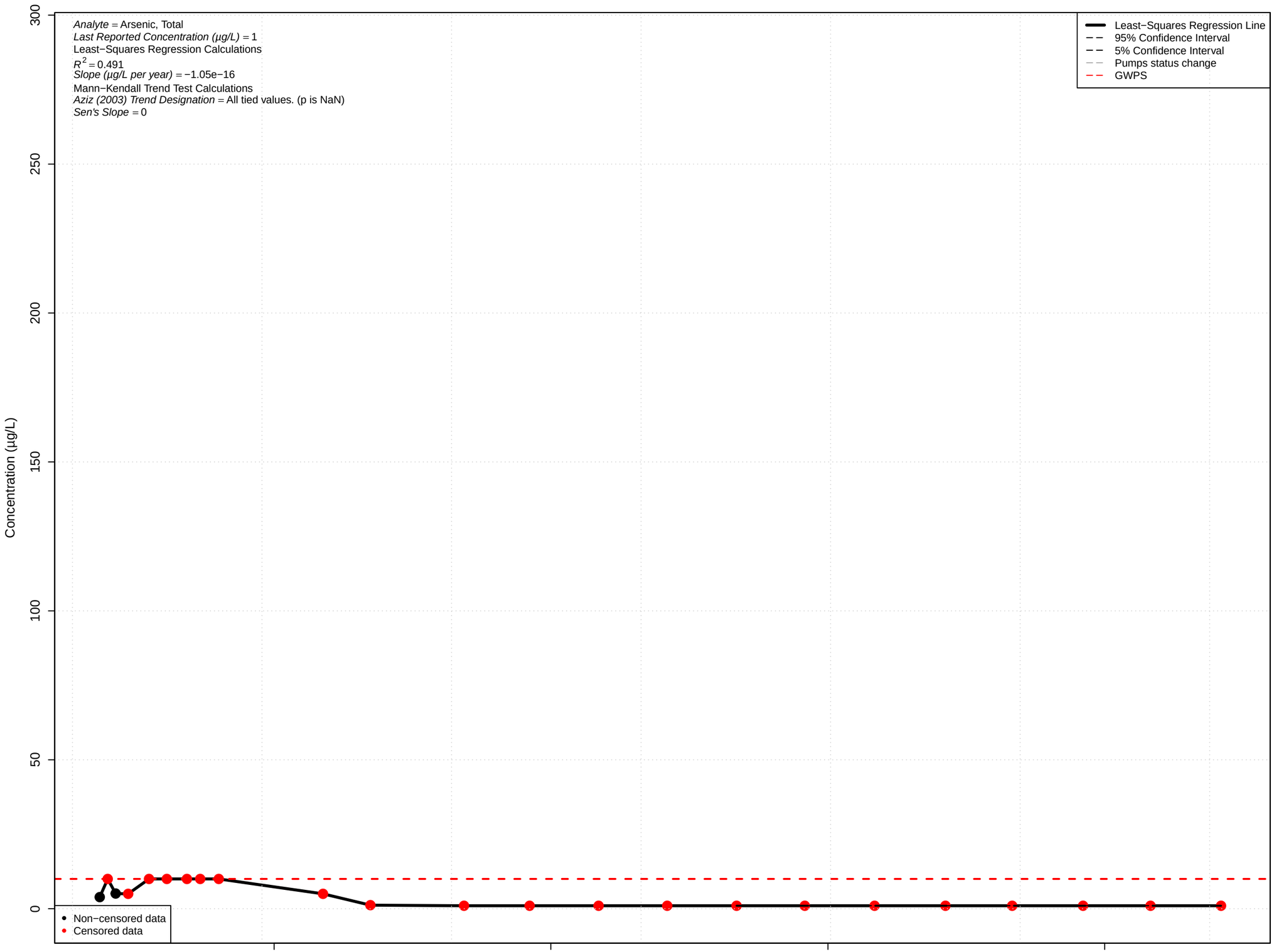
Date

ARSENIC TRENDS – LANDFILL

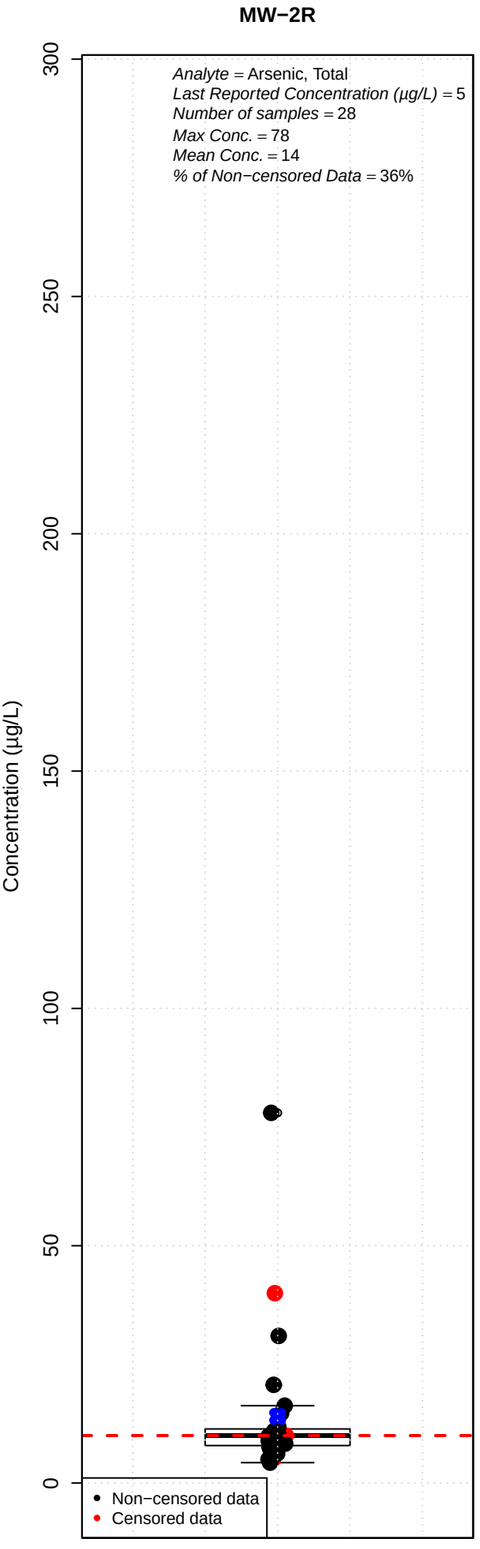
MW−1

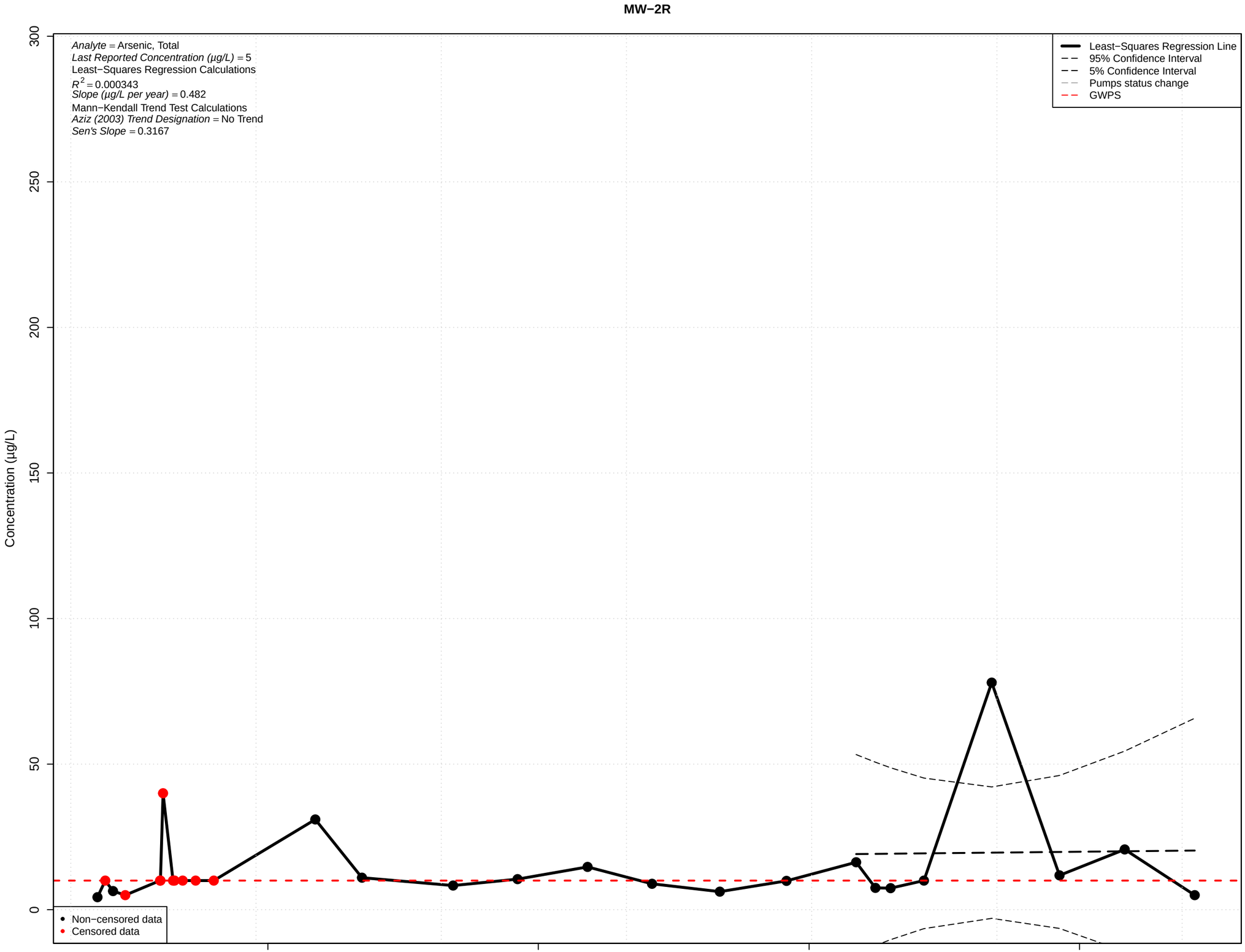

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 10
Mean Conc. = 4.01
% of Non−censored Data = 91%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

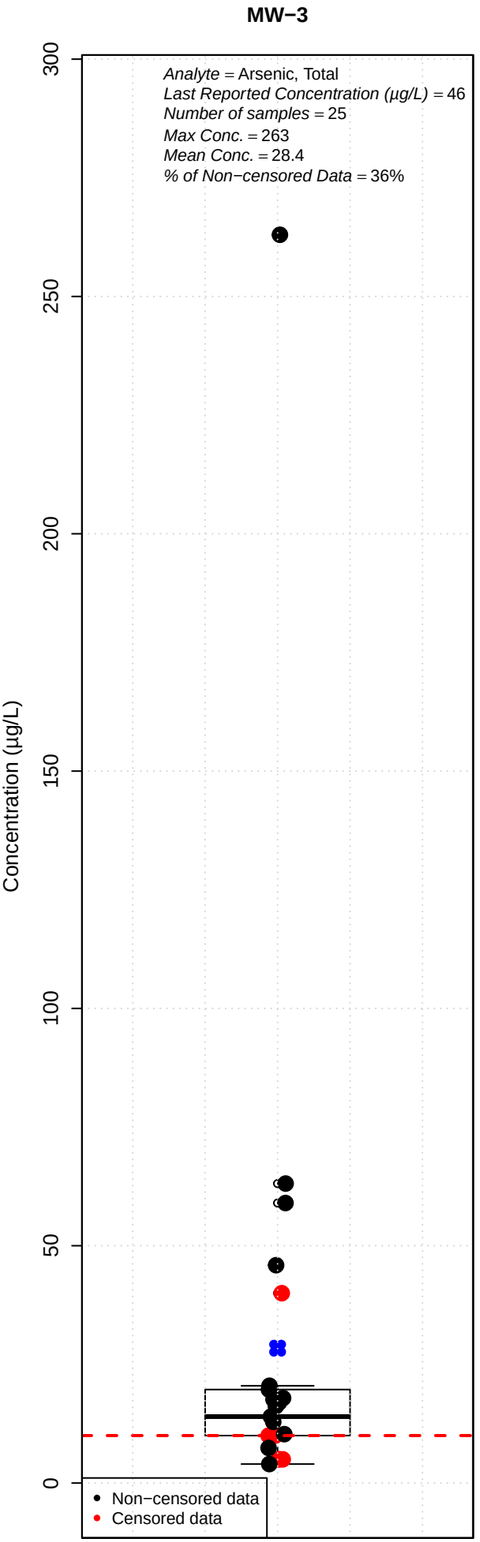
MW−1

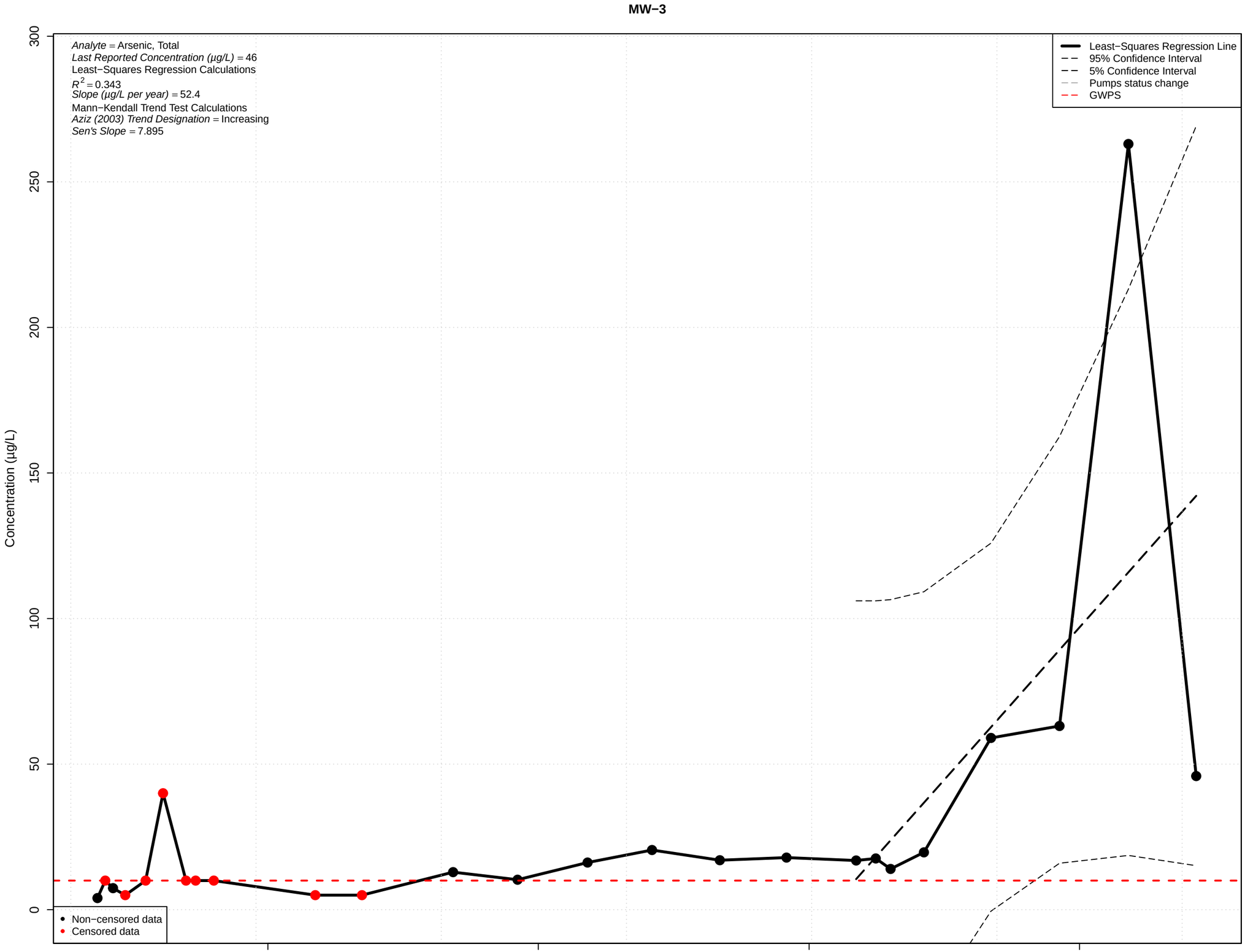

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.491
Slope (µg/L per year) = −1.05e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

D−1

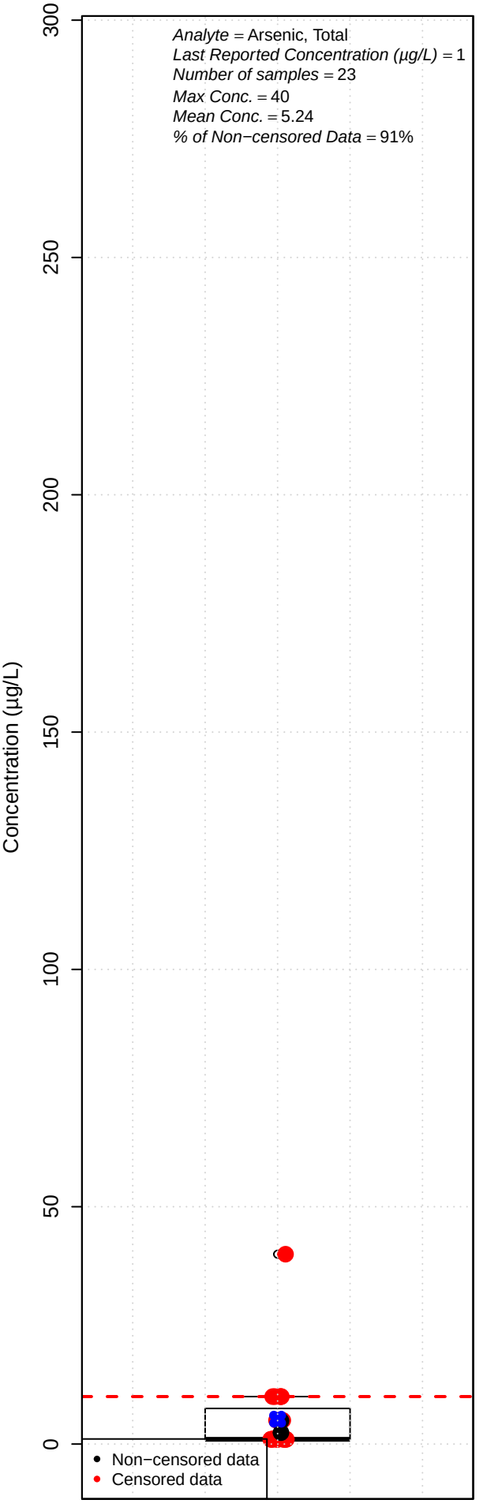

MW−2R
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 5
Number of samples = 28
Max Conc. = 78
Mean Conc. = 14
% of Non−censored Data = 36%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data


MW−2R
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 5
Least−Squares Regression Calculations
R2 = 0.000343
Slope (µg/L per year) = 0.482
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.3167
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

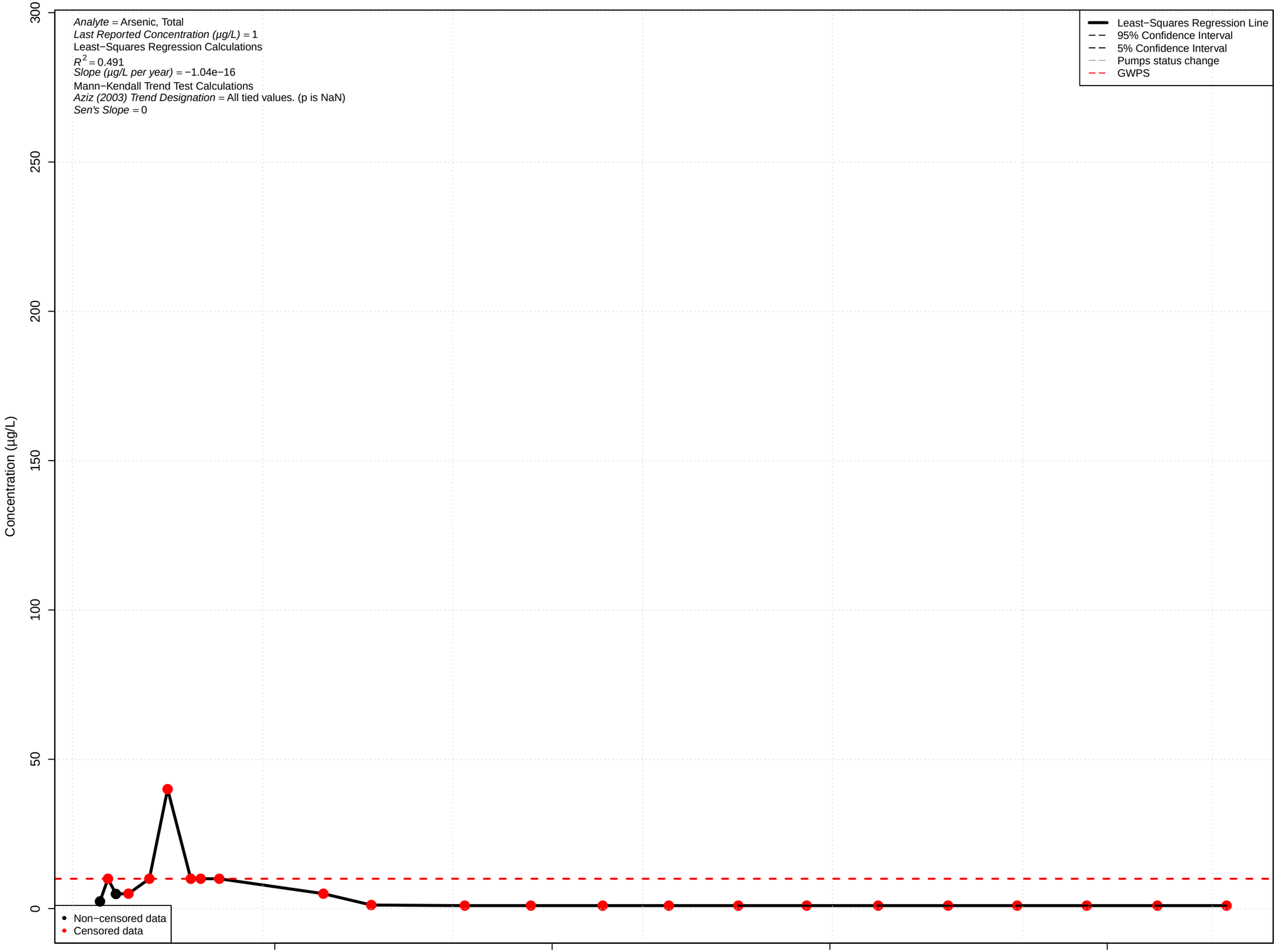

MW−3
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 46
Number of samples = 25
Max Conc. = 263
Mean Conc. = 28.4
% of Non−censored Data = 36%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data


MW−3
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 46
Least−Squares Regression Calculations
R2 = 0.343
Slope (µg/L per year) = 52.4
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 7.895
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−4C


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 5.24
% of Non−censored Data = 91%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

MW−4C


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.491
Slope (µg/L per year) = −1.04e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−10

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 61
Number of samples = 25
Max Conc. = 127
Mean Conc. = 71.7
% of Non−censored Data = 0%

Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

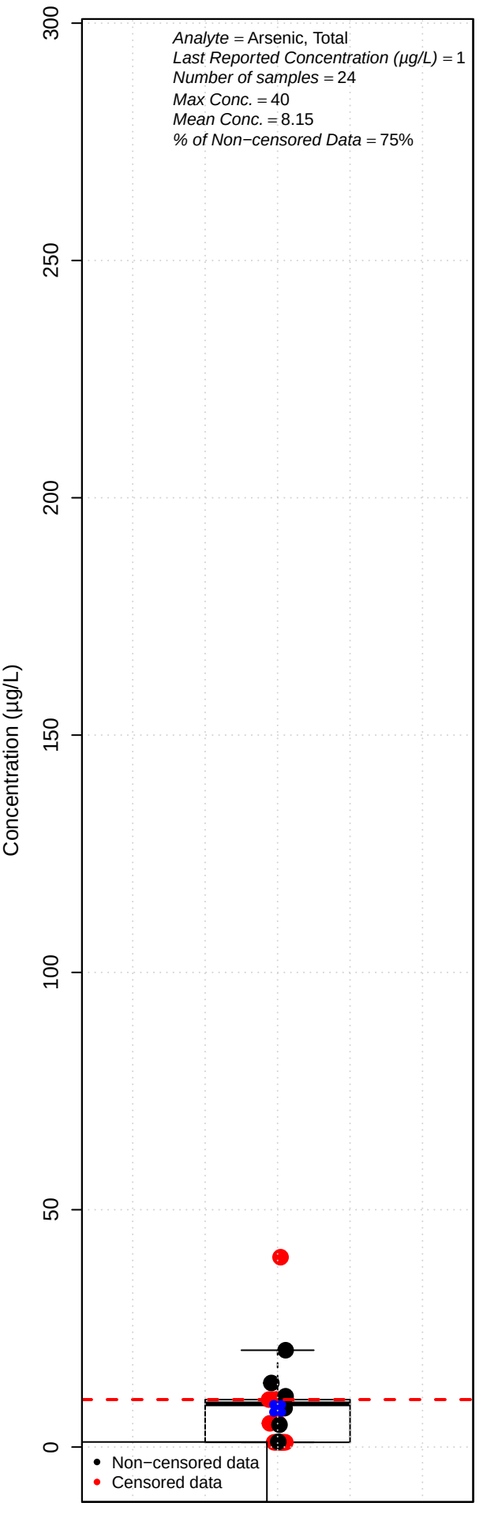
MW−10

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 61
Least−Squares Regression Calculations
R^2 = 0.485
Slope (µg/L per year) = −9.02
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −2.5095

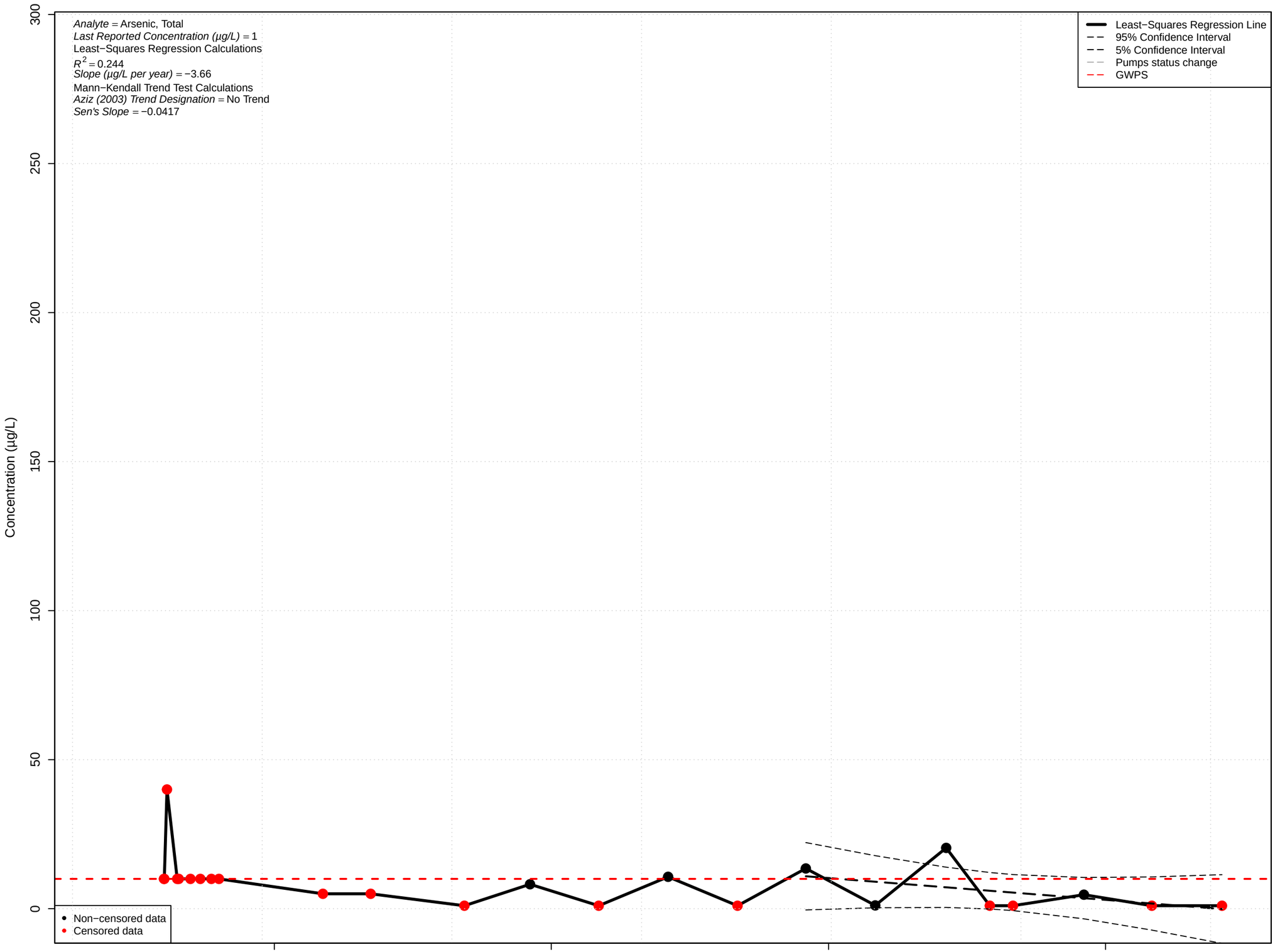
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

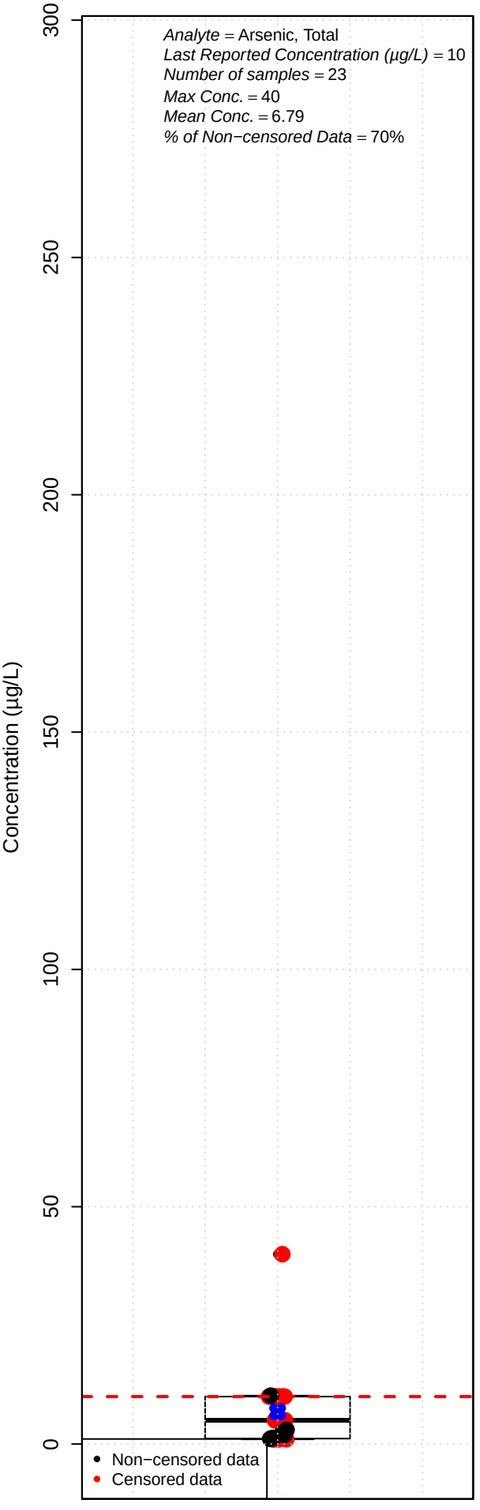
MW−11


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 24
Max Conc. = 40
Mean Conc. = 8.15
% of Non−censored Data = 75%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

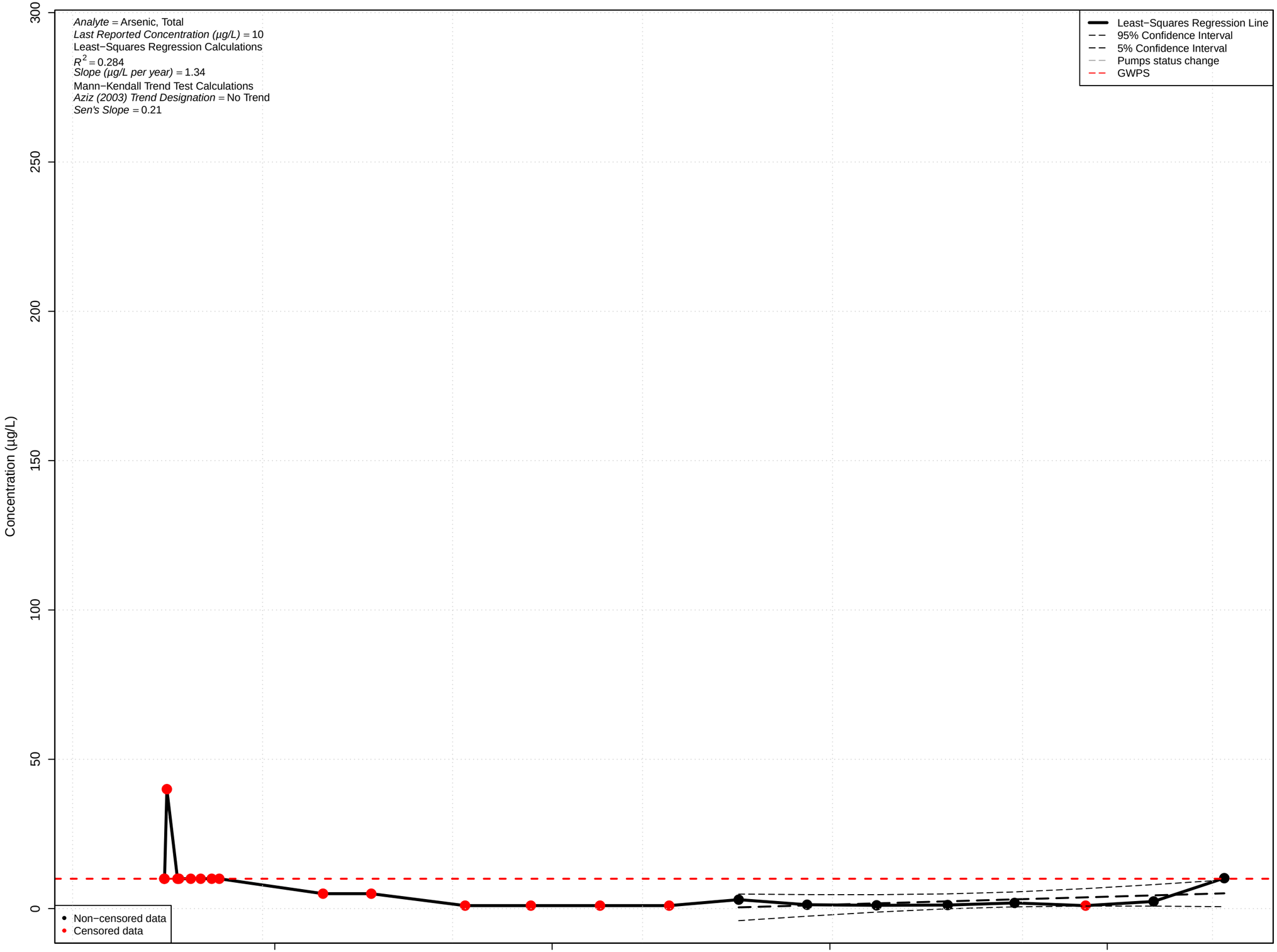
MW−11

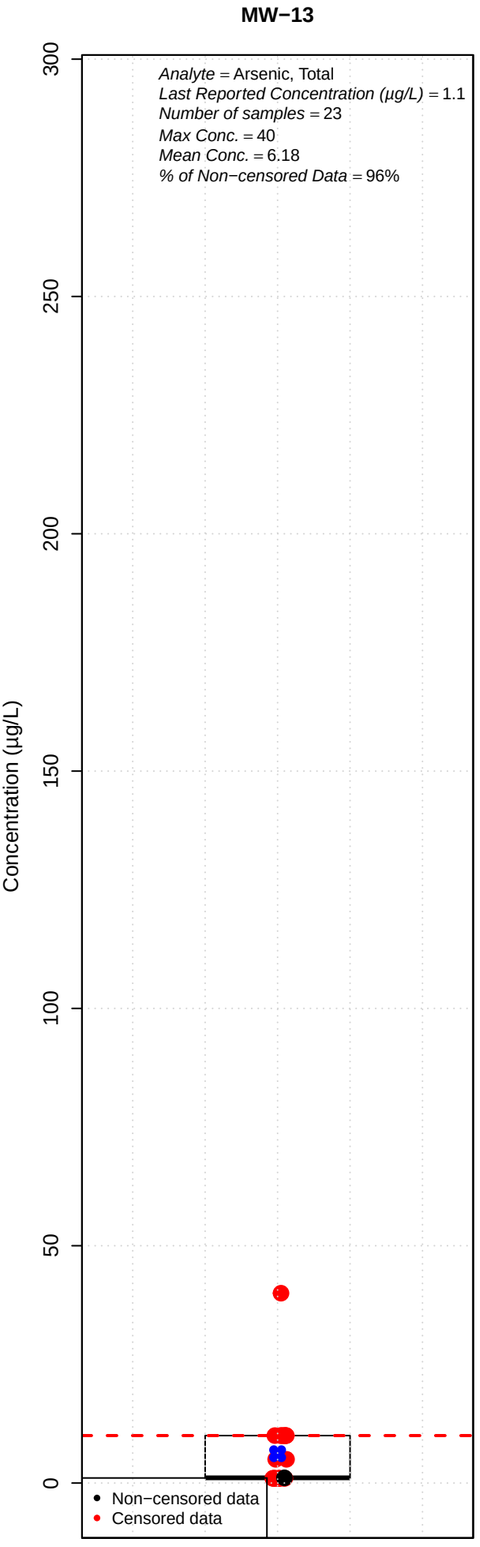

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R2 = 0.244
Slope (µg/L per year) = −3.66
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = −0.0417
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

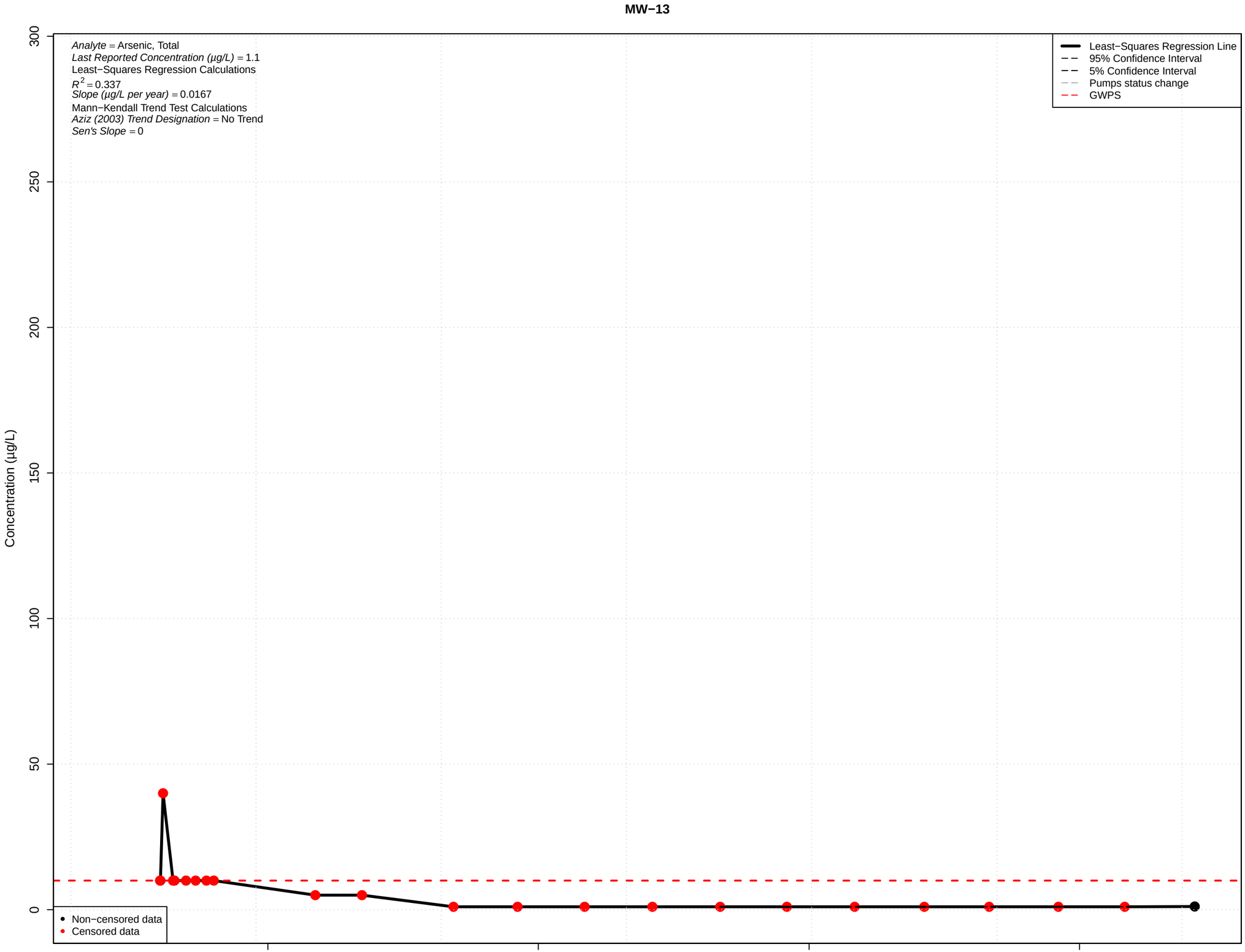
MW−12


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 40
Mean Conc. = 6.79
% of Non−censored Data = 70%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

MW−12


Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R2 = 0.284
Slope (µg/L per year) = 1.34
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.21
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date


MW−13
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.1
Number of samples = 23
Max Conc. = 40
Mean Conc. = 6.18
% of Non−censored Data = 96%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data


MW−13
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.1
Least−Squares Regression Calculations
R2 = 0.337
Slope (µg/L per year) = 0.0167
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−14

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.5
Number of samples = 11
Max Conc. = 15.2
Mean Conc. = 5.37
% of Non−censored Data = 0%

Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data

MW−14

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 2.5
Least−Squares Regression Calculations
R^2 = 0.189
Slope (µg/L per year) = −1.4
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −1.0417

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−15

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 12
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%

Concentration (µg/L)
300
250
200
150
100
50
0

Non−censored data
Censored data

MW−15

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.49
Slope (µg/L per year) = −1.04e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

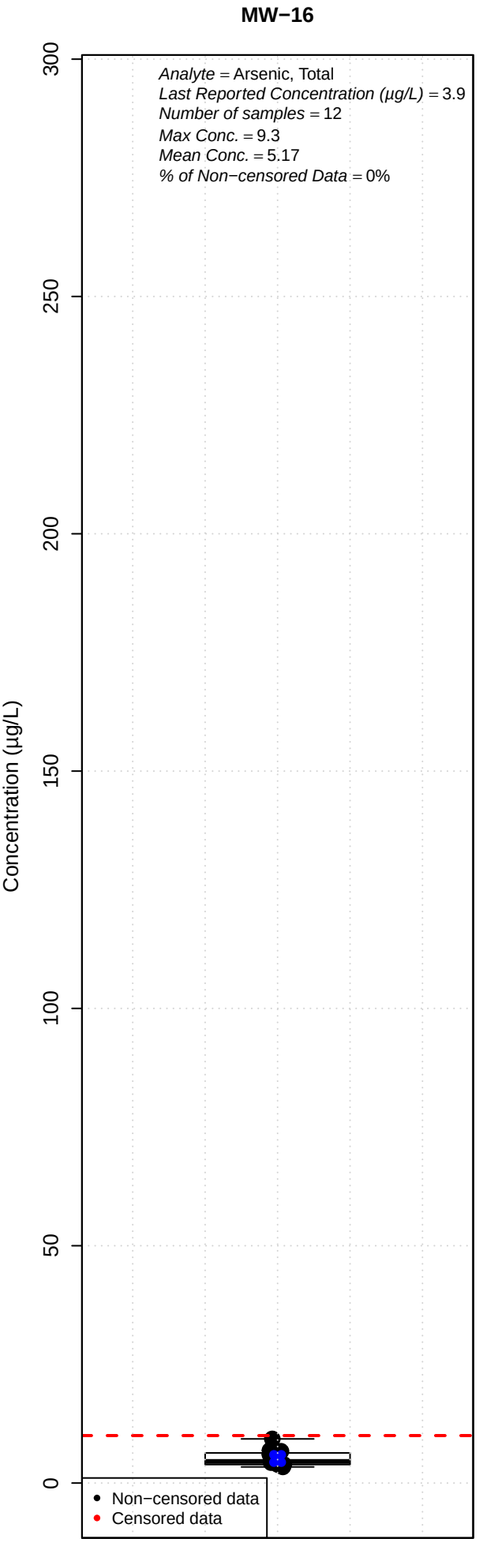
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

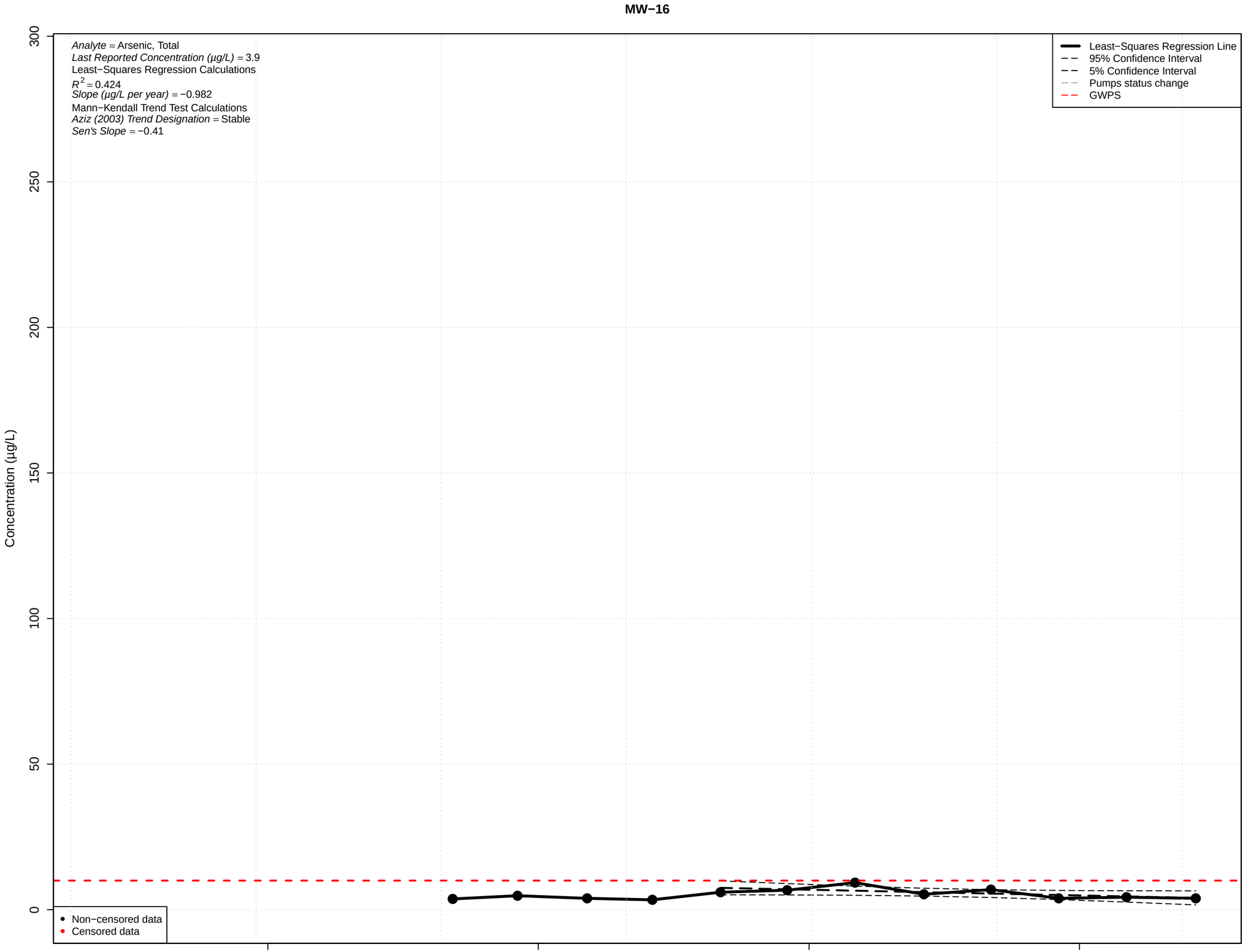
Concentration (µg/L)
300
250
200
150
100
50
0

Non−censored data
Censored data

2018
2020
2022
2024

Date


MW−16
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 3.9
Number of samples = 12
Max Conc. = 9.3
Mean Conc. = 5.17
% of Non−censored Data = 0%
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data


MW−16
Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 3.9
Least−Squares Regression Calculations
R2 = 0.424
Slope (µg/L per year) = −0.982
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.41
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
300
250
200
150
100
50
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−24

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Number of samples = 10
Max Conc. = 1
Mean Conc. = 1
% of Non−censored Data = 100%

Concentration (µg/L)
300
250
200
150
100
50
0

Non−censored data
Censored data

MW−24

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1
Least−Squares Regression Calculations
R^2 = 0.486
Slope (µg/L per year) = −1.03e−16
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

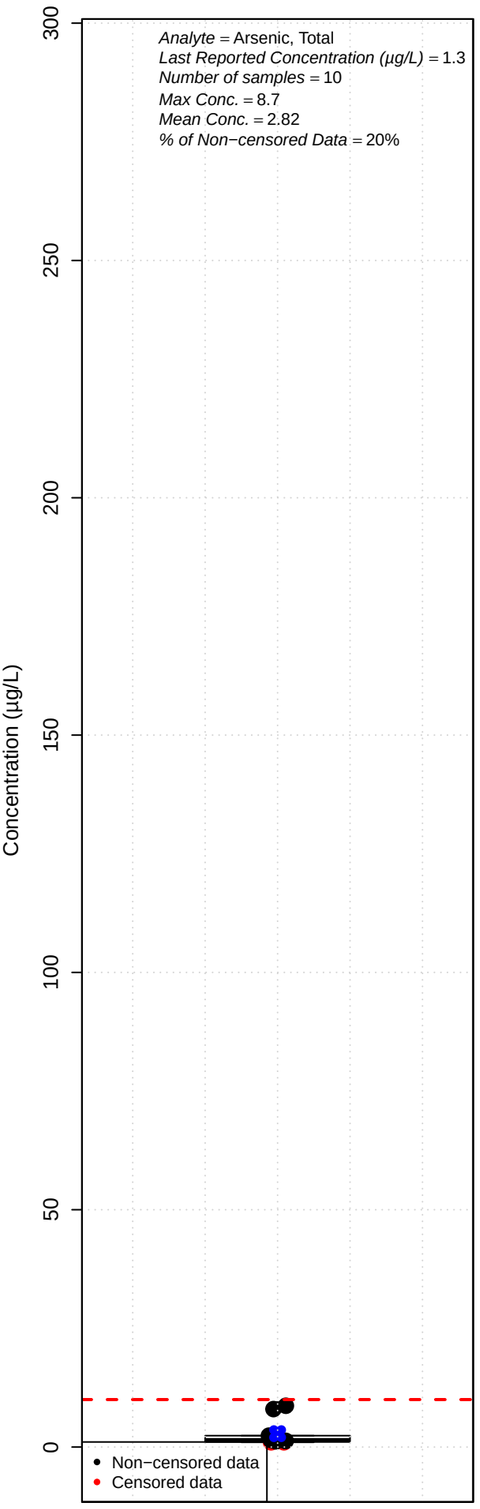
Concentration (µg/L)
300
250
200
150
100
50
0

Non−censored data
Censored data

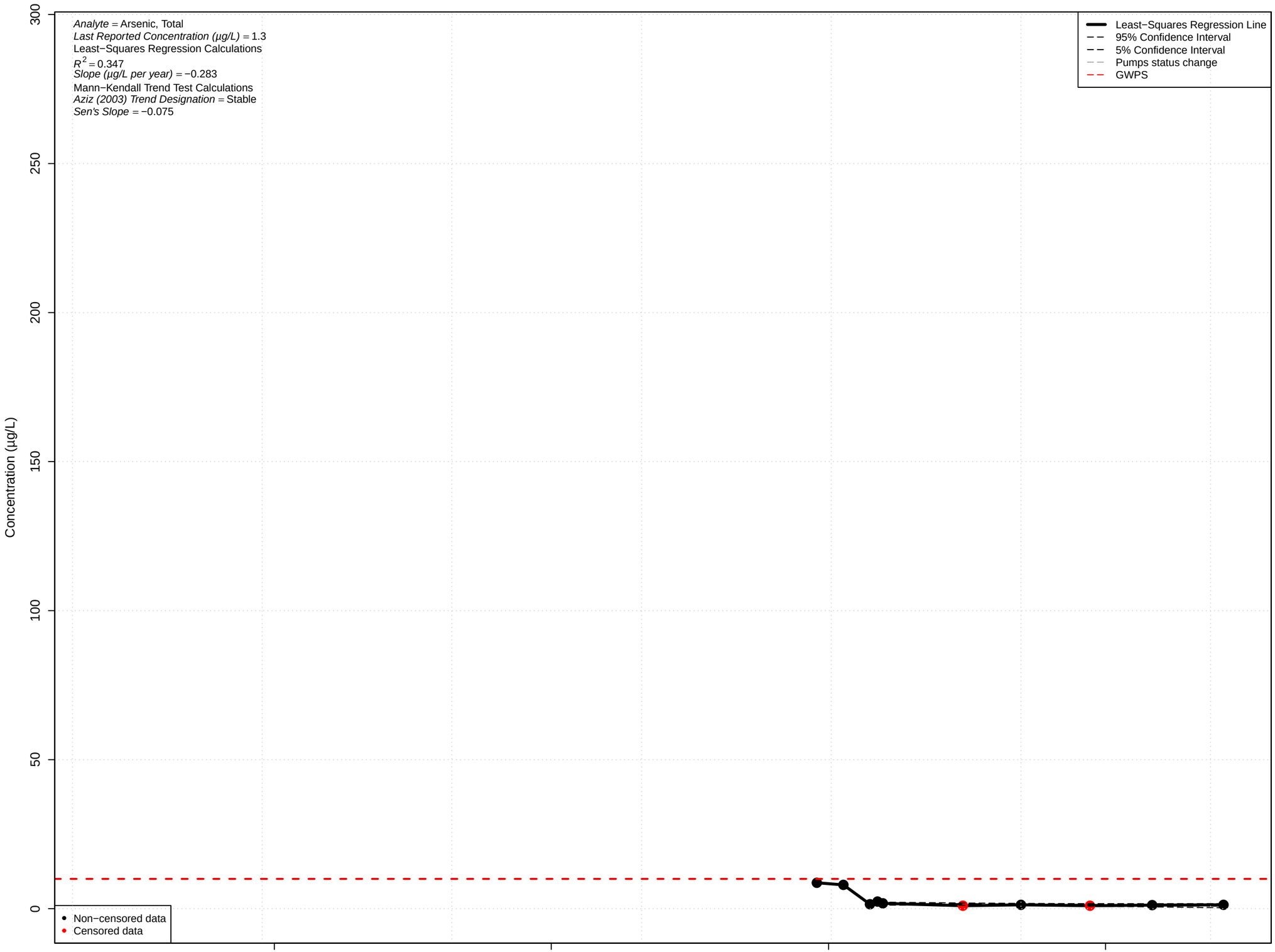
2018
2020
2022
2024

Date

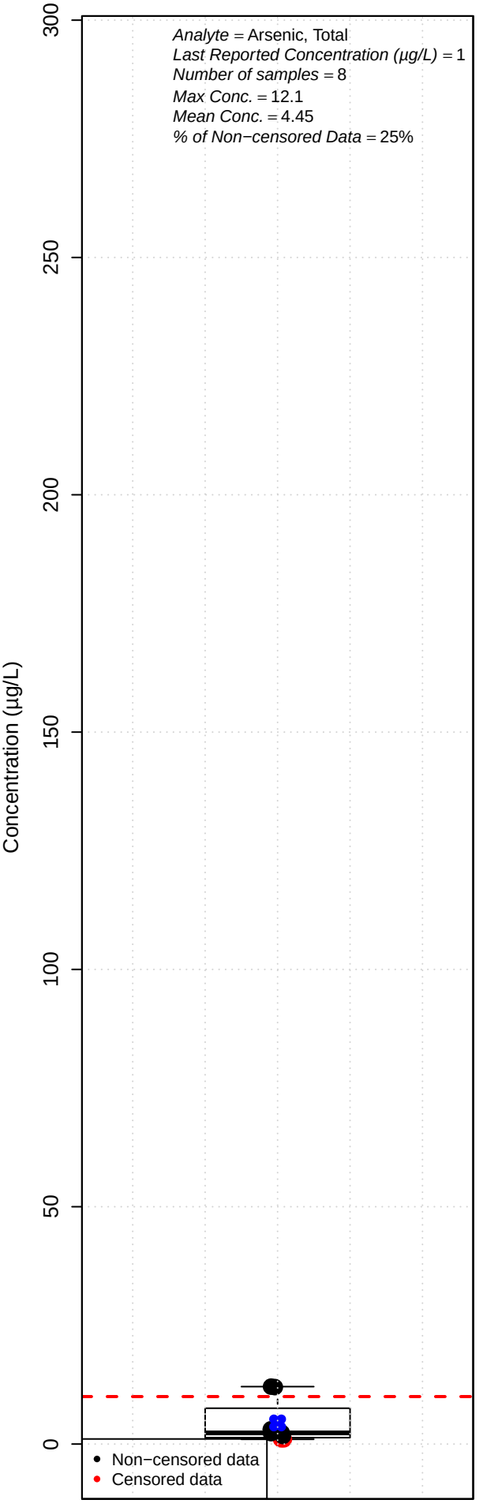
MW−33D2



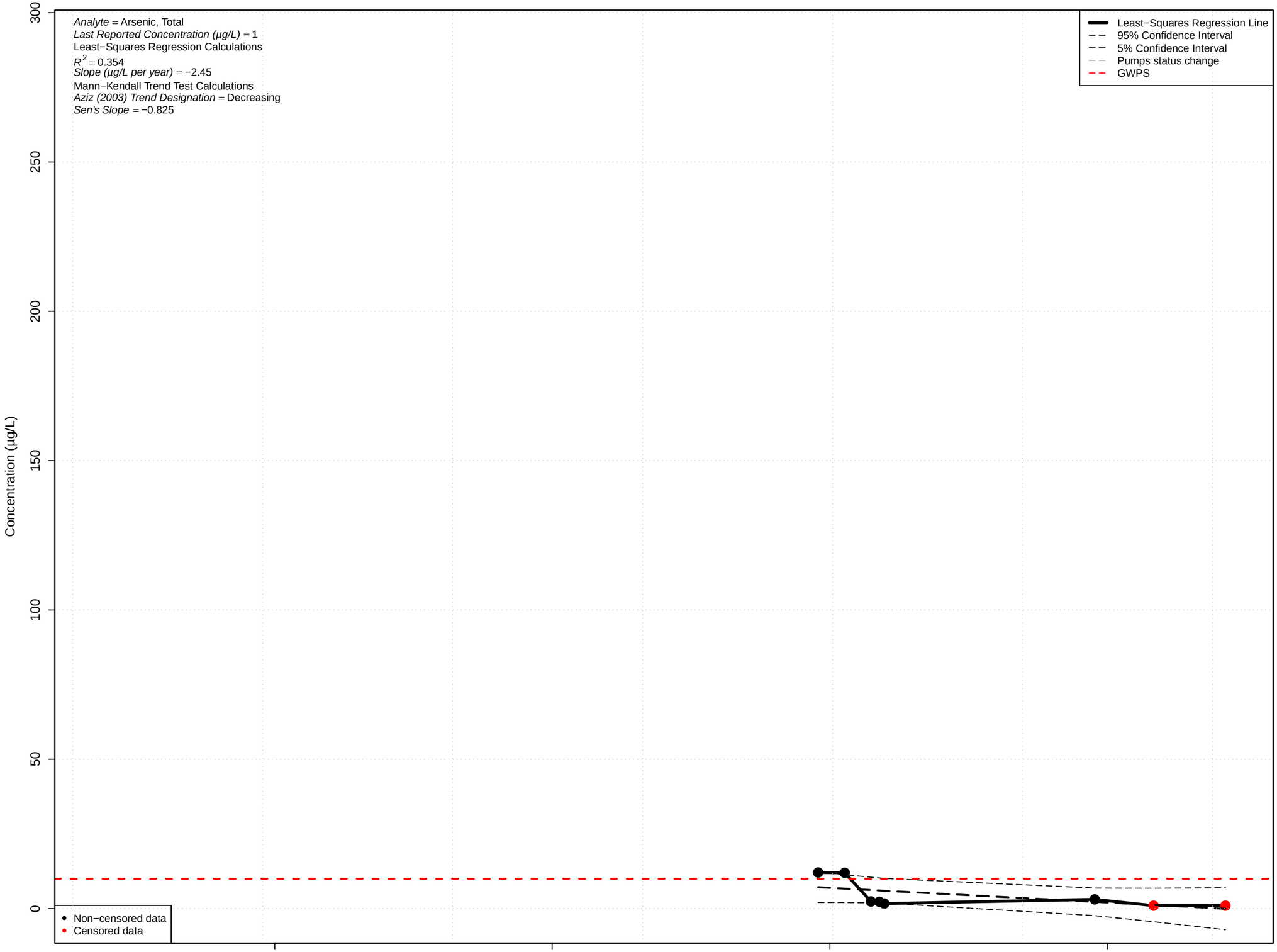
MW−33D2



MW−35D2



MW−35D2



MW−35SS

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.3
Number of samples = 8
Max Conc. = 119
Mean Conc. = 16.5
% of Non−censored Data = 25%

Concentration (µg/L)
300
250
200
150
100
50
0

Non−censored data
Censored data

MW−35SS

Analyte = Arsenic, Total
Last Reported Concentration (µg/L) = 1.3
Least−Squares Regression Calculations
R^2 = 0.113
Slope (µg/L per year) = −12.1
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = −0.4286

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
300
250
200
150
100
50
0

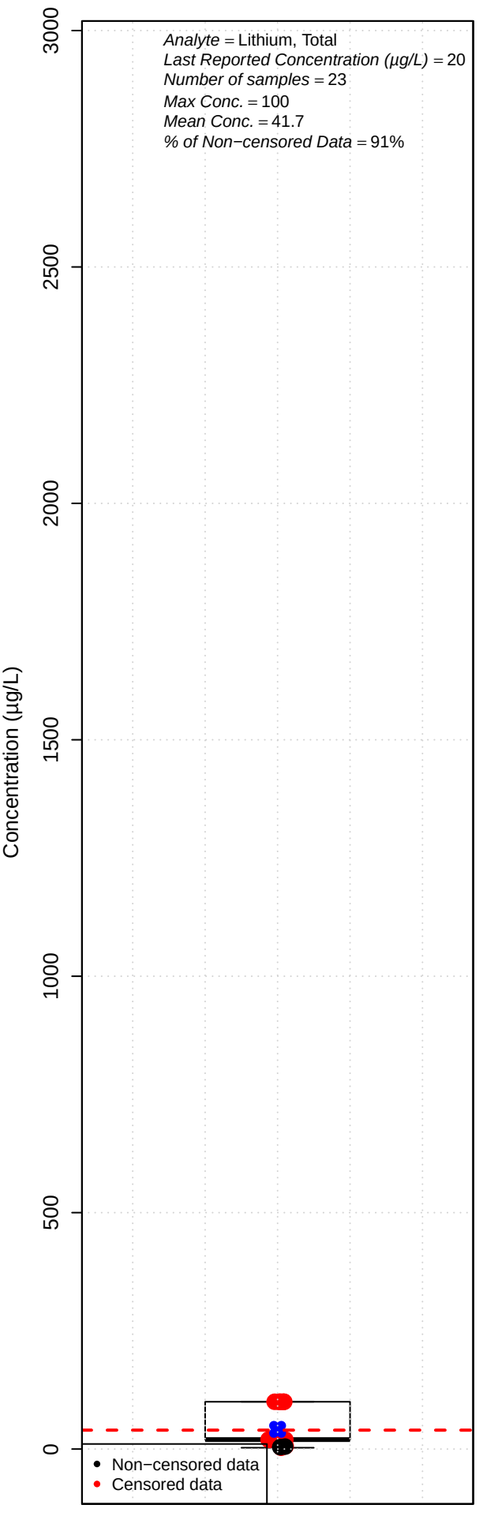
Non−censored data
Censored data

2018
2020
2022
2024

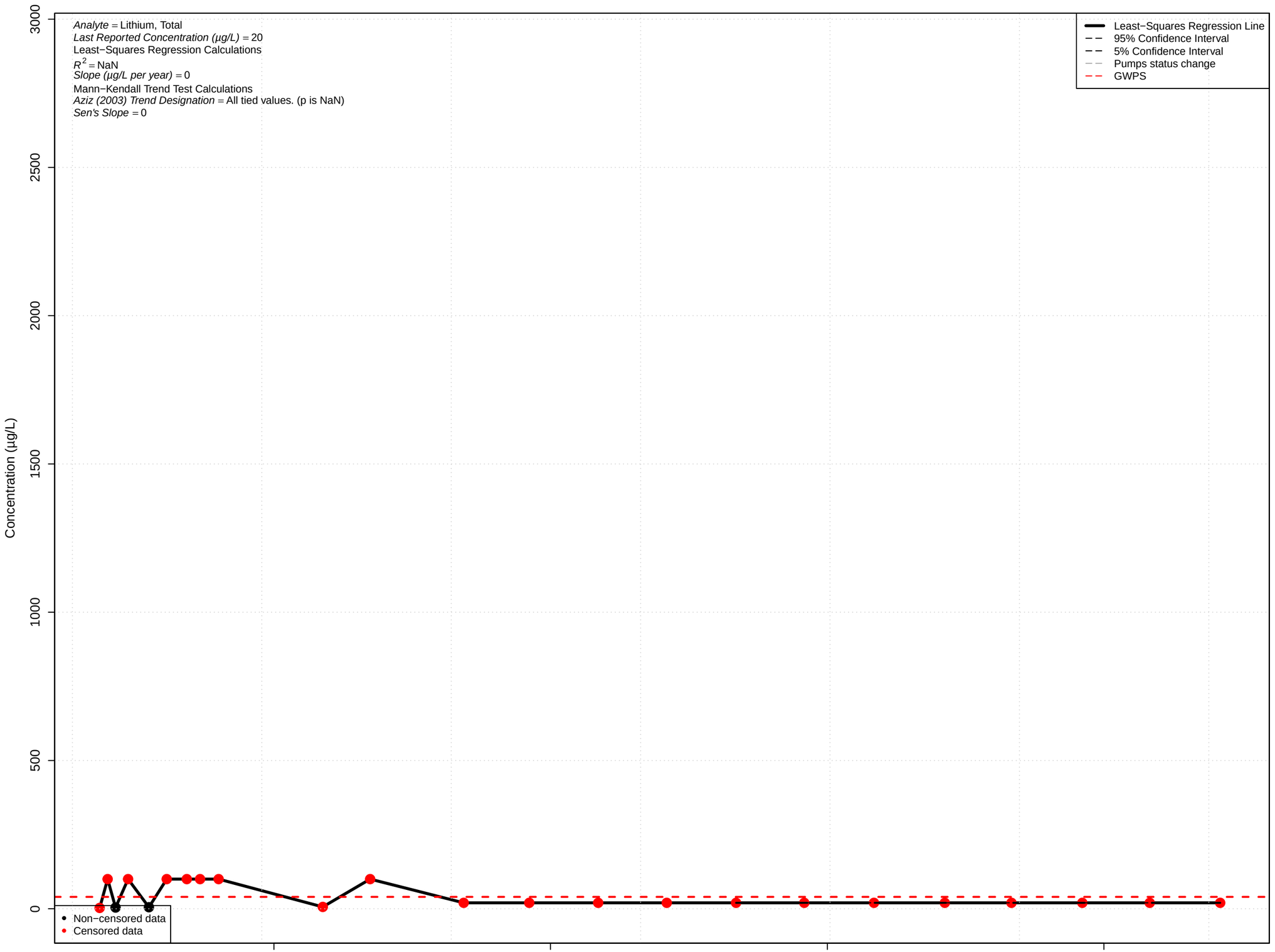
Date

LITHIUM TRENDS – LANDFILL

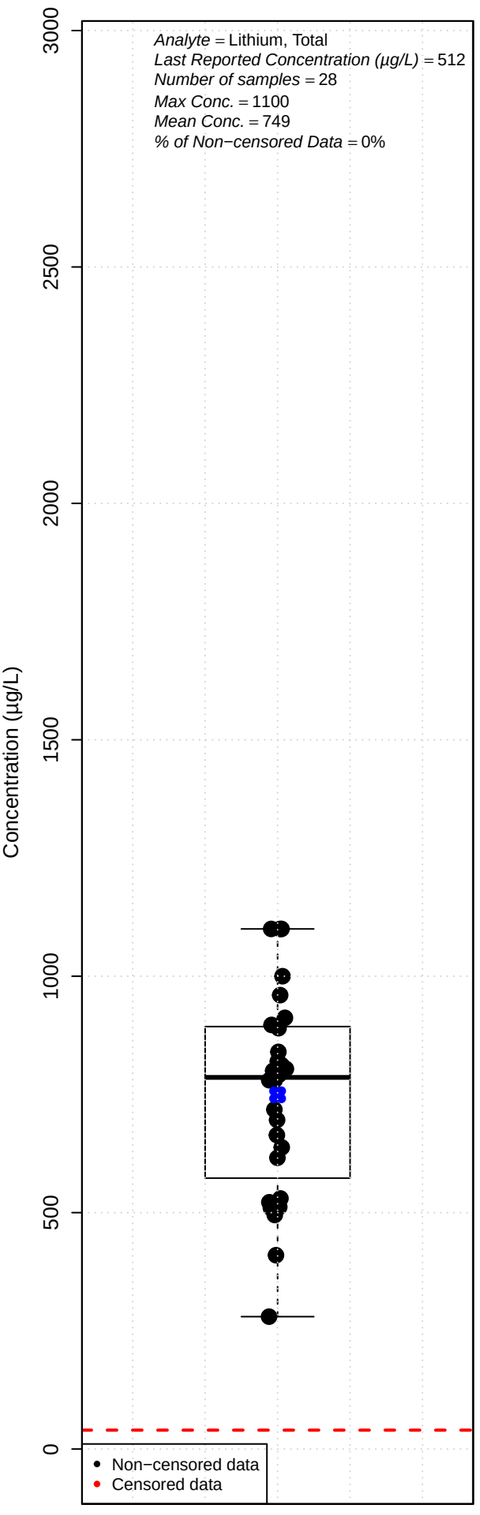
MW−1


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 41.7
% of Non−censored Data = 91%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

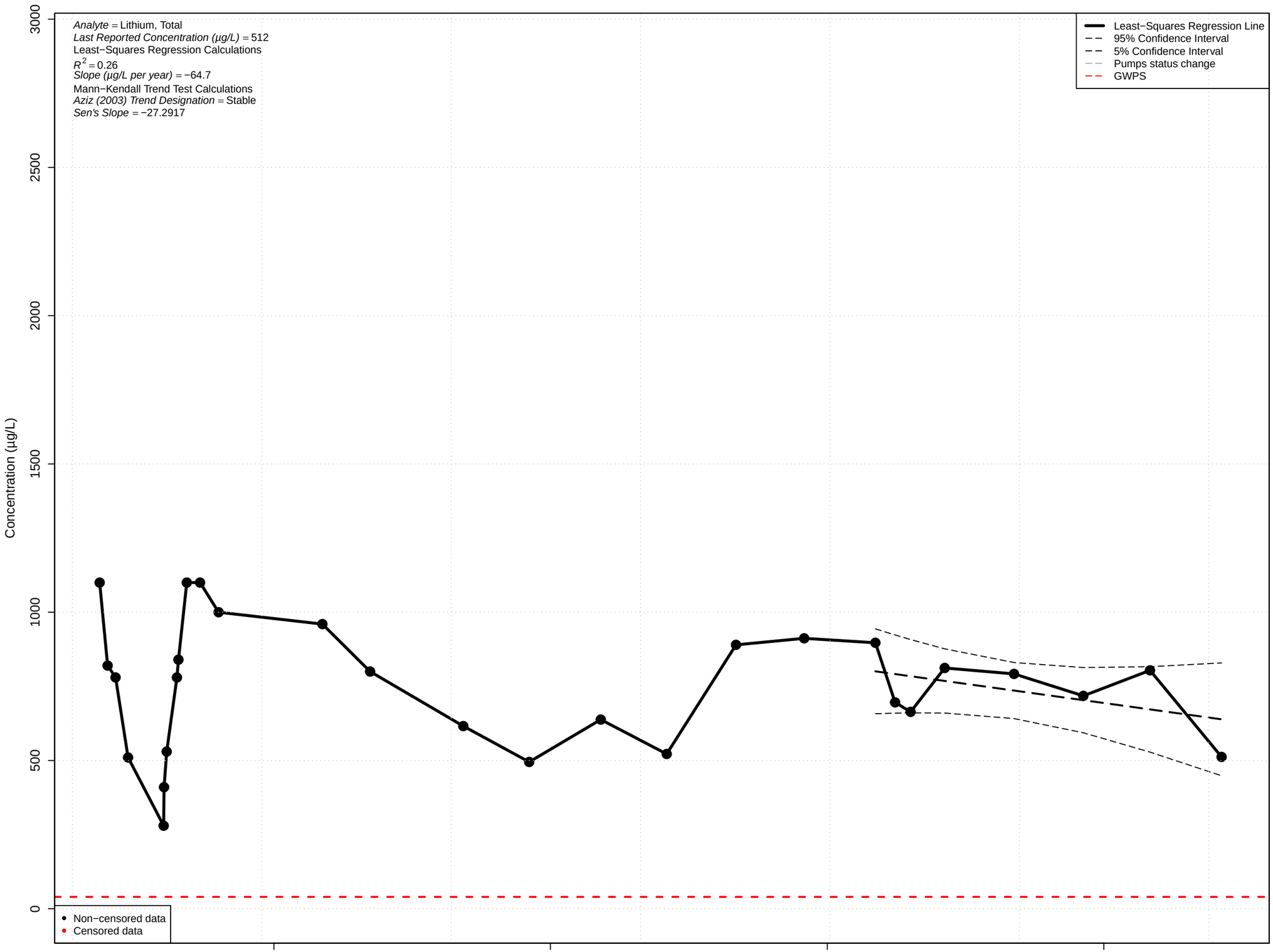
MW−1


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−2R


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 512
Number of samples = 28
Max Conc. = 1100
Mean Conc. = 749
% of Non−censored Data = 0%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

MW−2R


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 512
Least−Squares Regression Calculations
R2 = 0.26
Slope (µg/L per year) = −64.7
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −27.2917
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−3

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1430
Number of samples = 25
Max Conc. = 2600
Mean Conc. = 1854
% of Non−censored Data = 0%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−3

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1430
Least−Squares Regression Calculations
R^2 = 0.016
Slope (µg/L per year) = −45.9
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −59.5833

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

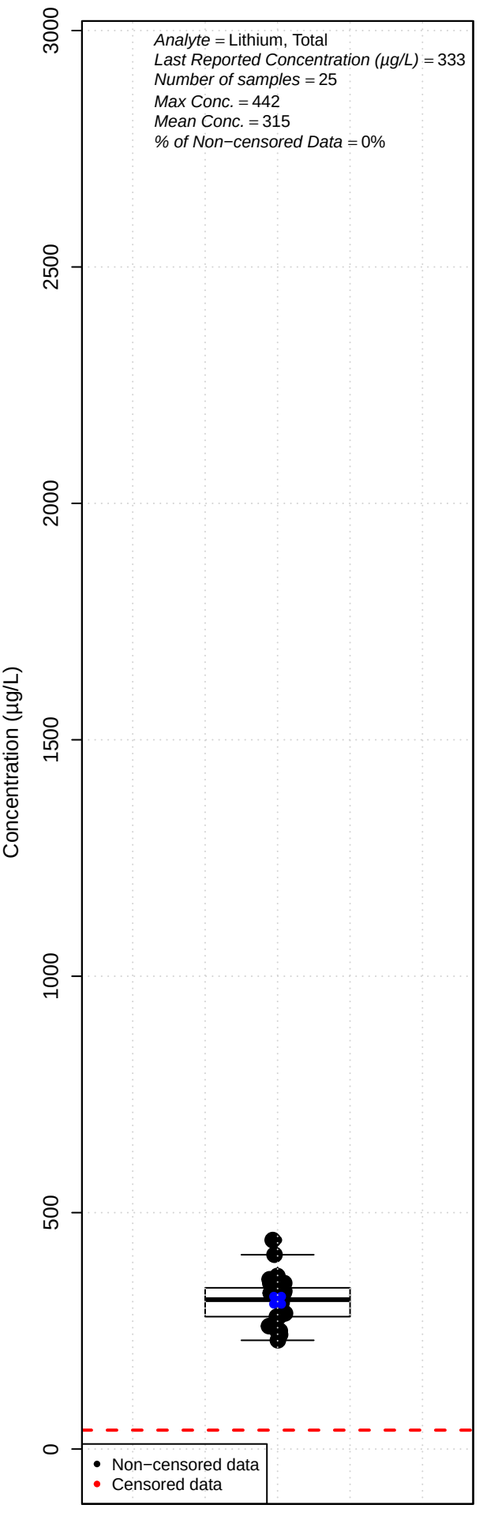
Non−censored data
Censored data

2018
2020
2022
2024

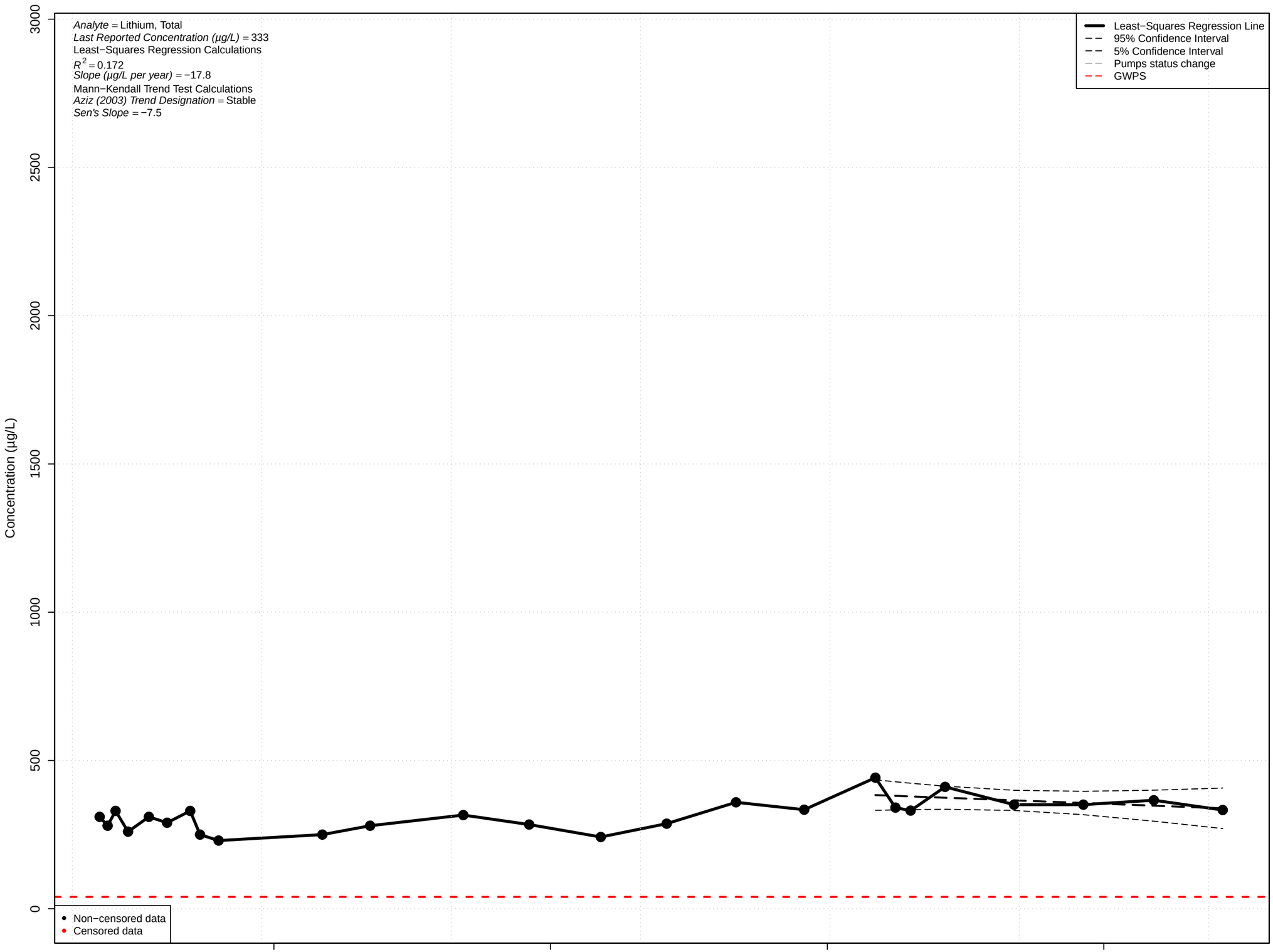
Date

D−18

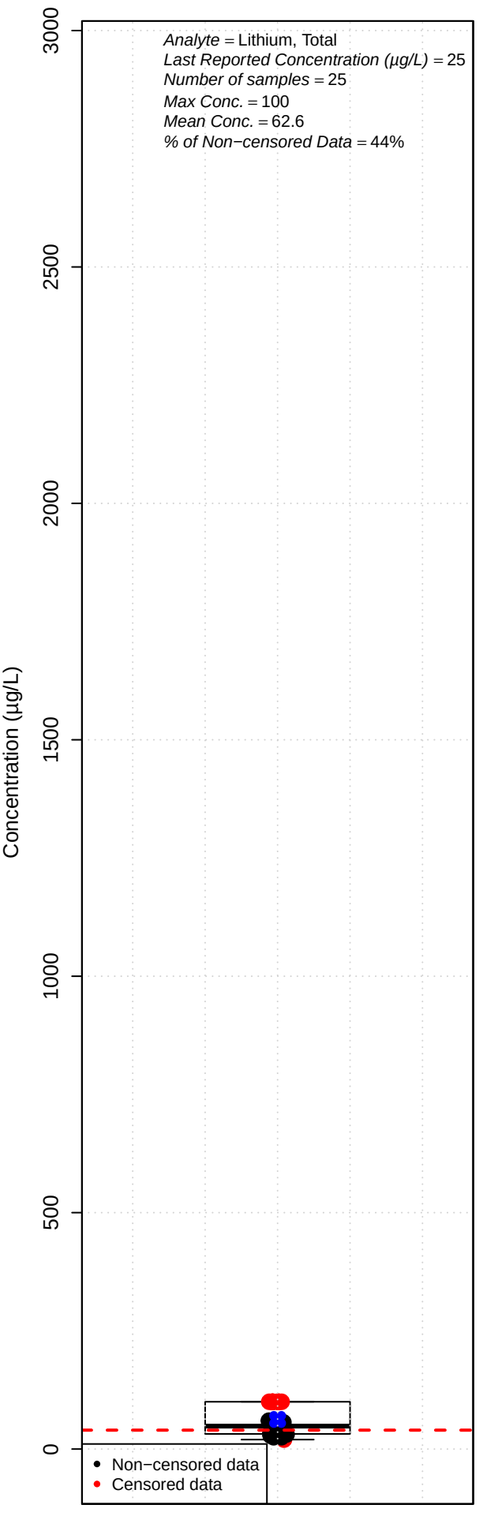
MW−4C


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 333
Number of samples = 25
Max Conc. = 442
Mean Conc. = 315
% of Non−censored Data = 0%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

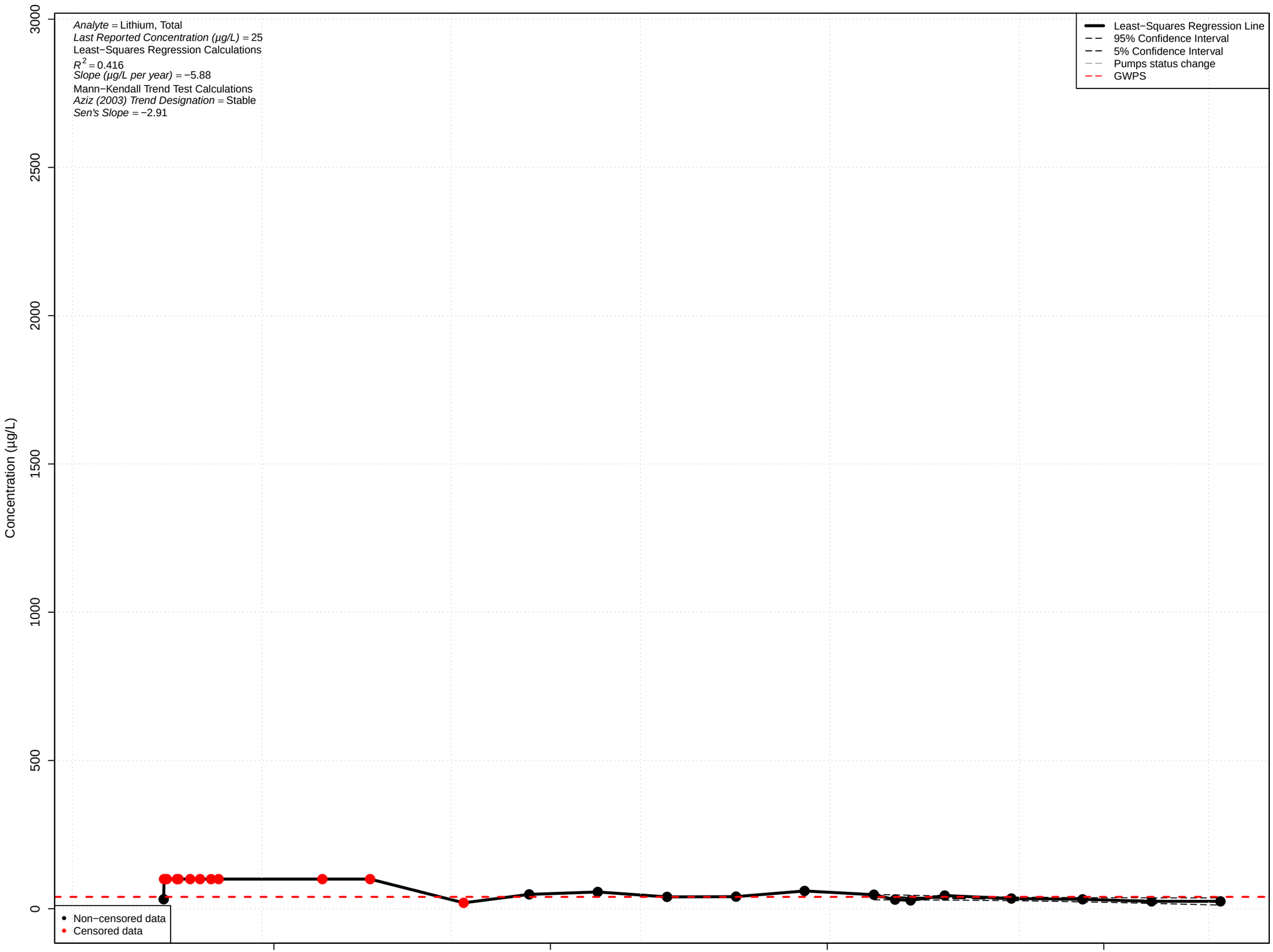
MW−4C


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 333
Least−Squares Regression Calculations
R2 = 0.172
Slope (µg/L per year) = −17.8
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −7.5
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−10


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 25
Number of samples = 25
Max Conc. = 100
Mean Conc. = 62.6
% of Non−censored Data = 44%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

MW−10


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 25
Least−Squares Regression Calculations
R^2 = 0.416
Slope (µg/L per year) = −5.88
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −2.91
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−11

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 58.3
% of Non−censored Data = 100%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−11

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

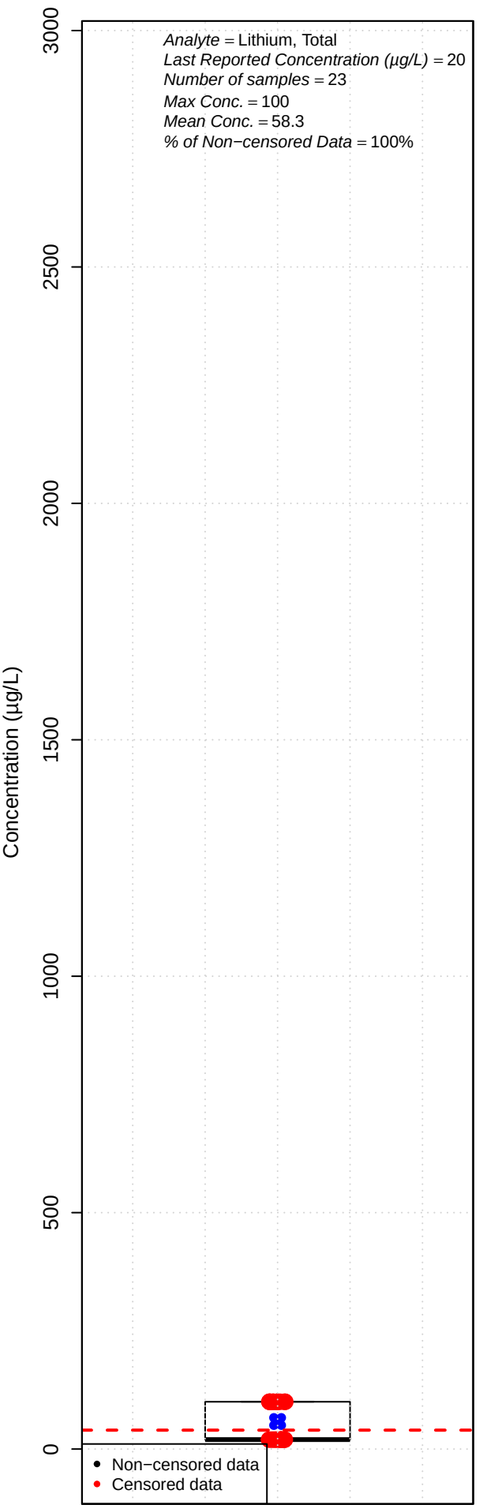
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

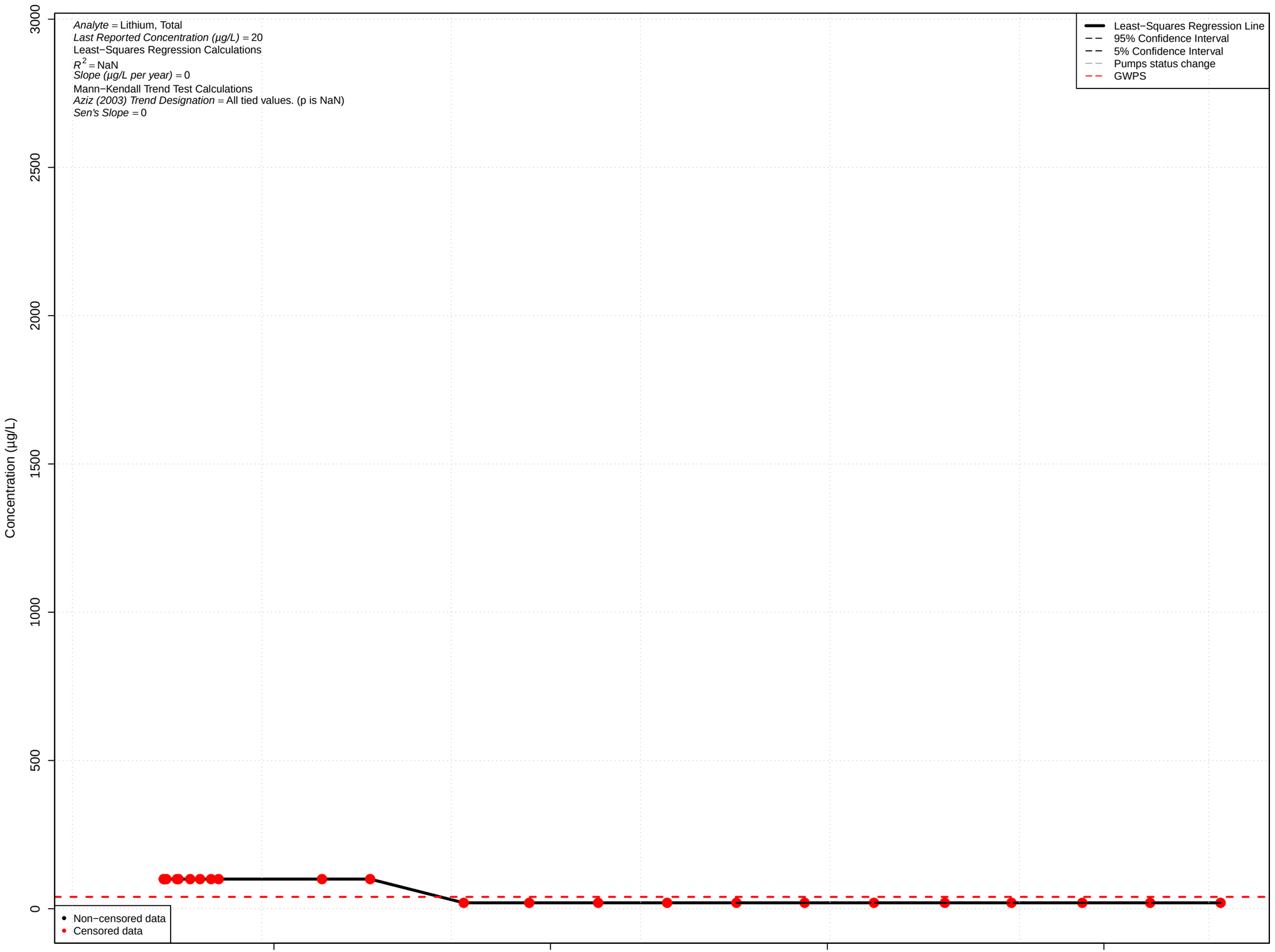
2018
2020
2022
2024

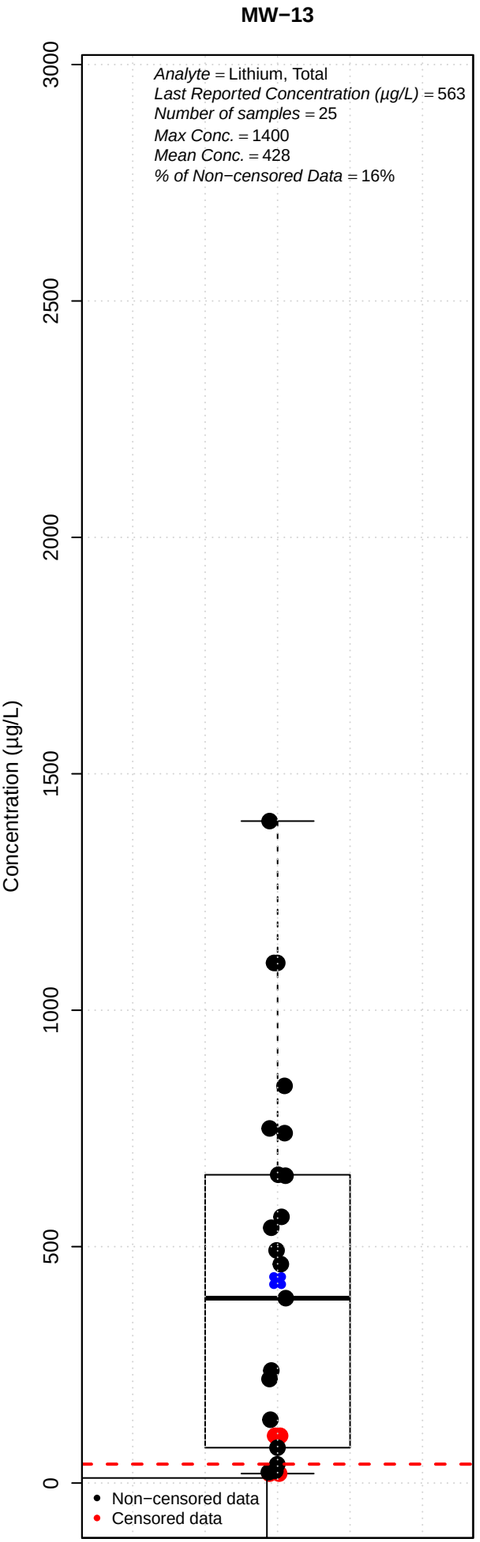
Date

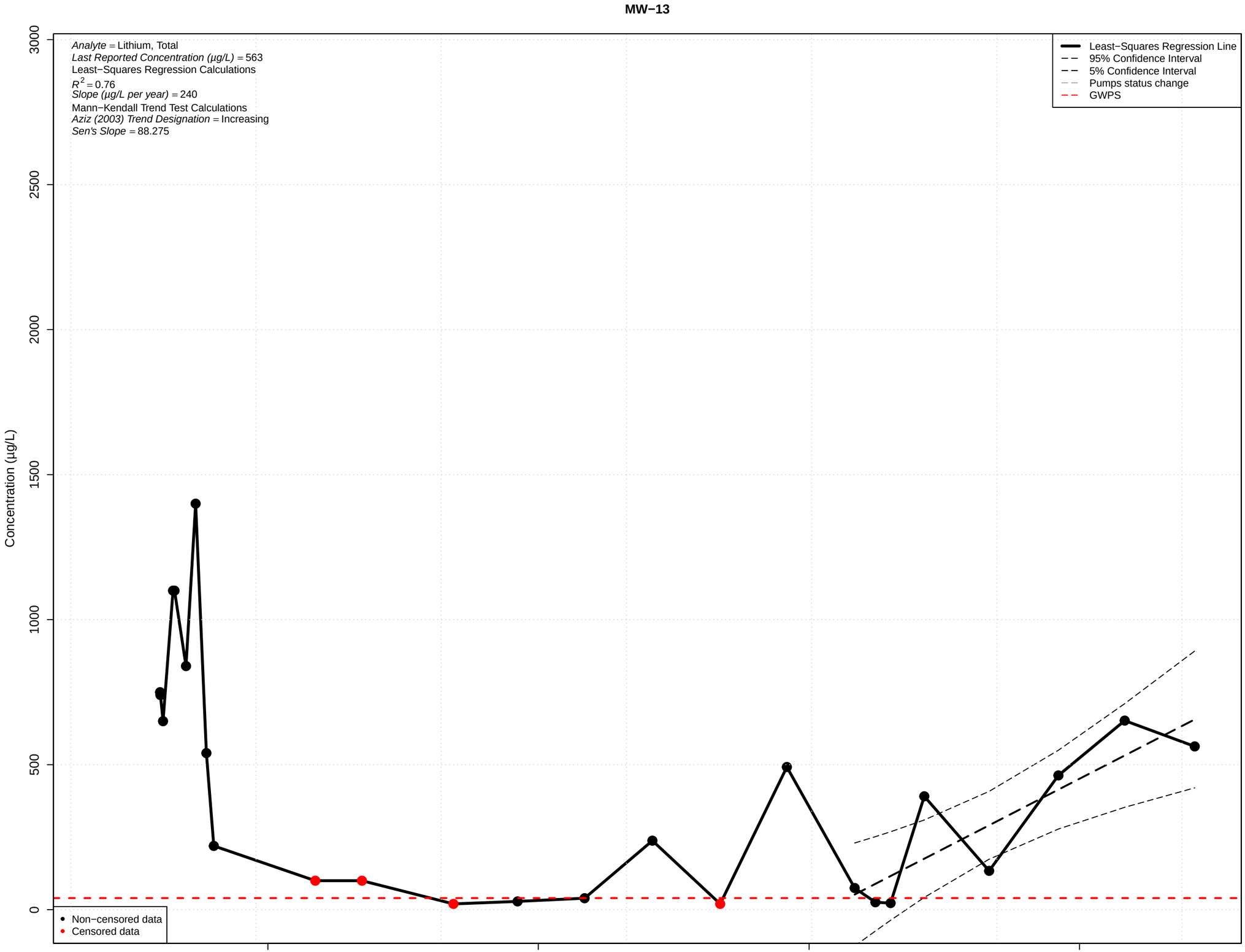
MW−12


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 23
Max Conc. = 100
Mean Conc. = 58.3
% of Non−censored Data = 100%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

MW−12


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date


MW−13
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 563
Number of samples = 25
Max Conc. = 1400
Mean Conc. = 428
% of Non−censored Data = 16%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data


MW−13
Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 563
Least−Squares Regression Calculations
R2 = 0.76
Slope (µg/L per year) = 240
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 88.275
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−14

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 11
Max Conc. = 20
Mean Conc. = 20
% of Non−censored Data = 100%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−14

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−15

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 665
Number of samples = 12
Max Conc. = 972
Mean Conc. = 801
% of Non−censored Data = 0%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−15

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 665
Least−Squares Regression Calculations
R^2 = 0.254
Slope (µg/L per year) = −47.6
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −24

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−16

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 661
Number of samples = 12
Max Conc. = 2640
Mean Conc. = 1812
% of Non−censored Data = 0%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−16

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 661
Least−Squares Regression Calculations
R^2 = 0.975
Slope (µg/L per year) = −547
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −250.75

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

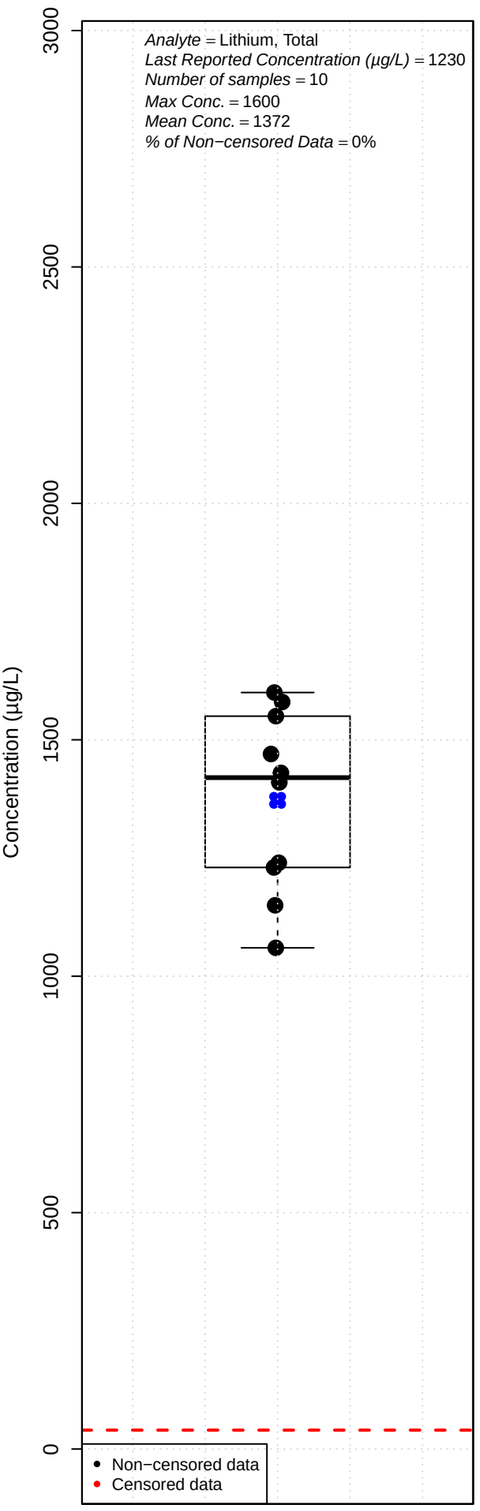
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

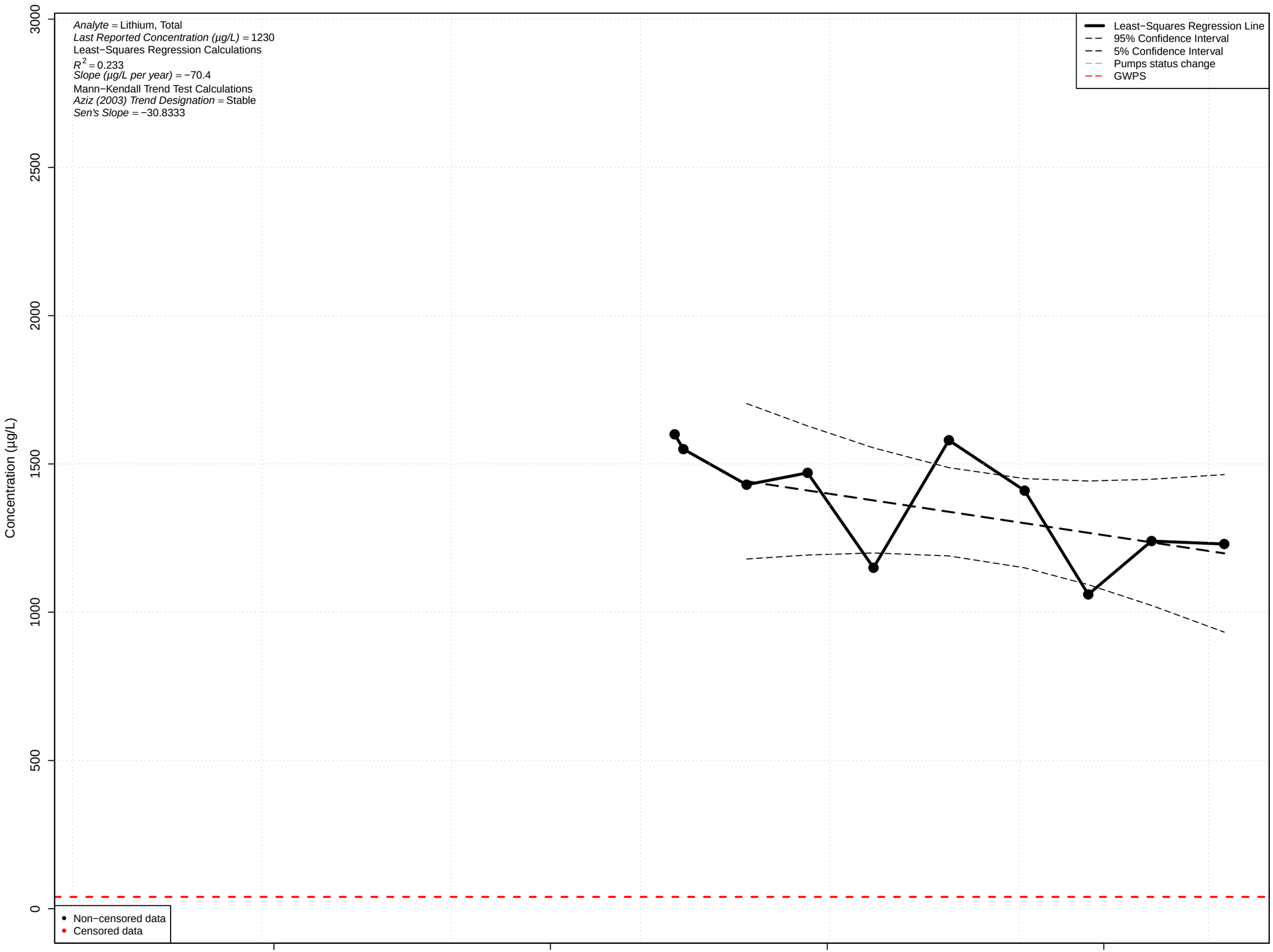
2018
2020
2022
2024

Date

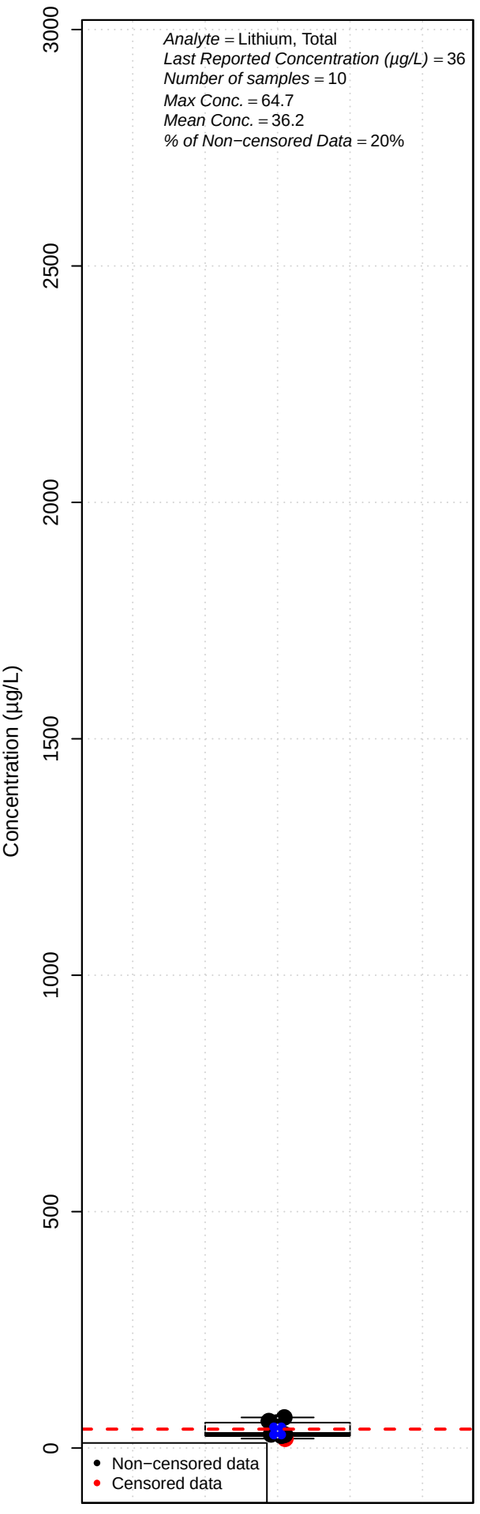
MW−24


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1230
Number of samples = 10
Max Conc. = 1600
Mean Conc. = 1372
% of Non−censored Data = 0%
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data

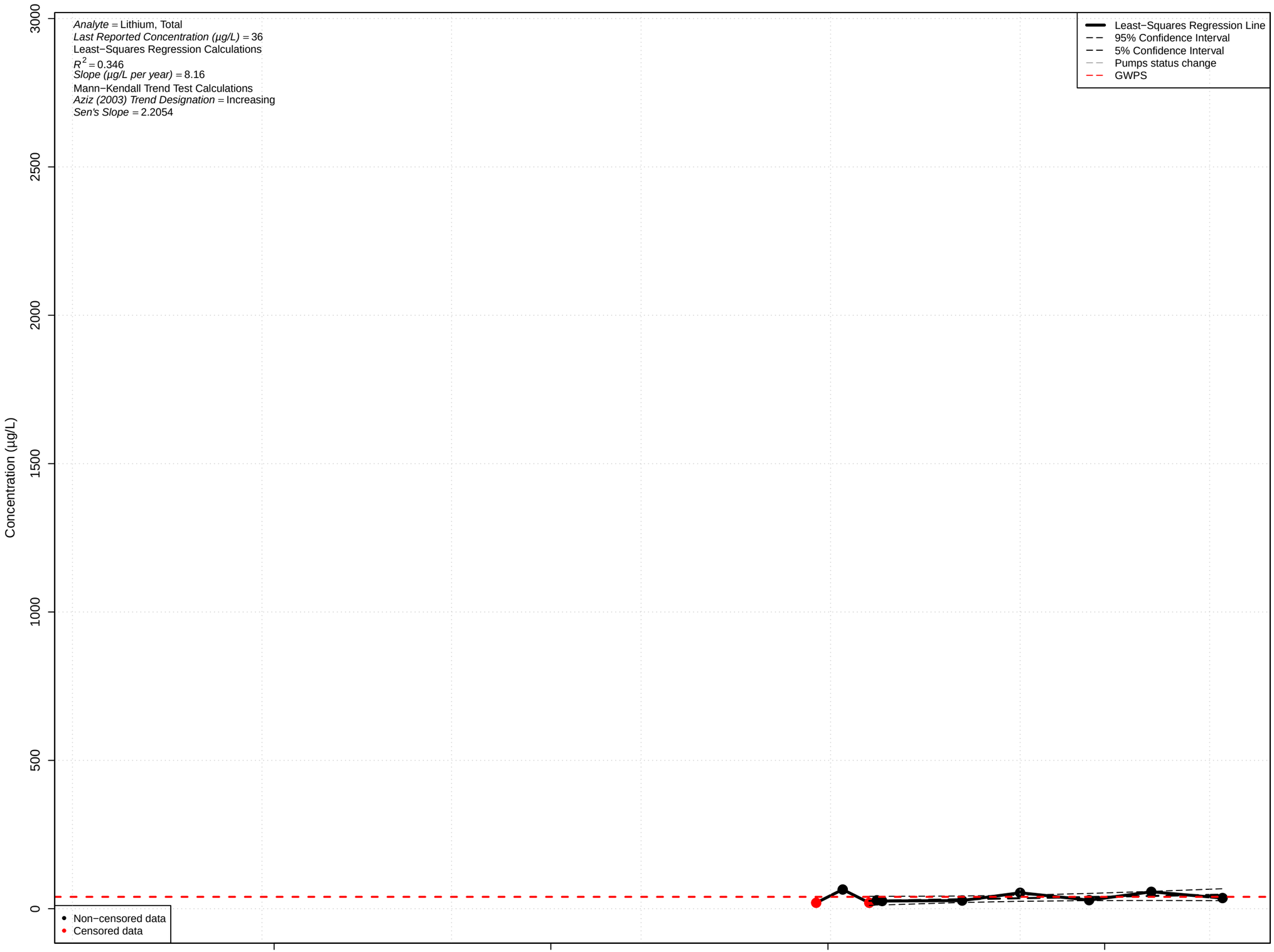
MW−24


Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 1230
Least−Squares Regression Calculations
R2 = 0.233
Slope (µg/L per year) = −70.4
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −30.8333
Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS
Concentration (µg/L)
3000
2500
2000
1500
1000
500
0
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−33D2



MW−33D2



MW−35D2

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 75
Mean Conc. = 34.3
% of Non−censored Data = 38%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−35D2

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.266
Slope (µg/L per year) = −10.5
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −2.45

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−35SS

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 51
Number of samples = 8
Max Conc. = 498
Mean Conc. = 99.7
% of Non−censored Data = 0%

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

MW−35SS

Analyte = Lithium, Total
Last Reported Concentration (µg/L) = 51
Least−Squares Regression Calculations
R^2 = 0.0859
Slope (µg/L per year) = −41.2
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 1.45

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
3000
2500
2000
1500
1000
500
0

Non−censored data
Censored data

2018
2020
2022
2024

Date

MOLYBDENUM TRENDS – LANDFILL

MW−1

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−1

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.0614
Slope (µg/L per year) = 0.644
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−2R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Number of samples = 26
Max Conc. = 100
Mean Conc. = 58.9
% of Non−censored Data = 58%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−2R

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Least−Squares Regression Calculations
R^2 = 0.031
Slope (µg/L per year) = 0.0573
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0.0208

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−3

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 206
Number of samples = 25
Max Conc. = 660
Mean Conc. = 416
% of Non−censored Data = 0%

Concentration (µg/L)
0
200
400
600
800
1000
Non−censored data
Censored data

MW−3

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 206
Least−Squares Regression Calculations
R^2 = 0.0167
Slope (µg/L per year) = −11
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −7.4

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000
Non−censored data
Censored data
2018
2020
2022
2024
Date

MW−4C

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Number of samples = 23
Max Conc. = 100
Mean Conc. = 53
% of Non−censored Data = 91%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−4C

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Least−Squares Regression Calculations
R^2 = 0.237
Slope (µg/L per year) = 0.387
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−10

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Number of samples = 23
Max Conc. = 1000
Mean Conc. = 95.6
% of Non−censored Data = 52%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−10

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 11
Least−Squares Regression Calculations
R^2 = 0.698
Slope (µg/L per year) = −3.57
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −1.25

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−11

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 96%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−11

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.0617
Slope (µg/L per year) = 0.639
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−12

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 23
Max Conc. = 100
Mean Conc. = 52.7
% of Non−censored Data = 100%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−12

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.0617
Slope (µg/L per year) = 0.645
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−13

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 66
Number of samples = 23
Max Conc. = 100
Mean Conc. = 77
% of Non−censored Data = 48%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−13

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 66
Least−Squares Regression Calculations
R^2 = 0.0312
Slope (µg/L per year) = 2.48
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 1.0875

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−14

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 11
Max Conc. = 10
Mean Conc. = 10
% of Non−censored Data = 100%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−14

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = NaN
Slope (µg/L per year) = 0
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = All tied values. (p is NaN)
Sen's Slope = 0

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−15

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 106
Number of samples = 12
Max Conc. = 119
Mean Conc. = 83.7
% of Non−censored Data = 0%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−15

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 106
Least−Squares Regression Calculations
R^2 = 0.675
Slope (µg/L per year) = 12.8
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Increasing
Sen's Slope = 6.95

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−16

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 314
Number of samples = 12
Max Conc. = 570
Mean Conc. = 441
% of Non−censored Data = 0%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−16

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 314
Least−Squares Regression Calculations
R^2 = 0.776
Slope (µg/L per year) = −42.6
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Decreasing
Sen's Slope = −20.25

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−24

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 383
Number of samples = 10
Max Conc. = 383
Mean Conc. = 335
% of Non−censored Data = 0%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−24

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 383
Least−Squares Regression Calculations
R^2 = 0.202
Slope (µg/L per year) = 9.66
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = 3

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−33D2

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 18
Number of samples = 10
Max Conc. = 33.7
Mean Conc. = 19.2
% of Non−censored Data = 20%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−33D2

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 18
Least−Squares Regression Calculations
R^2 = 0.000313
Slope (µg/L per year) = 0.164
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −0.5107

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−35D2

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Number of samples = 8
Max Conc. = 58
Mean Conc. = 26.4
% of Non−censored Data = 12%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−35D2

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 10
Least−Squares Regression Calculations
R^2 = 0.267
Slope (µg/L per year) = −7.57
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = Stable
Sen's Slope = −4.3583

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

MW−35SS

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 20
Number of samples = 8
Max Conc. = 164
Mean Conc. = 45.2
% of Non−censored Data = 12%

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

MW−35SS

Analyte = Molybdenum, Total
Last Reported Concentration (µg/L) = 20
Least−Squares Regression Calculations
R^2 = 0.154
Slope (µg/L per year) = −17.3
Mann−Kendall Trend Test Calculations
Aziz (2003) Trend Designation = No Trend
Sen's Slope = −3.4

Least−Squares Regression Line
95% Confidence Interval
5% Confidence Interval
Pumps status change
GWPS

Concentration (µg/L)
0
200
400
600
800
1000

Non−censored data
Censored data

2018
2020
2022
2024

Date

APPENDIX B
Groundwater Risk Evaluation

HALEY ALDRICH

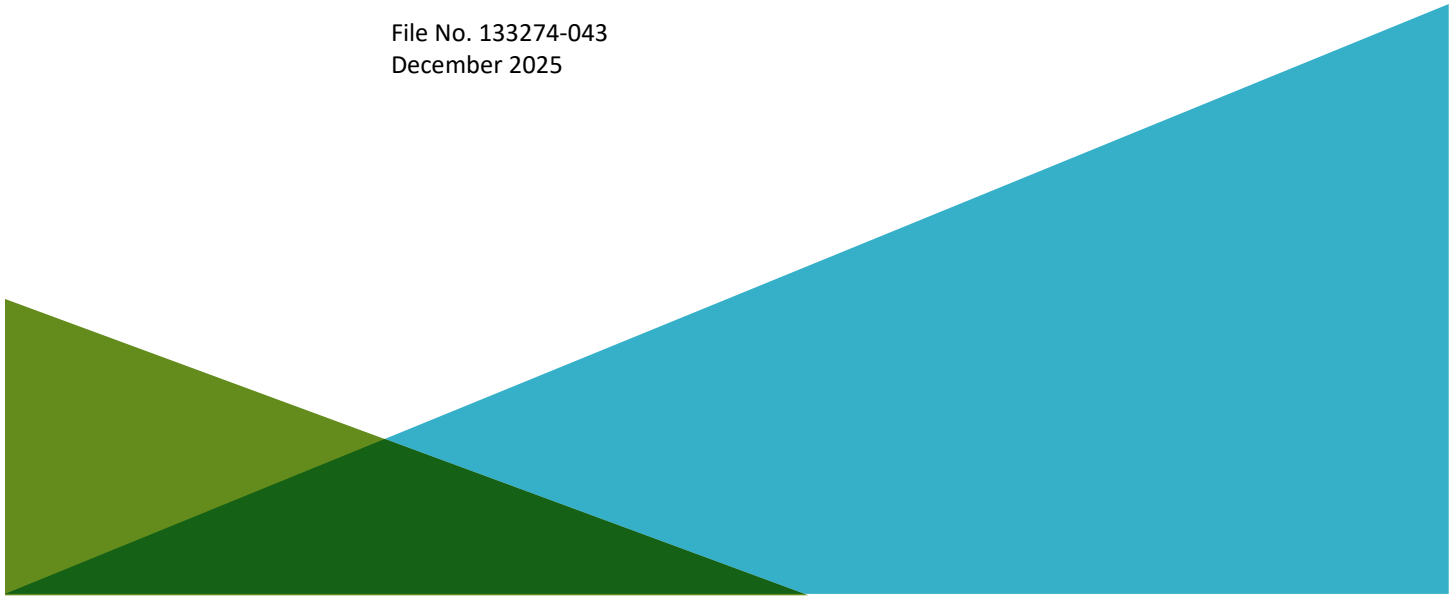
www.haleyaldrich.com

GROUNDWATER RISK EVALUATION
PETERSBURG GENERATING STATION
6925 NORTH STATE ROAD 57
PETERSBURG, INDIANA

by
Haley & Aldrich, Inc.
Cleveland, Ohio

for
AES Indiana
Indianapolis, Indiana

File No. 133274-043
December 2025



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PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

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Executive Summary

This Groundwater Risk Evaluation report was prepared by Haley & Aldrich, Inc. for the Petersburg Generating Station (PGS or Site), a coal-fired power plant located approximately 4 miles northeast of the town of Petersburg in Pike County, Indiana. Coal combustion residuals (CCR) produced by the PGS have been managed onsite in a multi-unit system of impoundments consisting of Ponds A, A', C, and Former Ponds B and D, collectively referred to as the Ash Pond System, and a Type III Restricted Waste Landfill, referred to herein as the Landfill.

The purpose of this report is to review the analytical data collected from the groundwater monitoring at the Site and Site vicinity, identify the pathways by which human and ecological receptors could potentially contact groundwater, and evaluate if the pathways could pose an adverse human health or ecological effect. Potential risks to human health or the environment were evaluated by comparing analytical results from groundwater monitoring to screening levels drawn or derived from United States Environmental Protection Agency (USEPA) and Indiana Department of Environmental Management (IDEM) sources. Due to the conservative methods used to derive screening levels, exposures to concentrations below screening levels will not result in adverse health effects, and no further evaluation is necessary. Concentrations above conservative screening levels do not necessarily indicate that a potential risk exists but indicate that further evaluation may be warranted.

Groundwater data collected in accordance with USEPA's final rule for Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities, 80 Fed. Reg. 21302, and subsequent regulatory revisions (CCR Rule) from CCR and nature and extent (N&E) monitoring wells installed around the perimeter of the Ash Pond System and Landfill and N&E monitoring wells installed farther to the west and north of the Ash Pond System toward the White River) were used for the risk evaluation dataset. Additional data collected from two observation wells located east of the Landfill, two bedrock monitoring wells located to the southeast of the Landfill, two temporary monitoring wells located within the Landfill, five piezometers located within Pond A, and one piezometer cluster located along a discharge canal west of the Ash Pond System were also included.

Offsite areas consist of the White River to the west and north, wetland areas primarily along the eastern boundary of the White River, to the west and north of the Ash Pond System, and wooded areas and farmland to the south and east. The nearest residents are southeast of the Landfill along State Road 57. Environmental media of interest for the risk evaluation include groundwater, as well as White River surface water, assuming CCR constituents in groundwater could potentially be introduced into the White River from groundwater flow. Potentially exposed receptors identified for the risk evaluation are onsite workers, residents in the Site vicinity, farmers in the Site vicinity, recreational users of the White River, and aquatic ecological receptors. However, potential exposure to groundwater via direct contact exposure pathways is considered incomplete for the following reasons:

- onsite workers do not use groundwater for drinking water;
- groundwater does not flow toward residents in the Site vicinity (southeast of the Landfill); and
- there are no groundwater supply wells in the farmland areas in the Site vicinity (south and east of the Site).

Potentially complete indirect exposure pathways through which receptors are assumed to be potentially exposed to CCR constituents in groundwater consist of the following, assuming such constituents could potentially be introduced into the adjacent White River:

- Consumption of White River surface water as drinking water (by residents in the Site vicinity);
- Recreational exposure to White River surface water (dermal contact and incidental ingestion by swimmers or waders and/or dermal contact by boaters);
- Consumption of fish from the White River (by recreational anglers); and
- Aquatic receptor exposure to White River surface water.

Screening levels were compiled from USEPA and IDEM sources (or derived using the USEPA Regional Screening Level calculator) protective of White River surface water for the types of potential exposures identified above as potentially complete. From the selected or derived surface water screening levels, target groundwater screening levels were then calculated from the lowest (i.e., most protective) surface water screening levels based upon the amount of dilution and attenuation estimated to occur as groundwater flows into the White River.

Risks associated with the potential introduction of CCR constituents in groundwater to the White River were evaluated by conservatively comparing maximum groundwater constituent concentrations from all wells and piezometers dating back to the initial CCR Rule groundwater monitoring event in September 2016 to the target screening levels for groundwater that are protective of White River surface water. The comparison demonstrates that detected concentrations do not pose an adverse impact to the river. Detected concentrations would need to be 8 to 1,500 times higher than the highest measured levels before a potential adverse impact to the river might occur. This means that the present concentrations of constituents in groundwater do not pose a risk to human health or the environment, and even much higher concentrations in groundwater are unlikely to be harmful. The results of this evaluation are further supported by recent surface water sampling which also indicates the river is not adversely affected by Site groundwater.

In conclusion, the completed groundwater risk evaluation demonstrates that there are no adverse impacts on human health or the environment from groundwater at or downgradient of the Ash Pond System and Landfill at the PGS.

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Attached Tables

Table No.	Title
1	Comparison of Groundwater Results to Groundwater Protection Standards
2	Published Human Health Screening Levels for Drinking Water and Surface Water
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A	Derivation of Risk-Based Screening Levels
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List of Abbreviations

Abbreviation	Definition
µg/L	micrograms per liter
40 CFR	Code of Federal Regulations Title 40
AESI	AES Indiana
Ash Pond System	Ponds A, A', C, and Former Ponds B and D, collectively
Atlas	Atlas Technical Consultants LLC
bgs	below ground surface
CCR	coal combustion residuals
CCR Rule	USEPA's final rule for *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities*, 80 Fed. Reg. 21302, and subsequent regulatory revisions
CSM	conceptual site model
DAF	dilution-attenuation factor
GWPS	groundwater protection standard
Haley & Aldrich	Haley & Aldrich, Inc.
HHRA	human health risk assessment
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
IPL	Indianapolis Power and Light
IWPCD	Indiana Water Pollution Control Division
Landfill	Type III Restricted Waste Landfill
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
N&E	nature and extent
PGS	Petersburg Generating Station, Petersburg, Pike County, Indiana
RBSL	risk-based screening level
RSL	Regional Screening Level
Site	Petersburg Generating Station, Petersburg, Pike County, Indiana
SSI	statistically significant increase
SSL	statistically significant level
USEPA	United States Environmental Protection Agency

1. Introduction

AES Indiana (AESI) owns and operates the Petersburg Generating Station (PGS or Site), a coal-fired power plant located approximately 4 miles to the northeast of the town of Petersburg at 6725 North State Road 57, Petersburg, Pike County, Indiana. The Site is bounded to the north and west by the east fork of the White River and wetland areas and to the south and east by wooded areas and farmland. Coal combustion residual(s) (CCR) produced by the PGS were historically managed in Ponds A, A', C, and Former Ponds B and D, and a Type III Restricted Waste Landfill, herein referred to as the Landfill. Collectively, Ponds A, A', C, and Former Ponds B and D are referred to as the Ash Pond System. Ponds B and D are considered CCR management units (CCRMUs) per the United States Environmental Protection Agency's (USEPA's) final rule for "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities" (CCR Rule).[1] **Figure 1** shows the location of the facility, Ash Pond System, and Landfill.

The CCR Rule requires the evaluation of groundwater monitoring data from CCR units using groundwater protection standards (GWPSs), which are federal primary drinking water standards, also known as Maximum Contaminant Levels or MCLs (USEPA, 2024a)[2], or Site-specific background concentrations. The most recent analysis of groundwater results against GWPSs required by the CCR Rule is presented in *2024 CCR Annual Groundwater Monitoring and Corrective Action Reports* for the Ash Pond System and Landfill.[3] This *Groundwater Risk Evaluation* report has been prepared by Haley & Aldrich, Inc. (Haley & Aldrich) to provide a risk-based analysis of the groundwater results, identifying the pathways by which human and ecological receptors could potentially contact groundwater and evaluating if the pathways could pose an adverse human health or ecological effect. As discussed in this report, there are no direct exposure pathways to groundwater (groundwater is not used as a source of drinking water at the Site or Site vicinity). Potential exposures are limited to surface water, assuming CCR constituents in groundwater could be introduced into the White River from the PGS. While a risk-based evaluation of such exposures is not required by the CCR Rule, the risk-based analysis provides relevant context for the groundwater monitoring results.

[1] On May 8, 2024, USEPA issued final revisions to the CCR Rule expanding the scope of the CCR Rule to include CCR management units (CCRMUs), entitled *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Legacy CCR Surface Impoundments.* 80 Fed. Reg. 38950 (effective November 8, 2024), herein referred to as "Legacy CCR Rule." Former Ponds B and D are CCRMUs as defined in these 2024 final revisions.

[2] MCLs are enforceable for municipal drinking water supplies.

[3] AESI has been conducting groundwater monitoring and reported the resulting data publicly as required by the CCR Rule. AESI has posted the required information on their publicly available website: https://www.aesindiana.com/petersburg-generating-station.

2. Approach

The analysis presented in this report was conducted by evaluating the environmental setting of the Site and Site vicinity, including the Ash Pond System and Landfill where CCR management has occurred at the facility (**Figure 1**). Information on where groundwater is located at the facility, the rate(s) and direction(s) of groundwater flow, and where waterbodies may intercept groundwater flow were reviewed and assessed.

A conceptual site model (CSM) was developed based on the environmental setting, and the CSM was used to identify human populations that could be in contact with groundwater and/or surface water at the Site or Site vicinity. This information was also used to identify where ecological populations could come into contact with nearby surface water.

Using the CSM, the human health risk assessment (HHRA) process was used to estimate the potential that contact with constituents in the environment may result in harm to people. Generally, there are four components to the HHRA process (USEPA, 1989): 1) Hazard Identification/Data Evaluation; 2) Toxicity Assessment; 3) Exposure Assessment; and 4) Risk Characterization. To support this process, the USEPA and other regulatory agencies, including the Indiana Department of Environmental Management (IDEM), develop "screening levels" of constituent concentrations in groundwater (and other media) that are considered protective of specific human exposures. In developing screening levels, USEPA uses a specific target risk level (component 4 of the HHRA process) combined with an assumed exposure scenario (component 3) and toxicity information from USEPA (component 2) to derive an estimate of a concentration of a constituent in an environmental medium, for example groundwater, (component 1) that is protective of a person in that exposure scenario (for example, drinking water). Similarly, ecological screening levels for surface water are developed by USEPA and IDEM to be protective of the wide range of potential aquatic ecological resources or receptors.

Analytical results from the groundwater monitoring events completed at the Site and Site vicinity were then compared to screening levels developed by USEPA and IDEM, or Site-specific risk-based screening levels (RBSLs) derived by Haley & Aldrich (further discussion of the RBSLs is provided in Section 5.1.3). Screening levels are designed to provide a conservative estimate of the concentration to which a receptor (human or ecological) can be exposed without experiencing adverse health effects. Due to the conservative methods used to derive screening levels, exposures to concentrations at or below screening levels will not result in adverse health effects and no further evaluation is necessary. Concentrations above conservative screening levels do not necessarily indicate that a potential risk exists, but rather indicate that further evaluation may be warranted. Human health and ecological screening levels are used to determine if the concentrations of constituents in groundwater could pose a risk to human health or the environment that warrants further evaluation.

2.1 REPORT ORGANIZATION

The remaining sections of this *Groundwater Risk Evaluation* report are organized according to the typical steps in a risk assessment, as outlined below.

- Section 3 summarizes the analytical groundwater data included in the risk evaluation;

- Section 4 presents the exposure assessment, including the sources and migration pathways for CCR constituents in groundwater, identification of potentially exposed populations, and specific pathways through which populations could become exposed to CCR constituents in groundwater;
- Section 5 presents the screening levels used to evaluate the constituent concentrations for potential risks to human health or the environment;
- Section 6 presents the results of the evaluation; and
- Section 7 presents a summary of the evaluation.

The following attachments are included in the evaluation:

- Attachment A – Derivation of RBSLs for recreational use of surface water
- Attachment B – Dilution-attenuation factor (DAF) calculations
- Attachment C – Preparer resumes

3. Available Site Data

Groundwater data collected in accordance with the CCR Rule provides the basis for the risk evaluation dataset. Section 3.1 provides an overview of the monitoring well and piezometer installations, while Section 3.2 discusses the sampling events for the different phases of groundwater monitoring at the PGS, as well as the groundwater sampling conducted from the piezometers. The data from these sampling events is presented in **Table 1**.

3.1 MONITORING WELLS AND PIEZOMETERS

The CCR Rule monitoring well systems for the Ash Pond System and Landfill includes a combination of CCR monitoring wells and background monitoring wells certified as part of the CCR Rule for detection monitoring and assessment monitoring. The CCR Rule monitoring wells for the Ash Pond System consists of wells installed in June 2014 and April 2016, while the CCR Rule monitoring wells for the Landfill consists of wells installed in November 1986, September 1992, and January 2017. Both monitoring well systems support compliance with the CCR Rule. Typically, monitoring wells were installed in the uppermost aquifer below the base of the Ash Pond System and Landfill.[4]

In 2019, a nature and extent (N&E) investigation in accordance with the CCR Rule was initiated by installing supplemental monitoring wells further downgradient of the Ash Pond System and Landfill to delineate the horizontal and vertical extent of groundwater downgradient of the Ash Pond System and Landfill. From 2020 to 2023, additional N&E monitoring wells were subsequently installed farther west of the Ash Pond System toward the White River, north of the Ash Pond System, and north, west, and east of the Landfill. During this same time period, two temporary monitoring wells were installed within the Landfill (MW-22 and MW-23) and two bedrock monitoring wells were installed in the deeper aquifer system to be used as potential background wells (MW-1A and MW-12A).

The Ash Pond System monitoring well network currently consists of 81 monitoring wells, including 14 CCR Rule monitoring wells around the perimeter of the Ash Pond System and 67 N&E monitoring wells installed to the west and northwest of the Ash Pond System. These 81 wells include 31 shallow zone wells (generally screened between 15 and 30 feet below ground surface [bgs]), 23 intermediate zone wells (generally screened between 30 and 50 feet bgs), and 27 deep zone wells (screened between 55 and 70 feet bgs).

The Landfill monitoring well network currently consists of 13 monitoring wells, including one background well, seven CCR monitoring wells around the perimeter of the Landfill, and five monitoring wells installed for the N&E investigation downgradient of the Landfill. Of the 13 wells, eight are considered shallow zone wells (generally screened between 25 and 45 feet bgs) and four are deep zone wells (generally screened between 35 and 100 feet bgs). One location (MW-10) is screened at a depth that represents both the shallow and deep zones.

Five piezometers (APA-PW-1B through APA-PW-4B, and P-4) were installed within the footprint of Pond A from 2019 to 2020 to better understand groundwater conditions directly beneath the pond. In

[4] See Tables 1A and 1B of the *Nature and Extent Report* for the Site (Haley & Aldrich, 2025) for a correlation of well identifications to the specific groundwater flow zones.

addition, two piezometer clusters were installed along a discharge canal to the west of the Ash Pond System in 2020 (only one of which was sampled, PZ-1). **Figure 1** presents the well and piezometer locations where groundwater data has been collected.

3.2 MONITORING EVENTS

Detection monitoring per 40 CFR §257.94(b) of the CCR Rule for both the Ash Pond System and the Landfill monitoring systems consisted of nine sampling events completed between September 2016 and August 2017. Samples collected from the CCR monitoring wells during these rounds were analyzed for the constituents listed in **Table 3-1** below, as required by the CCR Rule:

Table 3-1: 40 CFR §257 Appendix III and Appendix IV Constituents

Appendix III		Appendix IV		
Boron	Sulfate	Antimony	Chromium	Mercury
Calcium	Total dissolved	Arsenic	Cobalt	Molybdenum
Chloride	solids	Barium	Fluoride	Selenium
Fluoride		Beryllium	Lead	Thallium
pH		Cadmium	Lithium	Radium 226/228

Statistical evaluation of detection monitoring results (described in the *Certification of Selected Statistical Method for Groundwater Monitoring Data Evaluation* [ATC Group Services, LLC, 2017]) determined that statistically significant increases (SSIs) above background concentrations of Appendix III constituent concentrations had occurred in monitoring wells downgradient of the Ash Pond System and monitoring wells downgradient of the Landfill. No alternative source was identified for the SSI constituents. Accordingly, the groundwater monitoring program transitioned to an assessment monitoring program in 2018.

Assessment monitoring events per 40 CFR §257.95 of the CCR Rule began in May 2018. Samples were analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR §257.95(b) and 40 CFR §257.95(d)(1). Concurrent with the second assessment monitoring event in September 2018, and as required by 40 CFR §257.95(h), GWPSs were established for detected Appendix IV constituents and it was determined that cadmium, cobalt, and molybdenum were present in certain monitoring wells associated with the Ash Pond System, and arsenic, lithium, and molybdenum were present in certain monitoring wells associated with the Landfill at statistically significant levels (SSLs) above their respective GWPSs.[5] However, it was determined through alternative source demonstrations that the source of the elevated concentrations of cadmium and cobalt in groundwater at AP-8 and elevated concentrations of arsenic in groundwater at MW-10 were due to historical mining activities conducted in these areas of the Site. Assessment monitoring has continued semiannually within the Ash Pond System and Landfill groundwater monitoring programs since September 2019.

Groundwater sampling to investigate the N&E of affected groundwater in accordance with 40 CFR §257.95(g) of the CCR Rule began in 2019. A summary of N&E monitoring is provided in **Table 3-2** below.

[5] For the Ash Pond System, cadmium and cobalt were present at SSLs above their respective GWPSs at AP-8, and molybdenum was present at SSLs above its GWPS at AP-2A and AP-3. For the Landfill, arsenic was present at SSLs above its GWPS at MW-10, lithium was present at SSLs above its GWPS at MW-2R, MW-3, and MW-4C, and molybdenum was present at SSLs above its GWPS at MW-3.

Table 3-2: Nature and Extent Monitoring Summary	
Sampling Event Date	**Wells Sampled**
Ash Pond System	
August and November 2019	AP-9A, AP-10A, and MW-19B/I/A were sampled in August and November 2019.
May through November 2020	AP-9A, AP-10A, and MW-19B/I/A were sampled in May and November 2020. Newly installed wells MW-20B/I/A were sampled in June and November 2020. Piezometers PZ-1B/I/A were sampled in September and November 2020.
January through November 2021	AP-9A, AP-10A, and MW-19B/I/A were sampled in May and November 2021; MW-20B/I/A were sampled in May, September, and November 2021. Newly installed N&E wells MW-21B/I/A were sampled January, April, and November 2021; MW-25B/I/A, MW-26B/I/A, MW-27B, MW-28B/I/A; MW-29B/I/A were sampled in September and November 2021.
May through December 2022	AP-9A, AP-10A, MW-19B/I/A, MW-20B/I/A, MW-21B/I/A, MW-25B/I/A, and MW-29B/I/A were sampled in May and November 2022; MW-26B/I/A and MW-28B/I/A were sampled in June and November 2022; MW-27B was sampled in June and December 2022; AP-11A was sampled in August and December 2022; AP-9B/I and AP-10I were sampled in December 2022. Newly installed N&E wells MW-36B/I/A,MW-37B/I/A, and MW-40B/I/A were sampled in September and November 2022; MW-42B/I/A, MW-43B/I/A, MW-44B/I/A, and MW-45B/I/A were sampled in September and December 2022, and MW-38B/I/A, MW-39B/I/A, MW-41B/I/A, MW-46B/I/A; MW-47B/I/A were sampled in November 2022.
January through November 2023	AP-10B was sampled in January, June, and November 2023; AP-9B/A, AP-10/I/A, AP-11B/I/A, MW-19B/I/A, MW-20B/I/A, MW-21B/I/A, MW-25B/I/A, MW-29B/I/A, and MW-36B/I/A through MW-47B/I/A were sampled in May and November 2023; AP-9I, MW-26B/I/A, MW-27B; MW-28B/I/A were sampled in June and November 2023.
May and November 2024	Generally, all N&E monitoring wells were sampled in May and November 2024.
Landfill	
May and November 2019	MW-14, MW-15, and MW-16 were sampled in May and November 2019.
May through December 2020	MW-14, MW-15, and MW-16 were sampled in May and November 2020. MW-24 was sampled in November and December 2020.
May through December 2021	MW-14, MW-15, MW-16, and MW-24 were sampled in May/June and November 2021.
May through December 2022	MW-14, MW-15, MW-16, and MW-24 were sampled in May and November 2022. Newly installed well MW-15B was sampled in December 2022.
May and November 2023	MW-14, MW-15, MW-15B, MW-16, and MW-24 were sampled in May and November 2023.
May and November 2024	MW-15B was sampled in February 2024. MW-14, MW-15, MW-15B, MW-16, and MW-24 were sampled in May and November 2024.

Groundwater samples were also collected from piezometers APA-PW-1B through APA-PW-4B and P-4 in April and September 2020, landfill observation well LW-18 in June 2020, piezometer cluster PZ-1 in September and November 2020, and temporary monitoring wells MW-22 and MW-23 in November

2020, December 2020, June 2021, and November 2021. In addition, bedrock monitoring wells MW-1A and MW-12A have been sampled seven times since April 2023.

The data from all groundwater well and piezometer sampling events is presented in **Table 1**.

4. Exposure Assessment

Exposure assessment is the process of describing, measuring, or estimating the intensity, frequency, and duration of potential exposure to chemicals of potential concern in environmental media (e.g., groundwater, surface water, etc.). This section discusses the mechanisms by which human or ecological receptors might come into contact with the CCR constituents present in groundwater and concludes with the identification of potentially complete and incomplete exposure pathways.

An exposure assessment is best conducted within the context of a risk-based CSM. A CSM is used to show the relationships between a chemical source, exposure pathway, and potential receptor. The CSM identifies chemical sources, potentially impacted media, migration pathways, exposure routes, and possible exposure scenarios (USEPA, 1988). These source-pathway-receptor relationships provide the basis for the quantitative exposure assessment. Only potentially complete source-pathway-receptor relationships are included in the risk evaluation.

4.1 CHEMICAL SOURCES, POTENTIAL RELEASE MECHANISMS, AND ENVIRONMENTAL MEDIA OF INTEREST

4.1.1 Chemical Sources

For the CSM, ash contained in the Ash Pond System and Landfill has been identified as the chemical source of CCR constituents in groundwater based on an evaluation of groundwater flow patterns, chemical composition of groundwater, and Site operational features. The horizontal extent of affected groundwater covers approximately 370 acres, which encompasses portions of the Landfill, Ash Pond System, and an area that extends to the west toward the White River. The vertical extent of affected groundwater is limited by relatively impermeable shale bedrock, which typically exists at approximately 65 feet bgs.

4.1.2 Potential Release Mechanisms and Migration Pathways

CCR constituents present in the ash can be dissolved into infiltrating water that could flow into groundwater. Constituents could move with the groundwater, usually in a downgradient/downhill direction.

Groundwater near the PGS flows generally toward the White River to the west and north of the Site (**Figure 2**). This means that if there is a release of constituents to groundwater from the Ash Pond System or Landfill, it will be confined to the area of groundwater at the plant and downgradient. Any impacted groundwater beneath the Site is not expected to migrate inland. As the plant is close to the river (approximately 2,000 feet from the Ash Pond System west toward the river at the widest measurement), the area of groundwater that could be affected by facility operations is limited to the area between the Ash Pond System and the White River.

4.1.3 Environmental Media of Interest

Environmental media of interest for this evaluation include groundwater at the Site and White River surface water.

4.2 POTENTIAL RECEPTORS

Populations identified in this risk evaluation include those who could potentially be exposed to CCR constituents present in groundwater. The Site is bounded to the north and west by the east fork of the White River and wetland areas, and to the south and east by wooded areas and farmland. The nearest residents appear to the southeast of the Landfill along State Road 57.

Based on this setting and groundwater flow patterns discussed above in Section 4.1, potentially exposed receptors identified for this risk evaluation include:

- onsite workers;
- residents in the Site vicinity;
- farmers in the Site vicinity;
- recreational users of the White River; and
- aquatic ecological receptors.

4.3 POTENTIALLY COMPLETE AND INCOMPLETE EXPOSURE PATHWAYS

Potentially complete exposure pathways require chemical sources, migration pathways, an exposure point for contact for potential receptors, and exposure routes. The sections below present information used to identify exposure pathways as potentially complete for the risk evaluation and a summary of the identified potentially complete exposure pathways.

4.3.1 Water Wells

There are no onsite users of shallow groundwater at PGS. Water for plant operations is obtained from the White River and potable water is provided by the municipal water utility. A plot of water wells within one-half mile of the Ash Pond System and Landfill boundaries is presented in **Figure 3**. Well location information was obtained from:

- The Indiana Department of Natural Resources (IDNR) Significant Water Withdrawal Facilities online map (IDNR, 2025a)
- IDNR's Water Well Record Database (IDNR, 2025b); and
- Information provided by AESI for onsite wells.

Based on the IDNR Significant Water Withdrawal Facilities online map (IDNR, 2025a), four significant water withdrawal wells were identified within a one-half-mile radius of the Ash Pond System and Landfill (well numbers 234824, 234834, 234839, and 234844). All four wells are mapped within AESI property (registered to Indianapolis Power and Light [IPL], doing business as AESI) and are downgradient of the Ash Pond System and Landfill, but are no longer in service according to AESI.

The IDNR Water Well Record Database (IDNR, 2025b) lists five additional wells within a one-half-mile radius of the Ash Pond System and Landfill, two of which are mapped within AESI property (and listed as owned by IPL, doing business as AESI; well numbers 234819 and 234829). These two wells within AESI

property are downgradient of the Ash Pond System (well number 234829) or Landfill (well number 234819) but are no longer in service according to AESI. The three other wells located within a one-half-mile radius of the Landfill (well numbers 230401, 230411, and 230421); **Figure 3** are registered to homeowners but are hydraulically upgradient from the Landfill to the east or southeast and therefore are not impacted by affected groundwater. With no residential wells downgradient of the Ash Pond System and Landfill, potential residential exposure to constituents of concern in groundwater is incomplete.

The closest public water supply wells, according to the IDNR Significant Water Withdrawal Facilities web map (IDNR, 2025a), are located approximately 3 miles to the southwest of the PGS and are owned by the Petersburg Water Company. These wells are located near the White River and their cones of depression could potentially intercept the river. Under that circumstance, constituents in White River surface water could be drawn through the overburden groundwater to the water supply wells. To account for this potential exposure pathway, White River surface water was evaluated as a potential drinking water source (Section 4.3.2).

4.3.2 Surface Water

The White River is used for water supply, recreation (i.e., wading, swimming, boating, and fishing), and as a habitat for aquatic species (i.e., fish, amphibians, etc.). Based on the IDNR Significant Water Withdrawal Facilities online map (IDNR, 2025a), the only surface water intake identified within a one-half-mile radius of the Ash Pond System and Landfill is that of the PGS facility. The facility's surface water intake, located in the southwestern corner of the facility property (**Figure 3**), obtains water from the White River for plant operations (primarily cooling purposes).

No surface water intakes for significant public water supply (i.e., with the aggregate capacity to withdraw more than 100,000 gallons in one day) were identified within 20 miles downstream of the PGS. However, out of an abundance of caution, the use of river surface water as a potential source of drinking water for residents in the Site vicinity was evaluated. The evaluation is protective for the downriver public water supply drawn from the river surface water and the downriver public water supply wells located adjacent to the White River (Section 4.3.1).

In total, exposure pathways to river surface water are evaluated as potentially complete for residents in the Site vicinity through use of the river water as drinking water, recreational users through direct contact with the water and consumption of fish, and aquatic life in the river.

4.3.3 Wetland Areas

AESI has delineated wetland areas on AESI's property which are shown on **Figure 3**. As shown, the wetlands are primarily located along the eastern boundary of the White River, to the west and north of the Ash Pond System. Based on information from AESI and available aerial photographs, there is typically no standing water in the wetlands along the White River; they only become inundated with water under flooding conditions. Groundwater elevation data from monitoring well clusters AP-6 and AP-7 north of Pond C also indicate that shallow groundwater is at least 10 feet bgs near the "mitigation wetland" in this area (**Figure 3**). Based on this information, migration of affected groundwater into surface water in the delineated wetland areas to the west and north of the Ash Pond System is considered incomplete and is not evaluated further in this assessment.

4.3.4 Summary of Potentially Complete Exposure Pathways

In summary, potentially complete exposure pathways through which receptors are assumed to be potentially exposed to CCR constituents consist of the following, assuming CCR constituents in groundwater at the Site could be introduced into the White River:

- Consumption of White River surface water as drinking water (by residents in the Site vicinity);
- Recreational exposure to White River surface water (dermal contact and incidental ingestion by swimmers or waders, dermal contact by boaters);
- Consumption of fish from the White River (by recreational anglers); and
- Aquatic receptor exposure to White River surface water.

A depiction of the CSM illustrating the identified chemical source(s), release mechanisms/migration pathways, exposure media, potential receptors, and the potentially complete exposure pathways listed above is shown on **Figure 4**.

5. Screening Levels

Screening levels have been compiled or derived for this evaluation for the types of potential exposures identified in the CSM discussion above:

- Drinking water consumption by residents in the Site vicinity;
- Recreational exposure to surface water;
- Consumption of fish (from the White River); and
- Aquatic receptor exposure to surface water.

As described earlier in Section 2, screening levels are designed to provide a conservative estimate of the concentration to which a receptor (human or ecological) can be exposed without experiencing adverse effects. Due to the conservative methods used to derive screening levels, exposures to concentrations at or below screening levels will not result in adverse effects, and no further evaluation is necessary. However, concentrations above conservative screening levels do not necessarily indicate that a potential risk exists, but rather that further evaluation may be warranted.

5.1 SCREENING LEVELS FOR THE PROTECTION OF SURFACE WATER

This section outlines the human health and ecological screening levels that are protective of White River surface water in accordance with the CSM presented in Section 4 and **Figure 4**. Human health screening levels for surface water are identified for the following exposure settings: 1) use of surface water as a drinking water source; 2) the consumption of fish from a surface water body; and 3) recreational uses of surface water.

5.1.1 Drinking Water Screening Levels

The human health screening levels for drinking water are from IDEM and USEPA sources and address the drinking water exposure pathway. The IDEM criteria for drinking water class groundwater are the same as the federal primary drinking water standards (MCLs). USEPA Regional Screening Levels (RSLs; USEPA, 2024d) for tap water (drinking water, or untreated groundwater used as potable water) have also been included for constituents which do not have promulgated IDEM/MCL criteria. The tap water RSLs are RBSLs based on USEPA default assumptions for residential exposure to tap water.

These sources, in the order in which they were used are:

- USEPA MCLs (USEPA, 2024a).
- USEPA RSLs, November 2024; Values for tap water (USEPA, 2024d).
- Indiana Administrative Code (IAC) Title 327 – Water Pollution Control Division (IWPCD); 327 IAC 2-11-6; Criteria for drinking water class groundwater (IWPCD, 2025b).

Human health screening levels for drinking water are provided in **Table 2**.

5.1.2 Published Recreational Screening Levels

Published human health screening levels for surface water are generally derived to be protective of the use of surface water as a drinking water source and the consumption of fish from a surface water body. The drinking water screening levels are also protective of, but highly conservative for, recreational uses of a surface water body (such as swimming, wading, or boating) because drinking water exposure is of a higher magnitude and frequency than incidental water consumption exposures which may occur during recreational uses.

The human health screening levels for surface water are from federal and state sources. Values that address use of surface water as drinking water are the values for drinking water provided in **Table 2**. Values that address the fish consumption pathway are USEPA values for human health for "the consumption of organism only," and IDEM surface water quality criteria for protection of human health (where the surface water body is not within the Great Lakes System).

These screening level sources, in the order in which they were used, are:

- USEPA Ambient Water Quality Criteria for Human Health Consumption of Organisms (USEPA, 2024c).
- IWPCD 327 IAC 2-1-6. Minimum Surface Water Quality Standards, surface water quality criteria for protection of human health (continuous criterion concentrations outside of mixing zone) (IWPCD, 2025a).

The published human health screening levels for surface water are provided in **Table 2**.

5.1.3 Calculated Risk-Based Screening Levels for Recreational Use

Potential recreational exposures to constituents in surface water could, in general, occur through ingestion and dermal contact. However, the specific nature of the potential exposures is dependent on the type of water body. Specifically:

- Incidental ingestion and dermal contact with shallow surface water (e.g., less than 2 feet in depth) can only occur via wading because the water is not deep enough to permit swimming. Exposures during wading could be potentially complete in the White River.
- Incidental ingestion and dermal contact with deeper surface water (e.g., more than 3 feet in depth) could occur via swimming. Exposures during swimming could be potentially complete in the White River.
- Dermal contact with surface water could occur during boating or fishing activities in the White River. Since these types of activities are not associated with intense exposures to water (such as is the case with swimming), incidental ingestion of surface water would be insignificant.

Site-specific RBSLs derived for recreational exposures to surface water for a recreational swimmer, wader, and boater are presented in **Table 3**. The RBSLs were calculated using USEPA-derived exposure factors and equations, as well as Site-specific inputs where appropriate, using the USEPA RSL calculator (USEPA, 2025). The RSL calculator output, including the exposure parameters used, is provided in **Attachment A**.

5.1.4 Ecological Screening Levels

Table 4 presents the published ecological screening levels for surface water. Some of the screening levels are expressed as a function of the hardness of water, specifically the criteria for cadmium, chromium, and lead. Values presented in **Table 4** for these constituents are based on a Site-specific hardness value of 160 milligrams per liter (mg/L), derived from hardness data collected by IDEM as part of the 2020 White River Mainstem Project (IDEM, 2021).

Water quality criteria are concentrations calculated from controlled laboratory tests on freshwater or marine organisms that are protective of the most sensitive organism (often zooplankton, such as daphnids) for the most sensitive life stage (typically reproduction).

The screening level sources, in the order in which they were used, are:

- USEPA National Recommended Water Quality Criteria, Freshwater Chronic and Acute (USEPA, 2024b).
- IWPCD 327 IAC 2-1-6. Minimum Surface Water Quality Standards; acute aquatic criteria and chronic aquatic criteria (IWPCD, 2025a).
- USEPA Region 4 Ecological Risk Assessment Supplemental Guidance, Surface Water Screening Values (USEPA, 2018).

5.1.5 Selected Screening Levels

Table 5 presents a summary of the selected surface water screening levels (from **Tables 2 through 4**), identifying the lowest selected screening levels for: 1) the use of surface water as a drinking water source; 2) the consumption of fish from a surface water body; 3) Site-specific recreational uses of surface water; and 4) potential ecological exposure scenarios.

5.2 TARGET SCREENING LEVELS FOR GROUNDWATER (PROTECTIVE OF WHITE RIVER SURFACE WATER)

Impacts to groundwater do not mean that White River surface waters are impaired. The degree to which groundwater, which is a fraction of the volume and flow rate of the river, may interact with the White River is variable and complex, and is dependent upon a variety of factors, including gradient and flow rate. However, it is possible to determine maximum concentration levels in onsite groundwater that would be sufficiently protective of the White River surface water environment, assuming gradient and flow rates are such that groundwater flows into the river. Groundwater and surface waters flow at very different rates and volumes. The White River is a large river system, and as calculated in **Attachment B**, as groundwater flows into the river, it is diluted by more than 1,700 times.

Based upon the amount of dilution and attenuation estimated to occur as groundwater flows into the White River, target screening levels for groundwater were calculated. The target screening levels for groundwater identify the concentrations at which groundwater entering the river system may pose an adverse human health or ecological effect.

Table 5 shows the application of the DAF to the lowest (i.e., most protective) selected surface water screening levels (selected as described in Section 5.1 above) to calculate target screening levels for groundwater, which are protective of White River surface water for detected Appendix III and Appendix IV constituents.

6. Results

This section presents the results of the risk evaluation, which includes a comparison of groundwater concentrations to the screening levels protective of White River surface water (to evaluate potential impacts to the river, assuming CCR constituents in groundwater could be introduced into the river from the PGS), and a summary of completed surface water sampling from the White River which provides additional perspective on potential impacts.

6.1 COMPARISON OF GROUNDWATER CONCENTRATIONS AGAINST TARGET SCREENING LEVELS (PROTECTIVE OF WHITE RIVER SURFACE WATER)

Table 6-1 below presents a comparison of the maximum groundwater constituent concentrations from all wells and piezometers, dating back to the initial CCR Rule groundwater monitoring event in September 2016, to the target screening levels for groundwater that are protective of White River surface water. The comparison demonstrates that detected groundwater concentrations (conservatively, maximum concentrations) do not pose an adverse impact to the river. In fact, there is a wide margin of safety between the screening levels and detected concentrations, which is shown in the last column of the table. To illustrate, concentrations of arsenic, lithium, and molybdenum would need to be more than 8, 13, and 46 times higher, respectively, than currently measured levels before a potential adverse impact to the river might occur.

Table 6-1: Comparison of Groundwater Concentrations against Target Screening Levels (Protective of White River Surface Water)

Constituents	Target Groundwater Screening Level - White River (a) (mg/L)	Maximum Groundwater Concentration (mg/L)		Ratio Between Target Groundwater Screening Level and the Maximum Groundwater Concentration
Detection Monitoring - USEPA Appendix III Constituents (b)				
Boron	16,000	46	MW-10	>140
Fluoride	11,000	15.9	MW-12	>280
Assessment Monitoring - USEPA Appendix IV Constituents				
Antimony	24	0.0064	MW-30D2	>1,500
Arsenic	39	2.08	AP-2A	>8
Barium	870	2.24	MW-32D2	>160
Beryllium	16	0.0144	MW-35SS	>470
Cadmium	1.3	0.024	AP-8	>25
Chromium	390	0.614	MW-32D2	>270
Cobalt	24	0.901	AP-8	>11
Lead	16	0.174	MW-32D2	>40
Lithium	160	4.88	MW-23	>13
Mercury	0.59	0.00067	MW-1	>380
Molybdenum	390	3.64	P-4	>46
Selenium	12	0.124	MW-35SS	>42

Constituents	Target Groundwater Screening Level - White River (a) (mg/L)	Maximum Groundwater Concentration (mg/L)		Ratio Between Target Groundwater Screening Level and the Maximum Groundwater Concentration
Thallium	1.9	0.0046	MW-32D2	>170
Radiological Constituent (picocuries/liter)				
Radium	20,000	6	AP-2A	>1,400

Notes:
*(a) Target groundwater screening levels calculated as presented in **Table 5.***
(b) Detection Monitoring - USEPA Appendix III Constituents without screening levels are not included.

This means that the present concentrations of constituents in groundwater do not pose an unacceptable risk to human health or the environment and even much higher concentrations in groundwater are unlikely to be harmful. The results of this comparison demonstrate that detected concentrations of CCR constituents in groundwater do not pose an adverse impact to the White River and do not pose a risk to human health or ecological receptors.

6.2 SURFACE WATER SAMPLES

In August 2024, surface water samples were collected from the White River by Atlas Technical Consultants LLC (Atlas) in accordance with the IDEM-approved *Groundwater Nature and Extent Investigation Surface Water Sampling and Analysis Plan* (Atlas, 2024a). In accordance with this plan, surface water samples were collected from three locations, two hydraulically upgradient of the Ash Pond System to represent upriver background conditions and one hydraulically downgradient from/west of the Ash Pond System. At each location, samples were collected from two stations, one along the riverbank and one farther out at the river center line, and analyzed for total boron and total molybdenum. As presented in the *August 2024 Surface Water Sampling Report* (Atlas, 2024b), the results from the completed surface water sampling indicate boron was detected at each sampling location at concentrations below the GWPS of 4,000 micrograms per liter (µg/L) and the Indiana Minimum Surface Water Quality Standard of 7,700 µg/L (IWPCD, 2025a), and molybdenum was not detected in any sample. These results further confirm that groundwater at the Site has not adversely affected the White River.

7. Summary

This comprehensive evaluation demonstrates that there are no adverse impacts on human health or the environment from groundwater affected by the Ash Pond System and Landfill at the PGS.

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20. USEPA, 2025. RSL Calculator. Available at: https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search.

TABLES

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
AP-1R	5/15/2019	-	11700 -	458000 -	76800 -	100 U	7 J	939000 -	1880000 -	1 U	1.4 -	60.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	18.9 -	1 U	1 U	0.513 -	1.01 -	1.52 -
	11/5/2019	-	9960 -	422000 -	76100 -	100 U	7.1 J	922000 -	1850000 -	1 U	1.4 -	53.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	14.1 -	1 U	1 U	-0.0573 U	2.28 -	2.28 -
	5/12/2020	-	9730 -	436000 -	87600 -	120 -	7.2 J	950000 -	1840000 -	1 U	1.6 -	61.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	16.9 -	1 U	1 U	0 U	0.0955 U	0.0955 U
	11/9/2020	-	8590 -	361000 -	102000 -	100 U	7 J	967000 -	1840000 -	1 U	1.9 -	57.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	15.1 -	1 U	1 U	0.117 U	0.515 U	0.632 U
	5/8/2021	-	8520 -	428000 -	119000 -	100 UJ	7.6 J	976000 J-	1820000 -	1 U	1.8 -	68.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	15 -	1 U	1 U	0.375 U	0.624 U	0.999 U
	11/4/2021	-	9100 -	446000 -	136000 -	100 U	7 J	1040000 -	1990000 -	1 U	1.8 -	68.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	13.5 -	1 U	1 U	0.134 U	0.509 U	0.643 U
	5/12/2022	-	- -	- -	144000 -	100 U	7.1 -	1080000 -	1830000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	-	9520 -	435000 -	145000 -	100 U	7.1 -	1050000 -	2190000 -	1 U	1.7 -	66.5 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	13.4 -	1 U	1 U	0.293 -	0.891 -	1.18 -
	11/2/2022	-	9700 -	396000 -	118000 -	120 -	7 J	848000 -	1820000 -	1 U	1.5 -	50.6 -	0.2 U	2 U	10 U	2.5 -	10 U	20 U	- -	10 U	1 U	- -	0.162 U	0.906 J+	1.07 U
	11/2/2022	-	- -	- -	121000 -	100 U	7.1 -	897000 -	1820000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	12200 -	466000 -	182000 -	100 U	6.8 J	1110000 -	2010000 -	1 U	2.2 -	72.2 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	0.2 U	12.3 -	1 U	1 U	0.173 U	0.909 J+	1.08 U
	5/4/2023	-	- -	- -	- -	- -	7.1 -	- -	2080000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/6/2023	-	10600 -	422000 -	132000 -	100 U	7.3 J-	892000 -	1870000 -	- -	1.8 -	68.4 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.291 -	0.93 -	0.93 -
	11/6/2023	-	- -	- -	- -	- -	- -	- -	1870000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/5/2024	-	10600 -	397000 -	119000 -	100 U	7 J	874000 -	1730000 -	1 U	1.5 -	61.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	13 -	1 U	1 U	-0.202 U	0.741 U	0.741 U
	11/6/2024	-	8270 -	327000 -	84500 -	120 -	7.2 -	704000 -	1590000 -	1 U	2.3 -	59.5 -	0.2 U	2 U	- -	1.8 -	- -	20 U	- -	10 U	1 U	- -	-0.229 U	0.193 U	0.193 U
AP-2A	5/15/2019	-	21600 -	608000 -	113000 -	110 -	7.3 J	1430000 -	2370000 -	1 U	3.8 -	46 -	0.2 U	2 U	10 U	1.1 -	10 U	77.9 -	2 U	2200 -	1 U	1 U	0.297 U	1.13 -	1.43 -
	11/5/2019	-	16600 -	570000 -	97000 -	160 -	7.2 J	1430000 -	2470000 -	1 U	5.6 -	48.3 -	0.2 U	2 U	- -	1.1 -	10 U	82.2 -	- -	2600 -	1 U	1 U	0.78 -	5.22 -	6 -
	5/11/2020	-	16900 -	592000 -	108000 -	200 -	7.3 J	1490000 -	2340000 -	2 -	6.5 -	49.1 -	0.2 U	2 U	10 U	1 U	10 U	86 -	2 U	2650 -	1 U	1 U	0.265 U	0.848 -	1.11 U
	11/9/2020	-	17200 -	528000 -	84900 -	180 -	7.2 J	1470000 -	2380000 -	1 U	4.6 -	43.6 -	0.2 U	2 U	- -	1 U	10 U	84.9 -	- -	2430 -	1 U	1 U	0.268 U	0.731 U	0.999 U
	5/8/2021	-	18200 -	594000 -	106000 -	150 J-	7.3 J	1700000 J-	2370000 -	1 U	2.7 -	45.3 -	0.2 U	2 U	10 U	1 U	10 U	64.6 -	2 U	1920 -	1 U	1 U	0.169 U	1.06 -	1.23 U
	11/4/2021	-	17200 -	600000 -	93800 -	160 -	7.3 J	1460000 -	2300000 -	1 U	3.6 -	46.5 -	0.2 U	2 U	10 U	1 U	10 U	99.2 -	- -	1790 -	1 U	1 U	0.566 U	0.866 -	1.43 U
	5/12/2022	-	- -	- -	122000 -	100 U	7.3 -	1530000 -	2640000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	-	18600 -	638000 -	130000 -	100 U	7.3 -	1550000 -	2530000 -	3.1 -	16 -	52.6 -	0.2 U	0.2 U	2 U	1 U	1.5 -	66.8 -	0.2 U	1570 -	1 U	1 U	0.473 U	1.32 -	1.79 -
	11/2/2022	-	18000 -	550000 -	136000 -	170 -	7.3 J	1480000 -	2560000 -	1 U	23 -	51.2 -	0.2 U	2 U	10 U	1 U	10 U	72.1 -	- -	1320 -	1 U	- -	0.608 -	0.883 J+	1.49 J+
	11/2/2022	-	- -	- -	132000 -	100 U	7.3 -	1490000 -	2650000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	22000 -	683000 -	193000 -	160 -	7.1 J	1690000 -	2680000 -	1 U	142 -	47.9 -	0.2 U	2 U	10 U	1 U	10 U	57.8 -	0.2 U	1120 -	1 U	1 U	0.605 -	1.76 J+	2.37 -
	5/4/2023	-	- -	- -	- -	- -	7 -	- -	2680000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2023	-	21600 -	690000 -	184000 -	130 -	7 J-	1570000 -	2720000 -	- -	1580 -	54 -	- -	2 U	- -	1 U	10 U	69.6 -	- -	779 -	2 -	1 U	0.884 J+	1.76 -	2.64 J+
	11/7/2023	-	- -	- -	- -	- -	- -	- -	2870000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	1/25/2024	-	- -	- -	- -	- -	- -	- -	- -	- -	2080 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2024	-	22700 -	718000 -	214000 -	200 -	7.3 J	1530000 -	2700000 -	4.3 -	1560 -	48.5 -	0.2 U	4.3 -	10 U	1 U	10 U	66.8 -	0.2 U	1120 -	2.3 -	1 U	0.261 U	1.6 -	1.86 -
	5/7/2024	Duplicate	23000 -	727000 -	211000 -	190 -	7.4 J	1530000 -	2600000 -	4.4 -	1860 -	48.2 -	0.2 U	5.4 -	10 U	1 U	10 U	60.9 -	0.2 U	1060 -	2.4 -	1 U	-0.29 U	1.49 -	1.49 U
	11/6/2024	-	20900 -	672000 -	218000 -	340 -	7.4 -	1620000 -	2730000 -	1 U	1000 -	46.8 -	0.2 U	2 U	- -	1 U	- -	59.2 -	- -	943 -	1 U	- -	0.601 -	1.54 -	2.14 -
AP-2BO	5/15/2019	-	19600 -	615000 -	112000 -	100 U	7.2 J	1490000 -	2410000 -	1 U	2.1 -	30.6 -	0.2 U	2 U	10 U	2.8 -	10 U	20 U	2 U	268 -	1 U	1 U	0.901 -	0.848 -	1.75 -
	11/5/2019	-	17800 -	578000 -	103000 -	100 U	7.1 J	1460000 -	2480000 -	1 U	2.4 -	26.7 -	0.2 U	2 U	- -	2.7 -	10 U	20 U	- -	193 -	1 U	1 U	0.525 -	2.01 -	2.54 -
	11/5/2019	Duplicate	17600 -	582000 -	102000 -	100 U	7.1 J	1470000 -	2570000 -	1 U	2.2 -	26.7 -	0.2 U	2 U	- -	2.6 -	10 U	20 U	- -	194 -	1 U	1 U	0.261 -	2 -	2.26 -
	5/11/2020	-	21800 -	612000 -	118000 -	100 U	7.5 J	1530000 -	2380000 -	1 U	2.2 -	25.9 -	0.2 U	2 U	10 U	2.5 -	10 U	20 U	2 U	618 -	1 U	1 U	0.131 U	0.813 U	0.944 U
	11/9/2020	-	19600 -	536000 -	102000 -	100 U	7.1 J	1510000 -	2400000 -	1 U	2.7 -	23.4 -	0.2 U	2 U	- -	3 -	10 U	20 U	- -	235 -	1 U	1 U	0.679 -	0.671 U	1.35 U
	5/8/2021	-	16800 -	570000 -	100000 -	100 UJ	7.5 J	1500000 J-	2200000 -	1 U	1.8 -	25.4 -	0.2 U	2 U	10 U	3.5 -	10 U	20 U	2 U	190 -	1 U	1 U	0.267 U	0.809 U	1.08 U
	11/7/2021	-	16600 -	580000 -	95900 -	100 U	7.4 J	1470000 -	2450000 -	1 U	2.5 -	26 -	0.2 U	2 U	10 U	3.4 -	10 U	25.8 -	- -	158 -	1 U	1 U	0.135 U	0.879 U	1.01 U
	5/12/2022	-	- -	- -	105000 -	100 U	7.2 -	1410000 -	2600000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	-	16500 -	548000 -	113000 -	100 U	7.2 -	1460000 -	2270000 -	1 U	2 -	25.8 -	0.2 U	0.2 U	2 U	4.8 -	1 U	20 U	0.2 U	155 -	1 U	1 U	0.438 U	0.913 -	1.35 -
	11/2/2022	-	17900 -	570000 -	103000 -	100 U	7.5 J	1400000 -	2260000 -	1 U	3.5 -	25.9 -	0.2 U	2 U	10 U	3.1 -	10 U	20 U	- -	483 -	1 U	- -	0.374 -	0.704 U	1.08 -
	11/2/2022	-	- -	- -	86700 -	100 U	7.3 -	1450000 -	2200000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	19000 -	582000 -	102000 -	100 U	7.2 J	1430000 -	2190000 -	1 U	2 -	24.2 -	0.2 U	2 U	10 U	3.9 -	10 U	20 U	0.2 U	465 -	1 U	1 U	0.295 U	0.977 J+	1.27 -
	5/4/2023	-	- -	- -	- -	- -	6.8 -	- -	2250000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2023	-	17300 -	570000 -	93300 -	100 U	7.4 J-	1250000 -	2190000 -	- -	3.4 -	22.8 -	- -	2 U	- -	3 -	10 U	20 U	- -	454 -	1 U	1 U	1.04 J+	0.539 -	1.58 J+
	11/7/2023	-	- -	- -	- -	- -	- -	- -	2270000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2024	-	17500 -	607000 -	92300 -	100 U	6.7 J	1230000 -	2150000 -	1 U	5.8 -	23.8 -	0.2 U	2 U	10 U	2.7 -	10 U	20 U	0.2 U	574 -	1 U	1 U	-0.785 UJ	0.467 U	0.467 UJ
	11/6/2024	-	15400 -	523000 -	84800 -	100 U	7.4 -	1300000 -	2200000 -	1 U	3 -	23.9 -	0.2 U	2 U	- -	3.5 -	- -	20 U	- -	459 -	1 U	- -	0.226 U	0.242 U	0.468 U
AP-3	5/14/2019	-	7090 -	528000 -	46500 J+	120 -	7 J	976000 J+	2060000 -	1 U	1 U	21.8 -	0.2 U	2 U	10 U	1.1 -	10 U	20 U	2 U	10 U	1 U	1 U	0.553 U	0.612 U	1.17 U
	11/4/2019	-	3870 -	378000 -	28400 -	100 U	7 J	699000 -	1550000 -	1 U	1 U	28.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.7 -	1 U	0.0977 U	2.43 -	2.53 -
	5/11/2020	-	4070 -	380000 -	40300 -	130 -	7.2 J	868000 -	1600000 -	1 U	2.2 -	33.2 -	0.2 U	2 U	10 U	2.9 -	10 U	20 U	2 U	10 U	1.7 -	1 U	0.41 U	0.326 U	0.736 U
	11/7/2020	-	5100 -	423000 -	46600 -	100 U	6.8 J	933000 -	1800000 -	1 U	1 U	28.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.4 -	1 U	0.0992 U	0.344 U	0.443 U
	5/8/2021	-	4440 -	440000 -	47400 -	100 UJ	7.2 J	1050000 J-	1740000 -	1 U	1 U	24.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	2.3 -	1 U	0.341 U	0.115 U	0.456 U
	11/7/2021	-	4000 -	376000 -	31500 -	100 U	7.3 J	728000 -	1500000 -	1 U	1 U	38.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	2.2 -	1 U	0.251 -	0.622 U	0.873 U
	5/15/2022	-	- -	- -	12300 -	130 -	7 -	183000 -	747000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	1480 -	169000 -	12300 -	130 -	7.1 -	178000 -	731000 -	1 U	1 U	18.2 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	1.1 -	2.9 -	1 U	-0.0868 U	0.296 U	0.296 U
	11/2/2022	-	1590 -	180000 -	15200 -	110 -	7 J	215000 -	2910000 -	1 U	1 U	37 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2.5 -	- -	0.248 U	0.604 U	0.852 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

| Well / Piezometer | Sample Date | Sample Type | Appendix III Constituents | | |

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents																	
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
AP-4I	11/9/2023	-	- -	- -	- -	- -	- -	- -	2700000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/9/2023	Duplicate	- -	- -	- -	- -	- -	- -	2930000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/6/2024	-	11900 -	729000 -	110000 -	180 -	6.4 J	1690000 -	2560000 -	1 U	1 U	24.5 -	0.2 U	2 U	10 U	2.1 -	10 U	20 U	0.2 U	83.3 -	1 U	1 U	0.26 U	0.637 U	0.897 U
	11/5/2024	-	8720 -	656000 -	85100 -	220 -	7.3 -	1540000 -	2580000 -	1 U	1 U	22 -	0.2 U	2 U	- -	3 -	- -	20 U	- -	74.8 -	1 U	- -	0.104 U	0.325 U	0.429 U
AP-4A	5/14/2019	-	23500 -	582000 -	118000 J+	100 U	7.1 J	1360000 J+	2720000 -	1 U	1 U	30.5 -	0.2 U	2 U	10 U	1 U	10 U	43.6 -	2 U	265 -	1 U	1 U	0.872 -	0.909 -	1.78 -
	11/4/2019	-	20300 -	586000 -	123000 -	100 U	7.1 J	1740000 -	2870000 -	1 U	1 U	30.2 -	0.2 U	2 U	- -	1 U	10 U	42.6 -	- -	264 -	1 U	1 U	0.413 U	1.4 -	1.81 -
	5/7/2020	-	19800 -	621000 -	119000 -	130 -	7.4 J	1710000 -	2670000 -	1 U	1 U	31 -	0.2 U	2 U	10 U	1 U	10 U	63.1 -	2 U	220 -	1 U	1 U	0.425 U	0.766 U	1.19 U
	11/7/2020	-	21000 -	640000 -	128000 -	110 -	6.9 J	1800000 -	2740000 -	1 U	1 U	32.2 -	0.2 U	2 U	- -	1 U	10 U	49.8 -	- -	228 -	1 U	1 U	0.054 U	1.66 -	1.71 U
	5/8/2021	-	21200 -	627000 -	133000 -	100 UJ	7.4 J	1860000 J-	2760000 -	1 U	1 U	31 -	0.2 U	2 U	10 U	1 U	10 U	36.6 -	2 U	222 -	1 U	1 U	0.484 U	0.568 U	1.05 U
	11/7/2021	-	21600 -	618000 -	125000 -	100 U	7.2 J	1790000 -	2900000 -	1 U	1 U	30.9 -	0.2 U	2 U	10 U	1 U	10 U	51.3 -	- -	214 -	1 U	1 U	0.389 U	1.32 -	1.71 -
	5/15/2022	-	- -	- -	128000 -	130 -	7 -	1790000 -	2880000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	22300 -	654000 -	127000 -	150 -	7 -	1800000 -	2890000 -	1 U	1 U	26.8 -	0.2 U	0.2 U	2 U	1 U	1 U	45.2 -	0.2 U	183 -	1 U	1 U	0.0904 U	0.365 U	0.455 U
	11/3/2022	-	23000 -	634000 -	148000 -	100 U	7.2 J	1860000 -	2190000 -	1 U	1 U	33 -	0.2 U	2 U	- -	1 U	10 U	25.4 -	- -	245 -	1 U	- -	0.299 U	1.22 -	1.52 -
	11/3/2022	-	- -	- -	145000 -	100 U	7 -	1850000 -	2810000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/3/2023	-	24600 -	680000 -	128000 -	110 -	6.9 J	1640000 -	2940000 -	1 U	1 U	28.4 J+	0.2 U	0.2 U	10 U	1 U	1 U	39.2 -	0.2 U	220 -	1 U	1 U	0.227 U	1.38 -	1.61 -
	5/3/2023	-	- -	- -	- -	- -	7.4 -	- -	2880000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/9/2023	-	24600 -	650000 -	166000 -	100 U	6.9 J-	1960000 -	2900000 -	- -	1 U	28.4 -	- -	2 U	- -	1 U	10 U	40.3 -	- -	252 -	1 U	1 U	0.218 -	0.367 -	0.585 -
	11/9/2023	-	- -	- -	- -	- -	- -	- -	2830000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/6/2024	-	22200 -	651000 -	148000 -	100 U	6.3 J	1720000 -	2650000 -	1 U	1 U	28.3 -	0.2 U	2 U	10 U	1 U	10 U	35.2 -	0.2 U	215 -	1 U	1 U	0.343 U	1.34 -	1.68 -
	11/5/2024	-	23600 -	665000 -	161000 -	150 -	7.3 -	1660000 -	2780000 -	1 U	1 U	28.5 -	0.2 U	2 U	- -	1 U	- -	42.3 -	- -	245 -	1 U	- -	0.449 U	0.864 -	1.31 -
AP-5	5/14/2019	-	7220 -	450000 -	34900 J+	190 -	7.1 J	886000 J+	1800000 -	1 U	1 U	28.8 -	0.2 U	2 U	10 U	1.7 -	10 U	21.3 -	2 U	138 -	1 U	1 U	1.44 -	1.33 -	2.77 -
	11/4/2019	-	12500 -	640000 -	75000 -	180 -	7.2 J	1630000 -	2710000 -	1 U	1 U	28.4 -	0.2 U	2 U	- -	2.3 -	10 U	20.5 -	- -	229 -	1 U	1 U	0.679 -	1.32 -	2 -
	5/7/2020	-	6340 -	410000 -	33900 -	200 -	7.7 J	855000 -	1620000 -	1 U	1 U	28.6 -	0.2 U	2 U	10 U	1.7 -	10 U	30.3 -	2 U	147 -	1.7 -	1 U	0.157 U	0.352 U	0.509 U
	11/7/2020	-	11300 -	608000 -	80600 -	190 -	7.1 J	1440000 -	2340000 -	1 U	1 U	35.3 -	0.2 U	2 U	- -	2.5 -	10 U	23.7 -	- -	131 -	1 U	1 U	0.368 U	1.05 U	1.42 U
	5/10/2021	-	3290 -	233000 -	18200 J+	100 U	7.7 J	457000 -	980000 -	1 U	1 U	15.7 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	2 U	72.1 -	3 -	1 U	0 U	0.595 U	0.595 U
	11/7/2021	-	5210 -	390000 -	34500 -	130 -	7.5 J	826000 -	1570000 -	1 U	1 U	35 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	- -	104 -	1.2 -	1 U	0.518 U	1.66 -	2.18 -
	5/15/2022	-	- -	- -	8500 -	190 -	7.3 -	216000 -	602000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	886 -	130000 -	5300 -	180 -	7.4 -	127000 -	527000 -	1 U	1 U	29.3 -	0.2 U	0.2 U	2 U	1.7 -	1 U	20 U	0.2 U	27.6 -	4.2 -	1 U	0.0898 U	0.794 U	0.884 U
	11/3/2022	-	6220 -	400000 -	42700 -	120 -	7.2 J	880000 -	1740000 -	1 U	1 U	51.3 -	0.2 U	2 U	- -	1.5 -	10 U	20 U	- -	84 -	2.6 -	- -	0 U	0.87 -	0.87 U
	11/3/2022	-	- -	- -	44100 -	120 -	7.2 -	918000 -	1740000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/3/2023	-	1960 -	180000 -	11700 -	140 -	7.2 J	251000 -	714000 -	1 U	1 U	44.3 J+	0.2 U	0.2 U	10 U	1.5 -	1 U	20 U	0.2 U	47.1 -	3.3 -	1 U	0.346 U	1.2 -	1.55 U
	5/3/2023	-	- -	- -	- -	- -	7.3 -	- -	738000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/9/2023	-	5500 -	380000 -	31600 -	100 U	7.1 J-	773000 -	1620000 -	- -	- -	42.9 -	- -	2 U	- -	1 U	10 U	20 U	- -	65.6 -	2 -	1 U	0.16 -	0.683 -	0.843 -
	11/9/2023	-	- -	- -	32400 -	- -	- -	775000 J-	1600000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2024	-	960 -	138000 -	5800 -	140 -	7.2 J	125000 J+	554000 -	1 U	1 U	20.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	39 -	2.4 -	1 U	0.0957 U	0.275 U	0.371 U
	11/5/2024	-	3580 -	279000 -	23000 -	160 -	7.5 -	499000 -	1090000 -	1 U	1 U	41.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	56.7 -	2.2 -	- -	0.226 U	0.607 U	0.833 U
AP-5A	5/14/2019	-	16900 -	617000 -	43400 J+	100 U	7 J	1360000 J+	2560000 -	1 U	1 U	25.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	196 -	1 U	1 U	0.522 U	1.15 U	1.67 U
	11/4/2019	-	15300 -	592000 -	53100 -	100 U	7 J	1640000 -	2630000 -	1 U	1.3 -	23.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	178 -	1 U	1 U	0.124 U	1.23 -	1.35 U
	5/7/2020	-	17400 -	628000 -	58200 -	110 -	7.4 J	1660000 -	2570000 -	1 U	1 U	25.7 -	0.2 U	2 U	10 U	1 U	10 U	23.6 -	2 U	199 -	1 U	1 U	0 U	0.482 U	0.482 U
	11/7/2020	-	15600 -	644000 -	52200 -	100 U	7 J	1800000 -	2440000 -	1 U	1 U	30.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	236 -	1 U	1 U	0.561 -	0.588 U	1.15 -
	5/10/2021	-	15000 -	652000 -	52800 J+	100 U	7.1 J	2030000 -	2480000 -	1 U	1.2 -	33.5 -	0.2 U	2 U	10 U	1 -	10 U	20 U	2 U	234 -	1 U	1 U	0.167 U	0.0524 U	0.219 U
	11/7/2021	-	12500 -	632000 -	46400 -	100 U	7.2 J	1660000 -	2560000 -	1 U	1 U	31.1 -	0.2 U	2 U	10 U	1.1 -	10 U	20 U	- -	244 -	1 U	1 U	0.118 U	0.882 -	1 U
	5/15/2022	-	- -	- -	46800 -	110 -	6.8 -	1140000 -	2690000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	12800 -	641000 -	48000 -	100 U	6.9 -	1760000 -	2620000 -	1 U	1 U	23.5 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	210 -	1 U	1 U	0.0436 U	1.24 -	1.28 -
	11/3/2022	-	11000 -	608000 -	51800 -	100 U	7.1 J	1830000 -	2700000 -	1 U	1.1 -	29.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	221 -	1 U	- -	0.309 U	0.289 U	0.598 U
	11/3/2022	Duplicate	10800 -	628000 -	49000 -	100 U	7.1 J	1850000 -	2660000 -	1 U	1 U	28 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	228 -	1 U	- -	0.0561 U	0.584 U	0.64 U
	11/3/2022	-	- -	- -	52400 -	100 U	6.9 -	1830000 -	2650000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/3/2022	Duplicate	- -	- -	49100 -	100 U	7 -	1870000 -	2630000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/3/2023	-	11200 -	628000 -	50400 -	100 U	6.8 J	1610000 -	2730000 -	1 U	1 U	24.1 J+	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	271 -	1 U	1 U	0.189 U	0.503 U	0.692 U
	5/3/2023	-	- -	- -	- -	- -	7.1 -	- -	2720000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/12/2023	-	9690 -	631000 -	53000 -	100 U	6.8 J-	1770000 -	2520000 -	- -	1 U	24.5 -	- -	2 U	- -	1 U	10 U	20 U	- -	310 -	1 U	1 U	0 -	0.129 -	0.129 -
	11/12/2023	-	- -	- -	- -	- -	- -	- -	2600000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2024	-	10200 -	641000 -	56700 -	100 U	6.8 J	1680000 J+	2770000 -	1 U	1 U	23.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	455 -	1 U	1 U	1.12 -	0.361 U	1.48 -
	11/5/2024	-	10200 -	621000 -	55800 -	100 U	7.3 -	1660000 -	2520000 -	1 U	1.2 -	24.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	438 -	1 U	- -	0.983 -	0.5 U	1.48 -
AP-6B	5/14/2019	-	1410 -	236000 -	10100 J+	110 -	6.9 J	382000 J+	1010000 -	1 U	1 U	23.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.117 U	0.383 U	0.5 U
	11/4/2019	-	1110 -	234000 -	10500 -	100 U	7 J	463000 -	1120000 -	1 U	1 U	30 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.2 -	1 U	-0.111 U	0.687 U	0.687 U
	5/7/2020	-	1210 -	229000 -	11400 -	100 U	7.4 J	455000 -	1080000 -	1 U	1 U	37.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1.2 -	1 U	0.101 U	0.219 U	0.32 U
	11/7/2020	-	1210 -	239000 -	12000 -	100 U	6.9 J	446000 -	990000 -	1 U	1 U	30.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.106 U	0.615 U	0.721 U
	5/10/2021	-	1260 -	292000 -	24200 J+	100 U	7.1 J	685000 -	1280000 -	1 U	1 U	36.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	-0.24 U	0.577 U	0.577 U
	11/7/2021	-	1840 -	256000 -	19000 -	100 U	7.4 J	606000 -	1130000 -	1 U	1 U	29.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1.3 -	1 U	0 U	-0.0358 U	0 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents																	
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
AP-6B	5/15/2022	-	- -	- -	9300 -	150 -	7.3 -	317000 -	847000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	970 -	195000 -	9300 -	100 U	7.2 -	315000 -	798000 -	1 U	1 U	30.5 -	0.2 U	0.2 U	2 -	1 U	1 U	20 U	0.2 U	1 U	3.1 -	1 U	0.0451 U	0.0689 U	0.114 U
	11/30/2022	-	684 -	228000 -	13000 -	100 -	7.3 J	515000 -	988000 -	1 U	1 U	31.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	4.3 -	- -	0.319 U	0.378 U	0.697 U
	11/30/2022	-	684 -	- -	12800 -	100 -	7.3 J	505000 -	988000 -	- -	- -	31.8 -	- -	2 U	10 U	- -	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	5/4/2023	-	477 -	153000 -	5900 -	110 -	7.2 J	180000 -	597000 -	1 U	1 U	28.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	3.1 -	1 U	0.0531 U	0.558 U	0.611 U
	5/4/2023	-	- -	- -	- -	- -	7 -	- -	604000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/15/2023	-	665 -	185000 -	6700 -	100 U	7.8 J-	280000 -	741000 -	- -	1 U	26.4 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	6 -	- -	0.555 -	0.752 -	1.31 -
	11/15/2023	-	- -	- -	- -	- -	- -	- -	760000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2024	-	817 -	158000 -	5200 -	130 -	7.4 J	258000 -	631000 -	1 U	1 U	23.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	5 -	1 U	0.197 U	0.382 U	0.579 U
	11/7/2024	-	469 -	152000 -	4500 -	130 -	7.4 -	241000 -	648000 -	1 U	1 U	30.3 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	7.9 -	- -	0.153 U	0.269 U	0.422 U
AP-6A	5/14/2019	-	13700 -	551000 -	34000 J+	100 U	7.1 J	1240000 J+	2410000 -	1 U	1 U	26.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.622 -	0.69 U	1.31 U
	11/4/2019	-	13500 -	470000 -	39700 -	100 U	7 J	1530000 -	2570000 -	1 U	1 U	25.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.0491 U	1.74 -	1.79 -
	5/7/2020	-	10800 -	459000 -	34900 -	100 U	7.5 J	1250000 -	2130000 -	1 U	1 U	28.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.212 U	0.138 U	0.35 U
	11/7/2020	-	12300 -	476000 -	41900 -	100 U	7 J	1330000 -	2180000 -	1 U	1 U	27.7 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0 U	1.27 -	1.27 U
	5/10/2021	-	7250 -	395000 -	29700 J+	100 U	7 J	864000 -	1810000 -	1 U	1.8 -	31.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0 U	0.536 U	0.536 U
	11/7/2021	-	7320 -	403000 -	31100 -	100 U	7.2 J	1030000 -	1910000 -	1 U	1 U	25.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.144 U	0.747 U	0.891 U
	5/15/2022	-	- -	- -	16900 -	100 U	7 -	703000 -	1470000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/15/2022	-	3570 -	308000 -	16700 -	100 U	7.2 -	700000 -	1450000 -	1 U	1 U	22.6 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	0.0994 U	0.318 U	0.417 U
	11/3/2022	-	4110 -	288000 -	20900 -	100 U	7.1 J	735000 -	1260000 -	1 U	2.3 -	29.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	- -	0.627 -	0.995 U
	11/3/2022	-	- -	- -	21900 -	100 U	7 -	765000 -	1430000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	2790 -	286000 -	20800 -	100 U	7.1 J	661000 -	1280000 -	1 U	1 U	21.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.0803 U	0.856 J+	0.856 U
	5/4/2023	-	- -	- -	21000 -	- -	7.4 -	- -	1290000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/12/2023	-	4270 -	313000 -	23900 -	100 U	6.9 J-	707000 -	1420000 -	- -	1 U	23.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.435 -	0.369 -	0.804 -
	11/12/2023	-	- -	- -	- -	- -	- -	- -	1470000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2024	-	2540 -	301000 -	20700 -	100 U	6.9 J	605000 J+	1260000 -	1 U	1 U	21.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.577 U	0.46 U	1.04 U
	11/7/2024	-	3100 -	271000 -	18300 -	100 U	6.7 -	637000 -	1250000 -	1 U	1 U	20.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	1 U	0.159 U	0.498 U	0.657 U
	11/7/2024	Duplicate	3150 -	270000 -	18000 -	100 U	6.7 -	591000 -	1250000 -	1 U	1 U	21 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.16 U	0.456 U	0.616 U
AP-7	5/15/2019	-	288 -	219000 -	4900 -	120 -	6.8 J	306000 -	989000 -	1 U	2.5 -	69.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.547 U	0.267 U	0.814 U
	11/5/2019	-	216 -	191000 -	4100 -	140 -	6.7 J	298000 -	1110000 -	1 U	1.1 -	53.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.0521 U	0.558 U	0.558 U
	5/12/2020	-	333 -	213000 -	4700 -	160 -	7.2 J	294000 -	940000 -	1 U	2.4 -	66.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.29 U	0.568 U	0.858 U
	11/5/2020	-	220 -	218000 -	4100 -	160 -	6.7 J	273000 -	918000 -	1 U	1 U	67.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.119 U	1.91 -	2.03 U
	5/8/2021	-	236 -	213000 -	4800 -	120 J-	7 J	293000 J-	930000 -	1 U	1.9 -	79.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.334 U	0.341 U	0.675 U
	11/3/2021	-	397 J	214000 -	4500 -	150 -	6.7 J	289000 -	944000 -	1 U	4.3 J	81.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.117 U	1.2 -	1.32 U
	11/3/2021	Duplicate	288 J	210000 -	4100 -	120 -	6.8 J	288000 -	958000 -	1 U	2.9 J	77.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.0609 U	0.792 U	0.853 U
	5/12/2022	-	- -	- -	2900 -	100 U	6.8 -	318000 -	1110000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	-	273 -	214000 -	4200 -	100 U	6.8 -	322000 -	1030000 -	1 U	1.5 -	82.2 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	0.616 -	0.8 -	1.42 -
	11/3/2022	-	221 -	198000 -	4800 -	120 -	6.8 J	332000 -	1000000 -	1 U	1 U	76.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.713 U	0.766 -	1.48 -
	11/3/2022	-	- -	- -	4800 -	120 -	6.7 -	348000 -	1000000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	406 -	226000 -	8200 -	170 -	6.7 J	380000 -	984000 -	1 U	2.1 -	101 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.513 -	0.682 U	1.2 U
	5/4/2023	-	- -	- -	- -	- -	6.9 -	- -	996000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/12/2023	-	202 -	217000 -	4700 -	130 -	6.7 J-	328000 -	916000 -	- -	1 U	84.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.373 -	1.42 J+	1.79 J+
	11/12/2023	-	- -	- -	- -	- -	- -	- -	866000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/9/2024	-	225 -	221000 -	4500 -	140 -	6.8 J	332000 -	1050000 -	1 U	1.7 -	78.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.434 U	0.434 U
	11/6/2024	-	171 -	189000 -	3100 -	190 -	6.9 -	348000 -	982000 -	1 U	1 U	72.4 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.118 U	-0.0788 U	0.118 U
AP-8	5/15/2019	-	1080 -	136000 -	12800 -	450 J	5.6 J	587000 -	940000 -	1 U	5.9 -	16.8 -	1.9 J	7 J	10 U	295 -	10 U	38.5 -	2 U	10 U	1 U	1 U	0.505 U	0.183 U	0.688 U
	5/15/2019	Duplicate	1100 -	132000 -	12600 -	350 J	5.5 J	571000 -	958000 -	1 U	5.8 -	16 -	1.4 J	4.7 J	10 U	244 -	10 U	28.3 -	2 U	10 U	1 U	1 U	0.687 U	0.602 U	1.29 U
	11/4/2019	-	1340 -	137000 -	13800 -	570 -	5.5 J	639000 -	998000 -	1 U	6.2 -	17.8 -	2 -	8.6 -	- -	364 -	10 U	47.3 -	- -	10 U	1 U	1 U	0.242 U	1.49 -	1.73 U
	5/11/2020	-	1290 -	136000 -	13600 -	350 -	6 J	579000 -	921000 -	1 U	6.4 -	16.8 -	1.5 -	6.2 -	10 U	258 -	10 U	33.5 -	2 U	10 U	1 U	1 U	0.0697 U	0.0734 U	0.143 U
	11/5/2020	-	828 -	128000 -	12200 -	760 J	5.4 J	579000 -	973000 -	1 U	5.5 -	14.6 -	2.2 -	6.7 J	- -	372 -	10 U	57.3 -	- -	10 U	1 U	1 U	0.332 U	1.11 U	1.44 U
	11/5/2020	Duplicate	871 -	126000 -	11100 -	520 J	5.5 J	539000 -	956000 -	1 U	4.9 -	14.4 -	1.7 -	4.2 J	- -	311 -	10 U	50.5 -	- -	10 U	1 U	1 U	0.214 -	1.63 -	1.84 -
	5/7/2021	-	510 -	150000 -	11700 -	1600 J	5.2 J	778000 -	1200000 -	1 U	4 J	15.1 -	6.5 J	10.5 J	10 U	677 J	10 U	74.3 -	2 U	10 U	4.2 J	1 U	0.163 U	1.17 -	1.33 U
	5/7/2021	Duplicate	660 -	147000 -	9300 -	410 J	5.7 J	778000 -	1110000 -	1 U	7.7 J	19.5 -	1.8 J	3 J	10 U	297 J	10 U	38.2 -	2 U	10 U	2.4 J	1 U	-0.123 U	0.465 U	0.465 U
	12/9/2021	-	788 -	147000 -	10300 -	410 J-	5.5 J	719000 -	1100000 -	1 U	7.2 -	19.2 -	1.8 -	4.2 -	10 U	319 -	10 U	45.7 -	- -	10 U	1.9 -	1 U	0.104 U	0.889 U	0.993 U
	5/12/2022	-	- -	- -	10900 -	2100 -	4.9 -	854000 -	1560000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	Duplicate	- -	- -	12300 -	1300 -	5.3 -	860000 -	1450000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/12/2022	-	536 -	160000 -	12400 -	1000 -	4.9 -	856000 -	1450000 -	1 U	5.4 -	15.2 -	4.2 -	15.4 -	2 U	663 -	1 U	83 -	0.2 U	1 U	1 U	1 U	0.51 -	0.28 U	0.79 -
	5/12/2022	Duplicate	434 -	163000 -	12200 -	1100 -	5.3 -	862000 -	1450000 -	1 U	6.5 -	16.7 -	5.8 -	23.1 -	2 U	820 -	2.9 -	112 -	0.2 U	2 -	1 U	1 U	0.104 U	1.08 -	1.18 -
	11/3/2022	-	474 J	172000 -	12200 -	2800 J	4.8 J	1000000 -	1500000 -	1 U	4.2 -	17.4 -	6.8 -	24 -	- -	901 -	10 U	121 J	- -	10 U	1 -	- -	1.07 -	0.434 U	1.5 -
	11/3/2022	Duplicate	580 J	169000 -	11400 -	1400 J	5.3 J	872000 -	1380000 -	1 U	4.6 -	18.1 -	5.4 -	17.4 -	- -	752 -	10 U	95.6 J	- -	10 U	1 U	- -	0.344 U	0.456 U	0.8 U
	11/3/2022	-	- -	- -	12300 -	800 -	5.4 -	840000 -	1300000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents																	
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
AP-8	11/3/2022	Duplicate	- -	- -	11400 -	1200 -	5.5 -	875000 -	1350000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2023	-	674 -	188000 -	17400 -	800 -	5.6 J	789000 -	1390000 -	1 U	12.3 -	21.6 -	4.7 -	17.2 -	10 U	771 -	10 U	86.7 -	0.2 U	10 U	1.7 -	1 U	0.465 U	1.29 J+	1.76 -
	5/4/2023	-	- -	- -	- -	- -	5.6 -	- -	1480000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/12/2023	-	839 -	155000 -	19000 -	730 -	6 J-	763000 -	1240000 -	- -	6 -	20.3 -	- -	4 -	- -	410 -	10 U	43.3 -	- -	10 U	1 U	1 U	0.259 -	0.403 -	0.662 -
	11/12/2023	-	- -	- -	- -	- -	- -	- -	1250000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/9/2024	-	847 -	169000 -	24800 -	810 -	6.1 J	822000 -	1400000 -	1 U	7.8 -	21.1 -	2.1 -	6.2 -	10 U	415 -	10 U	43.6 -	0.2 U	10 U	1.3 -	1 U	0.329 U	0.851 -	1.18 -
	11/6/2024	-	898 -	153000 -	20500 -	550 -	6 -	824000 -	1340000 -	1 U	7.2 -	20.7 -	1.7 -	4.7 -	- -	368 -	- -	37.8 -	- -	10 U	3.4 -	- -	-0.76 U	1.34 -	1.34 U
AP-9B	12/29/2022	-	7410 -	358000 -	48500 -	100 U	6.8 J	880000 -	1700000 -	1 U	5.3 -	72.9 -	0.2 U	2 U	- -	7.4 -	10 U	20 U	- -	165 -	1 U	- -	0.355 U	1.43 -	1.79 -
	6/6/2023	-	7510 -	366000 -	52800 -	100 -	6.9 J	722000 -	1640000 -	1 U	5 -	59.2 -	0.2 U	2 U	10 U	7.2 -	10 U	20 U	0.2 U	162 -	1 U	1 U	0.41 U	0.763 U	1.17 U
	6/6/2023	-	- -	- -	- -	- -	6.9 -	- -	1640000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	2/15/2024	-	8900 -	426000 -	58800 -	100 U	7.1 -	864000 -	1830000 -	- -	4.2 -	47.8 -	- -	2 U	- -	6.1 -	10 U	20 U	- -	162 -	1 U	- -	-0.055 U	0.934 -	0.934 -
	2/15/2024	Duplicate	8880 -	426000 -	58600 -	100 U	7.2 -	874000 -	1880000 -	- -	4.1 -	48.1 -	- -	2 U	- -	6.1 -	10 U	20 U	- -	161 -	1 U	- -	-0.278 U	0.947 -	0.947 -
	5/7/2024	-	8040 -	386000 -	51500 -	100 U	6.9 J	801000 -	1620000 -	1 U	3.2 -	46 -	0.2 U	2 U	10 U	5.1 -	10 U	20 U	0.2 U	148 -	1 U	1 U	0.108 U	0.421 U	0.529 U
	11/6/2024	-	5150 -	342000 -	42600 -	100 U	7.1 -	624000 -	1420000 -	1 U	2.2 -	36.8 -	0.2 U	2 U	- -	4.7 -	- -	20 U	- -	127 -	1 U	- -	0.555 U	1.01 -	1.57 -
AP-9I	12/29/2022	-	20800 -	616000 -	108000 -	180 -	7 J	1530000 -	2410000 -	1 U	3 -	37.3 -	0.2 U	2 U	- -	1 U	10 U	38.4 -	- -	1120 -	1 U	- -	0.632 U	0.679 -	1.31 U
	6/6/2023	-	23400 -	626000 -	122000 -	300 -	7.2 J	1430000 -	2490000 -	1 U	5.1 -	31.1 -	0.2 U	2 U	10 U	1 U	10 U	32.3 -	0.2 U	1590 -	1 U	1 U	0.33 U	1.02 J+	1.35 U
	6/6/2023	Duplicate	22600 -	600000 -	124000 -	300 -	7.1 J	1340000 -	2440000 -	1 U	4.9 -	30.9 -	0.2 U	2 U	10 U	1 U	10 U	31.8 -	0.2 U	1580 -	1 U	1 U	0.0604 U	1.32 J+	1.38 U
	6/6/2023	-	- -	- -	- -	- -	7.2 -	- -	2490000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	6/6/2023	Duplicate	- -	- -	- -	- -	7.1 -	- -	2440000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2023	-	23300 -	643000 -	130000 -	250 -	7.2 J-	1450000 -	2690000 -	- -	7.7 -	28.5 -	- -	2 U	- -	1 U	10 U	38.8 -	- -	1580 -	1 U	- -	-0.235 -	0.794 -	0.794 -
	11/7/2023	Duplicate	23500 -	647000 -	131000 -	250 -	7.4 J-	1440000 -	2420000 -	- -	8.2 -	28.3 -	- -	2 U	- -	1 U	10 U	40.1 -	- -	1610 -	1 U	- -	0.447 -	0.924 -	1.37 -
	2/15/2024	-	24100 -	630000 -	123000 -	190 -	7.1 -	1470000 -	2570000 -	- -	6.8 -	30.1 -	- -	2 U	- -	1 U	10 U	38.8 -	- -	1740 -	1 U	- -	0.242 U	0.714 U	0.956 -
	5/7/2024	-	24800 -	661000 -	128000 -	280 -	7.1 J	1560000 -	2330000 -	1 U	7.3 -	31.5 -	0.2 U	2 U	10 U	1 U	10 U	44 -	0.2 U	1600 -	1 U	1 U	0.846 U	0.669 U	1.52 U
	11/6/2024	-	27100 -	683000 -	158000 -	290 -	7.4 -	1480000 -	2600000 -	1 U	11.5 -	31 -	0.2 U	2 U	- -	1 U	- -	49.1 -	- -	1430 -	1 U	- -	0.901 -	1.13 -	2.03 -
	11/6/2024	Duplicate	26900 -	735000 -	158000 -	290 -	7.2 -	1520000 -	2600000 -	1 U	11.1 -	30.2 -	0.2 U	2 U	- -	1 U	- -	48.8 -	- -	1430 -	1 U	- -	0.101 U	0.803 -	0.904 U
AP-9A	8/23/2019	-	29500 -	684000 -	133000 -	240 -	7.2 -	1720000 -	2740000 -	1 U	2.6 -	62.7 -	0.2 U	2 U	- -	1.6 -	10 U	22.6 -	- -	2300 -	1 U	1 U	0.452 -	0.885 -	1.34 -
	5/6/2020	-	31000 -	711000 -	149000 -	250 -	7.2 J	1770000 -	2750000 -	- -	1.1 -	- -	- -	- -	- -	1 -	10 U	43.3 -	- -	2180 -	- -	- -	- -	- -	- -
	11/6/2020	-	32200 -	716000 -	131000 -	220 -	7.1 J	1710000 -	2860000 -	1 U	1.1 -	42.6 -	0.2 U	2 U	- -	1 U	10 U	21.4 -	- -	2190 -	1 U	1 U	0.408 U	4.57 -	4.98 -
	5/11/2021	-	32200 -	748000 -	143000 -	150 -	7 J	1680000 -	2820000 -	1 U	1 U	42.1 -	0.2 U	2 U	- -	1 U	10 U	200 U	- -	2130 -	1 U	1 U	0.23 U	0.747 U	0.977 U
	11/9/2021	-	31700 -	741000 -	144000 -	100 U	7.2 J	1710000 -	2840000 -	1 U	1.5 -	41.2 -	0.2 U	2 U	10 U	1 U	10 U	41 -	- -	2010 -	1 U	1 U	0.331 U	0.668 U	0.999 U
	5/16/2022	-	32700 -	93100 -	255000 -	240 -	7 J	1830000 -	2900000 -	1 U	1 U	41.2 -	0.2 U	2 U	10 U	1 U	10 U	30.2 -	- -	2040 -	1 U	1 U	0.227 -	0.588 -	0.815 -
	11/6/2022	-	33800 -	702000 -	164000 -	100 U	7.1 J	1700000 -	2960000 -	1 U	1.4 -	42.8 -	0.2 U	2 U	- -	1 U	10 U	31.7 -	- -	1790 -	1 U	- -	1.05 -	0.858 -	1.91 -
	5/18/2023	-	35400 -	749000 -	162000 -	210 -	7.2 J	1530000 -	2890000 -	1 U	1.8 -	38.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	1530 -	1 U	1 U	0.338 U	1.02 -	1.36 -
	11/7/2023	-	34100 -	754000 -	208000 -	160 -	7.3 J-	1590000 -	3000000 -	- -	1.4 -	38.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	1430 -	1 U	- -	0.236 -	1.29 -	1.53 -
	5/8/2024	-	34100 -	702000 -	196000 -	210 -	6.3 J	1710000 -	2860000 -	1 U	1.4 -	38.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	1540 -	1 U	1 U	-0.247 U	1.02 -	1.02 U
	11/6/2024	-	36600 -	779000 -	216000 -	210 -	7.2 -	1670000 -	2980000 -	1 U	1.3 -	38.5 -	0.2 U	2 U	- -	1 U	- -	24.6 -	- -	1700 -	1 U	- -	0 U	1.06 -	1.06 U
AP-10B	1/5/2023	-	1070 -	101000 -	11500 -	160 -	7.4 J	71600 -	424000 -	1 U	1 U	85.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.16 U	0.329 U	0.489 U
	6/5/2023	-	560 -	104000 -	4300 -	150 -	7.4 J	43900 -	403000 -	1 U	1 U	65.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.8 -	1 U	-0.0652 U	0.014 U	0.014 U
	11/14/2023	-	788 -	104000 -	5600 -	120 -	7.3 J-	44200 -	410000 -	- -	1 U	77.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.7 -	- -	0.122 -	0.849 -	0.971 -
	2/13/2024	-	806 -	135000 -	13900 -	130 -	7.1 -	77700 -	489000 -	- -	1 U	94.4 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.2 -	- -	-0.0604 U	0.75 U	0.75 U
	5/10/2024	-	567 -	126000 -	13100 -	130 -	7.1 J	65500 -	481000 -	1 U	1 U	87.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.7 -	1 U	-0.0649 U	0.78 -	0.78 U
	11/12/2024	-	895 -	132000 -	6600 -	100 -	7.1 -	64800 -	523000 -	1 U	1 U	113 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1.8 -	- -	1.06 -	0.638 U	1.7 -
AP-10I	12/29/2022	-	11600 -	384000 -	121000 -	100 U	7.2 J	969000 -	1430000 -	1 U	1 U	76.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	106 -	1 U	- -	0.85 U	1.17 -	2.02 -
	6/5/2023	-	- -	297000 -	- -	140 -	7.4 J	- -	1220000 -	1 U	1.3 -	52.6 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	- -	124 -	1 U	1 U	- -	- -	- -
	6/5/2023	-	9740 -	297000 -	51500 -	140 -	7.4 J	4400000 -	1220000 -	1 U	1.3 -	52.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	124 -	1 U	1 U	0.724 -	0.333 U	1.06 U
	11/14/2023	-	12100 -	342000 -	103000 -	140 -	7 J-	769000 -	1500000 -	- -	1 U	76.7 -	- -	2 U	- -	1 U	10 U	20.5 -	- -	113 -	1 U	- -	0.626 -	1.05 -	1.68 -
	2/13/2024	-	14300 -	410000 -	146000 -	140 -	7.1 -	924000 -	1820000 -	- -	1 U	104 -	- -	2 U	- -	1 U	10 U	29.7 -	- -	161 -	1 U	- -	0.845 U	1.86 -	2.71 -
	5/9/2024	-	14400 -	428000 -	164000 -	120 -	6.9 J	998000 -	1980000 -	1 U	1 U	76.6 -	0.2 U	2 U	10 U	1 U	10 U	22.5 -	0.2 U	140 -	1 U	1 U	0.364 U	0.744 U	1.11 U
	11/12/2024	-	10500 -	314000 -	188000 -	150 -	7.5 -	802000 -	1600000 -	1 U	1 U	68.1 -	0.2 U	2 U	- -	1 U	- -	23.1 -	- -	188 -	1 U	- -	0.104 U	1.14 -	1.24 U
AP-10A	8/23/2019	-	27700 -	664000 -	147000 -	100 -	7.1 -	1570000 -	2610000 -	1 U	3.7 -	63.5 -	0.2 U	2 U	- -	3.7 -	10.1 -	20 U	- -	957 -	1 U	1 U	0.91 -	0.58 -	1.49 -
	8/23/2019	Duplicate	27800 -	658000 -	144000 -	100 -	7.1 -	1560000 -	2590000 -	1 U	3.8 -	55.8 -	0.2 U	2 U	- -	3.7 -	10 U	20 U	- -	956 -	1 U	1 U	1.07 -	0.977 -	2.05 -
	5/6/2020	-	27800 -	660000 -	156000 -	110 -	7.4 J	1590000 -	2730000 -	- -	1 -	- -	- -	- -	- -	1 U	10 U	24.7 -	- -	885 -	- -	- -	- -	- -	- -
	11/6/2020	-	28200 -	702000 -	134000 -	110 -	7 J	1570000 -	2680000 -	1 U	1 U	32.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	721 -	1 U	1 U	-0.0489 U	1.18 U	1.18 U
	5/10/2021	-	29200 -	698000 -	142000 J+	100 U	8.3 J	1570000 -	2600000 -	1 U	1 U	33.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	758 -	1 U	1 U	0.572 U	0.767 U	1.34 U
	11/9/2021	-	27400 -	684000 -	149000 -	100 U	7.1 J	1630000 -	2660000 -	1 U	1.1 -	30.5 -	0.2 U	2 U	10 U	1 U	10 U	20.9 -	- -	651 -	1 U	1 U	-0.384 U	0.432 U	0.432 U
	11/9/2021	Duplicate	26800 -	670000 -	144000 -	100 U	7.1 J	1630000 -	2610000 -	1 U	1.2 -	29.8 -	0.2 U	2 U	10 U	1 U	10 U	20.5 -	- -	652 -	1 U	1 U	0.581 U	0.901 U	1.48 U
	5/3/2022	-	27800 -	642000 -	186000 -	100 U	6.9 J	2280000 -	2700000 -	1 U	1.1 -	30.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	717 -	1 U	1 U	0.0492 -	0.656 -	0.705 -
	11/6/2022	-	28400 -	680000 -	139000 -	100 U	7 J	1590000 -	2790000 -	1 U	1 U	31.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	634 -	1 U	- -	0.351 U	0.515 U	0.866 U
	11/6/2022	Duplicate	27700 -	633000 -	142000 -	100 U	7 J	1580000 -	2770000 -	1 U	1 U	30.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	602 -	1 U	- -	0.0752 U	0.858 -	0.933 U
	5/18/2023	-	29300 -	705000 -	161000 -	100 U	7.2 J	1630000 -	2760000 -	1 U	1.1 -	29.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	621 -	1 U	1 U	0.191 U	0.707 U	0.898 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
AP-10A	11/15/2023	-	27900 -	649000 -	163000 -	100 U	7.7 J-	1650000 -	2660000 -	- -	1 U	30.2 -	- -	2 U	- -	1 U	10 U	20 U	- -	569 -	1 U	- -	0.118 -	1.26 -	1.38 -
	5/9/2024	-	28700 -	729000 -	170000 -	100 U	6.8 J	1780000 -	2980000 -	1 U	1.2 -	31 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	504 -	1 U	1 U	0.359 U	0.814 -	1.17 U
	11/12/2024	-	28700 -	683000 -	176000 -	100 U	7 -	1730000 -	2800000 -	1 U	1.2 -	31.3 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	399 -	1 U	- -	0.366 U	0.928 -	1.29 U
AP-11B	12/21/2022	-	938 -	176000 -	7100 -	120 -	7.5 J	359000 -	782000 -	1 U	1 U	29.1 -	0.2 U	0.2 U	- -	2.2 -	1 U	20 U	- -	1 U	- -	- -	-0.144 U	2.77 J+	2.77 J+
	5/2/2023	-	877 -	145000 -	5900 -	120 -	6.9 J	377000 -	721000 -	1 U	1 U	27.8 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.288 U	0.274 U	0.274 U
	11/9/2023	-	861 -	160000 -	5000 -	110 -	7.5 J-	359000 -	794000 -	- -	1 U	17.3 -	- -	2 U	- -	1.1 -	10 U	20 U	- -	10 U	1 U	- -	0.184 -	0.779 -	0.963 -
	2/14/2024	-	863 -	139000 -	4800 -	150 -	6.8 -	344000 -	657000 -	- -	1 U	16.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.0554 U	0.434 U	0.489 U
	5/20/2024	-	804 -	160000 -	4800 -	120 -	7.1 J	404000 -	805000 -	1 U	1 U	15.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.12 U	0.866 -	0.986 U
	11/4/2024	-	887 -	157000 -	4800 -	140 -	6.7 -	375000 -	755000 -	1 U	1 U	17 -	0.2 U	2 U	- -	1 -	- -	20 U	- -	10 U	1 U	- -	0.0557 U	0.708 U	0.764 -
AP-11I	12/21/2022	-	1140 -	185000 -	9300 -	100 U	7.1 J	371000 -	858000 -	1 U	1.8 -	68.7 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1.4 -	- -	- -	0.583 U	0.705 J+	1.29 U
	5/2/2023	-	1150 -	174000 -	9700 -	110 -	7.3 J	452000 -	913000 -	1 U	1.6 -	62.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.652 U	0.566 U	1.22 U
	11/9/2023	-	1130 -	181000 -	8200 -	100 U	7.6 J-	368000 -	872000 -	- -	1.7 -	62.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	-0.0795 -	0.0917 -	0.0917 -
	2/14/2024	-	1100 -	177000 -	8100 -	120 -	6.8 -	391000 -	871000 -	- -	1.6 -	61.7 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.143 U	0.405 U	0.548 U
	5/13/2024	-	1060 -	180000 -	9300 -	100 U	7 J	410000 -	884000 -	1 U	1.4 -	57.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.41 U	0.724 -	1.13 U
	11/4/2024	-	1100 -	179000 -	8000 -	100 U	7 -	408000 -	889000 -	1 U	1.7 -	61.8 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	1.2 U	0.449 U	1.65 -
AP-11A	8/24/2022	-	1000 -	178000 -	8700 -	140 -	7 -	402000 -	922000 -	1 U	1 U	27 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1 U	- -	- -	0.0547 U	-0.202 U	0.0547 U
	12/21/2022	-	817 -	208000 -	9000 -	100 U	7.3 J	450000 -	993000 -	1 U	1 U	30.1 -	0.2 U	0.2 U	- -	1 U	1 U	21.5 -	- -	1 U	- -	- -	0.479 U	1.13 J+	1.61 J+
	5/1/2023	-	955 -	198000 -	8600 -	100 U	7.2 J	400000 -	884000 -	1 U	1.2 -	33 -	0.2 U	0.2 U	10 U	1.4 -	1.3 -	20 U	0.2 U	1 U	1 U	1 U	0.0951 U	0.778 U	0.873 U
	11/9/2023	-	607 -	223000 -	6900 -	100 U	7.6 J-	535000 -	1120000 -	- -	1 U	29 -	- -	2 U	- -	1 U	10 U	21.8 -	- -	10 U	1 U	- -	1.46 J+	-0.0711 -	1.46 J+
	5/13/2024	-	509 -	242000 -	7500 -	110 -	7.1 J	647000 -	1210000 -	1 U	1 U	32.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.18 U	0.445 U	0.625 U
	11/5/2024	-	621 -	229000 -	6900 -	110 -	7.4 -	537000 -	1060000 -	1 U	1 U	29.2 -	0.2 U	2 U	- -	1 U	- -	22.5 -	- -	10 U	1 U	- -	0.574 U	0.489 U	1.06 -
APA-PW-1B	4/10/2020	-	33200 -	724000 -	167000 -	1100 -	8.6 -	1590000 -	2540000 -	- -	- -	- -	- -	- -	- -	- -	- -	43.2 -	- -	731 -	- -	- -	- -	- -	- -
	9/1/2020	-	32900 -	668000 -	163000 -	820 -	8.9 -	1450000 -	2790000 -	- -	- -	- -	- -	- -	- -	- -	- -	24.1 -	- -	748 -	- -	- -	- -	- -	- -
APA-PW-2B	4/10/2020	-	28500 -	746000 -	139000 -	560 -	8.8 -	1640000 -	2500000 -	- -	- -	- -	- -	- -	- -	- -	- -	50.2 -	- -	652 -	- -	- -	- -	- -	- -
	9/1/2020	-	27100 -	676000 -	116000 -	350 -	9.4 -	1390000 -	2660000 -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	- -	466 -	- -	- -	- -	- -	- -
APA-PW-3B	4/9/2020	-	27300 -	634000 -	123000 -	550 -	7.4 -	1420000 -	2250000 -	- -	- -	- -	- -	- -	- -	- -	- -	31.1 -	- -	1100 -	- -	- -	- -	- -	- -
	9/1/2020	-	30300 -	610000 -	95900 -	750 -	8.3 -	1140000 -	2330000 -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	- -	1580 -	- -	- -	- -	- -	- -
APA-PW-4B	4/9/2020	-	19300 -	471000 -	94900 -	160 -	6.8 -	1240000 -	1930000 -	- -	- -	- -	- -	- -	- -	- -	- -	68.6 -	- -	32.1 -	- -	- -	- -	- -	- -
	9/1/2020	-	17800 -	413000 -	72200 -	100 -	7.1 -	993000 -	1890000 -	- -	- -	- -	- -	- -	- -	- -	- -	38.5 -	- -	15.3 -	- -	- -	- -	- -	- -
LW-18	6/26/2020	-	- -	128000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-1	9/28/2016	-	500 U	120000 -	6000 -	500 U	7.01 -	130000 -	500000 -	0.05 U	3.9 -	43 -	10 U	10 U	10 U	20 U	10 U	2.8 U	0.2 U	100 U	1.6 U	50 U	- U	2.6 -	2.6 -
	10/19/2016	-	500 U	140000 -	5800 -	5000 U	5.27 -	160000 -	700000 -	50 U	10 U	51 -	10 U	10 U	10 U	20 U	10 U	100 U	0.2 U	100 U	10 U	50 U	0.21 -	1.1 -	1.3 -
	11/9/2016	-	500 U	160000 -	6800 -	500 U	6.92 -	210000 -	720000 -	50 U	5.1 -	59 -	10 U	10 U	10 U	20 U	10 U	4.1 -	0.2 U	100 U	8.6 -	50 U	0.18 -	1.1 -	1.28 -
	12/12/2016	-	500 U	160000 -	5400 -	5000 U	7.31 -	220000 -	760000 -	5 U	5 U	56 -	10 U	10 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	50 U	0.23 -	0.89 -	1.12 -
	2/5/2017	-	500 U	150000 -	5400 -	5000 U	7.31 -	180000 -	630000 -	6 U	10 U	52 -	4 U	1 U	10 U	20 U	10 U	5.2 -	0.2 U	100 U	30 U	2 U	0.26 -	1.6 -	1.86 -
	3/24/2017	-	500 U	140000 -	5000 U	5000 U	7.13 -	160000 -	640000 -	6 U	10 U	50 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.46 -	- U	- U
	5/16/2017	-	500 U	140000 -	5000 U	5000 U	7.26 -	130000 -	620000 -	6 U	10 U	48 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.82 -	- U	0.82 -
	6/20/2017	-	500 U	150000 -	5000 U	5000 U	7.71 -	100000 -	630000 -	6 U	10 U	49 -	1 U	1 U	10 U	20 U	10 U	100 U	0.67 -	100 U	5 U	5 U	0.26 -	4.2 -	4.46 -
	8/8/2017	-	500 U	130000 -	18000 -	5000 U	6.98 -	51000 -	530000 -	6 U	10 U	47 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.64 -	0.79 -	1.43 -
	5/10/2018	-	500 U	150000 -	5000 U	5000 U	6.93 -	140000 -	620000 -	5 U	5 U	47 -	5 U	5 U	10 U	20 U	10 U	6.2 U	0.2 U	100 U	5 U	1 U	- U	- U	- U
	9/12/2018	-	500 U	130000 -	7700 -	600 U	6.78 -	110000 -	690000 -	1.4 U	1.2 U	49 -	0.65 U	0.55 U	- -	3.6 U	- -	100 U	- -	100 U	0.9 U	0.6 U	- -	- -	- U
	5/17/2019	-	165 -	108000 -	2900 -	100 U	7.2 -	74200 -	442000 -	1 U	1 U	29.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.0644 U	0.474 U	0.538 U
	11/6/2019	-	120 -	124000 -	4300 -	120 -	7.2 J	190000 -	589000 -	1 U	1 U	41.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.389 U	0.243 U	0.632 J+
	5/6/2020	-	108 -	136000 -	3900 -	130 -	- -	170000 -	579000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.292 U	0.398 U	0.69 U
	11/3/2020	-	100 U	127000 -	4700 -	140 -	7.5 J	191000 -	580000 -	1 U	1 U	41.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.495 U	0.633 U	1.13 U
	5/5/2021	-	146 -	153000 -	5900 -	100 -	7.4 J	214000 -	639000 -	1 U	1 U	52.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	-0.28 U	-0.297 U	0 U
	11/1/2021	-	163 -	153000 -	5100 -	110 J-	7.1 J	237000 -	668000 -	1 U	1 U	58.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.276 U	0.535 U	0.811 U
	11/1/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2 U	- -	- -	- -	- -	- -	0.811 U
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
	5/4/2022	-	142 -	144000 -	4100 -	100 U	7.3 J	179000 -	618000 -	1 U	1 U	48 -	0.2 U	0.2 U	2.2 -	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	-0.177 U	0.201 U	0.201 U
	5/4/2022	-	- -	- -	4100 -	100 U	7.2 -	179000 -	618000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2022	-	181 -	150000 -	4100 -	100 U	7.2 -	210000 -	640000 -	- -	1 U	55.2 -	0.2 U	- -	2.2 -	1 U	1 U	20 U	- -	1 U	1 U	- -	-0.0791 U	0.448 U	0.448 U
	11/7/2022	-	178 -	129000 -	3700 -	110 -	7.4 J	205000 -	612000 -	1 U	1 U	45.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	- -	0 U	0.831 J+	0.831 U
	11/7/2022	-	- -	- -	3600 -	100 -	7.2 -	208000 -	581000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	184 -	129000 -	3600 -	110 -	7.3 J	204000 -	601000 -	- -	1 U	45.7 -	0.2 U	- -	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.206 U	0.607 U	0.813 U
	5/2/2023	-	156 -	142000 -	3900 -	120 -	7.3 J	190000 -	606000 -	1 U	1 U	50.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.227 U	0.127 U	0.354 U
	5/2/2023	-	- -	- -	- -	- -	7.8 -	- -	621000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	152 -	149000 -	4100 -	130 -	- -	201000 -	645000 -	1 U	1 U	49.7 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	0.269 U	0.0749 U	0.344 U
	11/5/2023	-	145 -	128000 -	2400 -	130 -	7.4 J-	146000 -	532000 -	- -	1 U	41.8 -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.0558 -	0.289 -	0.289 -
	11/5/2023	-	- -	- -	- -	- -	- -	- -	543000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents														
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-1	11/5/2023	-	146 -	128000 -	3500 -	100 -	- -	159000 -	547000 -	1 U	1 U	40.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.0651 -	0.461 -	0.461 -
	5/1/2024	-	109 -	122000 -	3800 -	110 -	7.8 J	130000 -	525000 -	1 U	1 U	39.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.123 U	0.78 -	0.78 U
	5/1/2024	-	109 -	123000 -	3900 -	100 -	- -	127000 -	530000 -	1 U	1 U	41.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.228 U	0.302 U	0.53 U
	11/3/2024	-	100 U	121000 -	10600 -	130 -	7.1 -	61200 -	450000 -	1 U	1 U	39.8 -	0.2 U	- -	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.265 U	0.453 U	0.718 U
	11/3/2024	-	100 U	126000 -	10400 -	130 -	- -	63400 -	448000 -	1 U	1 U	38.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.516 U	1.08 -	1.6 U
MW-1A	4/7/2023	-	100 U	136000 -	83800 -	120 -	7.3 -	123000 -	619000 -	1 U	1 U	128 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	2.4 -	- -	- -	0.333 U	0.731 -	1.06 U
	4/7/2023	Duplicate	100 U	134000 -	83500 -	120 -	7.2 -	123000 -	620000 -	1 U	1 U	128 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	2.4 -	- -	- -	0.689 U	0.661 U	1.35 U
	6/6/2023	-	143 -	112000 -	94100 -	100 U	7.5 -	112000 -	636000 -	1 U	2.3 -	120 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	1 -	1 U	1 U	0.291 U	0.671 U	0.962 U
	8/18/2023	-	170 -	88000 -	92700 -	100 U	7.1 -	120000 -	598000 -	1 U	1.5 -	84.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	1.5 U	1.15 -	2.65 -
	11/1/2023	-	136 -	80700 -	91000 -	100 U	6.9 J-	107000 -	541000 -	- -	1 -	80.3 -	- -	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.909 -	1.85 -	2.76 -
	2/16/2024	-	162 -	75600 -	93600 -	180 -	8.1 -	122000 -	529000 -	- -	1 U	80.6 -	- -	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	1.7 -	1.03 -	2.73 -
	5/2/2024	-	156 -	70800 -	94600 -	100 U	7.2 J	129000 -	513000 -	1 U	1 U	84.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	1.88 -	1.24 -	3.12 -
	11/15/2024	-	166 -	76700 -	86400 -	100 U	6.9 -	124000 -	546000 -	1 U	1 U	74.3 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	1.94 -	1.83 -	3.77 -
MW-2	9/28/2016	-	2500 -	520000 -	88000 -	500 U	7.31 -	1000000 -	2600000 -	0.05 U	4.3 -	43 -	10 U	10 U	10 U	20 U	10 U	1100 -	0.2 U	100 U	1.6 U	50 U	0.97 -	2.5 -	- -
	10/19/2016	-	2600 -	510000 -	68000 -	5000 U	5.27 -	970000 -	2800000 -	50 U	10 U	37 -	10 U	10 U	10 U	20 U	10 U	820 -	0.2 U	100 U	10 U	50 U	0.25 -	1.7 -	- -
	11/9/2016	-	2200 -	550000 -	98000 -	500 U	6.8 -	1100000 -	2900000 -	50 U	6.4 -	37 -	10 U	10 U	10 U	20 U	10 U	780 -	0.2 U	100 U	20 U	50 U	- -	- U	- -
	12/12/2016	-	2800 -	480000 -	85000 -	5000 U	7.31 -	1400000 -	2900000 -	5 U	5 U	29 -	10 U	10 U	10 U	20 U	10 U	510 -	0.2 U	100 U	5 U	50 U	0.6 -	1.2 -	- -
	3/16/2017	-	1100 -	500000 -	81000 -	5000 U	6.83 -	990000 -	2400000 -	6 U	10 U	53 -	1 U	1 U	10 U	20 U	10 U	280 -	0.2 U	100 U	5 U	5 U	0.47 -	- U	- U
	3/17/2017	-	1300 -	480000 -	83000 -	5000 U	6.84 -	940000 -	2300000 -	6 U	10 U	66 -	1 U	1 U	10 U	20 U	10 U	410 -	0.2 U	100 U	5 U	5 U	0.88 -	1.4 -	2.28 -
	3/24/2017	-	1400 -	440000 -	95000 -	5000 U	6.88 -	1000000 -	2400000 -	24 U	40 U	54 -	4 U	4 U	10 U	20 U	10 U	530 -	0.2 U	100 U	20 U	20 U	0.53 -	0.83 -	1.36 -
	4/20/2017	-	1700 -	500000 -	86000 -	5000 U	6.88 -	1100000 -	2600000 -	6 U	10 U	46 -	1 U	1 U	10 U	20 U	10 U	780 -	0.2 U	100 U	5 U	5 U	0.68 -	0.7 -	1.38 -
	4/24/2017	-	1600 -	560000 -	81000 -	5000 U	6.91 -	1100000 -	2700000 -	6 U	10 U	56 -	1 U	1 U	10 U	20 U	10 U	840 -	0.2 U	100 U	5 U	5 U	0.3 -	0.9 -	1.2 -
	5/16/2017	-	2000 -	590000 -	91000 -	5000 U	7.03 -	1200000 -	3000000 -	6 U	10 U	46 -	1 U	1 U	10 U	20 U	10 U	1100 -	0.2 U	100 U	5 U	5 U	- U	0.97 -	0.97 -
	6/20/2017	-	2100 -	570000 -	92000 -	5000 U	7.61 -	1200000 -	2900000 -	6 U	10 U	45 -	1 U	1 U	10 U	20 U	10 U	1100 -	0.2 U	100 U	5.9 -	5 U	0.52 -	2.6 -	3.12 -
	8/8/2017	-	2000 -	500000 -	83000 -	5000 U	6.81 -	620000 -	2700000 -	6 U	10 U	42 -	1 U	1 U	10 U	20 U	10 U	1000 -	0.2 U	100 U	5 U	5 U	0.89 -	- U	0.89 -
	5/9/2018	-	2200 -	450000 -	42000 -	5000 U	6.73 -	620000 -	2400000 -	5 U	31 -	73 -	5 U	5 U	10 U	20 U	10 U	960 -	0.2 U	100 U	5 U	1 U	1.1 -	1.1 -	2.2 -
	9/12/2018	-	2300 -	430000 -	46000 -	600 U	6.61 -	970000 -	2300000 -	1.4 U	11 -	44 -	0.65 U	0.55 U	- -	3.6 U	- -	800 -	- -	100 U	5 U	2.3 -	- -	- -	- U
	11/7/2018	-	- -	420000 -	73000 -	- -	- -	950000 -	2300000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/16/2019	-	2020 -	428000 -	35000 -	100 U	7 J	1260000 -	2230000 -	1 U	8.3 -	35.5 -	0.2 U	2 U	10 U	3.3 -	10 U	616 -	2 U	11.2 -	1 U	1 U	0.664 -	0.524 U	1.19 -
	11/6/2019	-	2210 -	451000 -	65100 -	100 U	6.9 J	1460000 -	2390000 -	1 U	10.5 -	39 -	0.2 U	2 U	- -	3.1 -	10 U	495 -	- -	10 U	1 U	1 U	0.334 U	0.517 -	0.851 U
	5/13/2020	-	2240 -	488000 -	43700 -	120 -	- -	1500000 -	2170000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.178 U	0.829 U	1.01 U
	11/3/2020	-	2170 -	528000 -	75200 -	120 -	7.2 J	1480000 -	2320000 -	1 U	8.9 -	45 -	0.2 U	2 U	10 U	3.1 -	10 U	522 -	2 U	12.8 -	1 U	1 U	0.511 U	-0.0918 U	0.511 U
	5/5/2021	-	1900 -	552000 -	90800 -	100 UJ	7.6 J	1760000 J-	2580000 -	1 U	6.2 -	44.6 -	0.2 U	2 U	10 U	2.9 -	10 U	890 J+	2 U	10.3 -	1 U	1 U	0.0671 U	1.52 -	1.59 U
	11/1/2021	-	2160 -	512000 -	95200 -	100 UJ	7.1 J	1630000 -	2630000 -	1 U	9.9 -	54 -	0.2 U	2 U	10 U	2.2 -	10 U	912 -	- -	11 -	1 U	1 U	0.0728 U	0.697 U	0.77 U
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
MW-2R	5/8/2022	-	1790 -	506000 -	72200 -	100 UJ	6.8 J	1610000 -	2420000 -	1 U	16.3 -	45.2 -	0.2 U	0.2 U	2 U	3.3 -	1 U	897 J+	0.2 U	10.2 -	1 U	1 U	0.455 U	0.768 -	1.22 U
	5/8/2022	-	- -	- -	58400 -	100 U	6.8 -	1610000 -	2410000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2022	-	1870 -	480000 -	63200 -	100 U	6.7 -	1650000 -	2540000 -	- -	14.7 -	47.6 -	0.2 U	- -	2 U	2.8 -	1 U	866 -	- -	10.1 -	1 U	- -	0.288 -	1.42 -	1.71 -
	6/29/2022	-	1850 -	- -	- -	- -	- -	- -	- -	- -	7.5 -	- -	- -	- -	- -	- -	- -	696 -	- -	- -	- -	- -	- -	- -	- -
	8/9/2022	-	1960 -	- -	- -	- -	- -	- -	- -	- -	7.4 -	- -	- -	- -	- -	- -	- -	664 -	- -	- -	- -	- -	- -	- -	- -
	11/1/2022	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2 U	- -	- -	- -	- -	- -	- -
	11/7/2022	-	2020 -	512000 -	73900 -	100 U	7.2 J	1460000 -	2620000 -	1 U	10 -	48.6 -	0.2 U	2 U	10 U	2 -	10 U	812 -	- -	10.7 -	1 U	- -	0.483 -	0.573 U	1.06 -
	11/7/2022	-	- -	- -	72400 -	100 U	7 -	1540000 -	2540000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	1970 -	512000 -	72000 J+	100 U	7 J	1560000 -	2590000 -	- -	8.1 -	46.8 -	0.2 U	- -	10 U	2.8 -	10 U	753 -	- -	11.3 -	1 U	- -	0.359 U	1.25 -	1.61 U
	5/9/2023	-	1830 -	508000 -	78100 -	100 U	6.9 J	1580000 -	2480000 -	1 U	78 -	80.4 -	0.2 U	2 U	10 U	3.7 -	10 U	703 -	0.2 U	10.4 -	1 U	1 U	0.774 -	0.649 -	1.42 -
	5/9/2023	-	- -	- -	- -	- -	7.2 -	- -	2400000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/9/2023	-	1920 -	504000 -	76500 -	100 U	- -	1620000 -	2450000 -	1 U	13.6 -	46.8 -	0.2 U	0.2 U	10 U	2.7 -	1 U	792 -	0.2 U	9.8 U	1 U	1 U	0.0644 U	0.549 U	0.613 U
	11/8/2023	-	1900 -	460000 -	70300 -	100 U	7.4 J-	1780000 -	2510000 -	- -	7.5 -	45.2 -	- -	- -	- -	2.7 -	10 U	638 -	- -	10.6 -	1 U	1 U	0.0509 -	1.33 -	1.38 -
	11/8/2023	-	- -	- -	- -	- -	- -	- -	2440000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/8/2023	-	1970 -	463000 -	63400 -	100 U	- -	1390000 -	2450000 -	1 U	11.8 -	51.8 -	0.2 U	2 U	10 U	2.3 -	10 U	718 -	0.2 U	10.9 -	1 U	1 U	0.334 -	0.694 -	1.03 -
	5/2/2024	-	1860 -	514000 -	76200 -	100 U	7.3 J	1650000 -	2620000 -	1 U	10.8 -	53.6 -	0.2 U	2 U	10 U	3.3 -	10 U	778 -	0.2 U	10.4 -	1 U	1 U	0.432 U	1.26 -	1.69 -
	5/2/2024	-	1730 -	505000 -	80000 -	100 U	- -	1620000 -	2310000 -	1 U	20.7 -	77.9 -	0.21 -	2 U	10 U	3.7 -	10 U	804 -	0.2 U	10.1 -	1.5 -	1 U	0.527 U	1.13 -	1.66 U
	11/7/2024	-	1670 -	483000 -	82000 -	120 -	6.6 -	1480000 -	2450000 -	1 U	4.9 -	38.1 -	0.2 U	- -	- -	3.8 -	- -	512 -	- -	10 U	1 U	- -	0.334 U	0.402 U	0.736 U
	11/7/2024	-	1720 -	467000 -	84500 -	140 -	- -	1460000 -	2440000 -	1 U	5 -	40.1 -	0.2 U	2 U	10 U	3.6 -	10 U	490 -	- -	10.9 -	1 U	1 U	0.0582 U	0.717 -	0.775 U
MW-3	9/28/2016	-	1000 -	260000 -	98000 -	500 U	7.31 -	600000 -	1600000 -	0.05 U	4 -	32 -	10 U	10 U	10 U	20 U	10 U	2000 -	0.2 U	350 -	2.6 -	50 U	- U	1.4 -	1.4 -
	10/19/2016	-	1100 -	280000 -	71000 -	5000 U	5.27 -	700000 -	1900000 -	50 U	10 U	31 -	10 U	10 U	10 U	20 U	10 U	1900 -	0.2 U	330 -	10 U	50 U	0.69 -	1.8 -	2.5 -
	11/9/2016	-	1000 -	270000 -	67000 -	500 U	7.29 -	550000 -	1800000 -	50 U	7.4 -	36 -	10 U	10 U	10 U	20 U	10 U	2200 -	0.2 U	280 -	2.3 -	50 U	0.8 -	0.97 -	1.77 -
	12/12/2016	-	920 -	310000 -	73000 -	5000 U	7.31 -	950000 -	2200000 -	5 U	5 U	29 -	10 U	10 U	10 U	20 U	10 U	2200 -	0.2 U	390 -	5 U	50 U	0.68 -	1.4 -	2.08 -
	2/5/2017	-	1000 -	360000 -	69000 -	5000 U	7.31 -	970000 -	2200000 -	6 U	10 U	37 -	4 U	1 U	10 U	20 U	10 U	2100 -	0.2 U	660 -	30 U	2 U	0.4 -	1.3 -	1.7 -
	3/24/2017	-	1100 -	320000 -	79000 -	5000 U	7.36 -	890000 -	2100000 -	24 U	40 U	32 -	4 U	4 U	10 U	20 U	10 U	2100 -	0.2 U	660 -	20 U	20 U	0.56 -	- U	- U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
	5/25/2017	-	1400 -	440000 -	66000 -	5000 U	7.52 -	920000 -	2300000 -	6 U	10 U	36 -	1 U	1 U	10 U	20 U	10 U	2000 -	0.2 U	570 -	5 U	5 U	- U	- U	- -
	6/20/2017	-	1000 -	290000 -	91000 -	5000 U	7.89 -	730000 -	1900000 -	6 U	10 U	36 -	1 U	1 U	10 U	20 U	10 U	2000 -	0.2 U	510 -	5.2 -	5 U	0.96 -	- U	0.96 -
	8/8/2017	-	830 -	250000 -	84000 -	5000 U	7.53 -	620000 -	1700000 -	6 U	10 U	40 -	1 U	1 U	10 U	20 U	10 U	1600 -	0.2 U	330 -	5 U	5 U	1.2 -	1 -	2.2 -
	5/9/2018	-	1200 -	430000 -	48000 -	5000 U	7.23 -	920000 -	2500000 -	5 U	5 U	38 -	5 U	5 U	10 U	20 U	10 U	2600 -	0.2 U	390 -	5 U	1 U	0.97 -	1.1 -	2.07 -
	9/12/2018	-	1000 -	390000 -	74000 -	600 U	7.13 -	1100000 -	2500000 -	1.4 U	5 U	45 -	0.65 U	0.55 U	- -	3.6 U	- -	2600 -	- -	520 -	5 U	0.6 U	- -	- -	- U
	11/7/2018	-	- -	380000 -	100000 -	- -	- -	950000 -	2500000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/16/2019	-	1620 -	422000 -	78000 -	190 -	7.4 J	1090000 -	2020000 -	1 U	12.9 -	28.6 -	0.2 U	2 U	10 U	2 -	47.8 -	1260 -	2 U	338 -	1 U	1 U	0.665 -	0.0798 U	0.745 U
	11/6/2019	-	1070 -	299000 -	88400 -	130 -	7.3 J	1060000 -	1850000 -	1 U	10.3 -	42.8 -	0.2 U	2 U	- -	2.6 -	10 U	1930 -	- -	508 -	1 U	1 U	1.15 -	3.25 -	4.4 -
	5/13/2020	-	1300 -	476000 -	57100 -	350 -	- -	1540000 -	2420000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.978 -	0.818 U	1.8 U
	5/13/2020	Duplicate	1310 -	494000 -	52900 -	380 -	- -	1560000 -	2350000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.564 U	1.18 -	1.74 U
	11/3/2020	-	989 -	346000 -	80300 -	170 -	7.6 J	1180000 -	1820000 -	1 U	20.5 -	39.4 -	0.2 U	2 U	10 U	2.1 -	10 U	1760 -	2 U	549 -	1 U	1 U	0.461 U	0.316 U	0.777 U
	11/3/2020	Duplicate	1040 -	371000 -	76300 -	170 -	7.6 J	1190000 -	1910000 -	1 U	20.9 -	41.1 -	0.2 U	2 U	10 U	2.2 -	10 U	1820 -	2 U	573 -	1 U	1 U	0.65 -	0.311 U	0.961 U
	5/5/2021	-	1270 -	481000 -	55700 -	140 J-	7.5 J	1590000 J-	2230000 -	1 U	17 -	37.3 -	0.2 U	2 U	10 U	2.1 -	10 U	1820 J+	2 U	532 -	1 U	1 U	1.24 -	1.27 -	2.51 -
	5/5/2021	Duplicate	1280 -	490000 -	53500 -	150 J-	7.4 J	1760000 J-	2240000 -	1 U	13 -	38.9 -	0.2 U	2 U	10 U	1.6 -	10 U	1870 J+	2 U	539 -	1 U	1 U	0.373 U	0.842 -	1.22 U
	11/1/2021	-	896 -	243000 -	86400 -	100 J-	7.5 J	858000 -	1670000 -	1 U	17.9 -	38.2 -	0.2 U	2 U	10 U	2.3 -	10 U	1880 -	- -	501 -	1 U	1 U	0.564 U	1.03 -	1.59 U
	11/1/2021	Duplicate	983 -	245000 -	87000 -	100 UJ	7.3 J	892000 -	1710000 -	1 U	17.5 -	45.3 -	0.2 U	2 U	10 U	1.6 -	10 U	2070 -	- -	440 -	1 U	1 U	1.36 -	0.76 U	2.12 -
	11/1/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2 U	- -	- -	- -	- -	- -	- -
	11/1/2021	Duplicate	- -	- -	81700 -	100 -	- -	878000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	2 U	- -	- -	- -	- -	- -	- -
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
	12/12/2021	Duplicate	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
	5/8/2022	-	1140 -	514000 -	60800 -	100 UJ	7.4 J	1530000 -	2270000 -	1 U	14.8 -	55 -	0.2 U	0.2 U	2 U	1.8 -	1 U	1960 J+	0.2 U	273 -	1 U	1 U	0.563 -	0.695 U	1.26 -
	5/8/2022	Duplicate	1140 -	537000 -	58600 -	100 UJ	7.4 J	1670000 -	2410000 -	1 U	14.2 -	52.7 -	0.2 U	0.2 U	2 U	1.8 -	1 U	2010 J+	0.2 U	258 -	1 U	1 U	0.556 U	0.548 U	1.1 U
	5/8/2022	-	- -	- -	68400 -	100 U	7.3 -	1540000 -	2210000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2022	Duplicate	- -	- -	67400 -	100 U	7.3 -	1800000 -	2390000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/8/2022	-	1140 -	494000 -	50300 -	100 U	7.4 -	1620000 -	2460000 -	- -	16.9 -	56.9 -	0.2 U	- -	2 U	2.4 -	1 U	1810 -	- -	306 -	1 U	- -	0.145 U	0.542 U	0.687 U
	5/8/2022	Duplicate	1130 -	460000 -	55400 -	100 U	7.3 -	1590000 -	2510000 -	- -	15.5 -	53.6 -	0.2 U	- -	2 U	2.1 -	1 U	1980 -	- -	300 -	1 U	- -	-0.0429 U	1.01 -	1.01 U
	6/30/2022	-	967 -	- -	- -	- -	- -	- -	- -	- -	17.6 -	- -	- -	- -	- -	- -	- -	1640 -	- -	388 -	- -	- -	- -	- -	- -
MW-3	8/9/2022	-	1250 -	- -	- -	- -	- -	- -	- -	- -	14 -	- -	- -	- -	- -	- -	- -	902 -	- -	219 -	- -	- -	- -	- -	- -
	8/9/2022	Duplicate	1210 -	- -	- -	- -	- -	- -	- -	- -	13.7 -	49 -	- -	- -	- -	- -	- -	876 -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	945 -	289000 -	91300 -	100 U	7.6 J	982000 -	1790000 -	1 U	17.3 -	46.1 -	0.2 U	2 U	10 U	2.6 -	10 U	1980 -	- -	304 -	1 U	- -	0.35 U	0.295 U	0.645 U
	11/7/2022	Duplicate	943 -	286000 -	82000 -	100 U	7.5 J	1060000 -	1840000 -	1 U	16.5 -	46.4 -	0.2 U	2 U	10 U	1.9 -	10 U	2010 -	- -	298 -	1 U	- -	0.469 -	0.595 -	1.06 -
	11/7/2022	-	- -	- -	86700 -	100 U	7.6 -	966000 -	1800000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	Duplicate	- -	- -	73300 -	100 U	7.5 -	1010000 -	1810000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	917 -	282000 -	83000 J+	100 U	7.6 J	984000 -	- -	- -	19.7 -	41.2 -	0.2 U	- -	10 U	2.3 -	10 U	1930 -	- -	308 -	1 U	- -	0.743 U	0.33 U	1.07 U
	11/7/2022	Duplicate	948 -	286000 -	77100 J+	100 U	7.6 J	991000 -	1820000 -	- -	17.3 -	45 -	0.2 U	- -	10 U	2 -	10 U	2000 -	- -	296 -	1 U	- -	0.543 U	0.581 -	1.12 -
	5/7/2023	-	985 -	454000 -	51700 -	140 -	7.4 J	1420000 J-	1980000 -	1 U	32.3 J	61.6 J+	0.2 U	2 U	10 U	2.3 -	10 U	1710 -	0.2 U	345 -	1 U	1 U	0.0974 U	0.828 -	0.925 U
	5/7/2023	Duplicate	1130 -	474000 -	48800 -	140 -	6.8 J	1560000 J-	2310000 -	1 U	57.3 J	97.7 J	0.2 U	2 U	10 U	1.8 -	10 U	1650 -	0.2 U	280 -	1 U	1 U	1.16 J+	0.245 U	1.41 U
	5/7/2023	-	- -	- -	50200 -	- -	7.3 -	1410000 -	2270000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2023	Duplicate	- -	- -	- -	- -	7.2 -	- -	2290000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2023	-	1140 -	460000 -	51100 J-	140 -	- -	1470000 -	2300000 -	1 U	59 -	99.3 -	0.2 U	0.2 U	10 U	1.8 -	1 U	1600 -	0.2 U	287 -	1 U	1 U	0.529 U	0.389 U	0.918 U
	5/7/2023	Duplicate	1180 -	468000 -	49100 J-	140 -	- -	1380000 -	2280000 -	1 U	65.3 -	103 -	0.2 U	0.2 U	10 U	1.7 -	1 U	1610 -	0.2 U	288 -	1 U	1 U	0.613 -	0.313 U	0.926 U
	11/8/2023	-	758 -	286000 -	67500 -	100 U	7.2 J-	1120000 -	1890000 -	- -	59.3 -	59.1 -	- -	- -	- -	2.2 -	10 U	1640 -	- -	242 -	1 U	1 U	1.25 -	0.855 -	2.11 -
	11/8/2023	Duplicate	752 -	283000 -	68800 -	100 U	7.3 J-	817000 -	1840000 -	- -	58.6 -	58.6 -	- -	- -	- -	2.2 -	10 U	1630 -	- -	242 -	1 U	1 U	0.743 -	0.739 -	1.48 -
	11/8/2023	-	- -	- -	- -	- -	- -	- -	1910000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/8/2023	Duplicate	- -	- -	- -	- -	- -	- -	1900000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/8/2023	-	756 -	286000 -	69400 -	100 U	- -	1010000 -	1860000 -	1 U	63.1 -	61.7 -	0.2 U	2 U	10 U	2.1 -	10 U	1590 -	0.2 U	245 -	1 U	1 U	1.96 -	0.457 -	2.42 -
	11/8/2023	Duplicate	745 -	285000 -	69500 -	100 U	- -	1040000 -	1820000 -	1 U	61.9 -	62.8 -	0.2 U	2 U	10 U	2.2 -	10 U	1580 -	0.2 U	247 -	1 U	1 U	1.16 -	0.67 -	1.83 -
	5/12/2024	-	863 -	430000 -	52400 -	100 U	8.5 J	1260000 -	2080000 -	2.1 -	234 -	70.5 -	0.2 U	2 U	10 U	1.9 -	10 U	1620 -	0.2 U	426 -	1 U	1 U	0.642 U	0.288 U	0.93 U
	5/12/2024	Duplicate	866 -	426000 -	54500 -	100 U	6.6 J	1230000 -	2080000 -	2.1 -	253 -	69.3 -	0.2 U	2 U	10 U	1.9 -	10 U	1650 -	0.2 U	428 -	1 U	1 U	0.979 -	0.89 -	1.87 -
	5/12/2024	-	842 -	390000 -	52700 -	100 U	- -	1250000 -	2120000 -	2.4 -	263 -	72.9 -	0.2 U	2 U	10 U	1.9 -	10 U	1600 -	0.2 U	414 -	1 U	1 U	0.53 U	0.967 -	1.5 U
	5/12/2024	Duplicate	882 -	404000 -	52800 -	100 U	- -	1320000 -	2180000 -	2.4 -	257 -	72.4 -	0.2 U	2 U	10 U	1.9 -	10 U	1690 -	0.2 U	429 -	1 U	1 U	0.477 U	1.01 -	1.49 U
	11/11/2024	-	765 -	260000 -	82500 -	100 -	7.3 -	868000 -	1620000 -	1 U	45.9 -	36.5 -	0.2 U	2 U	- -	3.2 -	- -	1420 -	- -	206 -	1 U	- -	0.921 -	0.975 -	1.9 -
	11/11/2024	Duplicate	762 -	262000 -	80800 -	100 -	7.3 -	882000 -	1560000 -	1 U	44.6 -	36.2 -	0.2 U	2 U	- -	3.2 -	- -	1430 -	- -	206 -	1 U	- -	0.724 U	0.624 -	1.35 U
	11/11/2024	-	773 -	266000 -	75800 -	100 U	- -	857000 -	1600000 -	1 U	45.6 -	36.7 -	0.2 U	2 U	10 U	3.1 -	10 U	1430 -	- -	205 -	1 U	1 U	0.724 U	0.537 U	1.26 U
	11/11/2024	Duplicate	761 -	262000 -	73000 -	100 U	- -	835000 -	1560000 -	1 U	42.6 -	35.9 -	0.2 U	2 U	10 U	3.3 -	10 U	1420 -	- -	218 -	1 U	1 U	0.784 U	0.64 U	1.42 U
	9/28/2016	-	4900 -	520000 -	47000 -	500 U	7.31 -	840000 -	2300000 -	0.23 -	2.4 -	27 -	10 U	10 U	10 U	20 U	10 U	310 -	0.2 U	100 U	1.6 U	50 U	0.52 -	1.6 -	2.1 -
	10/19/2016	-	5100 -	520000 -	33000 -	5000 U	5.27 -	940000 -	2400000 -	50 U	10 U	28 -	10 U	10 U	10 U	20 U	10 U	280 -	0.2 U	100 U	10 U	50 U	0.44 -	0.67 -	1.1 -
MW-4C	11/9/2016	-	4900 -	560000 -	49000 -	500 U	7.03 -	790000 -	2600000 -	50 U	4.9 -	32 -	10 U	10 U	10 U	20 U	10 U	330 -	0.2 U	100 U	20 U	50 U	0.28 -	0.58 -	0.86 -
	12/12/2016	-	4900 -	460000 -	40000 -	5000 U	7.31 -	1100000 -	2600000 -	5 U	5 U	26 -	10 U	10 U	10 U	20 U	10 U	260 -	0.2 U	100 U	5 U	50 U	0.78 -	1.5 -	2.28 -
	2/5/2017	-	5000 -	550000 -	38000 -	5000 U	7.31 -	880000 -	2600000 -	6 U	10 U	30 -	4 U	1 U	10 U	20 U	10 U	310 -	0.2 U	100 U	30 U	2 U	0.32 -	2.2 -	2.52 -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

| Well / Piezometer | Sample Date | Sample Type | Appendix III Constituents | | |

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-10	8/9/2022	-	34700 -	- -	- -	- -	- -	- -	- -	- -	82.5 -	67.3 -	- -	- -	- -	- -	- -	28.2 -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	22800 -	556000 -	121000 -	470 -	7.1 J	1170000 -	2690000 -	1 U	90.1 -	68.1 -	0.2 U	2 U	10 U	2.3 -	10 U	44.6 -	- -	14.7 -	1 -	- -	0.162 U	0.9 J+	1.06 U
	11/7/2022	-	- -	- -	110000 -	480 -	7.1 -	1160000 -	2590000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	23000 -	563000 -	121000 -	450 -	7.1 J	1180000 -	2600000 -	- -	89.5 -	69.1 -	0.2 U	- -	10 U	2.4 -	10 U	41.3 -	0.2 U	15.4 -	1 U	1 U	0.328 U	1.21 -	1.54 U
	5/2/2023	-	34300 -	620000 -	117000 -	230 -	7.2 J	1400000 -	2720000 -	1 U	67.7 -	67.4 -	0.2 U	2 U	10 U	2.1 -	10 U	34.5 -	0.2 U	15.7 -	1 U	1 U	1.01 -	0.77 -	1.78 -
	5/2/2023	-	- -	- -	- -	- -	7.6 -	- -	2720000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	34000 -	649000 -	127000 -	500 -	- -	1290000 -	2740000 -	1 U	67.3 -	68.8 -	0.2 U	0.2 U	10 U	2.2 -	1 U	34.2 -	0.2 U	15.6 -	1 U	1 U	0.44 U	1.03 -	1.47 U
	11/6/2023	-	21500 -	534000 -	130000 -	490 -	7 J-	978000 -	2510000 -	- -	84 -	58.2 -	- -	- -	- -	2.6 -	10 U	23.4 -	- -	11.1 -	1 U	1 U	0.408 -	0.655 -	1.06 -
	11/6/2023	-	- -	- -	- -	- -	- -	- -	2460000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/6/2023	-	21200 -	534000 -	135000 -	500 -	- -	1020000 -	2490000 -	1 U	88.4 -	98.9 -	1.5 -	2 U	12.9 -	5.2 -	11.2 -	31.8 -	0.2 U	11.5 -	1.8 -	1 U	0.58 -	0.659 -	1.24 -
	1/24/2024	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	10 U	- -	10 U	- -	- -	- -	- -	- -	- -	- -	- -
	5/6/2024	-	34400 -	591000 -	65900 -	100 U	6.4 J	920000 -	1550000 -	1 U	62.6 -	79.1 -	0.2 U	2 U	10 U	2.2 -	10 U	24.9 -	0.2 U	12.9 -	1 U	1 U	0.677 U	0.674 U	1.35 U
	5/6/2024	-	34600 -	589000 -	88800 -	390 -	- -	1390000 -	2530000 -	1 U	63.6 -	78.5 -	0.2 U	2 U	10 U	2.2 -	10 U	24 -	0.2 U	13.1 -	1 U	1 U	0.653 U	0.419 U	1.07 U
	11/4/2024	-	23400 -	- -	125000 -	390 -	7 -	997000 -	2510000 -	1 U	61.3 -	66.9 -	0.2 U	- -	- -	2.4 -	- -	25 -	- -	10.8 -	1 U	- -	0.233 U	0.84 -	1.07 U
	11/4/2024	-	22600 -	543000 -	125000 -	390 -	- -	1020000 -	2480000 -	1 U	61.4 -	68.1 -	0.2 U	2 U	10 U	2.4 -	10 U	22.3 -	- -	10 U	1 U	1 U	0.49 U	0.66 U	1.15 U
MW-11	3/16/2017	-	1600 -	220000 -	5000 U	5000 U	7.08 -	510000 -	1100000 -	6 U	10 U	34 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5.2 -	5 U	0.44 -	- U	- U
	3/17/2017	-	1700 -	240000 -	5000 U	5000 U	7.06 -	510000 -	1100000 -	6 U	10 U	34 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.42 -	1.7 -	2.12 -
	3/24/2017	-	1500 -	200000 -	3500 -	500 U	7.18 -	460000 -	1100000 -	24 U	40 U	30 -	4 U	4 U	10 U	20 U	10 U	100 U	0.2 U	100 U	20 U	20 U	0.34 -	- U	- U
	4/20/2017	-	1900 -	290000 -	2800 -	500 U	7.2 -	440000 -	1100000 -	6 U	10 U	34 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5.2 -	5 U	0.39 -	- U	- U
	4/24/2017	-	1900 -	220000 -	3100 -	500 U	7.23 -	430000 -	1000000 -	6 U	10 U	29 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.46 -	0.9 -	1.36 -
	5/25/2017	-	1800 -	220000 -	5000 U	5000 U	7.08 -	480000 -	1100000 -	6 U	10 U	32 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.32 -	- U	- -
	6/20/2017	-	1400 -	200000 -	5000 U	5000 U	7.62 -	420000 -	990000 -	6 U	10 U	27 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.39 -	0.8 -	1.19 -
	7/19/2017	-	1400 -	180000 -	2600 -	500 U	7.57 -	320000 -	980000 -	6 U	10 U	25 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 -	5 U	0.73 -	- U	0.73 -
	8/8/2017	-	1500 -	200000 -	5000 U	5000 U	7.12 -	320000 -	950000 -	6 U	10 U	28 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.59 -	0.67 -	1.26 -
	5/9/2018	-	1500 -	170000 -	5000 U	5000 U	6.97 -	390000 -	920000 -	5 U	5 U	27 -	5 U	5 U	10 U	20 U	10 U	100 U	0.2 U	100 U	6.2 -	1 U	0.4 -	- U	- U
	9/12/2018	-	1400 -	160000 -	2700 -	2500 U	6.88 -	420000 -	930000 -	5 U	5 U	30 -	5 U	5 U	- -	3.6 U	- -	100 U	- -	100 U	5 U	1 U	- -	- -	- U
	5/17/2019	-	1380 -	170000 -	2400 -	140 -	7.2 -	403000 -	837000 -	1 U	1 U	30.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	3.5 -	1 U	0.0659 U	0.548 -	0.581 U
	11/6/2019	-	1170 -	148000 -	2000 -	130 -	7.1 J	409000 -	762000 -	1 U	8.2 -	58.5 -	0.63 -	2 U	- -	2.1 -	10 U	20 U	- -	10 U	3.4 -	1 U	1.22 -	5.16 -	6.38 U
	5/5/2020	-	1140 -	160000 -	1400 -	180 -	- -	398000 -	730000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.113 U	0.755 U	0.868 U
	11/4/2020	-	1060 -	156000 -	1700 -	160 -	7.5 J	407000 -	776000 -	1 U	10.7 -	89.2 -	0.89 -	2 U	21.2 -	3.1 -	10 -	20 U	2 U	10 U	2.5 -	1 U	0.589 U	0.75 U	1.34 U
	5/6/2021	-	1230 -	193000 -	1800 -	120 -	7.3 J	532000 -	862000 -	1 U	1 U	42.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	3.4 -	1 U	0 U	0.274 U	0.274 U
	11/2/2021	-	1050 -	163000 -	2900 -	150 -	7.1 J	415000 -	761000 -	1 U	13.5 -	100 -	1 -	2 U	23.5 -	3.5 -	12.4 -	20 U	- -	10 U	4.7 -	1 U	0.0791 U	0.528 U	0.607 U
	11/2/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	2 U	- -	- -	- -	- -	- -	0.607 U
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
	5/4/2022	-	1080 -	153000 -	3600 -	100 U	7.3 J	413000 -	777000 -	1 U	1 U	30.5 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	0.2 U	1 -	3.8 -	1 U	0.0391 U	-0.123 U	0.0391 U
	5/4/2022	-	- -	- -	3600 -	100 U	7.2 -	397000 -	745000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2022	-	1140 -	147000 -	3600 -	100 U	7.2 -	418000 -	766000 -	- -	1.1 -	32 -	0.2 U	- -	2.1 -	1 U	1 U	20 U	- -	1.1 -	3.3 -	- -	0.244 U	0.646 U	0.89 U
	6/30/2022	-	1100 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	8/10/2022	-	1040 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	1040 -	168000 -	3300 -	150 -	7.2 J	457000 -	847000 -	1 U	9.8 -	75.5 -	0.66 -	2 U	12.9 -	2.6 -	10 U	20 U	- -	10 U	5.5 -	- -	1.46 -	2.55 J+	4.01 J+
	11/7/2022	-	- -	- -	3200 -	160 -	7.4 -	429000 -	865000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	1080 -	167000 -	3400 -	160 -	7.5 J	414000 -	820000 -	- -	20.4 -	126 -	1.5 -	- -	30.4 -	5.7 -	16.4 -	20 U	0.2 U	10 U	6.6 -	1 U	0.49 U	0.785 -	1.28 U
	3/2/2023	-	924 -	- -	- -	- -	- -	- -	- -	- -	1 U	38.2 -	- -	- -	10 U	- -	10 U	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	1050 -	160000 -	1800 -	140 -	7.4 J	356000 -	696000 -	1 U	1 U	34.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	4.6 -	1 U	0.198 U	0.357 U	0.555 U
	5/2/2023	-	- -	- -	- -	- -	7.8 -	- -	764000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	968 -	144000 -	2400 -	180 -	- -	395000 -	714000 -	1 U	1 U	33.5 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	1.1 U	4.1 -	1 U	0.454 U	0.478 U	0.932 U
	11/5/2023	-	1010 -	162000 -	1800 -	170 -	7.1 J-	440000 -	774000 -	- -	1.3 -	37.6 -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	3.5 -	1 U	0.149 -	1.13 -	1.28 -
	11/5/2023	-	- -	- -	- -	- -	- -	- -	773000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/5/2023	-	1060 -	169000 -	2300 -	140 -	- -	470000 -	804000 -	1 U	4.7 -	54 -	0.3 -	2 U	10 U	1.5 -	10 U	20 U	0.2 U	10 U	3.4 -	1 U	0.285 -	0.633 -	0.918 -
	5/2/2024	-	807 -	136000 -	2000 -	150 -	7.6 J	318000 -	592000 -	1 U	1 U	29.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	3 -	1 U	0.196 U	0.806 U	1 U
	5/2/2024	-	716 -	128000 -	2100 -	160 -	- -	325000 -	597000 -	1 U	1 U	29.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	2.7 -	1 U	-0.0994 U	0.795 -	0.795 U
	11/3/2024	-	697 -	133000 -	2700 -	160 -	7.1 -	316000 -	626000 -	1 U	1 U	28.9 -	0.2 U	- -	- -	1 U	- -	20 U	- -	10 U	1.5 -	- -	0.381 U	0.369 U	0.75 U
	11/3/2024	-	697 -	134000 -	2700 -	160 -	- -	318000 -	626000 -	1 U	1 U	29.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1.4 -	1 U	0.13 U	0.294 U	0.424 U
MW-12	3/16/2017	-	500 U	52000 -	5000 U	5000 U	7.34 -	13000 -	280000 -	6 U	10 U	41 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.41 -	0.81 -	1.22 -
	3/17/2017	-	500 U	51000 -	5000 U	5000 U	7.27 -	13000 -	310000 -	6 U	10 U	40 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.48 -	1.2 -	1.68 -
	3/23/2017	-	500 U	45000 -	4600 -	500 U	7.29 -	19000 -	260000 -	24 U	40 U	33 -	4 U	4 U	10 U	20 U	10 U	100 U	0.2 U	100 U	20 U	20 U	0.46 -	- U	- U
	4/20/2017	-	500 U	49000 -	3900 -	500 U	7.32 -	16000 -	240000 -	6 U	10 U	30 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.3 -	2.7 -	3 -
	4/24/2017	-	500 U	55000 -	4200 -	500 U	7.38 -	17000 -	240000 -	6 U	10 U	32 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.95 -	0.82 -	1.77 -
	5/25/2017	-	500 U	52000 -	4500 -	500 U	7.16 -	18000 -	250000 -	6 U	10 U	42 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	- U	- U	- -
	6/20/2017	-	500 U	54000 -	4500 -	500 U	7.22 -	16000 -	230000 -	6 U	10 U	32 -	1 U	1 U	10 U	20 U	10 U	100 U	0.21 -	100 U	5 U	5 U	0.89 -	- U	0.89 -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-12	7/19/2017	-	500 U	51000 -	4900 -	500 U	7.84 -	20000 -	280000 -	6 U	10 U	29 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.47 -	- U	- U
	8/8/2017	-	500 U	55000 -	5200 -	500 U	6.92 -	21000 -	250000 -	6 U	10 U	41 -	1 U	1 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	5 U	0.71 -	1.4 -	2.11 -
	5/8/2018	-	500 U	48000 -	7300 -	500 U	6.97 -	18000 -	300000 -	5 U	5 U	38 -	5 U	5 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	1 U	0.67 -	- U	- U
	9/12/2018	-	500 U	44000 -	7600 -	600 U	1 U	13000 -	390000 -	5 U	5 U	26 -	5 U	5 U	- -	20 U	- -	100 U	- -	100 U	5 U	2.8 -	- -	- -	- U
	5/17/2019	-	100 U	47800 -	9400 -	130 -	7.2 -	15900 -	255000 -	1 U	1 U	28.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.68 -	0.604 U	1.28 U
	11/6/2019	-	100 U	46700 -	10600 -	130 -	7.2 J	14800 -	227000 -	1 U	1 U	26.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.343 U	0.819 U	1.16 U
	5/6/2020	-	100 U	53100 -	9900 -	160 -	- -	15700 -	252000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.18 U	0.0732 U	0.253 U
	11/4/2020	-	100 U	50800 -	10700 -	150 -	7.5 J	15300 -	225000 -	1 U	1 U	31.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	10 U	1 U	1 U	0.299 -	0.536 U	0.835 U
	5/6/2021	-	100 U	52800 -	9900 -	120 -	7.3 J	15100 -	223000 -	1 U	3 -	42.2 -	0.2 U	2 U	10 U	1.3 -	10 U	20 U	2 U	10 U	1 U	1 U	-0.106 U	0.44 U	0.44 U
	11/2/2021	-	100 U	50100 -	8900 -	140 -	7.2 J	14100 -	217000 -	1 U	1.3 -	31.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.131 U	0.372 U	0.372 U
	11/2/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	2 U	- -	- -	- -	- -	- -	- -
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -
	5/4/2022	-	100 U	48700 -	8500 -	100 U	7.1 J	14200 -	250000 -	1 U	1.1 -	27.5 -	0.2 U	0.2 U	2 U	1 U	1.1 -	20 U	0.2 U	1 U	1 U	1 U	-0.125 U	0.665 U	0.665 U
	5/4/2022	-	- -	- -	8600 -	100 U	7.2 -	14700 -	235000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2022	-	100 U	47700 -	8700 -	100 U	7.2 -	14700 -	248000 -	- -	1 U	27.9 -	0.2 U	- -	2 U	1 U	1 U	20 U	- -	1 U	1 U	- -	-0.043 U	0.451 U	0.451 U
	11/7/2022	-	100 U	46800 -	8100 -	120 -	7.2 J	13800 -	237000 -	1 U	1.1 -	28 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	- -	0 U	0.29 U	0.29 U
	11/7/2022	-	- -	- -	8200 -	120 -	7.3 -	13400 -	242000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/7/2022	-	100 U	45100 -	7900 -	120 -	7.2 J	13600 -	- -	- -	1.2 -	29.4 -	0.2 U	- -	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.214 U	0.744 -	0.744 U
	5/2/2023	-	16.6 -	53200 -	7800 -	160 -	7.4 J	13000 -	216000 -	1 U	1.9 -	34.9 -	0.2 U	2 U	10 U	1.2 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.334 U	0.307 U	0.641 U
	5/2/2023	-	- -	- -	- -	- -	7.9 -	- -	246000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	15.6 -	52200 -	827000 -	15900 -	- -	1340000 -	231000 -	1 U	1.2 -	30 -	0.2 U	0.2 U	10 U	1 U	1.2 U	20 U	0.2 U	1 U	1 U	1 U	0.17 -	0.308 U	0.478 U
	11/5/2023	-	100 U	49100 -	6800 -	150 -	7.7 J-	13100 -	215000 -	- -	1 U	25 -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.0572 -	0.187 -	0.244 -
	11/5/2023	-	- -	- -	- -	- -	- -	- -	212000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/5/2023	-	100 U	46800 -	7400 -	120 -	- -	13600 -	213000 -	1 U	1 U	25 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.203 U	0.594 U	0.594 U
	5/2/2024	-	100 U	46200 -	8500 -	120 -	7.5 J	13300 -	182000 -	1 U	2.4 -	30.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.2 -	1 U	-0.603 U	0.343 U	0.343 U
	5/2/2024	-	100 U	44500 -	7900 -	120 -	- -	13500 -	187000 -	1 U	1 U	22.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.496 -	0.431 U	0.927 -
	11/4/2024	-	100 U	- -	7600 -	120 -	7.2 -	13900 -	230000 -	1 U	10.2 -	67.7 -	0.74 -	- -	- -	6.6 -	- -	20 U	- -	10 U	3.1 -	- -	0.752 U	1.14 -	1.89 -
	11/4/2024	-	104 -	45600 -	7800 -	120 -	- -	14100 -	215000 -	1 U	1 U	23 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.358 U	0.414 U	0.772 U
MW-12A	4/7/2023	-	100 U	51200 -	6700 -	100 U	7.1 -	55700 -	231000 -	1 U	1 U	67.2 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1 U	- -	- -	0.372 U	0.498 U	0.87 U
	6/6/2023	-	10.4 -	45900 -	7100 -	100 U	8 -	56900 -	239000 -	1 U	1 U	73.2 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	0.342 U	1.11 -	1.45 U
	6/6/2023	Duplicate	10.2 -	46800 -	7100 -	100 U	7.6 -	57600 -	247000 -	1 U	1 U	73 -	0.2 U	0.2 U	10 U	1 U	1 U	20 U	0.2 U	1 U	1 U	1 U	0.683 -	0.604 U	1.29 -
	8/17/2023	-	100 U	46100 -	6900 -	100 U	7.3 -	61600 -	243000 -	1 U	1 U	77.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.402 U	0.458 U	0.86 U
	8/17/2023	Duplicate	100 U	44400 -	6800 -	100 U	7.2 -	61900 -	240000 -	1 U	1.1 -	78.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	1.3 -	0.751 -	2.05 -
	11/2/2023	-	100 U	47500 -	7300 -	100 U	7.6 J-	63900 -	240000 -	- -	- -	76.4 -	- -	- -	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.419 -	1.07 -	1.49 -
	11/2/2023	Duplicate	100 U	46100 -	7300 -	100 U	7.2 J-	63400 -	233000 -	- -	- -	75.5 -	- -	- -	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	1.09 -	1.02 -	2.11 -
	2/14/2024	-	100 U	45400 -	7100 -	100 U	7.1 -	63600 -	228000 -	- -	- -	82.5 -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.659 -	0.473 U	1.13 U
	5/3/2024	-	100 U	49500 -	7200 -	100 U	7.3 J	63400 -	210000 -	1 U	1 U	76.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.648 U	0.955 -	1.6 -
	5/3/2024	Duplicate	100 U	48900 -	7200 -	100 U	7.3 J	63700 -	224000 -	1 U	1 U	76.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.266 U	0.423 U	0.689 U
	11/15/2024	-	100 U	46200 -	6900 -	100 U	7 -	61100 -	225000 -	1 U	1 U	75.6 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	-0.41 U	1.28 -	1.28 U
	11/15/2024	Duplicate	100 U	45800 -	7000 -	100 U	7.2 -	60800 -	212000 -	1 U	1 U	76.3 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.652 U	0.731 U	1.38 U
MW-13	3/16/2017	-	3100 -	640000 -	34000 -	5000 U	7.15 -	1100000 -	2700000 -	6 U	10 U	41 -	1 U	1 U	10 U	20 U	10 U	750 -	0.2 U	100 U	20 -	5 U	0.47 -	1.1 -	1.57 -
	3/17/2017	-	2900 -	640000 -	30000 -	5000 U	7.13 -	1200000 -	2700000 -	6 U	10 U	41 -	1 U	1 U	10 U	20 U	10 U	740 -	0.2 U	100 U	21 -	5 U	0.33 -	1.4 -	1.73 -
	3/24/2017	-	2900 -	660000 -	34000 -	680 -	7.2 -	1100000 -	2500000 -	24 U	40 U	37 -	4 U	4 U	10 U	20 U	10 U	650 -	0.2 U	100 U	22 -	20 U	0.42 -	- U	- U
	3/25/2017	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- U	- -	- -	0.5 -
	4/20/2017	-	2500 -	610000 -	59000 -	580 -	7.38 -	1100000 -	2100000 -	6 U	10 U	41 -	1 U	1 U	10 U	20 U	10 U	1100 -	0.2 U	100 U	17 -	5 U	0.35 -	0.75 -	1.1 -
	4/24/2017	-	2600 -	620000 -	51000 -	670 -	7.31 -	1000000 -	2700000 -	6 U	10 U	39 -	1 U	1 U	10 U	20 U	10 U	1100 -	0.2 U	100 U	16 -	5 U	0.22 -	- U	- U
	5/25/2017	-	2500 -	670000 -	34000 -	5000 U	7.18 -	1000000 -	2400000 -	6 U	10 U	38 -	1 U	1 U	10 U	20 U	10 U	840 -	0.2 U	100 U	8.4 -	5 U	0.5 -	- U	- -
	6/20/2017	-	2600 -	670000 -	61000 -	5000 U	7.28 -	1100000 -	2700000 -	6 U	10 U	37 -	1 U	1 U	10 U	20 U	10 U	1400 -	0.32 -	100 U	9.5 -	5 U	0.54 -	1.9 -	2.44 -
	7/19/2017	-	2900 -	580000 -	15000 -	800 -	7.82 -	530000 -	2400000 -	6 U	10 U	34 -	1 U	1 U	10 U	20 U	10 U	540 -	0.2 U	100 U	14 -	5 U	0.57 -	- U	0.57 -
	8/8/2017	-	2700 -	610000 -	6800 -	5000 U	7.14 -	790000 -	2400000 -	6 U	10 U	34 -	1 U	1 U	10 U	20 U	10 U	220 -	0.2 U	100 U	29 -	5 U	0.91 -	0.96 -	1.87 -
	5/9/2018	-	1200 -	550000 -	5000 U	5000 U	7.08 -	640000 -	2000000 -	5 U	5 U	10 U	5 U	5 U	10 U	20 U	10 U	100 U	0.2 U	100 U	5 U	1 U	0.41 -	1.8 -	2.21 -
	9/12/2018	-	2400 -	580000 -	5000 U	600 U	7.01 -	990000 -	2200000 -	5 U	5 U	27 -	5 U	5 U	- -	3.6 U	- -	100 U	- -	100 U	11 -	1 U	- -	- -	- U
	5/17/2019	-	1860 -	546000 -	520 -	690 -	7.4 -	1170000 -	2000000 -	1 U	1 U	18.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	47.6 -	2.7 -	1 U	0.308 U	0.172 U	0.48 U
	11/6/2019	-	2740 -	574000 -	1500 -	610 -	7.1 J	1320000 -	2110000 -	1.1 -	1 U	25 -	0.2 U	2 U	- -	1 U	10 U	28.6 -	- -	37.6 -	2.9 -	1 U	0.261 U	0.432 U	0.693 U
	5/5/2020	-	1660 -	520000 -	510 -	720 -	- -	1150000 -	1780000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.167 U	0.3 U	0.467 U
	11/4/2020	-	2530 -	435000 -	11500 -	800 -	7.5 J	1490000 -	2280000 -	1 U	1 U	25 -	0.2 U	2 U	10 U	1 U	10 U	238 -	2 U	76.2 -	4.7 -	1 U	0.36 -	0.0511 U	0.411 U
	5/6/2021	-	1660 -	476000 -	2000 -	650 -	7.5 J	1020000 -	1640000 -	1 U	1 U	17.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	2 U	45.3 -	8.4 -	1 U	-0.171 U	0.0414 U	0.0414 U
	11/2/2021	-	2420 -	637000 -	46200 -	730 -	7.2 J	1550000 -	2440000 -	1 U	1 U	29 -	0.2 U	2 U	10 U	1 U	10 U	492 -	- -	75 -	8.5 -	1 U	0.168 U	0.284 U	0.452 U
	11/2/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	504 -	2 U	- -	- -	- -	- -	- -	- -
	12/12/2021	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	0.2 U	- -	- -	- -	- -	- -	- -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-13	5/4/2022	-	1560 -	493000 -	2400 -	530 -	7.4 J	1230000 -	1730000 -	1 U	1 U	22 -	0.2 U	0.2 U	2 U	1 U	1 U	74.8 -	0.2 U	37.8 -	4.6 -	1 U	0.123 U	0.571 U	0.694 U
	5/4/2022	-	- -	- -	1900 -	500 -	7.4 -	1040000 -	1720000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/4/2022	-	1430 -	450000 -	1500 -	530 -	7.4 -	1240000 -	1690000 -	- -	1 U	16.8 -	0.2 U	- -	2 U	1 U	1 U	20 U	- -	38.8 -	3.5 -	- -	-0.137 U	0.124 U	0.124 U
	6/29/2022	-	2080 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	25.7 -	- -	- -	- -	- -	- -	- -	- -
	8/9/2022	-	2260 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	22.9 -	- -	- -	- -	- -	- -	- -	- -
	11/8/2022	-	2520 -	586000 -	12000 -	760 -	7.2 J	1400000 -	2290000 -	1 U	1 U	22.2 -	0.2 U	2 U	10 U	1 U	10 U	385 -	- -	65.2 -	8.6 -	- -	-0.223 U	0.428 U	0.428 U
	11/8/2022	-	- -	- -	11800 -	750 -	7.3 -	1400000 -	2340000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/8/2022	-	2530 -	593000 -	12800 -	770 -	7.3 J	1400000 -	- -	- -	1 U	21.3 -	0.2 U	- -	10 U	1 U	10 U	391 -	0.2 U	68.1 -	7.4 -	1 U	0.294 U	0.5 U	0.794 U
	5/2/2023	-	1230 -	394000 -	3700 -	660 -	7.5 J	753000 -	1450000 -	1 U	1 U	18.5 -	0.2 U	2 U	10 U	1 U	10 U	62.3 -	0.2 U	39.8 -	5.8 -	1 U	0.144 U	0.113 U	0.257 U
	5/2/2023	-	- -	- -	- -	- -	7.7 -	- -	1640000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/2/2023	-	1350 -	424000 -	6700 -	770 -	- -	812000 -	1590000 -	1 U	1 U	23.6 -	0.2 U	0.2 U	10 U	1 U	1 U	134 -	0.2 U	39.8 -	7.9 -	1 U	0.421 U	0.2 U	0.621 U
	11/5/2023	-	2540 -	631000 -	18200 -	860 -	7.5 J-	1450000 -	2320000 -	- -	1 U	20.9 -	- -	- -	- -	1 U	10 U	456 -	- -	82.6 -	19.1 -	1 U	0.0606 -	0.352 -	0.413 -
	11/5/2023	-	- -	- -	- -	- -	- -	- -	2440000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/5/2023	-	2440 -	640000 -	18000 -	820 -	- -	1430000 -	2400000 -	1 U	1 U	20.5 -	0.2 U	2 U	10 U	1 U	10 U	463 -	0.2 U	79.4 -	20 -	1 U	0 -	0.678 -	0.678 -
	1/24/2024	-	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1.7 -	- -	- -	- -	- -
	5/2/2024	-	1730 -	571000 -	26000 -	740 -	7.1 J	1390000 -	2330000 -	1 U	1 U	31.8 -	0.2 U	2 U	10 U	1 U	10 U	594 -	0.2 U	45.5 -	21 -	1 U	0.94 -	0.683 U	1.62 -
	5/2/2024	-	1660 -	572000 -	25800 -	700 -	- -	1470000 -	2230000 -	1 U	1 U	32.9 -	0.2 U	2 U	10 U	1 U	10 U	652 -	0.2 U	41.9 -	21 -	1 U	0.0538 U	0.367 U	0.421 U
	11/7/2024	-	2980 -	617000 -	30000 -	720 -	7 -	1480000 -	2450000 -	1 U	1.1 -	23.7 -	0.2 U	- -	- -	1 U	- -	563 -	- -	66.3 -	20.6 -	- -	-0.197 U	0.601 U	0.601 -
	11/7/2024	-	2890 -	635000 -	30100 -	730 -	- -	1520000 -	2470000 -	1 U	1 U	22.7 -	0.2 U	2 U	10 U	1 U	10 U	561 -	- -	62.5 -	20.6 -	1 U	-0.423 U	0.324 U	0.324 U
MW-14	5/15/2019	-	624 -	165000 -	5000 -	100 U	7.1 -	222000 -	695000 -	1 U	1.9 -	55.8 -	0.2 U	2 U	10 U	1.7 -	10 U	20 U	2 U	10 U	1 U	1 U	1.36 -	0.15 U	1.51 -
	11/6/2019	-	990 -	219000 -	6000 -	110 -	7.1 -	384000 -	896000 -	1 U	2.6 -	69.9 -	0.2 U	2 U	- -	1.7 -	10 U	20 U	- -	10 U	1 U	1 U	0.372 -	0.814 -	1.19 -
	5/12/2020	-	647 -	162000 -	3900 -	120 -	7.5 J	231000 -	682000 -	- -	4.5 -	- -	- -	- -	- -	1.1 -	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	5/12/2020	Duplicate	651 -	164000 -	3900 -	120 -	7.5 J	249000 -	680000 -	- -	3.5 -	- -	- -	- -	- -	1.1 -	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	11/4/2020	-	746 -	181000 -	5200 -	100 U	7.4 J	269000 -	750000 -	1 U	2.9 -	66.9 -	0.2 U	2 U	10 U	1.4 -	10 U	20 U	2 U	10 U	1 U	1 U	0.287 U	0.0792 U	0.366 U
	11/4/2020	Duplicate	729 -	178000 -	5200 -	100 U	7.4 J	269000 -	739000 -	1 U	3.1 -	65.6 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	2 U	10 U	1 U	1 U	0.2 -	0.814 U	1.01 U
	5/6/2021	-	571 -	164000 -	4300 -	100 U	7 J	224000 -	674000 -	1 U	9.4 -	73 -	0.2 U	2 U	- -	1.3 -	10 U	20 U	- -	10 U	1 U	1 U	0.724 U	0.689 U	1.41 U
	11/2/2021	-	585 -	168000 -	5800 -	100 -	7.2 J	178000 -	669000 -	1 U	8.9 -	75.8 -	0.2 U	2 U	10 U	1.3 -	10 U	20 U	- -	10 U	1 U	1 U	0.0952 U	0.643 U	0.738 U
	5/5/2022	-	529 -	173000 -	9000 -	110 -	7.4 J	238000 -	743000 -	1 U	15.2 -	103 -	0.2 U	2 U	10 U	1.1 -	10 U	20 U	- -	10 U	1 U	1 U	0.367 U	0.875 -	1.24 U
	11/6/2022	-	623 -	174000 -	10800 J-	110 U	7.2 J	225000 -	776000 -	1 U	5.3 J	74.9 -	0.2 U	2 U	10 U	1.4 -	10 U	20 U	- -	10 U	1 U	- -	0.164 U	0.546 U	0.71 U
	11/6/2022	Duplicate	618 -	174000 -	10600 J-	10 U	7.2 J	225000 -	784000 -	1 U	4 J	73.1 -	0.2 U	2 U	10 U	1.4 -	10 U	20 U	- -	10 U	1 U	- -	0.173 U	0.257 U	0.43 U
	5/7/2023	-	519 -	185000 -	13600 -	100 U	7 J	218000 -	699000 -	1 U	3.2 -	69 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.263 U	0.49 U	0.753 U
	5/7/2023	Duplicate	531 -	185000 -	13300 -	100 U	6.9 J	219000 -	715000 -	1 U	3.5 -	69.7 -	0.2 U	2 U	10 U	1.7 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.668 J+	0.668 U
	5/7/2023	-	- -	- -	14100 -	- -	7 -	226000 -	717000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2023	Duplicate	- -	- -	- -	- -	6.8 -	- -	726000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/5/2024	-	600 -	249000 -	24800 -	100 U	7.1 J	290000 -	864000 -	1 U	2.7 -	95.7 -	0.2 U	2 U	10 U	1.9 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.262 U	1.63 -	1.89 -
	11/10/2024	-	572 -	212000 -	20800 -	100 U	7.1 -	240000 -	814000 -	1 U	2.5 -	79.3 -	0.2 U	- -	- -	2.4 -	- -	20 U	- -	10 U	1 U	- -	0.193 U	0.88 -	1.07 U
MW-15B	12/29/2022	-	1290 -	257000 -	47300 -	100 U	7 J	767000 -	1870000 -	1 U	1 U	68.6 -	0.2 U	2 U	- -	1 U	10 U	794 -	- -	10.6 -	1 U	- -	0.258 U	1.32 -	1.58 -
	6/6/2023	-	1340 -	268000 -	55200 -	110 -	7.5 J	851000 -	1450000 -	1 U	1 U	60.5 -	0.2 U	2 U	10 U	1 U	10 U	915 -	0.2 U	14.3 -	1 U	1 U	0.63 U	1.25 -	1.88 U
	11/15/2023	-	- -	- -	- -	- -	- -	- -	1200000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/15/2023	-	1380 -	227000 -	41500 -	110 -	7 J-	828000 -	1260000 -	- -	1.2 -	51.3 -	- -	- -	- -	1 U	10 U	785 -	- -	16.4 -	1 U	- -	0.203 -	1.4 -	1.6 -
	2/15/2024	-	1360 -	199000 -	38700 -	130 -	7.9 -	618000 -	1180000 -	- -	1.3 -	46.6 -	- -	- -	- -	1 U	10 U	726 -	- -	16.8 -	1 U	1 U	0 U	0.859 -	0.859 U
	2/15/2024	-	- -	- -	- -	- -	- -	- -	1220000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/21/2024	-	1210 -	184000 -	33100 -	110 -	7.7 J	617000 -	1070000 -	1 U	1.4 -	45.7 -	0.2 U	2 U	10 U	1 U	10 U	622 -	0.2 U	15.7 -	1 U	1 U	0.293 U	0.426 U	0.719 U
	11/14/2024	-	1280 -	193000 -	29600 -	130 -	7.1 -	541000 -	1060000 -	1 U	1.6 -	48.1 -	0.2 U	- -	- -	1 U	- -	588 -	- -	20 -	1 U	- -	-0.27 U	2.55 -	2.55 -
MW-15	5/15/2019	-	1840 -	310000 -	81400 -	100 U	7.1 -	893000 -	1710000 -	1 U	1 U	100 -	0.2 U	2 U	10 U	1 U	10 U	869 -	2 U	34.4 -	1 U	1 U	2.05 -	0.721 U	2.77 -
	11/6/2019	-	1740 -	306000 -	80500 -	100 U	7.2 -	921000 -	1660000 -	1 U	1 U	88.2 -	0.2 U	2 U	- -	1 U	10 U	813 -	- -	61.5 -	1 U	1 U	1.08 -	1.4 -	2.48 -
	5/12/2020	-	1760 -	308000 -	87400 -	100 -	7.5 J	945000 -	1670000 -	- -	1 U	- -	- -	- -	- -	1 U	10 U	837 -	- -	72.9 -	- -	- -	- -	- -	- -
	11/4/2020	-	1640 -	306000 -	94600 -	100 U	7.4 J	974000 -	1680000 -	1 U	1 U	89.3 -	0.2 U	2 U	10 U	1 U	10 U	844 -	2 U	76.6 -	1 U	1 U	1.02 -	0.898 U	1.92 -
	5/6/2021	-	1580 -	309000 -	99100 -	100 U	7.1 J	1030000 -	1860000 -	1 U	1 U	85.6 -	0.2 U	2 U	- -	1 U	10 U	897 -	- -	80 -	1 U	1 U	0.64 U	1.22 -	1.86 -
	11/3/2021	-	1510 -	286000 -	89900 -	100 U	7.3 J	847000 -	1650000 -	1 U	1 U	80.8 -	0.2 U	2 U	10 U	1 U	10 U	972 -	- -	81.4 -	1 U	1 U	0.856 -	1.02 U	1.88 U
	11/3/2021	Duplicate	1480 -	284000 -	88400 -	100 U	7.1 J	817000 -	1610000 -	1 U	1 U	79.8 -	0.2 U	2 U	10 U	1 U	10 U	945 -	- -	80.3 -	1 U	1 U	0.423 U	0.971 -	1.39 U
	5/5/2022	-	1200 -	257000 -	73300 -	130 -	7.3 J	765000 -	1360000 -	1 U	1 U	94.8 -	0.2 U	2 U	10 U	1 U	10 U	626 -	- -	67.4 -	1 U	1 U	0.409 U	0.842 -	1.25 U
	5/5/2022	Duplicate	1310 -	260000 -	77100 -	120 -	7.2 J	807000 -	1410000 -	1 U	1 U	88.8 -	0.2 U	2 U	10 U	1 U	10 U	715 -	- -	76.9 -	1 U	1 U	0.441 U	1.61 -	2.05 -
	11/6/2022	-	1210 -	239000 -	71900 J-	100 U	7.3 J	677000 -	1360000 -	1 U	1 U	91.7 -	0.2 U	2 U	10 U	1 U	10 U	713 -	- -	84 -	1 U	- -	0.769 U	0.759 -	1.53 -
	5/7/2023	-	1280 -	252000 -	71400 -	110 -	7.1 J	719000 -	1280000 -	1 U	1 U	91.7 -	0.2 U	2 U	10 U	1 U	10 U	817 -	0.2 U	104 -	1 U	1 U	0.34 U	0.644 U	0.984 U
	5/7/2023	-	- -	- -	- -	- -	7.1 -	- -	1280000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/5/2023	-	1280 -	251000 -	66800 -	100 -	7 J-	638000 -	1310000 -	- -	1 U	102 -	- -	- -	- -	1 U	10 U	757 -	- -	117 -	1 U	1 U	1.13 -	0.732 -	1.86 -
	11/5/2023	Duplicate	1260 -	259000 -	66100 -	100 -	7 J-	674000 -	1330000 -	- -	1 U	99.6 -	- -	- -	- -	1 U	10 U	744 -	- -	115 -	1 U	1 U	0.576 -	0.865 -	1.44 -
	11/5/2023	-	- -	- -	- -	- -	- -	- -	1290000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/5/2023	Duplicate	- -	- -	- -	- -	- -	- -	1320000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-15	5/5/2024	-	1210 -	279000 -	70400 -	100 U	6.4 J	690000 -	1280000 -	1 U	1 U	112 -	0.2 U	2 U	10 U	1 U	10 U	797 -	0.2 U	119 -	1 U	1 U	0.497 U	0.542 U	1.04 U
	5/5/2024	Duplicate	1140 -	273000 -	70400 -	100 U	6.7 J	699000 -	1310000 -	1 U	1 U	109 -	0.2 U	2 U	10 U	1 U	10 U	757 -	0.2 U	113 -	1 U	1 U	1.65 -	0.742 U	2.39 -
	11/10/2024	-	1040 -	242000 -	68500 -	100 U	7.3 -	638000 -	1300000 -	1 U	1 U	114 -	0.2 U	- -	- -	1.2 -	- -	665 -	- -	106 -	1 U	- -	0.51 U	1.23 -	1.74 U
	11/10/2024	Duplicate	1110 -	252000 -	69000 -	100 U	7 -	702000 -	1290000 -	1 U	1 U	115 -	0.2 U	- -	- -	1.3 -	- -	715 -	- -	110 -	1 U	- -	0.88 U	1.19 -	2.07 -
MW-16	5/15/2019	-	2910 -	345000 -	85200 -	100 U	7.2 -	1280000 -	2360000 -	1 U	3.7 -	77.3 -	0.2 U	2 U	10 U	1.7 -	10 U	2440 -	2 U	534 -	1 U	1 U	0.948 U	1.14 -	2.09 -
	11/6/2019	-	3190 -	383000 -	59200 -	110 -	7.2 -	1500000 -	2420000 -	1 U	4.8 -	73.6 -	0.4 U	2 U	- -	1.3 -	10 U	2320 -	- -	555 -	1 U	1 U	0.676 -	1.56 -	2.24 -
	5/12/2020	-	3180 -	419000 -	61300 -	120 -	7.5 J	1630000 -	2560000 -	- -	3.9 -	- -	- -	- -	- -	1.2 -	10 U	2560 -	- -	570 -	- -	- -	- -	- -	- -
	11/4/2020	-	3170 -	405000 -	62400 -	100 U	7.4 J	1690000 -	2530000 -	1 U	3.4 -	75.9 -	0.2 U	2 U	10 U	1 -	10 U	2470 -	2 U	521 -	1 U	1 U	0.971 -	1.62 -	2.59 -
	5/7/2021	-	2930 -	358000 -	90700 -	100 U	7.4 J	1520000 -	2240000 -	1 U	6 -	67.9 -	2 U	2 U	- -	1 U	10 U	2640 -	- -	447 -	1 U	1 U	0.55 U	1.95 -	2.5 -
	5/7/2021	Duplicate	2880 -	359000 -	90400 -	100 U	7.2 J	1410000 -	2250000 -	1 U	5.2 -	66.2 -	2 U	2 U	- -	1 U	10 U	2610 -	- -	433 -	1 U	1 U	0.577 U	1.45 -	2.03 -
	11/3/2021	-	3070 -	314000 -	97900 -	100 U	7.2 J	1130000 -	2120000 -	1 U	6.7 -	57.8 -	0.4 U	2 U	10 U	1 U	10 U	2170 -	- -	484 -	1 U	1 U	0.709 U	1.94 -	2.65 -
	5/5/2022	-	2780 -	351000 -	77200 -	130 -	7.1 J	1180000 -	2020000 -	1 U	9.3 -	60.7 -	0.2 U	2 U	10 U	1 U	10 U	1780 -	- -	387 -	1 U	1 U	0.362 U	1.32 -	1.68 U
	11/7/2022	-	3070 -	421000 -	60700 -	120 -	7.2 J	1170000 -	2190000 -	- -	5.3 -	62 -	0.2 U	2 U	10 U	1 U	10 U	1540 -	- -	412 -	1 U	- -	0.417 U	1.52 J+	1.94 J+
	5/7/2023	-	3250 -	513000 -	51800 -	100 -	7.2 J	1410000 -	2400000 -	1 U	6.9 -	64.6 J+	0.2 U	2 U	10 U	1 U	10 U	1300 -	0.2 U	355 -	1 U	1 U	0.553 U	0.936 J+	1.49 J+
	5/7/2023	-	- -	- -	- -	- -	7.2 -	- -	2380000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	11/6/2023	-	4240 -	500000 -	40400 -	100 U	7.2 J-	1130000 -	2380000 -	- -	3.9 -	58.1 -	- -	- -	- -	1 U	10 U	1040 -	- -	394 -	1 U	1 U	0.528 -	1.63 -	2.16 -
	11/6/2023	-	- -	- -	- -	- -	- -	- -	2340000 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	5/7/2024	-	4070 -	542000 -	49700 -	100 U	6.8 J	1380000 -	2350000 -	1 U	4.3 -	56 -	0.2 U	2 U	10 U	1 U	10 U	823 -	0.2 U	318 -	1 U	1 U	0.116 U	0.766 -	0.882 U
	11/10/2024	-	4240 -	490000 -	43200 -	150 -	8.6 -	1220000 -	2260000 -	1 U	3.9 -	50.2 -	0.2 U	- -	- -	2.7 -	- -	661 -	- -	314 -	1 U	- -	0.0515 U	1.91 -	1.96 U
MW-19B	8/23/2019	-	630 -	127000 -	11600 -	150 -	7.4 -	61900 -	430000 -	1 U	6 -	109 -	0.2 U	2 U	- -	4.2 -	10 U	20 U	- -	10 U	2 -	1 U	1.07 -	0.302 U	1.37 -
	5/6/2020	-	347 -	84300 -	9700 -	180 -	8 J	32600 -	301000 -	- -	1 U	- -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	11/6/2020	-	737 -	105000 -	12700 -	130 -	7.2 J	44400 -	364000 -	1 U	1 U	62.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	3.8 -	1 U	0.324 U	0.485 U	0.809 U
	5/11/2021	-	576 -	87200 -	11200 -	140 -	7.5 J	41500 -	345000 -	1 U	1 U	51.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2.1 -	1 U	-0.379 U	0.399 U	0.399 U
	5/11/2021	Duplicate	566 -	85400 -	11100 -	140 -	7.6 J	41400 -	329000 -	1 U	1 U	51 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2 -	1 U	-0.11 U	0.109 U	0.109 U
	11/8/2021	-	702 -	99800 -	10800 -	130 -	7.5 J	69800 -	413000 -	1 U	1 U	60.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	3.3 -	1 U	0.277 U	0.76 -	1.04 U
	5/3/2022	-	306 -	84300 -	9900 -	110 -	7.5 J	56700 -	345000 -	1 U	1 U	55 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1.3 -	1 U	0.162 -	0.339 -	0.501 -
	11/6/2022	-	548 -	121000 -	11000 -	120 -	7.2 J	46200 -	475000 -	1 U	1 U	71.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2.8 -	- -	-0.0828 U	0.163 U	0.163 U
	5/17/2023	-	389 -	107000 -	9700 -	130 -	7.6 J	43300 -	363000 -	1 U	1 U	63.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	2.1 -	1 U	-0.0879 U	0.21 U	0.21 U
	5/8/2024	-	390 -	102000 -	7300 -	110 -	7.2 J	47200 -	357000 -	1 U	1 U	58.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	2.6 -	1 U	0.0621 U	0.00793 U	0.07 U
	11/13/2024	-	436 -	114000 -	12500 -	100 -	7.2 -	47900 -	409000 -	1 U	1 U	63.1 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	3.5 -	- -	0.165 U	0.461 U	0.626 U
MW-19I	8/23/2019	-	1040 -	163000 -	12800 -	120 -	7.4 -	115000 -	436000 -	1 -	13.2 -	168 -	0.67 -	2 U	- -	13.2 -	28.1 -	20 U	- -	10 U	1 -	1 U	3.47 -	0.634 U	4.1 -
	5/6/2020	-	1070 -	114000 -	12800 -	120 -	7.7 J	96300 -	444000 -	- -	1 U	- -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	5/6/2020	Duplicate	1080 -	114000 -	12500 -	120 -	7.8 J	96000 -	443000 -	- -	1 U	- -	- -	- -	- -	1 U	10 U	20 U	- -	10 U	- -	- -	- -	- -	- -
	11/6/2020	-	1290 -	125000 -	12900 -	110 -	7.2 J	118000 -	475000 -	1 U	1 U	68.2 -	0.2 U	2 U	- -	1.1 -	10 U	20 U	- -	10 U	1 U	1 U	0.631 U	0.145 U	0.776 U
	5/11/2021	-	1020 -	110000 -	11500 -	100 U	7.4 J	79000 -	439000 -	1 U	1 U	59.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.149 U	0.803 U	0.952 U
	11/8/2021	-	964 -	101000 -	11100 -	100 U	7.4 J	67900 -	401000 -	1 U	1 U	63.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.072 U	0.474 U	0.474 U
	5/3/2022	-	912 -	103000 -	9900 -	100 U	7.2 J	64900 -	427000 -	1 U	1 U	59.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.0435 -	0.149 -	0.193 -
	11/6/2022	-	716 -	89100 -	10100 -	130 -	7.3 J	42800 -	376000 -	1 U	1 U	51.2 -	0.2 U	2 U	- -	1.2 -	10 U	20 U	- -	10 U	1.6 -	- -	0.247 U	0.479 U	0.726 U
	5/17/2023	-	710 -	109000 -	12400 -	100 -	7.7 J	52200 -	371000 -	1 U	1 U	57.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.562 U	0.562 U
	11/2/2023	-	656 -	113000 -	10000 -	100 U	7.6 J-	46100 -	422000 -	- -	1 U	62.2 -	- -	2 U	- -	1.6 -	10 U	20 U	- -	10 U	1 U	- -	-0.392 -	0.979 -	0.979 -
	5/8/2024	-	712 -	115000 -	9800 -	100 U	7.3 J	52600 -	411000 -	1 U	1 U	64 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.424 U	4.11 -	4.53 -
	11/13/2024	-	937 -	115000 -	9600 -	100 U	7.2 -	57700 -	416000 -	1 U	1 U	67.2 -	0.2 U	2 U	- -	1.3 -	- -	20 U	- -	10 U	1 U	- -	0 U	1.98 -	1.98 -
MW-19A	8/23/2019	-	24700 -	612000 -	103000 -	100 U	7.1 -	1520000 -	2390000 -	1 U	3.8 -	78.5 -	0.25 -	2 U	- -	6.1 -	10 U	20 U	- -	1050 -	1 U	1 U	0.812 -	0.97 -	1.78 -
	5/6/2020	-	24500 -	596000 -	119000 -	100 U	7.5 J	1520000 -	2440000 -	- -	1.1 -	- -	- -	- -	- -	1.1 -	10 U	22.6 -	- -	962 -	- -	- -	- -	- -	- -
	11/6/2020	-	23700 -	618000 -	117000 -	100 U	7 J	1480000 -	2410000 -	1 U	1 -	37.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	788 -	1 U	1 U	0.258 U	1.66 -	1.92 -
	5/11/2021	-	24000 -	638000 -	108000 -	100 U	7 J	1450000 -	2350000 -	1 U	1.1 -	35.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	921 -	1 U	1 U	-0.0529 U	0.745 U	0.745 U
	11/8/2021	-	23500 -	622000 -	110000 -	100 U	7 J	1580000 -	2460000 -	1 U	1.1 -	33.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	847 -	1 U	1 U	0.247 U	0.768 -	1.02 U
	5/3/2022	-	24800 -	600000 -	117000 -	100 U	6.9 J	1510000 -	2420000 -	1 U	1.1 -	35.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	926 -	1 U	1 U	-0.0937 -	0.5 -	0.5 -
	11/6/2022	-	23100 -	560000 -	101000 -	100 U	7.1 J	1360000 -	2380000 -	1 U	1.1 -	37.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	682 -	1 U	- -	0.0762 U	0.333 U	0.409 U
	5/17/2023	-	24900 -	648000 -	122000 -	100 U	7.3 J	1290000 -	2420000 -	1 U	1.1 -	33.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	747 -	1 U	1 U	0.173 U	0.463 U	0.636 U
	11/1/2023	-	23900 -	573000 -	114000 -	100 U	7.2 J-	1260000 -	2240000 -	- -	1 U	32.7 -	- -	2 U	- -	1 U	10 U	20 U	- -	669 -	1 U	- -	0.365 -	1.27 -	1.64 -
	5/8/2024	-	24500 -	566000 -	123000 -	100 U	7.2 J	1390000 -	2330000 -	1 U	1 U	31.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	822 -	1 U	1 U	0.728 -	1.46 -	2.19 -
	11/13/2024	-	21300 -	514000 -	106000 -	100 U	6.9 -	1180000 -	1900000 -	1 U	1 -	30.9 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	627 -	1 U	- -	0.172 U	2.13 -	2.3 -
MW-20B	6/25/2020	-	522 -	195000 -	14300 -	100 U	6.6 -	80700 -	658000 -	1 U	5.1 -	209 -	0.56 -	2 U	16.8 -	7.1 -	11.2 -	20 U	2 U	10 U	2.3 -	1 U	1.7 -	2.56 -	4.26 -
	11/6/2020	-	621 -	166000 -	16400 -	100 U	6.8 J	81200 -	558000 -	1 U	1.3 -	136 -	0.2 U	2 U	- -	2 -	10 U	20 U	- -	10 U	2.7 -	1 U	0.108 U	0.385 U	0.493 U
	5/10/2021	-	576 -	180000 -	13400 J+	100 U	7 J	73200 -	631000 -	1 U	1 U	116 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	6.9 -	1 U	-0.06 U	1.16 -	1.16 U
	9/16/2021	-	1230 -	213000 -	35400 -	100 U	7 -	180000 -	788000 -	1 U	1.1 -	119 -	0.2 U	2 U	- -	2 -	10 U	20 U	- -	10 U	1.1 -	1 U	-0.265 U	0.286 U	0.286 U
	11/8/2021	-	632 -	172000 -	18200 -	100 U	7.3 J	80700 -	618000 -	1 U	1 U	119 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	3.7 -	1 U	0.346 U	0.522 U	0.868 U
	5/3/2022	-	494 -	172000 -	14500 -	100 U	6.8 J	67700 -	609000 -	1 U	1 U	117 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	4.1 -	1 U	0.125 -	-0.226 -	0.125 -
	5/17/2023	-	469 -	174000 -	12900 -	100 U	7.4 J	61100 -	578000 -	1 U	1 U	102 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	8.5 -	1 U	0.405 U	0.439 U	0.844 U
MW-20B	5/17/2023	Duplicate	453 -	174000 -	12800 -	100 U	7.2 J	62000 -	580000 -	1 U	1 U	103 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	8.5 -	1 U	0.192 U	0.723 U	0.915 U
	5/24/2024	-	468 -	166000 -	16200 -	100 U	7.4 J	56900 -	552000 -	1 U	1 U	100 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	9.4 -	1 U	-0.116 U	0.477 U	0.477 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-20I	6/26/2020	-	276 -	126000 -	8300 -	100 -	6.9 -	36100 -	433000 -	1 U	1 U	74.4 -	0.2 U	2 U	10 U	2.7 -	10 U	20 U	2 U	10 U	2.9 -	1 U	0.0656 U	0.542 U	0.608 U
	11/6/2020	-	409 -	111000 -	8900 -	100 U	7.2 J	38700 -	376000 -	1 U	1 U	60 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.258 U	0.561 U	0.819 U
	11/6/2020	Duplicate	323 -	110000 -	8700 -	100 U	7.1 J	38500 -	361000 -	1 U	1 U	59.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	1 U	-0.0557 U	1.13 -	1.13 U
	5/10/2021	-	265 -	113000 -	6600 J+	100 U	7.3 J	29500 -	402000 -	1 U	1 U	57.9 -	0.2 U	2 U	- -	1.1 -	10 U	20 U	- -	10 U	1.5 -	1 U	0.252 U	-0.0888 U	0.252 U
	9/16/2021	-	470 -	133000 -	11700 -	130 -	7.2 -	51500 -	482000 -	1 U	1 U	51.4 -	0.2 U	2 U	- -	2.2 -	10 U	20 U	- -	10 U	1.4 -	1 U	0.561 U	0.628 U	1.19 U
	11/8/2021	-	313 -	128000 -	11200 -	100 U	7.2 J	47000 -	476000 -	1 U	1 U	64.4 -	0.2 U	2 U	10 U	1.3 -	10 U	20 U	- -	10 U	1.7 -	1 U	0.267 U	0.638 -	0.905 U
	5/3/2022	-	328 -	119000 -	7800 -	120 -	7.1 J	35500 -	451000 -	1 U	1 U	62.3 -	0.2 U	2 U	10 U	1.7 -	10 U	20 U	- -	10 U	2.3 -	1 U	0 -	0.395 -	0.395 -
	11/6/2022	-	435 -	105000 -	7700 -	120 -	7.5 J	27200 -	389000 -	1 U	1 U	50.8 -	0.2 U	2 U	- -	1.7 -	10 U	20 U	- -	10 U	1.7 -	- -	0.389 U	0.367 U	0.756 U
	5/17/2023	-	261 -	120000 -	6800 -	110 -	7.4 J	29700 -	392000 -	1 U	1 U	57.9 -	0.2 U	2 U	10 U	4.9 -	10 U	20 U	0.2 U	10 U	2 -	1 U	0.0833 U	0.459 U	0.542 U
	11/2/2023	-	339 -	115000 -	9400 -	100 U	7.6 J-	44700 -	424000 -	- -	1 U	50.8 -	- -	2 U	- -	1.4 -	10 U	20 U	- -	10 U	1.8 -	- -	-0.168 -	0.339 -	0.339 -
	5/24/2024	-	284 -	121000 -	8900 -	100 U	7.5 J	39200 -	382000 -	1 U	1 U	47.1 -	0.2 U	2 U	10 U	1.2 -	10 U	20 U	0.2 U	10 U	3.5 -	1 U	0.376 U	0.813 U	1.19 U
	11/11/2024	-	423 -	107000 -	8000 -	100 -	7.3 -	47200 -	376000 -	1 U	1 U	45.4 -	0.2 U	2 U	- -	1.1 -	- -	20 U	- -	10 U	1 U	- -	-0.0554 U	0.412 U	0.412 U
MW-20A	6/26/2020	-	13200 -	364000 -	55000 -	100 U	7 -	824000 -	1320000 -	1 U	2 -	35.2 -	0.2 U	2 U	10 U	1.2 -	10 U	20 U	2 U	401 -	1 U	1 U	0.067 U	0.504 U	0.571 U
	11/6/2020	-	13900 -	401000 -	62400 -	100 U	7 J	935000 -	1630000 -	1 U	1.8 -	34.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	282 -	1 U	1 U	0.379 U	1.55 -	1.93 -
	5/10/2021	-	16200 -	454000 -	73100 J+	100 U	7.5 J	1050000 -	1530000 -	1 U	1.8 -	38.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	436 -	1 U	1 U	0.262 -	1.52 -	1.78 -
	9/16/2021	-	18300 -	492000 -	82000 -	100 U	7.2 -	1080000 -	2020000 -	1 U	2.7 -	45.1 -	0.2 U	2 U	- -	2 -	10 U	20 U	- -	656 -	1.4 -	1 U	0.0588 U	1.22 -	1.28 U
	11/8/2021	-	15800 -	455000 -	79300 -	100 U	7.2 J	1060000 -	1850000 -	1 U	2.1 -	35.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	463 -	1 U	1 U	-0.406 U	0.553 U	0.553 U
	5/3/2022	-	12100 -	355000 -	59100 -	100 -	7 J	903000 -	1500000 J	1 U	2 -	32.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	336 -	1 U	1 U	0.309 -	0.18 -	0.489 -
	11/6/2022	-	13800 -	403000 -	73000 -	100 U	7.1 J	924000 -	1730000 -	1 U	1.8 -	38.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	385 -	1 U	- -	0.519 U	0.793 -	1.31 -
	5/17/2023	-	10900 -	338000 -	59400 -	100 U	7.8 J	691000 -	1390000 -	1 U	1.7 -	29.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	366 -	1 U	1 U	0.597 U	0.552 U	1.15 U
	11/2/2023	-	13000 -	364000 -	48700 -	100 U	7.6 J-	585000 -	1360000 -	- -	1.6 -	30.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	362 -	1 U	- -	0.107 -	0.943 -	1.05 -
	11/11/2024	-	13800 -	344000 -	64400 -	100 U	7 -	738000 -	1370000 -	1 U	1.7 -	30.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	384 -	1 U	- -	0.946 -	0.613 U	1.56 -
MW-21B	1/18/2021	-	771 -	267000 -	56000 -	100 U	6.9 -	400000 -	1180000 -	1 U	2.1 -	139 -	0.25 -	2 U	10 U	9.2 -	10 U	20 U	2 U	10 U	1 U	1 U	0.833 -	0.641 -	1.47 -
	1/18/2021	Duplicate	761 -	264000 -	55600 -	100 U	7 -	405000 -	1180000 -	1 U	2.1 -	133 -	0.24 -	2 U	10 U	9.5 -	10 U	20 U	2 U	10 U	1 U	1 U	0.331 U	0.631 -	0.962 -
	11/9/2021	-	879 -	241000 -	65000 -	100 U	7.2 J	387000 -	1010000 -	1 U	1 U	70 -	0.2 U	2 U	10 U	4.2 -	10 U	20 U	- -	10 U	1 U	1 U	0.454 U	0.656 U	1.11 U
	5/3/2022	-	622 -	299000 -	50000 -	100 U	6.8 J	661000 -	1390000 -	1 U	1 U	65.6 -	0.2 U	2 U	10 U	6.4 -	10 U	20 U	- -	10 U	1 U	1 U	0.261 -	0.555 -	0.816 -
	11/29/2022	-	806 -	325000 -	46700 -	100 U	6.8 J	442000 -	1230000 -	1 U	1 U	97.8 -	0.2 U	2 U	- -	3.6 -	10 U	20 U	- -	10 U	1 U	- -	0.53 -	0.387 U	0.917 -
	5/22/2023	-	720 -	258000 -	55900 -	100 U	7 J	433000 -	1280000 -	1 U	1 U	55.9 -	0.2 U	2 U	10 U	8.2 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.433 J+	0.21 U	0.643 U
	11/9/2023	-	825 -	258000 -	52300 -	100 U	7.5 J-	352000 -	1120000 -	- -	1 U	68.3 -	- -	2 U	- -	2.1 -	10 U	20 U	- -	10 U	1 U	- -	0.192 -	1.02 -	1.21 -
	5/9/2024	-	769 -	274000 -	58700 -	100 U	6.9 J	479000 -	1240000 -	1 U	1 U	55.3 -	0.2 U	2 U	10 U	2.7 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.546 U	0.287 U	0.833 U
	11/14/2024	-	798 -	247000 -	52400 -	100 U	7.1 -	369000 -	1040000 -	1 U	1 U	70.2 -	0.2 U	2 U	- -	1.8 -	- -	20 U	- -	10 U	1 U	- -	0.185 U	0.921 -	1.11 U
MW-21I	1/18/2021	-	3640 -	265000 -	72300 -	140 -	7.2 -	475000 -	1110000 -	1 U	1.2 -	56.2 -	0.2 U	2 U	10 U	1.2 -	10 U	20 U	2 U	120 -	1 U	1 U	0.225 U	0.456 -	0.681 U
	11/9/2021	-	2670 -	239000 -	72500 -	150 -	7.4 J	389000 -	990000 -	1 U	1 U	39 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	89.1 -	1 U	1 U	0.75 -	0.565 U	1.32 -
	5/3/2022	-	2640 -	232000 -	68400 -	140 -	7.1 J	402000 -	1120000 -	1 U	1 U	43.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	112 -	1 U	1 U	0.065 -	0.293 -	0.358 -
	11/29/2022	-	2980 -	258000 -	71500 -	200 -	7 J	408000 -	1010000 -	1 U	1 U	39.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	138 -	1 U	- -	0.798 -	0.561 U	1.36 -
	5/22/2023	-	2250 -	222000 -	71400 -	170 -	7.3 J	407000 -	1070000 -	1 U	1 U	43.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	115 -	1 U	1 U	0.294 U	0.348 U	0.642 U
	11/9/2023	-	1900 -	238000 -	69200 -	120 -	7.3 J-	390000 -	1070000 -	- -	1 U	40.9 -	- -	2 U	- -	1 U	10 U	21.3 -	- -	108 -	1 U	- -	0.192 -	0.633 -	0.825 -
	5/9/2024	-	2330 -	262000 -	74300 -	230 -	6.9 J	457000 -	1140000 -	1 U	1 U	46.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	109 -	1 U	1 U	0.591 U	0.852 U	1.44 U
	11/14/2024	-	1590 -	240000 -	71200 -	190 -	7.2 -	433000 -	1030000 -	1 U	1 U	40.5 -	0.2 U	2 U	- -	1 U	- -	22.5 -	- -	102 -	1 U	- -	0.115 U	1.38 -	1.5 U
MW-21A	1/18/2021	-	11200 -	565000 -	116000 -	160 -	7.2 -	1560000 -	2460000 -	1 U	2.8 -	57.4 -	0.2 U	2 U	10 U	1.5 -	10 U	77.8 -	2 U	215 -	1 U	1 U	0.192 U	0.962 -	1.15 -
	11/9/2021	-	11000 -	529000 -	106000 -	140 -	7 J	1520000 -	2200000 -	1 U	1.6 -	33.7 -	0.2 U	2 U	10 U	1 U	10 U	84.4 -	- -	204 -	1 U	1 U	0.0732 U	0.451 U	0.524 U
	5/3/2022	-	10700 -	525000 -	102000 -	180 -	7.1 J	1750000 -	2320000 -	1 U	1.7 -	32.8 -	0.2 U	2 U	10 U	1 U	10 U	77.8 -	- -	199 -	1 U	1 U	0.252 -	1.02 -	1.27 -
	11/29/2022	-	11400 -	524000 -	82800 -	230 -	7.2 J	1190000 -	2110000 -	1 U	2 -	33.8 -	0.2 U	2 U	- -	1 U	10 U	61.6 -	- -	187 -	1 U	- -	0.47 U	1.04 -	1.51 U
	5/19/2023	-	10800 -	453000 -	80000 -	200 -	7.2 J	1150000 -	2010000 -	1 U	1.8 -	31.6 -	0.2 U	2 U	10 U	1 U	10 U	65.6 -	0.2 U	170 -	1 U	1 U	-0.334 U	0.805 -	0.805 U
	11/9/2023	-	11000 -	497000 -	78900 -	190 -	7 J-	1460000 -	2150000 -	- -	2.1 -	31.1 -	- -	2 U	- -	1 U	10 U	71.2 -	- -	165 -	1 U	- -	0.219 -	0.779 -	0.998 -
	11/9/2023	Duplicate	11200 -	502000 -	79000 -	190 -	7.2 J-	1340000 -	2130000 -	- -	2 -	31.5 -	- -	2 U	- -	1 U	10 U	75.2 -	- -	168 -	1 U	- -	0.564 -	0.891 -	1.46 -
	5/9/2024	-	11500 -	522000 -	91600 -	190 -	6.8 J	1390000 -	2250000 -	1 U	2 -	30.5 -	0.2 U	2 U	10 U	1 U	10 U	72.7 -	0.2 U	177 -	1 U	1 U	0.445 U	0.412 U	0.857 U
	5/9/2024	Duplicate	11600 -	529000 -	88800 -	190 -	6.8 J	1380000 -	2180000 -	1 U	2 -	30.7 -	0.2 U	2 U	10 U	1 U	10 U	69.7 -	0.2 U	179 -	1 U	1 U	-0.0618 U	0.126 U	0.126 U
	11/14/2024	-	11700 -	498000 -	84100 -	230 -	7.6 -	1300000 -	2140000 -	1 U	2 -	31.2 -	0.2 U	2 U	- -	1.1 -	- -	69.7 -	- -	175 -	1 U	- -	0.615 U	0.945 U	1.56 U
	11/14/2024	Duplicate	11700 -	519000 -	83900 -	240 -	7.6 -	1290000 -	2220000 -	1 U	2 -	31.5 -	0.2 U	2 U	- -	1.1 -	- -	70.3 -	- -	176 -	1 U	- -	0.351 U	1.87 -	2.22 -
MW-22	11/24/2020	-	2550 -	356000 -	196000 -	150 -	7.3 -	1650000 -	2890000 -	1 U	5.6 -	116 -	0.2 U	2 U	- -	2.8 -	10 U	3480 -	- -	285 -	1.3 -	1 U	0.776 -	1.97 -	2.75 -
	12/17/2020	-	2450 -	353000 -	185000 -	100 U	7.2 -	1590000 -	3000000 -	1 U	9.1 -	114 -	0.95 -	2 U	13.8 -	4.5 -	10 U	3540 -	2 U	329 -	1.2 -	1 U	- -	- -	- -
	6/2/2021	-	2430 -	354000 -	193000 -	100 U	7.2 -	1620000 -	3080000 -	1 U	14.2 -	151 -	1.4 -	3.9 -	- -	10 -	16.1 -	4010 -	- -	250 -	2 -	1 U	0.446 -	3.01 -	3.46 -
	11/9/2021	-	2740 -	397000 -	228000 -	100 U	7.3 J	1770000 -	3260000 -	1 U	7.7 -	74.2 -	2 U	2 U	10 U	1 U	10 U	4880 -	- -	1010 -	1 -	1 U	0.911 -	1.35 -	2.26 -
MW-23	11/24/2020	-	109 -	64600 -	11400 -	200 -	7.7 -	43300 -	249000 -	1 U	3.9 -	52.3 -	0.26 -	2 U	- -	2.3 -	10 U	20 U	- -	10 U	2.3 -	1 U	- - U	0.628 -	- U
	12/16/2020	-	100 U	67400 -	9800 -	180 -	7.9 -	29300 -	234000 -	1 U	2.2 -	42 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	2 U	10 U	1 U	1 U	- -	- -	- -
	6/2/2021	-	135 -	58900 -	8600 -	120 -	7.7 -	16300 -	242000 -	1 U	2.6 -	32.9 -	0.2 U	2 U	- -	1.8 -	10 U	20 U	2 U	10 U	1 U	1 U	0.315 -	0.755 -	1.07 -
	11/9/2021	-	100 U	61400 -	9100 -	140 -	7.8 J	18200 -	212000 -	1 U	1 U	14.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.0607 U	0.0912 U	0.152 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents														
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-24	11/24/2020	-	999 -	309000 -	96700 -	100 U	7.3 -	1010000 -	1770000 -	1 U	1 U	45.9 -	0.2 U	2 U	- -	2.7 -	10 U	1600 -	- -	270 -	1 U	1 U	0.766 -	- U	1.23 -
	12/17/2020	-	929 -	308000 -	92200 -	100 U	7.3 -	994000 -	1770000 -	1 U	1 U	43.9 -	0.2 U	2 U	10 U	2.6 -	10 U	1550 -	2 U	252 -	1 U	1 U	- -	- -	- -
	6/2/2021	-	818 -	265000 -	79200 -	100 U	7.4 -	833000 -	1520000 -	1 U	1 U	38.7 -	0.2 U	2 U	- -	2 -	10 U	1430 -	2 U	301 -	1 U	1 U	0.729 -	0.903 -	1.63 -
	11/10/2021	-	895 -	247000 -	53900 -	100 U	7.3 J	788000 -	1490000 -	1 U	1 U	39.2 -	0.2 U	2 U	10 U	1.4 -	10 U	1470 -	- -	379 -	1 U	1 U	0.394 U	-0.033 U	0.394 U
	5/3/2022	-	688 -	214000 -	65500 -	100 U	7.3 J	923000 -	750000 -	1 U	1 U	38 -	0.2 U	2 U	10 U	1.4 -	10 U	1150 -	- -	348 -	1 U	1 U	-0.0934 U	1.27 -	1.27 U
	11/18/2022	-	1040 -	272000 -	- -	- -	7.5 J	- -	1590000 -	1 U	1 U	41.6 -	0.2 U	2 U	- -	2.2 -	10 U	1580 -	- -	373 -	1 U	- -	0.362 U	0.443 U	0.805 U
	6/6/2023	-	934 -	248000 -	57100 -	100 U	7.5 J	600000 -	1410000 -	1 U	1 U	34.5 -	0.2 U	2 U	10 U	1.8 -	10 U	1410 -	0.2 U	347 -	1 U	1 U	-0.0579 -	0.609 -	0.609 -
	11/21/2023	-	906 -	261000 -	48300 -	110 -	7.6 J-	751000 -	1350000 -	- -	1 U	35.7 -	- -	2 U	- -	1.4 -	10 U	1060 -	- -	345 -	1 U	- -	0.477 -	1.15 -	1.63 -
	5/6/2024	-	1080 -	273000 -	89200 -	370 -	6.7 J	1290000 -	2630000 -	1 U	1 U	37.3 -	0.2 U	2 U	10 U	2 -	10 U	1240 -	0.2 U	354 -	1 U	1 U	0.0506 U	0.445 U	0.496 U
	11/14/2024	-	1070 -	295000 -	71700 -	100 U	7.6 -	941000 -	1720000 -	1 U	1 U	39.6 -	0.2 U	2 U	- -	2.5 -	- -	1230 -	- -	383 -	1 U	- -	0.539 U	0.347 U	0.886 U
MW-25B	9/15/2021	-	3350 -	224000 -	17000 -	100 U	7 -	318000 -	896000 -	1 U	1 U	55.6 -	0.2 U	2 U	- -	1.7 -	10 U	20 U	- -	10 U	1.3 -	1 U	0.128 U	0.057 U	0.185 U
	11/5/2021	-	3430 -	170000 -	15200 -	100 U	7.3 J	246000 -	705000 -	1 U	1 U	47.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.233 U	0.224 U	0.457 U
	5/2/2022	-	2680 -	173000 -	13900 -	100 U	7.2 J	225000 -	735000 -	1 U	1 U	39.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1.2 -	1 U	0.162 -	0.212 -	0.374 -
	11/2/2022	-	548 -	126000 -	7400 -	130 -	7.3 J	82000 -	519000 -	1 U	1 U	45.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.5 -	- -	-0.194 U	0.484 U	0.484 U
	11/2/2022	Duplicate	539 -	124000 -	7400 -	130 -	7.4 J	82600 -	513000 -	1 U	1 U	45.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.6 -	- -	-0.166 U	0.647 U	0.647 U
	5/11/2023	-	4160 -	211000 -	15700 -	120 -	7.3 J	390000 -	860000 -	1 U	1 U	48 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.921 -	0.921 U
	11/8/2023	-	1110 -	135000 -	7400 -	100 -	7.6 J-	91700 -	487000 -	- -	1 U	42.4 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.2 -	- -	0.185 -	0.306 -	0.491 -
	5/20/2024	-	9220 -	382000 -	36200 -	150 -	7 J	786000 -	1510000 -	1 U	1 U	56.9 -	0.2 U	2 U	10 U	1.2 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.181 U	0.075 U	0.256 U
	11/13/2024	-	2820 -	178000 -	10600 -	110 -	7.1 -	217000 -	647000 -	1 U	1 U	43 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.219 U	0.921 -	1.14 U
MW-25I	9/15/2021	-	18600 -	570000 -	59700 -	100 U	7 -	1480000 -	2490000 -	1 U	1.1 -	43.9 -	0.2 U	2 U	- -	1.2 -	10 U	20 U	- -	16 -	1 U	1 U	0.143 U	0.677 U	0.82 U
	11/4/2021	-	16800 -	551000 -	49500 -	100 U	7.1 J	1470000 -	2360000 -	1 U	1 U	35.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	15.2 -	1 U	1 U	0.328 U	0.618 U	0.946 U
	5/2/2022	-	14300 -	554000 -	42300 -	100 U	7.1 J	1440000 -	2220000 -	1 U	1 U	26.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	17.7 -	1 U	1 U	0.212 -	0.442 -	0.654 -
	5/2/2022	Duplicate	13500 -	564000 -	41700 -	100 U	6.9 J	1430000 -	2300000 -	1 U	1 U	23.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	15.8 -	1 U	1 U	-0.0986 -	0.0943 -	0.0943 -
	11/4/2022	-	18400 -	550000 -	65000 -	100 U	7 J	1470000 -	2240000 -	1 U	1 U	27.7 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	20.3 -	1 U	- -	0.342 U	0.808 U	1.15 U
	5/12/2023	-	15700 -	570000 -	52800 -	100 U	7.1 J	1440000 -	2360000 -	1 U	1 U	22.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	21.8 -	1 U	1 U	0.413 U	1.18 -	1.59 -
	11/7/2023	-	18900 -	590000 -	59800 -	100 U	7.2 J-	1340000 -	2430000 -	- -	1 U	22.5 -	- -	2 U	- -	1 U	10 U	20 U	- -	34.9 -	1 U	- -	0.255 -	0.178 -	0.433 -
	5/21/2024	-	14500 -	517000 -	54800 -	100 U	7.1 J	1330000 J+	2280000 -	1 U	1 U	20.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	35.4 -	1 U	1 U	0.124 U	0.57 U	0.694 U
	11/12/2024	-	16700 -	535000 -	56000 -	100 U	7.2 -	1390000 -	2340000 -	1 U	1 U	20.6 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	51.6 -	1 U	- -	0.102 U	1.12 -	1.22 U
MW-25A	9/15/2021	-	13900 -	554000 -	43400 -	120 -	7 -	1430000 -	2400000 -	1 U	1.2 -	51.5 -	0.2 U	2 U	- -	2.1 -	10 U	20 U	- -	13 -	1 U	1 U	-0.211 U	0.597 U	0.597 U
	11/4/2021	-	13800 -	528000 -	41200 -	100 U	7.2 J	1470000 -	2420000 -	1 U	1 -	31 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.192 U	-0.208 U	0.192 U
	5/2/2022	-	11200 -	560000 -	48400 -	100 U	7.1 J	1550000 -	2350000 -	1 U	1 U	28.5 -	0.2 U	2 U	10 U	1.3 -	10 U	20 U	- -	11.1 -	1 U	1 U	0.353 -	0.373 -	0.726 -
	11/2/2022	-	11200 -	539000 -	44600 -	100 U	7.2 J	1400000 -	2310000 -	1 U	1 U	30.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.571 -	0.498 U	1.07 -
	5/10/2023	-	11800 -	504000 -	55200 -	100 U	7.5 J	1420000 -	2380000 -	1 U	1 U	20 -	0.2 U	2 U	10 U	2.9 -	10 U	20 U	0.2 U	15.5 -	1 U	1 U	0 U	0.878 -	0.878 U
	11/7/2023	-	13200 -	501000 -	52200 -	100 U	7.3 J-	1350000 -	2690000 -	- -	1 -	18.2 -	- -	2 U	- -	1 U	10 U	20 U	- -	15.6 -	1 U	- -	0.177 -	0.795 -	0.972 -
	5/20/2024	-	13500 -	509000 -	55200 -	100 U	6.9 J	1630000 -	2450000 -	1 U	1 U	18.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	13.4 -	1 U	1 U	-0.302 U	0.138 U	0.138 U
	11/13/2024	-	14900 -	502000 -	56900 -	100 U	7.1 -	1490000 -	2350000 -	1 U	1 U	18.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	14.6 -	1 U	- -	0.266 U	1.16 -	1.43 -
MW-26B	9/16/2021	-	1330 -	162000 -	20500 -	130 -	7 -	116000 -	665000 -	1 U	1 U	56.8 -	0.2 U	2 U	- -	3.2 -	10 U	20.6 -	- -	10 U	11.3 -	1 U	-0.0702 U	1.47 -	1.47 U
	11/3/2021	-	2840 -	193000 -	30100 J-	100 U	7.1 J	237000 -	858000 -	1 U	1 U	59.1 -	0.2 U	2 U	10 U	2.8 -	10 U	28.2 -	- -	10 U	1 U	1 U	0.655 U	0.334 U	0.989 U
	7/14/2022	-	1250 -	157000 -	22500 -	100 U	7.1 J	126000 -	707000 -	1 U	1 U	30.5 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	- -	10 U	3.1 -	1 U	0.135 -	0.834 -	0.969 -
	11/3/2022	-	1530 -	180000 -	30700 -	100 U	7 J	192000 -	586000 -	1 U	1 U	21.9 -	0.2 U	2 U	- -	1.6 -	10 U	20 U	- -	10 U	1 U	- -	0.279 U	0.677 U	0.956 U
	6/1/2023	-	1230 -	167000 -	19300 -	100 U	7.2 J	113000 -	722000 -	1 U	1 U	21.9 -	0.2 U	2 U	10 U	1.9 -	10 U	20 U	0.2 U	10 U	10.3 -	1 U	-0.0623 U	0.475 U	0.475 U
	11/8/2023	-	2120 -	175000 -	35900 -	100 U	7.4 J-	239000 -	803000 -	- -	1 U	21.3 -	- -	2 U	- -	1.8 -	10 U	20 U	- -	10 U	1 U	- -	0.189 -	0.175 -	0.364 -
	6/11/2024	-	1760 -	199000 -	33700 -	100 U	8 J	227000 -	772000 -	1 U	1 U	22.1 -	0.2 U	2 U	10 U	1.4 -	10 U	20 U	0.2 U	10 U	4.9 -	1 U	0.535 U	0.376 U	0.911 U
	6/11/2024	Duplicate	1750 -	195000 -	33000 -	100 U	7.2 J	225000 -	798000 -	1 U	1 U	22.1 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	0.2 U	10 U	5.2 -	1 U	0.279 U	0.907 -	1.19 U
	11/19/2024	-	2020 -	208000 -	32400 -	100 U	7 -	228000 -	856000 -	1 U	1 U	24.1 -	0.2 U	2 U	- -	2.4 -	- -	20 U	- -	10 U	2.8 -	- -	-0.227 U	0.512 U	0.512 U
MW-26I	9/16/2021	-	5660 -	241000 -	49000 -	120 -	7.3 -	359000 -	994000 -	1 U	1.5 -	106 -	0.2 U	2 U	- -	1.6 -	10 U	49.7 -	- -	52.2 -	1 U	1 U	0.255 U	1.58 -	1.84 U
	11/3/2021	-	15800 -	398000 -	79800 J-	100 U	7.1 J	942000 -	1760000 -	1 U	1 U	75.8 -	0.2 U	2 U	10 U	1 U	10 U	33.4 -	- -	558 -	1 U	1 U	0.144 U	1.14 -	1.28 U
	7/14/2022	-	6160 -	239000 -	58100 -	100 U	7.3 J	422000 -	1160000 -	1 U	1.9 -	38.6 -	0.2 U	2 U	10 U	1 U	10 U	32.8 -	- -	152 -	1 U	1 U	0.369 -	0.702 -	1.07 -
	11/4/2022	-	5040 -	224000 -	57500 -	100 U	7.3 J	384000 -	998000 -	1 U	1.9 -	38.3 -	0.2 U	2 U	- -	1 U	10 U	27.6 -	- -	79.3 -	1 U	- -	-0.301 U	1.26 -	1.26 U
	6/1/2023	-	4340 -	205000 -	47400 -	100 U	7.1 J	318000 -	984000 -	1 U	2.2 -	32.9 -	0.2 U	2 U	10 U	1 U	10 U	29.2 -	0.2 U	76.5 -	1 U	1 U	0.425 U	0.615 U	1.04 U
	11/8/2023	-	6430 -	244000 -	53700 -	100 U	7.4 J-	462000 -	1060000 -	- -	1.6 -	30.9 -	- -	2 U	- -	1 U	10 U	29.4 -	- -	219 -	1 U	- -	-0.0721 -	0.326 -	0.326 -
	6/10/2024	-	8370 -	277000 -	63200 -	100 U	7 J	547000 -	1140000 -	1 U	1.4 -	32.4 -	0.2 U	2 U	10 U	1 U	10 U	24.5 -	0.2 U	333 -	1 U	1 U	0.219 U	1.37 -	1.59 U
	11/19/2024	-	9390 -	280000 -	65600 -	100 U	7.2 -	562000 -	1120000 -	1 U	2.1 -	35.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	660 -	1 U	- -	0.493 -	0.745 U	1.24 U
MW-26A	9/16/2021	-	19100 -	442000 -	85400 -	100 -	7.2 -	1100000 -	1860000 -	1 U	1 U	36.4 -	0.2 U	2 U	- -	1 -	10 U	24.7 -	- -	806 -	1 U	1 U	0.0666 U	1.25 -	1.32 U
	11/3/2021	-	25400 -	614000 -	99100 J-	100 U	7 J	1390000 -	2400000 -	1 U	1.6 -	33.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	1620 -	1 U	1 U	0.0644 U	-0.217 U	0.0644 U
	7/14/2022	-	23900 -	538000 -	120000 -	100 U	7.1 J	1450000 -	2420000 -	1 U	1.5 -	31.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	1390 -	1 U	1 U	0.214 -	1.36 -	1.57 -
	11/3/2022	-	22300 -	686000 -	101000 -	100 U	7 J	1360000 -	2260000 -	1 U	1.3 -	35.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	1230 -	1 U	- -	-0.181 U	0.8 -	0.8 U
	6/1/2023	-	24700 -	548000 -	96900 -	100 U	6.8 J	1220000 -	2360000 -	1 U	1.5 -	29.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	1370 -	1 U	1 U	-0.238 U	0.676 -	0.676 U
	11/8/2023	-	21900 -	590000 -	111000 -	100 U	7 J-	1250000 -	2180000 -	- -	1.5 -	30 -	- -	2 U	- -	1 U	10 U	20 U	- -	1510 -	1 U	- -	0.313 -	1.01 -	1.32 -
	6/10/2024	-	21700 -	542000 -	109000 -	100 U	7.1 J	1320000 -	2170000 -	1 U	1.9 -	30 -	0.2 U	2 U	10 U	1 -	10 U	20 U	0.2 U	1390 -	1 U	1 U	0 U	0.811 -	0.811 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

| Well / Piezometer | Sample Date | Sample Type | Appendix III Constituents | | |

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-30D2	12/8/2021	-	796 -	11300 -	11900 -	920 -	9 -	5100 -	456000 -	6.4 -	7.4 -	178 -	0.96 -	2.1 -	173 -	8.5 -	10.4 -	35.5 -	- -	64.6 -	5.4 -	1 U	2.3 -	0.959 -	3.26 -
	2/9/2022	-	781 -	5020 -	13500 -	910 -	8.7 -	6800 -	409000 -	3 -	2.4 -	91.3 -	0.24 -	2 U	29.7 -	1.8 -	10 U	20 U	- -	36.2 -	1.4 -	1 U	- -	- -	- -
	4/19/2022	-	726 -	3760 -	- -	- -	8.8 -	- -	378000 -	1.1 -	2.3 -	76.5 -	0.3 -	0.22 -	9.1 -	2.3 -	2.8 -	20 U	- -	13.2 -	1.5 -	1 U	- -	- -	- -
MW-31D2	11/17/2021	-	1180 -	12500 -	9300 -	890 -	7.9 -	2500 -	328000 -	1 U	1.8 -	250 -	0.2 U	2 U	10 U	1.1 -	10 U	20 U	- -	10 U	1 U	1 U	0.514 -	0.527 -	1.04 -
	2/7/2022	-	1200 -	14800 -	11600 -	870 -	8.1 -	6100 -	290000 -	1 U	1.8 -	296 -	0.28 -	2 U	10 U	2.5 -	10 U	23.9 -	- -	10 U	1 U	1 U	- -	- -	- -
	4/19/2022	-	1080 -	18500 -	- -	- -	8 -	- -	454000 -	1 U	1.9 -	249 -	0.2 U	0.2 U	2 U	1 U	1 U	21.7 -	- -	35.7 -	1 U	1 U	- -	- -	- -
MW-32I	4/20/2022	-	951 -	194000 -	- -	- -	6.9 -	- -	1160000 -	1 U	3.5 -	60 -	0.3 -	0.28 -	6.7 -	1.9 -	4.7 -	20 U	- -	2.1 -	1.2 -	1 U	- -	- -	- -
	5/24/2022	-	897 -	222000 -	- -	- -	- -	- -	- -	1 U	8.7 -	86.9 -	0.86 -	0.48 -	20.4 -	4.7 -	14.4 -	20 U	2 U	2.6 -	1.1 -	1 U	- -	- -	- -
MW-32D1	11/17/2021	-	100 U	109000 -	2700 -	100 U	6.6 -	242000 -	518000 -	1 U	1 U	69.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.404 -	- U	0.787 -
	2/9/2022	-	100 U	104000 -	2500 -	100 U	7.2 -	237000 -	517000 -	1 U	1 U	70.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	- -	- -	- -
	4/19/2022	-	100 U	89200 -	- -	- -	7.1 -	- -	518000 -	1 U	1 -	67.6 -	0.2 U	0.52 -	3 -	1 U	1 U	20 U	- -	3.8 -	1 U	1 U	- -	- -	- -
MW-32D2	12/8/2021	-	815 -	19700 -	21900 -	1100 -	8.3 -	66900 -	394000 -	1.9 -	3.2 -	171 -	0.51 -	2 U	31.9 -	4.9 -	10 U	36.1 -	- -	22.5 -	1.4 -	1 U	1.38 -	1.32 -	2.7 -
	2/9/2022	-	796 -	121000 -	12300 -	1600 -	8.4 -	18300 -	69000 -	1 U	98.7 -	2240 -	14.2 -	15.3 -	614 -	215 -	174 -	448 -	- -	198 -	64.7 -	4.6 -	- -	- -	- -
	4/19/2022	-	884 -	7670 -	- -	- -	8.7 -	- -	381000 -	1.2 -	3.2 -	158 -	0.41 -	0.23 -	10.8 -	3.3 -	3.7 -	21.3 -	- -	17.5 -	2.7 -	1 U	- -	- -	- -
	5/11/2022	-	936 -	8280 -	10700 -	2000 -	7.5 J	11100 -	395000 -	1 U	2.4 -	158 -	0.25 -	2 U	11.5 -	1.6 -	10 U	20 U	- -	19.2 -	1.5 -	1 U	- -	- -	- -
	5/24/2022	-	889 -	5790 -	11500 -	1700 -	8.7 J	6500 -	336000 -	1 U	1.5 -	106 -	0.21 -	0.2 U	5.6 -	1.6 -	1.8 -	20 U	2 U	9 -	1 U	1 U	- -	- -	- -
MW-33I	12/1/2021	-	1690 -	331000 -	100000 -	150 -	7.1 -	1610000 -	2460000 -	- -	1.5 -	80.7 -	- -	- -	- -	3.8 -	- -	220 -	- -	34.4 -	1 U	1 U	0.61 -	2.94 -	3.55 -
	2/9/2022	-	1940 -	462000 -	120000 -	100 U	6.9 -	1700000 -	2480000 -	1 U	3 -	63 -	0.2 U	2 U	10 U	2.1 -	10 U	258 -	- -	27.3 -	1 U	1 U	- -	- -	- -
	4/20/2022	-	1890 -	428000 -	- -	- -	6.6 -	- -	2700000 -	1 U	8.4 -	59.3 -	0.2 U	0.2 U	2 U	1.4 -	1 U	142 -	- -	13.6 -	1 U	1 U	- -	- -	- -
	5/10/2022	-	2060 -	449000 -	115000 -	140 -	8.3 J	1860000 -	2710000 -	1 U	10.3 -	64 -	0.2 U	2 U	10 U	1.2 -	10 U	200 -	- -	12.9 -	1 U	1 U	- -	- -	- -
	5/24/2022	-	2000 -	452000 -	116000 -	130 -	7 J	1820000 -	2770000 -	1 U	5.2 -	63.5 -	0.2 U	0.2 U	2 U	3.1 -	1.5 -	252 -	2 U	17.4 -	1 U	1 U	- -	- -	- -
MW-33D2	12/1/2021	-	100 U	8960 -	51000 -	3800 -	8.7 -	4200 -	676000 -	- -	8.7 -	283 -	0.2 U	- -	10 U	16 -	10 U	20 U	- -	17.5 -	1 U	- -	1.46 -	0.79 -	2.25 -
	2/9/2022	-	1110 -	9810 -	48300 -	3400 -	8.6 -	5800 -	782000 -	1.7 -	8 -	345 -	1.3 -	2 U	57.6 -	15.1 -	15.8 -	64.7 -	- -	22 -	5.3 -	1 U	- -	- -	- -
	4/20/2022	-	1070 -	2920 -	- -	- -	8.3 -	- -	660000 -	1.8 -	1.5 -	127 -	0.2 U	0.2 U	2.8 -	1 U	1 U	20 U	- -	21.2 -	1.2 -	1 U	- -	- -	- -
	5/10/2022	-	1160 -	5010 -	44900 -	4100 -	8.5 J	8100 -	653000 -	1.1 -	2.4 -	167 -	0.21 -	2 U	10 U	1.3 -	10 U	28.4 -	- -	30.9 -	1.2 -	1 U	- -	- -	- -
	5/24/2022	-	1080 -	3540 -	46800 -	3600 -	8.7 J	4300 -	648000 -	1 U	1.8 -	127 -	0.2 U	0.2 U	3.6 -	1.4 -	2 -	26 -	2 U	14.8 -	1 U	1 U	- -	- -	- -
	12/21/2022	-	1180 -	3470 -	46000 -	3600 -	8.5 J	4000 -	616000 -	1 U	1 U	129 -	0.2 U	2 U	10 U	1 U	10 U	27.5 -	0.2 U	10 U	1 U	1 U	0.283 U	0.509 U	0.792 U
	5/23/2023	-	1140 -	9490 -	45800 -	3200 -	7.7 J	33000 -	642000 -	1 U	1.3 -	182 -	0.2 U	2 U	10 U	1 U	10 U	53.8 -	0.2 U	13.7 -	1 U	1 U	0 U	-0.032 U	0 U
	11/21/2023	-	1120 -	4220 -	47200 -	3400 -	7.6 J-	11400 -	633000 -	- -	1 U	127 -	- -	2 U	- -	1 U	10 U	28.9 -	- -	10 U	1 U	1 U	0.211 -	-0.145 -	0.211 -
	11/21/2023	Duplicate	1120 -	4200 -	47200 -	3400 -	8.1 J-	11400 -	619000 -	- -	1 U	127 -	- -	2 U	- -	1 U	10 U	28.5 -	- -	10 U	1 U	1 U	0.433 -	0.699 -	1.13 -
	5/3/2024	-	1100 -	15800 -	66200 -	2900 -	8.2 J	64400 -	641000 -	1 U	1.2 -	226 -	0.2 U	2 U	10 U	1 U	10 U	57 -	0.2 U	33.7 -	1 U	1 U	0.201 U	0.432 U	0.633 U
	11/7/2024	-	1090 -	8660 -	53900 -	3500 -	8.2 -	32200 -	640000 -	1 U	1.3 -	250 -	0.2 U	2 U	- -	1 U	- -	35.1 -	- -	17.9 -	1 U	- -	0.45 U	0.0629 U	0.513 U
	11/7/2024	Duplicate	1080 -	8730 -	53400 -	3500 -	8.3 -	31400 -	662000 -	1 U	1.3 -	255 -	0.2 U	2 U	- -	1 U	- -	37.4 -	- -	17.8 -	1 U	- -	1.24 -	0.135 U	1.38 U
MW-34A	11/16/2021	-	100 U	67000 -	3100 -	180 -	6.5 -	12200 -	305000 -	1 U	1.9 -	93.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.894 -	- U	1.32 -
	2/8/2022	-	100 U	69100 -	2300 -	160 -	7.2 -	8600 -	278000 -	1 U	6.3 -	59 -	0.3 -	2 U	10 U	5.2 -	10 U	20 U	- -	10 U	1 -	1 U	- -	- -	- -
	4/19/2022	-	100 U	64800 -	- -	- -	7.6 -	- -	296000 -	1 U	1.6 -	41.1 -	0.2 U	0.2 U	2 U	1.4 -	1 U	20 U	- -	1.7 -	1 U	1 U	- -	- -	- -
MW-34D1	11/16/2021	-	100 U	101000 -	3600 -	110 -	6.6 -	110000 -	436000 -	1 U	1 U	115 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	0.538 -	0.808 -	1.35 -
	2/8/2022	-	100 U	96100 -	6300 -	100 U	7.2 -	84400 -	405000 -	1 U	1.2 -	171 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	10 U	1 U	1 U	- -	- -	- -
	4/19/2022	-	100 U	103000 -	- -	- -	7.3 -	- -	480000 -	1 U	1.2 -	150 -	0.2 U	0.2 U	2 U	1 U	1 U	20 U	- -	7.7 -	1 U	1 U	- -	- -	- -
MW-34SS	12/8/2021	-	220 -	65600 -	3900 -	100 U	7.5 -	12500 -	351000 -	1 U	2.7 -	290 -	0.2 U	2 U	10 U	1.6 -	10 U	27.6 -	- -	18.6 -	1 U	1 U	0.413 -	1.28 -	1.69 -
	2/10/2022	-	226 -	70000 -	3000 -	100 U	7.8 -	20900 -	330000 -	2.2 -	4.3 -	314 -	0.43 -	2 U	14.4 -	6 -	10 U	26.3 -	- -	94.6 -	4.4 -	1 U	- -	- -	- -
	4/20/2022	-	208 -	59600 -	- -	- -	7.6 -	- -	356000 -	1 U	1.2 -	263 -	0.2 U	0.2 U	2 U	1.3 -	1 U	20 U	- -	31.4 -	1 U	1 U	- -	- -	- -
MW-34D2	11/17/2021	-	888 -	7300 -	20900 -	2000 -	8.6 -	11400 -	495000 -	1 U	1.6 -	162 -	0.6 -	2 U	17.5 -	2.8 -	10 U	24.2 -	- -	12.5 -	1.1 -	1 U	0.916 -	0.563 -	1.48 -
	2/9/2022	-	952 -	5020 -	16600 -	1900 -	9 -	7500 -	470000 -	1 U	1.6 -	126 -	0.38 -	2 U	12.8 -	1.9 -	10 U	21.2 -	- -	10 U	1.8 -	1 U	- -	- -	- -
	4/19/2022	-	865 -	4490 -	- -	- -	8.6 -	- -	409000 -	1 U	1 U	103 -	0.2 U	0.2 U	3.3 -	1 U	1 U	20 U	- -	11.9 -	1 U	1 U	- -	- -	- -
MW-35D1	12/1/2021	-	100 U	180000 -	22100 -	310 -	7.2 -	492000 -	994000 -	- -	2.2 -	110 -	- -	- -	- -	1 U	- -	96.6 -	- -	34.4 -	1 U	1 U	0.764 -	-0.122 -	0.764 -
	2/9/2022	-	100 U	176000 -	25000 -	280 -	7.4 -	499000 -	5080000 -	1 U	1.8 -	104 -	0.2 U	2 U	10 U	1 U	10 U	188 -	- -	30.4 -	1 U	1 U	- -	- -	- -
	4/19/2022	-	100 U	123000 -	- -	- -	7.4 -	- -	635000 -	1 U	1 U	184 -	0.2 U	0.2 U	2 U	1.3 -	1 U	28.8 -	- -	14.3 -	1 U	1 U	- -	- -	- -
	11/22/2023	-	100 U	241000 -	35600 -	320 -	7.8 J-	720000 -	1350000 -	- -	1 U	89.7 -	- -	2 U	- -	2 -	10 U	382 -	- -	36.4 -	1 U	1 U	0.978 -	0.107 -	1.09 -
	5/1/2024	-	100 U	242000 -	33800 -	350 -	7.2 J	692000 -	1180000 -	1 U	1.2 -	85 -	0.2 U	2 U	10 U	2.2 -	10 U	375 -	0.2 U	38.8 -	1 U	1 U	1.79 -	0.0906 U	1.88 U
	11/7/2024	-	100 U	228000 -	29200 -	360 -	7 -	623000 -	1240000 -	1 U	1 U	85.4 -	0.2 U	2 U	- -	3 -	- -	298 -	- -	34.6 -	1 U	- -	0.93 -	-0.0611 U	0.93 U
MW-35SS	12/9/2021	-	541 -	35100 -	11000 -	460 -	8 -	13200 -	316000 -	1 U	4.5 -	356 -	0.69 -	2 U	20.6 -	8.8 -	10 U	48.8 -	- -	10 U	2.3 -	1 U	1.97 -	- U	2.72 -
	2/10/2022	-	615 -	113000 -	3100 -	100 U	7.8 -	22200 -	640000 -	5 U	119 -	2010 -	14.4 -	9.8 -	380 -	219 -	150 -	498 -	- -	164 -	124 -	5 U	- -	- -	- -
	4/20/2022	-	657 -	65100 -	- -	- -	7.4 -	- -	565000 -	1 U	2.5 -	237 -	0.2 U	0.2 U	3 -	10.5 -	1.2 -	33 -	- -	64.8 -	1.3 -	1 U	- -	- -	- -
	5/11/2022	-	632 -	55700 -	12400 -	460 -	8.4 J	61900 -	503000 -	1 U	1.2 -	202 -	0.2 U	2 U	10 U	9.9 -	10 U	35.5 -	- -	28.7 -	1.5 -	1 U	- -	- -	- -
	5/24/2022	-	654 -	61900 -	12400 -	380 -	7.3 J	100000 -	553000 -	1 -	1 U	170 -	0.2 U	0.22 -	2.3 -	11.6 -	1 U	36.6 -	2 U	28.9 -	3.1 -	1 U	- -	- -	- -
	11/28/2023	-	614 -	45800 -	23200 -	410 -	7.4 J-	67800 -	493000 -	- -	1.3 -	190 -	- -	2 U	- -	2.9 -	10 U	41.7 -	- -	25 -	1 U	1 U	-0.197 -	0.156 -	0.156 -
	5/2/2024	-	580 -	46200 -	23500 -	460 -	7.6 J	81800 -	466000 -	1 U	1 U	197 -	0.2 U	2 U	10 U	1 U	10 U	53 -	0.2 U	20 -	1 U	1 U	0.448 U	0.272 U	0.72 U
MW-35SS	5/2/2024	Duplicate	591 -	48500 -	24900 -	480 -	7.9 J	91800 -	470000 -	1 U	1 -	207 -	0.2 U	2 U	10 U	1.4 -	10 U	56.6 -	0.2 U	21.5 -	1 U	1 U	0.303 U	0.736 U	1.04 U
	11/7/2024	-	608 -	44300 -	24000 -	490 -	7.6 -	71800 -	489000 -	1 U	1.3 -	223 -	0.2 U	2 U	- -	1 U	- -	50.8 -	- -	20.3 -	1 U	- -	0.525 U	0.665 U	1.19 U

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COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-35D2	12/1/2021	-	1090 -	15600 -	9800 -	2300 -	8.5 -	7800 -	395000 -	- -	12.1 -	364 -	1.8 -	2.2 -	67.1 -	24 -	21.7 -	69.2 -	- -	44.7 -	7.1 -	- -	2.92 -	1.44 -	4.36 -
	2/9/2022	-	1190 -	14000 -	8400 -	2100 -	8.8 -	7000 -	500000 -	1 U	12 -	474 -	2.1 -	2.3 -	81.5 -	22.6 -	22.8 -	75 -	- -	58 -	8.5 -	1 U	- -	- -	- -
	4/19/2022	-	1210 -	7290 -	- -	- -	8.6 -	- -	329000 -	1 U	2.4 -	180 -	0.22 -	0.2 U	3 -	1.3 -	1.7 -	20 U	- -	14.5 -	1 U	1 U	- -	- -	- -
	5/11/2022	-	1240 -	6930 -	11900 -	2100 -	7.6 J	14100 -	337000 -	1 U	2.3 -	154 -	0.2 U	2 U	10 U	1 U	10 U	20 U	- -	15.5 -	1 U	1 U	- -	- -	- -
	5/24/2022	-	1200 -	6200 -	10300 -	2100 -	8.8 J	11700 -	413000 -	1 U	1.7 -	139 -	0.2 U	0.2 U	3.4 -	1.1 -	1.2 -	21.9 -	2 U	22.1 -	1 U	1 U	- -	- -	- -
	11/29/2023	-	1190 -	10800 -	8500 -	2000 -	8 J-	10900 -	517000 -	- -	3.1 -	281 -	- -	2 U	- -	3.3 -	10 U	27 -	- -	30 -	3 -	1 U	-0.0567 -	1.07 -	1.07 -
	5/2/2024	-	1160 -	17600 -	14800 -	2200 -	8.2 J	87800 -	468000 -	1 U	1 U	108 -	0.2 U	2 U	10 U	1 U	10 U	21.4 -	0.2 U	16.6 -	1 U	1 U	0.419 U	0.474 U	0.893 U
	11/7/2024	-	1100 -	6910 -	6400 -	2300 -	8.3 -	11300 -	446000 -	1 U	1 U	155 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	1 U	1.05 -	2.05 U
MW-36B	9/1/2022	-	100 U	82700 -	5700 -	170 -	7.7 J	26700 -	397000 -	1 U	1 U	88.3 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	4.6 -	- -	- -	0.0862 -	0.427 -	0.513 -
	11/14/2022	-	100 U	96700 -	5100 -	100 -	7.5 J	22400 -	391000 -	1 U	1 U	111 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.5 -	- -	-0.222 U	-0.143 U	0 U
	5/10/2023	-	78.4 -	111000 -	6600 -	140 -	7.2 J	39200 -	412000 -	1 U	1 U	95.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.4 -	1 U	0.203 U	0.432 U	0.635 U
	11/7/2023	-	100 U	102000 -	3600 -	100 U	7.7 J-	18000 -	398000 -	- -	1 U	82.2 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.4 -	- -	0 -	0.934 -	0.934 -
	5/23/2024	-	100 U	105000 -	5800 -	110 -	7.4 J	32600 -	392000 -	1 U	1 U	90.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.3 -	1 U	0.138 U	0.571 U	0.709 U
	11/11/2024	-	100 U	103000 -	3300 -	110 -	7.3 -	20000 -	379000 -	1 U	1 U	91.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1.7 -	- -	0.133 U	0.626 U	0.759 U
MW-36I	9/1/2022	-	1000 -	142000 -	8500 -	100 U	7.5 J	325000 -	670000 -	1 U	1 U	78.4 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1.1 -	- -	- -	-0.0871 -	-0.0113 -	0 -
	11/15/2022	-	947 -	146000 -	9400 -	100 U	7.2 J	279000 -	650000 -	1 U	1.5 -	71.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.433 U	0.314 U	0.747 U
	5/5/2023	-	1030 -	158000 -	8500 -	100 U	7.1 J	302000 -	629000 -	1 U	2.3 -	70.9 -	0.2 U	2 U	10 U	2 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.469 -	0.403 U	0.872 U
	11/6/2023	-	1010 -	151000 -	6500 -	100 U	7.2 J-	303000 -	679000 -	- -	1.1 -	64.4 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	-0.128 -	0.32 -	0.32 -
	5/23/2024	-	896 -	143000 -	7600 -	100 U	7.4 J	296000 -	644000 -	1 U	1 U	63.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.215 U	0.433 U	0.648 U
	11/12/2024	-	990 -	146000 -	6800 -	100 U	7.2 -	307000 -	677000 -	1 U	1 U	65.6 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0 U	1.05 -	1.05 U
MW-36A	8/31/2022	-	1090 -	146000 -	7600 -	100 U	7.2 J	348000 -	711000 -	1 U	1 U	53.9 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1.3 -	- -	- -	0.167 -	1.13 -	1.3 -
	11/15/2022	-	1150 -	157000 -	8700 -	100 U	7.1 J	346000 -	716000 -	1 U	1 U	51.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.282 U	-0.31 U	0.282 U
	5/5/2023	-	1080 -	155000 -	9100 -	100 U	7 J	348000 -	669000 -	1 U	1.2 -	43.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.332 U	0.0778 U	0.41 U
	11/7/2023	-	1150 -	152000 -	8200 -	100 U	7.7 J-	333000 -	735000 -	- -	1.1 -	43.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	-0.252 -	0.595 -	0.595 -
	5/23/2024	-	1030 -	147000 -	8900 -	100 U	7.4 J	333000 -	665000 -	1 U	1.2 -	44.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.354 U	1.16 -	1.51 -
	11/12/2024	-	1070 -	149000 -	7400 -	100 U	7.2 -	359000 -	721000 -	1 U	1.1 -	46.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.205 U	0.28 U	0.485 U
MW-37B	9/2/2022	-	689 -	156000 -	8200 -	100 U	7.4 J	101000 -	608000 -	1 U	1 U	68.3 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1.1 -	- -	- -	0.29 -	0.365 -	0.655 -
	11/16/2022	-	752 -	136000 -	7900 -	150 -	7.4 J	93900 -	519000 -	1 U	1 U	61.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.9 -	- -	0.15 U	0.355 U	0.505 U
	5/4/2023	-	1350 -	156000 -	11100 -	110 -	7.4 J	160000 -	566000 -	1 U	1 U	37.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.9 -	1 U	-0.0434 U	-0.00613 U	0 U
	5/4/2023	Duplicate	1340 -	155000 -	11000 -	110 -	7.4 J	158000 -	558000 -	1 U	1 U	37.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	2 -	1 U	0.104 U	0.41 U	0.514 U
	11/3/2023	-	1050 -	146000 -	7200 -	100 U	7.1 J-	94400 -	552000 -	- -	1 U	38.5 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	2.4 -	- -	-0.537 -	0.417 -	0.417 -
	5/13/2024	-	3810 -	261000 -	18500 -	100 U	7 J	514000 -	990000 -	1 U	1 U	47.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1.3 -	1 U	0.072 U	0.45 U	0.522 U
	11/12/2024	-	986 -	138000 -	7200 -	110 -	7.1 -	89700 -	500000 -	1 U	1 U	35.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1.8 -	- -	0.369 U	0.613 U	0.982 U
MW-37I	9/2/2022	-	12600 -	676000 -	55400 -	100 U	7.2 J	1590000 -	2580000 -	1 U	1 U	41.4 -	0.2 U	0.2 U	- -	1.1 -	1 U	20 U	- -	93.1 -	- -	- -	0.554 -	0.402 -	0.956 -
	11/15/2022	-	12700 -	694000 -	61000 -	100 U	7 J	1720000 -	2520000 -	1 U	1 U	31.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	102 -	1 U	- -	0.311 U	0.388 U	0.699 U
	5/4/2023	-	11200 -	656000 -	38400 -	100 U	7 J	1680000 -	2460000 -	1 U	1 U	29.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	228 -	1 U	1 U	0.227 U	1.09 J+	1.32 -
	11/3/2023	-	9560 -	541000 -	26500 -	100 U	6.8 J-	1200000 -	2060000 -	- -	1 U	25.7 -	- -	2 U	- -	1 U	10 U	20 U	- -	187 -	1 U	- -	0.0964 -	0.839 -	0.935 -
	5/13/2024	-	11000 -	576000 -	43700 -	100 U	6.7 J	1350000 -	2330000 -	1 U	1 U	30.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	221 -	1 U	1 U	0.118 U	0.379 U	0.497 U
	11/12/2024	-	7490 -	448000 -	23300 -	170 -	7 -	1090000 -	1770000 -	1 U	1 U	29.2 -	0.2 U	2 U	- -	1.3 -	- -	20 U	- -	175 -	1 U	- -	0.831 U	1.73 -	2.56 -
MW-37A	9/1/2022	-	13400 -	644000 -	58900 -	110 -	7.2 J	1890000 -	2590000 -	1 U	1 U	50.9 -	0.2 U	0.2 U	- -	1.1 -	1 U	20 U	- -	193 -	- -	- -	0 -	0.195 -	0.195 -
	11/15/2022	-	14000 -	696000 -	60100 -	100 U	6.9 J	1780000 -	2540000 -	1 U	1 U	35.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	225 -	1 U	- -	0.0458 U	0.698 U	0.744 U
	5/4/2023	-	13100 -	698000 -	61500 -	100 U	7.3 J	1780000 -	2670000 -	1 U	1 U	27.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	388 -	1 U	1 U	0.128 U	0.177 U	0.305 U
	11/3/2023	-	13100 -	659000 -	47900 -	100 U	6.8 J-	1390000 -	2710000 -	- -	1 U	25.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	436 -	1 U	- -	-0.279 -	0.654 -	0.654 -
	11/3/2023	Duplicate	13300 -	677000 -	45900 -	100 U	6.8 J-	1550000 -	2700000 -	- -	1 U	24.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	437 -	1 U	- -	0.193 -	0.767 -	0.96 -
	5/13/2024	-	12100 -	603000 -	49400 -	100 U	6.7 J	1730000 -	2550000 -	1 U	1 U	24.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	418 -	1 U	1 U	0.186 U	0.00108 U	0.187 U
	5/13/2024	Duplicate	12000 -	598000 -	49600 -	100 U	6.8 J	1740000 -	2530000 -	1 U	1 U	24.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	416 -	1 U	1 U	0.268 U	0.839 -	1.11 U
	11/12/2024	-	11500 -	622000 -	49900 -	100 U	6.7 -	1690000 -	2480000 -	1 U	1 U	24.8 -	0.2 U	2 U	- -	1.7 -	- -	20 U	- -	445 -	1 U	- -	0.288 U	0.446 U	0.734 U
	11/12/2024	Duplicate	11600 -	623000 -	50200 -	100 U	6.6 -	1710000 -	2630000 -	1 U	1 U	25.1 -	0.2 U	2 U	- -	1.8 -	- -	20 U	- -	451 -	1 U	- -	0.483 U	1.02 -	1.5 U
MW-38B	11/10/2022	-	396 -	141000 -	12100 -	100 U	7.1 J	61200 -	526000 -	1 U	1 U	50 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2.3 -	- -	-0.144 U	0.0573 U	0.0573 U
	2/22/2023	-	2290 -	186000 -	24100 -	100 U	7.4 J	286000 -	791000 -	1 U	1 U	50.7 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	-0.145 U	0.207 U	0.062 U
	5/10/2023	-	3120 -	234000 -	28700 -	100 U	6.9 J	397000 -	902000 -	1 U	1 U	32.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.137 U	0.346 U	0.346 U
	11/14/2023	-	457 -	133000 -	8400 -	100 U	7.5 J-	66400 -	491000 -	- -	1 U	28 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.1 -	- -	0.12 -	0.127 -	0.247 -
	5/15/2024	-	7290 -	413000 -	57400 -	100 U	6.9 J	890000 -	1640000 -	1 U	1 U	45.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.0648 U	-0.0126 U	0.0648 U
	11/13/2024	-	905 -	139000 -	10600 -	120 -	7.1 -	111000 -	531000 -	1 U	1 U	26.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1.2 -	- -	-0.0554 U	0.362 U	0.362 -
MW-38I	11/10/2022	-	13300 -	599000 -	85500 -	100 U	7.2 J	1310000 -	2220000 -	1 U	1.5 -	48.2 -	0.2 U	2 U	- -	1.6 -	10 U	20 U	- -	142 -	1 U	- -	0.244 U	0.361 U	0.605 U
	2/22/2023	-	17100 -	634000 -	115000 -	100 U	7.2 J	1650000 -	2670000 -	1 U	1.3 -	30.6 -	0.2 U	2 U	- -	1 U	10 U	22.6 -	- -	230 -	- -	- -	0.373 U	0.107 U	0.48 U
	5/10/2023	-	16500 -	658000 -	110000 -	100 U	7 J	1530000 -	2610000 -	1 U	1 U	28 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	232 -	1 U	1 U	-0.21 U	0.0946 U	0.0946 U
	11/14/2023	-	15200 -	666000 -	102000 -	100 U	7 J-	1770000 -	2610000 -	- -	1 U	26.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	225 -	1 U	- -	0.671 -	0.278 -	0.949 -
MW-38I	5/15/2024	-	15500 -	673000 -	115000 -	100 U	6.7 J	1680000 -	2500000 -	1 U	1 U	26.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	255 -	1 U	1 U	0.0567 U	0.78 -	0.837 U
	11/13/2024	-	15200 -	659000 -	108000 -	100 U	6.9 -	1620000 -	2230000 -	1 U	1 U	24.5 -	0.2 U	2 U	- -	1.8 -	- -	20 U	- -	239 -	1 U	- -	0.441 U	0.633 U	1.07 -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents															
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-38A	11/10/2022	-	10800 -	442000 -	94500 -	100 U	7.1 J	1290000 -	2050000 -	1 U	1 U	46.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	151 -	1 U	- -	0.159 U	0.64 U	0.799 U
	2/22/2023	-	19400 -	579000 -	116000 -	100 U	7.2 J	1600000 -	2600000 -	1 U	1 U	30.1 -	0.2 U	2 U	- -	1 U	10 U	21 -	- -	317 -	- -	- -	0.479 U	0.669 U	1.15 U
	2/22/2023	Duplicate	20400 -	620000 -	116000 -	100 U	6.9 J	1640000 -	2610000 -	1 U	1 U	30.1 -	0.2 U	2 U	- -	1 U	10 U	21 -	- -	313 -	- -	- -	0.497 U	0.663 U	1.16 U
	5/8/2023	-	18000 -	659000 -	113000 -	100 U	6.9 J	1490000 -	2590000 -	1 U	1 U	28.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	321 -	1 U	1 U	-0.0774 U	0.711 -	0.711 U
	11/14/2023	-	17300 -	644000 -	108000 -	100 U	7.1 J-	1560000 -	2540000 -	- -	1 U	27.1 -	- -	2 U	- -	1 U	10 U	20 U	- -	333 -	1 U	- -	0 -	0.971 -	0.971 -
	11/14/2023	Duplicate	17500 -	647000 -	112000 -	100 U	7.1 J-	1410000 -	2570000 -	- -	1 U	26.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	338 -	1 U	- -	0 -	1.09 -	1.09 -
	5/15/2024	-	17200 -	645000 -	115000 -	100 U	6.8 J	1710000 -	2720000 -	1 U	1 U	26.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	354 -	1 U	1 U	0.341 U	0.961 -	1.3 U
	5/15/2024	Duplicate	17100 -	653000 -	110000 -	100 U	6.8 J	1610000 -	2600000 -	1 U	1 U	26.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	356 -	1 U	1 U	0.125 U	1.19 -	1.32 U
	11/12/2024	-	19300 -	611000 -	120000 -	100 U	6.8 -	1550000 -	2420000 -	1 U	1 U	26.6 -	0.2 U	2 U	- -	1.7 -	- -	20 U	- -	349 -	1 U	- -	0.412 U	0.633 U	1.05 U
	11/12/2024	Duplicate	20000 -	618000 -	122000 -	100 U	6.6 -	1550000 -	2450000 -	1 U	1 U	26 -	0.2 U	2 U	- -	1.7 -	- -	20 U	- -	360 -	1 U	- -	0.375 U	0.777 -	1.15 U
MW-39B	11/17/2022	-	781 -	123000 -	12400 -	150 -	7.4 J	70200 -	496000 -	1 U	1 U	50.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	2 -	- -	0 U	0.36 U	0.36 U
	2/23/2023	-	2180 -	151000 -	14700 -	130 -	7.3 J	174000 -	634000 -	1 U	1 U	43.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	0 U	0.255 U	0.255 U
	5/11/2023	-	2800 -	174000 -	19400 -	100 U	7.6 J	254000 -	732000 -	1 U	1 U	55.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.415 U	1.13 -	1.55 -
	11/14/2023	-	705 -	127000 -	12000 -	100 U	7.4 J-	58700 -	504000 -	- -	1 U	42.7 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	2.2 -	- -	0.543 -	-0.079 -	0.543 -
	5/15/2024	-	4560 -	254000 -	35700 -	120 -	6.9 J	490000 -	1110000 -	1 U	1 U	78.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.432 U	0.444 U	0.876 U
	11/13/2024	-	1080 -	126000 -	10800 -	100 -	7.2 -	84300 -	466000 -	1 U	1 U	36.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	-0.377 U	0.091 U	0.091 -
MW-39I	11/17/2022	-	16000 -	520000 -	92300 -	100 U	7.2 J	1460000 -	2280000 -	1 U	1.1 -	48.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	92.3 -	1 U	- -	0.311 U	0.821 -	1.13 U
	2/23/2023	-	20400 -	734000 -	109000 -	100 U	6.9 J	1670000 -	2630000 -	1 U	1.2 -	32.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	159 -	- -	- -	1.07 -	1.13 -	2.2 -
	5/11/2023	-	20800 -	572000 -	101000 -	100 U	7.3 J	1510000 -	2430000 -	1 U	1 U	30.9 -	0.2 U	2 U	10 U	1 -	10 U	20 U	0.2 U	149 -	1 U	1 U	0.487 U	0.455 U	0.942 U
	11/14/2023	-	16000 -	537000 -	85100 -	100 U	7.1 J-	1410000 -	2300000 -	- -	1 U	26.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	123 -	1 U	- -	0.466 -	0.584 -	1.05 -
	5/15/2024	-	20900 -	639000 -	111000 -	100 U	6.7 J	1630000 -	2700000 -	1 U	1 U	30 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	190 -	1 U	1 U	0.626 U	0.754 U	1.38 U
	11/13/2024	-	17400 -	575000 -	86900 -	100 U	7 -	1350000 -	2460000 -	1 U	1 U	24.4 -	0.2 U	2 U	- -	1.6 -	- -	20 U	- -	152 -	1 U	- -	0.832 U	0.531 U	1.36 -
MW-39A	11/17/2022	-	22800 -	603000 -	152000 -	100 U	7.1 J	2100000 -	2580000 -	1 U	1 U	38.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	278 -	1 U	- -	0.336 U	0.889 U	1.23 U
	2/23/2023	-	23300 -	779000 -	126000 -	100 U	7.1 J	1720000 -	2670000 -	1 U	1 U	31.3 -	0.2 U	2 U	- -	1.1 -	10 U	20 U	- -	331 -	- -	- -	0.521 U	1.39 -	1.91 -
	5/11/2023	-	25600 -	626000 -	116000 -	100 U	7.3 J	1720000 -	2640000 -	1 U	1 U	27.8 -	0.2 U	2 U	10 U	1 -	10 U	20 U	0.2 U	360 -	1 U	1 U	0.35 U	1.13 -	1.48 U
	5/11/2023	Duplicate	26100 -	627000 -	114000 -	100 U	7.3 J	1750000 -	2620000 -	1 U	1 U	28.3 -	0.2 U	2 U	10 U	1.1 -	10 U	20 U	0.2 U	370 -	1 U	1 U	0.864 -	0.735 U	1.6 -
	11/13/2023	-	23500 -	629000 -	117000 -	100 U	7 J-	1500000 -	2580000 -	- -	1 U	26.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	363 -	1 U	- -	0.699 -	1.18 J+	1.88 J+
	5/15/2024	-	23100 -	633000 -	137000 -	100 U	6.5 J	1700000 -	2670000 -	1 U	1 U	25.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	343 -	1 U	1 U	-0.181 U	1.46 -	1.46 U
	11/13/2024	-	22100 -	623000 -	138000 -	100 U	6.9 -	1610000 -	2620000 -	1 U	1 U	24.5 -	0.2 U	2 U	- -	1.7 -	- -	20 U	- -	333 -	1 U	- -	0.174 U	0.694 -	0.868 -
MW-40B	9/6/2022	-	1160 -	104000 -	18800 -	170 -	7.4 J	100000 -	447000 -	1 U	1 U	39.4 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	1 U	- -	- -	0.819 -	0.341 -	1.16 -
	12/1/2022	-	1060 -	111000 -	14500 -	160 -	7.7 J	90800 -	456000 -	1 U	1 U	36.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1.7 -	- -	0.058 U	0.109 U	0.167 U
	5/12/2023	-	1220 -	146000 -	16400 -	150 -	7.7 J	129000 -	556000 -	1 U	1 U	45.5 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.0723 U	-0.0544 U	0.0723 U
	11/13/2023	-	1260 -	110000 -	10800 -	120 -	7.3 J-	68700 -	410000 -	- -	1 U	31.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1.9 -	- -	-0.281 -	0.328 -	0.328 -
	5/14/2024	-	1610 -	154000 -	18000 -	110 -	7.2 J	152000 -	593000 -	1 U	1 U	41.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.119 U	0.281 U	0.281 U
	11/14/2024	-	1150 -	113000 -	11500 -	120 -	7.3 -	72600 -	451000 -	1 U	1 U	32.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	2 -	- -	0.238 U	1.53 -	1.77 U
MW-40I	9/6/2022	-	22900 -	611000 -	119000 -	100 U	7.2 J	1710000 -	2560000 -	1 U	1 U	50.9 -	0.2 U	0.2 U	- -	1 -	1 U	20 U	- -	203 -	- -	- -	0.0726 -	0.49 -	0.563 -
	9/6/2022	Duplicate	22600 -	598000 -	119000 -	100 U	7 J	1710000 -	2550000 -	1 U	1 U	49.8 -	0.2 U	0.2 U	- -	1 -	1 U	20 U	- -	200 -	- -	- -	1.31 -	0.139 -	1.45 -
	11/30/2022	-	19200 -	576000 -	121000 -	100 U	7.1 J	1810000 -	2600000 -	1 U	1 U	27.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	230 -	1 U	- -	0.462 U	0.835 -	1.3 -
	5/12/2023	-	22000 -	596000 -	120000 -	100 U	7.3 J	1550000 -	2470000 -	1 U	1 U	26 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	256 -	1 U	1 U	0.425 U	0.859 -	1.28 U
	11/13/2023	-	18100 -	569000 -	103000 -	100 U	7 J-	1370000 -	2400000 -	- -	1 -	24.8 -	- -	2 U	- -	1.1 -	10 U	20 U	- -	160 -	1 U	- -	0.2 -	0.763 J+	0.963 J+
	11/13/2023	Duplicate	17800 -	567000 -	105000 -	100 U	7 J-	1390000 -	2300000 -	- -	1.1 -	25.2 -	- -	2 U	- -	1.2 -	10 U	20 U	- -	159 -	1 U	- -	-0.17 -	1.16 J+	1.16 J+
	5/13/2024	-	20200 -	526000 -	121000 -	100 U	6.8 J	1530000 -	2380000 -	1 U	1 -	22.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	150 -	1 U	1 U	0.66 U	1.22 -	1.88 U
	5/13/2024	Duplicate	20700 -	543000 -	122000 -	100 U	6.9 J	1560000 -	2430000 -	1 U	1.1 -	22.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	156 -	1 U	1 U	-0.0587 U	0.652 U	0.652 U
	11/14/2024	-	20800 -	597000 -	107000 -	100 U	7 -	1490000 -	2460000 -	1 U	1 U	23.9 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	185 -	1 U	- -	0.703 U	1.96 -	2.66 -
	11/14/2024	Duplicate	21400 -	552000 -	108000 -	100 U	6.6 -	1470000 -	2510000 -	1 U	1 U	23.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	197 -	1 U	- -	0.122 U	2.14 -	2.26 -
MW-40A	9/7/2022	-	22800 -	592000 -	114000 -	100 U	7 J	1580000 -	2560000 -	1 U	1 U	67.2 -	0.2 U	0.2 U	- -	1.1 -	1 U	22.1 -	- -	142 -	- -	- -	0.519 -	0.0488 -	0.568 -
	12/1/2022	-	23800 -	634000 -	89700 -	100 U	7.7 J	1150000 -	2520000 -	1 U	1 U	30.4 -	0.2 U	2 U	- -	1.3 -	10 U	23 -	- -	534 -	1 U	- -	0.152 U	0.67 U	0.822 U
	5/11/2023	-	25400 -	607000 -	114000 -	100 U	7.3 J	1700000 -	2600000 -	1 U	1 U	28.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	724 -	1 U	1 U	0.623 U	0.459 U	1.08 U
	11/13/2023	-	23800 -	646000 -	133000 -	100 U	7.1 J-	1460000 -	2660000 -	- -	1 U	28.5 -	- -	2 U	- -	1 U	10 U	20 U	- -	652 -	1 U	- -	0.358 -	0.815 J+	1.17 J+
	5/14/2024	-	24400 -	674000 -	145000 -	100 U	6.8 J	1630000 -	2820000 -	1 U	1 U	28.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	762 -	1 U	1 U	-0.539 U	0.692 -	0.692 U
	11/14/2024	-	23500 -	638000 -	132000 -	100 U	7.1 -	1550000 -	2630000 -	1 U	1 U	28.1 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	636 -	1 U	- -	0.21 U	1.91 -	2.12 -
MW-41B	12/1/2022	-	543 -	109000 -	7400 -	130 -	7.2 J	31700 -	373000 -	1 U	1 U	44.2 -	0.2 U	2 U	- -	1.2 -	10 U	20 U	- -	10 U	1.2 -	- -	-0.281 U	0.0965 U	0.0965 U
	12/1/2022	Duplicate	514 -	108000 -	7400 -	130 -	7.6 J	32100 -	368000 -	1 U	1 U	43.6 -	0.2 U	2 U	- -	1.2 -	10 U	20 U	- -	10 U	1.3 -	- -	0.0605 U	-0.164 U	0.0605 U
	2/23/2023	-	707 -	101000 -	9000 -	140 -	7.4 J	51100 -	383000 -	1 U	1 U	40.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	-0.0563 U	0.235 U	0.235 U
	5/15/2023	-	485 -	105000 -	8300 -	110 -	7.4 J	40300 -	387000 -	1 U	1 U	46.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.239 U	0.0566 U	0.296 U
	11/6/2023	-	390 -	107000 -	7300 -	100 -	7.2 J-	40100 -	397000 -	- -	1 U	35.7 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	2.8 -	- -	-0.181 -	0.621 -	0.621 -
	5/2/2024	-	517 -	106000 -	9900 -	100 U	7.3 J	52500 -	373000 -	1 U	1 U	38.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.426 U	0.426 U
	11/11/2024	-	390 -	107000 -	9100 -	100 U	7.4 -	50400 -	391000 -	1 U	1 U	38.1 -	0.2 U	2 U	- -	1.8 -	- -	20 U	- -	10 U	3.1 -	- -	0.863 U	0.415 U	1.28 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents														
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-41I	12/2/2022	-	1410 -	123000 -	17600 -	100 U	7.3 J	164000 -	541000 -	1 U	1.5 -	71.9 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.471 U	0.803 U	1.27 U
	2/23/2023	-	1620 -	128000 -	16700 -	120 -	7.6 J	162000 -	538000 -	1 U	1 U	63.3 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	0.656 U	0.928 U	1.58 U
	5/15/2023	-	891 -	105000 -	10800 -	100 U	7.3 J	64600 -	407000 -	1 U	1 U	74.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.297 U	0.376 U	0.376 U
	11/6/2023	-	1900 -	116000 -	14000 -	100 U	7.1 J-	104000 -	446000 -	- -	1.7 -	67.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.226 -	0.237 -	0.463 -
	5/2/2024	-	904 -	103000 -	13600 -	100 U	7.3 J	74800 -	374000 -	1 U	1 U	71.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.0475 U	0.618 U	0.666 U
	11/11/2024	-	1580 -	104000 -	13200 -	100 U	7.4 -	94800 -	395000 -	1 U	1.8 -	64.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.244 U	0.501 U	0.745 U
MW-41A	12/2/2022	-	12500 -	400000 -	66200 -	100 U	7.1 J	825000 -	1540000 -	1 U	1 U	34.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	212 -	1 U	- -	0.314 U	0.704 U	1.02 U
	2/23/2023	-	13400 -	472000 -	68900 -	100 U	7.3 J	906000 -	1580000 -	1 U	1 U	39.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	248 -	- -	- -	0.297 U	0.39 U	0.687 U
	2/23/2023	Duplicate	13400 -	390000 -	68600 -	100 U	7.6 J	888000 -	1580000 -	1 U	1 U	40 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	251 -	- -	- -	0.0551 U	0.855 U	0.91 U
	5/12/2023	-	11700 -	318000 -	56300 -	100 U	7.7 J	668000 -	1290000 -	1 U	1.5 -	37.9 -	0.2 U	2 U	10 U	1.8 -	10 U	20 U	0.2 U	314 -	1 U	1 U	0.715 U	0.366 U	1.08 U
	11/6/2023	-	8950 -	262000 -	41900 -	100 U	6.7 J-	517000 -	1070000 -	- -	1 U	25.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	361 -	1 U	- -	0.0826 -	0.591 -	0.674 -
	5/2/2024	-	12400 -	329000 -	61400 -	110 -	7.2 J	749000 -	1290000 -	1 U	1 U	32.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	458 -	1 U	1 U	0.323 U	0.751 -	1.07 U
	11/11/2024	-	9110 -	292000 -	51300 -	100 U	7.2 -	614000 -	1140000 -	1 U	1 U	29 -	0.2 U	2 U	- -	1.5 -	- -	20 U	- -	421 -	1 U	- -	0.84 U	1.38 -	2.22 -
MW-42B	9/13/2022	-	741 -	154000 -	13500 J	100 U	7.2 J	54400 -	581000 -	1 U	1 U	55.7 -	0.2 U	0.2 U	- -	2.1 -	1 U	20 U	- -	1.1 -	- -	- -	0.44 -	0.0384 -	0.478 -
	12/20/2022	-	839 -	156000 -	16300 J-	100 U	7.1 J	77600 -	602000 -	1 U	1 U	58.1 -	0.2 U	2 U	- -	2.1 -	10 U	20 U	- -	10 U	1 U	- -	0.499 U	0.121 U	0.62 U
	5/30/2023	-	670 -	150000 -	13000 -	100 U	7.4 J	61400 -	582000 -	1 U	1 U	48 -	0.2 U	2 U	10 U	1.5 -	10 U	20 U	0.2 U	10 U	3.6 -	1 U	-0.0589 U	0.79 -	0.79 U
	11/10/2023	-	2850 -	239000 -	25500 -	100 U	7.2 J-	194000 -	851000 -	- -	1 U	73.2 -	- -	2 U	- -	2.2 -	10 U	20 U	- -	10 U	3.9 -	- -	0.968 -	0.62 -	1.59 -
	6/7/2024	-	2520 -	223000 -	25000 -	100 U	7.2 J	200000 -	810000 -	1 U	1 U	64.4 -	0.2 U	2 U	10 U	2.2 -	10 U	20 U	0.2 U	10 U	4.8 -	1 U	-0.225 U	0.684 U	0.684 U
	11/18/2024	-	2350 -	219000 -	27500 -	100 U	7.1 -	198000 -	752000 -	1 U	1 U	66.1 -	0.2 U	2 U	- -	2.7 -	- -	20 U	- -	10 U	9.4 -	- -	0.858 -	1.03 -	1.89 -
MW-42I	9/12/2022	-	14000 -	436000 -	73600 -	100 U	7.1 J	1030000 -	1870000 -	1 U	2.2 -	71.4 -	0.2 U	0.2 U	- -	1.4 -	1 U	73.9 -	- -	197 -	- -	- -	0.78 -	1.34 -	2.12 -
	12/19/2022	-	17100 -	434000 -	85900 -	100 U	7.1 J	1110000 -	1900000 -	1 U	1.9 -	37.5 -	0.2 U	2 U	- -	1 U	10 U	48.3 -	- -	473 -	1 U	- -	0.539 U	1.39 -	1.93 -
	5/31/2023	-	13500 -	391000 -	64100 -	100 U	7 J	709000 -	1650000 -	1 U	1 U	36.4 -	0.2 U	2 U	10 U	1 U	10 U	57 -	0.2 U	206 -	1 U	1 U	0.0799 U	0.904 J+	0.984 U
	11/10/2023	-	16300 -	448000 -	79300 -	100 U	7 J-	962000 -	1800000 -	- -	1 U	37.2 -	- -	2 U	- -	1 U	10 U	59.2 -	- -	339 -	1 U	- -	0.295 -	0.897 -	1.19 -
	11/10/2023	Duplicate	16800 -	456000 -	81200 -	100 U	7 J-	999000 -	1860000 -	- -	1 U	37.3 -	- -	2 U	- -	1 U	10 U	58.5 -	- -	388 -	1 U	- -	0.704 -	1.04 -	1.74 -
	6/7/2024	-	14800 -	450000 -	82400 -	170 -	6.9 J	987000 -	1710000 -	1 U	1 U	32.7 -	0.2 U	2 U	10 U	1 U	10 U	57.9 -	0.2 U	347 -	1 U	1 U	0.78 U	0.983 -	1.76 U
	6/7/2024	Duplicate	14800 -	454000 -	82500 -	210 -	6.9 J	992000 -	1730000 -	1 U	1 U	32.3 -	0.2 U	2 U	10 U	1 U	10 U	57.4 -	0.2 U	348 -	1 U	1 U	0.456 U	1.02 -	1.48 U
	11/19/2024	-	16200 -	434000 -	77800 -	100 U	7 -	941000 -	1670000 -	1 U	1 U	36.6 -	0.2 U	2 U	- -	1 U	- -	50.1 -	- -	524 -	1 U	- -	-0.375 U	0.423 U	0.423 U
	11/19/2024	Duplicate	16100 -	435000 -	77400 -	100 U	7.1 -	937000 -	1690000 -	1 U	1 U	36.3 -	0.2 U	2 U	- -	1 U	- -	51.5 -	- -	529 -	1 U	- -	0.535 U	2.77 -	3.31 -
MW-42A	9/13/2022	-	20600 -	625000 -	112000 J	110 -	7.1 J	1550000 -	2410000 -	1 U	1 U	39.7 -	0.2 U	0.2 U	- -	1 U	1 U	20 -	- -	1240 -	- -	- -	0.366 -	0.599 -	0.965 -
	12/20/2022	-	20800 -	647000 -	118000 J-	100 U	6.8 J	1620000 -	2490000 -	1 U	1 U	32.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	1800 -	1 U	- -	0.234 U	0.592 U	0.826 U
	5/31/2023	-	22600 -	603000 -	106000 -	100 U	7 J	1340000 -	2480000 -	1 U	1 U	31.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	2160 -	1 U	1 U	0.322 U	1.49 J+	1.81 J+
	5/31/2023	Duplicate	23000 -	596000 -	106000 -	100 U	7.1 J	1320000 -	2460000 -	1 U	1 U	31.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	2160 -	1 U	1 U	0.259 U	0.797 J+	1.06 U
	11/14/2023	-	21300 -	625000 -	109000 -	110 -	6.9 J-	1710000 -	2550000 -	- -	1 U	33.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	2350 -	1 U	- -	0.231 -	1.58 -	1.81 -
	6/7/2024	-	22000 -	644000 -	115000 -	100 U	6.9 J	1570000 -	2480000 -	1 U	1 U	33.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	2020 -	1 U	1 U	0.516 U	1.31 -	1.83 U
	11/19/2024	-	24900 -	643000 -	120000 -	100 U	7.1 -	1520000 -	2510000 -	1 U	1 U	34.5 -	0.2 U	2 U	- -	1.3 -	- -	20 U	- -	2160 -	1 U	- -	0.24 U	1.41 -	1.65 -
MW-43B	9/8/2022	-	1130 -	219000 -	49400 -	100 -	7 J	281000 -	912000 -	1 U	1 U	132 -	0.2 U	0.2 U	- -	4.3 -	1 U	20 U	- -	10.3 -	- -	- -	1.08 -	0.664 J	1.74 -
	12/20/2022	-	1240 -	237000 -	62000 J-	100 U	7.3 J	342000 -	1050000 -	1 U	1.4 -	116 -	0.2 U	2 U	- -	4 -	10 U	20 U	- -	10 U	1 U	- -	0.797 U	0.472 U	1.27 U
	5/24/2023	-	612 -	152000 -	22800 -	100 -	7.6 J	77500 -	616000 -	1 U	1 U	63.9 -	0.2 U	2 U	10 U	1.9 -	10 U	20 U	0.2 U	10 U	8.7 -	1 U	0.202 U	0.415 U	0.617 U
	11/14/2023	-	1030 -	236000 -	47200 -	100 U	7.1 J-	347000 -	1010000 -	- -	1 U	94.3 -	- -	2 U	- -	3.4 -	10 U	20 U	- -	10 U	1 U	- -	1.2 -	0.828 -	2.03 -
	6/6/2024	-	931 -	161000 -	23200 -	100 U	7.5 J	113000 -	594000 -	1 U	1 U	51.9 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	0.2 U	10 U	22 -	1 U	-0.604 U	0.749 J+	0.749 U
	11/20/2024	-	955 -	231000 -	55800 -	100 U	7.2 -	324000 -	828000 -	1 U	1 U	78.2 -	0.2 U	2 U	- -	2.8 -	- -	20 U	- -	10 U	1 U	- -	0.962 -	1.69 -	2.65 -
MW-43I	9/9/2022	-	1560 -	257000 -	69800 -	120 -	7 J	396000 -	1110000 -	1 U	1.9 -	101 -	0.2 U	0.2 U	- -	1.8 -	1 U	20 U	- -	77.3 -	- -	- -	0.225 -	0.665 -	0.89 -
	9/9/2022	Duplicate	1560 -	253000 -	69600 -	120 -	6.9 J	399000 -	1110000 -	1 U	1.9 -	98.6 -	0.2 U	0.2 U	- -	1.7 -	1 U	20 U	- -	76.8 -	- -	- -	0.309 -	0.336 -	0.645 -
	12/20/2022	-	2030 -	231000 -	74700 J-	100 U	7.3 J	424000 -	1070000 -	1 U	4.1 -	63.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	106 -	1 U	- -	0 U	1.61 J+	1.61 U
	5/24/2023	-	1470 -	249000 -	63100 -	100 U	7.5 J	358000 -	1140000 -	1 U	4.3 -	61.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	95.9 -	1 U	1 U	0.367 U	0.55 U	0.917 U
	5/24/2023	Duplicate	1480 -	251000 -	63600 -	100 U	7.4 J	362000 -	1150000 -	1 U	4.4 -	60.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	95.7 -	1 U	1 U	0.133 U	0.576 U	0.709 U
	11/10/2023	-	1610 -	234000 -	67800 -	100 U	7.1 J-	436000 -	1080000 -	- -	3.9 -	57.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	116 -	1 U	- -	0.494 -	0.765 -	1.26 -
	6/6/2024	-	1710 -	237000 -	61400 -	100 U	7.5 J	409000 -	978000 -	1 U	4.3 -	58.3 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	109 -	1 U	1 U	0.428 U	1.55 J+	1.98 U
	11/19/2024	-	1940 -	260000 -	64600 -	120 -	7.1 -	449000 -	1070000 -	1 U	3.7 -	70.1 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	119 -	1 U	- -	0.805 U	0.493 U	1.3 U
MW-43A	9/9/2022	-	10000 -	468000 -	121000 -	130 -	7.1 J	1270000 -	2030000 -	1 U	1 U	50.8 -	0.2 U	0.2 U	- -	1.1 -	1 U	20 U	- -	182 -	- -	- -	0 -	1.3 -	1.3 -
	12/20/2022	-	9820 -	452000 -	111000 J-	100 U	7.1 J	1110000 -	1930000 -	1 U	1.3 -	31.6 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	265 -	1 U	- -	0.451 U	0.785 J+	1.24 U
	5/25/2023	-	9370 -	422000 -	83000 -	100 U	7 J	898000 -	1900000 -	1 U	1.7 -	30.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	290 -	1 U	1 U	0.412 U	0.954 -	1.37 -
	11/10/2023	-	12900 -	521000 -	109000 -	100 U	7 J-	1290000 -	2230000 -	- -	1.6 -	29.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	328 -	1 U	- -	0.488 -	0.257 -	0.745 -
	6/6/2024	-	9050 -	425000 -	93200 -	110 -	7.6 J	983000 -	1730000 -	1 U	1.9 -	28.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	289 -	1 U	1 U	0.639 U	0.803 J+	1.44 U
	11/20/2024	-	8620 -	439000 -	188000 -	100 U	7.2 -	995000 -	1590000 -	1 U	1.9 -	25.8 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	236 -	1 U	- -	0.924 -	1.36 -	2.28 -
MW-44B	9/7/2022	-	1100 -	187000 -	114000 -	110 -	7.2 J	166000 -	834000 -	1 U	1.7 -	163 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	8.1 -	- -	- -	0.988 -	1.55 J	2.54 -
	12/20/2022	-	2370 -	182000 -	63500 J-	150 -	6.9 J	209000 -	803000 -	1 U	4.1 -	152 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	1.66 -	0.828 J+	2.49 J+
	5/25/2023	-	1660 -	184000 -	102000 -	140 -	7.5 J	161000 -	884000 -	1 U	4.3 -	158 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.702 U	0.815 -	1.52 U
	11/9/2023	-	1390 -	198000 -	118000 -	100 U	7.3 J-	166000 -	894000 -	- -	3.5 -	159 -	- -	2 U	- -	1 U	10 U	20 U	- -	11.3 -	1 U	- -	0.802 -	0.671 -	1.47 -
	6/5/2024	-	4430 -	189000 -	101000 -	210 -	8 J	204000 -	758000 -	1 U	4.2 -	149 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	1.11 -	0.839 -	1.95 -
MW-44B	11/19/2024	-	3610 -	157000 -	54800 -	190 -	7.1 -	145000 -	662000 -	1 U	4 -	127 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	15.8 -	1 U	- -	1.51 -	0.774 -	2.28 -

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

			Appendix III Constituents							Appendix IV Constituents														
Well / Piezometer	Sample Date	Sample Type	Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-44I	9/8/2022	-	666 -	250000 -	75900 -	100 U	7.1 J	446000 -	1080000 -	1 U	1 U	79.6 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	27.3 -	- -	- -	0.0786 -	0.571 -	0.65 -
	12/20/2022	-	944 -	228000 -	99400 J-	100 U	7.1 J	241000 -	970000 -	1 U	1.4 -	75.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	25.8 -	1 U	- -	-0.0778 U	0.498 U	0.498 U
	5/30/2023	-	818 -	205000 -	94200 -	100 U	7.4 J	253000 -	924000 -	1 U	2.1 -	68.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	28.5 -	1 U	1 U	0.325 U	1.03 -	1.36 U
	11/9/2023	-	1080 -	210000 -	86700 -	100 U	7.2 J-	242000 -	924000 -	- -	1.9 -	63.9 -	- -	2 U	- -	1 U	10 U	20 U	- -	26.1 -	1 U	- -	0.269 -	0.55 -	0.819 -
	6/5/2024	-	3060 -	243000 -	126000 -	100 U	7.4 J	264000 -	918000 -	1 U	2.4 -	74 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	28 -	1 U	1 U	0 U	0.459 U	0.459 U
	11/20/2024	-	880 -	221000 -	350000 -	100 U	7.1 -	243000 -	860000 -	1 U	2.1 -	66.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	25.8 -	1 U	- -	0.343 U	1.46 -	1.8 U
MW-44A	9/8/2022	-	1980 -	268000 -	73400 -	100 -	7.1 J	538000 -	1210000 -	1 U	1.1 -	63.3 -	0.2 U	0.2 U	- -	1 U	1 U	20 U	- -	62.3 -	- -	- -	0.106 -	0.268 -	0.374 -
	12/20/2022	-	1520 -	238000 -	67500 J-	100 U	7.3 J	355000 -	1090000 -	1 U	1 U	41.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	45 -	1 U	- -	-0.121 U	0.712 J+	0.712 U
	12/20/2022	Duplicate	1470 -	237000 -	63500 J-	100 U	6.9 J	350000 -	1080000 -	1 U	1 U	40.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	44.3 -	1 U	- -	0.628 U	0.927 J+	1.56 U
	5/26/2023	-	1690 -	230000 -	62400 -	100 U	7.5 J	457000 -	1110000 -	1 U	2.7 -	38.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	74.7 -	1 U	1 U	1.35 -	0.685 U	2.04 -
	11/9/2023	-	1050 -	239000 -	64100 -	100 U	7.8 J-	412000 -	1040000 -	- -	2.9 -	32.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	64.3 -	1 U	- -	0.127 -	0.516 -	0.643 -
	6/5/2024	-	1650 -	254000 -	70500 -	100 U	7.4 J	435000 -	1030000 -	1 U	3.6 -	37.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	64.4 -	1 U	1 U	0.356 U	0.401 U	0.757 U
	11/20/2024	-	910 -	226000 -	70800 -	100 U	7.1 -	379000 -	930000 -	1 U	2.8 -	35.7 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	45.1 -	1 U	- -	1.34 -	1.32 -	2.66 -
MW-45B	10/3/2022	-	100 U	113000 -	5900 -	130 -	7.3 -	108000 -	490000 -	1 U	1.7 -	102 -	0.2 U	0.2 U	- -	2.7 -	1 U	20 U	- -	2.4 -	- -	- -	0.343 -	0.831 -	1.17 -
	12/7/2022	-	100 U	106000 -	6000 -	140 -	7.6 J	115000 -	502000 -	1 U	1.3 -	79.4 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.552 -	0.403 U	0.955 -
	5/3/2023	-	68.4 -	130000 -	5100 -	150 -	7.8 J	139000 -	579000 -	1 U	1 U	80.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.0551 U	-0.264 U	0.0551 U
	11/13/2023	-	100 U	121000 -	5500 -	110 -	7.3 J-	123000 -	501000 -	- -	1 U	60.8 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.0687 -	0.24 -	0.309 -
	5/21/2024	-	100 U	133000 -	5700 -	130 -	7.4 J	196000 -	589000 -	1 U	1 U	69.9 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.419 U	0.419 U
	11/5/2024	-	100 U	116000 -	3700 -	130 -	7.2 -	110000 -	483000 -	1 U	1 U	56.1 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1.4 -	- -	-0.122 U	0.415 U	0.415 U
MW-45I	10/3/2022	-	443 -	153000 -	9400 -	190 -	7.3 -	259000 -	712000 -	1 U	2.1 -	120 -	0.2 U	0.2 U	- -	2.5 -	1.4 -	20 U	- -	4 -	- -	- -	0.332 U	1.04 U	1.37 U
	12/6/2022	-	417 -	162000 -	8900 -	170 -	7.2 J	274000 -	689000 -	1 U	3 -	102 -	0.2 U	2 U	- -	1.3 -	10 U	20 U	- -	10 U	1 U	- -	-0.248 U	0.4 U	0.4 U
	5/2/2023	-	323 -	174000 -	8400 -	190 -	7.6 J	341000 -	777000 -	1 U	3.7 -	86.1 -	0.2 U	2 U	10 U	1.9 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.146 U	-0.0186 U	0.146 U
	11/14/2023	-	363 -	188000 -	7000 -	190 -	7.4 J-	380000 -	848000 -	- -	2.8 -	76.2 -	- -	2 U	- -	1.2 -	10 U	20 U	- -	10 U	1 U	- -	0.303 -	0.309 -	0.612 -
	5/21/2024	-	435 -	185000 -	9500 -	190 -	7.3 J	422000 -	906000 -	1 U	2.7 -	77.2 -	0.2 U	2 U	10 U	1.4 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.198 U	0.467 U	0.665 U
	11/5/2024	-	596 -	194000 -	8200 -	200 -	7.1 -	432000 -	866000 -	1 U	2.8 -	68 -	0.2 U	2 U	- -	1.2 -	- -	20 U	- -	10 U	1 U	- -	0.662 U	0.785 -	1.45 -
MW-45A	10/3/2022	-	724 -	189000 -	9600 -	510 -	7.2 -	402000 -	924000 -	1 U	2.5 -	120 -	0.2 U	0.2 U	- -	1.4 -	1 U	32 -	- -	5.2 -	- -	- -	0.78 -	0.868 -	1.65 -
	12/6/2022	-	713 -	197000 -	9900 -	530 -	7.1 J	460000 -	932000 -	1 U	1.7 -	82 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	-0.354 U	0.0652 U	0.0652 U
	5/2/2023	-	741 -	169000 -	9300 -	580 -	7.5 J	313000 -	787000 -	1 U	1.6 -	47.5 -	0.2 U	2 U	10 U	1.9 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.241 U	0.347 U	0.588 U
	11/14/2023	-	659 -	183000 -	7000 -	550 -	7.1 J-	387000 -	901000 -	- -	1.4 -	45.8 -	- -	2 U	- -	1 U	10 U	21 -	- -	10 U	1 U	- -	0.0813 -	0.229 -	0.31 -
	5/20/2024	-	714 -	195000 -	7700 -	690 -	7.2 J	486000 -	949000 -	1 U	1 U	36.6 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.837 U	0.219 U	1.06 U
	11/5/2024	-	663 -	178000 -	8900 -	570 -	7.1 -	387000 -	845000 -	1 U	1 U	35.2 -	0.2 U	2 U	- -	1 U	- -	21.2 -	- -	10 U	1 U	- -	0.124 U	0.135 U	0.259 U
MW-46B	11/11/2022	-	103 -	139000 -	9100 -	120 -	7.2 J	117000 -	572000 -	1 U	1 U	90.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.326 U	0.22 U	0.546 U
	2/20/2023	-	125 -	140000 -	8600 -	160 -	7.9 J	108000 -	539000 -	1 U	1 U	85.1 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	0.757 U	0.237 U	0.994 U
	5/5/2023	-	104 -	133000 -	9300 J+	110 -	6.7 J	51700 -	452000 -	1 U	1 U	97.7 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.197 U	0.582 U	0.779 U
	11/15/2023	-	100 U	137000 -	8000 -	100 -	6.9 J-	93500 -	520000 -	- -	1 U	82.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.245 -	0.591 -	0.836 -
	5/21/2024	-	100 U	134000 -	9400 -	110 -	7.3 J	78900 -	561000 -	1 U	1 U	90.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.612 U	0.453 U	1.07 U
	11/11/2024	-	100 U	136000 -	7300 -	110 -	7.1 -	79500 -	527000 -	1 U	1 U	79.4 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.304 U	0.413 U	0.717 U
MW-46I	11/9/2022	-	451 -	143000 -	11400 -	120 -	7.2 J	231000 -	728000 -	1 U	1.2 -	102 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.383 U	0.477 U	0.86 U
	11/9/2022	Duplicate	453 -	146000 -	11400 -	120 -	7.2 J	232000 -	712000 -	1 U	1.2 -	104 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.964 U	0.57 U	1.53 U
	2/20/2023	-	757 -	165000 -	8400 -	120 -	7.4 J	328000 -	760000 -	1 U	1 U	77.2 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	0.0799 U	0.427 U	0.507 U
	5/5/2023	-	695 -	161000 -	9900 J+	140 -	7 J	278000 -	712000 -	1 U	1 U	76 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.0487 U	-0.104 U	0 U
	11/15/2023	-	638 -	155000 -	8400 -	110 -	7 J-	310000 -	737000 -	- -	1 U	75.6 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	3.1 -	1.08 -	4.18 -
	5/22/2024	-	720 -	158000 -	7600 -	120 -	7.5 J	333000 -	736000 -	1 U	1 U	71.2 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.187 U	0.878 -	0.878 U
	11/8/2024	-	675 -	154000 -	7300 -	100 U	7.1 -	307000 -	767000 -	1 U	1 U	77.2 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.502 U	0.809 U	1.31 U
MW-46A	11/9/2022	-	1170 -	181000 -	11100 -	100 U	6.8 J	388000 -	918000 -	1 U	1.9 -	34.5 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.299 U	0.5 U	0.799 U
	2/20/2023	-	1250 -	193000 -	9900 -	100 U	7 J	420000 -	933000 -	1 U	1.5 -	29.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	-0.848 U	0.111 U	0.111 U
	5/3/2023	-	1080 -	189000 -	12300 -	100 U	7.3 J	357000 -	915000 -	1 U	2.1 -	27.5 J+	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0 U	0.26 U	0.26 U
	11/15/2023	-	1220 -	193000 -	9700 -	100 U	7.1 J-	431000 -	912000 -	- -	2.1 -	27 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.314 -	0.341 -	0.655 -
	5/22/2024	-	1270 -	196000 -	8500 -	100 U	7.7 J	462000 -	912000 -	1 U	3.1 -	26.4 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.348 U	0.0749 U	0.0749 U
	11/8/2024	-	1240 -	197000 -	8000 -	100 U	6.9 -	427000 -	924000 -	1 U	2.7 -	26.9 -	0.2 U	2 U	- -	1.1 -	- -	20 U	- -	10 U	1 U	- -	0.258 U	0.838 -	1.1 U
MW-47B	11/8/2022	-	100 U	209000 -	17100 -	110 -	7.5 -	46200 -	784000 -	1 U	2.7 -	159 -	0.2 U	2 U	- -	3.3 -	10 U	20 U	- -	10 U	1 U	- -	0.158 U	0.115 U	0.273 U
	2/21/2023	-	100 U	212000 -	19300 -	170 -	7.2 J	37500 -	742000 -	1 U	1.9 -	121 -	0.2 U	2 U	- -	1.5 -	10 U	20 U	- -	10 U	- -	- -	0.581 U	0.643 U	1.22 U
	5/4/2023	-	74.7 -	212000 -	16900 -	100 U	7.3 J	46300 -	688000 -	1 U	1.8 -	115 -	0.2 U	2 U	10 U	6.9 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.246 U	0.362 U	0.608 U
	11/16/2023	-	100 U	192000 -	15700 -	110 -	8 J-	43900 -	630000 -	- -	1.9 -	104 -	- -	2 U	- -	2.5 -	10 U	20 U	- -	10 U	1 U	- -	0.0537 -	-0.0833 -	0.0537 -
	11/16/2023	Duplicate	100 U	185000 -	15500 -	110 -	7.7 J-	43800 -	600000 -	- -	1.9 -	104 -	- -	2 U	- -	2.5 -	10 U	20 U	- -	10 U	1 U	- -	-0.301 -	0.193 -	0.193 -
	5/22/2024	-	100 U	186000 -	14000 -	100 U	7.2 J	50500 -	643000 -	1 U	1.3 -	111 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.321 U	-0.00749 U	0 U
	5/22/2024	Duplicate	100 U	186000 -	14500 -	100 U	7.2 J	47900 -	648000 -	1 U	1.3 -	109 -	0.2 U	2 U	10 U	1.6 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.242 U	0.428 U	0.67 U
	11/8/2024	-	100 U	188000 -	14800 -	100 U	7 -	46800 -	698000 -	1 U	1 U	107 -	0.2 U	2 U	- -	1.9 -	- -	20 U	- -	10 U	1 U	- -	-0.247 U	0.661 U	0.661 U
	11/8/2024	Duplicate	100 U	193000 -	14600 -	100 U	6.8 -	46800 -	694000 -	1 U	1 U	106 -	0.2 U	2 U	- -	1.9 -	- -	20 U	- -	10 U	1 U	- -	-0.0512 U	0.779 U	0.779 U

TABLE 1
COMPARISON OF GROUNDWATER RESULTS TO GROUNDWATER PROTECTION STANDARDS
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Well / Piezometer	Sample Date	Sample Type	Appendix III Constituents							Appendix IV Constituents																
			Boron, Total ug/L	Calcium, Total ug/L	Chloride ug/L	Fluoride ug/L	pH (lab) pH units	Sulfate ug/L	Total Dissolved Solids (TDS) ug/L	Antimony, Total ug/L	Arsenic, Total ug/L	Barium, Total ug/L	Beryllium, Total ug/L	Cadmium, Total ug/L	Chromium, Total ug/L	Cobalt, Total ug/L	Lead, Total ug/L	Lithium, Total ug/L	Mercury, Total ug/L	Molybdenum, Total ug/L	Selenium, Total ug/L	Thallium, Total ug/L	Radium-226 pCi/L	Radium-228 pCi/L	Radium-226 & 228 pCi/L
	Site GWPS:		4000*	-	-	4000	-	-	-	6	10	2000	4	5	100	6	10	40	2	100	50	2	-	-	5
MW-47I	11/8/2022	-	874 -	148000 -	7600 -	110 -	7.5 -	301000 -	743000 -	1 U	1 U	78.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.619 -	0.378 U	0.997 -
	2/21/2023	-	1010 -	156000 -	7200 -	100 -	7.2 J	319000 -	730000 -	1 U	1 U	54.8 -	0.2 U	2 U	- -	1 U	10 U	20 U	- -	10 U	- -	- -	0.846 U	0.412 U	1.26 U
	5/4/2023	-	857 -	158000 -	7700 -	110 -	7.7 J	321000 -	656000 -	1 U	1 U	66.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.254 U	0.81 J+	1.06 U
	11/16/2023	-	962 -	152000 -	7600 -	120 -	7.9 J-	323000 -	676000 -	- -	1 U	63.3 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.201 -	0.44 -	0.641 -
	5/22/2024	-	901 -	150000 -	6600 -	110 -	7.3 J	338000 -	663000 -	1 U	1 U	60.8 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	-0.223 U	0.194 U	0.194 U
	11/8/2024	-	1010 -	146000 -	6500 -	110 -	6.9 -	321000 -	684000 -	1 U	1 U	64.8 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	-0.0923 U	0.0712 U	0 U
MW-47A	11/11/2022	-	1130 -	146000 -	8500 -	100 U	7.3 J	320000 -	734000 -	1 U	1 U	72.1 -	0.2 U	2 U	- -	1 U	10 U	26.2 -	- -	10 U	1 U	- -	0.332 U	-0.0108 U	0.332 U
	2/21/2023	-	1140 -	161000 -	7900 -	100 U	7.2 J	316000 -	748000 -	1 U	1 U	65.3 -	0.2 U	2 U	- -	1 U	10 U	24.2 -	- -	10 U	- -	- -	0.0765 U	0.475 U	0.552 U
	5/4/2023	-	1180 -	164000 -	8400 -	100 U	7.3 J	356000 -	711000 -	1 U	1.5 -	54.6 -	0.2 U	2 U	10 U	1.8 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.269 U	1.12 J+	1.39 J+
	5/4/2023	Duplicate	1140 -	164000 -	8400 -	100 U	7.5 J	360000 -	716000 -	1 U	1.5 -	54.8 -	0.2 U	2 U	10 U	1.8 -	10 U	20 U	0.2 U	10 U	1 U	1 U	0.209 U	0.558 U	0.767 U
	11/16/2023	-	1120 -	153000 -	6800 -	100 U	7.7 J-	328000 -	705000 -	- -	2.9 -	48.2 -	- -	2 U	- -	1 U	10 U	20 U	- -	10 U	1 U	- -	0.128 -	-0.0207 -	0.128 -
	5/22/2024	-	1120 -	162000 -	6800 -	100 U	7.3 J	382000 -	722000 -	1 U	1.3 -	47.1 -	0.2 U	2 U	10 U	1 U	10 U	20 U	0.2 U	10 U	1 U	1 U	0.057 U	0.109 U	0.166 U
	11/11/2024	-	1080 -	157000 -	6700 -	100 U	7.2 -	361000 -	722000 -	1 U	1.2 -	42.5 -	0.2 U	2 U	- -	1 U	- -	20 U	- -	10 U	1 U	- -	0.502 U	0.818 -	1.32 U
P-4	4/9/2020	-	22900 -	475000 -	79700 -	210 -	6.7 -	1160000 -	1850000 -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	- -	3640 -	- -	- -	- -	- -	- -
	9/1/2020	-	22900 -	518000 -	57500 -	140 -	7.3 -	1090000 -	2070000 -	- -	- -	- -	- -	- -	- -	- -	- -	20 U	- -	3420 -	- -	- -	- -	- -	- -
PZ-1A	9/1/2020	-	27900 -	688000 -	132000 -	190 -	7.6 -	1530000 -	2640000 -	1 U	11.8 -	199 -	0.87 -	0.23 -	21.3 -	16.1 -	40.9 -	45.7 -	2 U	345 -	1.4 -	1 U	1.23 -	0.746 -	1.98 -
	11/23/2020	-	28200 -	686000 -	142000 -	230 -	7.3 -	1610000 -	2500000 -	1 U	4.8 -	89.6 -	0.23 -	2 U	10.6 -	5.3 -	14 -	34.5 -	2 U	285 -	1 U	1 U	0.764 -	0.379 U	1.14 -
PZ-1B	9/1/2020	-	853 -	140000 -	11600 -	150 -	7.4 -	60300 -	449000 -	1 U	11.7 -	129 -	0.38 -	0.2 U	7.5 -	7.9 -	6.8 -	20 U	2 U	1.1 -	5.3 -	1 U	1.57 -	0.277 U	1.85 -
	11/23/2020	-	1500 -	162000 -	16300 -	130 -	7.0 -	128000 -	597000 -	1 U	7.3 -	117 -	0.2 U	2 U	10 U	4.5 -	10 U	20 U	2 U	10 U	2.9 -	1 U	0.279 U	0.356 U	0.635 U
PZ-1I	9/1/2020	-	25800 -	636000 -	136000 -	240 -	7.5 -	1700000 -	2730000 -	1 U	5.7 -	74 -	0.3 -	0.23 -	6.7 -	6.6 -	11.5 -	44.6 -	2 U	258 -	1 U	1 U	0.82 -	0.773 -	1.59 -
	11/23/2020	-	26400 -	628000 -	139000 -	260 -	7.4 -	1620000 -	2510000 -	1 U	5.1 -	68.9 -	0.2 U	2 U	10 U	4.5 -	10 U	39.2 -	2 U	274 -	1 U	1 U	0.728 -	1.27 -	2 -
Maximum concentration, all wells and piezometers			**46,000**	**779,000**	**827,000**	**15,900**	**9.4**	**4,400,000**	**5,080,000**	**6.4**	**2,080**	**2,240**	**14.4**	**24**	**614**	**901**	**174**	**4,880**	**0.67**	**3,640**	**124**	**4.6**	**3.5**	**5.2**	**6**

Notes:

J: Estimated result
J+: Estimated result, biased high
J-: Estimated result, biased low
ug/L: micrograms per liter
pCi/L: picoCurie per liter
U: Constituent not detected, value is the reporting limit
UJ: Constituent not detected, value is the estimated reporting limit
** No GWPS is established for boron. A comparative screening level is shown*

Results in blue exceed the Site-Specific Groundwater Protection Standard (GWPS) or comparative screening level for boron

TABLE 2
PUBLISHED HUMAN HEALTH SCREENING LEVELS FOR DRINKING WATER AND SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

		Published Human Health Screening Level - Drinking Water			Published Human Health Screening Level - Surface Water		Selected Screening Levels for Drinking Water and Surface Water	
Constituent	CAS RN	USEPA MCL (a) (mg/L)	USEPA RSL Tap Water (b) (mg/L)	IDEM Criteria for Drinking Water Class Groundwater (c) (mg/L)	USEPA NRWQC Consumption of Organism Only (d) (mg/L)	IDEM CCC HLSC Consumption of Organism Only (e) (mg/L)	Selected Screening Level - Drinking Water (f) (mg/L)	Selected Screening Level - Surface Water Consumption of Organism Only (g) (mg/L)
Detection Monitoring - USEPA Appendix III Constituents (h)								
Boron	7440-42-8	NA	4	NA	NA	NA	4	NA
Fluoride	16984-48-8	4	0.8	4	NA	NA	4	NA
Assessment Monitoring - USEPA Appendix IV Constituents								
Antimony	7440-36-0	0.006	0.0078	0.006	0.64	0.64	0.006	0.64
Arsenic	7440-38-2	0.01	0.0052 (i)	0.01	0.014 (i, j)	0.00175 (i,k)	0.01	0.014
Barium	7440-39-3	2	3.8	2	NA	NA	2	NA
Beryllium	7440-41-7	0.004	0.025	0.004	NA	NA	0.004	NA
Cadmium	7440-43-9	0.005	0.0018	0.005	NA	NA	0.005	NA
Chromium (Total)	7440-47-3	0.1	22 (l)	0.1	NA	NA	0.1	NA
Cobalt	7440-48-4	NA	0.006	NA	NA	NA	0.006	NA
Lead	7439-92-1	0.01 (m)	0.01 (m)	0.015	NA	NA	0.01	NA
Lithium	7439-93-2	NA	0.04	NA	NA	NA	0.04	NA
Mercury	7439-97-6	0.002 (n)	0.0057 (o)	0.002 (n)	NA	0.00015	0.002	0.00015
Molybdenum	7439-98-7	NA	0.1	NA	NA	NA	0.1	NA
Selenium	7782-49-2	0.05	0.1	0.05	4.2	4.2	0.05	4.2
Thallium	7440-28-0	0.002	0.0002	0.002	0.00047	0.048	0.002	0.00047
Radiological (pCi/L)								
Radium-226 & 228	7440-14-4	5	NA	5	NA	NA	5	NA

Notes:

CAS RN - Chemical Abstracts Service Registry Number.
CCC HLSC - Continuous Criterion Concentration. Human Life-Cycle Safe Concentration.
IDEM - Indiana Department of Environmental Management.
MCL - Maximum Contaminant Level.
mg/L - milligrams/liter.
NA - Not Available.
NRWQC - National Recommended Water Quality Criteria.
pCi/L - picoCuries/liter.
RSL - Regional Screening Level.
USEPA - United States Environmental Protection Agency.

TABLE 2
PUBLISHED HUMAN HEALTH SCREENING LEVELS FOR DRINKING WATER AND SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Additional Notes:

(a) - USEPA National Primary Drinking Water Regulations.
https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations

(b) - USEPA Regional Screening Levels (November 2024). Values for Tap Water, Hazard Index = 1.0. TR = 1E-06.
https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

(c) - IDEM Water Quality Standards. Title 327 of the Indiana Administrative Code (IAC). Article 2. Water Quality Standards. Rule 11. Ground Water Quality Standards. Part 327 IAC 2-11-6. Criteria for Drinking Water Class Ground Water.
https://iar.iga.in.gov/code/2026/327

(d) - USEPA National Recommended Water Quality Criteria - Human Health Criteria Table. USEPA NRWQC - Human Health Criteria for the Consumption of Organism Only apply to total concentrations.
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table

(e) - IDEM Water Quality Standards. Title 327 of the IAC. Article 2. Water Quality Standards. Rule 1. Water Quality Standards Applicable to All State Waters Except Waters of the State Within the Great Lakes System. Part 327 IAC 2-1-6 Minimum Surface Water Quality Standards. Table 6-4. Surface Water Quality Criteria for Protection of Human Health, Continuous Criterion Concentrations Outside of Mixing Zone. For metals, surface water quality criteria apply to total recoverable concentrations. For carcinogenic substances, criteria are to protect human health from unacceptable cancer risk of greater than one (1) additional occurrence of cancer per one hundred thousand (100,000) population.
https://iar.iga.in.gov/code/2026/327

(f) - The hierarchy for the selection of published human health screening levels for drinking water is:
1) USEPA MCL
2) USEPA RSL - Tap Water
3) IDEM Criteria for Drinking Water Class Groundwater

(g) - The hierarchy for selection of published human health screening levels for surface water - "consumption of organisms only" is:
1) USEPA NRWQC - Consumption of Organism Only.
2) IDEM CCC HLSC - Consumption of Organism Only.

(h) - Detection Monitoring - EPA Appendix III Constituents without health risk-based screening levels are not included.

(i) - Value based on a target lifetime excess cancer risk of 1E-04, the cancer risk per the CCR Rule (USEPA, 2015) generally "considered to pose a substantial present or potential hazard to human health and the environment and generally will be regulated," and the cumulative target cancer risk that should not be exceeded per IDEM risk assessment guidance (2022). Cancer risk-based screening levels for arsenic (based on a target cancer risk of 1E-05 or 1E-06) were adjusted to values based on a target cancer risk of 1E-04 as arsenic is the only constituent evaluated that is carcinogenic (via the oral and/or dermal pathways accounted for in the screening levels).

(j) - Value for inorganic arsenic.

(k) - Value for inorganic arsenic as arsenite, As(III), derived from nonthreshold cancer risk.

(l) - Value for chromium (III).

(m) - Federal Lead Action Level. This is a drinking water treatment action level applicable to regulated Community and Non-Transient Non-Community public water systems.
https://www.federalregister.gov/documents/2024/10/30/2024-23549/national-primary-drinking-water-regulations-for-lead-and-copper-improvements-lcri

(n) - Value for inorganic mercury.

(o) - Value for mercuric chloride.

Reference:

Indiana Department of Environmental Management (IDEM). 2022. Risk-based Closure Guide. Office of Land Quality. July 8.

United States Environmental Protection Agency (USEPA). 2015. Final Rule: Disposal of Coal Combustion Residuals (CCRs) for Electric Utilities. 80 FR 21301-21501. U.S. Environmental Protection Agency, Washington, D.C Available at: https://www.epa.gov/coalash/coal-ash-rule

TABLE 3
SITE-SPECIFIC, RISK-BASED SCREENING LEVELS FOR RECREATIONAL USE OF SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Constituent	CAS RN	Human Health Calculated RBSL - Recreational Use of Surface Water (a)						Selected Human Health Calculated RBSL - Recreational Use of Surface Water (c) (mg/L)
		Current/Future Off-Site Recreational Swimmer Age-Adjusted (Ages 1 - 26) (b) (mg/L)		Current/Future Off-Site Recreational Wader Age-Adjusted (Ages 1 - 26) (b) (mg/L)		Current/Future Off-Site Recreational Boater (Adult) (b) (mg/L)		
Detection Monitoring - USEPA Appendix III Constituents (d)								
Boron	7440-42-8	216		235		10,700		216
Fluoride	16984-48-8	43		47		2,140		43
Assessment Monitoring - USEPA Appendix IV Constituents								
Antimony	7440-36-0	0.263		0.40		3.2		0.26
Arsenic	7440-38-2	0.02	(e, f)	0.035	(e, g)	1.2	(e, h)	0.02
Barium	7440-39-3	86		162		748		86
Beryllium	7440-41-7	0.13		0.41		0.75		0.13
Cadmium	7440-43-9	0.034		0.072		0.27		0.034
Chromium (Total)	7440-47-3	169	(i)	494	(i)	1,040	(i)	169
Cobalt	7440-48-4	0.35		0.36		40		0.35
Lead	7439-92-1	0.01	(j)	0.01	(j)	0.01	(j)	0.01
Lithium	7439-93-2	2.2		2.4		107		2.2
Mercury	7439-97-6	0.13	(k)	0.24	(k)	1.12	(k)	0.129
Molybdenum	7439-98-7	5.4		5.9		267		5.4
Selenium	7782-49-2	5.4		5.9		267		5.4
Thallium	7440-28-0	0.011		0.012		0.53		0.0108
Radiological (pCi/L)								
Radium-226 & 228	7440-14-4	NA		NA		NA		NA

Notes:

CAS RN - Chemical Abstracts Service Registry Number.
mg/L - micrograms/liter.
NA - Not Available.
pCi/L - picoCuries/liter.
RBSL - Risk-Based Screening Level.
USEPA - United States Environmental Protection Agency.

TABLE 3
SITE-SPECIFIC, RISK-BASED SCREENING LEVELS FOR RECREATIONAL USE OF SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Additional Notes:

(a) - Some calculated values may be above solubility limits.

(b) - Documentation for the risk-based screening level (RBSL) calculations for recreational use of surface water is provided in Attachment A. RBSLs calculated using the USEPA RSL calculator (USEPA, 2025b).

(c) - The selected RBSL for recreational use of surface water is the minimum value from amongst the Current/Future Off-Site Recreational Swimmer, Current/Future Off-Site Recreational Wader, and Current/Future Off-Site Recreational Boater RBSLs.

(d) - Detection Monitoring - EPA Appendix III Constituents without health risk-based screening levels are not included.

(e) - Arsenic RBSLs are based on the lower of the values based on a hazard index of 1 and an excess lifetime cancer risk of 1E-04. Per the CCR Rule (USEPA, 2015), a cancer risk level of 1E-04 is generally "considered to pose a substantial present or potential hazard to human health and the environment and generally will be regulated," and per the Indiana Department of Environmental Management (IDEM) risk assessment guidance (IDEM, 2022), cumulative cancer risk should not exceed 1E-04. Cancer RBSLs for arsenic were therefore calculated using a target cancer risk of 1E-04 as arsenic is the only constituent evaluated that is carcinogenic via the oral and/or dermal pathways accounted for in the RBSLs. RBSLs for arsenic were also calculated using the recently promulgated oral cancer slope factor of 32 per milligrams per kilogram per day (mg/kg-day) and oral reference dose of 0.00006 mg/kg-day (USEPA, 2025a).

(f) - RBSL based on cancer endpoint (noncancer-based RBSL is 0.065 mg/L).

(g) - RBSL based on cancer endpoint (noncancer-based RBSL is 0.071 mg/L).

(h) - RBSL based on cancer endpoint (noncancer-based RBSL is 3.2 mg/L).

(i) - Value for chromium (III).

(j) - USEPA lead action level of 0.01 mg/L for lead in drinking water (USEPA, 2024) is used as the RBSL.

(k) - Value for mercuric chloride.

References:

Indiana Department of Environmental Management (IDEM). 2022. Risk-based Closure Guide. Office of Land Quality. July 8.

United States Environmental Protection Agency (USEPA). 2015. Final Rule: Disposal of Coal Combustion Residuals (CCRs) for Electric Utilities. 80 FR 21301-21501. U.S. Environmental Protection Agency, Washington, D.C. Available at: https://www.epa.gov/coalash/coal-ash-rule

USEPA. 2024. National Primary Drinking Water Regulations. Available at: https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations. Last updated on 12 December 2024.

USEPA. 2025a. Integrated Risk Information System. Available at: https://epa.gov/iris

USEPA. 2025b. RSL Calculator. Available at: https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search

TABLE 4
PUBLISHED ECOLOGICAL SCREENING LEVELS FOR SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Constituent	CAS RN	Published Ecological Screening Levels - Surface Water												Selected Ecological Screening Level (acute) (e) (mg/L)		Selected Ecological Screening Level (chronic) (e) (mg/L)	
		USEPA NRWQC Aquatic Life Criteria CMC - Freshwater (acute) (a) (mg/L)		USEPA NRWQC Aquatic Life Criteria CCC - Freshwater (chronic) (a) (mg/L)		IDEM AAC Aquatic Life Criterion (acute) (b)(c) (mg/L)		IDEM CAC Aquatic Life Criterion (chronic) (b)(c) (mg/L)		USEPA Region 4 Surface Water Screening Values for Hazardous Waste Sites (freshwater - acute) (d) (mg/L)		USEPA Region 4 Surface Water Screening Values for Hazardous Waste Sites (freshwater - chronic) (d) (mg/L)					
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Detection Monitoring - USEPA Appendix III Constituents (f)																	
Boron	7440-42-8	NA	NA	NA	NA	41 (g)	NA	7.7 (g)	NA	34	34	7.2	7.2	41	34	7.7	7.2
Fluoride	16984-48-8	NA	NA	NA	NA	NA	NA	NA	NA	9.8	NA	2.7	NA	9.8	NA	2.7	NA
Assessment Monitoring - USEPA Appendix IV Constituents																	
Antimony	7440-36-0	NA	NA	NA	NA	0.72 (g)	NA	0.21 (g)	NA	0.9	NA	0.19	NA	0.72	NA	0.21	NA
Arsenic	7440-38-2	0.34 (h)	0.34 (h)	0.15 (h)	0.15 (h)	0.34	0.34	0.15	0.15	0.34	0.34	0.15	0.15	0.34	0.34	0.15	0.15
Barium	7440-39-3	NA	NA	NA	NA	NA	NA	NA	NA	2	NA	0.22	NA	2	NA	0.22	NA
Beryllium	7440-41-7	NA	NA	NA	NA	0.13 (g, i)	NA	0.0059 (g, i)	NA	0.093	NA	0.011	NA	0.13	NA	0.0059	NA
Cadmium	7440-43-9	0.0030 (i)	0.0028 (i)	NA	0.00036 (i, j)	0.0030 (i)	0.0028 (i)	0.0011 (i)	0.0010 (i)	0.0030 (i)	0.0028 (i)	0.0011 (i)	0.0010 (i)	0.0030	0.0028	0.0011	0.0004
Chromium (Total)	7440-47-3	2.6 (i)	0.8 (i)	0.13 (i)	0.11 (i)	2.6 (i)	0.8 (i)	0.13 (i)	0.11 (i)	2.6 (i, k)	0.8 (i)	0.13 (i, k)	0.109 (i)	2.6	0.8	0.13	0.11
Cobalt	7440-48-4	NA	NA	NA	NA	0.14 (g)	NA	0.053 (g)	NA	0.12	NA	0.019	NA	0.14	NA	0.053	NA
Lead	7439-92-1	0.15 (i)	0.11 (i)	0.0058 (i)	0.0042 (i)	0.15 (i)	0.11 (i)	0.0058 (i)	0.0042 (i)	0.15 (i)	0.11 (i)	0.0058 (i)	0.0042 (i)	0.15	0.11	0.0058	0.0042
Lithium	7439-93-2	NA	NA	NA	NA	0.91 (g)	NA	0.91 (g)	NA	0.91	NA	0.44	NA	0.91	NA	0.91	NA
Mercury	7439-97-6	0.0016 (l)	0.0014 (l)	0.00091 (l)	0.00077 (l)	0.0024	NA	0.000012	NA	0.0014 (l)	0.0014 (l)	0.00077 (l)	0.00077 (l)	0.0016	0.0014	0.00091	0.00077
Molybdenum	7439-98-7	NA	NA	NA	NA	84 (g)	NA	3.8 (g)	NA	7.2	NA	0.8	NA	84	NA	3.8	NA
Selenium	7782-49-2	NA	NA	NA	0.0031 (m)	NA	NA	NA	0.0031 (m)	0.02	NA	0.005	NA	0.02	NA	0.005	0.0031
Thallium	7440-28-0	NA	NA	NA	NA	0.086 (g)	NA	0.035 (g)	NA	0.054	NA	0.006	NA	0.086	NA	0.035	NA
Radiological (pCi/L)																	
Radium-226 & 228	7440-14-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

AAC - Acute Aquatic Criterion
CAC - Chronic Aquatic Criterion
CAS RN - Chemical Abstracts Service Registry Number.
CCC - Continuous Criterion Concentration
CMC - Criterion Maximum Concentration
IDEM - Indiana Department of Environmental Management
mg/L - micrograms/liter.
NA - Not Available
NRWQC - National Recommended Water Quality Criteria
pCi/L - picoCuries/liter.
USEPA - United States Environmental Protection Agency

Additional Notes:

(a) - USEPA Water Quality Criteria. Current Water Quality Criteria Tables. National Recommended Water Quality Criteria - Aquatic Life Criteria Table.
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table
(b) - IDEM Water Quality Standards. Title 327 of the IAC. Article 2. Water Quality Standards. Rule 1. Water Quality Standards Applicable to All State Waters Except Waters of the State Within the Great Lakes System. Part 327 IAC 2-1-6 Minimum Surface Water Quality Standards. Tables 6-1, 6-2, and 6-3. For metals, surface water quality criteria apply to total recoverable concentrations.
https://iar.iga.in.gov/code/2026/327
(c) - IDEM. Water Quality Standards.
https://www.in.gov/idem/cleanwater/resources/water-quality-standards/
(d) - USEPA Region 4 Ecological Risk Assessment Supplemental Guidance. Table 1a: Region 4 Surface Water Screening Values for Hazardous Waste Sites. Freshwater Screening Values.
https://www.epa.gov/sites/default/files/2018-03/documents/era_regional_supplemental_guidance_report-march-2018_update.pdf
(e) - The hierarchy for the selection of ecological screening levels is:
1) USEPA NRWQC. Aquatic Life Criteria - Freshwater.
2) IDEM Aquatic Life Criterion.
3) USEPA Region 4. Freshwater Screening Values.
(f) - Detection Monitoring - EPA Appendix III Constituents without health risk-based screening levels are not included.
(g) - Aqualtic life water quality criteria calculated using the methodologies at 327 IAC 2-1-8.2 and 8.3, for waters outside the Great Lakes system.
https://www.in.gov/idem/cleanwater/files/wqs_non_glb.pdf
(h) - Value for inorganic arsenic only.
(i) - Criterion expressed as a function of total hardness (as $CaCO_3$). Value displayed is based on a Site-specific hardness value of 160 mg/L, obtained from IDEM, 2021. Value is the minimum hardness concentration in surface water samples collected from the nearest upstream and nearest downstream station locations (i.e., stations WWL-09-0008 and WWL-10-0054, located upstream and downstream of the facility, respectively).
(j) - As indicated in the National Recommended Water Quality Criteria - Aquatic Life Criteria Table, the current national recommended chronic freshwater cadmium aquatic life criteria are from USEPA's 2001 Update of Ambient Water Quality Critieria for Cadmium
(k) - Value for chromium (III).
(l) - Aquatic Life Criterion for metallic mercury (CAS RN 7439-97-6) and/or methylmercury (CAS RN 22967-92-6).
(m) - USEPA Office of Water. Final Criterion: Aquatic Life Ambient Water Quality Criterion for Selenium - Freshwater. 30 June 2016. Freshwater value for chronic (30 day) water column concentration (mg/L) of dissolved selenium in lotic (flowing) surface water. The criterion is based on fish ovary concentrations, and in lieu of that, the water column values are used.
https://www.epa.gov/sites/production/files/2016-07/documents/aquatic_life_awqc_for_selenium_-_freshwater_2016.pdf

Reference:

Indiana Department of Environmental Management (IDEM). 2021. 2020 White River Mainstem Project Surface Water Results Summaries. October 14.

TABLE 5
SELECTED SURFACE WATER SCREENING LEVELS AND DERIVATION OF TARGET SCREENING LEVELS FOR GROUNDWATER (PROTECTIVE OF WHITE RIVER SURFACE WATER)
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

									Dilution-Attenuation Factor for White River (e)	**1,703**
Constituent	**CAS RN**	**HH DW SL (a) (mg/L)**	**HH REC SL - Consumption of Organism Only (b) (mg/L)**	**HH Recreational Calculated RBSL (c) (mg/L)**	**ECO SL - Total (acute) (d) (mg/L)**	**ECO SL - Dissolved (acute) (d) (mg/L)**	**ECO SL - Total (chronic) (d) (mg/L)**	**ECO SL - Dissolved (chronic) (d) (mg/L)**	**Lowest of the Human Health and Ecological Screening Levels (mg/L)**	**Target Groundwater Screening Level - White River (f) (mg/L)**
Detection Monitoring - USEPA Appendix III Constituents (g)										
Boron	7440-42-8	4	NA	216	41	34	7.7	7.2	4	6,800
Fluoride	16984-48-8	4	NA	43	9.8	NA	2.7	NA	2.7	4,600
Assessment Monitoring - USEPA Appendix IV Constituents										
Antimony	7440-36-0	0.006	0.64	0.26	0.7	NA	0.21	NA	0.006	10
Arsenic	7440-38-2	0.01	0.014	0.02	0.34	0.34	0.15	0.15	0.01	17
Barium	7440-39-3	2	NA	86	2	NA	0.22	NA	0.22	370
Beryllium	7440-41-7	0.004	NA	0.13	0.132394	NA	0.006	NA	0.004	6.8
Cadmium	7440-43-9	0.005	NA	0.034	0.003	0.0028	0.00115	0.00036	0.00036	0.61
Chromium (Total)	7440-47-3	0.1	NA	169	2.6	0.8	0.13	0.11	0.1	170
Cobalt	7440-48-4	0.006	NA	0.35	0.14	NA	0.053	NA	0.006	10
Lead	7439-92-1	0.01	NA	0.01	0.15	0.11	0.0058	0.0042	0.0042	7.1
Lithium	7439-93-2	0.04	NA	2.2	0.91	NA	0.91	NA	0.04	68
Mercury	7439-97-6	0.002	0.00015	0.13	0.0016	0.0014	0.000906	0.00077	0.00015	0.26
Molybdenum	7439-98-7	0.1	NA	5.4	84	NA	3.8	NA	0.1	170
Selenium	7782-49-2	0.05	4.2	5.4	0.02	NA	0.005	0.0031	0.0031	5.3
Thallium	7440-28-0	0.002	0.00047	0.011	0.086	NA	0.035	NA	0.00047	0.8
Radiological (pCi/L)										
Radium-226 & 228	7440-14-4	5	NA	NA	NA	NA	NA	NA	5	8,500

TABLE 5
SELECTED SURFACE WATER SCREENING LEVELS AND DERIVATION OF TARGET SCREENING LEVELS FOR GROUNDWATER (PROTECTIVE OF WHITE RIVER SURFACE WATER)
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Notes:

CAS RN - Chemical Abstracts Service Registry Number.

ECO SL - Ecological Screening Level.

HH DW SL - Human Health Drinking Water Screening Level.

HH REC SL - Human Health Recreational Use Screening Level.

mg/L - milligram per liter.

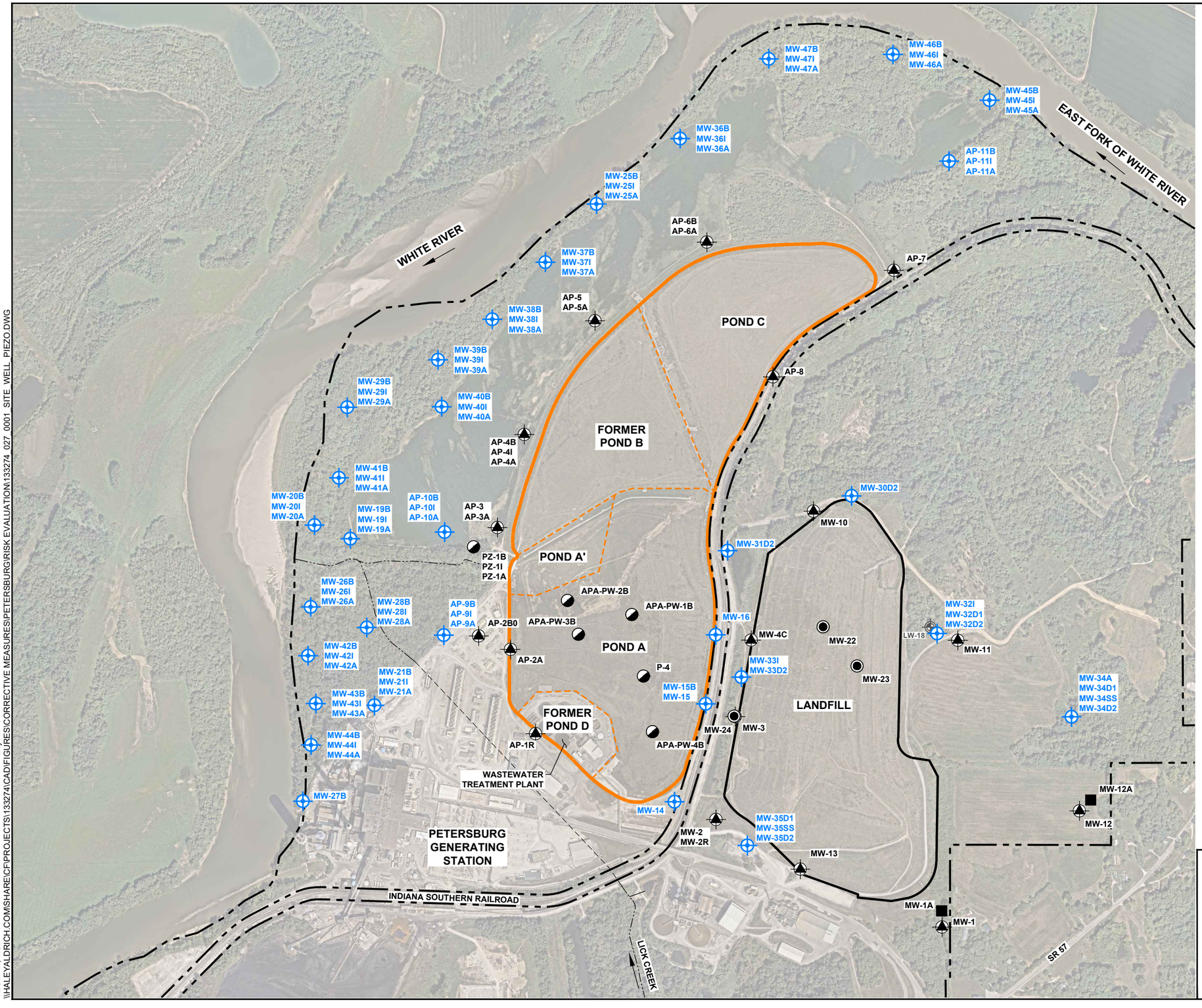
NA - Not Available.

pCi/L - picoCuries/liter.

RBSL - Risk-Based Screening Level.

(a) - Human health screening levels for drinking water selected in Table 2 using the following hierarchy:
1) United States Environmental Protection Agency (USEPA) Maximum Contaminant Levels
2) USEPA Regional Screening Level - Tap Water
3) Indiana Department of Environmental Management (IDEM) Criteria for Drinking Water Class Groundwater
(b) - Human health screening levels for surface water, "consumption of organism only," selected in Table 2 using the following hierarchy:
1) USEPA National Recommended Water Quality Criteria (NRWQC) - Consumption of Organism Only.
2) IDEM Continuous Criterion Concentration. Human Life-Cycle Safe Concentration - Consumption of Organism Only.
(c) - Minimum human health risk-based screening level (RBSL) for current/future off-site recreational swimmer, current/future off-site recreational wader, and current/future off-site recreational boater, obtained from Table 3.
(d) - Ecological Screening Levels selected in Table 4 using the following hierarchy:
1) USEPA NRWQC. Aquatic Life Criteria - Freshwater.
2) IDEM Aquatic Life Criterion.
3) USEPA Region 4. Freshwater Screening Values.
(e) - Estimated value, see Attachment B for derivation.
(f) - The Target Groundwater Screening Level = Minimum Screening Level x Dilution-Attenuation Factor.
(g) - Detection Monitoring - EPA Appendix III Constituents without health risk-based screening levels are not included.

FIGURES



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

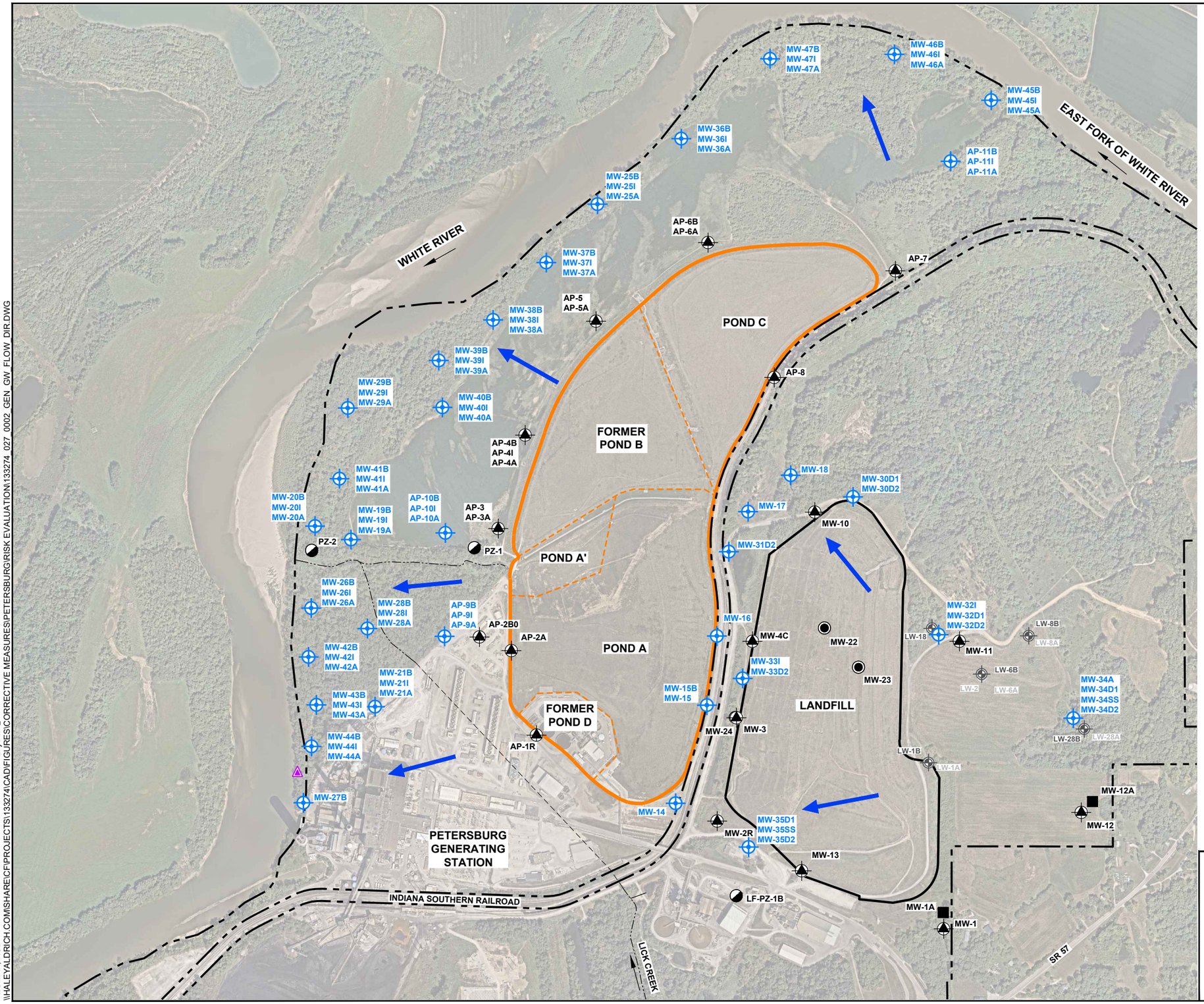
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

SITE FEATURES, AND WELL AND PIEZOMETER LOCATIONS

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 1

YEOMAN, ROB Saved: 3/17/2025 1:36 PM Layout: 1
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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- MW-10 — CCR MONITORING WELL LOCATION
- LF-PZ-1B — PIEZOMETER LOCATION
- MW-14 — NATURE AND EXTENT MONITORING WELL
- USGS STAFF GAUGE
- LW-18 — 1991 LANDFILL OBSERVATION WELL
- MW-22 — TEMPORARY MONITORING WELL
- MW-1A — BEDROCK MONITORING WELL
- GROUNDWATER FLOW DIRECTION

NOTES

1. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024
2. WELL DESIGNATION:
   - B = SHALLOW WELL
   - I = INTERMEDIATE WELL
   - A = DEEP WELL
   - SS = SANDSTONE UNIT WELL
   - D1 = UPPER BLACK SHALE/COAL UNIT
   - D2 = LOWER BLACK SHALE UNIT
3. CCR = COAL COMBUSTION RESIDUALS

N

0 800 1600
SCALE IN FEET

HALEY ALDRICH

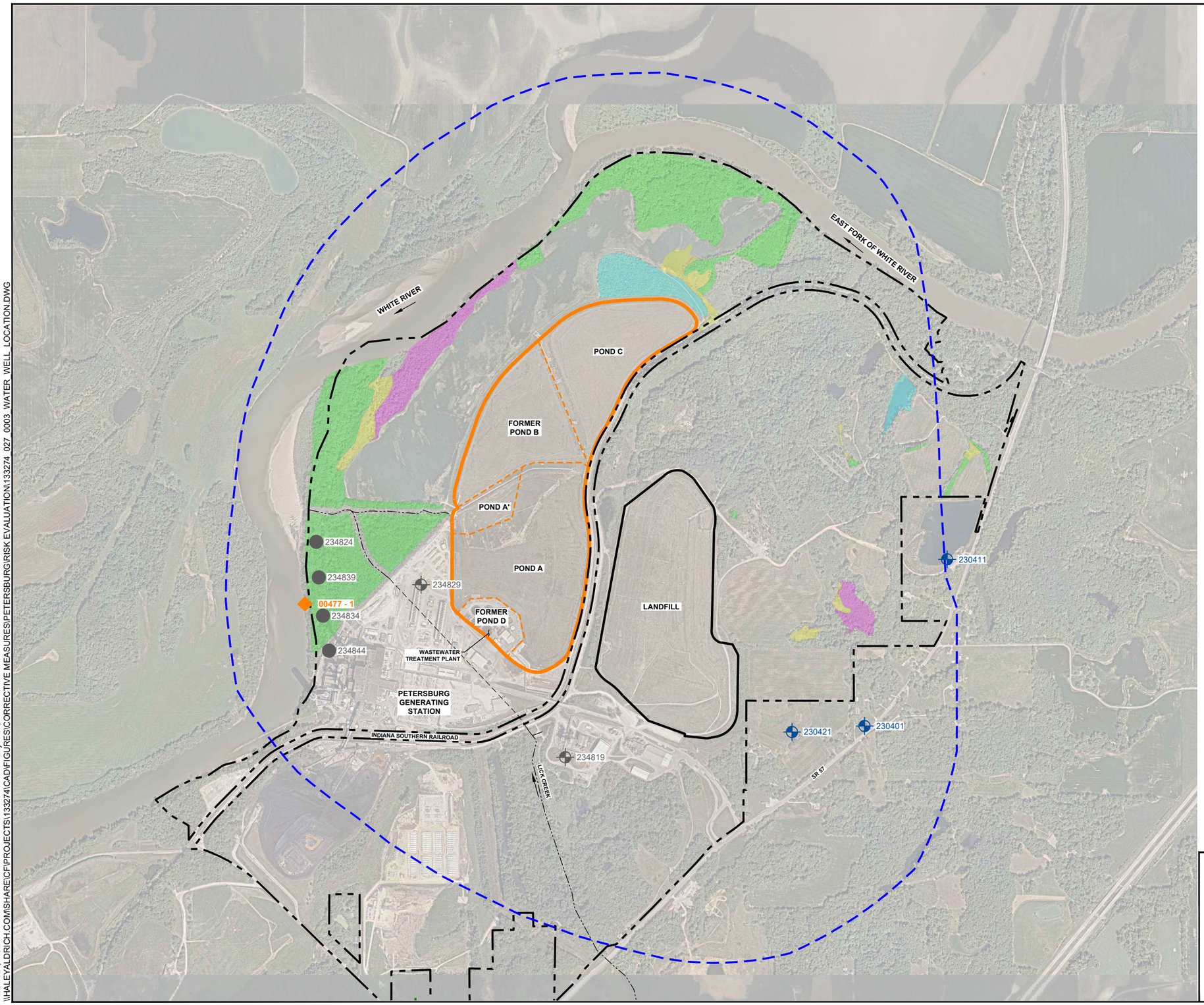
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

GENERALIZED GROUNDWATER FLOW DIRECTION

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 2

YEOMAN, ROB Saved: 12/2/2025 1:55 PM Layout: 2
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LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- APPROXIMATE LIMITS OF ASH POND SYSTEM
- APPROXIMATE BOUNDARY OF ASH POND
- APPROXIMATE LIMITS OF LANDFILL
- HALF MILE RADIUS BOUNDARY
- WATER SUPPLY WELL (NOT A SIGNIFICANT WITHDRAWAL WELL)
- WATER SUPPLY WELL (NO LONGER IN SERVICE)
- FORMER LOCATION OF SIGNIFICANT WATER WITHDRAW WELL (NO LONGER IN SERVICE)
- SURFACE WATER INTAKE
- MITIGATION WETLAND
- DELINEATED PALUSTRINE SCRUB SHRUB WETLAND
- DELINEATED PALUSTRINE FORESTED WETLAND
- DELINEATED PALUSTRINE EMERGENT WETLAND

NOTES

1. ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.
2. IMAGE SOURCE: NEARMAP.COM, DATED 23 AUGUST 2024, AND BING AERIAL MAPS.
3. WATER WELLS SOURCE: INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR) DIVISION OF WATER WELL RECORDS DATABASE.
4. LABELS FOR THE SIGNIFICANT WATER WITHDRAWAL LOCATIONS ARE THE REGISTRATION NUMBER IN THE IDNR SIGNIFICANT WATER WITHDRAWAL DATABASE, ACCESSED 4 MARCH 2025.

N

0 1200 2400
SCALE IN FEET

HALEY ALDRICH

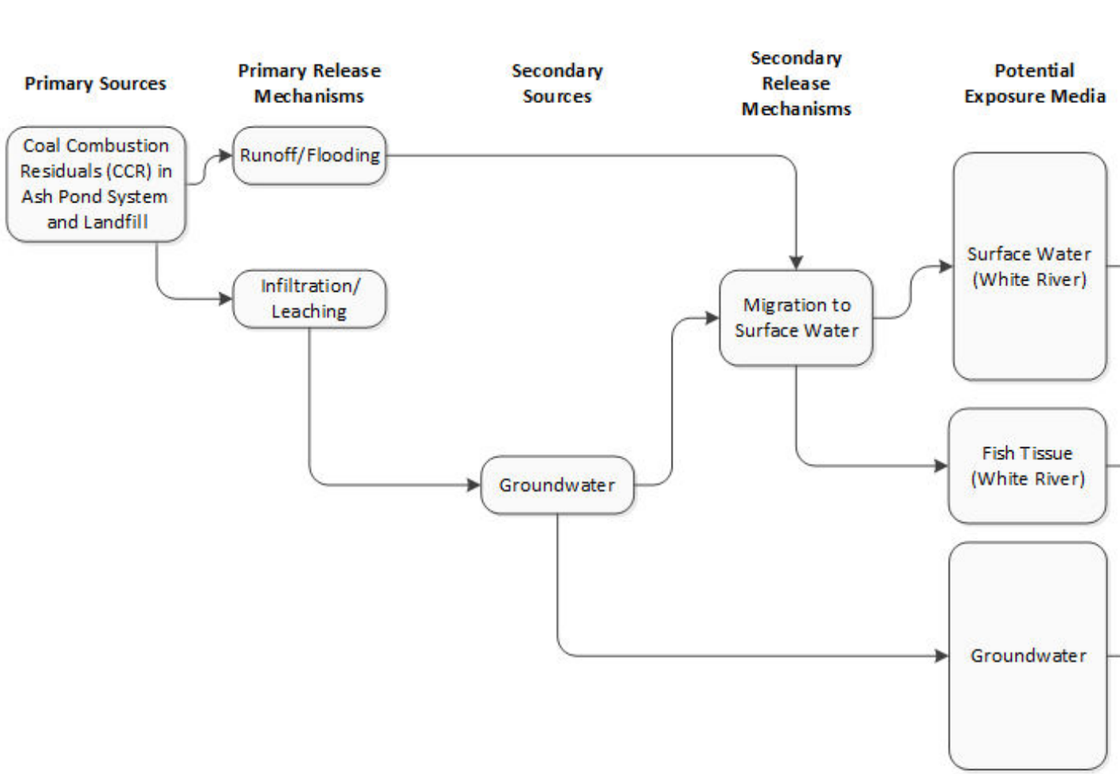
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

WATER WELL LOCATIONS WITHIN A HALF-MILE RADIUS OF ASH POND AND LANDFILL BOUNDARY

SCALE: AS SHOWN
DECEMBER 2025

FIGURE 3

YEOMAN, ROB Saved: 3/17/2025 11:13 AM Layout: 3
\\HALEYALDRICH.COM\SHARE\CF\PROJECTS\133274\CAD\FIGURES\CORRECTIVE MEASURES\PETERSBURG\RISK EVALUATION\133274_027_0003_WATER_WELL_LOCATION.DWG



Potential Exposure Route	Potential Human Health Receptors: Current/Future Resident Adult/Child	Current/Future Swimmer or Wader	Current/Future Boater	Current/Future Recreational Fisher	Potential Ecological Receptors: Aquatic Receptors
Ingestion	●	●	○	○	NA
Dermal Contact	●	●	●	○	NA
Aquatic Exposure	NA	NA	NA	NA	●

Ingestion	○	○	○	●	NA

Ingestion	○ (a)	○	○	○	NA
Dermal Contact	○ (a)	○	○	○	NA
Aquatic Exposure	NA	NA	NA	NA	○ (b)

Notes:

● Pathway evaluated and found potentially complete

○ Pathway evaluated and found incomplete

(a) As groundwater does not flow from the Ash Pond System or Landfill towards off-site residential water wells, potential exposures to CCR constituents in groundwater at these wells is incomplete.
(b) Ecological Receptors are not exposed to groundwater.

NA – Not Applicable.

HALEY ALDRICH

PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

CONCEPTUAL SITE MODEL

DECEMBER 2025

FIGURE 4

GIS FILE PATH: \\haleyaldrichshare\CF\Projects\133274\GIS\133274_012_PETERSBURG\133274_012_PETERSBURG_VISIO.aprx - USER: Vpehlivan - LAST SAVED: 10/27/2025 9:14 AM

ATTACHMENT A
Derivation of Risk-Based Screening Levels

TABLE A-1
EXPOSURE PARAMETERS FOR DERIVATION OF RISK-BASED SCREENING LEVELS FOR RECREATIONAL USE OF SURFACE WATER
PETERSBURG GENERATING STATION
PETERSBURG, INDIANA

Exposure Parameter		Units	Current/Future Off-Site Recreational Swimmer				Current/Future Off-Site Recreational Wader				Current/Future Off-Site Recreational Boater Adult
			Child (Age <6)	Adolescent (6-<16 years)	Adult	Child, Adolescent and Adult (Ages 1 - 26)	Child (Age <6)	Adolescent (6-<16 years)	Adult	Child, Adolescent and Adult (Ages 1 - 26)	
			Value / Source	Value / Source	Value / Source	Value / Source	Value / Source	Value / Source	Value / Source	Value / Source	Value / Source
Standard Parameters											
Body Weight	BW	kg	15 USEPA, 2014a	44 USEPA, 2011 [1]	80 USEPA, 2014a	NA	15 USEPA, 2014a	44 USEPA, 2011 [1]	80 USEPA, 2014a	NA	80 USEPA, 2014a
Exposure Duration	ED	years	6 Ages <6	10 Ages 6 - <16	10 Balance of 26-yr exposure	26	6 Ages <6	10 Ages 6 - <16	10 Balance of 26-yr exposure	26	10 Balance of 26-yr exposure
Non–carcinogenic Averaging Time	ATnc	days	2190 ED expressed in days	3650 ED expressed in days	3650 ED expressed in days	9490 ED expressed in days	2190 ED expressed in days	3650 ED expressed in days	3650 ED expressed in days	9490 ED expressed in days	3650 ED expressed in days
Carcinogenic Averaging Time	ATc	days	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime	25550 70 year lifetime
Incidental Ingestion of Surface Water											
Exposure Frequency	EF	days/year	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	NA
Water Ingestion Rate	IR	L/day	0.10 USEPA, 2014b [3]	0.10 USEPA, 2014b [3]	0.10 USEPA, 2014b [3]	NA	0.10 USEPA, 2014b [4]	0.02 USEPA, 2014b [4]	0.02 USEPA, 2014b [4]	NA	NA
Fraction Ingested	FI	unitless	1.0 Assumption	1.0 Assumption	1.0 Assumption	1.0 Assumption	1.0 Assumption	1.0 Assumption	1.0 Assumption	1.0 Assumption	NA
Age-Adjusted Water Ingestion Factor	IFWadj	L/kg	NA	NA	NA	3.39	NA	NA	NA	2.12	NA
Age-Adjusted Water Ingestion Factor-Mutagenic	IFWM	L/kg	NA	NA	NA	13.23	NA	NA	NA	10.33	NA
Dermal Exposure with Surface Water											
Exposure Frequency	EF	days/year	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]	45 USEPA, 2018 [2]
Exposed Skin Surface Area	SA	cm^2	6365 USEPA, 2014a	13350 USEPA, 2011 [5]	19652 USEPA, 2014a	NA	1749 USEPA, 2011 [6]	3944 USEPA, 2011 [6]	6075 USEPA, 2011 [6]	NA	6075 USEPA, 2011 [6]
Exposure Time	t-event	hr/event	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]	2 Site-specific [7]
Events per Day	EV	event/day	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]	1 Site-specific [7]
Age-Adjusted Dermal Contact Factor	DFWadj	events-cm^2/kg	NA	NA	NA	361647	NA	NA	NA	105990	NA
Age-Adjusted Dermal Contact Factor-Mutagenic	DFWM	events-cm^2/kg	NA	NA	NA	1131185	NA	NA	NA	323085	NA

Notes and Abbreviations:

NA = not applicable
USEPA, 2011 - Exposure Factors Handbook. USEPA/600/R-10/030. October, 2011.
USEPA, 2014a - Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120. February 6, 2014.
USEPA, 2014b - Region 4 Human Health Risk Assessment Supplemental Guidance. January 2014. Draft Final.
USEPA, 2018 - Region 4 Human Health Risk Assessment Supplemental Guidance. March 2018 Update.
[1] - Table 8-1 of USEPA (2011); weighted average of mean body weights (6 to <16 years)
[2] - Default exposure frequency for swimming in the southeast
[3] - Based on USEPA Region 4-recommended ingestion rate of 50 mL/hour for exposures to water during swimming (USEPA, 2014b), site-specific exposure time (2 hours per event), and site-specific events per day (1).
The water ingestion rate in liters/day is calculated as follows: ingestion (mL/hr) x exposure time (hr/event)/1000 (mL/L) x events per day (1)
[4] - Based on USEPA Region 4-recommended ingestion rates of 50 mL/hour for children (age <6) and 10 mL/hour for adolescents and adults for exposures to water during wading (USEPA, 2014b), site-specific exposure time (2 hours per event), and site-specific events per day (1).
The water ingestion rate in liters/day is calculated as follows: ingestion (mL/hr) x exposure time (hr/event)/1000 (mL/L) x events per day (1)
[5] - Table 7-1 of USEPA (2011); weighted average of mean skin surface area (6 to <16 years)
[6] - Based on surface area of hands, forearms, lower legs, and feet
[7] - Assumes 2 hours per event, 1 event per day, and that on days when recreation in water occurs, all daily exposure to water is derived from locations at the Site.

Values based on a time-weighted average of child, adolescent, and adult exposure values are calculated as follows:
Water
IFWadj = (child ED [0-2] x child EF [0-2] x child IR [0-2] / child BW [0-2]) + (child ED [2-6] x child EF [2-6] x child IR [2-6] / child BW [2-6]) + (older child ED [6-16] x older child EF [6-16] x older child IR [6-16] / older child BW [6-16]) + (adult ED x adult EF x adult IR / adult BW)
DFWadj = (child EF [0-2] x child ED [0-2] x child SA [0-2] x child EV [0-2] / child BW [0-2]) + (child EF [2-6] x child ED [2-6] x child SA [2-6] x child EV [2-6] / child BW [2-6]) + (older child EF [6-16] x older child ED [6-16] x older child SA [6-16] x older child EV [6-16] / older child BW [6-16]) + (adult EF x adult ED x adult SA x adult EV / adult BW)
Water - mutagenic
IFWM = (child ED [0-2] x child EF [0-2] x child IR [0-2] x ADAF [0-2] / child BW [0-2]) + (child ED [2-6] x child EF [2-6] x child IR [2-6] x ADAF [2-6] / child BW [2-6]) + (older child ED [6-16] x child EF [6-16] x older child IR [6-16] x ADAF [6-16] / older child BW [6-16]) + (adult ED x adult EF x adult IR x adult ADAF / adult BW)
DFWM = (child EF [0-2] x child ED [0-2] x child SA [0-2] x child EV [0-2] x ADAF [0-2] / child BW [0-2]) + (child EF [2-6] x child ED [2-6] x child SA [2-6] x child EV [2-6] x ADAF [2-6] / child BW [2-6]) + (older child EF [6-16] x older child ED [6-16] x older child SA [6-16] x older child EV [6-16] x ADAF [6-16] / older child BW [6-16]) +
(adult EF x adult ED x adult SA x adult EV x adult ADAF / adult BW)
USEPA guidance for early life exposure to carcinogens (USEPA, 2005) requires that risks for potentially carcinogenic constituents that are presumed to act by a mutagenic mode of action be calculated differently than for constituents that do not act via a mutagenic mode of action.
Therefore, the age-dependent adjustment factors (ADAF) will be applied for calculations involving children under the age of 16. The ADAFs are as follows:
Age 0 to 2 years (2 year interval from birth until 2nd birthday) – ADAF = 10
Ages 2 to 16 years (14 year interval from 2nd birthday to 16th birthday) – ADAF = 3
Ages 16 and up (after 16th birthday) – no adjustment - ADAF = 1
The exposure parameters for children ages <6 are applied to children 0 - 2 and 2- 6.

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
INPUT VALUES - RECREATIONAL SWIMMER

Variable	Recreator Surface Water Default Value	Site-Specific Value
BW_{0-2} (body weight) kg	15	15
BW_{2-6} (body weight) kg	15	15
BW_{6-16} (body weight) kg	80	44
BW_{16-26} (body weight) kg	80	80
BW_{rec-c} (body weight - adult) kg	15	15
BW_{rec-a} (body weight - adult) kg	80	62
$DFW_{rec-adj}$ (age-adjusted dermal factor) cm^2-event/kg	0	354100.645
$DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	0	1131184.77
ED_{rec} (exposure duration - recreator) years	26	26
ED_{0-2} (exposure duration) years	2	2
ED_{2-6} (exposure duration) years	4	4
ED_{6-16} (exposure duration) years	10	10
ED_{16-26} (exposure duration) years	10	10
ED_{rec-a} (exposure duration - adult) years	20	20
EF_{rec} (exposure frequency) days/year	0	45
EF_{2-6} (exposure frequency) days/year	0	45
EF_{6-16} (exposure frequency) days/year	0	45
EF_{16-26} (exposure frequency) days/year	0	45
EF_{rec-a} (adult exposure frequency) days/year	0	45
ET_{0-2} (exposure time) hours/event	0	2
ET_{2-6} (exposure time) hours/event	0	2
ET_{6-16} (exposure time) hours/event	0	2
ET_{16-26} (exposure time) hours/event	0	2
ET_{rec-a} (adult exposure time) hours/event	0	2
EV_{0-2} (events) events/day	0	1
EV_{2-6} (events) events/day	0	1
EV_{6-16} (events) events/day	0	1
EV_{16-26} (events) events/day	0	1
EV_{rec-a} (adult) events/day	0	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg	0	3.252
$IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg	0	13.231
IRW_{0-2} (water intake rate) L/hour	0.12	0.05
IRW_{2-6} (water intake rate) L/hour	0.12	0.05
IRW_{6-16} (water intake rate) L/hour	0.124	0.05
IRW_{16-26} (water intake rate) L/hour	0.0985	0.05
IRW_{rec-a} (water intake rate - adult) L/hr	0.11	0.05
LT (lifetime - recreator) years	70	70
SA_{0-2} (skin surface area) cm^2	6365	6365
SA_{2-6} (skin surface area) cm^2	6365	6365
SA_{6-16} (skin surface area) cm^2	19652	13350
SA_{16-26} (skin surface area) cm^2	19652	19652
SA_{rec} (skin surface area - adult) cm^2	19652	16501
SA_{rec-a} (skin surface area - adult) cm^2	19652	16501
Apparent thickness of stratum corneum (cm)	0.001	0.001
TR (target risk) unitless	0.000001	0.0001

Output generated 21FEB2025:14:03:26

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
OUTPUT VALUES - RECREATIONAL SWIMMER

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; T = ATSDR DRAFT; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; R = ORD; N = WI; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_o Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	FA (unitless)	In EPD?	$DA_{event\ (ca)}$	$DA_{event\ (nc\ child)}$	$DA_{event\ (nc\ adult)}$	Ingestion SL TR=0.0001 (ug/L)	Dermal SL TR=0.0001 (ug/L)	Carcinogenic SL TR=0.0001 (ug/L)	Ingestion SL (Child) THQ=1 (ug/L)	Dermal SL (Child) THQ=1 (ug/L)	Noncarcinogenic SL (Child) THQ=1 (ug/L)	Ingestion SL (Adult) THQ=1 (ug/L)	Dermal SL (Adult) THQ=1 (ug/L)	Noncarcinogenic SL (Adult) THQ=1 (ug/L)	Screening Level (ug/L)
Antimony (metallic)	7440-36-0	No	No	Inorganics	Inorganics	-		4.00E-04	U	3.00E-04	U	1.50E-01	1.00E-03	1.22E+02	1.00E+00	Yes	-	1.15E-03	1.83E-03	-	-	-	4.87E+02	5.73E+02	2.63E+02	2.01E+03	9.14E+02	6.29E+02	2.63E+02 nc
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	Inorganics	3.20E+01	U	6.00E-05	U	1.50E-05	U	1.00E+00	1.00E-03	7.49E+01	1.00E+00	Yes	2.25E-04	1.15E-03	1.83E-03	2.46E+01	1.13E+02	2.02E+01	7.30E+01	5.73E+02	6.48E+01	3.02E+02	9.14E+02	2.27E+02	2.02E+01 ca
Barium	7440-39-3	No	No	Inorganics	Inorganics	-		2.00E-01	U	5.00E-04	U	7.00E-02	1.00E-03	1.37E+02	1.00E+00	Yes	-	2.68E-01	4.27E-01	-	-	-	2.43E+05	1.34E+05	8.63E+04	1.01E+06	2.13E+05	1.76E+05	8.63E+04 nc
Beryllium and compounds	7440-41-7	No	No	Inorganics	Inorganics	-		2.00E-03	U	2.00E-05	U	7.00E-03	1.00E-03	9.01E+00	1.00E+00	Yes	-	2.68E-04	4.27E-04	-	-	-	2.43E+03	1.34E+02	1.27E+02	1.01E+04	2.13E+02	2.09E+02	1.27E+02 nc
Boron And Borates Only	7440-42-8	No	No	Inorganics	Inorganics	-		2.00E-01	U	2.00E-02	U	1.00E+00	1.00E-03	1.38E+01	1.00E+00	Yes	-	3.82E+00	6.10E+00	-	-	-	2.43E+05	1.91E+06	2.16E+05	1.01E+06	3.05E+06	7.56E+05	2.16E+05 nc max
Cadmium (Water)	7440-43-9	No	No	Inorganics	Inorganics	-		1.00E-04	U	1.00E-05	U	5.00E-02	1.00E-03	1.12E+02	1.00E+00	Yes	-	9.56E-05	1.52E-04	-	-	-	1.22E+02	4.78E+01	3.43E+01	5.03E+02	7.62E+01	6.62E+01	3.43E+01 nc
Chromium(III), Insoluble Salts	16065-83-1	No	No	Inorganics	Inorganics	-		1.50E+00	U	-		1.30E-02	1.00E-03	5.20E+01	1.00E+00	Yes	-	3.73E-01	5.94E-01	-	-	-	1.83E+06	1.86E+05	1.69E+05	7.54E+06	2.97E+05	2.86E+05	1.69E+05 nc max
Cobalt	7440-48-4	No	No	Inorganics	Inorganics	-		3.00E-04	U	6.00E-06	U	1.00E+00	4.00E-04	5.89E+01	1.00E+00	Yes	-	5.73E-03	9.14E-03	-	-	-	3.65E+02	7.17E+03	3.47E+02	1.51E+03	1.14E+04	1.33E+03	3.47E+02 nc
Fluoride	16984-48-8	No	No	Inorganics	Inorganics	-		4.00E-02	U	1.30E-02	U	1.00E+00	1.00E-03	3.80E+01	1.00E+00	Yes	-	7.65E-01	1.22E+00	-	-	-	4.87E+04	3.82E+05	4.32E+04	2.01E+05	6.10E+05	1.51E+05	4.32E+04 nc
Lithium	7439-93-2	No	No	Inorganics	Inorganics	-		2.00E-03	U	-		1.00E+00	1.00E-03	6.94E+00	1.00E+00	Yes	-	3.82E-02	6.10E-02	-	-	-	2.43E+03	1.91E+04	2.16E+03	1.01E+04	3.05E+04	7.56E+03	2.16E+03 nc
Mercuric Chloride	7487-94-7	No	No	Inorganics	Inorganics	-		3.00E-04	U	3.00E-04	U	7.00E-02	1.00E-03	2.72E+02	1.00E+00	Yes	-	4.01E-04	6.40E-04	-	-	-	3.65E+02	2.01E+02	1.29E+02	1.51E+03	3.20E+02	2.64E+02	1.29E+02 nc
Molybdenum	7439-98-7	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-03	U	1.00E+00	1.00E-03	9.59E+01	1.00E+00	Yes	-	9.56E-02	1.52E-01	-	-	-	6.08E+03	4.78E+04	5.40E+03	2.51E+04	7.62E+04	1.89E+04	5.40E+03 nc
Selenium	7782-49-2	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-02	U	1.00E+00	1.00E-03	7.90E+01	1.00E+00	Yes	-	9.56E-02	1.52E-01	-	-	-	6.08E+03	4.78E+04	5.40E+03	2.51E+04	7.62E+04	1.89E+04	5.40E+03 nc
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	Inorganics	-		1.00E-05	U	-		1.00E+00	1.00E-03	2.04E+02	1.00E+00	Yes	-	1.91E-04	3.05E-04	-	-	-	1.22E+01	9.56E+01	1.08E+01	5.03E+01	1.52E+02	3.78E+01	1.08E+01 nc

Output generated 21FEB2025:14:03:26

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
INPUT VALUES - RECREATIONAL WADER

Variable	Recreator Surface Water Default Value	Site-Specific Value
BW_{0-2} (body weight) kg	15	15
BW_{2-6} (body weight) kg	15	15
BW_{6-16} (body weight) kg	80	44
BW_{16-26} (body weight) kg	80	80
BW_{rec-c} (body weight - adult) kg	15	15
BW_{rec-a} (body weight - adult) kg	80	62
$DFW_{rec-adj}$ (age-adjusted dermal factor) cm^2-event/kg	0	104200.548
$DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	0	323084.966
ED_{rec} (exposure duration - recreator) years	26	26
ED_{0-2} (exposure duration) years	2	2
ED_{2-6} (exposure duration) years	4	4
ED_{6-16} (exposure duration) years	10	10
ED_{16-26} (exposure duration) years	10	10
ED_{rec-a} (exposure duration - adult) years	20	20
EF_{rec} (exposure frequency) days/year	0	45
EF_{2-6} (exposure frequency) days/year	0	45
EF_{6-16} (exposure frequency) days/year	0	45
EF_{16-26} (exposure frequency) days/year	0	45
EF_{rec-a} (adult exposure frequency) days/year	0	45
ET_{0-2} (exposure time) hours/event	0	2
ET_{2-6} (exposure time) hours/event	0	2
ET_{6-16} (exposure time) hours/event	0	2
ET_{16-26} (exposure time) hours/event	0	2
ET_{rec-a} (adult exposure time) hours/event	0	2
EV_{0-2} (events) events/day	0	1
EV_{2-6} (events) events/day	0	1
EV_{6-16} (events) events/day	0	1
EV_{16-26} (events) events/day	0	1
EV_{rec-a} (adult) events/day	0	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg	0	2.09
$IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg	0	10.326
IRW_{0-2} (water intake rate) L/hour	0.12	0.05
IRW_{2-6} (water intake rate) L/hour	0.12	0.05
IRW_{6-16} (water intake rate) L/hour	0.124	0.01
IRW_{16-26} (water intake rate) L/hour	0.0985	0.01
IRW_{rec-a} (water intake rate - adult) L/hr	0.11	0.01
LT (lifetime - recreator) years	70	70
SA_{0-2} (skin surface area) cm^2	6365	1749
SA_{2-6} (skin surface area) cm^2	6365	1749
SA_{6-16} (skin surface area) cm^2	19652	3944
SA_{16-26} (skin surface area) cm^2	19652	6075
SA_{rec} (skin surface area - adult) cm^2	19652	5009.5
SA_{rec-a} (skin surface area - adult) cm^2	19652	5009.5
Apparent thickness of stratum corneum (cm)	0.001	0.001
TR (target risk) unitless	0.000001	0.0001

Output generated 21FEB2025:14:19:50

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
OUTPUT VALUES - RECREATIONAL WADER

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; T = ATSDR DRAFT; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; R = ORD; N = WI; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_o Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	FA (unitless)	In EPD?	$DA_{event\ (ca)}$	$DA_{event\ (nc\ child)}$	$DA_{event\ (nc\ adult)}$	Ingestion SL TR=0.0001 (ug/L)	Dermal SL TR=0.0001 (ug/L)	Carcinogenic SL TR=0.0001 (ug/L)	Ingestion SL (Child) THQ=1 (ug/L)	Dermal SL (Child) THQ=1 (ug/L)	Noncarcinogenic SL (Child) THQ=1 (ug/L)	Ingestion SL (Adult) THQ=1 (ug/L)	Dermal SL (Adult) THQ=1 (ug/L)	Noncarcinogenic SL (Adult) THQ=1 (ug/L)	Screening Level (ug/L)
Antimony (metallic)	7440-36-0	No	No	Inorganics	Inorganics	-		4.00E-04	U	3.00E-04	U	1.50E-01	1.00E-03	1.22E+02	1.00E+00	Yes	-	4.17E-03	6.02E-03	-	-	-	4.87E+02	2.09E+03	3.95E+02	1.01E+04	3.01E+03	2.32E+03	3.95E+02 nc
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	Inorganics	3.20E+01	U	6.00E-05	U	1.50E-05	U	1.00E+00	1.00E-03	7.49E+01	1.00E+00	Yes	7.66E-04	4.17E-03	6.02E-03	3.82E+01	3.83E+02	3.47E+01	7.30E+01	2.09E+03	7.05E+01	1.51E+03	3.01E+03	1.01E+03	3.47E+01 ca
Barium	7440-39-3	No	No	Inorganics	Inorganics	-		2.00E-01	U	5.00E-04	U	7.00E-02	1.00E-03	1.37E+02	1.00E+00	Yes	-	9.74E-01	1.41E+00	-	-	-	2.43E+05	4.87E+05	1.62E+05	5.03E+06	7.03E+05	6.17E+05	1.62E+05 nc max
Beryllium and compounds	7440-41-7	No	No	Inorganics	Inorganics	-		2.00E-03	U	2.00E-05	U	7.00E-03	1.00E-03	9.01E+00	1.00E+00	Yes	-	9.74E-04	1.41E-03	-	-	-	2.43E+03	4.87E+02	4.06E+02	5.03E+04	7.03E+02	6.93E+02	4.06E+02 nc
Boron And Borates Only	7440-42-8	No	No	Inorganics	Inorganics	-		2.00E-01	U	2.00E-02	U	1.00E+00	1.00E-03	1.38E+01	1.00E+00	Yes	-	1.39E+01	2.01E+01	-	-	-	2.43E+05	6.96E+06	2.35E+05	5.03E+06	1.00E+07	3.35E+06	2.35E+05 nc max
Cadmium (Water)	7440-43-9	No	No	Inorganics	Inorganics	-		1.00E-04	U	1.00E-05	U	5.00E-02	1.00E-03	1.12E+02	1.00E+00	Yes	-	3.48E-04	5.02E-04	-	-	-	1.22E+02	1.74E+02	7.16E+01	2.51E+03	2.51E+02	2.28E+02	7.16E+01 nc
Chromium(III), Insoluble Salts	16065-83-1	No	No	Inorganics	Inorganics	-		1.50E+00	U	-		1.30E-02	1.00E-03	5.20E+01	1.00E+00	Yes	-	1.36E+00	1.96E+00	-	-	-	1.83E+06	6.78E+05	4.94E+05	3.77E+07	9.79E+05	9.54E+05	4.94E+05 nc max
Cobalt	7440-48-4	No	No	Inorganics	Inorganics	-		3.00E-04	U	6.00E-06	U	1.00E+00	4.00E-04	5.89E+01	1.00E+00	Yes	-	2.09E-02	3.01E-02	-	-	-	3.65E+02	2.61E+04	3.60E+02	7.54E+03	3.76E+04	6.28E+03	3.60E+02 nc
Fluoride	16984-48-8	No	No	Inorganics	Inorganics	-		4.00E-02	U	1.30E-02	U	1.00E+00	1.00E-03	3.80E+01	1.00E+00	Yes	-	2.78E+00	4.02E+00	-	-	-	4.87E+04	1.39E+06	4.70E+04	1.01E+06	2.01E+06	6.70E+05	4.70E+04 nc
Lithium	7439-93-2	No	No	Inorganics	Inorganics	-		2.00E-03	U	-		1.00E+00	1.00E-03	6.94E+00	1.00E+00	Yes	-	1.39E-01	2.01E-01	-	-	-	2.43E+03	6.96E+04	2.35E+03	5.03E+04	1.00E+05	3.35E+04	2.35E+03 nc
Mercuric Chloride	7487-94-7	No	No	Inorganics	Inorganics	-		3.00E-04	U	3.00E-04	U	7.00E-02	1.00E-03	2.72E+02	1.00E+00	Yes	-	1.46E-03	2.11E-03	-	-	-	3.65E+02	7.30E+02	2.43E+02	7.54E+03	1.05E+03	9.25E+02	2.43E+02 nc
Molybdenum	7439-98-7	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-03	U	1.00E+00	1.00E-03	9.59E+01	1.00E+00	Yes	-	3.48E-01	5.02E-01	-	-	-	6.08E+03	1.74E+05	5.88E+03	1.26E+05	2.51E+05	8.38E+04	5.88E+03 nc
Selenium	7782-49-2	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-02	U	1.00E+00	1.00E-03	7.90E+01	1.00E+00	Yes	-	3.48E-01	5.02E-01	-	-	-	6.08E+03	1.74E+05	5.88E+03	1.26E+05	2.51E+05	8.38E+04	5.88E+03 nc
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	Inorganics	-		1.00E-05	U	-		1.00E+00	1.00E-03	2.04E+02	1.00E+00	Yes	-	6.96E-04	1.00E-03	-	-	-	1.22E+01	3.48E+02	1.18E+01	2.51E+02	5.02E+02	1.68E+02	1.18E+01 nc

Output generated 21FEB2025:14:19:50

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
INPUT VALUES - RECREATIONAL BOATER

Variable	Recreator Surface Water Default Value	Site-Specific Value
BW_{0-2} (body weight) kg	15	0
BW_{2-6} (body weight) kg	15	0
BW_{6-16} (body weight) kg	80	0
BW_{16-26} (body weight) kg	80	80
BW_{rec-c} (body weight - adult) kg	15	0
BW_{rec-a} (body weight - adult) kg	80	80
$DFW_{rec-adj}$ (age-adjusted dermal factor) cm^2-event/kg	0	34171.875
$DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	0	34171.875
ED_{rec} (exposure duration - recreator) years	26	10
ED_{0-2} (exposure duration) years	2	0
ED_{2-6} (exposure duration) years	4	0
ED_{6-16} (exposure duration) years	10	0
ED_{16-26} (exposure duration) years	10	10
ED_{rec-a} (exposure duration - adult) years	20	10
EF_{rec} (exposure frequency) days/year	0	45
EF_{2-6} (exposure frequency) days/year	0	0
EF_{6-16} (exposure frequency) days/year	0	0
EF_{16-26} (exposure frequency) days/year	0	45
EF_{rec-a} (adult exposure frequency) days/year	0	45
ET_{0-2} (exposure time) hours/event	0	0
ET_{2-6} (exposure time) hours/event	0	0
ET_{6-16} (exposure time) hours/event	0	0
ET_{16-26} (exposure time) hours/event	0	2
ET_{rec-a} (adult exposure time) hours/event	0	2
EV_{0-2} (events) events/day	0	0
EV_{2-6} (events) events/day	0	0
EV_{6-16} (events) events/day	0	0
EV_{16-26} (events) events/day	0	1
EV_{rec-a} (adult) events/day	0	1
THQ (target hazard quotient) unitless	0.1	1
$IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg	0	0
$IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg	0	0
IRW_{0-2} (water intake rate) L/hour	0.12	0
IRW_{2-6} (water intake rate) L/hour	0.12	0
IRW_{6-16} (water intake rate) L/hour	0.124	0
IRW_{16-26} (water intake rate) L/hour	0.0985	0
IRW_{rec-a} (water intake rate - adult) L/hr	0.11	0
LT (lifetime - recreator) years	70	70
SA_{0-2} (skin surface area) cm^2	6365	0
SA_{2-6} (skin surface area) cm^2	6365	0
SA_{6-16} (skin surface area) cm^2	19652	0
SA_{16-26} (skin surface area) cm^2	19652	6075
SA_{rec} (skin surface area - adult) cm^2	19652	6075
SA_{rec-a} (skin surface area - adult) cm^2	19652	6075
Apparent thickness of stratum corneum (cm)	0.001	0.001
TR (target risk) unitless	0.000001	0.0001

Output generated 21FEB2025:14:07:08

ATTACHMENT A
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGIONAL SCREENING LEVEL CALCULATOR
OUTPUT VALUES - RECREATIONAL BOATER

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; T = ATSDR DRAFT; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; R = ORD; N = WI; W = TEF applied; E = RPF applied; G = see user guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	Chemical Type	SF_o(mg/kg-day)$^{-1}$	SF_o Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	FA (unitless)	In EPD?	$DA_{event\ (ca)}$	DA_{event} (nc child)	DA_{event} (nc adult)	Ingestion SL TR=0.0001 (ug/L)	Dermal SL TR=0.0001 (ug/L)	Carcinogenic SL TR=0.0001 (ug/L)	Ingestion SL (Child) THQ=1 (ug/L)	Dermal SL (Child) THQ=1 (ug/L)	Noncarcinogenic SL (Child) THQ=1 (ug/L)	Ingestion SL (Adult) THQ=1 (ug/L)	Dermal SL (Adult) THQ=1 (ug/L)	Noncarcinogenic SL (Adult) THQ=1 (ug/L)	Screening Level (ug/L)
Antimony (metallic)	7440-36-0	No	No	Inorganics	Inorganics	-		4.00E-04	U	3.00E-04	U	1.50E-01	1.00E-03	1.22E+02	1.00E+00	Yes	-	-	6.41E-03	-	-	-	-	-	-	-	3.20E+03	3.20E+03	3.20E+03 nc
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	Inorganics	3.20E+01	U	6.00E-05	U	1.50E-05	U	1.00E+00	1.00E-03	7.49E+01	1.00E+00	Yes	2.34E-03	-	6.41E-03	-	1.17E+03	1.17E+03	-	-	-	-	3.20E+03	3.20E+03	1.17E+03 ca
Barium	7440-39-3	No	No	Inorganics	Inorganics	-		2.00E-01	U	5.00E-04	U	7.00E-02	1.00E-03	1.37E+02	1.00E+00	Yes	-	-	1.50E+00	-	-	-	-	-	-	-	7.48E+05	7.48E+05	7.48E+05 nc max
Beryllium and compounds	7440-41-7	No	No	Inorganics	Inorganics	-		2.00E-03	U	2.00E-05	U	7.00E-03	1.00E-03	9.01E+00	1.00E+00	Yes	-	-	1.50E-03	-	-	-	-	-	-	-	7.48E+02	7.48E+02	7.48E+02 nc
Boron And Borates Only	7440-42-8	No	No	Inorganics	Inorganics	-		2.00E-01	U	2.00E-02	U	1.00E+00	1.00E-03	1.38E+01	1.00E+00	Yes	-	-	2.14E+01	-	-	-	-	-	-	-	1.07E+07	1.07E+07	1.07E+07 nc max
Cadmium (Water)	7440-43-9	No	No	Inorganics	Inorganics	-		1.00E-04	U	1.00E-05	U	5.00E-02	1.00E-03	1.12E+02	1.00E+00	Yes	-	-	5.34E-04	-	-	-	-	-	-	-	2.67E+02	2.67E+02	2.67E+02 nc
Chromium(III), Insoluble Salts	16065-83-1	No	No	Inorganics	Inorganics	-		1.50E+00	U	-		1.30E-02	1.00E-03	5.20E+01	1.00E+00	Yes	-	-	2.08E+00	-	-	-	-	-	-	-	1.04E+06	1.04E+06	1.04E+06 nc max
Cobalt	7440-48-4	No	No	Inorganics	Inorganics	-		3.00E-04	U	6.00E-06	U	1.00E+00	4.00E-04	5.89E+01	1.00E+00	Yes	-	-	3.20E-02	-	-	-	-	-	-	-	4.01E+04	4.01E+04	4.01E+04 nc
Fluoride	16984-48-8	No	No	Inorganics	Inorganics	-		4.00E-02	U	1.30E-02	U	1.00E+00	1.00E-03	3.80E+01	1.00E+00	Yes	-	-	4.27E+00	-	-	-	-	-	-	-	2.14E+06	2.14E+06	2.14E+06 nc max
Lithium	7439-93-2	No	No	Inorganics	Inorganics	-		2.00E-03	U	-		1.00E+00	1.00E-03	6.94E+00	1.00E+00	Yes	-	-	2.14E-01	-	-	-	-	-	-	-	1.07E+05	1.07E+05	1.07E+05 nc max
Mercuric Chloride	7487-94-7	No	No	Inorganics	Inorganics	-		3.00E-04	U	3.00E-04	U	7.00E-02	1.00E-03	2.72E+02	1.00E+00	Yes	-	-	2.24E-03	-	-	-	-	-	-	-	1.12E+03	1.12E+03	1.12E+03 nc
Molybdenum	7439-98-7	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-03	U	1.00E+00	1.00E-03	9.59E+01	1.00E+00	Yes	-	-	5.34E-01	-	-	-	-	-	-	-	2.67E+05	2.67E+05	2.67E+05 nc max
Selenium	7782-49-2	No	No	Inorganics	Inorganics	-		5.00E-03	U	2.00E-02	U	1.00E+00	1.00E-03	7.90E+01	1.00E+00	Yes	-	-	5.34E-01	-	-	-	-	-	-	-	2.67E+05	2.67E+05	2.67E+05 nc max
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	Inorganics	-		1.00E-05	U	-		1.00E+00	1.00E-03	2.04E+02	1.00E+00	Yes	-	-	1.07E-03	-	-	-	-	-	-	-	5.34E+02	5.34E+02	5.34E+02 nc

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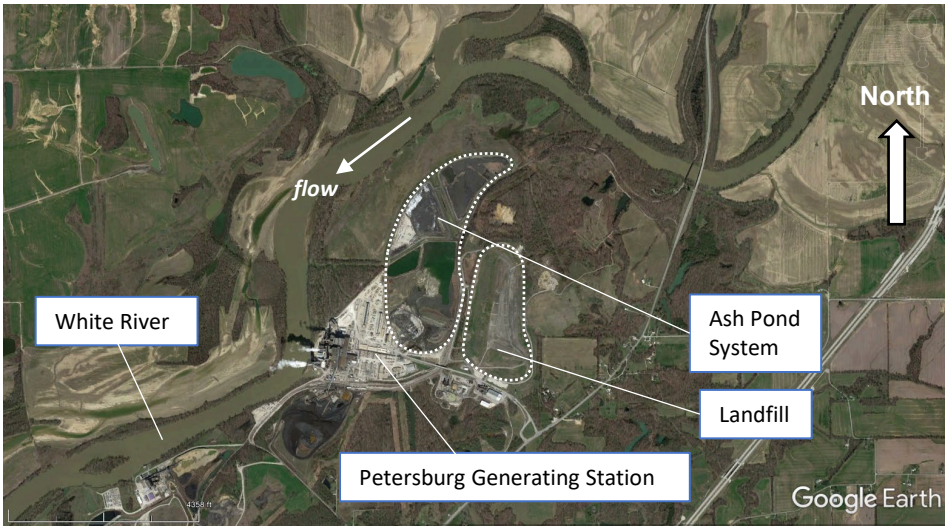
ATTACHMENT B
Dilution-Attenuation Factor Calculations

HALEY ALDRICH

CALCULATIONS

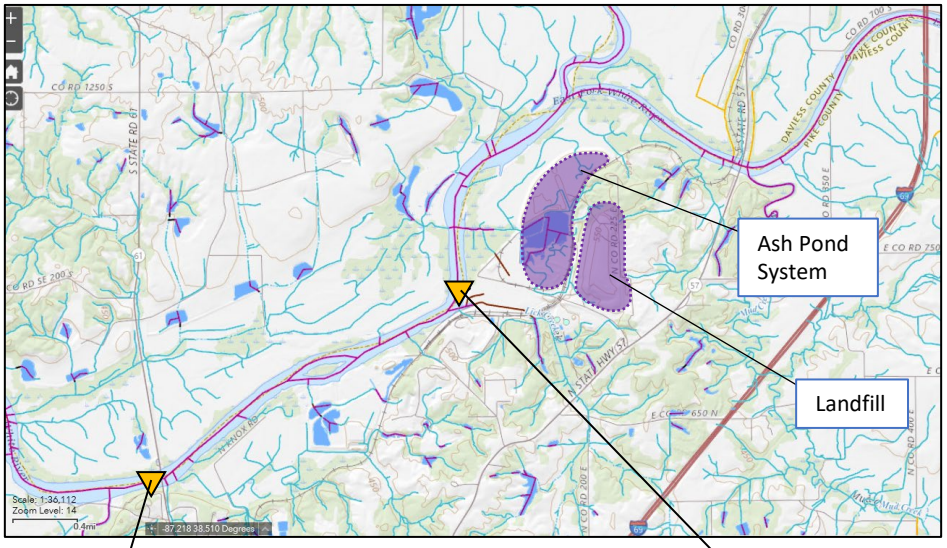
Client	AES Indiana	File No.	0133274-043
Project	Petersburg Generating Station – Petersburg, Indiana	Sheet	1 of 5
Subject	Surface Water Dilution/Attenuation Factor Calculation	Date	August 14, 2025
		Computed By	John Blue
		Checked By	Dimitri Quafisi

The Petersburg Generating Station is situated on the south bank for the White River which flows northeast to southwest. No dams or other flow control structures are located near the facility. Two USGS gaging stations are located nearby; the White River Above Petersburg Gage, and the White River At Petersburg Gage (see below). Data is available for both; flow statistics have been published by the USGS for the gage at Petersburg.



Google Earth Imagery

USGS Hydrological Data from the National Map



White River at Petersburg Gage (03374000)
https://waterdata.usgs.gov/nwis/inventory/?site_no=03374000

White River Above Petersburg Gage (03373980)
https://waterdata.usgs.gov/nwis/inventory/?site_no=03373980

\\haleyaldrich\share\CF\Projects\133274\GW_Modeling\AES IPL Petersburg\DAF\2024_0311_Petersburg DAF Calcs.pptx

HALEY ALDRICH

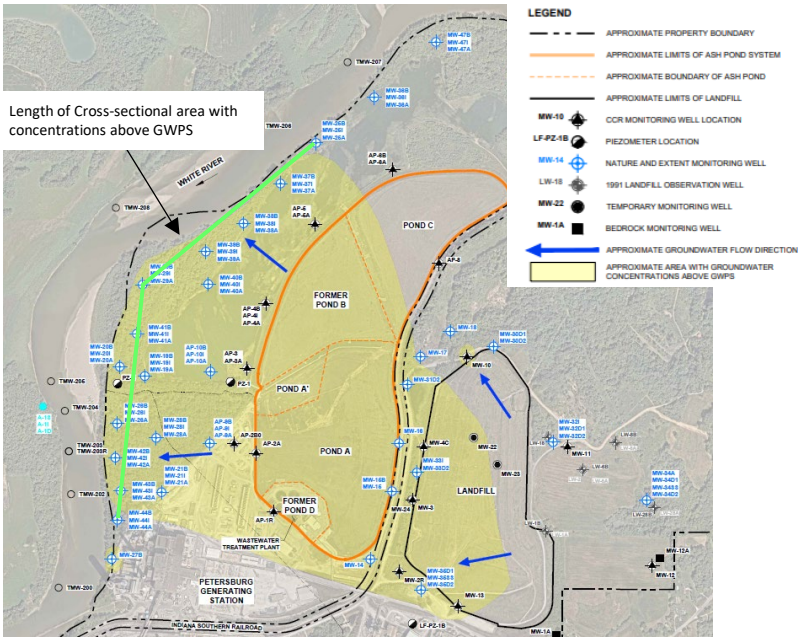
CALCULATIONS

Client	AES Indiana
Project	Petersburg Generating Station – Petersburg, Indiana
Subject	Dilution-Attenuation Factor Calculation

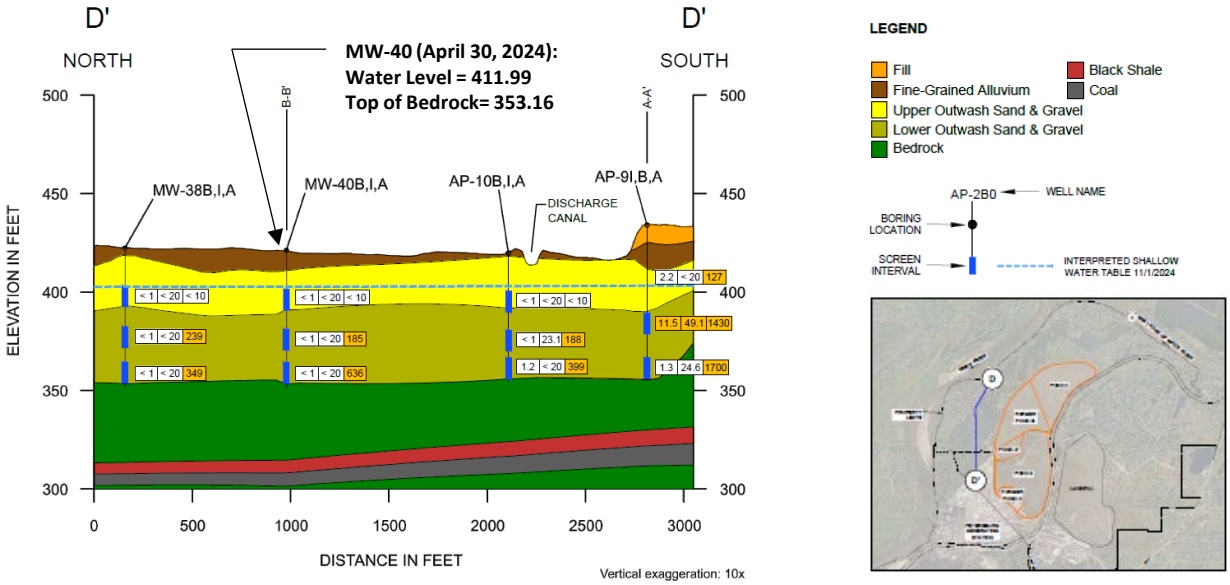
File No.	0133274-043
Sheet	2 of 5
Date	August 14, 2025
Computed By	John Blue
Checked By	Dimitri Quafisi

A Conceptual Model was developed for the Petersburg Ash Ponds using subsurface cross section interpretations from boring logs, and surveyed elevations. six simplified subsurface units were identified: bedrock, fine-grained alluvium (silts and clays), upper/lower alluvium (sand and gravel), Fill, Landfill Material, and Pond Material (coal combustion residuals or “ash”).

The sand and gravel of the upper and lower alluvium are the primary flow pathways at the Site and was utilized for this calculation.



The saturated thickness was calculated using the depth to bedrock at its deepest point below the groundwater table. This location is near the MW-40 cluster with a difference of approximately 59 feet on April 30, 2024.



HALEY ALDRICH

CALCULATIONS

Client	AES Indiana	File No.	0133274-043
Project	Petersburg Generating Station – Petersburg, Indiana	Sheet	3 of 5
Subject	Dilution-Attenuation Factor Calculation	Date	August 14, 2025
		Computed By	John Blue
		Checked By	Dimitri Quafisi

River discharge calculations were obtained from the White River Near Petersburg, IN (gauging station 03374000) located downstream of the Site. The station and stream statistics are maintained by the USGS (USGS Stream Stats).



Low-Flow Statistics

Statistic Name	Value	Units	Preferred?	Years of Record	Standard Error, percent	Citation	Comments
1 Day 10 Year Low Flow	791	cubic feet per second	✓	83		151	Statistic Date Range 4/1/1929 - 3/31/2011
7 Day 10 Year Low Flow	837	cubic feet per second	✓	83		151	Statistic Date Range 4/1/1929 - 3/31/2011
30 Day 10 Year Low Flow	925	cubic feet per second	✓	83		151	Statistic Date Range 4/1/1929 - 3/31/2011

HALEY ALDRICH

CALCULATIONS

Client	AES Indiana
Project	Petersburg Generating Station – Petersburg, Indiana
Subject	Dilution-Attenuation Factor Calculation

File No.	0133274-043
Sheet	4 of 5
Date	August 14, 2025
Computed By	John Blue
Checked By	Dimitri Quafisi

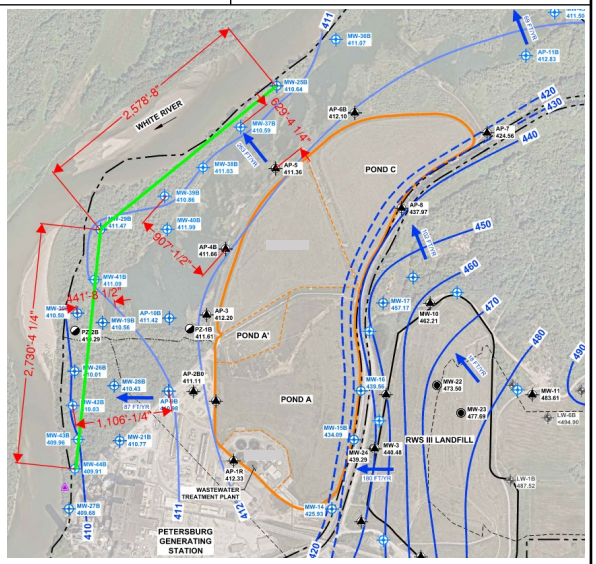
Shallow Groundwater Flow Zone

Groundwater Flux Calculations:

$$Q = KAI$$

$$K = Hydraulic\ Conductivity$$

Unit	Horizontal K (cm/sec)	Horizontal K (ft/day)
Sand and Gravel	3.97×10^{-2}	113



Hydraulic Conductivity calculated from geometric mean of wells AP-4B, AP-5, AP-9B, AP-10B, MW-19B, MW-20B, MW-21B, MW-25B, MW-26B, MW-28B, MW-29B, MW-37B, MW-38B, MW-39B, MW-40B, MW-41B, MW-42B, MW-43B, and MW-44B.

$$A = Area$$

Cross-section	Length (ft)	Thickness (ft)	Area (ft^2)
Red Line	5,309	59	313,200

Cross-sectional Area Used for Calculations. Length chosen to encompass the entire length of the contaminant plume above GWPS. Groundwater flow map from the April 30, 2024, gauging event. Arrows indicate groundwater flow direction.

Length of cross-sectional area

$$I = Gradient$$

Location	Head (ft)	Distance (ft)	Gradient (ft/ft)
Near MW-20B	0.50	441	0.0011
Near MW-42B	0.95	1,106	0.00086
Near MW-37B	0.77	629	0.0012
Near MW-39B	0.80	907	0.00088

Gradients were calculated at multiple locations along the length of the cross-sectional area to determine a range of values.

$$Q = Groundwater\ Flux$$

Cross-section	Horizontal K (ft/day)	Area (ft^2)	Gradient (ft/ft)	Groundwater Flux (ft^3/day)
Steepest Gradient	113	313,200	0.0012	42,470
Shallowest Gradient	113	313,200	0.00086	30,440

HALEY ALDRICH

CALCULATIONS

Client	AES Indiana	File No.	0133274-043
Project	Petersburg Generating Station – Petersburg, Indiana	Sheet	5 of 5
Subject	Dilution-Attenuation Factor Calculation	Date	August 14, 2025
		Computed By	John Blue
		Checked By	Dimitri Quafisi

River Flow Calculations:

$Q_R =$ Discharge of White River near Petersburg, at Low-Flow conditions.

$Q_R =$ 837 ft^3/sec = 72,316,800 ft^3/day

DAF Calculations:

$$DAF = \frac{Q_R}{Q_G}$$

Where:

$Q_R =$ Discharge of White River near Petersburg, at Low-Flow conditions.

$Q_G =$ Calculated Discharge from Petersburg Pond to White River

Pond Elevation (feet)83,	Q_G (ft^3/day)	Q_R (ft^3/day)	DAF
Steepest Gradient	42,470	72,320,000	**1,703**
Shallowest Gradient	30,440	72,320,000	**2,376**

ATTACHMENT C
Preparer Resumes

TODD BERNHARDT

Technical Expert | Risk Assessor

EDUCATION

M.S., Environmental Toxicology and Risk Assessment, Duke University
B.A., Biochemistry, Occidental College

Todd is a technical expert with over 24 years of experience in the fields of human health risk assessment (HHRA), site investigation and characterization, fate and transport modeling, toxic tort litigation support, and toxics regulation compliance. He has served as the HHRA lead on projects for over 20 years, leveraging prior work experience and expertise in the realm of multi-chemical, multi-pathway exposure assessment, and regulatory compliance under both federal and state programs. Todd's cross-regional experience includes extensive project work in California, under regulatory oversight of the California Environmental Protection Agency, Department of Toxic Substances Control and Regional Water Quality Control Boards or United States Environmental Protection Agency Region 9, plus project work in Arizona, Indiana, Kansas, Louisiana, Ohio, Puerto Rico, South Carolina, and Texas. Specific areas of project experience include vapor intrusion, power plant sites, utility service stations, petroleum sites, former manufactured gas plant sites, coal combustion residuals, and sites with heavy metals (including firing ranges). Todd has also been the lead human health risk assessor for multiple naval installations, and currently serves as the lead oversight consultant for a multi-site, multi-year risk-based corrective action pilot program in Puerto Rico, serving as the primary client and agency point of contact for all site characterization and risk-related issues. Todd has also performed several third-party technical reviews of HHRAs and has provided technical support for testimony in toxics-related litigation.

JAY PETERS

Principal Consultant | Risk Assessment Practice Leader

EDUCATION

M.S., Environmental Engineering, Tufts University
B.S., Toxicology, Northeastern University

PROFESSIONAL SOCIETIES

American Nuclear Society, Decommissioning and Environmental Services Division
Massachusetts Licensed Site Professionals Association, Technical Practices Committee
Society of Risk Analysis

Jay develops risk-based regulatory strategies for commercial and industrial clients, as well as legal professionals. With 30 years of experience as a risk assessor, he has successfully managed large and complex risk assessment projects for state and federal Superfund and Resource Conservation and Recovery Act sites, as well as brownfield redevelopment and property transfer sites under the regulatory frameworks of more than twenty state cleanup programs and seven Environmental Protection Agency (EPA) regions.

Jay's extensive cross-regional experience conducting risk assessments allows his clients to take advantage of risk-based strategies that stem from an in-depth insight into the latitude that can be afforded by EPA and state risk assessment procedures and the directions that agencies are taking on various initiatives. He has used this experience to leverage risk-based strategies that achieve his clients' end vision goals while also gaining approval by regulators, thereby substantially reducing his client's remedial liabilities.

Jay's specialized areas of risk assessment expertise include radiological risk and dose assessments, Toxic Substances Control Act 761.61(c) risk-based approaches for polychlorinated biphenyl (PCB) sites, application of bioavailability assessments, and developing risk-based site investigation and closure strategies that contribute to the cost-benefit analysis of remedial alternatives. Jay's areas of project experience include mixed chemical/radiological, coal combustion residuals, mining and smelting, petroleum, vapor intrusion, chemical manufacturing, foundry, and manufactured gas plant sites, as well as sites and heavy metals (including firing ranges). Jay has provided litigation support by performing third party technical reviews, developing expert opinions, and giving testimony.

Jay routinely communicates to community groups and regulatory stakeholders on numerous topics ranging from conceptual site models and nature and extent delineation to human health and ecological risk assessment. His ability to communicate technically complicated information in terms that are understandable to these entities has been successful in resolving comments and in facilitating concurrence with his clients end vision strategies.

DIMITRI QUAFISI, PG

Technical Expert |Geologist

EDUCATION

M.S., Geology, East Carolina University
B.S., Marine Science, Coastal Carolina University

PROFESSIONAL REGISTRATIONS

PA: Professional Geologist (PG Reg No. PG005284)

PROFESSIONAL SOCIETIES

Geological Society of America

Dimitri has over 10 years of experience completing Site related data evaluations for Hydrogeologic and geologic conceptual Site Modeling. He has also provided groundwater fate and transport modeling efforts in support of Corrective Measures Assessment evaluations at various CCR Sites around the country. IN addition to technical support for projects, Dimitri has been a task manager and assistant project manager helping to shepherd projects through regulatory programs to closure.

Dimitri's previous work experience includes completing Phase I, II, and III site assessments and attainment sampling. He has extensive experience working with State agencies such as the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Transportation, and the New Jersey Department of Environmental Protection. He has also acted as a liaison between several clients and their respective agencies.

Dimitri routinely communicates to community groups and regulatory stakeholders on numerous topics ranging from conceptual site models, nature and extent delineation, contaminate fate and transport, and remedial effort evaluations.

APPENDIX C
Groundwater Flow and Transport Modeling

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

TECHNICAL MEMORANDUM

September 2, 2025
File No. 0133274-043

TO: AES Indiana

FROM: Haley & Aldrich, Inc.

SUBJECT: Groundwater Fate and Transport Modeling

Introduction

On behalf of AES Indiana (AESI), Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this memorandum to provide a summary of the groundwater flow and solute transport model that was constructed to evaluate and compare potential corrective measures to support the Corrective Measures Assessment (CMA) for the multi-unit Ash Pond System and the Type III Restricted Waste Landfill at the Petersburg Generating Station (Site) near Petersburg, Indiana. The Appendix IV constituents above the Groundwater Protection Standards (GWPSs) at the Site include arsenic, lithium, and molybdenum. The following text describes the methods, model construction, assumptions, model calibration, and setup for the fate and transport simulation of the remedy alternatives.

Methods and Assumptions

The numerical model MODFLOW-2005 (Harbaugh, 2005) was selected for the modeling effort and is a three-dimensional, finite difference groundwater flow model capable of simulating the groundwater conditions under various scenarios, including pumping and changes to infiltration over time. MODFLOW uses a rectangular grid within the domain and allows for establishing irregular groundwater flow boundary conditions that represent actual and Site-specific features in the study area. The setup is facilitated by assigning boundary types and values to specific grid cells.

The three-dimensional finite difference groundwater flow model domain covers an approximate length of 7,740 feet in the x-direction (west to east), 9,300 feet in the y-direction (north to south), and approximately 300 feet in the z-direction (vertical). The model consists of 310 rows, 258 columns, and six layers, for a total of 479,880 cells.

Boundary conditions define the locations and manner in which water enters and exits the active model domain. The following boundary conditions were utilized in the MODFLOW-2005 model:

The White River is represented using the River Package and is used to estimate the Northern and western boundary elevations. For the steady-state condition, the river is assigned an elevation of 402.3 feet (North American Vertical Datum of 1988 [NAVD88]) upgradient and slopes downgradient to 401.8 feet. For the transient modeling runs, the river stage fluctuates seasonally based on the USGS river gauge (station 03373980) and ranges between El. 424.5 ft. and El. 401.6 ft.

- The Constant Head Boundary Package is used to estimate part of the eastern boundary elevations in layer 2 and is assigned an elevation range of 475.12 feet (NAVD88) to 499.91 feet (NAVD88).
- The drainage ditch to the west and at the toe of the landfill is represented using the Drain Package and simulates an elevation equal to ground surface (top of layer 1).
- Lick Creek to the South is represented using the drain package and is assigned an elevation equal to ground surface.
- Recharge was assigned to the model domain equal to a range of values between 0 feet per day (ft/day), where paved roads and the presence of the generating station prevent infiltration of rainwater, to 1.7 x 10^{-3} ft/day or 7.5 inches per year.

Hydraulic properties were initially assigned consistent with observations presented in borehole logs for onsite wells and results from in-situ slug testing of onsite wells performed by Haley & Aldrich field staff. Values were assigned for horizontal hydraulic conductivity and vertical hydraulic conductivity. These parameters were iteratively varied during the model calibration to achieve the best fit to the observed hydraulic patterns, including head elevations, hydraulic gradients, and flow directions. The simulated hydraulic conductivity values used in the model are presented below for hydrogeologic units underlying the Site:

- CCR Material: 0.28 ft/day or 9.9 x 10^{-5} centimeters per second (cm/s)
- Landfill Material: 0.00283 ft/day or 1.0 x 10^{-6} cm/s
- Fill: 0.0283 ft/day to 5.0 ft/day or 1.0 x 10^{-5} cm/s to 1.8 x 10^{-3} cm/s
- Silt or Clay: 0.0283 ft/day or 1.0 x 10^{-5} cm/s Sand or Sand and Gravel: 2.8 ft/day to 120 ft/day or 1.0 x 10^{-3} cm/s to 4.2 x 10^{-2} cm/s
- Bedrock: 0.014 ft/day or 5.0 x 10^{-6} cm/s

Calibration

Model calibration is the process of refining the model representation of the hydrogeologic framework, hydraulic properties, and boundary conditions to minimize the difference between the simulated heads to the measured data. The quality of model fit can be assessed from many statistical and graphic methods. One method is based on the difference between simulated and observed heads, or residuals. The overall magnitude of the residuals is considered, but the distribution of those residuals, both statistically and spatially, can be equally important. The evaluation of collected groundwater elevation

data resulted in the selection of a flow period that is considered representative for the Site, which are the synoptic groundwater levels collected in November 2024. Below is a scatter plot of model-simulated values as a function of observed values from Site monitoring:

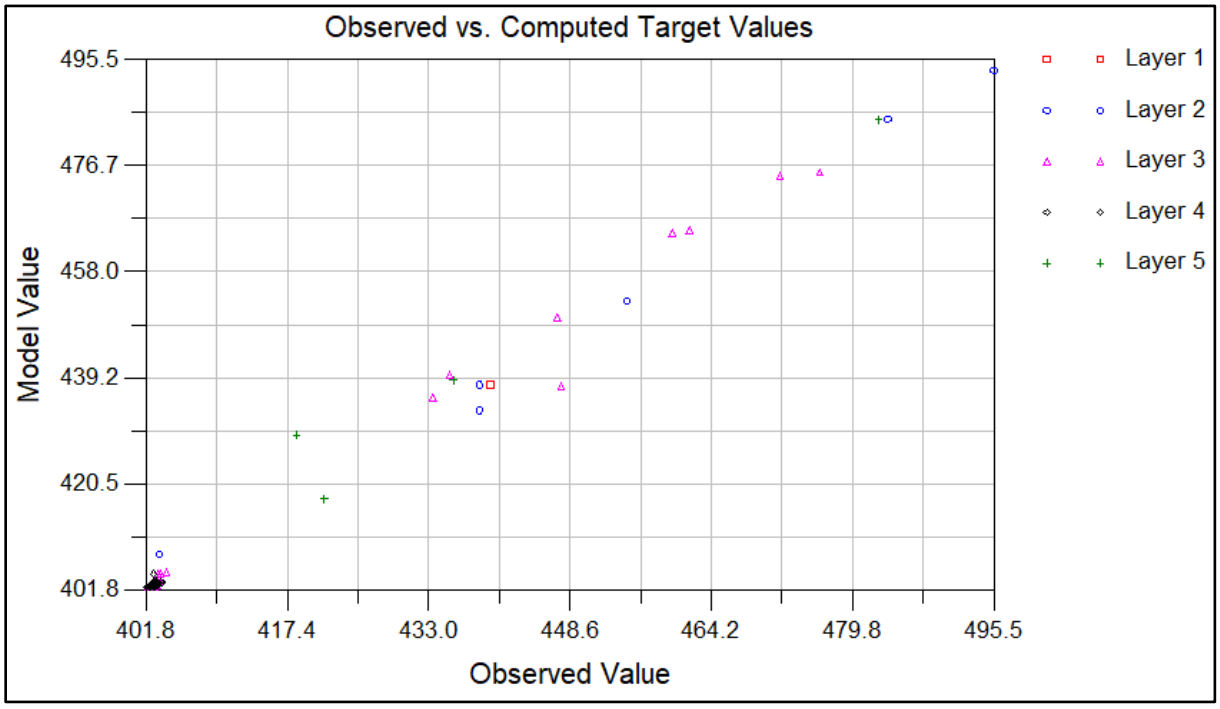


Figure 1: *Calibration scatter plot. Values represent steady-state targets.*

Based on the outcome of the model fit evaluation, it is concluded that the numerical calibration goals have been achieved. The mean error in head was 2.07 feet, or 2.2 percent (%) of the head observation range, 93.71 feet. The steady-state calibration assessment has achieved industry-accepted calibration goals; therefore, the groundwater flow model was deemed suitable for progressing into a transient calibration.

The transient calibration incorporates time-dependent river data to account for the seasonal variability in groundwater elevations observed in monitoring wells at the Site. The model simulated heads over time are compared to observed heads determined from level logger pressure transducers that were installed within 39 monitoring wells at 14 different locations along the floodplain of the White River between October 2022 and October 2023. The mean error in head for the year of transducer record was 1.29 feet, or 6.6 percent (%) of the head observation range, 19.45 feet.

The magnitude and overall trend of the simulated heads compared to the observed heads over time indicates the transient-state calibration assessment is adequate, and the groundwater flow model was deemed suitable for modeling the fate and transport of constituents in groundwater at the Site.

Fate and Transport Modeling

Solute fate and transport modeling was completed using the three-dimensional, numerical model MT3DMS (Version 5 of MT3D) (Zheng, C. and P.P. Wang, 1999). MT3DMS interfaces directly with MODFLOW for the head solution and supports all the hydrologic and discretization features of MODFLOW. Parameters affecting transport, such as advection, diffusion, dispersion, and adsorption, are utilized within the MT3DMS package to estimate solute transport within the model domain. For this modeling effort, the MT3DMS model utilized the flow regime from the steady-state, calibrated Site groundwater flow model to simulate transport of molybdenum. In addition to the MODFLOW groundwater flow field parameters and boundary conditions, the fate and transport models require inputs of adsorption rate (K_d) for molybdenum. In this modeling effort, input parameter values were defined from Site data, whenever possible, or using conservative literature values. Fate and transport timelines are directly related to the K_d for the solute. As part of the modeling exercise, molybdenum's K_d was assigned a value of 1.0 liters per kilogram (L/kg) for the aquifer, and 3.0 L/kg for the CCR material. The extent of the molybdenum groundwater plume assigned within the model domain was generated from groundwater concentrations observed during the November 2024 groundwater sampling event. To simulate additional mass entering the system from source areas, the source area was assigned initial concentrations and recharge concentrations based on porewater volume data collected within Pond A during the April 2020 sampling event.

Limitations

Models were built using available information to support CMA evaluations and conclusions. The model's level of accuracy is directly dependent on the data available to construct the model and should not be construed by the user as a definitive predictor of the future. Instead, the CMA alternatives model simulations should be primarily considered relative to one another.