



Department of Energy

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April 28, 2025

Mr. Brian Begley
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U.S. Environmental Protection Agency, Region 4
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PPPO-02-10032553-25

Ms. April Webb
Interim Federal Facility Agreement Manager
Hazardous Waste Branch Manager
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

Dear Mr. Begley and Ms. Webb:

**U.S. DEPARTMENT OF ENERGY PADUCAH GASEOUS DIFFUSION PLANT
FEDERAL FACILITY AGREEMENT SEMIANNUAL PROGRESS REPORT FOR THE
FIRST HALF OF FISCAL YEAR 2025 PADUCAH, KENTUCKY, DOE/LX/07-2518/V1**

Enclosed is the *U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the First Half of Fiscal Year 2025 Paducah, Kentucky, DOE/LX/07-2518/V1*, and the associated certification page. This report is required by Sections XXIII and XXXII.F of the Federal Facility Agreement (FFA) and Part IV (Corrective Action) of the Hazardous Waste Management Facility Permit.

In accordance with Section XX of the Paducah FFA, the U.S. Environmental Protection Agency and the Kentucky Department for Environmental Protection have a review period of 90 days or by July 28, 2025. If the FFA parties have no substantive comments, then the U.S. Department of Energy requests a letter of concurrence.

If you have any questions or require additional information, please contact me at (270) 217-2029.

Sincerely,

**APRIL
LADD**

April Ladd
Federal Facility Agreement Manager
Portsmouth/Paducah Project Office

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Enclosures:

1. Certification Page
2. *U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the First Half of Fiscal Year 2025 Paducah, Kentucky, DOE/LX/07-2518/V1*

General Reference Compendium

cc w/ enclosures:

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CERTIFICATION

Document Identification: *U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the First Half of Fiscal Year 2025, Paducah, Kentucky, DOE/LX/07-2518/V1, dated April 2025*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Four Rivers Nuclear Partnership, LLC

MYRNA REDFIELD
(Affiliate)

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REDFIELD (Affiliate)
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Myrna E. Redfield, Program Manager/Date Signed
Four Rivers Nuclear Partnership, LLC

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

U.S. Department of Energy

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April Ladd, Paducah Site Lead/Date Signed
Portsmouth/Paducah Project Office
U.S. Department of Energy

**DOE/LX/07-2518/V1
Secondary Document**

**U.S. Department of Energy
Paducah Gaseous Diffusion Plant
Federal Facility Agreement
Semiannual Progress Report for the
First Half of Fiscal Year 2025
Paducah, Kentucky**



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**U.S. Department of Energy
Paducah Gaseous Diffusion Plant
Federal Facility Agreement
Semiannual Progress Report for the
First Half of Fiscal Year 2025
Paducah, Kentucky**

Date Issued—April 2025

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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ACRONYMS

AR	Administrative Record
BGOU	Burial Grounds Operable Unit
CAB	Citizens Advisory Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	community relations plan
D&D	deactivation and decommissioning
DNAPL	dense nonaqueous-phase liquid
DOE	U.S. Department of Energy
EIC	Environmental Information Center
EPA	U.S. Environmental Protection Agency
EW	extraction well
FFA	Federal Facility Agreement
FRNP	Four Rivers Nuclear Partnership, LLC
GRC	general reference compendium
GWOU	Groundwater Operable Unit
IRA	interim remedial action
KDEP	Kentucky Department for Environmental Protection
LUCIP	land use control implementation plan
MCL	maximum contaminant level
MW	monitoring well
MWG	modeling working group
NEPCS	Northeast Plume Containment System
NTCRA	non-time-critical removal action
NTU	nephelometric turbidity unit
NWPGS	Northwest Plume Groundwater System
O&M	operation and maintenance
OSWDF	on-site waste disposal facility
OU	operable unit
PD	post-decision
PEGASIS	PPPO Environmental Geographic Analytical Spatial Information System
PPPO	Portsmouth/Paducah Project Office
PVA	property valuation administrator
RMD	risk methods document
RGA	Regional Gravel Aquifer
ROD	Record of Decision
SMP	site management plan
SST	Swift & Staley Team
SWMU	solid waste management unit
SWOU	Surface Water Operable Unit
VOC	volatile organic compound
WAG	waste area grouping
WDA	waste disposal alternatives

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FEDERAL FACILITY AGREEMENT SEMIANNUAL PROGRESS REPORT FIRST HALF OF FISCAL YEAR 2025

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025

INTRODUCTION

The Paducah Gaseous Diffusion Plant was placed on the National Priorities List on May 31, 1994. In accordance with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the U.S. Department of Energy (DOE) entered into a Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) and Kentucky Department for Environmental Protection (KDEP) on February 13, 1998. The FFA established one set of consistent requirements for achieving comprehensive site remediation in accordance with the Resource Conservation and Recovery Act and CERCLA, including stakeholder involvement.

Site cleanup activities are integrated into the following operable units (OUs) and decisions.

- C-400 Complex OU
- Groundwater OU (GWOU)
- Surface Water OU (SWOU)
- Soils OU
- Burial Grounds OU (BGOU)
- Environmental Media Decision¹
- Deactivation and Decommissioning (D&D) OU¹
- Facility Decommissioning OU¹
- Lagoons OU
- Depleted Uranium Hexafluoride (DUF₆) Footprint Underlying Soils OU
- Soils and Slabs OU
- CERCLA Waste Disposal Alternatives (WDA) OU
- Comprehensive Site OU

Section XXIII of the FFA requires that DOE prepare a regulatory semiannual progress report that describes the actions that DOE has taken during the previous six months to implement FFA requirements, as well as the schedules of activities to be taken during the upcoming six months.² Activities that have taken place after the reporting period end date are not included in this report, but will be included in the reporting period in which they occur. Projects and activities reported in this update are grouped by the OUs listed in Table 1.

¹ Updated from the approved *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2.

² Schedules are included for information and planning purposes only; enforceable schedules are established in the site management plan (SMP).

Table 1. OUs and Corresponding Report Topics

OUs	Project/Activities
C-400 Complex OU	<ul style="list-style-type: none"> • C-400 D&D • C-400 Final Remedial Action
GWOU	<ul style="list-style-type: none"> • C-400 Interim Remedial Action (IRA) • Southwest Plume Sources Remedial Action • Dissolved-Phase Plumes Remedial Action • Northeast Plume IRA • Northwest Plume IRA
BGOU	<ul style="list-style-type: none"> • C-749 Uranium Burial Ground Solid Waste Management Unit (SWMU) 2
SWOU	<ul style="list-style-type: none"> • Remedial Action
CERCLA WDA OU	<ul style="list-style-type: none"> • CERCLA WDA Evaluation
Environmental Media Decision*	<ul style="list-style-type: none"> • Soils SWMUs • Soils and Slabs • Facility decommissioning (at and below grade features) • C-400 Complex [at and below grade features and confirmed/probable dense nonaqueous-phase liquid (DNAPL) in groundwater] • Burial Grounds • Groundwater <ul style="list-style-type: none"> — Southwest Plume sources [above the Regional Gravel Aquifer (RGA)] — Potential additional groundwater sources (above the RGA) • Surface Water • Lagoons
D&D OU	<ul style="list-style-type: none"> • Facility decommissioning (abovegrade structures only) • C-400 Complex (abovegrade structures only) • Remaining non-CERCLA decommissioning activities (not currently in an OU)
Water Policy	<ul style="list-style-type: none"> • Removal Action
Additional Reporting	<ul style="list-style-type: none"> • Waste Area Groupings (WAGs) 1 and 7 • Community Relations Plan (CRP) • SMP • CERCLA Five-Year Review • Plant Industrial Area Vapor Intrusion Assessment

*The Environmental Media Decision is not an OU; however, it contains OU projects/activities outlined in Table 1.

The approved *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2, documents the FFA parties’ conceptual alignment on the integrated and accelerated approach to site cleanup; the FFA parties continue to work toward implementing this strategy and the details of the approach. Previous OU scope descriptions, shown in Table 1, remain largely unchanged in this document and will be updated after the proposed decision documents [i.e., Environmental Media Record of Decision (ROD), D&D ROD, WDA ROD] are signed. Table 2 illustrates the OU decision crosswalk and conceptual approach. DOE intends to work with the FFA parties to provide additional details on executing this approach. Three remedial investigations/feasibility studies, proposed plans, and RODs are proposed for submittal in 2029 (or earlier). The Environmental Media ROD will

combine cleanup actions for at and below grade features (e.g., slabs, utilities, basement structures), soils, surface water, C-400 confirmed/probable DNAPL,³ slabs, lagoons, and burial grounds into a single final decision, establishing final cleanup levels for the entire Paducah Site based on anticipated future use. The sitewide D&D ROD will combine all abovegrade structures into a single final decision (incorporating deactivation under the FFA/CERCLA process, as defined in the ROD). The WDA ROD will make a final waste disposition decision for waste generated by the D&D and Environmental Media decisions. A final Comprehensive Site OU would consider appropriate actions for remaining contamination, after actions determined by the three decision documents are complete, for groundwater actions (Dissolved-Phase Plumes, Northeast and Northwest Plumes, and Water Policy), for DUF₆ footprint underlying soil (and other site components required for DUF₆ operations), and for comprehensive risk review of remaining site conditions.

Table 2. OU Decision Crosswalk

ROD	Current OUs
WDA	<ul style="list-style-type: none"> • Waste Disposal Alternatives
D&D	<ul style="list-style-type: none"> • Facility decommissioning (abovegrade structures only) • C-400 Complex (abovegrade structures only) • Remaining non-CERCLA decommissioning activities (not currently in an OU)
Environmental Media	<ul style="list-style-type: none"> • Soils (SWMUs) • Soils and Slabs • Facility decommissioning (at and below grade features) • C-400 Complex (at and below grade features and confirmed/probable DNAPL in groundwater) • Burial Grounds • Groundwater <ul style="list-style-type: none"> — Southwest Plume sources (above the RGA) — Potential additional groundwater sources (above the RGA) • Surface Water • Lagoons
CSOU	<ul style="list-style-type: none"> • DUF₆ Footprint Underlying Soil (and other site components required for DUF₆ operations) • Groundwater <ul style="list-style-type: none"> — Northeast Plume (interim ROD transition to final remedy) — Northwest Plume (interim ROD transition to final remedy) — Dissolved-Phase Plumes — Water Policy (removal action transition to final remedy) • Comprehensive risk review of remaining site conditions

Each section of this update has been divided into nine sections as follows.

- I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan)
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction)

³ Scope does not include groundwater for Northeast Plume (interim ROD), Northwest Plume (interim ROD), Dissolved-Phase Plumes (as identified in the SMP) and Water Policy (removal action).

- III. Identity and assigned tasks of DOE contractors for work to be performed for this project
- IV. Statement of the manner and extent to which the requirements and time schedules are being met
- V. Primary/Secondary Document Tracking System
 - A) Documents under review and/or preparation for this reporting period
 - B) Due dates for completion of review/modification tasks
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay)
- VII. Summary of all contacts with local community, public interest groups, or state government
- VIII. Changes in relevant personnel
- IX. Actual cost for operation and maintenance (O&M), if appropriate

Each section satisfies a reporting requirement for the FFA Semiannual Progress Report or the Hazardous Waste Management Facility Permit and has been formatted in accordance with the template found in Appendix D of the FFA.

To account for sample analysis time and the data assessment process, the analytical data included in this report lags operational data by three months. This is in accordance with agreements made among the FFA parties during the July 14, 2022, FFA managers meeting.

This report includes five appendices as follows.

- Appendix A contains Northeast and Northwest Plumes Water Withdrawal Reports for the July 1, 2024, through December 31, 2024, reporting period.
- Appendix B contains Figures B.1 through B.30, as referenced in the Northeast and Northwest Plumes updates. All groundwater data are available in the PPPO Environmental Geographic Analytical Spatial Information System (PEGASIS) and, therefore, have not been summarized in this semiannual report.
- Appendix C contains a map depicting monitoring well (MW) locations for the C-746-K Landfill and graphical presentations of trichloroethene (TCE) concentrations in these wells over time. These data are currently collected semiannually. All groundwater data are available in PEGASIS and, therefore, have not been summarized in this semiannual report.
- Appendix D contains updates to the Administrative Record (AR) index since the last progress report. This is required by the Paducah FFA (Section XXXII.F). In October 2018, DOE began a comprehensive review of the Paducah Environmental Information Center (EIC) to ensure that the project document files were complete. As part of this effort, DOE reorganized the Paducah EIC to include the original three categories: 1) AR File, 2) Post-Decision (PD) File, and 3) General Reference Compendium (GRC); and added 4) AR Reference File and 5) AR Archive File. The AR Reference File contains programmatic documents that support the AR [e.g., SMP, Risk Methods Document (RMD)]. As a result of this reorganization of the EIC, Appendix D has been expanded to include updates to the AR index that include the AR File, PD File, and AR Reference File.

The AR Archive File contains documents for projects that originally were expected to have a decision document (i.e., ROD or Action Memorandum), but had been resequenced prior to a final decision. These documents have been archived within the AR Archive File to establish future AR files for projects and, as a result, are not included in Appendix D. The AR Archive File can be viewed on the EIC website.

The GRC, which supplements the Paducah AR, contains technical documents associated with the Paducah Site that do not meet the CERCLA criteria of an AR File or a PD File (e.g., CRP, CERCLA Five-Year Review, Annual Site Environmental Report); but are deemed important in understanding the Paducah Site environmental remedial efforts. Because the GRC is not part of the AR, it is not included as part of the update to Appendix D. The GRC can be viewed on the EIC website.

- Appendix E contains figures depicting the C-749 Uranium Burial Ground (SWMU 2) groundwater MW network and a summary of the SWMU 2 trends for TCE and technetium-99 (Tc-99) for a period of five years. All groundwater data are available in PEGASIS and, therefore, have not been summarized in this semiannual report.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

C-400 COMPLEX OPERABLE UNIT

The C-400 Complex OU was established in a *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (C-400 Complex OU MOA), signed August 8, 2017; the agreement then was incorporated into the SMP. The following two projects are included in the C-400 Complex OU.

- C-400 D&D
- C-400 Final Remedial Action

On September 16, 2022, the FFA parties executed an FFA milestone modification, which incorporated the C-400 D&D into the C-400 Final Remedial Action. Because the demolition of the C-400 Cleaning Building will be incorporated into the C-400 Final Remedial Action, milestones associated with the C-400 D&D, which was intended to be a non-time-critical removal action (NTCRA), will not be necessary. Per the Memorandum, *Suspension of D1 and D2 Comprehensive Environmental Response, Compensation, and Liability Act Documents Associated with the C-400 Cleaning Building Non-Time-Critical Removal Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (C-400 Building D&D MOA), dated October 2, 2019, the original NTCRA documents were not approved, and the NTCRA was suspended. With the FFA parties' execution of the FFA milestone modification, the C-400 Building D&D MOA is superseded, and the planning documents associated with the NTCRA and their associated milestones are no longer required because the C-400 Cleaning Building will be demolished as part of the remedial action. Additionally, under the FFA parties' FFA milestone modification, the milestone dates in the C-400 Complex OU MOA, which provided for enforceable milestones and planning dates and was later extended due to the force majeure related to COVID-19, are also superseded.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

C-400 COMPLEX OPERABLE UNIT: C-400 Final Remedial Action

The C-400 Final Remedial Action will investigate the C-400 Complex OU and associated SWMUs, evaluate potential remedial alternatives, develop decision documents selecting an alternative(s), and design and implement the remedial alternative(s).

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Initiated and completed remedial field activities in accordance with the *Addendum to the Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D2/R1/A1/R1, on October 30, 2024, and February 11, 2025, respectively.
- Initiated development of the *Addendum to the Remedial Investigation Report for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2474&D2/A1.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Finalize and submit the *Addendum to the Remedial Investigation Report for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2474&D2/A1, to EPA and KDEP.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the C-400 Complex OU belongs to Four Rivers Nuclear Partnership, LLC (FRNP). FRNP also provides programmatic and technical support, analytical services, and business management services. Swift & Staley Team (SST) manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

Requirements for the C-400 Complex Remedial Action are being met consistent with the following documents:

- *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, signed August 8, 2017;
- *Memorandum of Agreement for Resolution of Formal Dispute Regarding the Non-Concurrence by EPA and KDEP on the DOE Milestone Modification Request for Submittal of the Revised Proposed Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/LX/07-2407&D1)*, signed September 28, 2017;
- *Memorandum of Agreement for Resolution of Formal Disputes on EPA Conditional Concurrence on the Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2420&D2 and the Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2425&D2*, signed August 1, 2019; and
- *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Addendum to the Remedial Investigation Report for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2474&D2/A1, was under development during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site Citizens Advisory Board (CAB), FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025⁴

GROUNDWATER OPERABLE UNIT

The scope of the GWOU includes performing investigations, conducting baseline risk assessments, evaluating removal/remedial alternatives, and selecting and implementing actions necessary to achieve protection of human health and the environment from exposure to groundwater contamination that could result in an unacceptable risk.

Within the GWOU are these projects: C-400 IRA, Southwest Plume Sources Remediation, Dissolved-Phase Plumes, Northeast Plume IRA, and Northwest Plume IRA.

The overall objective of the GWOU is to remove/mitigate ongoing sources and to remediate the groundwater to target contaminant concentrations. The predominant contaminant of concern in the groundwater plumes is TCE. Table 3 provides an overall picture of the TCE mass removed [TCE values may contain other volatile organic compounds (VOCs)] by various actions.

Table 3. Cumulative TCE* Removed at Paducah

Source Area	Cumulative TCE Removed (gal)*
Northwest Plume Pump-and-Treat	4,069**
Northeast Plume Pump-and-Treat	380**
C-400 Six-Phase Treatability Study	1,900
C-400 Phase I	535
C-400 Phase IIa	1,137
Southwest Plume (SWMU 1)	24***
Other sources (i.e., SWMU 91–LASAGNA™)	246
Total	8,291

*TCE values may contain other VOCs.

** Cumulative through December 31, 2024.

*** Removed during deep soil mixing operations.

⁴ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

GROUNDWATER OPERABLE UNIT PROJECT: C-400 IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Continued long-term monitoring of the C-400 IRA groundwater monitoring network as required by the *Record of Decision for Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2150&D2/R2.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Continue long-term monitoring for the C-400 IRA. Data from long-term monitoring for the C-400 IRA are available in PEGASIS.
- Conduct annual inspections in accordance with the *Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2151&D2/R2.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the C-400 IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements for the C-400 IRA are being met consistent with the following documents:

- *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, signed August 8, 2017;
- *Memorandum of Agreement for Resolution of Formal Dispute Regarding the Non-Concurrence by EPA and KDEP on the DOE Milestone Modification Request for Submittal of the Revised Proposed Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/LX/07-2407&D1)*, signed September 28, 2017;

- *Record of Decision for Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/OR/07-2150&D2/R2; and*
- *Land Use Control Implementation Plan: Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/OR/07-2151&D2/R2.*

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- None.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Sampling of the C-400 IRA wells has been incorporated into the Environmental Monitoring Program. O&M cost for sampling for the C-400 IRA Project is not tracked separately.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

GROUNDWATER OPERABLE UNIT PROJECT: Southwest Plume Sources

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

SWMU 1

- Continued long-term monitoring of the SWMU 1 MW network as required by the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Conducted inspections of land use control implementation plan (LUCIP) warning signs at SWMU 1 and verified the Excavation/Penetration Permit program for the Southwest Plume area as required by the *Record of Decision for Solid Waste Management Units 1, 211-A, 211-B, and Part of 102 Volatile Organic Compound Sources for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0365&D2/R1*.

SWMUs 211-A and 211-B

- Continued performance and long-term MW network sample collection at SWMU 211-A as prescribed in the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Initiated development of a summary of preliminary performance MW results collected through September 2024 as prescribed in the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Conducted inspections of LUCIP warning signs at SWMU 211-A and SWMU 211-B and verified the Excavation/Penetration Permit Program for the Southwest Plume areas as required by the *Record of Decision for Solid Waste Management Units 1, 211-A, 211-B, and Part of 102 Volatile Organic Compound Sources for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0365&D2/R1*.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

SWMU 1

- Continue long-term monitoring of the SWMU 1 MW network as required by the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Conduct inspections of LUCIP warning signs at SWMU 1 and verify the Excavation/Penetration Permit Program for the Southwest Plume area as required by the *Record of Decision for Solid Waste Management Units 1, 211-A, 211-B, and Part of 102 Volatile Organic Compound Sources for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0365&D2/R1*.

SWMUs 211-A and 211-B

- Continue performance and long-term MW network sample collection at SWMU 211-A, as prescribed in the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Conduct inspections of LUCIP warning signs at SWMU 211-A and SWMU 211-B and verify the Excavation/Penetration Permit Program for the Southwest Plume areas as required by the *Record of Decision for Solid Waste Management Units 1, 211-A, 211-B, and Part of 102 Volatile Organic Compound Sources for the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-0365&D2/R1*.
- Finalize a summary of preliminary performance MW results collected through September 2024 as prescribed in the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.
- Initiate a summary of preliminary performance MW results collected through March 2025 as prescribed in the *Operation and Maintenance and Environmental Monitoring Plan for Solid Waste Management Units 1 and 211-A Remedial Actions for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2501&D2*.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the Southwest Plume Sources belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements for the SWMU 1 portion of the Southwest Plume sources remedial action subproject are being met consistent with the SMP, the FFA, and as agreed to by the FFA parties.
- The requirements for the SWMU 211-A portion of the Southwest Plume subproject are being met consistent with the SMP, the FFA, and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- None.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Sampling of SWMU 1 and SWMU 211-A has been incorporated into the Environmental Monitoring Program. O&M cost for this project is not tracked separately.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

GROUNDWATER OPERABLE UNIT PROJECT: Dissolved-Phase Plumes

- I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):**
- Met quarterly with the Modeling Working Group (MWG) during this reporting period on October 9, 2024, and January 22, 2025.
 - Developed responses to EPA comments provided for consideration during future modeling efforts on July 25, 2024, on the *2023 Update of the Paducah Gaseous Diffusion Plant Sitewide Groundwater Flow Model*, DOE/LX/07-2488&D1, and EPA’s supplemental comments for consideration during future modeling efforts provided on July 26, 2024.
 - Developed and submitted the *Compilation of Meeting Summaries and White Papers (Fiscal Year 2024)*, DOE/LX/07-2516&D1, to EPA and KDEP on February 28, 2025.
 - Received KDEP approval of the *Compilation of Meeting Summaries and White Papers (Fiscal Year 2024)*, DOE/LX/07-2516&D1, on March 21, 2025.
- II. Schedule of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Conduct quarterly meetings with the MWG, which are currently planned for April 2, 2025, and July 16, 2025.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the Dissolved-Phase Plume belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met. The MWG will continue to support Paducah Site projects.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Compilation of Meeting Summaries and White Papers (Fiscal Year 2024)*, DOE/LX/07-2516&D1, was under development, was under review by EPA and KDEP, and the document was approved by KDEP during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025⁵**

GROUNDWATER OPERABLE UNIT PROJECT: Northeast Plume IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Treated 46,282,638 gal of contaminated groundwater, with an average system treatment rate of 175 gal per minute during this reporting period. The system is designed so that continuous operation of the Northeast Plume Containment System (NEPCS) is possible when only one of the two extraction wells (EWs) is functional. The NEPCS achieved an average operational efficiency, as a whole, of 99.8%. Operational online efficiencies for the reporting period for C-765 were as follows: July 2024, 100%; August 2024, 100%; September 2024, 99.0%; October 2024, 99.7%; November 2024, 100%; and December 2024, 99.7%. The C-765-A operational online efficiencies for the reporting period were as follows: July 2024, 100%; August 2024, 100%; September 2024, 99.0%; October 2024, 100%; November 2024, 99.8%; and December 2024, 100%.

A) Process Operations:

The NEPCS consists of two EWs (EW234 and EW235), transfer piping, two treatment units for air stripping and suspended solids removal, and MW network. The old EWs, EW331 and EW332, equalization tank, and old transfer piping have been placed in standby mode.

B) Process Testing:

Operation of the NEPCS began February 28, 1997. As of December 31, 2024, the NEPCS has processed a total of approximately 2,358,183,069 gal of water. The monthly withdrawal volumes for this reporting period are presented in Appendix A, Table A.1, of this report. This table includes a summary of the withdrawn water volumes and average daily rates.

C) NEPCS Influent, Effluent, and Extraction Well Testing:

Due to sample analysis time and the data assessment process, there is a three-month lag in the analytical data and operational data. Graphs in this report present analytical data through December 31, 2024. Data are available in PEGASIS.

Influent TCE analytical data from 2019 through the end of December 2024 are presented in Appendix B. Environmental samples were collected monthly from the treatment system influent and weekly from the treatment system effluent for the period of July 1, 2024, through

⁵ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

December 31, 2024. High, low, and average influent and effluent TCE concentrations for these months are presented in Table 4.

Table 4. TCE Concentrations for Northeast Plume

	TCE (µg/L)		
	High	Low	Average
Influent C-765 (EW234)	18.3	12.1	14.4
Influent C-765-A (EW235)	54.5	42.1	46.1
Effluent from C-765	< 1	< 1	< 1
Effluent from C-765-A	< 1	< 1	< 1
Effluent (CERCLA Outfall C001)	< 1	< 1	< 1

NOTE: Data rejected by validation or assessment are not included on the table.

As presented in Table 4, the NEPCS continued to remove TCE effectively. The systems operated with an average removal efficiency of 93.1% for EW234 and 97.8% for EW235 for TCE.

The EWs were sampled monthly during this reporting period. For the period of July 1, 2024, through December 31, 2024, EW234 had an average TCE concentration of 14.4 µg/L, while EW235 had an average concentration of 46.1 µg/L.

Treated groundwater for the Northeast Plume is discharged to a CERCLA outfall, and data associated with the CERCLA outfall are included as part of Appendix B of this report.

D) Maintenance Activities:

Routine Maintenance Activities:

Daily, monthly, quarterly, and annual routine maintenance activities were conducted in accordance with the *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance*, CP4-ER-0017.

- C-765 system was shut down for 6.5 hours for planned maintenance during this reporting period.
- C-765-A system was shut down for 3.5 hours for planned maintenance during this reporting period.

Non-routine Maintenance Activities:

- C-765 system was shut down for a total of 5.5 hours during this reporting period due to unexpected repairs and power disruptions.
- C-765-A system was shut down for a total of 5.5 hours during this reporting period due to unexpected repairs and power disruptions.

E) Effectiveness Monitoring—Monitoring Well Results:

Figure B.1, included in Appendix B, shows locations of the MWs and EWs. Figure B.2 shows system influent TCE concentrations, and Figure B.3 includes a summary of the Tc-99 activities in the Northeast Plume EWs. Figure B.4 shows the estimated cumulative amount of TCE removed since the NEPCS began operations in 1997. Figures B.5 through B.14, presented in Appendix B, show TCE concentrations and Tc-99 activities in upgradient transect wells, MWs near the EWs, downgradient wells, distal downgradient wells, and wells near the C-400 Complex. The EWs are working well to increase TCE mass removal and to enhance control of the plume. This is shown in Figure B.4 in Appendix B with an increase in mass removal beginning in October 2017, with initiation of pumping from the optimized EWs.

During this reporting period, the FFA parties reviewed and assessed the Northeast Plume TCE and Tc-99 transect well results on a quarterly basis. The analytical results can be found in Appendix B, along with analytical results for other NEPCS MWs. This information is used by the FFA parties when considering if additional adjustments are needed to minimize undesirable expansion of high concentrations of Tc-99 and TCE within the Northeast Plume. As agreed to by the FFA parties, 100 gal per minute and 75 gal per minute are the target flowrates for EW234 and EW235, respectively. The NEPCS continues to operate under Condition #3 of the *Memorandum of Agreement for Resolution of Formal Dispute of the Explanation of Significant Differences to the Record of Decision for the Interim Remedial Action of the Northeast Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/LX/07-1291&D2)*, and *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky (DOE/LX/07-1280&D2)*.

F) Modification of the NEPCS Operations or Configuration:

- None.

G) See Section V for work related to document preparation and review.

II. Schedule of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Continue to conduct and document the necessary tasks required for equipment maintenance, calibration, and operation as specified in the *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2470&D1*.
- Provide TCE and Tc-99 transect MW sampling results to EPA and KDEP on a quarterly basis.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the Northeast Plume IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The effluent concentration goal of 30 µg/L for TCE was met during the reporting period. The NEPCS remained operational 99.8% of the time during this reporting period.
- V. Primary/Secondary Document Tracking System:**
- A) Documents under review and/or preparation for this reporting period:**
- None.
- B) Due dates for completion of review/modification tasks:**
- None.
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):**
- None.
- VII. Summary of all contacts with local community, public interest groups, or state government:**
- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.
- VIII. Changes in relevant personnel:**
- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.
- IX. Actual cost for O&M, if appropriate:**
- Actual costs for O&M of the Northwest and Northeast Plume facilities are tracked jointly. The total operating cost for the reporting period was approximately \$512,000.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025⁶**

GROUNDWATER OPERABLE UNIT PROJECT: Northwest Plume IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Treated 50,633,513 gal of contaminated groundwater, with an average monthly operational efficiency of 98.0% during this reporting period. The average system treatment rate for the reporting period was approximately 191 gal per minute. Operational efficiencies for the reporting period were as follows: July 2024, 96.7%; August 2024, 100%; September 2024, 99.7%; October 2024, 99.7%; November 2024, 100%; and December 2024, 91.8%.
- Developed and submitted the *Remedial Action Work Plan for the 2024 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2509&D1, to EPA and KDEP on November 26, 2024.
- Received EPA and KDEP comments on the *Remedial Action Work Plan for the 2024 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2509&D1, on December 11, 2024, and December 16, 2024, respectively.
- Developed and submitted the *Remedial Action Work Plan for the 2023 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2509&D2, to EPA and KDEP on January 14, 2025.
- Received EPA and KDEP concurrence on the *Remedial Action Work Plan for the 2023 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2509&D2, on January 15, 2025, and January 24, 2025, respectively.

A) Process Operations:

The Northwest Plume Groundwater System (NWPGS) consists of two EWs (EW232 and EW233), located just north of the Paducah Site, and underground transfer pipeline for moving comingled groundwater from the EWs to the C-612 treatment facility. The treatment facility has an operational capacity of 220 gal per minute and utilizes air stripping for removal of TCE in groundwater, ion exchange for removal of Tc-99 in groundwater, and vapor phase carbon for capturing TCE from the exhaust of the air stripper. Treated groundwater is released to a

⁶ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

tributary that flows to Kentucky Pollutant Discharge Elimination System Outfall 001. A MW network is used to evaluate performance and effectiveness of the optimized EWs.

B) Process Testing:

Operation of the NWPGS began on August 28, 1995. As of December 31, 2024, the NWPGS has processed a total of approximately 2,931,692,250 gal of water. The monthly withdrawal volumes for the reporting period are presented in Appendix A, Table A.2, of this report. This table includes a summary of the withdrawn water volumes and average daily rates.

C) NWPGS Influent, Effluent, and Extraction Well Testing:

Due to sample analysis time and the data assessment process, there is a three-month lag in the analytical data and operational data. Graphs in this report present data through December 2024. Data are available in PEGASIS.

Figure B.15, included in Appendix B, shows locations of the Northwest Plume MWs. Influent TCE and Tc-99 analytical data are presented in Appendix B on Figures B.16 and B.17. Figures B.18 and B.19 include a summary of the TCE and Tc-99 concentrations of the effluent versus time at the NWPGS. Figure B.20 shows the cumulative estimated amount of TCE removed since the NWPGS began operations in 1995. The influent sample results, compared to the NWPGS effluent results, indicated that the NWPGS continues to remove TCE and Tc-99 effectively.

As previously discussed in the *U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the Second Half of Fiscal Year 2024 Paducah, Kentucky*, DOE/LX/07-2500/V2, elevated Tc-99 results were observed in the NWPGS effluent sample collected on April 22, 2024. Upon examination, Vessel D, the lag vessel, was determined to have resin bypassing the resin retention lateral and allowing it to flow downstream. Maintenance was performed on ion exchange Vessel D on December 9, 2024. Vessel D was emptied, corroded bolts on the interior effluent flange were replaced with stainless steel bolts, and the vessel was filled with new ion exchange resin. The treatment system was restarted on December 11, 2024. Required Tc-99 sampling downstream of the ion exchange vessels was performed after the maintenance evolution, and the data will be discussed in the next reporting period.

For radionuclides, all reported values, including negative values, are used to derive averages. Negative Tc-99 results may be reported due to a statistical determination of the counts seen by a detector, minus a background count. High, low, and average treatment facility influent and effluent TCE and Tc-99 concentrations from July 1, 2024, through December 31, 2024, are presented in Table 5.

**Table 5. TCE and Tc-99 Concentrations at the C-612 Treatment Facility
for Northwest Plume (July 1, 2024, through December 31, 2024)**

	TCE (µg/L)			Tc-99 (pCi/L)		
	High	Low	Average	High	Low	Average
Influent from EW232 and EW233 (combined)	591	225	362	301	243	278
Effluent from C-612 NW Plume treatment facility	1	< 1*	< 1*	91.2	12.3*	48.3

*The values denoted are below the detection limit.

The treatment system influent was sampled monthly. The effluent was sampled weekly. These sampling frequencies were conducted in accordance with the *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2469&D2. As presented in Table 5, the NWPGS continued to remove TCE and Tc-99 effectively. The system operated with an average removal efficiency of 99.8% for TCE and 82.7% for Tc-99.

The average TCE effluent concentration for this reporting period was less than 1 µg/L, which is less than the treatment goal of 5 µg/L. The average Tc-99 effluent value was 48.3 pCi/L, which is less than the operational goal of 900 pCi/L, during the reporting period.

High, low, and average sample results for this reporting period at the EWs are shown in Table 6. EW232 and EW233 were sampled quarterly in accordance with the *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2469&D2.

**Table 6. TCE and Tc-99 Concentrations for Northwest Plume Extraction Wells
(July 1, 2024, through December 31, 2024)**

	TCE (µg/L)			Tc-99 (pCi/L)		
	High	Low	Average	High	Low	Average
EW232	129	115	120	54.7	47.8	51.0
EW233	929	275	602	559	504	532

D) Treatment Media:

Ion Exchange Resins:

The NWPGS is equipped with four ion exchange columns used for Tc-99 removal. Purolite® A520E resin is used in the columns, which are arranged in a lead/lag configuration in a trailer.

Activated Carbon Media:

The NWPGS is equipped with two carbon columns that contain granular activated carbon for absorption of VOCs from the vapor-phase effluent of the air stripper unit. The *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at*

the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2469&D2, requires that spent carbon be replaced every 6 months. The last carbon changeout was completed on March 24, 2025. The next carbon changeout is projected for September 2025.

E) Maintenance Activities:

Routine Maintenance Activities:

Daily, monthly, quarterly, and annual routine maintenance activities were conducted in accordance with the *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance*, CP4-ER-0017, and *Monthly, Quarterly and Annual Maintenance at the C-612 Northwest Plume Groundwater System*, CP4-ER-0016.

- The NWPGS was shut down for a total of 61.75 hours for planned maintenance activities.

Non-routine Maintenance Activities:

- The NWPGS was shut down for a total of 28 hours for the repair of failed components and unexpected power disruptions.

Effectiveness Monitoring—Monitoring Well Results:

Figures B.21 through B.30 presented in Appendix B, show TCE and Tc-99 concentrations in EWs and nearby MWs from 2019 through December 2024.

G) Modification of the NWPGS Operations or Configuration:

- None.

H) See Section V for work related to document preparation and review.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Continue to conduct and document the necessary tasks required for equipment maintenance, calibration, and operation, as specified in the *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2469&D2.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the Northwest Plume IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The average NWPGS water effluent concentrations met the operational goals of 5 µg/L for TCE and 900 pCi/L for Tc-99 during the reporting period. The NWPGS has maintained an average monthly operational efficiency of 98.0% during this reporting period.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Remedial Action Work Plan for the 2024 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2509&D1*, was under development and under review by EPA and KDEP during this reporting period.
- *Remedial Action Work Plan for the 2023 Optimization of the Northwest Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2509&D2*, was under development and under review and concurred on by EPA and KDEP during this reporting period.
- *Nonsignificant Change for the Record of Decision for Interim Remedial Action of the Northwest Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, memorandum to file, was under review by EPA and KDEP during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, and reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Actual costs for O&M of the Northwest and Northeast Plume facilities are tracked jointly. The total operating cost for the reporting period was approximately \$512,000.

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**FEDERAL FACILITY AGREEMENT
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**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

BURIAL GROUNDS OPERABLE UNIT

The scope of the BGOU includes a remedial investigation, baseline human health risk assessment, evaluation of remedial alternatives, remedy selection, and implementation of actions, as necessary, for protection of human health and the environment for the following burial grounds: C-749 (SWMU 2); C-404 (SWMU 3); C-747/C-748-B (SWMU 4); C-746-F (SWMU 5); C-747-B (SWMU 6); C-747-A (SWMUs 7 and 30), which includes the area beneath C-747-A (SWMU 12); the residential/inert borrow area (SWMU 145); and the C-746-S&T Landfills (SWMUs 9 and 10, respectively).

This section also includes information on the sampling activities being conducted at the C-749 Uranium Burial Ground, as required in the *Record of Decision for Interim Remedial Action at Solid Waste Management Units 2 and 3 of Waste Area Group 22 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1351&D1, signed in 1995.

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**FEDERAL FACILITY AGREEMENT
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**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025⁷**

BURIAL GROUNDS OPERABLE UNIT PROJECT: C-749 Uranium Burial Ground (SWMU 2)

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Continued groundwater monitoring at the C-749 Uranium Burial Ground (SWMU 2), as required by the *Record of Decision for Interim Remedial Action at Solid Waste Management Unit 2 and 3 of Waste Area Group 22 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1351&D1. Appendix E contains figures depicting the C-749 Uranium Burial Ground (SWMU 2) groundwater MW locations and a summary of the SWMU 2 trends for TCE and Tc-99 for a period of five years. All groundwater data are available in PEGASIS and, therefore, have not been summarized in this report.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Continue groundwater monitoring at the C-749 Uranium Burial Ground, as required by the *Record of Decision for Interim Remedial Action at Solid Waste Management Unit 2 and 3 of Waste Area Group 22 at the Paducah Gaseous Diffusion Plant Paducah, Kentucky*, DOE/OR/06-1351&D1.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the C-749 Uranium Burial Ground belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE and maintains existing burial ground cover.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation during this reporting period:

- None.

⁷ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Sampling of the C-749 Uranium Burial Ground has been incorporated into the Environmental Monitoring Program. O&M cost for this project is not tracked separately.

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SURFACE WATER OPERABLE UNIT

The SWOU includes the Surface Water Removal Action and Surface Water Remedial Action projects. O&M is performed on North-South Diversion Ditch Sections 1 and 2 and institutional controls, as required by the *Operation and Maintenance Plan for Sections 1 and 2 of the North-South Diversion Ditch at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2484&D2, and *Operation and Maintenance Plan for the Surface Water Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1904&D1/R2; and O&M activities for the C-613 Sedimentation Basin are maintained in accordance with the *Operation and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2044&D1/R4, respectively.

Per the *Operation and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2044&D1/R4, the relationship of turbidity to total suspended solids is compared on a quarterly basis. An update to the existing linear regression model was performed in February 2025, and the current maximum discharge limit for turbidity is 89 nephelometric turbidity units (NTUs), with a 30-day average not to exceed 41 NTUs.

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Reporting Period: 10/1/2024–3/31/2025**

SURFACE WATER OPERABLE UNIT PROJECT: Remedial Action

- I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):**
- Conducted inspections in accordance with the *Land Use Control Implementation Plan for the North-South Diversion Ditch at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1949&D2/R2.
 - Conducted inspections for Environmental Indicator signs and Institutional Control measures in October 2024 in accordance with the *Operation and Maintenance Plan for the Surface Water Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1904&D1/R2.
 - Completed a repair of a minor leak in the automatic sampling system at C-613-A Sedimentation Basin Process Trailer in accordance with the *Operation and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2044&D1/R4.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Conduct inspections in accordance with the *Land Use Control Implementation Plan for the North-South Diversion Ditch at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1949&D2/R2.
 - Conduct inspections for Environmental Indicator signs and Institutional Control measures in accordance with the *Operation and Maintenance Plan for the Surface Water Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1904&D1/R2.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the SWOU Remedial Action belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met for the SWOU consistent with the SMP and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- None.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- O&M activities have been incorporated into the Environmental Monitoring Program. O&M cost for this project is not tracked separately.

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**Facility: Paducah Gaseous Diffusion Plant
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Reporting Period: 10/1/2024–3/31/2025**

CERCLA WASTE DISPOSAL ALTERNATIVES OPERABLE UNIT

The scope of the WDA OU includes a remedial investigation, evaluation of remedial alternatives, development of a decision document, and the design and implementation of an on-site waste disposal facility (OSWDF) for disposal options of CERCLA waste generated by removal and remedial actions. Accordingly, the scope of the remedial investigation/feasibility study will be focused and tailored to the nature of this project; potential releases will not be investigated, evaluated, and/or remediated. The decision about whether to implement an OSWDF will be documented in a ROD.

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**Facility: Paducah Gaseous Diffusion Plant
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Reporting Period: 10/1/2024–3/31/2025**

**CERCLA WASTE DISPOSAL ALTERNATIVES OPERABLE UNIT PROJECT:
CERCLA Waste Disposal Alternatives Evaluation**

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

- Developed and submitted an errata to the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1 Errata, to EPA and KDEP on December 20, 2024.
- Initiated development of a revision to the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1/R1.
- Received EPA and KDEP concurrence on the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1 Errata, on December 23, 2024, and January 6, 2025, respectively.
- Continued development of an update to the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/ R2.⁸
- Initiated collection of geotechnical and geophysical data in accordance with the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1 Errata.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Finalize and submit the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1/R1, to EPA and KDEP.
- Continue development of an update to the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2.

⁸ This document was previously approved by EPA and KDEP in 2018.

- Continue collection of geotechnical and geophysical data in accordance with the *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the CERCLA WDA evaluation belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1, was under review by EPA and KDEP during this reporting period.
- *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1 Errata, was under development, and the document was under review and approved by EPA and KDEP during this reporting period.
- *Geotechnical Sampling and Analysis Plan for the Waste Disposal Alternatives Project at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2507&D1/R1, was under development during this reporting period.
- An addendum to the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2, was under development during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

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**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

ENVIRONMENTAL MEDIA DECISION

In 2023, DOE proposed to integrate and accelerate Paducah Site cleanup decisions for environmental media, D&D, and waste disposition. This new cleanup strategy for the site was discussed among the FFA parties in late FY 2023 and was documented in the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2. The three remedial investigations/feasibility studies, proposed plans, and RODs are proposed for submittal in 2029 (or earlier). Environmental Media ROD will propose and combine cleanup actions for at and below grade features (e.g., slabs, utilities, basement structures), soils, surface water, C-400 confirmed/probable DNAPL,⁹ slabs, lagoons, and burial grounds into a single final decision, establishing final cleanup levels for the entire Paducah Site based on anticipated future use.

⁹ Scope does not include groundwater for Northeast Plume (interim ROD), Northwest Plume (interim ROD), dissolved-phase plumes (as identified in the SMP), and Water Policy (removal action).

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**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

**ENVIRONMENTAL MEDIA DECISION PROJECT:
Environmental Media Remedial Investigation/Feasibility Study**

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- Initiated scoping meetings for the *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2515&D1, with EPA and KDEP in October 2024.
 - Initiated development of the *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2515&D1.
 - Initiated development of the *Environmental Media Remedial Investigation/Feasibility Study Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2519&D1.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Continue scoping meetings for the *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2515&D1, with EPA and KDEP.
 - Finalize and submit the *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2515&D1, to EPA and KDEP.
 - Initiate development of the *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2515&D2.
 - Continue development of the *Environmental Media Remedial Investigation/Feasibility Study Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2519&D1.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the Environmental Media remedial investigation/feasibility study belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met.
- V. Primary/Secondary Document Tracking System:**
- A) Documents under review and/or preparation for this reporting period:**
- *Scoping Document and Work Plan for the Environmental Media Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2515&D1, was under development during this reporting period.*
 - *Environmental Media Remedial Investigation/Feasibility Study Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2519&D1, was under development during this reporting period.*
- B) Due dates for completion of review/modification tasks:**
- None.
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):**
- None.
- VII. Summary of all contacts with local community, public interest groups, or state government:**
- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.
- VIII. Changes in relevant personnel:**
- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.
- IX. Actual cost for O&M, if appropriate:**
- None.

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DEACTIVATION AND DECOMMISSIONING OPERABLE UNIT

In 2023, DOE proposed to integrate and accelerate Paducah cleanup decisions for environmental media, D&D, and waste disposition. This new cleanup strategy for the site was discussed among the FFA parties in late FY 2023 and was documented in the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2. The three remedial investigations/feasibility studies, proposed plans, and RODs are proposed for submittal in 2029 (or earlier). The scope of the sitewide D&D ROD will include D&D of the abovegrade portion of structures at the Paducah Site. Decommissioning includes activities that take place after a facility has been deactivated and can include decontamination and dismantlement. Dismantlement involves the disassembly, or demolition and removal, of any structure or system. The sitewide D&D ROD will propose and combine all abovegrade structures into a single final decision (incorporating deactivation following the FFA/CERCLA process, as defined in the ROD).

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Reporting Period: 10/1/2024–3/31/2025**

**DEACTIVATION AND DECOMMISSIONING OPERABLE UNIT PROJECT:
Deactivation and Decommissioning Remedial Investigation/Feasibility Study**

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- Initiated development of the *Scoping Document and Work Plan for the Deactivation and Decommissioning Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2514&D1.*
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Finalize and submit the *Scoping Document and Work Plan for the Deactivation and Decommissioning Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2514&D1,* to EPA and KDEP.
 - Initiate development of the *Scoping Document and Work Plan for the Deactivation and Decommissioning Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2514&D2.*
 - Initiate development of the *Deactivation and Decommissioning Remedial Investigation/Feasibility Study Report at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2520&D1.*
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the D&D remedial investigation/feasibility study belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Scoping Document and Work Plan for the Deactivation and Decommissioning Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2514&D1, was under development during this reporting period.*

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

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WATER POLICY

Pursuant to the June 1994 *Action Memorandum for the Water Policy at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1201&D2, that was approved by EPA in August 1994, municipal water service was offered at no cost to all existing private residences and businesses within the Water Policy-affected area. The affected area is defined as follows:

The affected area is generally bounded by the Ohio River to the north, DOE property boundary to the south, Metropolis Lake Road to the east, and Bethel Church Road to the west. Specifically, on the west side, the boundary follows the DOE property boundary northwest to the intersection with Big Bayou Creek. At that point, it moves west to the intersection of Bethel Church Road and the centerline of a powerline easement just south of Bobo Lane. Property fronting the north end of Bethel Church Road is included in the affected area north of the intersection with the powerline easement to the Ohio River. Specifically, on the east side, the boundary follows the DOE property boundary northwest to the southern point of private property that fronts Ogden Landing Road (identified in McCracken County Property Valuation Office records as #20-27-1A). At that point, it moves east along the southern edge of properties that front the south side of Ogden Landing Road to the intersection of Ogden Landing Road with Metropolis Lake Road. Property fronting on both sides of Metropolis Lake Road is included in the affected area north of this intersection of the roads to the Ohio River.

There are 680.5 acres within the Water Policy-affected area (i.e., excluding DOE property) that lie over the 2020 TCE groundwater plume above the 5 µg/L maximum contaminant level (MCL); 522.5 acres are owned by either West Kentucky Wildlife Management Area or the Tennessee Valley Authority, and 158 acres are owned by private residents or businesses. DOE has implemented various water policy activities that ensure proper management of the Water Policy and assist in DOE's long-term protectiveness of residents and businesses located within the Water Policy-affected area. These activities include the following: (1) update water policy area information by maintaining an annual subscription to the online McCracken County Property Valuation Administrator (PVA) office and verifying land ownership with the PVA office; (2) review the monthly billing register, ensuring water bill payments and assessing trends; (3) manage license agreements; (4) provide sampling results; (5) provide an annual water policy educational fact sheet to all residents and businesses within the affected area; (6) perform annual cap and lock inspections; and (7) demonstrate, on an annual basis, that residents and businesses located over the groundwater plume are not utilizing the groundwater.

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Reporting Period: 10/1/2024–3/31/2025¹⁰**

PROJECT: Water Policy

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

License Agreements:

- Offered nine license agreements during this reporting period. Seven license agreements have been signed by the landowners. Two license agreements that were sent during the previous reporting period were signed by the landowner during this reporting period. One license agreement that was sent during a previous reporting period, the first half of 2024, was signed by the landowner during this reporting period. As of March 31, 2025, 112 of 124 parcels within the Water Policy-affected area are inhabitable (i.e., house or mobile/manufactured home with active municipal water). A total of 91% of the inhabitable parcels are covered by a license agreement. There are 10 parcels that overlie the groundwater plumes. Ninety percent of these parcels are under a license agreement, and the one unlicensed parcel is vacant.
- All parcel owners have been offered license agreements.

Water Bills:

- Reviewed all water bills for properties that DOE pays and noted no significant trends during this reporting period.

Water Policy Educational Fact Sheet Mailer:

- Initiated development of the annual *Water Policy Educational Fact Sheet* mailer.

Demonstration that Residents in the Water Policy-Affected Area Are Protected:

- Continued work on annual demonstration that residents, including parcels located over the contaminated groundwater plume, are not accessing groundwater from any residential well located within the Water Policy area. This demonstration included the following:
 - Continued monthly review of the Water Policy-affected area water bills and ensure no downward trends in usage that could indicate that property owners are using groundwater instead of municipal water. This review includes the 10 parcels that lie over the 5 µg/L or

¹⁰ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

greater portion of the TCE groundwater plumes. No issues were identified during this review.

- Reviewed the Kentucky Geological Survey water well database and ensured that no additional groundwater wells have been installed in the Water Policy-affected area, which included the area over the 5 µg/L or greater portion of the TCE groundwater plumes, as delineated for 2022. No issues were identified during this review.
- Received and reviewed the Kentucky Division of Water well notification report, which includes scans for newly submitted drilling logs for any water wells drilled within the Water Policy area. No issues were identified during this review.
- Conducted visual assessments (i.e., drive-bys, Google Earth images) of parcels overlying or immediately adjacent to the 5 µg/L or greater portion of the TCE groundwater plumes, as delineated for 2022. No issues were identified during these assessments.
- Performed semiannual verification of land ownership by reviewing the PVA website in December 2024. No issues were identified during this assessment. Updated ownership list emailed to KDEP on March 26, 2025.

Cap and Lock Inspection:

- Conducted the annual inspection of the caps and locks installed on residential wells located on parcels with current license agreements. During the inspections, one residential well was found to have a lock that was unattached to the cap due to a broken locking mechanism. The locking cap and lock were replaced on December 4, 2024.

Monitoring:

- Routine monitoring was conducted in accordance with the following documents:
 - *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2470&D1*; and
 - *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2469&D2*.
- Data collected in support of water policy monitoring will be made available in PEGASIS once data have been reported to the landowners.

Northeast:

- Nine MWs and seven residential wells are monitored routinely in accordance with the *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2470&D1*.
- Sampled four MWs in February 2025 and March 2025, during this reporting period. Analytical data for two MWs sampled in September 2024, during the previous reporting period, have been

included in this report. All MWs sampled in September 2024, including a duplicate sample at MW409, did not exhibit detections greater than the MCL for TCE (5 µg/L). Analytical data are pending for the samples collected in February 2025 and March 2025.

- Sampled seven residential wells in November 2024, during this reporting period. All seven, including a duplicate sample at R21, were reported as nondetect for TCE.

Northwest:

- Thirteen MWs and five residential wells are monitored routinely in accordance with the *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2469&D2*. (Note: Tc-99 was added as a result of the *Memorandum of Agreement for Resolution of Informal Dispute Concerning U.S. Environmental Protection Agency and Kentucky Department for Environmental Protection Requirements for Additional Actions or Modifications Regarding the CY 2018 Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2426&D2*, dated June 22, 2020.)
- Sampled 13 MWs and five residential wells in November 2024 and February 2025, during this reporting period, in accordance with the Water Policy Boundary Monitoring Program per the Environmental Monitoring Plan. Analytical data for MWs and residential wells sampled in August 2024, during the previous reporting period, have been included in this report. All MWs and residential wells sampled in August 2024, during the previous reporting period, and in November 2024 were below the MCL for TCE (5 µg/L). None of the MWs or residential wells sampled in August 2024 or November 2024 exhibited detections of Tc-99. Analytical data are pending for samples collected in February 2025.
- Sampled residential well R40 in November 2024 and February 2025 during this reporting period. Analytical data for R40 sampled in August 2024, during the previous reporting period, has been included in this report. The samples collected in August 2024 and November 2024 had results less than the MCL for vinyl chloride and TCE. Analytical data are pending for the samples collected in February 2025.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

Demonstration that Residents in the Water Policy-Affected Area Are Protected:

- Continue monthly review of the Water Policy-affected area water bills and ensure no downward trends in usage that could indicate that property owners are using groundwater instead of municipal water. This review includes the 10 parcels that lie over the 5 µg/L or greater portion of the TCE groundwater plumes.
- Perform semiannual verification of land ownership by reviewing the PVA website in June 2025.
- Receive and review the Kentucky Division of Water well notification report, which includes scans for newly submitted drilling logs for any water wells drilled within the Water Policy-affected area.

- Conduct visual assessments (i.e., drive-bys, Google Earth images) of properties overlying or immediately adjacent to the 5 µg/L or greater TCE groundwater plumes, as delineated for 2022.

Water Policy Educational Fact Sheet Mailer:

- Finalize and submit the *Water Policy Educational Fact Sheet* mailer and submit to EPA and KDEP for review and approval.
- Issue *Water Policy Educational Fact Sheet* mailer to area residents and publish the fact sheet to the public on the Paducah EIC website.

Monitoring:

- Continue routine monitoring and reporting in accordance with the *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2470&D1; and the *Operation and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2469&D2.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of the Water Policy belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Water Policy Educational Fact Sheet* mailer was under development during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Water bill payments are included in DOE's annual operating budget for the Paducah Site.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

ADDITIONAL REPORTING

Presented in this Additional Reporting section are updates for the following:

- WAGs 1 and 7 (C-746-K Landfill, TCE Spill Sites, Underground Storage Tanks, and Kentucky Ordnance Works sites);
- CRP;
- SMP;
- CERCLA Five-Year Review; and
- Plant Industrial Area Vapor Intrusion Assessment.

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**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025¹¹**

**PROJECT: WAGs 1 and 7 (C-746-K Landfill, TCE Spill Sites,
Underground Storage Tanks, and Kentucky Ordnance Works Sites)**

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

- Continued monitoring around the C-746-K Landfill, as required by the *Record of Decision for Waste Area Groups 1 and 7 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1470&D3. Appendix C contains a map depicting MW locations for the C-746-K Landfill and graphical presentations of TCE concentrations in these wells over time.
- Conducted inspections of warning signs, riprap, and deed notice/restrictions at the C-746-K Landfill, as required by the *Record of Decision for Waste Area Groups 1 and 7 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1470&D3.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Monitoring will continue around C-746-K Landfill, as required by the ROD. This monitoring is conducted and reported in accordance with other site programs, such as the Environmental Monitoring Program.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

- Reporting responsibility for the work to be performed in support of WAGs 1 and 7 belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- None.

¹¹ The analytical data included in this report lags operational data by three months due to sample analysis time and the data assessment process.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- Sampling activities for the C-746-K Landfill have been incorporated into the Environmental Monitoring Program. O&M cost for this project is not tracked separately.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

PROJECT: Community Relations Plan

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- No activities were performed for this project during this reporting period.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- No activities are scheduled for this project during the upcoming reporting period.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the CRP belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met.
- V. Primary/Secondary Document Tracking System:**
- A) Documents under review and/or preparation for this reporting period:**
- None.
- B) Due dates for completion of review/modification tasks:**
- None.
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):**
- None.
- VII. Summary of all contacts with local community, public interest groups, or state government:**
- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

PROJECT: Site Management Plan

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- Finalized and submitted the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D1, to EPA and KDEP on November 13, 2024.
 - Received EPA and KDEP comments on the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D1, on November 21, 2024, and December 2, 2024, respectively.
 - Developed and submitted the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2, to EPA and KDEP on December 12, 2024.
 - Received EPA and KDEP concurrence on the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2, on December 13, 2024.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Initiate scoping meetings for the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2026*, with EPA and KDEP in May 2025.
- **III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the SMP belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D1, was under development, and the document was under review by EPA and KDEP during this reporting period.
- *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2025*, DOE/LX/07-2508&D2, was under development, and the document was under review and approved by EPA and KDEP during this reporting period.

B) Due dates for completion of review/modification tasks:

- None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

PROJECT: CERCLA Five-Year Review

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- No activities were performed for this project during this reporting period.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- No activities are scheduled for this project during the upcoming reporting period.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the Five-Year Review belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules are being met.
- V. Primary/Secondary Document Tracking System:**
- A) Documents under review and/or preparation for this reporting period:**
- None.
- B) Due dates for completion of review/modification tasks:**
- None.
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):**
- None.
- VII. Summary of all contacts with local community, public interest groups, or state government:**
- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

**FEDERAL FACILITY AGREEMENT
SEMIANNUAL PROGRESS REPORT
FIRST HALF OF FISCAL YEAR 2025**

**Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 10/1/2024–3/31/2025**

PROJECT: Plant Industrial Area Vapor Intrusion Assessment

- I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):**
- No activities were scheduled for this project during this reporting period.
- II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):**
- Evaluate the vapor intrusion pathway to a building or proposed building if or when the use of an occupiable building at the Paducah Site changes, a new building is constructed, or a parcel of land is transferred for a different use, consistent with the requirements in the RMD.
- III. Identity and assigned tasks of DOE contractors for work to be performed for this project:**
- Reporting responsibility for the work to be performed in support of the Plant Industrial Area Vapor Intrusion Assessment subproject belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.
- IV. Statement of the manner and extent to which the requirements and time schedules are being met:**
- The requirements and time schedules related to the Plant Industrial Area Vapor Intrusion subproject are being met.
- V. Primary/Secondary Document Tracking System:**
- A) Documents under review and/or preparation for this reporting period:**
- None.
- B) Due dates for completion of review/modification tasks:**
- None.
- VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):**
- None.

VII. Summary of all contacts with local community, public interest groups, or state government:

- DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

- EPA designated Brian Begley to the position of FFA manager for the Paducah Site, effective February 27, 2025.

IX. Actual cost for O&M, if appropriate:

- None.

APPENDIX A

NORTHEAST AND NORTHWEST PLUME WATER WITHDRAWAL REPORTS

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**Table A.1. Northeast Plume Containment System Water Withdrawal Reporting Form
(Gal of Water Pumped)**

Day	July 2024	August 2024	September 2024	October 2024	November 2024	December 2024
1	251,521	246,872	251,144	256,819	253,711	251,158
2	249,489	253,705	251,144	257,842	253,711	251,157
3	247,126	253,705	251,143	239,446	253,711	254,825
4	252,678	253,705	244,119	254,102	253,709	255,367
5	252,678	253,704	253,438	254,102	254,924	242,272
6	252,678	251,524	235,778	254,102	252,698	251,433
7	252,678	252,286	235,778	254,098	255,040	251,433
8	252,678	249,113	235,778	252,838	253,392	251,433
9	257,374	252,244	235,777	245,302	253,392	251,434
10	272,861	252,244	249,116	247,417	253,392	244,572
11	224,300	252,244	248,930	256,799	253,390	254,482
12	254,675	252,243	260,148	256,799	237,499	249,733
13	254,675	249,552	251,120	256,799	251,709	252,612
14	254,675	253,166	251,120	256,797	255,100	252,612
15	254,671	250,640	251,120	242,763	251,285	252,612
16	245,676	254,398	251,116	249,696	251,285	252,612
17	255,557	254,398	257,334	251,551	251,285	243,655
18	261,882	254,398	246,995	253,605	251,282	252,230
19	248,448	254,398	242,364	253,605	253,865	250,639
20	248,448	243,101	251,294	253,605	254,113	257,260
21	248,448	258,309	251,294	253,607	251,217	257,260
22	248,446	252,533	251,294	243,784	253,846	257,260
23	250,202	252,960	251,295	253,611	253,846	257,259
24	252,204	252,960	259,238	252,922	253,846	252,145
25	255,134	252,960	248,727	252,291	253,845	252,145
26	251,933	252,961	259,175	252,291	250,360	252,144
27	251,933	245,030	250,524	252,291	251,158	261,238
28	251,933	256,211	250,524	252,291	251,158	261,238
29	251,933	248,648	250,524	238,998	251,158	261,238
30	249,886	251,144	250,523	250,044	251,158	261,236
31	254,141	251,144		250,032		214,275
Monthly Total	7,810,961	7,812,500	7,477,874	7,800,249	7,570,085	7,810,969
Daily Average	251,966	252,016	249,262	251,621	252,336	251,967

Total (July 2024–December 2024) = 46,282,638 gal
Average (July 2024–December 2024) = 251,536 gal per day (gpd)

**Table A.2. Northwest Plume Groundwater System Water Withdrawal Reporting Form
(Gal of Water Pumped)**

Day	July 2024	August 2024	September 2024	October 2024	November 2024	December 2024
1	283,397	282,866	287,040	285,976	285,171	283,099
2	282,756	284,574	287,040	282,446	285,171	283,101
3	251,936	284,574	287,040	281,026	285,171	282,796
4	201,364	284,574	266,856	284,174	285,171	286,256
5	210,283	284,572	286,186	284,174	282,266	278,506
6	257,852	282,896	283,114	284,174	283,786	282,996
7	257,852	283,716	283,114	284,172	282,746	282,996
8	257,852	282,696	283,114	284,166	283,886	282,996
9	276,950	284,211	283,112	279,736	283,886	193,805
10	279,846	284,211	281,836	280,116	283,886	-
11	283,226	284,211	288,566	285,556	283,886	55,001
12	284,516	284,211	280,926	285,556	280,446	247,746
13	284,516	281,786	283,189	285,556	283,416	280,059
14	284,516	284,296	283,189	285,556	285,116	280,059
15	284,516	265,618	283,189	280,016	282,754	280,059
16	281,626	156,935	283,187	281,756	282,754	268,165
17	282,516	156,935	283,966	281,856	282,754	281,346
18	287,586	156,935	283,216	284,001	282,752	282,976
19	282,846	255,046	280,836	284,001	285,076	283,086
20	282,846	280,706	284,784	284,001	283,096	285,931
21	282,846	284,736	284,784	284,001	283,556	285,931
22	282,846	286,736	284,784	279,076	284,071	285,931
23	282,226	284,156	284,782	284,546	284,071	285,931
24	283,576	284,156	281,826	247,331	284,071	283,606
25	286,746	284,156	270,524	282,831	284,071	283,606
26	281,711	284,156	274,216	282,831	281,926	283,606
27	275,765	279,666	282,619	282,831	283,099	275,976
28	281,711	286,446	282,619	282,831	283,099	275,976
29	281,711	281,146	282,619	285,306	283,099	275,976
30	283,666	287,040	282,617	280,676	283,099	246,246
31	283,926	287,040		282,036		244,666
Monthly Total	8,505,528	8,375,003	8,474,890	8,742,311	8,507,352	8,028,429
Daily Average	274,372	270,161	282,496	282,010	283,578	258,982

Total (July 2024–December 2024) = 50,633,513 gal

Average (July 2024–December 2024) = 275,182 gpd

APPENDIX B

NORTHEAST PLUME AND NORTHWEST PLUME GRAPHS, DATA, AND MAPS (FIGURES B.1 THROUGH B.30)

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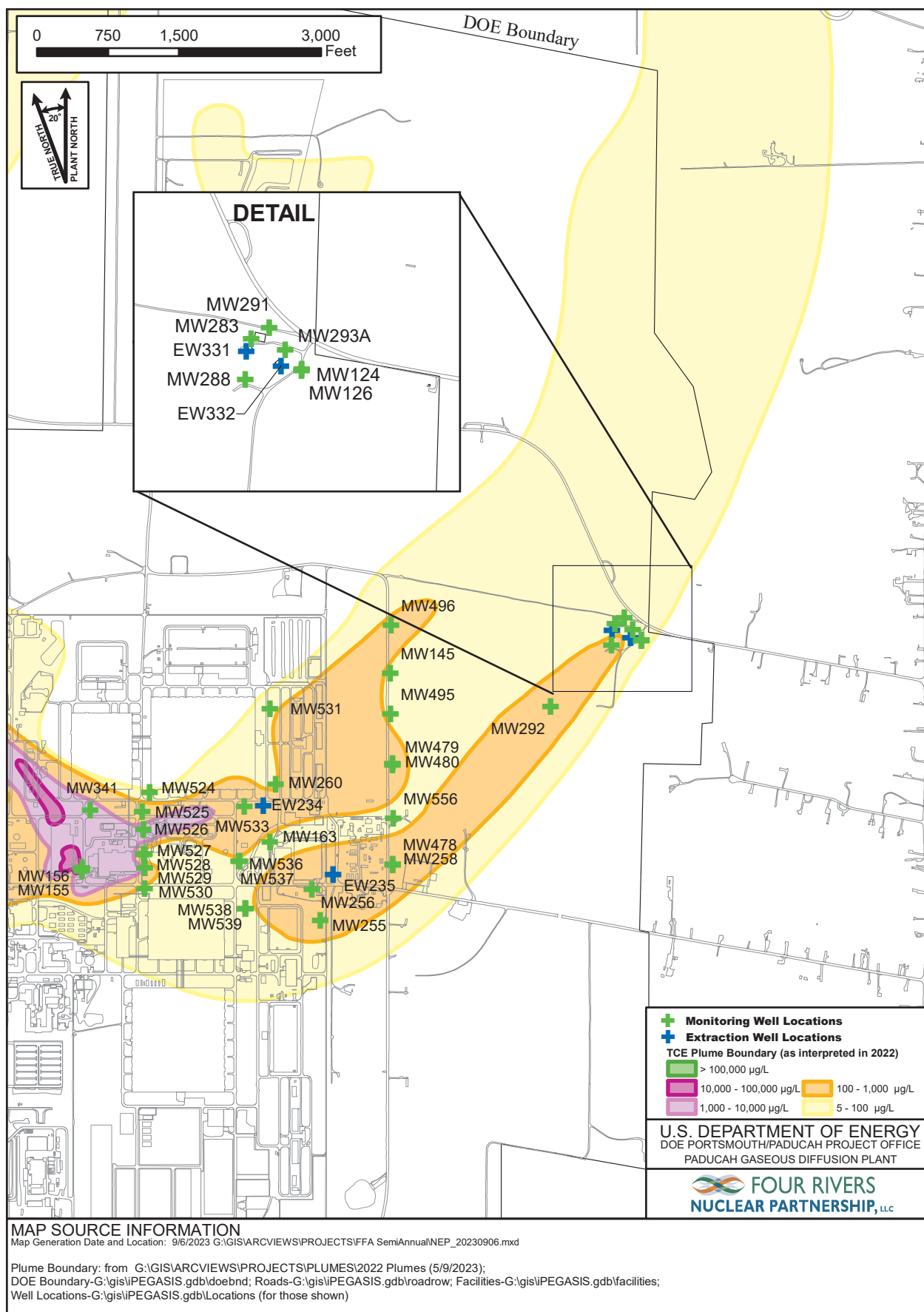
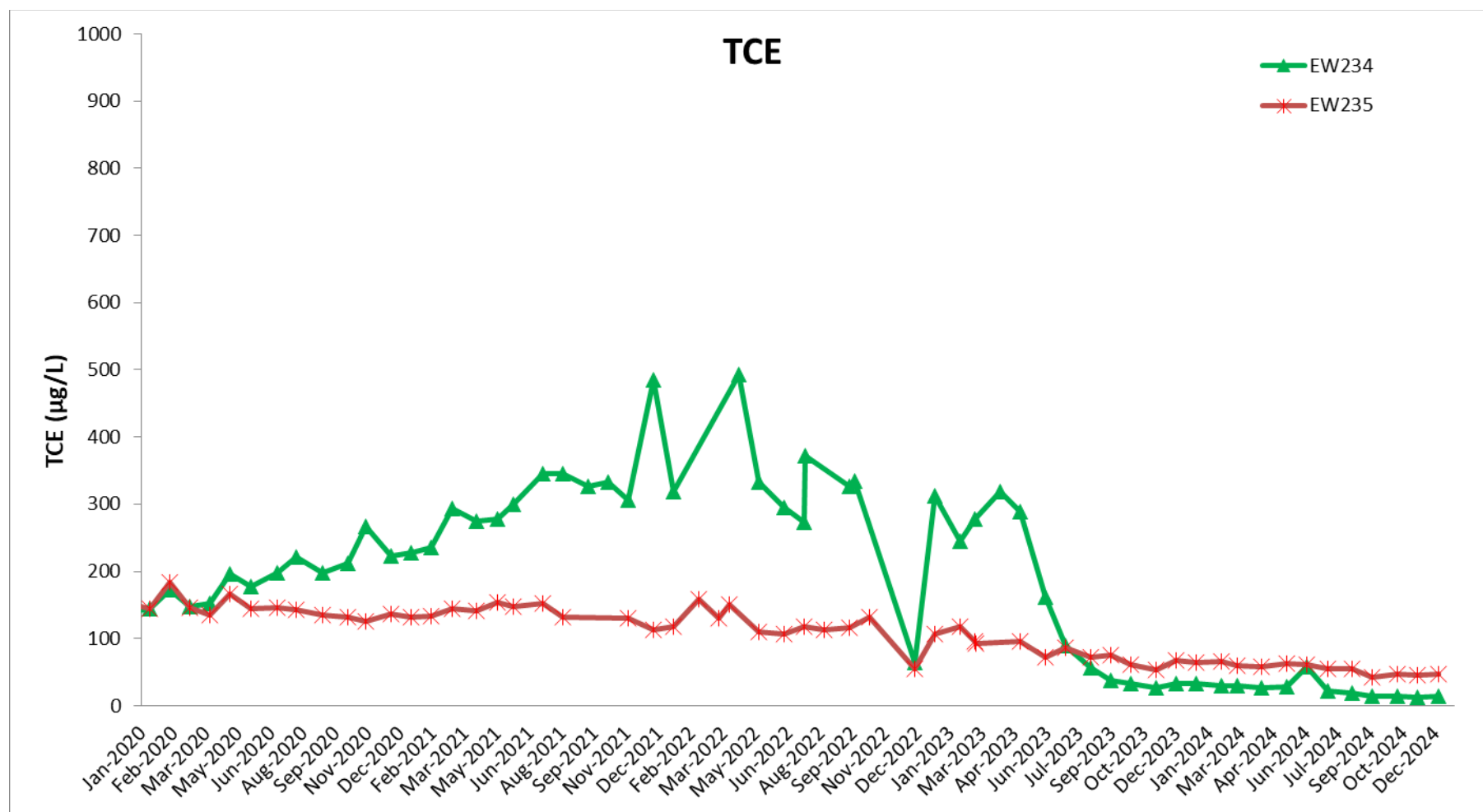


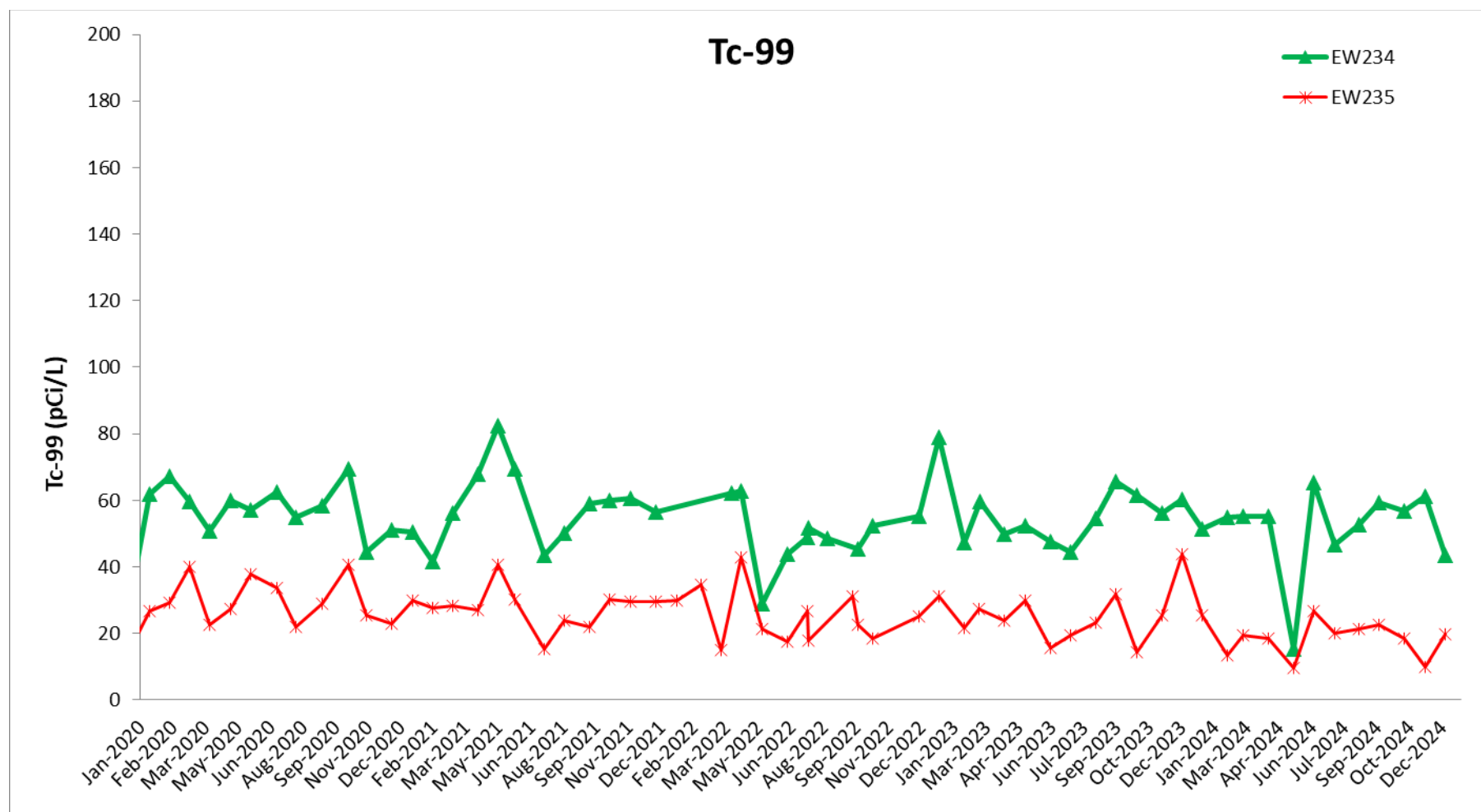
Figure B.1. Northeast Plume Groundwater Wells and Extraction Wells



NOTE: Data rejected by validation or assessment have not been graphed.

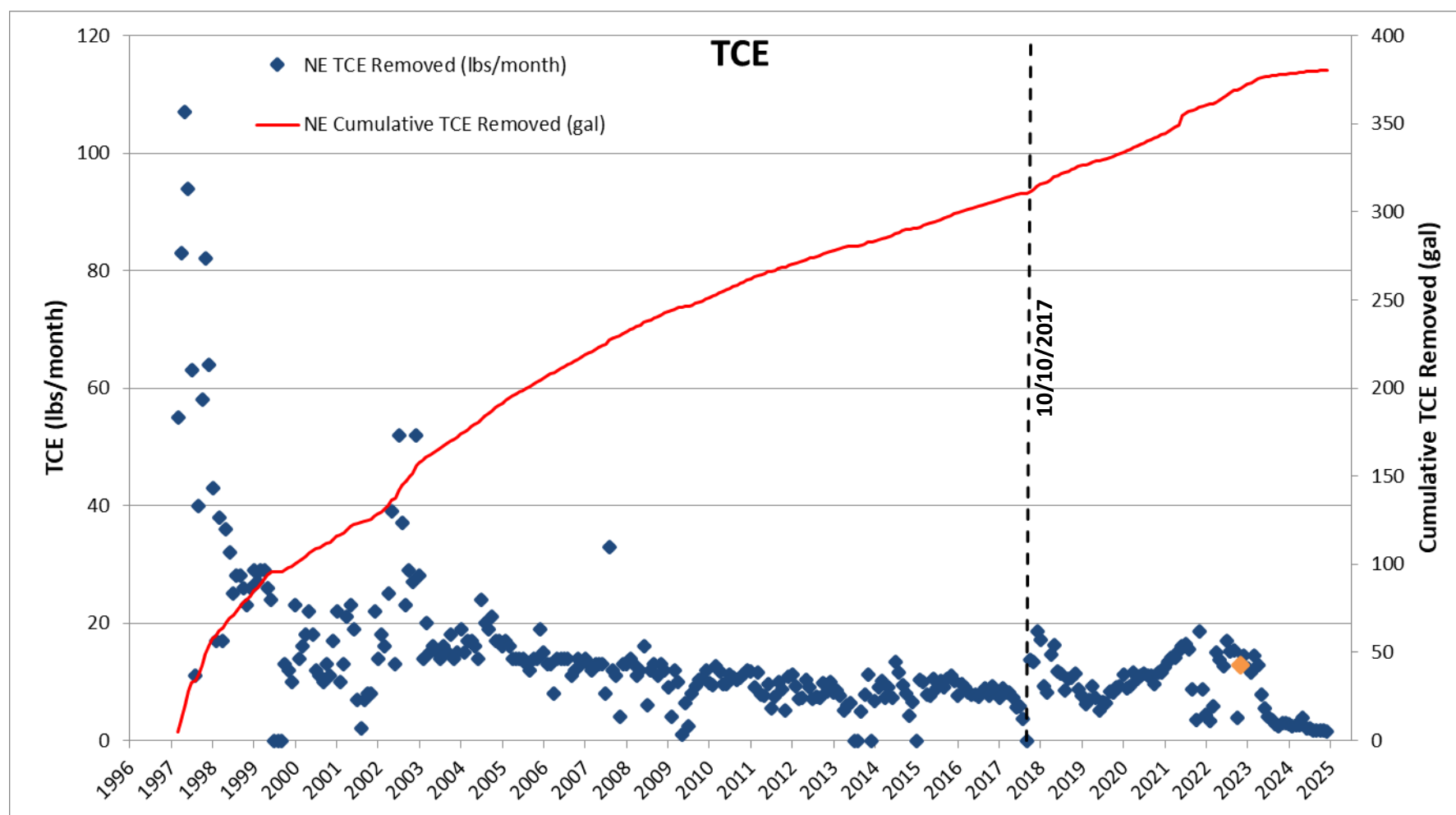
*TCE influent data was not collected from EW234 and EW235 for November 2022.

Figure B.2. Northeast Plume Containment System Influent TCE Concentrations



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.3. Northeast Plume—Tc-99 Activities in Extraction Wells



NOTE: Data rejected by validation or assessment have not been graphed.

◆ TCE influent data was not collected from EW234 and EW235 for November 2022. The average useable data for the rest of the reporting period [July 2022 – December 2022 (282 $\mu\text{g/L}$)] was used to calculate lbs of TCE removed.

Figure B.4. Northeast Plume Containment System TCE Removed

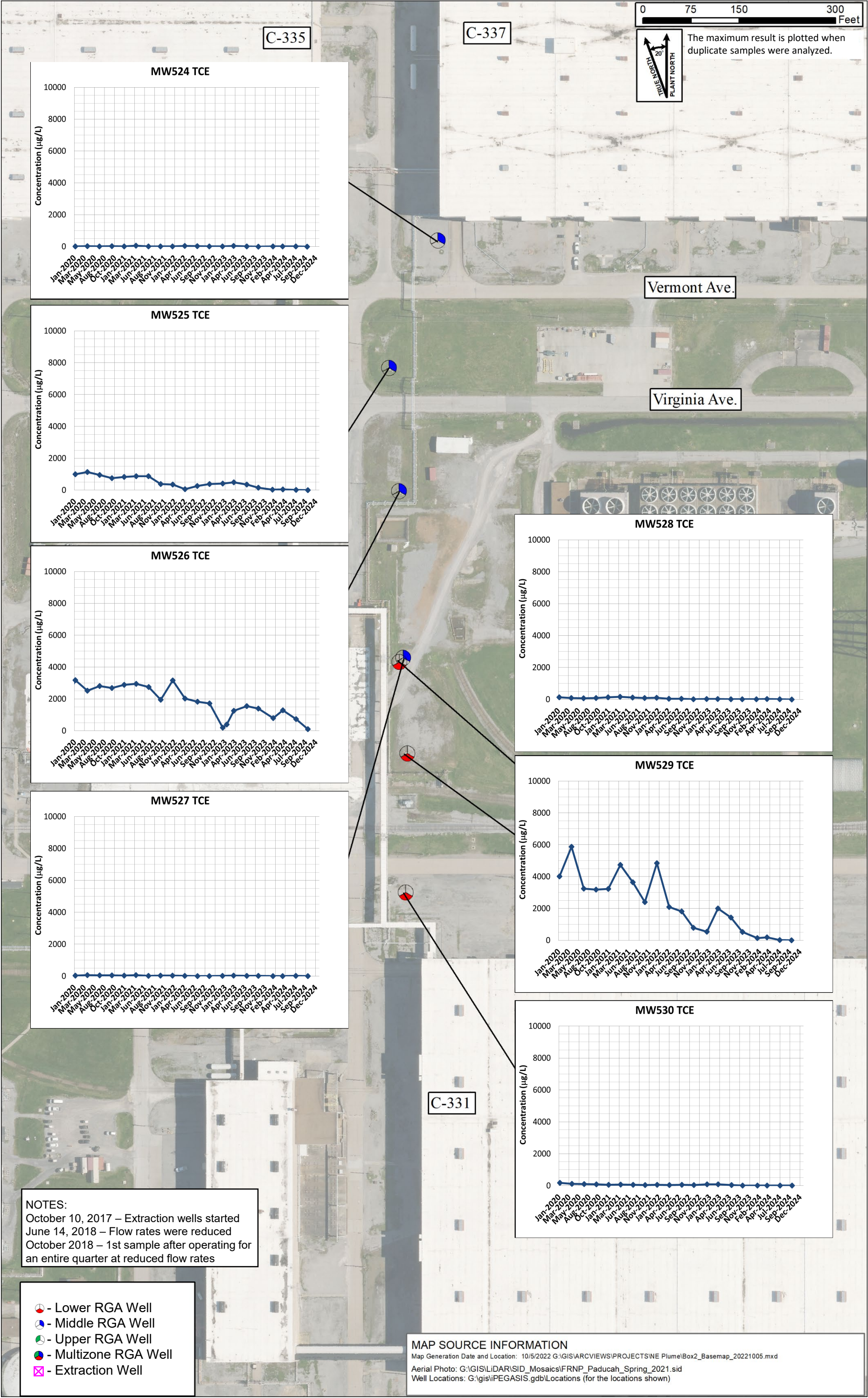


Figure B.5. Northeast Plume—Upgradient Transect Wells - TCE Trends

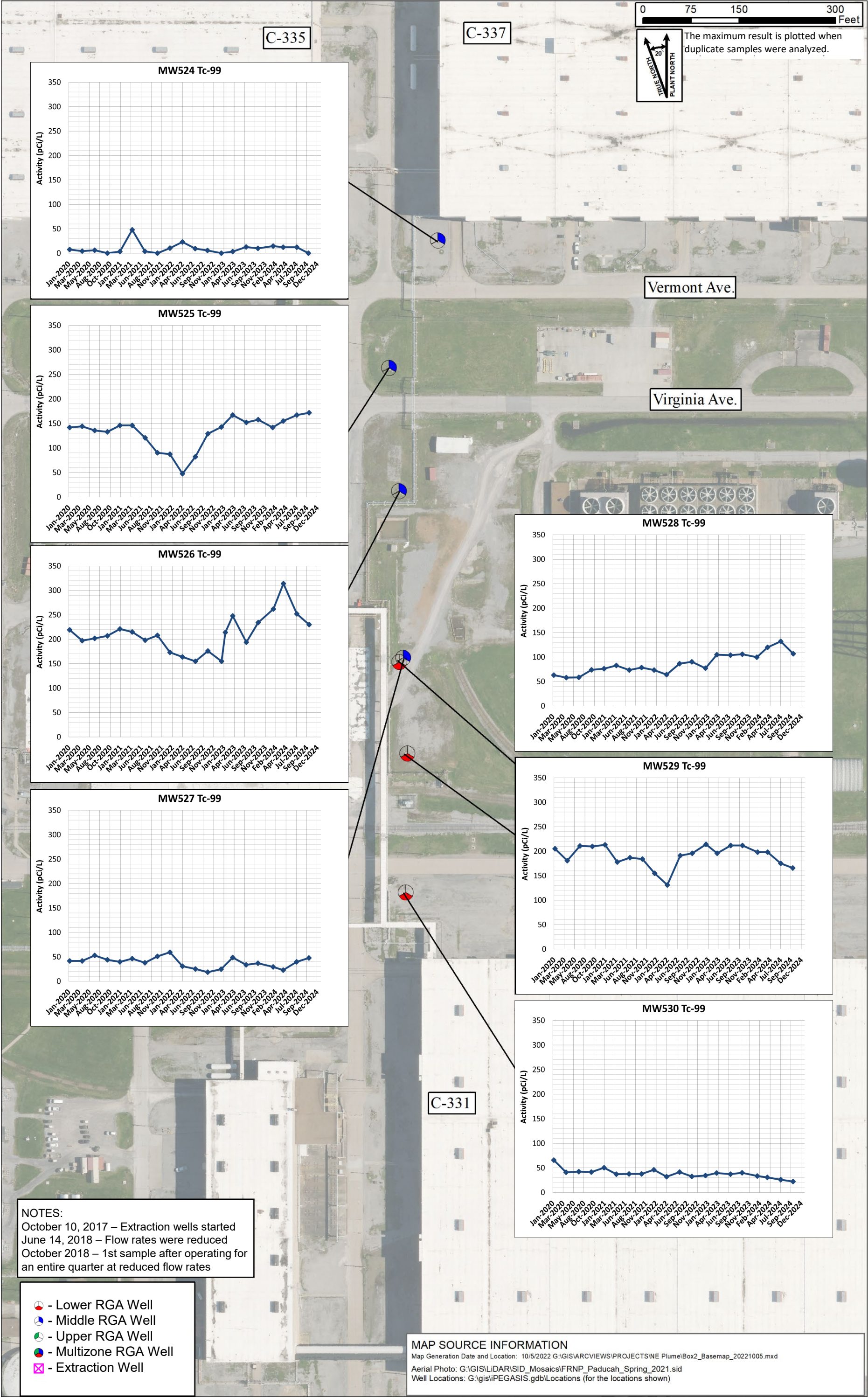


Figure B.6. Northeast Plume—Upgradient Transect Wells – Tc-99 Trends

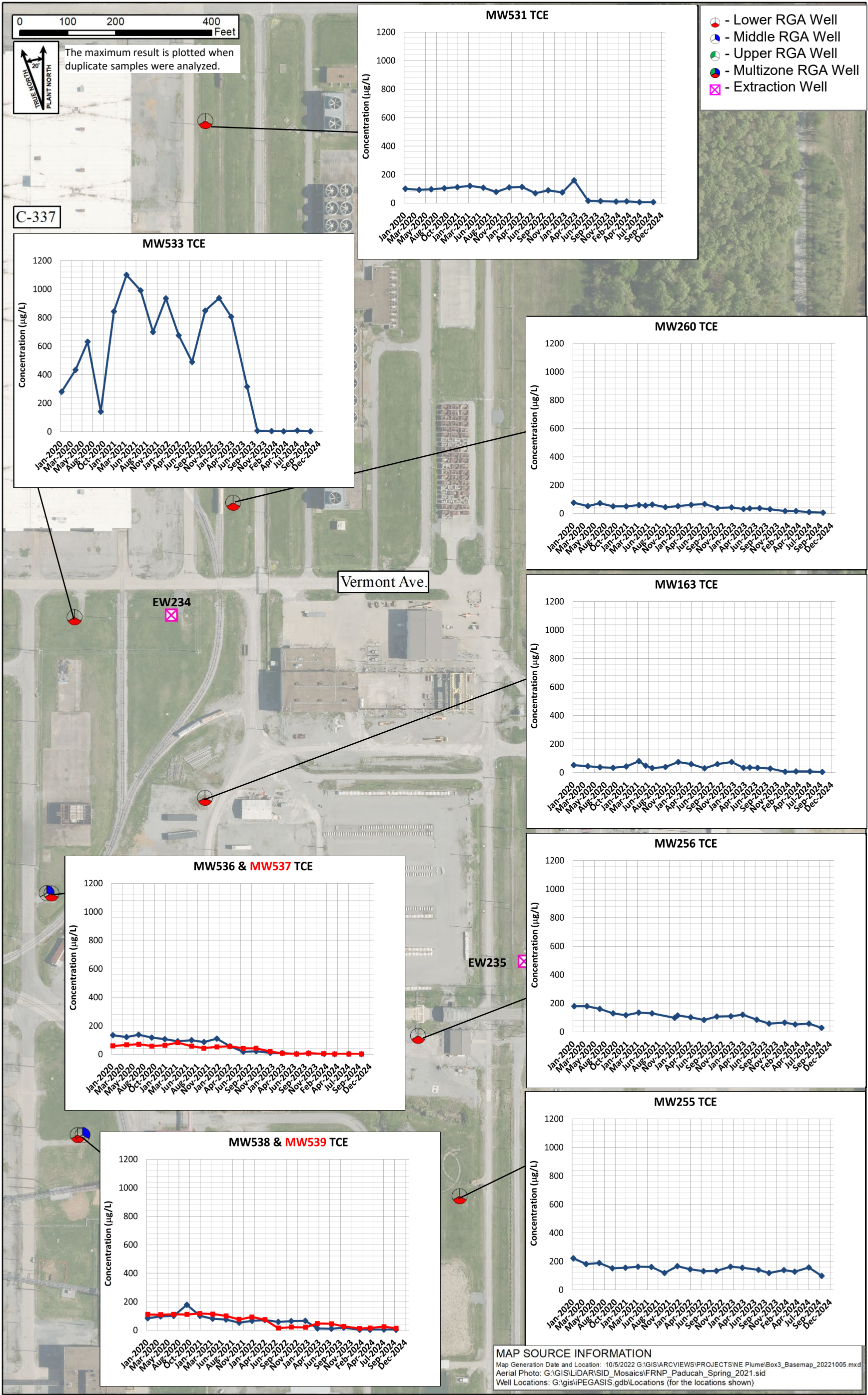


Figure B.7. Northeast Plume—Monitoring Wells near Extraction Wells—TCE Trends

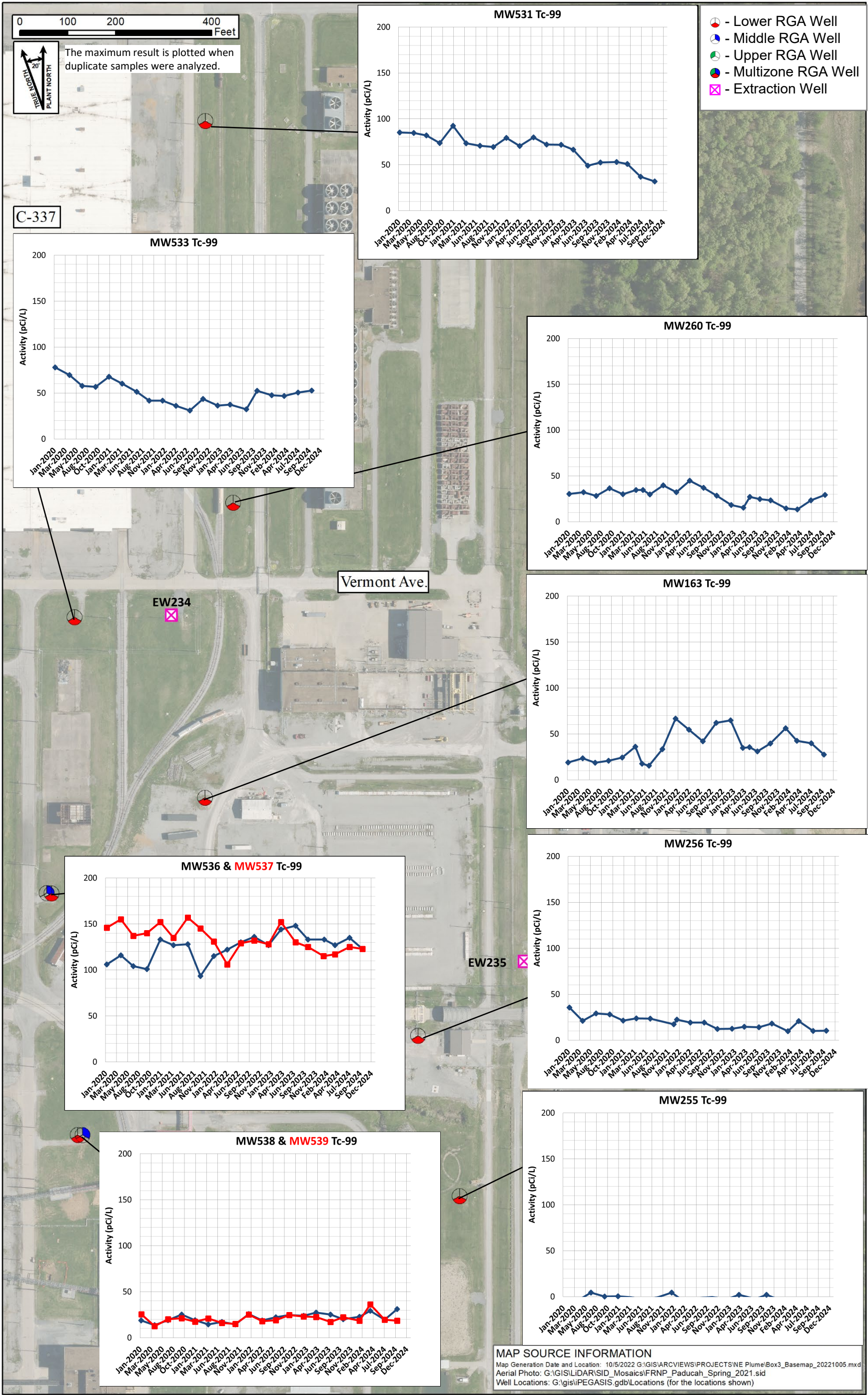


Figure B.8. Northeast Plume—Monitoring Wells near Extraction Wells—Tc-99 Trends

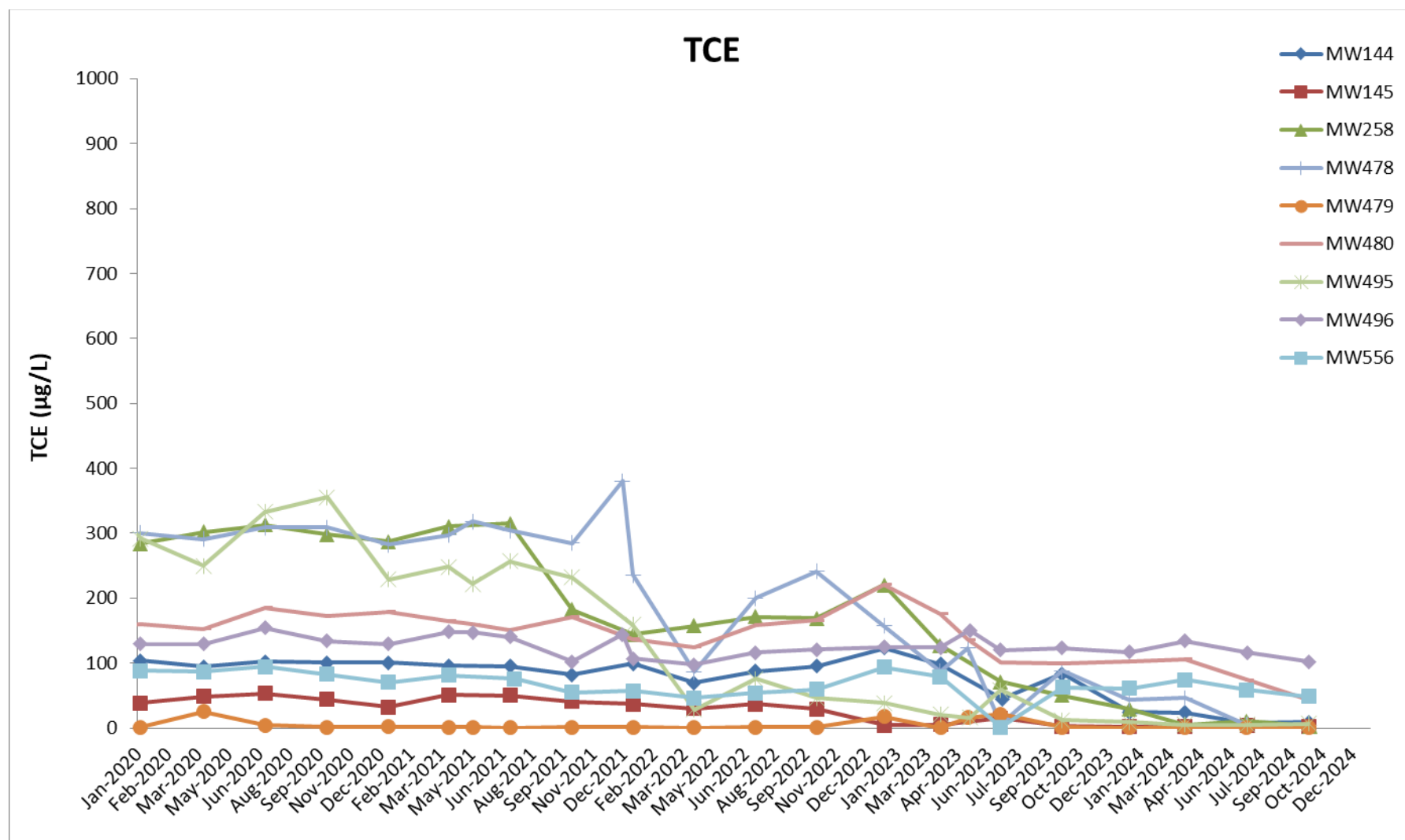


Figure B.9. Northeast Plume—TCE Concentrations in Downgradient Wells

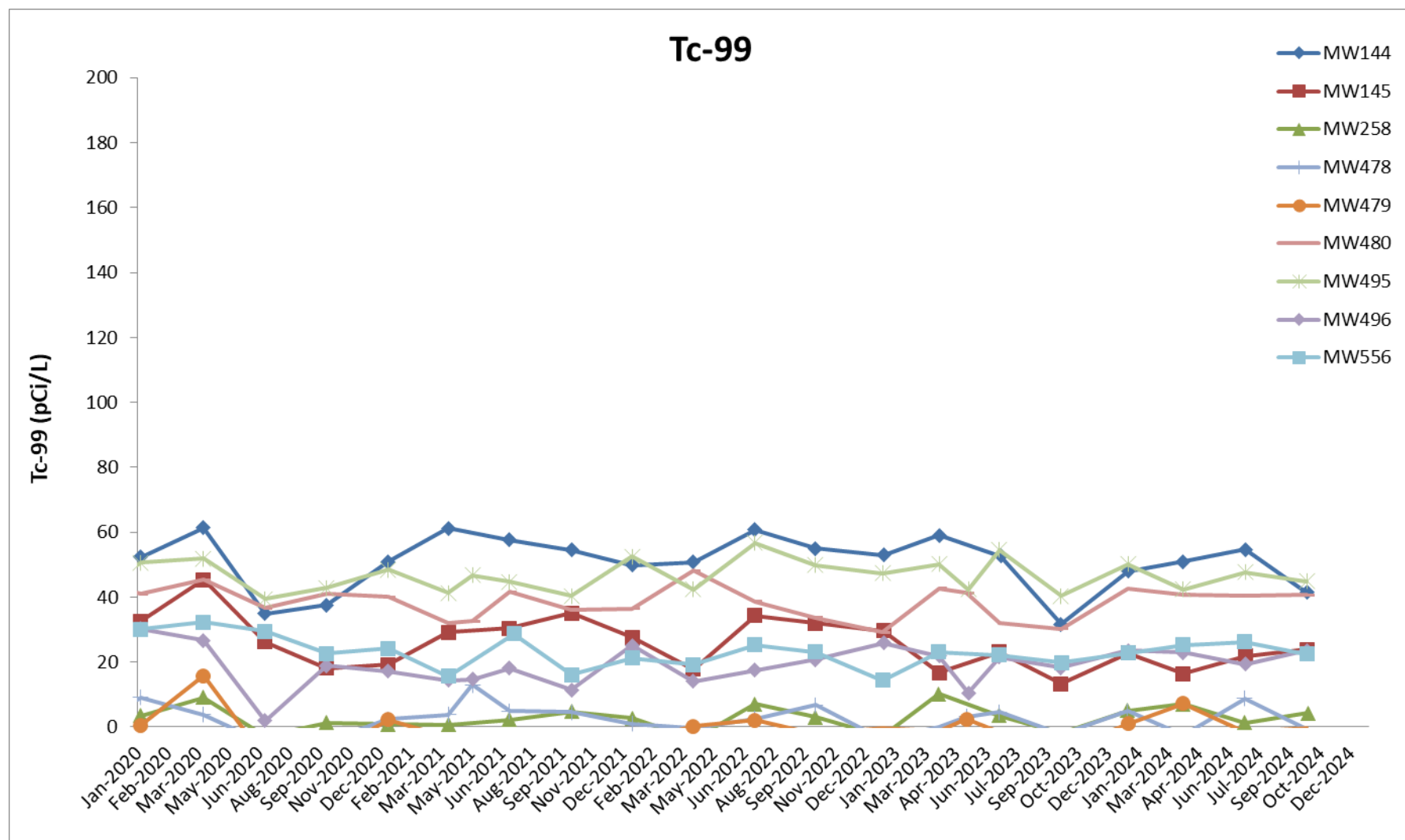
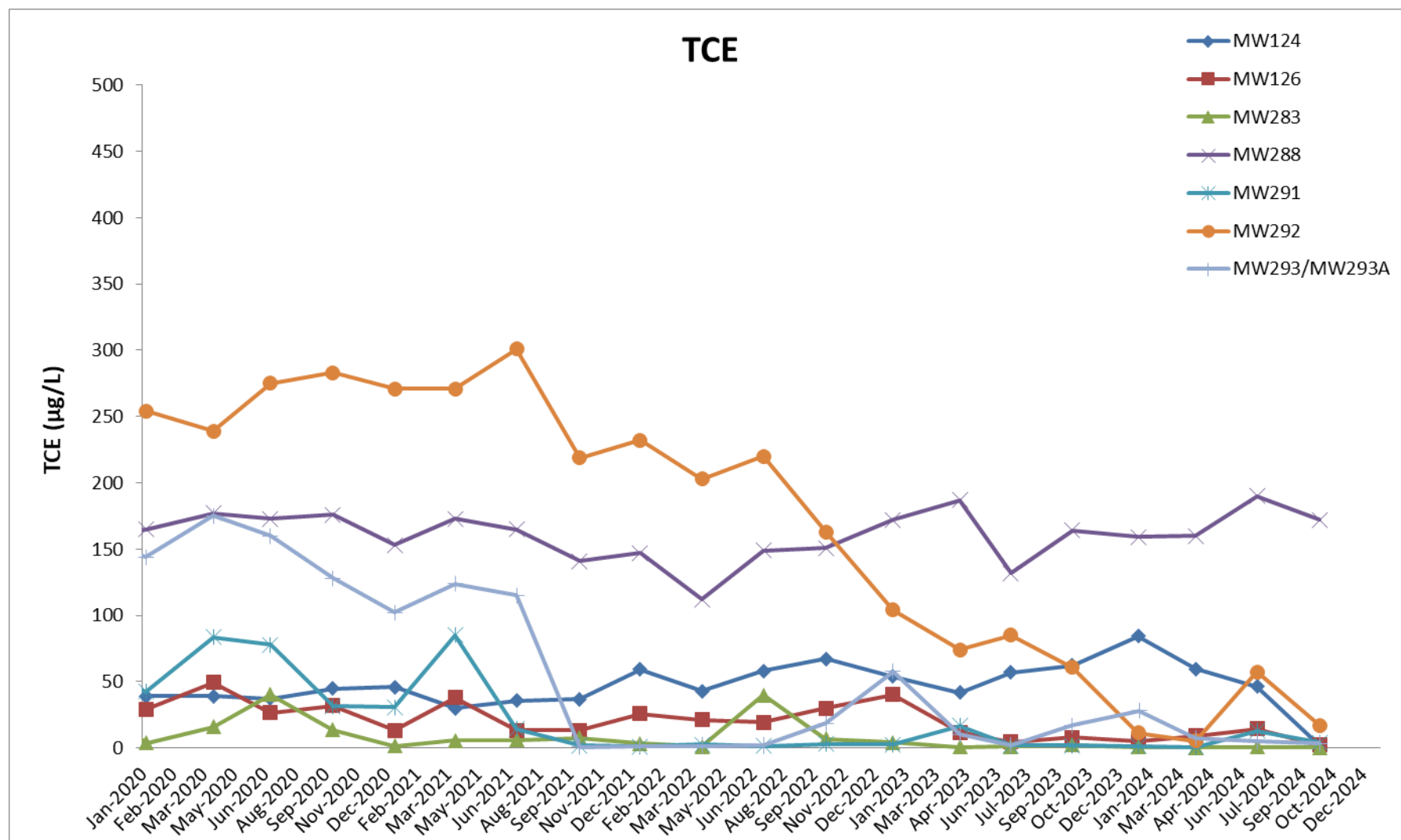


Figure B.10. Northeast Plume—Tc-99 Activities in Downgradient Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.11. Northeast Plume—TCE Concentrations in Distal Downgradient Wells

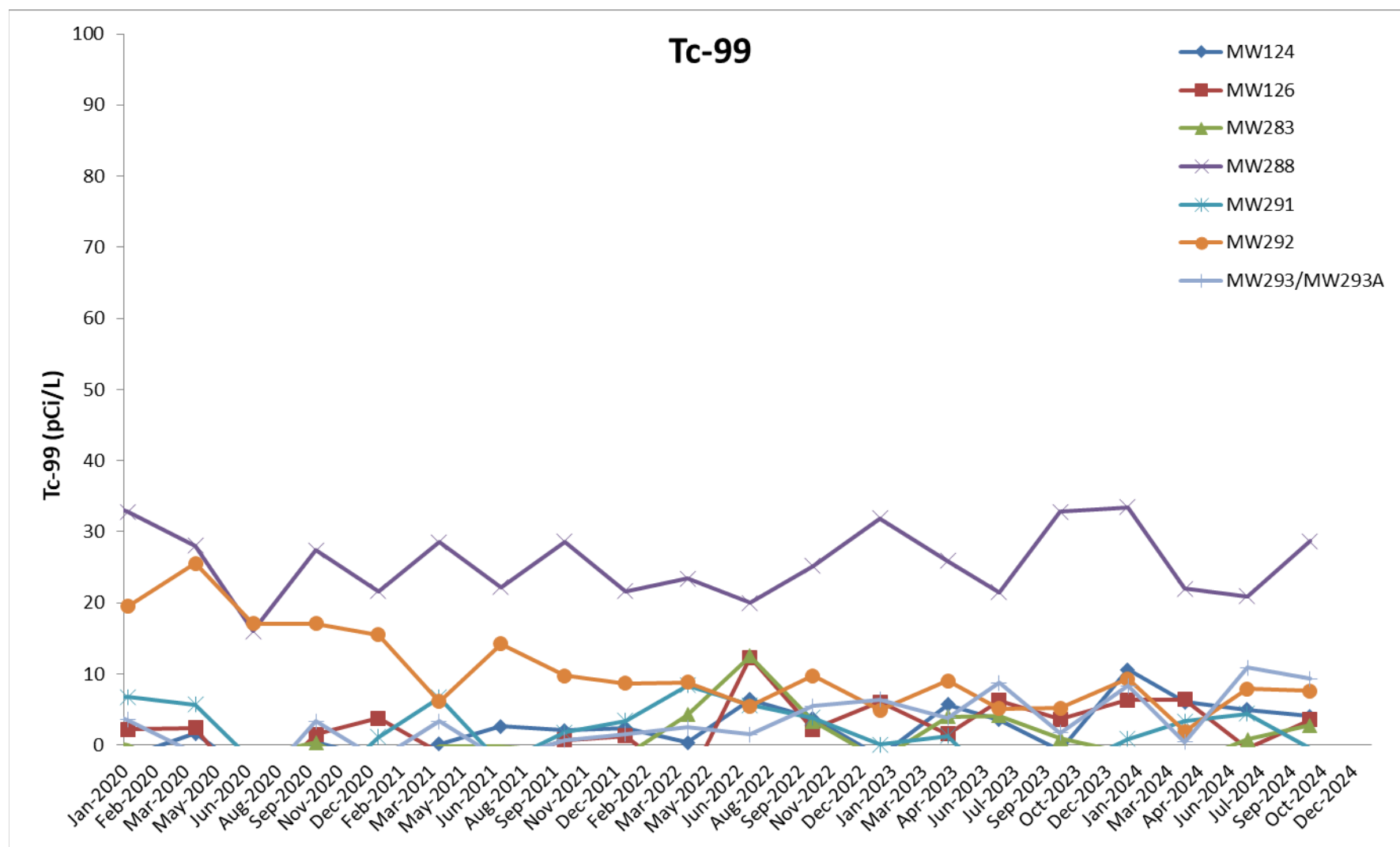
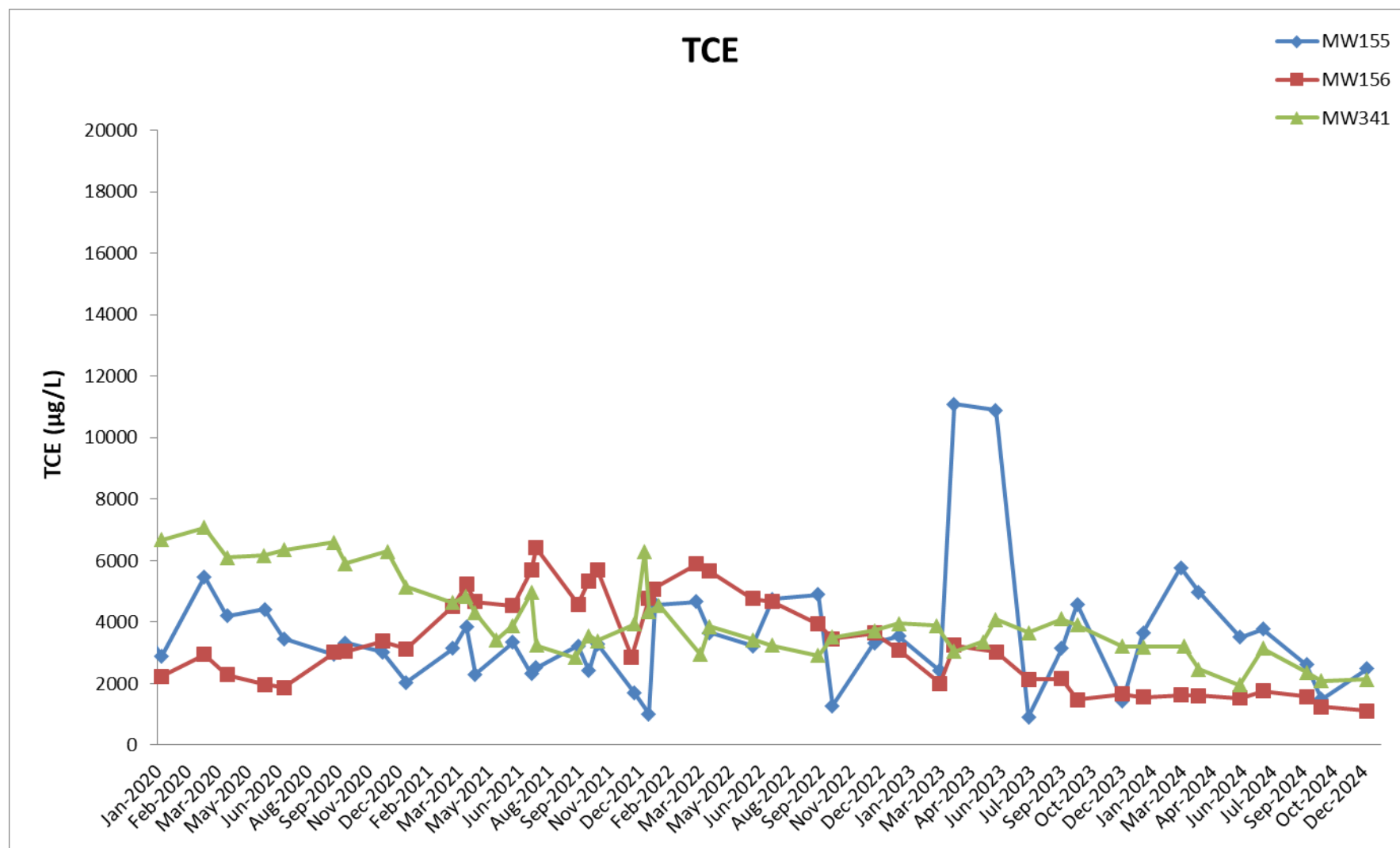
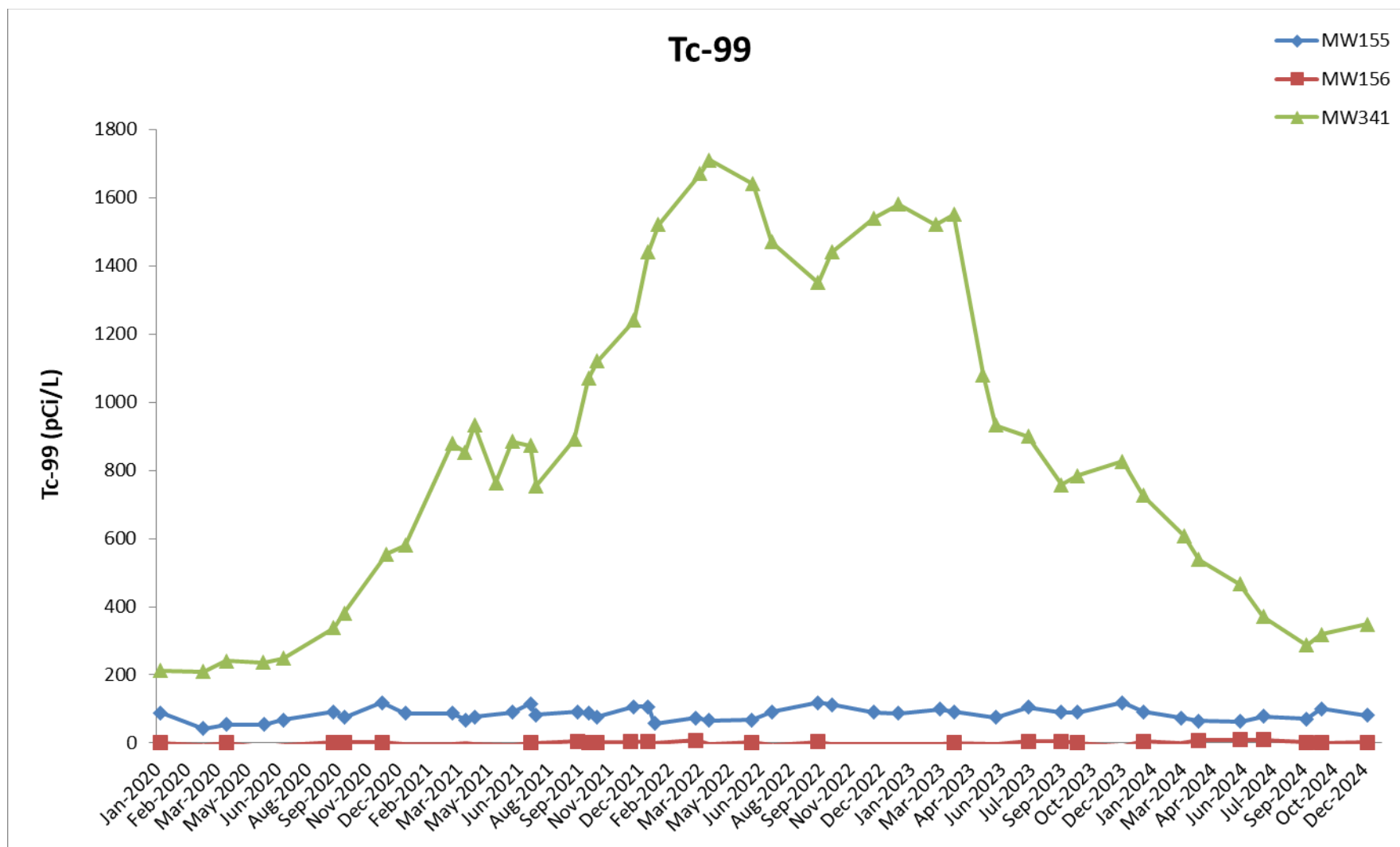


Figure B.12. Northeast Plume—Tc-99 Activities in Distal Downgradient Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.13. Northeast Plume—TCE Activities in Wells near C-400 Complex



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.14. Northeast Plume—Tc-99 Activities in Wells near C-400 Complex

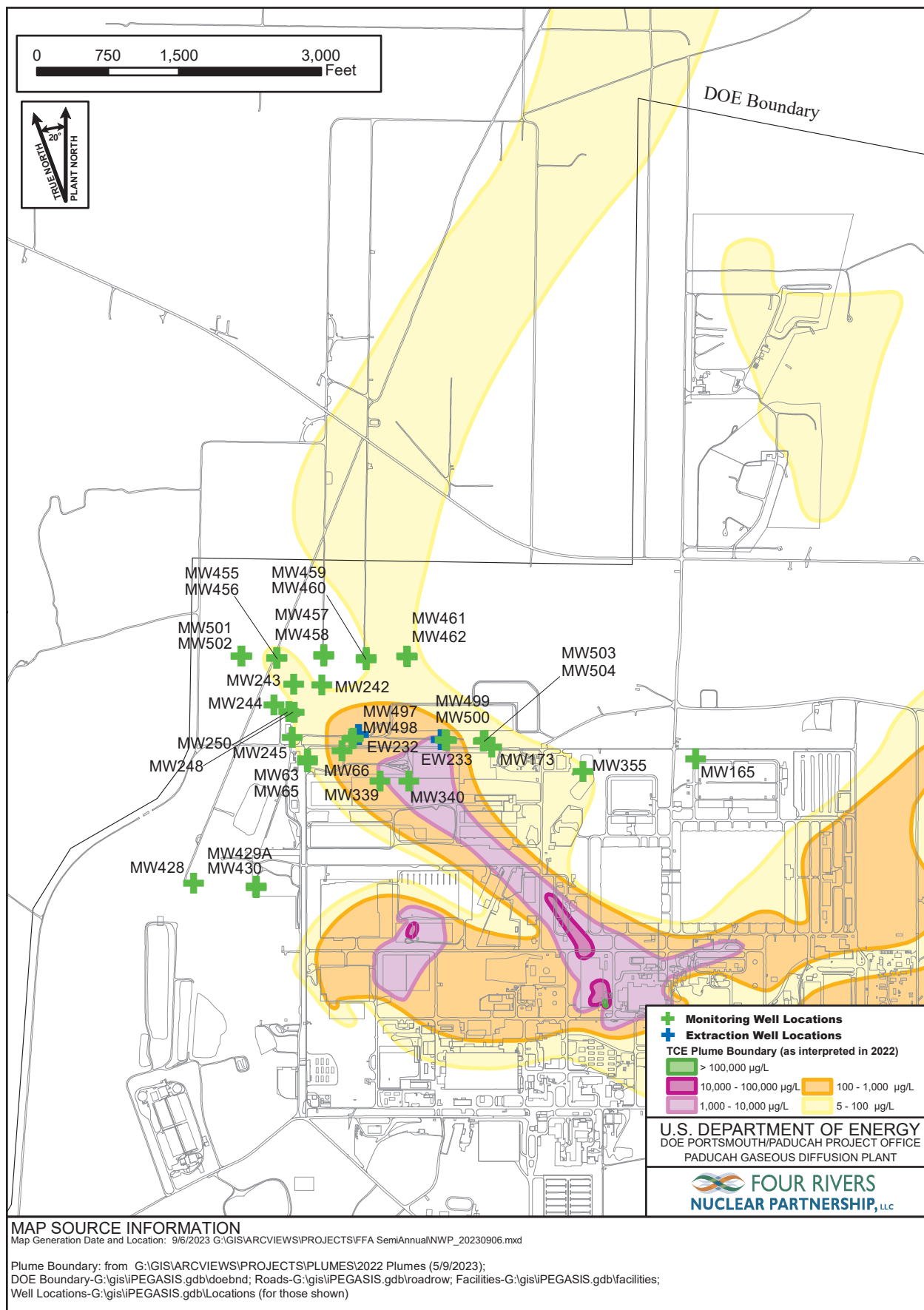
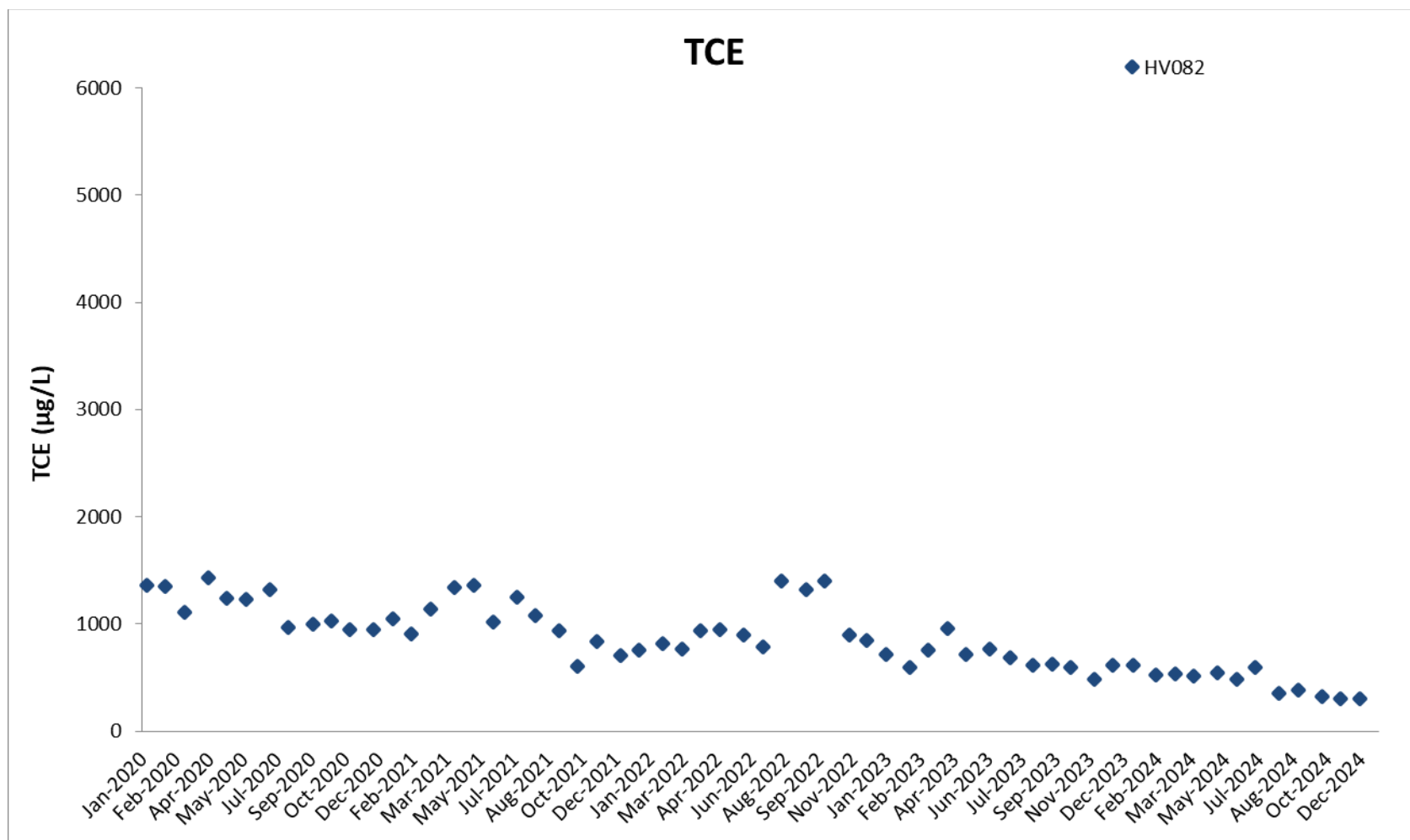
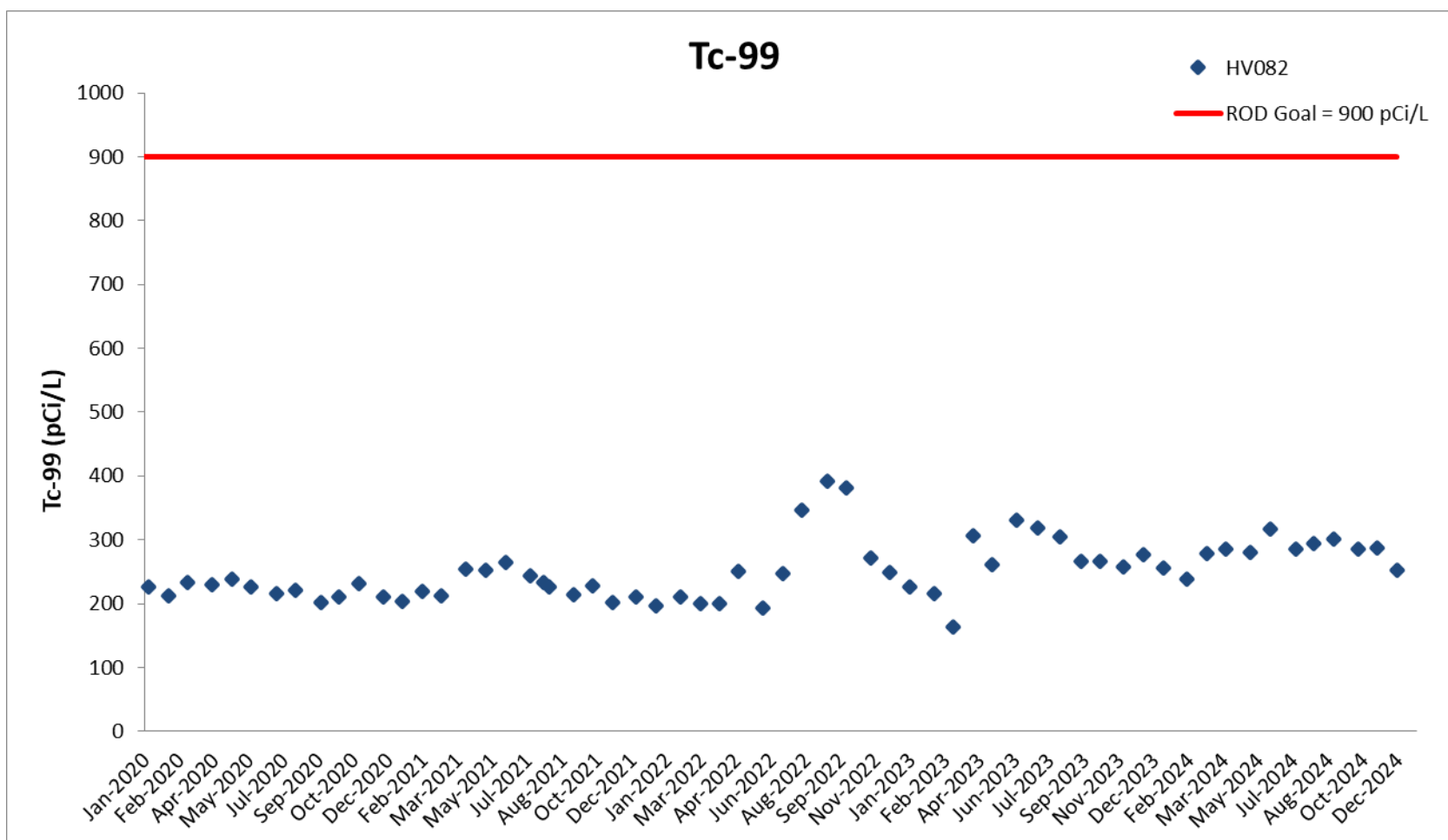


Figure B.15. Northwest Plume Groundwater Wells



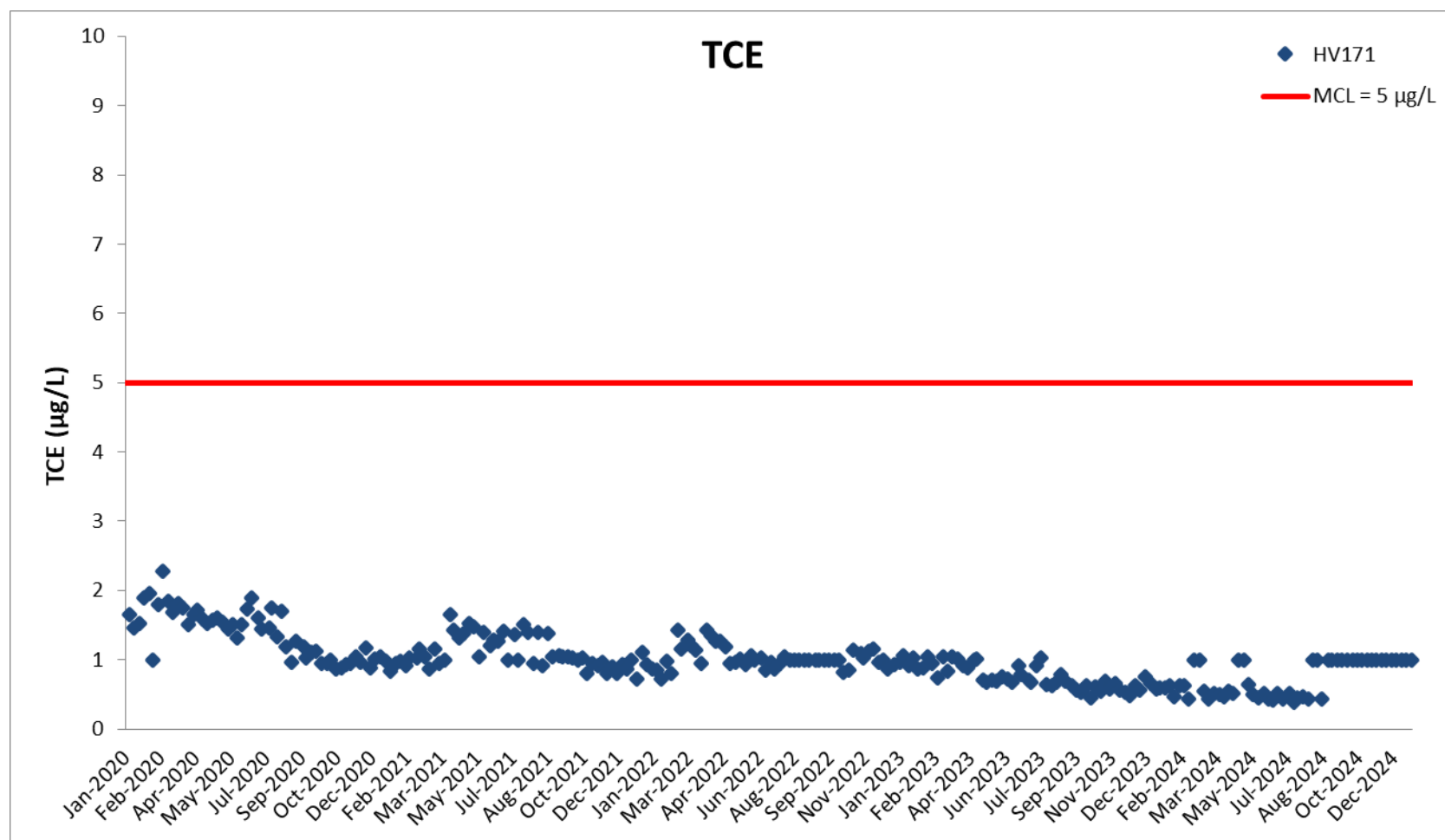
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.16. Northwest Plume Groundwater System Influent TCE Concentrations



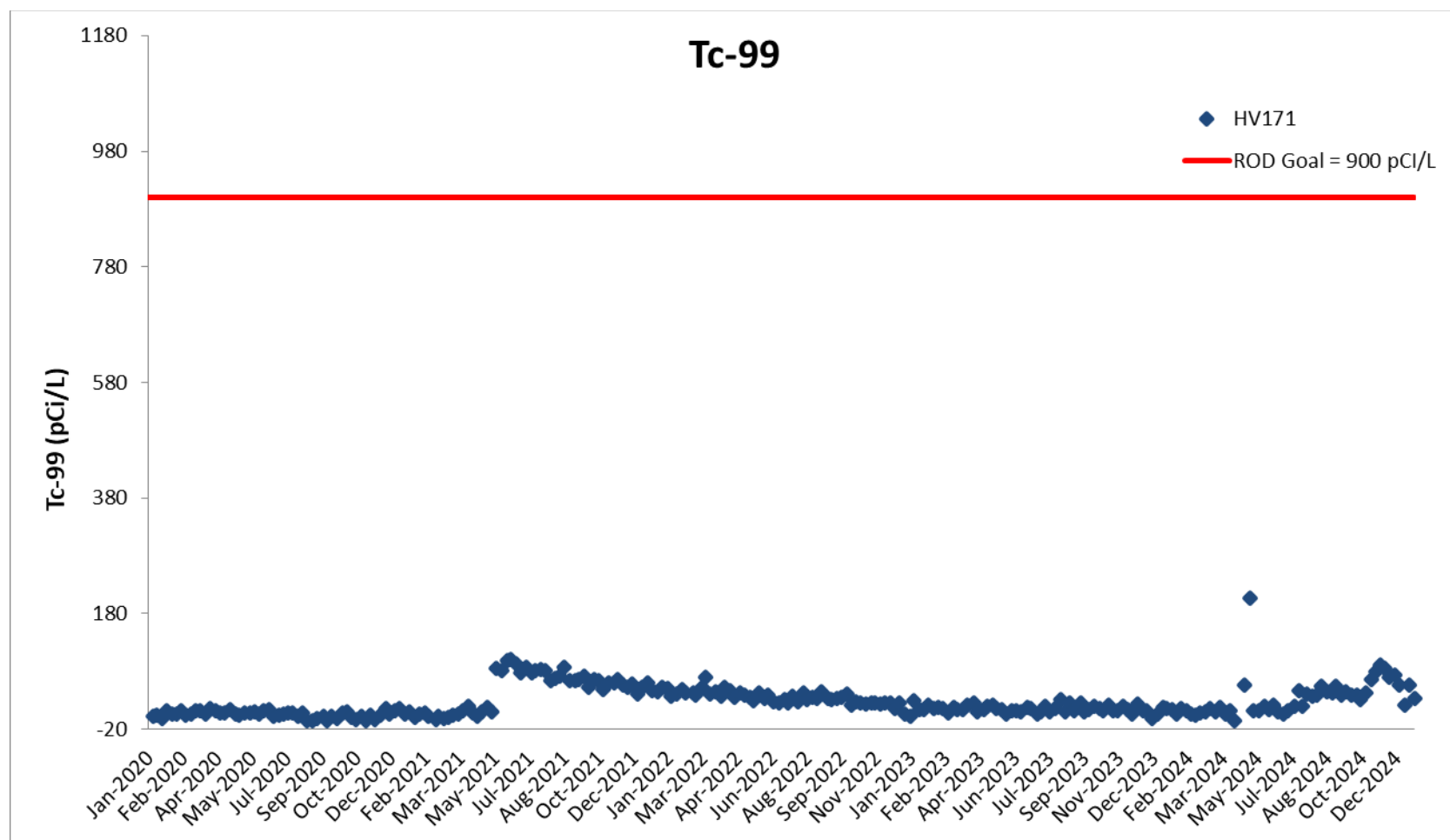
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.17. Northwest Plume Groundwater System Influent Tc-99 Activities



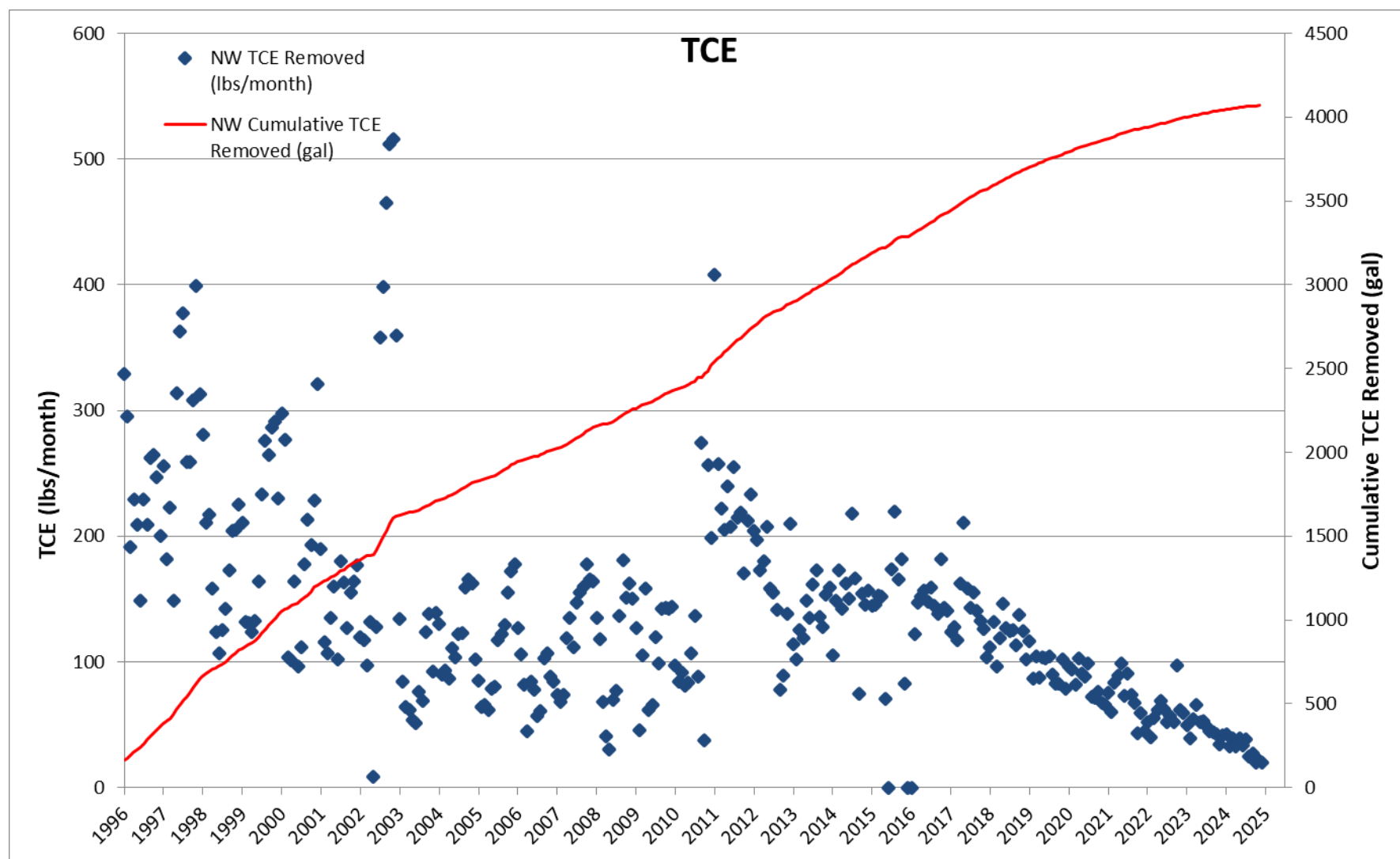
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.18. Northwest Plume Groundwater System Effluent TCE Concentrations



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.19. Northwest Plume Groundwater System Effluent Tc-99 Activities



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.20. Northwest Plume Groundwater System TCE Removed

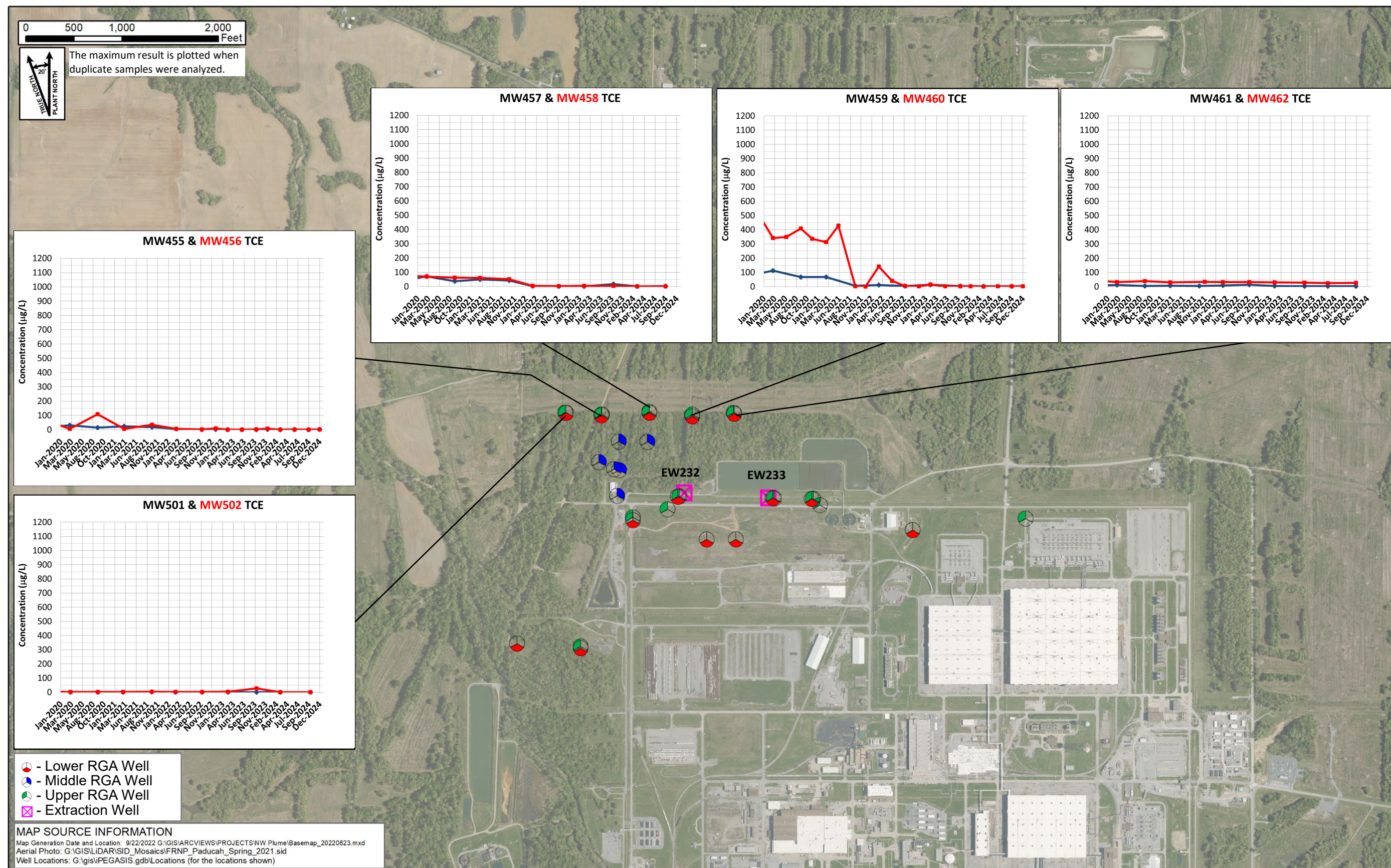


Figure B.21. Northwest Plume—Downgradient of New Well Field—TCE Trends

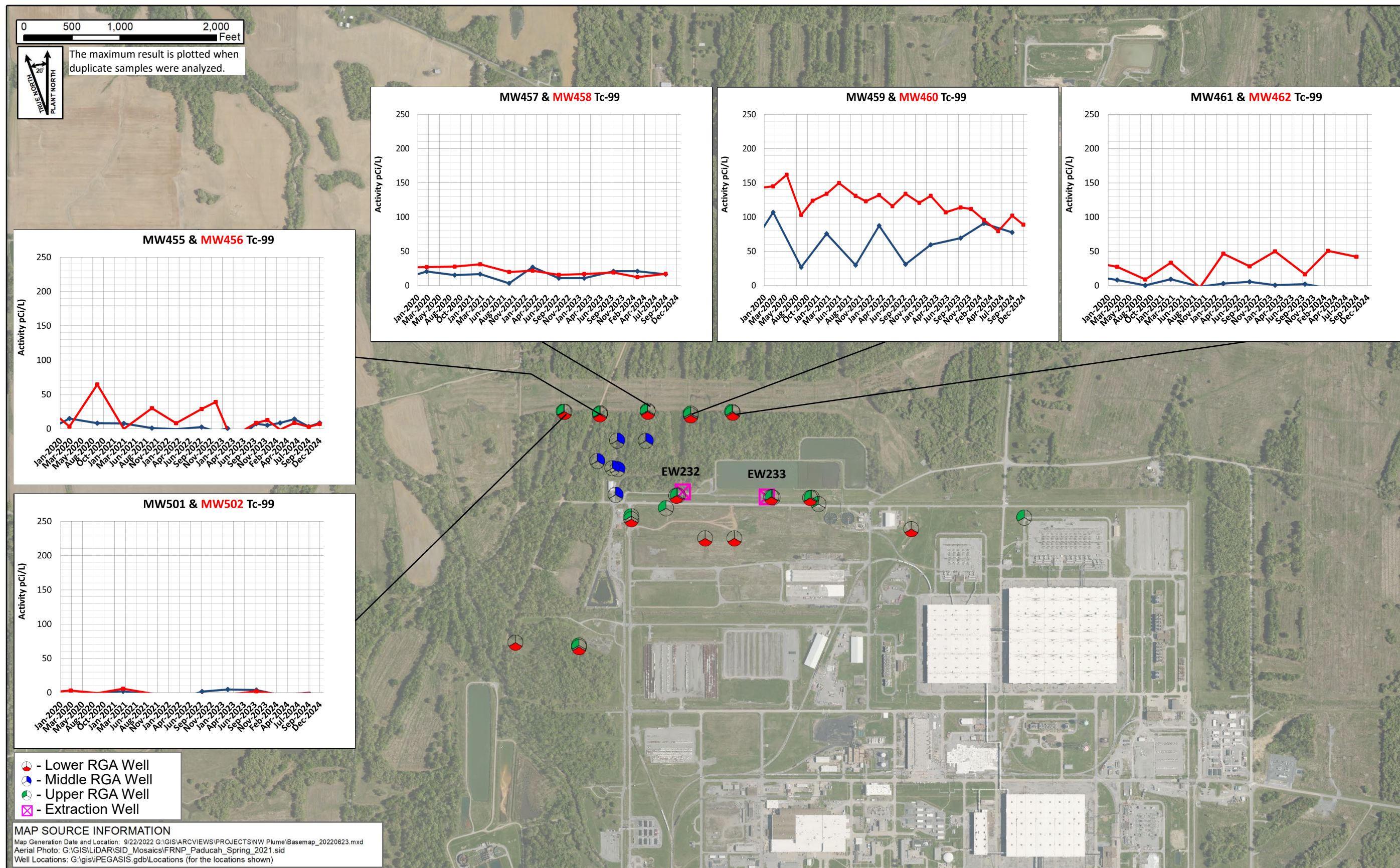


Figure B.22. Northwest Plume—Downgradient of New Well Field—Tc-99 Trends

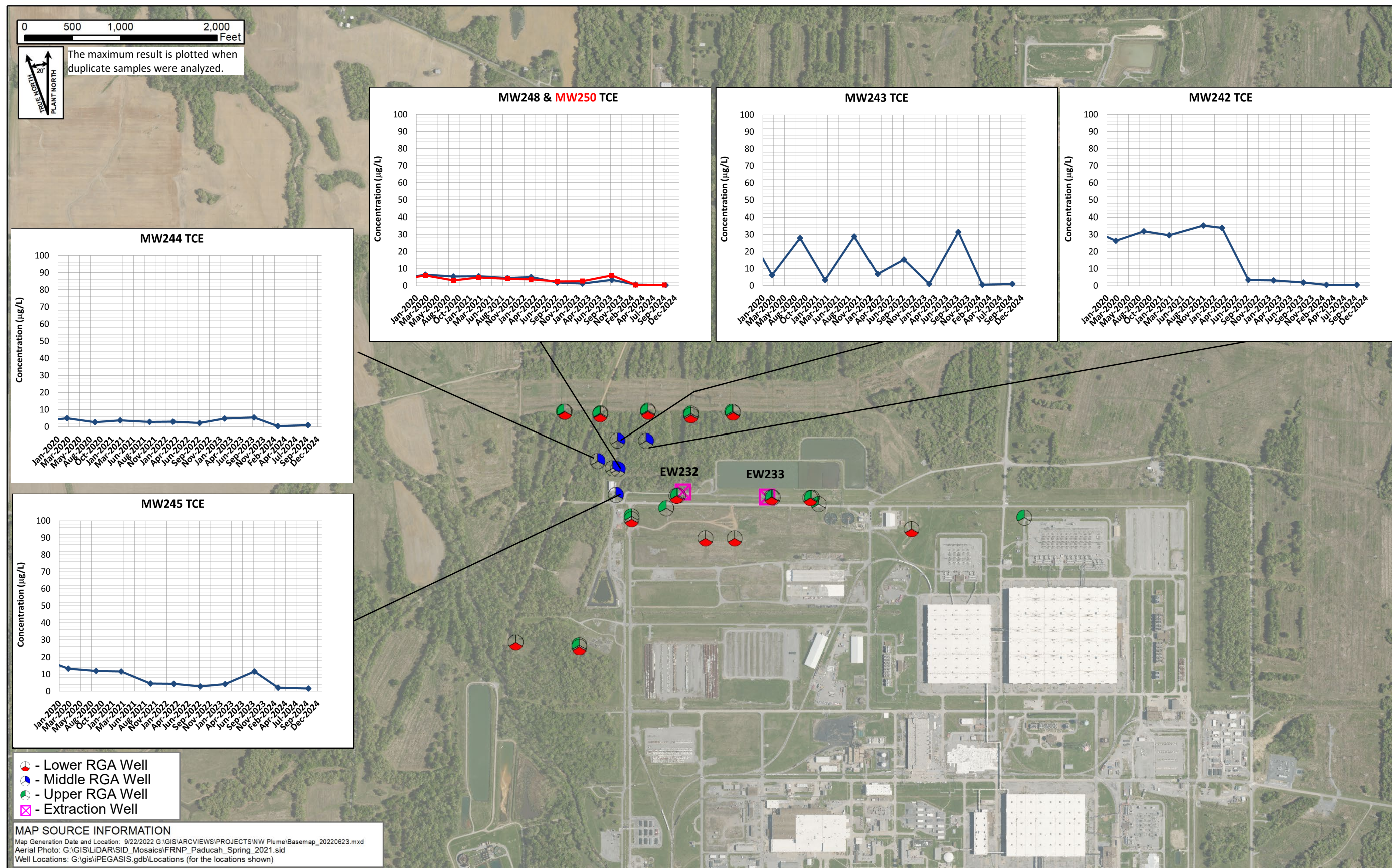


Figure B.23. Northwest Plume—South Well Field TCE Trends

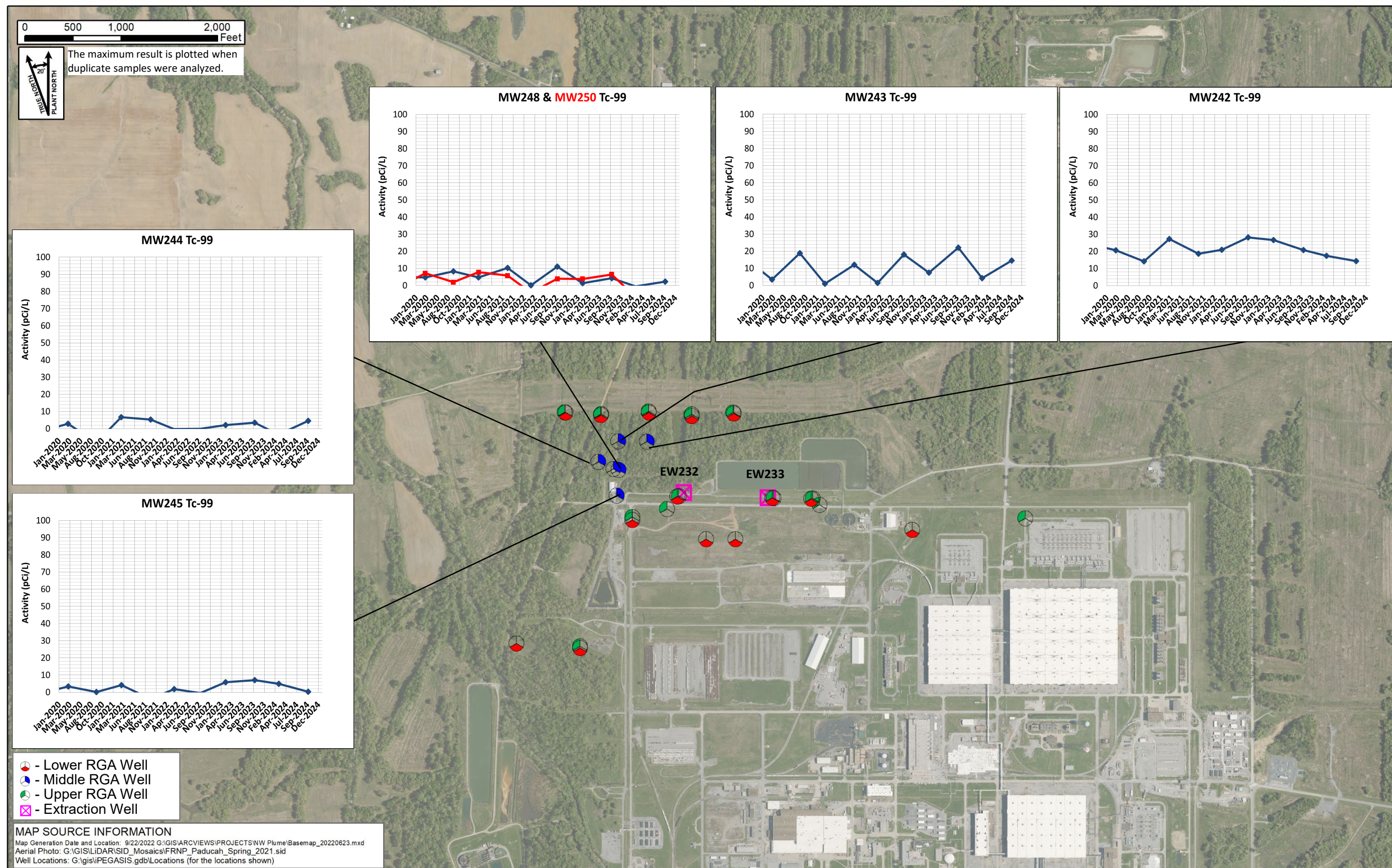
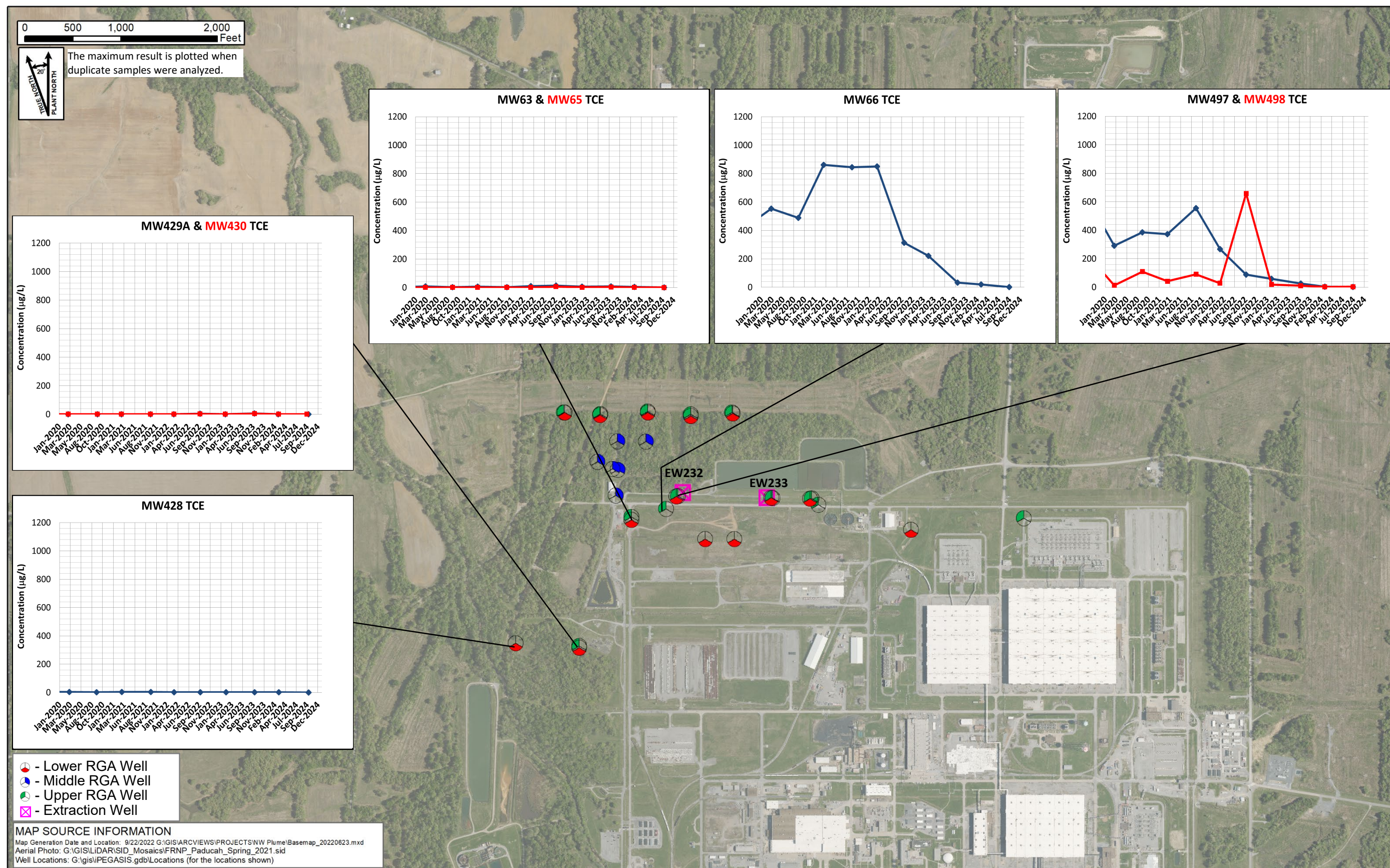


Figure B.24. Northwest Plume—South Well Field Tc-99 Trends



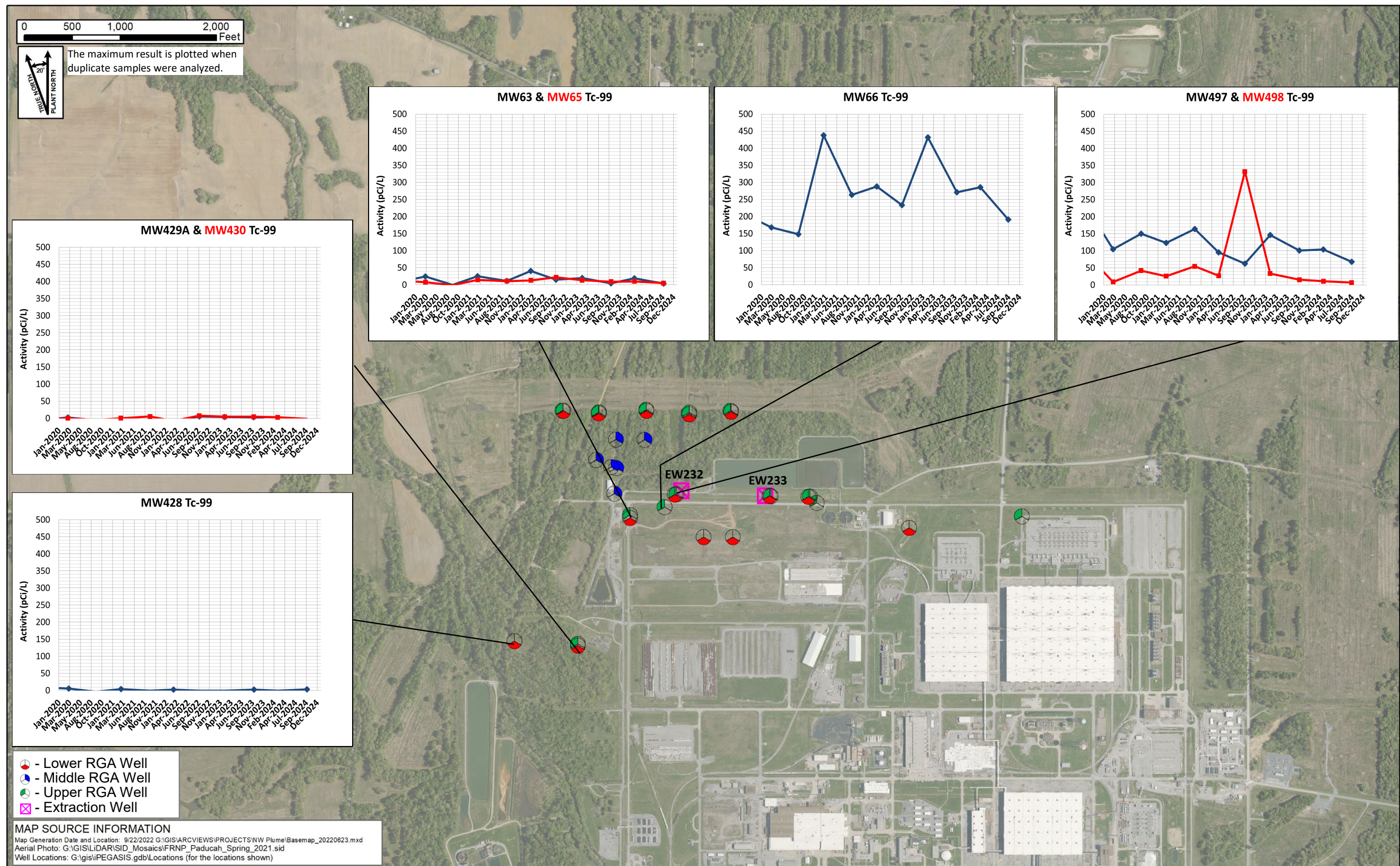


Figure B.26. Northwest Plume—New Well Field—Tc-99 Trends

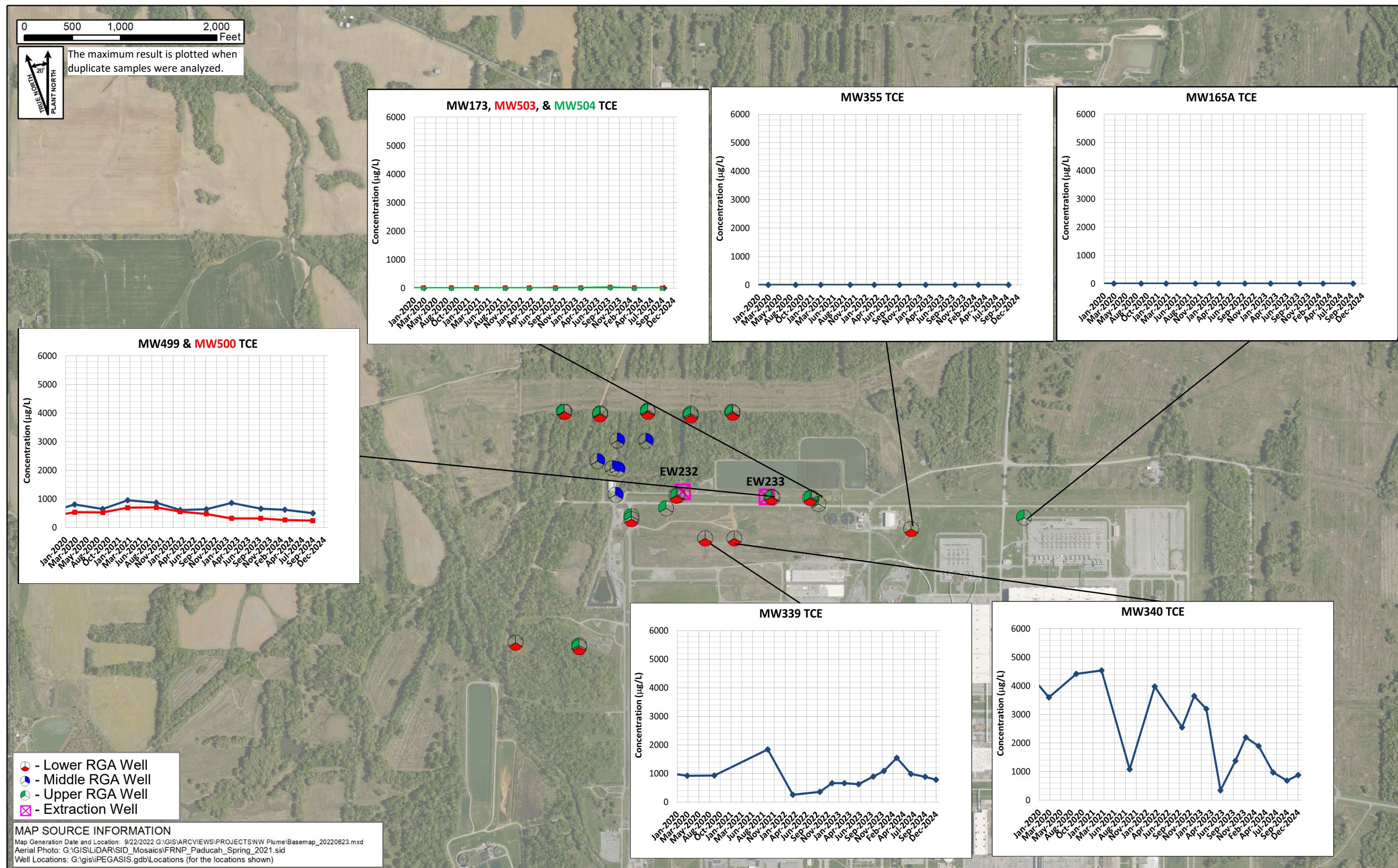


Figure B.27. Northwest Plume—Upgradient of Extraction Wells—TCE Trends

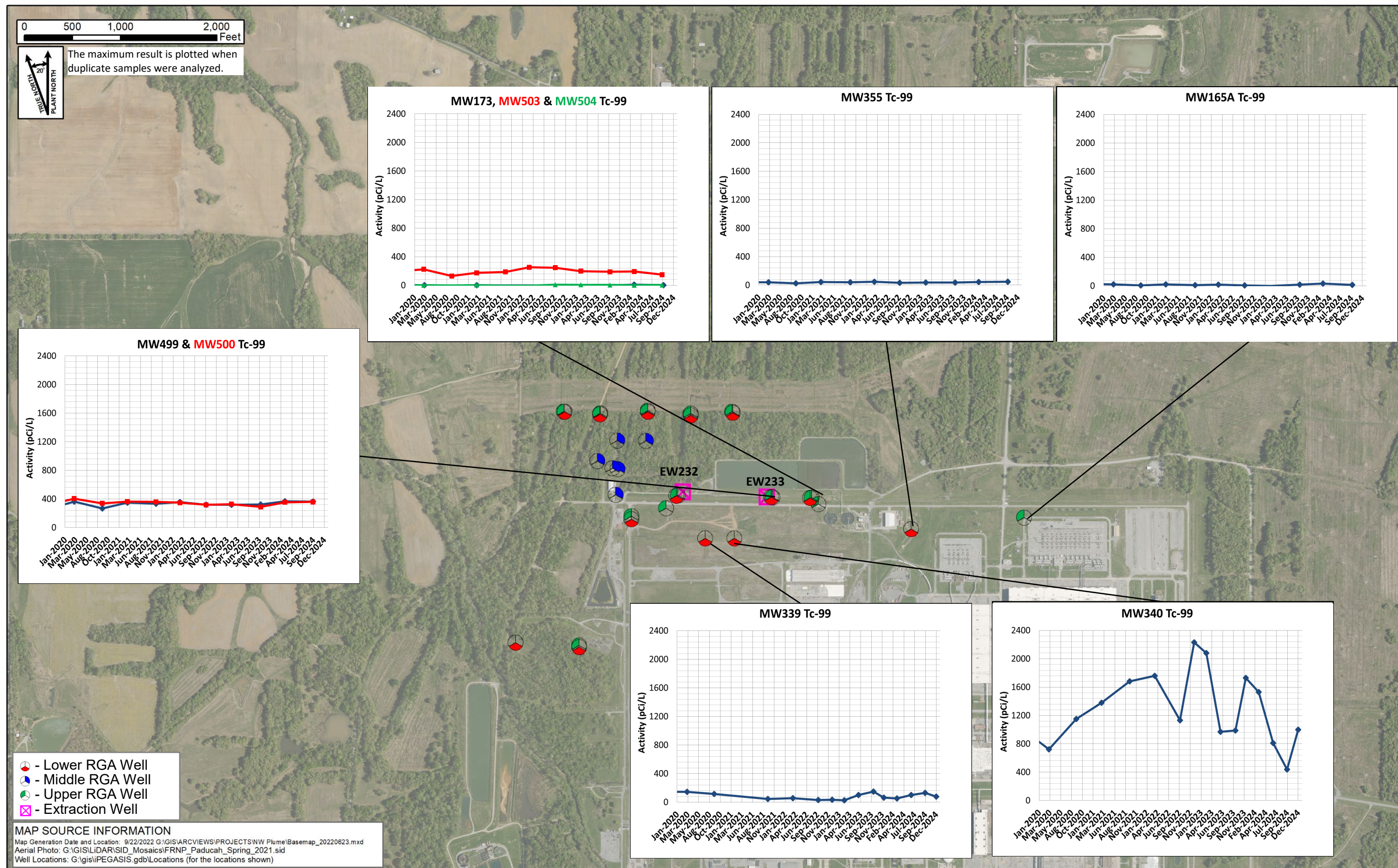
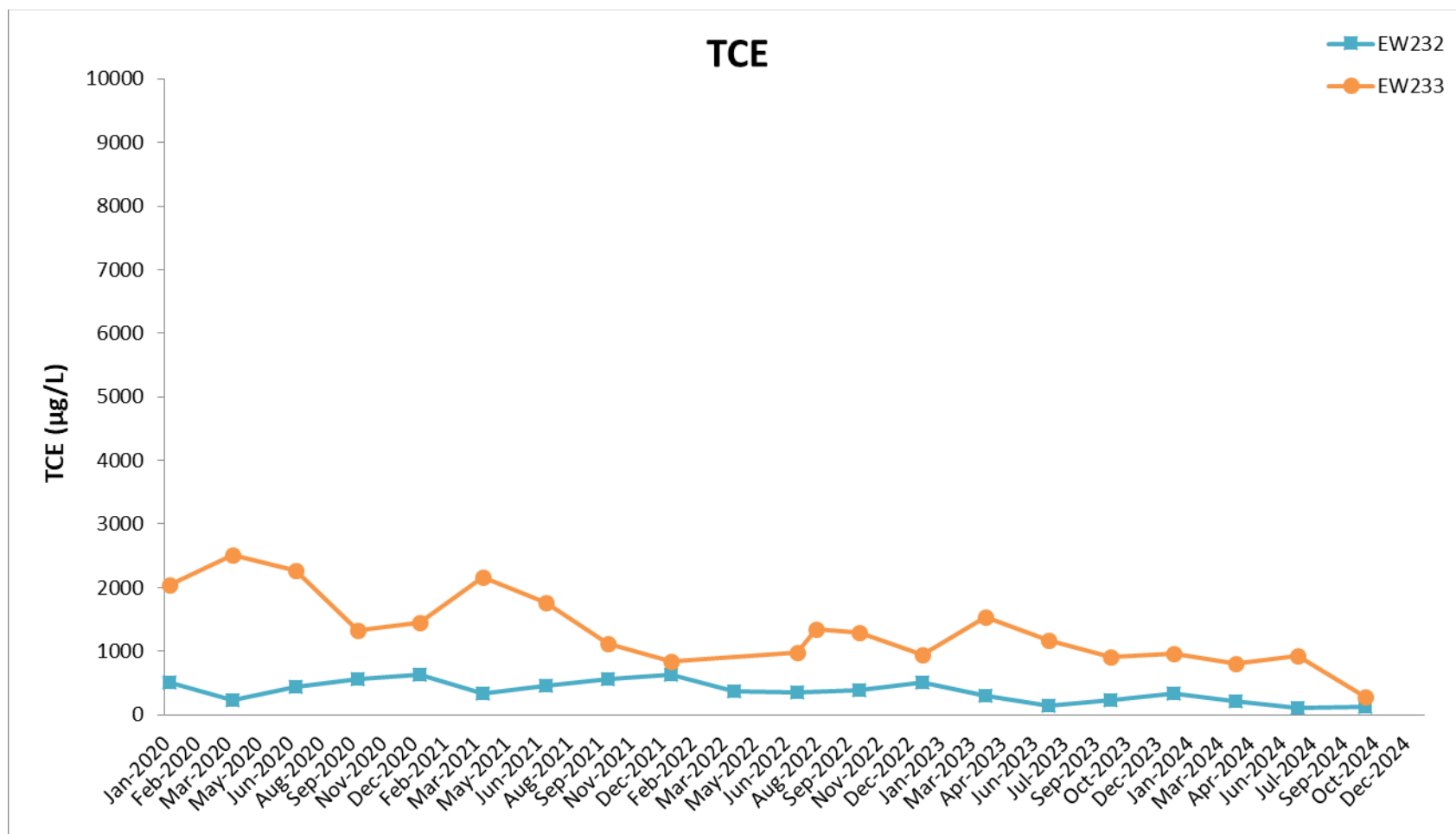
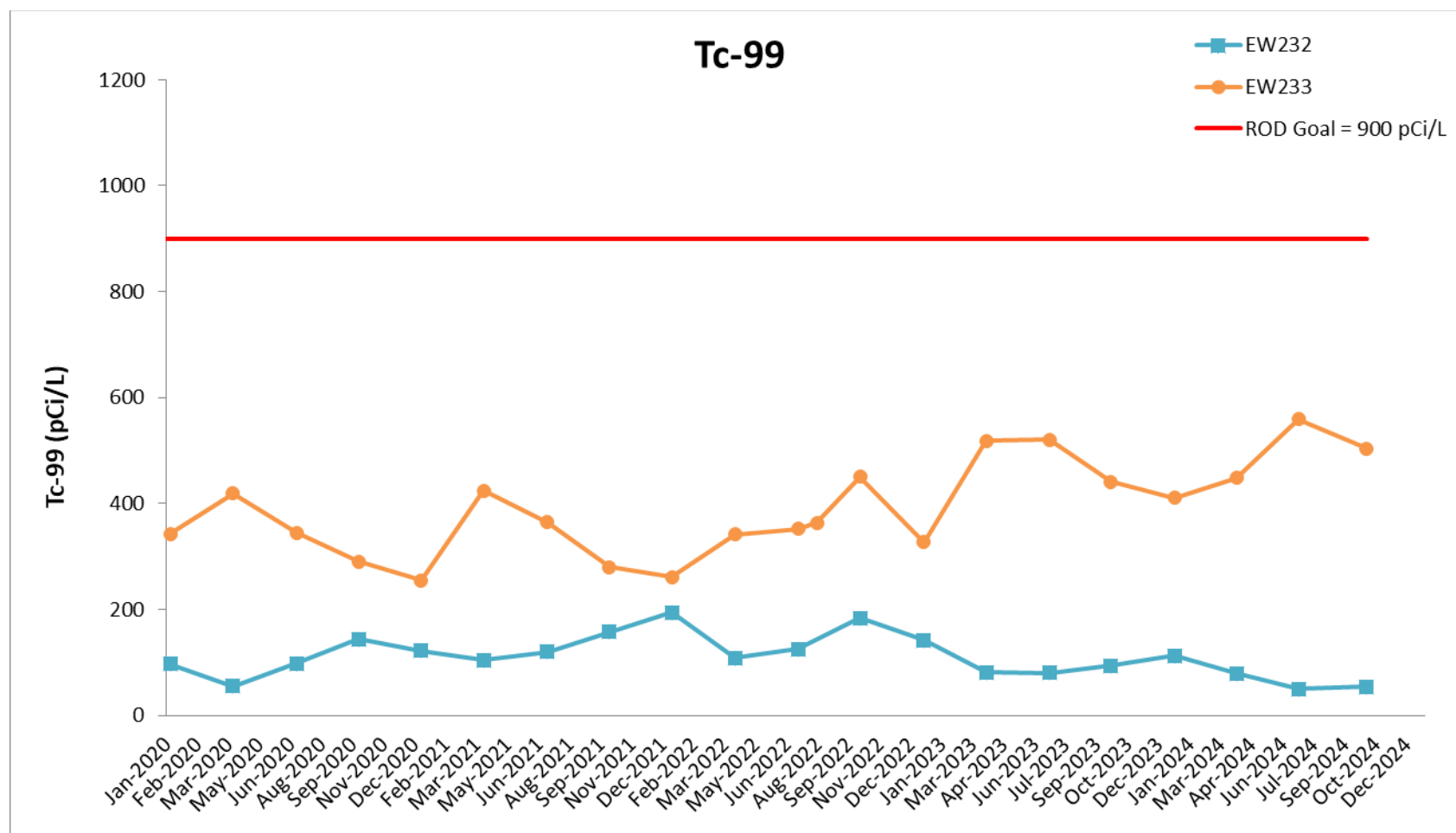


Figure B.28. Northwest Plume—Upgradient of Extraction Wells—Tc-99 Trends



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.29. Northwest Plume—TCE Concentrations in Extraction Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.30. Northwest Plume—Tc-99 Activities in Extraction Wells

APPENDIX C

C-746-K LANDFILL (SWMU 8) DATA

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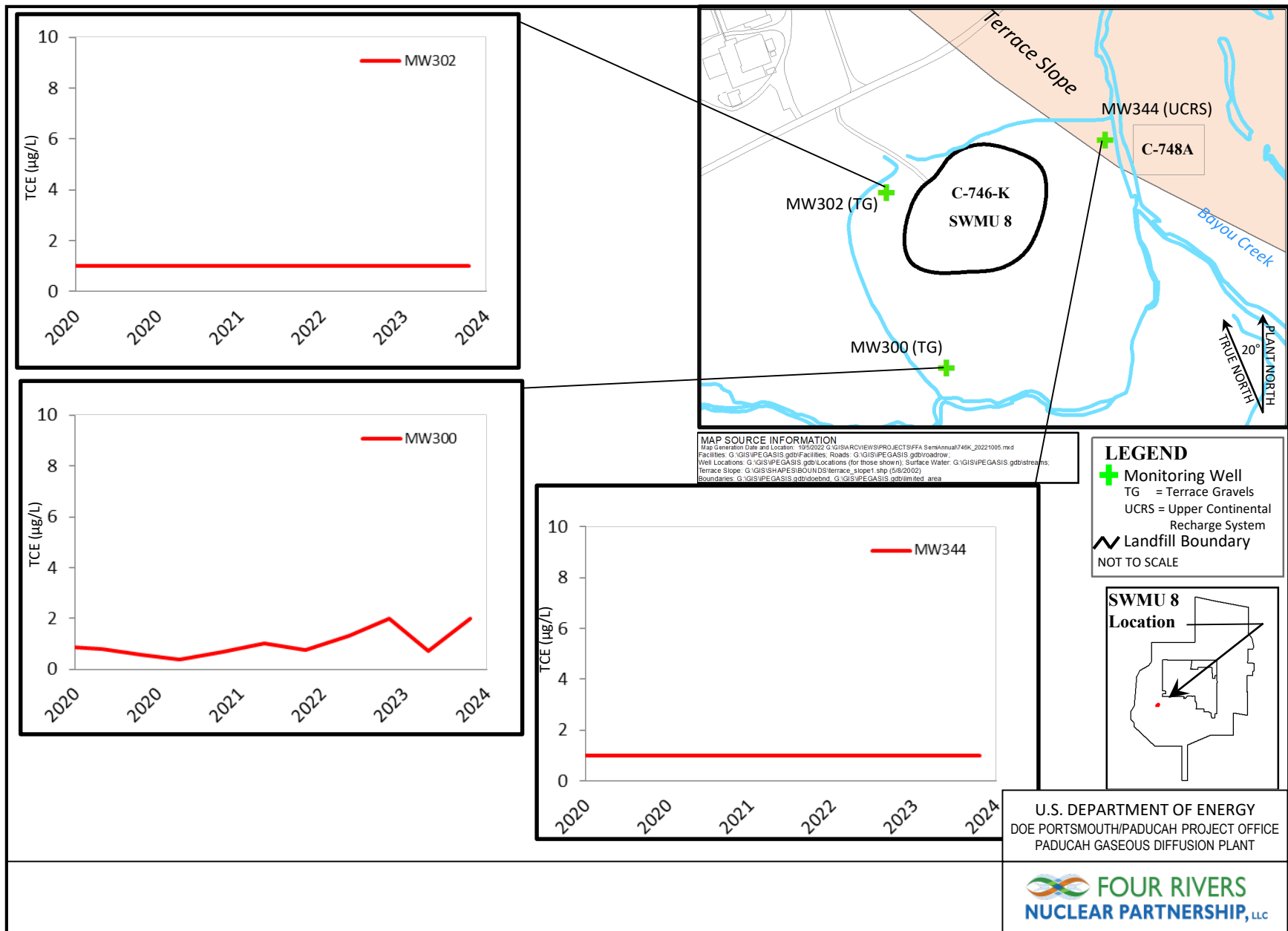


Figure C.1. TCE Trends in SWMU 8 Wells

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APPENDIX D

ADMINISTRATIVE RECORD, POST-DECISION RECORD, AND ADMINISTRATIVE RECORD REFERENCE INDICES

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Table D.1. Paducah Documents Added to the Administrative Record Files—Fourth Quarter CY 2024

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
ARF 400OUREME DIAL	11/26/2024	PPPO-02-10030128-25	NOTIFICATION OF REMEDIAL ACTION FIELD START FOR C-400 COMPLEX REMEDIAL INVESTIGATION ADDENDUM AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030128-25-C400 REMEDIAL INVEST-2024-11-26	12/17/2024
ARF WDA	9/10/2024	DOE/LX/07-2507&D1	VICTOR WEEKS COMMENTS ON GEOTECHNICAL SAMPLING AND ANALYSIS PLAN FOR WASTE DISPOSAL ALTERNATIVES PROJECT, DOE/LX/07-2507&D1	USEPA-4	DOE	INF-RECMGMT-GEOTECH SA PLAN WSTE DISPOSAL PROJ-2024-09-10	12/17/2024
ARF WDA	11/20/2024	FR-25-1037; DOE/LX/07-2507&D1	ACKNOWLEDGMENT OF RECEIPT AND REVIEW OF THE GEOTECHNICAL SAMPLING AND ANALYSIS PLAN FOR THE WASTE DISPOSAL ALTERNATIVES PROJECT AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2507&D1) PADUCAH SITE PADUCAH, MCCRACKEN COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1037-GEOTECH SA PLAN WSTE DISP PROJ-2024-11-20	12/17/2024

Table D.2. Paducah Documents Added to the Post-Decision Files—Fourth Quarter CY 2024

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
NSDD-PD	11/26/2024	CP3-ES-0041-F18	WINTERIZATION CHECKLIST - NORTH-SOUTH DIVERSION DITCH (WEEKLY)	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F18-C400L NSDD INSP-2024-11-26	12/17/2024
NSDD-PD	11/13/2024	CP3-ES-0041-F07	WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - NOVEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2024-11-13	12/17/2024
NSDD-PD	11/6/2024	CP3-ES-0041-F04	CP3-ES-0041-F04 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (QUARTERLY) - NOVEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F04-C400L NSDD INSP-2024-11-06	12/17/2024
NSDD-PD	11/26/2024	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - NOVEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2024-11-26	12/17/2024
NSDD-PD	10/30/2024	CP3-ES-0041-F18	CP3-ES-0041-F18 - WINTERIZATION CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - OCTOBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F18-C400L NSDD INSP-2024-10-30	11/19/2024
NSDD-PD	10/31/2024	CP3-ES-0041-F07	CP3-ES-0041-F07 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - OCTOBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2024-10-31	11/19/2024
NSDD-PD	10/29/2024	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - OCTOBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2024-10-29	11/19/2024
NSDD-PD	9/30/2024	CP3-ES-0041-F07	CP3-ES-0041-F07 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - SEPTEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2024-09-30	10/17/2024
NSDD-PD	9/3/2024	CP3-ES-0041-F06	CP3-ES-0041-F06 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (ANNUAL)	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F06-C400L NSDD INSP-2024-09-03	10/17/2024
NSDD-PD	9/26/2024	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - SEPTEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2024-09-26	10/17/2024
NWP PT-PD	11/26/2024	PPPO-02-10030224-25B; DOE/LX/07-2509&D1	TRANSMITTAL OF THE REMEDIAL ACTION WORK PLAN FOR THE 2024 OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2509&D1	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030224-25B-RAWP 2024 OPTI NW PLUME-2024-11-26	12/17/2024

Table D.2. Paducah Documents Added to the Post-Decision Files—Fourth Quarter CY 2024 (Continued)

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
NWP PT-PD	11/26/2024	PPPO-02-10030128-25	NOTIFICATION OF REMEDIAL ACTION FIELD START FOR C-400 COMPLEX REMEDIAL INVESTIGATION ADDENDUM AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030128-25-C400 REMEDIAL INVEST-2024-11-26	12/17/2024
NWP PT-PD	12/11/2024	FR-25-1042; DOE/LX/07-2509&D1	U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND COMMENT ON THE D1 REMEDIAL ACTION WORK PLAN FOR THE OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2509&D1	USEPA-4	DOE	INF-RECMGMT-FR-25-1042-RAWP OPTIMZTION NW PLUME IRA-2024-12-11	12/17/2024
NWP PT-PD	9/12/2024	N/A	DEPARTMENT OF ENERGY (DOE) PADUCAH SITE MEMORANDUM TO THE ADMINISTRATIVE RECORD (AR) FILE - NORTHWEST PLUME OPTIMIZATION - NONSIGNIFICANT CHANGE FOR THE RECORD OF DECISION FOR INTERIM REMEDIAL ACTION OF THE NORTHWEST PLUME AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY AUGUST 2024	DOE	KDEP; USEPA-4	INF-RECMGMT-NW PLUME OPTIMIZATION-2024-09-12	10/17/2024
SWP-PD	11/20/2024	CP3-ES-0041-F15	QUARTERLY SOUTHWEST PLUME SOLID WASTE MANAGEMENT UNIT (SWMU) INSPECTIONS	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F15-QRTL SW PLUME SWMU INSP-2024-11-20	12/17/2024

Table D.3. Paducah Documents Added to the Administrative Record Reference Files—Fourth Quarter CY 2024

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
ARF ARR	11/21/2024	PPPO-02-10030210-25; DOE/LX/07-2512&D1; DOE/LX/07-2513&D1	C-333-A FEED VAPORIZATION FACILITY SOLID WASTE MANAGEMENT UNIT ASSESSMENT REPORT, DOE/LX/07-2512&D1, FOR SWMU 70, AND C-337-A FEED VAPORIZATION FACILITY SOLID WASTE MANAGEMENT UNIT ASSESSMENT REPORT, DOE/LX/07-2513&D1, FOR SWMU 71, HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT NUMBER KY8-890-008-982, AGENCY INTEREST NO. 3059	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030210-25-SWMU ASSMNT REPORTS-2024-11-21	12/17/2024
ARF ARR	12/2/2024	FR-25-1041; DOE/LX/07-2512&D1; DOE/LX/07-2513&D1	KENTUCKY DEPARTMENT OF WASTE MANAGEMENT APPROVAL OF THE REVISED SOLID WASTE MANAGEMENT UNIT (SWMU) ASSESSMENT REPORTS (SARS) FOR SWMU 70 (DOE/LX/07 2512&D1) AND SWMU 71 (DOE/LX/07-2513&D1) PADUCAH SITE PADUCAH, MCCracken COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1041-KDWM REVISED SARS FOR SWMU-2024-12-02	12/17/2024
ARF ARR	12/2/2024	FR-25-1040; DOE/LX/07-2508&D1	KENTUCKY DEPARTMENT OF WASTE MANAGEMENT SUBMITTAL OF COMMENTS TO THE 2025 SITE MANAGEMENT PLAN (DOE/LX/07-2508&D1) PADUCAH SITE PADUCAH, MCCracken COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1040-KDWM 2025 SITE MGMT PLAN-2024-12-02	12/17/2024
ARF ARR	11/21/2024	DOE/LX/07-2508&D1	EMAIL - VICTOR WEEKS COMMENTS ON D1 SITE MANAGEMENT PLAN	USEPA-4	DOE; KDEP	INF-RECMGMT-COMMENTS D1 SITE MGMT PLAN-2024-11-21	12/17/2024
ARF ARR	11/13/2024	PPPO-02-10029969-25; DOE/LX/07-2508&D1	TRANSMITTAL OF THE D1 SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION, FISCAL YEAR 2025, DOE/LX/07-2508&D1	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10029969-25-SITE MGMT PLAN REV-2024-11-13	11/19/2024
ARF ARR	10/22/2024	PPPO-02-10029764-25	FEDERAL FACILITY AGREEMENT BUDGET REPORTING - PRELIMINARY ASSESSMENT OF FISCAL YEAR 2026 BUDGET FORMULATION GUIDANCE AND UPDATE OF THE FISCAL YEAR 2026 BUDGET TARGETS ON SITE PRIORITIES (INTEGRATED PRIORITY LIST)	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10029764-25-FFA BUDGET REPORT-2024-10-22	11/19/2024
ARF ARR	10/4/2024	PPPO-02-10029639-25	PADUCAH FEDERAL FACILITY AGREEMENT BUDGET NOTIFICATION - CONTINUING RESOLUTION	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10029639-25-PAD FFA BUDGT NOTF-2024-10-04	10/17/2024
ARF ARR	10/9/2024	PPPO-02-10026934-25	FEDERAL FACILITY AGREEMENT BUDGET REPORTING - FISCAL YEAR 2026 BUDGET TARGET FUNDING GUIDANCE NOTIFICATION	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10026934-25-FFA BUDGT RPRT FY 26-2024-10-09	10/17/2024
ARF ARR	9/12/2024	N/A	DEPARTMENT OF ENERGY (DOE) PADUCAH SITE MEMORANDUM TO THE ADMINISTRATIVE RECORD (AR) FILE - NORTHWEST PLUME OPTIMIZATION - NONSIGNIFICANT CHANGE FOR THE RECORD OF DECISION FOR INTERIM REMEDIAL ACTION OF THE NORTHWEST PLUME AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY AUGUST 2024	DOE	KDEP; USEPA-4	INF-RECMGMT-NW PLUME OPTIMIZATION-2024-09-12	10/17/2024

Table. D.4. Paducah Documents Added to the Administrative Record Files—First Quarter CY 2025

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
ARF SOU	7/24/2015	DOE/LX/07-1256&D2/R1	CONCURRENCE WITH THE SITEWIDE EVALUATION REPORT FOR THE SOILS OPERABLE UNIT (DOE/LX/07-1256&D2/R1)	KDEP	DOE	INF-RECMGMT-SOILS EVAL REPORT-2015-07-24	3/4/2025
ARF SOU	7/17/2015	DOE/LX/07-1256&D2	SITEWIDE EVALUATION REPORT FOR THE SOILS OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-1256&D2)	USEPA-4	DOE	INF-RECMGMT-SIGNED SOIL EVAL RPRT-2015-07-17	3/4/2025
ARF WDA	3/2/2015	PPPO-02-2687722-15	RESPONSE TO CITIZENS ADVISORY BOARD RECOMMENDATION 15-01: CONSTRUCTION OF AN ON-SITE WASTE DISPOSAL FACILITY AT THE PADUCAH GASEOUS DIFFUSION PLANT SITE	DOE	CAB	INF-RECMGMT-PPPO-02-2687722-15-CITIZENS ADV BOARD REC-2015-03-02	3/4/2025
ARF WDA	4/28/2014	PPPO-02-2091317-14	RESPONSE TO THE PADUCAH CITIZENS ADVISORY BOARD RECOMMENDATION 13-09: U.S. DEPARTMENT OF ENERGY REQUEST AN EXTENSION FOR THE SUBMISSION OF THE PROPOSED PLAN FOR THE WASTE DISPOSAL ALTERNATIVES EVALUATION DUE OCTOBER 20, 2013	DOE	CAB	INF-RECMGMT-PPPO-02-2091317-14-CITIZENS ADV BOARD REC-2014-04-28	3/4/2025
ARF WDA	10/16/2008	PPPO-02-657-08	RESPONSE TO CITIZENS ADVISORY BOARD CONSENSUS RECOMMENDATION 08-05 (PATH TO INCREASE EDUCATION AND INFORMATION GATHERING CONCERNING WASTE DISPOSAL OPTIONS)	DOE	CAB	INF-RECMGMT-PPPO-02-657-08-CITIZENS ADV BOARD CONSENSUS-2008-10-16	3/4/2025
ARF WDA	9/10/2008	PPPO-02-561-08	RESPONSE TO CITIZENS ADVISORY BOARD CONSENSUS RECOMMENDATION 08-03 (PUBLIC PARTICIPATION IN WASTE DISPOSAL OPTIONS DECISIONS)	DOE	CAB	INF-RECMGMT-PPPO-02-561-08-CITIZENS ADV BOARD CONSENSUS-2008-09-10	3/4/2025
ARF WDA	11/20/2014	N/A	RECOMMENDATION 15-01: CONSTRUCTION OF AN ON-SITE WASTE DISPOSAL FACILITY AT THE PADUCAH GASEOUS DIFFUSION PLANT SITE	CAB	DOE	INF-RECMGMT-CONSTRUCT WASTE DISPOSAL-2014-11-20	3/4/2025
ARF WDA	9/19/2013	N/A	RECOMMENDATION 13-09: DOE REQUEST AN EXTENSION FOR THE SUBMISSION OF THE PROPOSED PLAN FOR THE WASTE DISPOSAL ALTERNATIVES EVALUATION DUE OCTOBER 20, 2013	DOE	CAB	INF-RECMGMT-CITIZENS ADVISORY BOARD-2013-09-19	3/4/2025
ARF WDA	12/20/2024	PPPO-02-10030540-25; DOE/LX/07-2507&D1	TRANSMITTAL OF THE GEOTECHNICAL SAMPLING AND ANALYSIS PLAN FOR THE WASTE DISPOSAL ALTERNATIVES PROJECT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2507&D1 ERRATA)	DOE	KDEP; USEPA-4	NIF-RECMGMT-PPPO-02-10030540-25-GEOTECH SAP WDA PROJECT-2024-12-20	1/21/2025
ARF WDA	1/6/2025	FR-25-1057; DOE/LX/07-2507&D1	ACKNOWLEDGMENT OF RECEIPT OF AND CONCURRENCE WITH THE GEOTECHNICAL SAMPLING AND ANALYSIS PLAN FOR THE WASTE DISPOSAL ALTERNATIVES PROJECT AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2507&D1 ERRATA) PADUCAH SITE PADUCAH, MCCracken COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1057-GEOTECH SAP WDA PROJECT-2025-01-06	1/21/2025
ARF WDA	12/23/2024	FR-25-1050; DOE/LX/07-2507&D1	U.S. USEPA-4 REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND CONCURRENCE ON THE D1 GEOTECHNICAL SAMPLING AND ANALYSIS PLAN FOR THE WASTE DISPOSAL ALTERNATIVES PROJECT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2507&D1 ERRATA	USEPA-4	DOE	INF-RECMGMT-FR-25-1050-EPA GEOTECH SAP WDA PROJECT-2024-12-23	1/21/2025

Table D.5. Paducah Documents Added to the Post-Decision Files—First Quarter CY 2025

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
1/7-PD	12/17/2024	CP3-ES-0041-F12	CP3-ES-0041-F12 - WALKTHROUGH CHECKLIST - C-746-K LANDFILL	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F12-C746K WLKTHRU CHKLST-2024-12-17	3/4/2025
1/7-PD	12/11/2024	CP3-ES-0041-F20	CP3-ES-0041-F20 - WALKTHROUGH CHECKLIST - SOLID WASTE MANAGEMENT UNIT 100	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F20-SWMU INSP-2024-12-11	1/21/2025
NEP PT-PD	1/31/2025	FR-25-1065, FRNP-RPT-0354	U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE FOR THE PADUCAH SITE'S TRICHLOROETHENE EXTENT AND TRENDS IN WEST SIDE OF DOWNGRADIANT NORTHEAST PLUME, ACTIVITY 8 WHITE PAPER, FRNP-RPT-0354	USEPA-4	DOE	INF-RECMGMT-FR-25-1065-TCE WEST SIDE DOWNGRADIANT-2025-01-31	3/4/2025
NSDD-PD	2/25/2025	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - FEBRUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2025-02-25	3/27/2025
NSDD-PD	2/24/2025	CP3-ES-0041-F04	CP3-ES-0041-F04 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (QUARTERLY) - FEBRUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F04-C400L NSDD INSP-2025-02-24	3/27/2025
NSDD-PD	2/18/2025	CP3-ES-0041-F05	CP3-ES-0041-F05 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH SURGE BASIN/CONCRETE DITCH (SEMI-ANNUAL) - FEBRUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F05-C400L NSDD INSP-2025-02-18	3/27/2025
NSDD-PD	2/17/2025	CP3-ES-0041-F07	CP3-ES-0041-F07 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - FEBRUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2025-02-17	3/27/2025
NSDD-PD	2/26/2025	CP3-ES-0041-F18	CP3-ES-0041-F18 - WINTERIZATION CHECKLIST - NORTH-SOUTH DIVERSION DITCH (WEEKLY) - FEBRUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F18-WNTRZATION CHKLST-2025-02-26	3/27/2025
NSDD-PD	1/29/2025	CP3-ES-0041-F18	CP3-ES-0041-F18 - WINTERIZATION CHECKLIST - NORTH-SOUTH DIVERSION DITCH (WEEKLY) - JANUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F18-C400L NSDD INSP-2025-01-29	3/4/2025
NSDD-PD	1/30/2025	CP3-ES-0041-F07	CP3-ES-0041-F07 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - JANUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2025-01-30	3/4/2025

Table D.5. Paducah Documents Added to the Post-Decision Files—First Quarter CY 2025 (Continued)

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
NSDD-PD	1/27/2025	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - JANUARY 2025	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2025-01-27	3/4/2025
NSDD-PD	12/30/2024	CP3-ES-0041-F18	CP3-ES-0041-F18 - WINTERIZATION CHECKLIST - NORTH-SOUTH DIVERSION DITCH (WEEKLY)	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F18-C400L NSDD INSP-2024-12-30	1/21/2025
NSDD-PD	12/30/2024	CP3-ES-0041-F07	CP3-ES-0041-F07 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (STORM EVENT) - DECEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F07-C400L NSDD INSP-2024-12-30	1/21/2025
NSDD-PD	12/30/2024	CP3-ES-0041-F03	CP3-ES-0041-F03 - WALKTHROUGH CHECKLIST- NORTH-SOUTH DIVERSION DITCH (WEEKLY) - DECEMBER 2024	FRNP	DOE	INF-RECMGMT-CP3-ES-0041-F03-C400L NSDD INSP-2024-12-30	1/21/2025
NWP PT-PD	1/24/2025	FR-25-1062; DOE/LX/07-2509&D2	KENTUCKY DEPARTMENT OF WASTE MANAGEMENT (KDWM) CONCURRENCE WITH THE REMEDIAL ACTION WORK PLAN FOR THE 2023 OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2509&D2)	KDEP	DOE	INF-RECMGMT-FR-25-1062-KDWM 2023 OPTI NWP IRA-2025-01-24	3/27/2025
NWP PT-PD	1/31/2025	FR-25-1064, FRNP-RPT-0355	U.S. USEPA-4 REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND ACCEPTANCE OF THE TRICHLOROETHENE EXTENT AND TRENDS IN EAST SIDE OF DOWNGRADIANT NORTHWEST PLUME, PADUCAH, KENTUCKY, FRNP-RPT-0355	USEPA-4	DOE	INF-RECMGMT-FR-25-1064-TCE EAST SIDE DOWNGRADIANT-2025-01-31	3/4/2025
NWP PT-PD	1/14/2025	PPPO-02-10030792-25B; DOE/LX/07-2509&D2	TRANSMITTAL OF THE REMEDIAL ACTION WORK PLAN FOR THE 2023 OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2509&D2	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030792-25B-RAWP 2023 OPTIMIZ NW PLUME-2025-01-14	1/21/2025
NWP PT-PD	1/15/2025	FR-25-1060; DOE/LX/07-2509&D2	U.S. USEPA-4 REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND CONCURRENCE ON THE D2 REMEDIAL ACTION WORK PLAN FOR THE 2023 OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2509&D2	USEPA-4	DOE	INF-RECMGMT-FR-25-1060-EPA RAWP 2023 OPTIMIZATION NWP-2025-01-15	1/21/2025
NWP PT-PD	12/16/2024	FR-25-1045; DOE/LX/07-2509&D1	KENTUCKY DIVISION OF WASTE MANAGEMENT SUBMITTAL OF A COMMENT TO THE REMEDIAL ACTION WORK PLAN FOR THE 2024 OPTIMIZATION OF THE NORTHWEST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2509&D1) PADUCAH SITE PADUCAH, MCCracken COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1045-KDWM RAWP 2024 OPTIMZTION NWP-2024-12-16	1/21/2025

Table D.6. Paducah Documents Added to the Administrative Record Reference Files—First Quarter CY 2025

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Name	Date Added
ARF ARR	2/19/2025	FR-25-1067	NOTIFICATION OF DESIGNATION FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S PROJECT MANAGER UNDER THE FEDERAL FACILITY AGREEMENT FOR THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY	USEPA-4	DOE;#KDEP	INF-RECMGMT-FR-25-1067-EPA PROJ MANAGR FFA-2025-02-19	3/27/2025
ARF ARR	2/12/2025	PPPO-02-10030952-25	PADUCAH FEDERAL FACILITY AGREEMENT DRAFT INTEGRATED PRIORITY LIST AND ASSESSMENT OF BUDGET TARGETS ON SITE PRIORITIES - FISCAL YEAR 2027	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030952-25-PAD-FFA BUDGET TARGETS FY27-2025-02-12	3/27/2025
ARF ARR	2/12/2025	PPPO-02-10031206-25	PADUCAH FEDERAL FACILITY AGREEMENT MODIFICATION-FISCAL YEAR 2025 SITE MANAGEMENT PLAN, ENFORCEABLE COMMITMENTS, AND LIST OF SOLID WASTE MANAGEMENT UNITS/AREAS OF CONCERN	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10031206-25-FFA MOD FY2025 SMP COMMITMENTS-2025-02-12	3/27/2025
ARF ARR	2/21/2025	PPPO-02-10031425-25	PADUCAH FEDERAL FACILITY AGREEMENT SIGNED MODIFICATION - FISCAL YEAR 2025 SITE MANAGEMENT PLAN, ENFORCEABLE COMMITMENTS, AND LIST OF SOLID WASTE MANAGEMENT UNITS/AREAS OF CONCERN	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10031425-25-FFA SIGNED MOD FY25 SMP-2025-02-21	3/27/2025
ARF ARR	12/23/2024	PPPO-02-10030603-25	PADUCAH FEDERAL FACILITY AGREEMENT BUDGET NOTIFICATION - CONTINUING RESOLUTION	DOE	KDEP	INF-RECMGMT-PPPO-02-10030603-25-PAD FFA BUDGET-2024-12-23	1/21/2025
ARF ARR	12/12/2024	PPPO-02-10030391-25; DOE/LX/07-2508&D2	TRANSMITTAL OF THE D2 SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION - FISCAL YEAR 2025, DOE/LX/07-2508&D2	DOE	KDEP; USEPA-4	INF-RECMGMT-PPPO-02-10030391-25-D2 SMP ANNUAL REVISION-2024-12-12	1/21/2025
ARF ARR	12/13/2024	FR-25-1044; DOE/LX/07-2508&D2	KENTUCKY DIVISION OF WASTE MANAGEMENT CONCURRENCE WITH THE 2025 ANNUAL SITE MANAGEMENT PLAN (DOE/LX/07-2508&D2) PADUCAH SITE PADUCAH, MCCracken COUNTY, KENTUCKY KY8-890-008-982	KDEP	DOE	INF-RECMGMT-FR-25-1044-KDWM SITE MGMT PLAN-2024-12-13	1/21/2025
ARF ARR	12/13/2024	FR-25-1043; DOE/LX/07-2508&D2	U.S. USEPA-4 REGION 4 ACKNOWLEDGEMENT OF RECEIPT AND CONCURRENCE ON THE D2 PADUCAH SITE ANNUAL REVISION TO THE SITE MANAGEMENT PLAN FOR FISCAL YEAR 2025, DOE/LX/07-2508&D2	USEPA-4	DOE	INF-RECMGMT-FR-25-1043-PAD SITE ANNUAL REV MGMT PLAN-2024-12-13	1/21/2025

APPENDIX E

C-749 URANIUM BURIAL GROUND (SWMU 2) GROUNDWATER MONITORING WELL DATA

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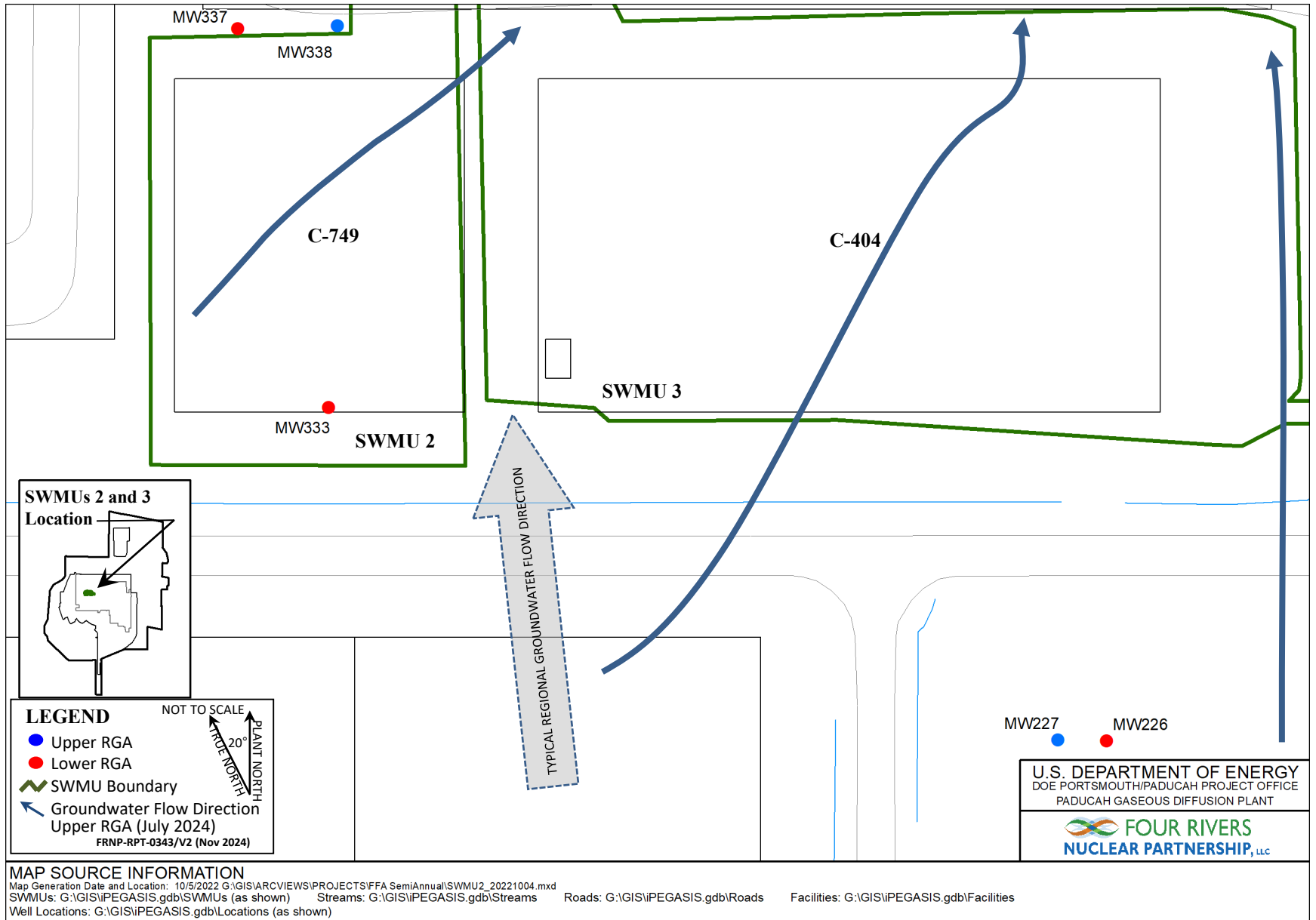


Figure E.1. SWMU 2 Wells Location

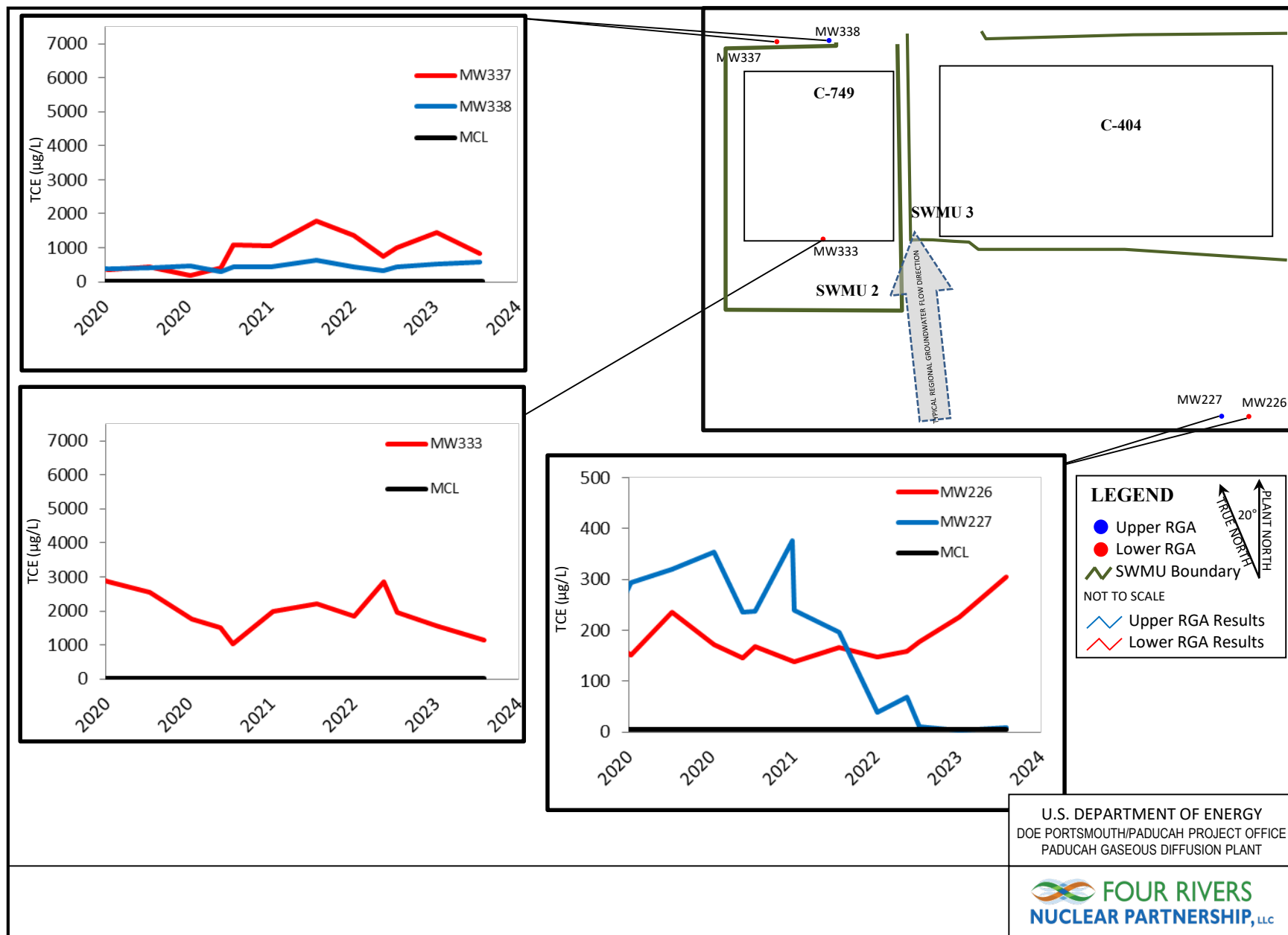


Figure E.2. TCE Trends in SWMU 2 Wells

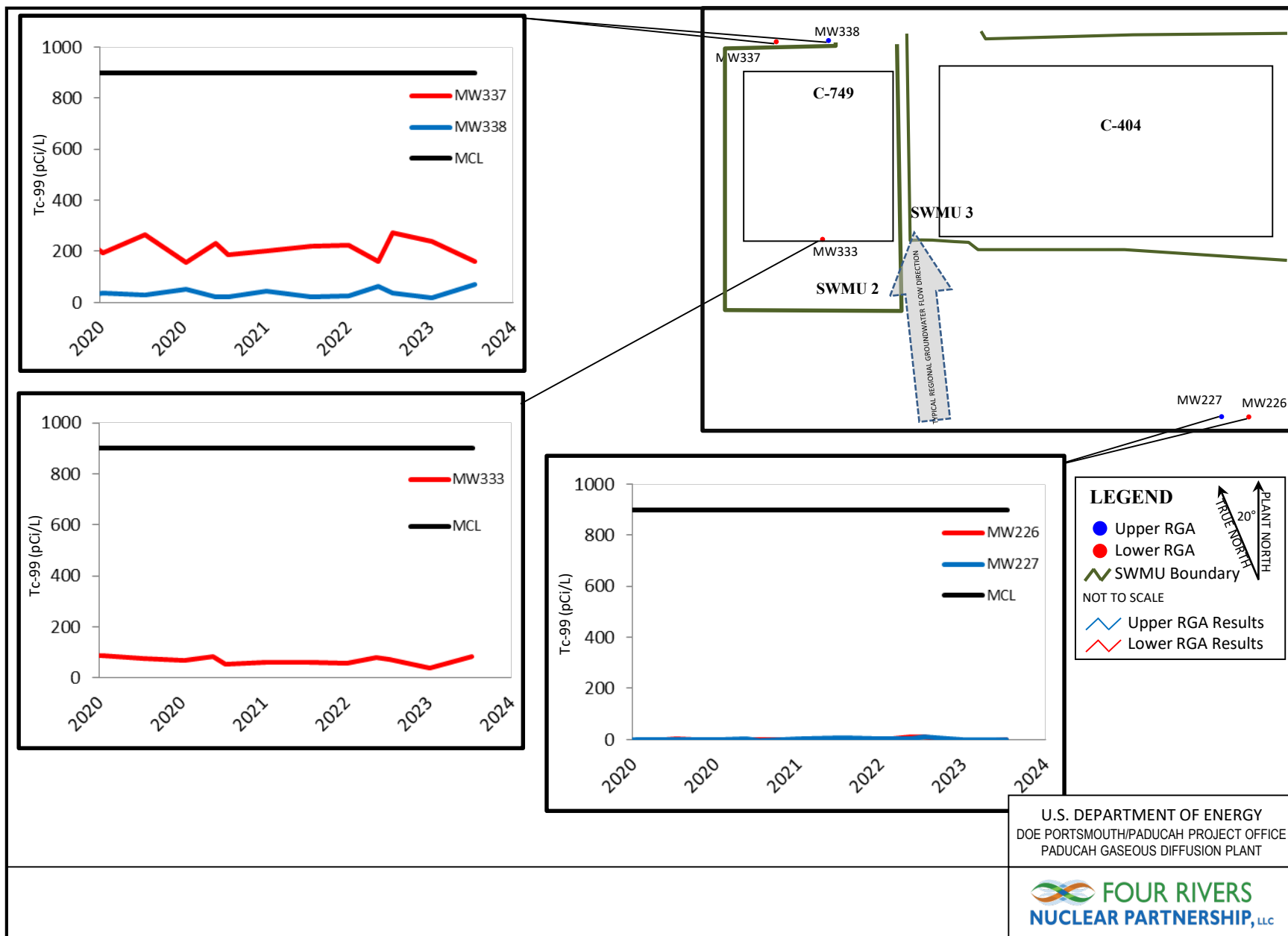


Figure E.3. Tc-99 Trends in SWMU 2 Wells

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