

was released, how much was released, where was it released, and did the released material get to the bare ground or to any water body including the storm drain. As the situation changes, it will be necessary to keep the Chief Operator informed.

- 4.1.5 Using the pigs/pads or other absorbents, collect all the liquid fuel remaining on the pavement.
- 4.1.6 Properly dispose of all contaminated materials according to B2.7 Waste Management Procedure.
- 4.1.7 If the fuel contacted the soil, initiate procedure B5.0 Contaminated Soil Management and Site Remediation Procedure.
- 4.1.8 Replenish supplies in the release response kit.
- 4.1.9 If greater than 1 gallon of diesel fuel comes into contact with the bare ground, then this would be a reportable incident and the WDNR Emergency Release Hot Line must be contacted.

4.2 Release of 25 pounds of salt (any salt) to ground outside of loading area

- 4.2.1 If it is not raining, collect all of the salt and return it to the proper container. If it is not raining and the salt is cleaned-up immediately, then this is NOT a reportable incident.
- 4.2.2 If it is raining or other runoff comes into contact with the salt, then it is necessary to contact the Chief Operator and notify him of the release (this is a reportable release).
- 4.2.3 If it is raining, it will be necessary to contain the runoff and direct it away from storm drains. It may be necessary to block the storm drain.
- 4.2.4 If there is any accumulation of runoff, it will have to be collected and disposed to the wastewater treatment system.
- 4.2.5 Continue to monitor the situation. Until the runoff has been completely contained or directed to the wastewater treatment system, the area must be monitored to ensure that the contaminated runoff does not migrate to a second storm drain or other discharge point.
- 4.2.6 If salt contacts rainwater that then contacts the soil – this is also a reportable environmental incident.
- 4.2.7 Do not remove the storm drain block until the area has been cleaned.

4.3 Release of 25 pounds of chlorine to air

- 4.3.1 Shut down the system or otherwise stop the chlorine emissions. Refer to operational procedures for emergency shutdowns.
- 4.3.2 Repair the system prior to restarting or continuing the process.
- 4.3.3 Releases of greater than 10 pounds of chlorine are reportable incidents.

4.4 Release of 200 gallons of hydrochloric acid to ground

- 4.4.1 Shut down the system or otherwise stop the release of hydrochloric acid. Refer to operational procedures for emergency shutdowns.

- 4.4.2 A release of greater than 5,000 pounds (500 gallons) of hydrochloric acid to the ground is a reportable incident. Refer to the chart in procedure 1.0PED Release Reporting Procedure.
- 4.4.3 Barricade or otherwise restrict access to the area of the release. Prevent entry and keep people away from the area.
- 4.4.4 Report the incident to the Chief Operator, include basic information about what was released, where it was released, how much was released, and what is currently being done about it.
- 4.4.5 The Chief Operator will follow procedure B1.0PED Release Reporting Procedure as appropriate.
- 4.4.6 Obtain acid neutralizing chemicals and supplies from the nearest acid release response kit and contain/neutralize the acid release.
- 4.4.7 Collect all solid residuals and arrange for proper disposal according to procedures in B2.7PED Waste Management Procedure.
- 4.4.8 It may be necessary to arrange for temporary storage of the waste materials prior to disposal. Contact the Environmental Engineer or Technical & Environmental Manager for assistance as needed.
- 4.4.9 Replenish release response kit supplies.

4.5 Release of 100 gallons of untreated process wastewater to storm drain

- 4.5.1 Shut down the system or otherwise stop the source of the untreated wastewater. Refer to operational procedures for emergency shutdowns.
- 4.5.2 Block the storm drain.
- 4.5.3 Block the discharge of the storm drain if possible.
- 4.5.4 Report the incident to the Chief Operator, include basic information about what was released, where it was released, how much was released, and what is being done about the release.
- 4.5.5 Provide additional containment to the released wastewater as needed to prevent it from migrating to the soil or to any other storm drain.
- 4.5.6 Determine if the wastewater has reached the river, wetland, or soil – if so, implement procedure B1.0PED Release Reporting Procedure.
- 4.5.7 Vacuum up the collected wastewater and flush the area. Be sure to collect all wash water. Dispose of the wastewater at the wastewater treatment plant.
- 4.5.8 Get permission from the Chief Operator/Plant Incident Commander before unblocking the storm drain.

Reference

None

Appendix E – Required Notifications

Required Notification Documents

1. 3/10/1995, Vulcan, *CPP and SPP Closure Approval Conditions*.
2. 11/04/1993, Wood County, *Survey Map 5384 Vulcan Muds Bin*.
3. 11/04/1993, Wood County, *Survey Map 5385 Vulcan Saturator Purge Pit*.
4. 11/04/1993, Wood County, *Survey Map 5386 Vulcan Clarifier Purge Pit*.
5. 6/7/2005, Wood County WI, *Basic Chemicals Company Property Deed*.



P.O. BOX 161
PORT EDWARDS, WISCONSIN 54469
(715) 887-4000 - PHONE

A DIVISION OF VULCAN
MATERIALS COMPANY

March 10, 1995

Ms. Barbara J. Zellmer
Chief, Hazardous Waste Management Section
Bureau of Solid and Hazardous Waste Management
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Ms. Zellmer:

On December 29, 1994, the Department approved the Clarifier Purge Pit Closure Documentation Report and conditionally approved the Long-term Care Plan. On February 20, 1995 the Department approved the Saturator Purge Pit Closure Documentation Report and conditionally approved the Long-term Care Plan.

Conditions in the long-term care plan approvals require a response from Vulcan Chemicals to the Department.

Condition 1 - Clarifier Purge Pit:

Vulcan shall specify the name, address, and telephone number of the person to contact during the long-term care period.

Response:

The name, address, and telephone number of Vulcan's contact person is:

Name:	Steven B. Ison
Address:	Vulcan Chemicals P.O. Box 161 Highway 73 South Port Edwards, WI 54469
Telephone Number:	(715) 887-4525

Condition 3 - Clarifier Purge Pit
Condition 1 - Saturator Purge Pit:

Vulcan shall submit revised cost estimates for long-term care of the clarifier purge pit and the saturator purge pit units.

Is your RETURN ADDRESS completed on the reverse side?

SENDER: • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. ☐ Addressee's Address 2. ☐ Restricted Delivery Consult postmaster for fee.
3. Article Addressed to:	4a. Article Number	
Richard Brown WPNR 5301 Rib Mountain Drive Wausau, WI 54401	P-845-318-963	
	4b. Service Type	
	☐ Registered ☐ Insured	
	☒ Certified ☐ COD	
	☐ Express Mail ☒ Return Receipt for Merchandise	
	7. Date of Delivery	
	3-13-95	
5. Signature (Addressee)	8. Addressee's Address (Only if requested and fee is paid)	
Michael Safford		
6. Signature (Agent)		

PS Form 3811, December 1991 ☆U.S. GPO: 1992-323-402 DOMESTIC RETURN RECEIPT

Is your RETURN ADDRESS completed on the reverse side?

SENDER: • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. ☐ Addressee's Address 2. ☐ Restricted Delivery Consult postmaster for fee.
3. Article Addressed to:	4a. Article Number	
Charles Blawie USERRA- Region V 77 West Jackson Blvd Chicago, IL 60604	P-845-318-962	
	4b. Service Type	
	☐ Registered ☐ Insured	
	☒ Certified ☐ COD	
	☐ Express Mail ☒ Return Receipt for Merchandise	
	7. Date of Delivery	
	3-13-95	
5. Signature (Addressee)	8. Addressee's Address (Only if requested and fee is paid)	
John A. Hopp		
6. Signature (Agent)		

PS Form 3811, December 1991 ☆U.S. GPO: 1992-323-402 DOMESTIC RETURN RECEIPT

Is your RETURN ADDRESS completed on the reverse side?

SENDER: • Complete items 1 and/or 2 for additional services. • Complete items 3, and 4a & b. • Print your name and address on the reverse of this form so that we can return this card to you. • Attach this form to the front of the mailpiece, or on the back if space does not permit. • Write "Return Receipt Requested" on the mailpiece below the article number. • The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. ☐ Addressee's Address 2. ☐ Restricted Delivery Consult postmaster for fee.
3. Article Addressed to:	4a. Article Number	
Barbara Zellmer WPNR P.O. Box 7921 Madison, WI 53707	P-845-318-961	
	4b. Service Type	
	☐ Registered ☐ Insured	
	☒ Certified ☐ COD	
	☐ Express Mail ☒ Return Receipt for Merchandise	
	7. Date of Delivery	
	MAR 15 1995	
5. Signature (Addressee)	8. Addressee's Address (Only if requested and fee is paid)	
6. Signature (Agent)		

PS Form 3811, December 1991 ☆U.S. GPO: 1992-323-402 DOMESTIC RETURN RECEIPT

Ms. Barbara J. Zellmer
March 10, 1995
Page 2

Response:

Attachment 1 contains the revised cost estimates. The cost estimates are based on a worst-case, third party costs as required by s. NR 685.07(4). The cost estimate associated with inspection and repair for both the clarifier purge pit cap and saturator purge pit cap assumes that the inspection and any needed repairs will occur on the same visit whenever possible. When the Department requires a long-term care financial responsibility mechanism to be in place, the amount necessary will be computed according to the proper formula found in s. NR 685.07(7).

Condition 4 - Clarifier Purge Pit
Condition 2 - Saturator Purge Pit:

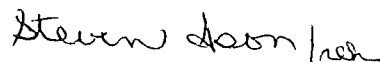
Vulcan shall submit a certification signed by the property owner that the notation required by s. NR 685.06(9) has been recorded with the register of deeds. Vulcan shall include a copy of the document in which this notation has been placed with its submittal to the Department.

Response:

Attachment 2 contains the property owner's certification and a copy of the document with the required notation. The certification and notation is for the former muds bin, the saturator purge pit, and the clarifier purge pit.

If you have any questions or require additional information, please contact me at (715) 887-4525.

Very truly yours,



Steven B. Ison
Environmental Engineer

SBI/rlk
Enclosures

c: B. J. Zellmer (2 additional copies)
R. L. Brown (2 copies)
C. Slaustas - 5HR/3
J. M. Boyd

ATTACHMENT 1

LONG-TERM CARE COST ESTIMATE

In accordance with s. NR 685.07(4), the long-term care cost estimates are based on the hiring of a third party to conduct the long-term care activities using a worst case scenario.

CLARIFIER PURGE PIT:

Long-term care activities for the clarifier purge pit include inspecting the concrete cap on a quarterly basis and making repairs as necessary. The 1995 annual cost to inspect and repair the cap, including labor and materials, is \$500.00*. The long-term care period is 30 years. Per s. NR 685.07(4), the long-term care cost estimate is obtained by multiplying the long-term care period by the annual long-term care cost. Based on this formula, the estimated long term care cost is \$15,000.00.

SATURATOR PURGE PIT:

Long-term care activities for the saturator purge pit include monitoring well maintenance, inspecting the concrete cap on a quarterly basis and making repairs as necessary, and quarterly ground water sampling and analysis.

Annual Cost Estimate

Monitoring Well Maintenance

Monitoring maintenance cost is based on the replacement of one well every eight years due to vehicular damage, etc.

The 1995 cost estimate to replace one well is \$1,500.00. That sum was divided by eight years to obtain a cost of \$187.00 per year.

Cap Inspection and Repair

The 1995 cost for inspecting and repairing the cap, including labor and materials, is \$500.00*.

Ground Water Sampling and Analysis

The 1995 cost for sampling two ground water monitoring wells on a quarterly basis is \$2,900.00.

The 1995 cost for an outside laboratory to analyze the ground water samples for total and dissolved mercury, chloride, and sulfate for two ground water monitoring wells is \$880.00

* The cost estimate associated with inspection and repair for both the clarifier purge pit cap and saturator purge pit cap assumes that the inspection and any needed repairs will occur on the same visit whenever possible.

The total annual cost for the long-term care activities for the saturator purge pit is \$4,467. The long-term care period is 30 years. Per s. NR 685.07(4), the long-term care cost estimate is obtained by multiplying the long-term care period by the annual long-term care cost. Based on this formula, the estimated long term care cost is \$134,010.00.

ATTACHMENT 2

CERTIFICATION AND DOCUMENT NOTATION

Vulcan Materials Company, a New Jersey corporation, acting by and through Michael J. Ferris, President of Vulcan Chemicals, a Division of Vulcan Materials Company ("Vulcan"), now stipulates to the following statements of fact and further agrees to restrict the use and title of the realty described in Attachment 1 of this document (hereinafter sometimes referred to as "The Land") in accordance with the terms and conditions set forth herein:

1. Vulcan, acting by and through its duly authorized employee, John A. Heilala, Executive Vice President - Chloralkali of Vulcan Chemicals, has applied for closure documentation approval and conditional approval of a long-term care plan for a certain hazardous waste management facility located on State Highway 73 South in the Village of Port Edwards, Wood County, Wisconsin, and the State of Wisconsin, Department of Natural Resources ("DNR"), has the authority to determine closure standards for such hazardous waste management facilities pursuant to Section 144.62(8), Stats.

2. Vulcan is the owner in fee of the real estate described in Attachment 1.

3. Vulcan, acting by and through its duly authorized employee, John A. Heilala, Executive Vice President - Chloralkali of Vulcan Chemicals, has submitted closure documentation and long-term care plans for its hazardous waste management facility described in Attachment 1, and the DNR has approved the closure plan documents and has given conditional approval of the long-term care plan submitted by Vulcan, requiring, inter alia, that Vulcan, by its duly authorized corporate officer, execute this instrument notifying any potential purchaser of the property described in Attachment 1 of the terms and conditions of the aforesaid DNR conditional approval.

4. This dedication shall consist of the execution of this document to restrict the use and title of The Land by the duly authorized corporate officer of Vulcan and the recording of this document in the office of the Register of Deeds for Wood County, Wisconsin.

5. This Covenant and Dedication shall bind Vulcan to the extent of its legal and/or equitable interest in The Land and shall run with The Land and be binding upon Vulcan and its successors and assigns forever, unless and until this requirement is changed, modified or revoked pursuant to a written instrument approving such change, modification or revocation which is executed by or on behalf of the DNR or its successor, or pursuant to a lawful act of the legislature of the State of Wisconsin.

6. The terms and conditions of this covenant shall be both implicitly and explicitly included in any transfer, conveyance or encumbrance of the real estate described in Attachment 1 or any part thereof, and any instrument of transfer, conveyance or encumbrance affecting all or any part of the real estate described in Attachment 1 shall set forth the terms and conditions of this document either by reference to this document or by setting forth in full text items 1 through 6 hereinbelow.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, including the closure document approval and the long-term care plan conditional

approval granted by the DNR, Vulcan, acting by and through Michael J. Ferris, President of the Vulcan Chemicals Division of Vulcan Materials Company hereby agrees to restrict the use and title of the land in Attachment 1 in accordance with s. NR685.06(9), Wis. Adm. Code, as follows:

1. Notice is hereby given to any potential purchaser or user of the real estate described in Attachment 1 that said real estate has been used to manage hazardous waste.

2. That use of the said real estate is restricted under the terms of s. NR685.06(3) of the Wis. Adm. Code.

3. That this Covenant and Dedication constitutes the notification required by s. NR685.06(9) Wis. Adm. Code.

4. That a survey plat and record of the type, location and kind of hazardous waste disposed of in each cell or disposal unit of the hazardous waste management facility have been filed with the office of the Register of Deeds for Wood County, Wisconsin, and have been submitted to the DNR. The survey plats have been recorded as Wood County Certified Survey Map No. 5384, recorded in Volume 18 of Survey Maps, page 284, as document no. 755933, and as Wood County Certified Survey Map No. 5385, recorded in Volume 18 of Survey Maps, page 285, as document no. 755934, and Wood County Certified Survey Map No. 5386, recorded in Volume 18 of Survey Maps, page 286, as document no. 755935, Wood County Records, all of which are hereby incorporated herewith including the note identifying the hazardous waste, the quantity of waste within the certified survey map, and the identity of the hazardous waste all as required by s. NR685.06(9), Wis. Adm. Code.

5. This Covenant and Dedication may be changed, modified or revoked only upon written approval of the State of Wisconsin, Department of Natural Resources.

6. This Covenant and Dedication is made in perpetuity such that the present owner and its successors and assigns shall be bound by the terms and conditions herein set forth, unless and until this Covenant and Dedication is changed, modified or revoked pursuant to a written instrument approving of such change, modification or revocation which is executed by or on behalf of the DNR or its successor, or pursuant to a lawful act of the legislature of the State of Wisconsin.

Vulcan Materials Company,
a New Jersey corporation

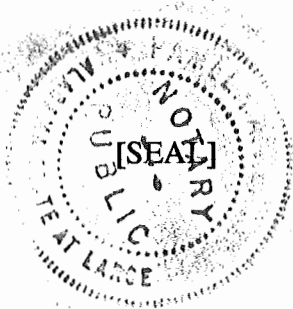
By: Michael J. Ferris
Michael J. Ferris
President, Vulcan Chemicals

ACKNOWLEDGEMENT

State of Alabama)
 : ss.
County of Jefferson)

Before me, a notary public in and for the above county in the state aforesaid, personally appeared Michael J. Ferris who acknowledged that he is the President of Vulcan Chemicals, a Division of Vulcan Materials Company, and that, as such, being duly authorized so to do, he executed the foregoing instrument on behalf of that corporation for the purposes therein contained.

Given under my hand and notarial seal this 15th day of February,
1995.



Pamela A. Leaves
Notary Public, State of Alabama

My commission expires 11/8/98

This instrument drafted by:

Mr. William L. Bryant
Birmingham, Alabama

ATTACHMENT 1

Outlot 1 of Wood County Certified Survey Map No. 5384, recorded in Volume 18 of Survey Maps, on page 284, as document no. 755933, Wood County Records, being part of the Southeast Quarter of the Southeast Quarter (SE-1/4 of SE-1/4) of Section 34, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

Outlot 1 of Wood County Certified Survey Map No. 5385, recorded in Volume 18 of Survey Maps, on page 285, as document no. 755934, Wood County Records, being part of the Southeast Quarter of the Southeast Quarter (SE-1/4 of SE-1/4) of Section 34, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

Outlot 1 of Wood County Certified Survey Map No. 5386, recorded in Volume 18 of Survey Maps, on page 286, as document no. 755935, Wood County Records, being part of the Southeast Quarter of the Southeast Quarter (SE-1/4 of SE-1/4) of Section 34, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

MR.

715090

PT SE-SE 34-22-5

WOOD CO. WIS.

'95 FEB 24 PM 3 31

RECORD IN

VOL. 745 REG. PAGES 11

REGISTER OF DEEDS

Rene L. Kraus

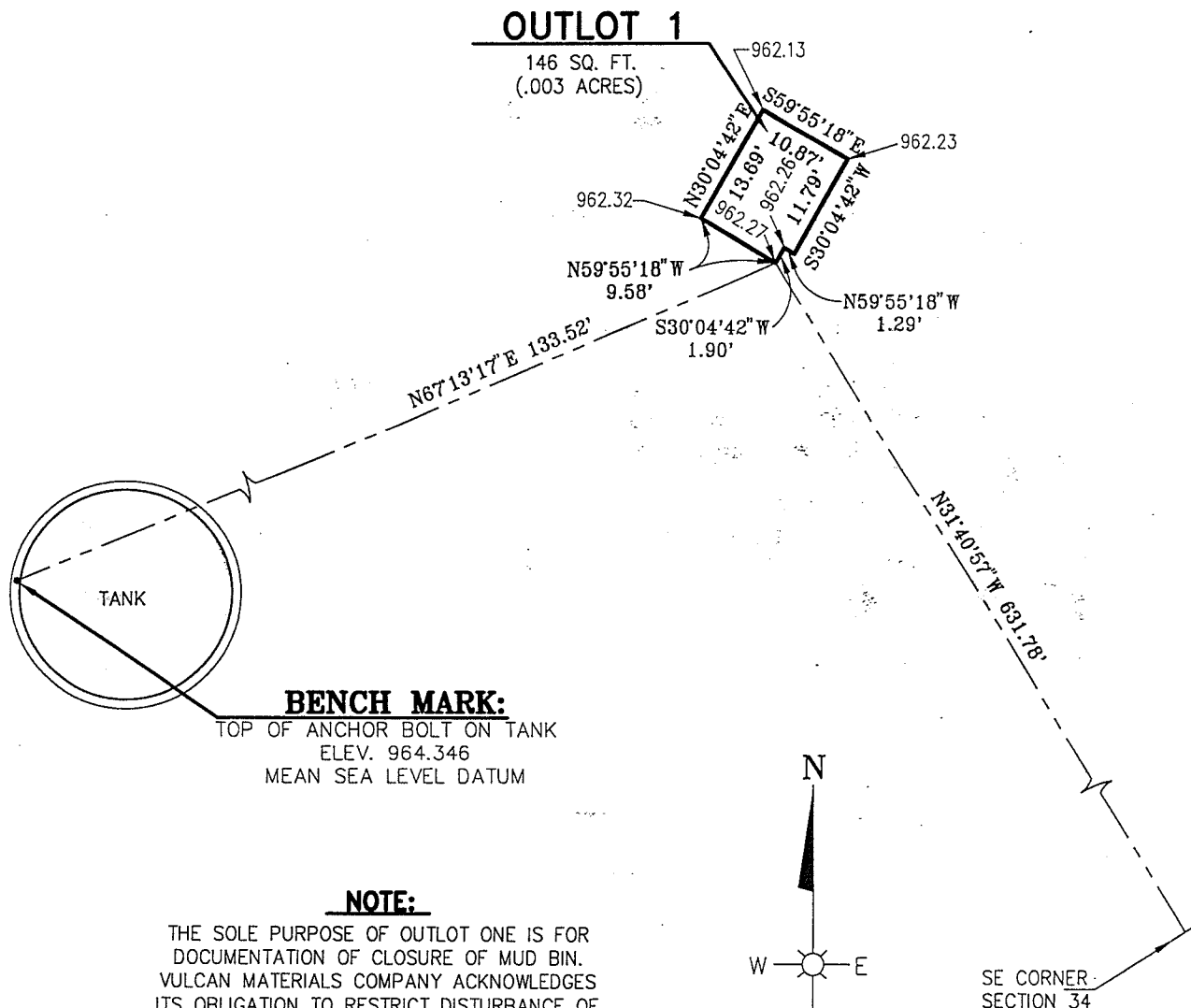
1600P
NCO



Stock No. 26273

WOOD COUNTY CERTIFIED SURVEY MAP NO. 5384

FOR

Vulcan Materials CompanyPart of the SE $\frac{1}{4}$ SE $\frac{1}{4}$, Section 34, T22N, R5E,
Village of Port Edwards, Wood County, Wisconsin

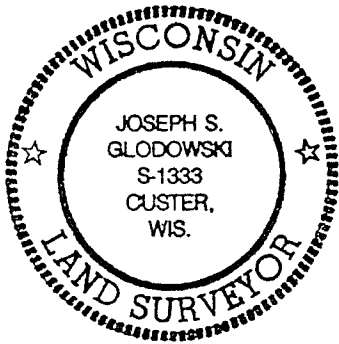
STATE OF WISCONSIN)
WOOD COUNTY)SS

I, Joseph S. Glodowski, Registered Land Surveyor, hereby certify:
That I have surveyed and mapped the property described and represented on this certified survey map.
That I have made such survey and map by the direction of Vulcan Materials Company, owner.
That such survey and map is a correct representation of the exterior boundaries of the land surveyed, described as:

Part of the SE1/4 SE1/4, Section 34, T22N, R5E, Village of Port Edwards, Wood County, Wisconsin;
Beginning at a point which is N31°40'57"W, 631.78 feet from the inaccessible southeast corner of Section 34;
Thence N59°55'18"W, 9.58 feet;
Thence N30°04'42"E, 13.69 feet;
Thence S59°55'18"E, 10.87 feet;
Thence S30°04'42"W, 11.79 feet;
Thence N59°55'18"W, 1.29 feet;
Thence S30°04'42"W, 1.90 feet to the point of beginning, containing 146 square feet and subject to restrictions, reservations, rights-of-way and easements of record.

That I have complied with the provisions of Chapter 236.34 of the Wisconsin Statutes in surveying, dividing and mapping the same.

Dated this 4th day of , 1993.



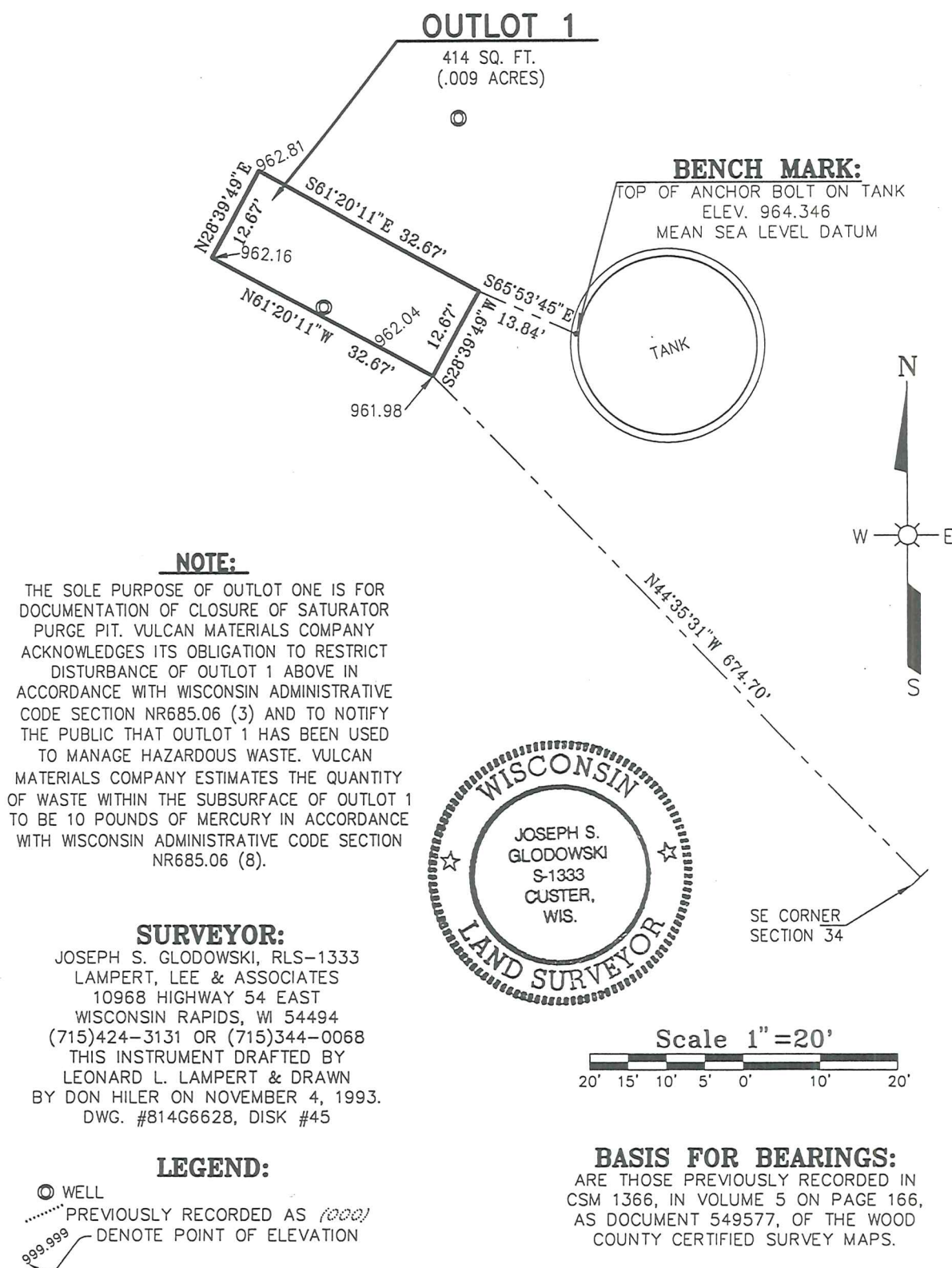
Joseph S. Glodowski
Joseph S. Glodowski
Registered Land Surveyor, S-1333



Stock No. 26273

WOOD COUNTY CERTIFIED SURVEY MAP NO. 5385

FOR

Vulcan Materials CompanyPart of the SE $\frac{1}{4}$ SE $\frac{1}{4}$, Section 34, T22N, R5E,
Village of Port Edwards, Wood County, Wisconsin

STATE OF WISCONSIN)
WOOD COUNTY)SS

I, Joseph S. Glodowski, Registered Land Surveyor, hereby certify:
That I have surveyed and mapped the property described and represented on this certified survey map.
That I have made such survey and map by the direction of Vulcan Materials Company, owner.
That such survey and map is a correct representation of the exterior boundaries of the land surveyed, described as:

Part of the SE1/4 SE1/4, Section 34, T22N, R5E, Village of Port Edwards, Wood County, Wisconsin;
Beginning at a point which is N44°35'31"W, 674.70 feet from the inaccessible southeast corner of Section 34;
Thence N61°20'11"W, 32.67 feet;
Thence N28°39'49"E, 12.67 feet;
Thence S61°20'11"E, 32.67 feet;
Thence S28°39'49"W, 12.67 feet to the point of beginning, containing 414 square feet and subject to restrictions, reservations, rights-of-way and easements of record.

That I have complied with the provisions of Chapter 236.34 of the Wisconsin Statutes in surveying, dividing and mapping the same.

Dated this 4th day of November, 1993.



Joseph S. Glodowski

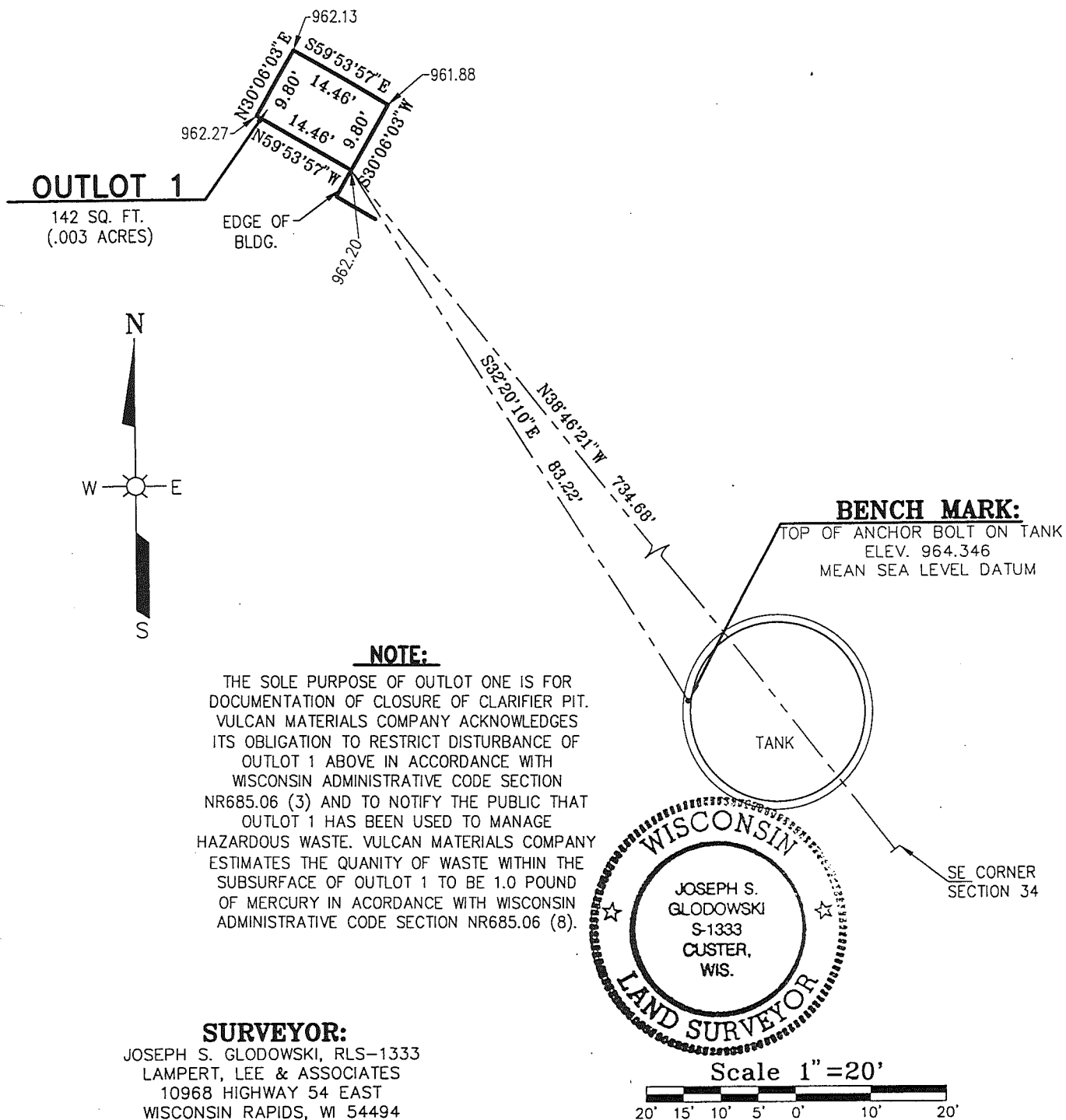
Joseph S. Glodowski
Registered Land Surveyor, S-1333



Stock No. 26273

WOOD COUNTY CERTIFIED SURVEY MAP NO. 5386

FOR

Vulcan Materials CompanyPart of the SE $\frac{1}{4}$ SE $\frac{1}{4}$, Section 34, T22N, R5E,
Village of Port Edwards, Wood County, Wisconsin

STATE OF WISCONSIN)
WOOD COUNTY)SS

I, Joseph S. Glodowski, Registered Land Surveyor, hereby certify:

That I have surveyed and mapped the property described and represented on this certified survey map.

That I have made such survey and map by the direction of Vulcan Materials Company, owner.

That such survey and map is a correct representation of the exterior boundaries of the land surveyed, described as:

Part of the SE1/4 SE1/4, Section 34, T22N, R5E, Village of Port Edwards, Wood County, Wisconsin;

Beginning at a point which is N38°46'21"W, 734.68 feet from the inaccessible southeast corner of Section 34;

Thence N59°53'57"W, 14.46 feet;

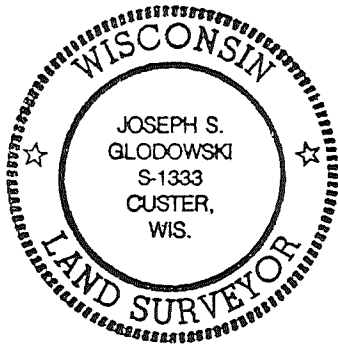
Thence N30°06'03"E, 9.80 feet;

Thence S59°53'57"E, 14.46 feet;

Thence S30°06'03"W, 9.80 feet to the point of beginning, containing 142 square feet and subject to restrictions, reservations, rights-of-way and easements of record.

That I have complied with the provisions of Chapter 236.34 of the Wisconsin Statutes in surveying, dividing and mapping the same.

Dated this 4th day of November, 1993.



Joseph S. Glodowski
Joseph S. Glodowski
Registered Land Surveyor, S-1333

434

SPECIAL WARRANTY DEED

Document Number

This Deed, made between

Vulcan Materials Company

Grantor,

and Basic Chemicals Company, LLC

Grantee

Witnesseth, that the said Grantor, for a valuable consideration

conveys to Grantee the following described real estate in Wood
County, State of Wisconsin

See Exhibit A attached hereto

GOETZ ABSTRACT & TITLE

PO Box 906

Wisconsin Rapids, WI 54495-0906

715-424-2200

27-00032, 27-00032A, 27-00059E

Parcel Identification Number (PIN)

This is not homestead property
(is) (is not)\$406.50
TRANSFER FEETogether with all and singular the hereditaments and appurtenances thereunto belonging,
And Grantor warrants title against defects, liens and encumbrances created by or through Grantor only (and none other) and specifically
excepting all defects, liens, encumbrances and other matters referenced in Schedule B attached hereto

Dated this 7 day of June, 2005

Vulcan Materials Company

(SEAL)

By William F. Denson, III (SEAL)

William F. Denson, III, Senior Vice President

(SEAL)

By (SEAL)

AUTHENTICATION

Signature(s)

authenticated this day of

TITLE MEMBER STATE BAR OF WISCONSIN

(If not,
authorized by § 706.06, Wis Stats)

THIS INSTRUMENT WAS DRAFTED BY

Frederic L. Smith, Jr.

Bradley Arant Rose & White LLP

(Signatures may be authenticated or acknowledged Both are not
necessary)

ACKNOWLEDGMENT

State of Alabama)
Jefferson County) ssPersonally came before me this 2nd day of
June 2005, the above namedWilliam F. Denson, III, Senior
Vice President, Vulcan Materials
Companyto
me known to be the person who executed the foregoing
instrument and acknowledged the same

Alicia M. Lamont

COPY TO BE FILED IN THE OFFICE OF THE CLERK OF THE SUPERIOR COURT OF ALABAMA AT LARGE

My commission expires Jan 25, 2006

Notary Public, State of Alabama

My commission is permanent (If not, state expiration date)

*Names of persons signing in any capacity must be typed or printed below their signature

SPECIAL WARRANTY DEED

EXHIBIT A

TO

SPECIAL WARRANTY DEED (Land)

Description of Land

Port Edwards, Wisconsin Owned Real Property
100 State Highway 73, Port Edwards, Wisconsin 54469

The Land:

Parcel 1: Lot 3 of Wood County Certified Survey Map No. 5394 (recorded in Volume 18 of Survey Maps at Page 294) being part of Government Lot 2, Section 35, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

Parcel 2: Lot 2 of Wood County Certified Survey Map No. 5395 (recorded in Volume 18 of Survey Maps at Page 295) being part of Government Lot 2, Section 35, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

Parcel 3: Part of Government Lot 2 of Section 35, Township 22 North, Range 5 East in the Village of Port Edwards, Wood County, Wisconsin commencing at the inaccessible section corner common to Sections 34 and 35, Township 22 North and Sections 2 and 3, Township 21 North all in Range 5 East; thence North on the Section line common to said Sections 34 and 35 a distance of 1007.50 feet; thence East at right angles to said section line 91.92 feet to an iron pipe stake and the beginning of the following description which is on the Easterly right of way of Wisconsin State Trunk Highway 73 and 30 feet South of and perpendicular to the center line of the former Nekoosa Papers Inc. intermill railroad; from said point of beginning thence S 00°56'36"E 582.60 feet to an iron pipe stake; thence S 46°03'10"E 33.67 feet to an iron pipe stake on the former Northerly right of way of Wisconsin State Trunk Highway 73; thence Northeasterly 102.57 feet along the arc of said curved right of way which is a 3°44' circular curve concave to the Southeast whose radius is 1532.39 feet, whose central angle is 03°50'06" to a wood right of way post which is measured by a chord of 102.55 feet which bears N 89°21'57"E; thence S 88°43'00"E continuing along the former Northerly right of way of Wisconsin State Trunk Highway 73 a distance of 300.75 feet to an iron pipe stake; thence N 04°06'10"W a distance of 619.48 feet to an iron pipe stake which is 30 feet South of and perpendicular to the center line of the aforesaid former Nekoosa Papers Inc. intermill railroad; thence S 89°09'50"W parallel to and 30 feet distant from the center line of said intermill railroad 392.80 feet to the point of beginning.

Parcel 4: Part of the SE ¼ of the SE ¼ of Section 34, Township 22 North, and Government Lot 2 in Section 3, Township 21 North, all in Range 5 East in the Village of Port Edwards, Wood County, Wisconsin, beginning at an iron pipe stake on the Westerly right of way of Wisconsin State Trunk Highway 73 which is North on the line between Sections 34 and 35 a distance of 993.50 feet and West at right angles to said section line 60 feet from the inaccessible corner common to Sections 34 and 35, Township 22 North, and to Sections 2 and 3, Township 21 North, all in Range 5 East; thence S 01°25'50"W along the Westerly right of way of said Wisconsin State Trunk Highway 73 517.50 feet to an iron pipe stake; thence S 46°54'50"W continuing along said Highway 73 right of way 194.44 feet to a P-K spike in the asphalt pavement of the parking lot; thence Southwesterly continuing along the right of way of said Highway 73 a distance of 1100.54 feet along the arc of said Highway which is a circular curve concave to the Southeast which has a radius of 1532.39 feet and a central angle of 41°08'56" to an iron pipe stake which is measured by a chord of 1077.04 feet to which bears S 53°49'29"W; thence N 62°13'10"W 36.66 feet to an iron pipe stake which is 30 feet East of and perpendicular to the center line of the former Nekoosa Papers Inc. intermill railroad; thence S 29°52'50"W parallel to and 30 feet distant from the said former intermill railroad 307.79 feet to an iron pipe stake; thence N 60°07'10"W 37.00 feet to an iron pipe stake; thence N 29°52'50"E a distance of 1330.88 feet to an iron rod stake at the beginning of a circular curve concave to the Southeast which has a radius of 818.06 feet and a central angle of 37°24'14"; thence Northeasterly 534.05 feet along the arc of said curve to an iron pipe stake which is measured by a chord of 524.61 feet which bears N 48°34'57"E; thence S 22°42'56"E 37.00 feet to an iron pipe stake in the fence line; thence Northeasterly 179.63 feet along the fence which is a curve concave to the Southeast

which has a radius of 781.06 feet and a central angle of 13°10'38" to the point of beginning which is measured by a chord of 179.24 feet which bears N 73°52'23"E. to the point of beginning.

The aforesaid fence is 30 feet South of and perpendicular to the said intermill railroad.

Included in the above description is all of Lot 1 of Wood County Certified Survey Map No. 1336 (recorded in Volume 5 of Survey Maps at Page 166), and Outlot 1 of Wood County Certified Survey Map No. 5384 (recorded in Volume 18 of Survey Maps at Page 284), Outlot 1 of Wood County Certified Survey Map No. 5385 (recorded in Volume 18 of Survey Maps at Page 285), Outlot 1 of Wood County Certified Survey Map No. 5386 (recorded in Volume 18 of Survey Maps at Page 286).

Parcel 5: Lot 3 of Wood County Certified Survey Map No. 5393 (recorded in Volume 18 of Survey Maps at Page 293) being part of Government Lot 2, Section 3, Township 21 North, Range 5 East and part of the SW ¼ of the SE ¼ and the SE ¼ of the SE ¼ of Section 34, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

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Parcel 7: Lot 1 of Wood County Certified Survey Map No. 5396 (recorded in Volume 18 of Survey Maps at Page 296) being part of Government Lot 2, Section 3, Township 21 North, Range 5 East and part of the SW ¼ of the SE ¼ and the SE ¼ of the SE ¼ of Section 34, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

Together with all rights, titles, and interests appurtenant thereto; BUT SPECIFICALLY EXCLUDING all plants, buildings, structures, fixtures, and other improvements located on the Land, SAVE and EXCEPT the following (collectively, the "Systems"), which Systems are included in this conveyance:

1. Groundwater Collection System. Those ditches, trenches, pumps, wells (if any), and other property, equipment or devices, as may be improved, repaired, modified, expanded, replaced, rebuilt, or restored from time to time, in existence as of the date hereof and necessary for the extraction, collection, and conveyance of groundwater being treated by the treatment system described in Paragraph 3 below as of the date hereof.
2. Groundwater Monitoring System. That system of groundwater monitoring wells and associated equipment, property and devices in place on the Land as of the date hereof, and as the same may be hereafter improved, repaired, replaced, rebuilt, modified, augmented or expanded, necessary or useful for implementation of the Modified Groundwater Monitoring Plan for the Land, as approved by Wisconsin Department of Natural Resources on April 10, 2000, and as the same may be modified in the future.
3. Treatment System. All equipment that is used exclusively to treat groundwater that is collected in the Groundwater Collection System, as such equipment may be improved, repaired, modified, expanded, replaced, rebuilt, or restored from time to time, in existence as of the date hereof and necessary for the removal of mercury from groundwater at the Land prior to the discharge of treated groundwater pursuant to the work being performed and remaining to be performed pursuant to the RCRA corrective action requirements imposed under authority of the hazardous waste operating licenses and involving the Systems.

EXHIBIT B
TO
SPECIAL WARRANTY DEED (Land)

Exceptions

1. Easements or claims of easements not shown by the public records.
2. Any claim of adverse possession or prescriptive easement.
3. Notice of hazardous waste as noted on Wood County Certified Survey Map No. 5834, as recorded on November 18, 1993 in Volume 18 (Survey maps), Page 284, Register of Deeds, Wood County, Wisconsin.
4. Notice of hazardous waste as noted on Wood County Certified Survey Map No. 5835, as recorded on November 18, 1993 in Volume 18 (Survey maps), Page 285, Register of Deeds, Wood County, Wisconsin.
5. Notice of hazardous waste as noted on Wood County Certified Survey Map No. 5836, as recorded on November 18, 1993 in Volume 18 (Survey maps), Page 286, Register of Deeds, Wood County, Wisconsin.
6. Utility easement as noted on Wood County Certified Survey Map No. 5395, dated November 9, 1993, as recorded on December 1, 1993 in Volume 18 (Survey maps), Page 295, Register of Deeds, Wood County, Wisconsin.
7. Utility easement as noted on Wood County Certified Survey Map No. 5393, dated November 9, 1993, as recorded on December 1, 1993 in Volume 18 (Survey maps), Page 293, Register of Deeds, Wood County, Wisconsin.
8. Rights and easements in and to any and all railroad switches, sidetracks spur tracks and right of way located upon or appurtenant to the above-described premises.
9. Reversionary rights and reservation of all water power, water flowage and dam privileges contained in an easement from Nekoosa-Edwards Paper Company, Grantor, to Wyandotte Chemicals Corporation, dated August 18, 1966, and recorded on October 28, 1966 in Volume 380 of Miscellaneous Records at Page 141, Register of Deeds, Wood County, Wisconsin.
10. Right of Way Easement, dated July 20, 1966, by Nekoosa-Edwards Paper Company, Grantor, to Wisconsin Power & Light Company, Grantee, as recorded August 22, 1966 in Volume 377 of Miscellaneous Records at Page 371, Register of Deeds, Wood County, Wisconsin.
11. Easement for Electric Line, dated April 20, 1973, by Nekoosa Edwards Paper Company, Grantor, to Wisconsin Power & Light Company, Grantee, as recorded July 13, 1973, in Volume 443 of Miscellaneous Records at Page 359, Register of Deeds, Wood County, Wisconsin.
12. Easement for Overhead Electric Line Facilities, dated November 11, 1999, by VMC, as Grantor, to Wisconsin Power & Light Company, as Grantee, as recorded

November 24, 1999 in Volume 965 of Records at Page 593, Register of Deeds, Wood County, Wisconsin.

13. Reversionary rights conveyed by Nekossa-Edwards Paper Company, Grantor, to Wisconsin Power & Light Company, Grantee, as noted on Warranty Deed, dated July 23, 1976, recorded October 22, 1976 in Volume 465 of Deeds at Page 461, Register of Deeds, Wood County, Wisconsin.

14. Holding Tank Agreement, dated February 4, 1996, between the Village of Port Edwards, Wisconsin and VMC, as recorded June 16, 1994 in Volume 724 of Records at Page 332, Register of Deeds, Wood County, Wisconsin.

15. Easements as noted on Quit Claim Deed, dated January 13, 1994, by Wisconsin Central Ltd., as Grantor, to VMC, as Grantee, as recorded on June 22, 1994 in Volume 724 of Records at Page 764, Register of Deeds, Wood County, Wisconsin.

16. Easements as noted in Warranty Deed, dated December 7, 1993, by Nekoosa-Edwards Paper Company, as Grantor, to VMC, as Grantee, recorded on June 22, 1994 in Volume 724 of Records at Page 767, Register of Deeds, Wood County, Wisconsin.

17. Agreements, easements and covenants as noted on the Easement, dated May 17, 1994, recorded on June 22, 1994 in Volume 724 of Records at Page 772, Register of Deeds, Wood County, Wisconsin.

18. Covenant and Dedication, dated February 15, 1995, by VMC, as recorded on February 24, 1995 in Volume 745 of Records at Page 511, Register of Deeds, Wood County, Wisconsin.

445

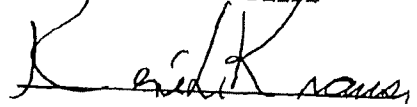
Document Number

MEMORANDUM OF LEASE

2005R06813

REGISTER OF DEEDS
WOOD COUNTY
RECORDED ON

06/07/2005 04:09PM

RENE' L KRAUSE
REGISTER OF DEEDSREC FEE: 19.00
PAGES: 5

This MEMORANDUM OF LEASE (this "Memorandum") is executed as of June 7, 2005, by BASIC CHEMICALS COMPANY, LLC, a Delaware limited liability company, having an address at 5005 LBJ Freeway, Suite 2200, Dallas, Texas 75244 ("Lessor"), and ERCO WORLDWIDE (USA) INC., a Delaware corporation, having an address at 302 The East Mall, Suite 200, Toronto, Ontario, Canada M9B 6C7 ("Lessee").

This Memorandum is being executed in connection with the execution and delivery of that certain Ground Lease (the "Lease") of even date herewith between Lessor, as lessor, and Lessee, as lessee. Among other things, the Lease provides for the lease by Lessor to Lessee of all or substantially all of the tract of land described on Exhibit "A" attached hereto. The term of the Lease expires on the last day of the calendar month that is ninety-eight (98) years after the last day of the calendar month in which the date hereof occurs.

This Memorandum is executed, acknowledged and delivered for the purpose of recordation in the Register of Deeds for Wood County, Wisconsin, in order to give notice of all of the terms, provisions and conditions thereof. This Memorandum is not intended and is not to be construed to amend or in any way modify any of the terms, provisions or conditions of the Lease. This Memorandum may be executed in multiple counterparts, each of which will be an original and all of which taken together shall constitute a single document.

[Signature pages follow this page.]

[Signature pages follow this page.]

Recording Area

GOETZ ABSTRACT & TITLE

P.O. Box 906

Wisconsin Rapids, WI 54495-0906

1900 P 715-424-2200

27-00032; 27-00032A; 27-00059E

Parcel Identification Number (PIN)

THIS INSTRUMENT WAS DRAFTED BY

Anne NewtownVinson & Elkins, L.L.P.

IN WITNESS WHEREOF, Lessor has executed this Memorandum of Lease as of the date and year above written.

BASIC CHEMICALS COMPANY, LLC,
a Delaware limited liability company

By: Stacy L. Palmatary
Name: Stacy L. Palmatary
Title: Vice President

THE STATE OF TEXAS §
COUNTY OF DALLAS §

This instrument was acknowledged before me on the 7th day of June, 2005, by Stacy L. Palmatary, Vice President of BASIC CHEMICALS COMPANY, LLC, a Delaware limited liability company, on behalf of said limited liability company.

[SEAL]



Sharee A. McDaniel
Notary Public in and for
The State of TEXAS

Sharee A. McDaniel
Printed Name of Notary

My Commission Expires: 10-18-07

IN WITNESS WHEREOF, Lessee has executed this Memorandum of Lease as of the date and year above written.

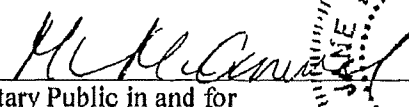
ERCO WORLDWIDE (USA) INC.,
a Delaware corporation

By: 
Name: John B. Kamler
Title: VP Business Development

PROVINCE
THE STATE OF ONTARIO §
CITY §
COUNTY OF TORONTO §

This instrument was acknowledged before me on the 2 day of June, 2005, by John B. Kamler, VP Business Development of **ERCO WORLDWIDE (USA) INC.**, a Delaware corporation, on behalf of said corporation.

[SEAL]


Notary Public in and for
The State of Ontario
Province

Printed Name of Notary MARY LOUISE McDONALD

My Commission Expires: never

EXHIBIT A
TO
MEMORANDUM OF LEASE

Description of Land

Port Edwards, Wisconsin Owned Real Property
100 State Highway 73, Port Edwards, Wisconsin 54469

Parcel 1: Lot 3 of Wood County Certified Survey Map No. 5394 (recorded in Volume 18 of Survey Maps at Page 294) being part of Government Lot 2, Section 35, Township 22 North, Range 5 East, Village of Port Edwards, Wood County, Wisconsin.

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continuing along said Highway 73 right of way 194.44 feet to a P-K spike in the asphalt pavement of the parking lot; thence Southwesterly continuing along the right of way of said Highway 73 a distance of 1100.54 feet along the arc of said Highway which is a circular curve concave to the Southeast which has a radius of 1532.39 feet and a central angle of 41°08'56" to an iron pipe stake which is measured by a chord of 1077.04 feet to which bears S 53°49'29" W; thence N 62°13'10" W 36.66 feet to an iron pipe stake which is 30 feet East of and perpendicular to the center line of the former Nekoosa Papers Inc. intermill railroad; thence S 29°52'50" W parallel to and 30 feet distant from the said former intermill railroad 307.79 feet to an iron pipe stake; thence N 60°07'10" W 37.00 feet to an iron pipe stake; thence N 29°52'50" E a distance of 1330.88 feet to an iron rod stake at the beginning of a circular curve concave to the Southeast which has a radius of 818.06 feet and a central angle of 37°24'14" ; thence Northeasterly 534.05 feet along the arc of said curve to an iron pipe stake which is measured by a chord of 524.61 feet which bears N 48°34'57" E; thence S 22°42'56" E 37.00 feet to an iron pipe stake in the fence line; thence Northeasterly 179.63 feet along the fence which is a curve concave to the Southeast which has a radius of 781.06 feet and a central angle of 13°10'38" to the point of beginning which is measured by a chord of 179.24 feet which bears N 73°52'23" E. to the point of beginning.

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Appendix F – Corrective Action Plans

Corrective Action Plan Documents

1. 2/2000, CH2M Hill, *Corrective Action Operation and Maintenance Plan*.
2. 1/5/2001, CH2M Hill, *Proposed Modifications to Saturator Purge Pit Groundwater Collection*.
3. 1/24/2001, WDNR, *Proposed Modifications to Saturator Purge Pit Groundwater Collection*.
4. 6/29/2020, ERCO, *Saturator Purge Pit Remedial Action Design Report*.

Operation and Maintenance Plan

PREPARED FOR: Vulcan Chemicals, Inc.
Port Edwards, WI Facility

DEVELOPMENT DATE: February 2000

This Operation and Maintenance (O&M) Plan describes the long-term maintenance and corrective measures for the groundwater collection systems installed to meet Vulcan's corrective action obligations. The systems consist of the Cell Room groundwater collection trench and the Saturator Purge Pit groundwater extraction well.

Pursuant to WDNR Corrective Measures Implementation Task III Internal Guide, specifically sections 4.a. through 4.h. (March 14, 1995), this plan provides or refers to:

- Standard Operating Procedure and Maintenance Procedures
- Potential Operating Problems and Possible Solutions
- Routine Monitoring and Laboratory Testing Includes
- Procedures to be Implemented in case of system failure
- Facility Safety Plan
- Description of Equipment
- Recordkeeping and Reporting Requirements
- Operator Training

a. Standard Operating and Maintenance Procedures

The Cell Room groundwater collection trench and the Saturator Purge Pit groundwater extraction well were constructed in 1998. The operational requirements for these systems consist of monitoring and maintaining the pumps, screen, and collection drain as necessary. As-built diagrams of the two units are provided as Attachment 1.

The operating manual for the pump (EBARA, Pro-Drainer EPD, 5½ hp, 1½" discharge) installed in the groundwater collection trench manhole downgradient of the Cell Room is provided as Attachment 2. The operating manual for the pump (QED Model H45SSB—Hammerhead) installed in the extraction well downgradient of the Saturator Purge Pit is provided as Attachment 3.

The maintenance procedures provided in those manuals or discussed in this O&M Plan are to be followed in the monitoring and maintenance of the groundwater collection systems.

b. Potential Operating Problems and Possible Solutions

Potential operating problems and possible solutions are presented in the table below.

Potential Operating Problems and Possible Solutions

Potential Operating Problems	Possible Solutions
Cell Room Collection Trench	
Collection system is not moving water – characterized by no flow to the treatment plant (as measured on the magnetic flowmeter) or a lack of noise from the pump	1. The pump is not operating – see below 2. The drain pipe running to the sump or the water discharge piping running from the sump pump is clogged – inspect both pipes for the following: a. Siltation 1. Drain pipe – sand or silt that could impede flow in this pipe should be removed/flushed out by jetting with a high pressure water spray 2. Discharge piping – disassemble and locate clog. Clear clog by jetting with a high-pressure water spray or other physical means. b. Mineralization in PVC collection pipe or in water discharge piping 1. Drain pipe – Mineralization that could impede flow in this pipe should be removed by acidifying the well with New Well - NW-100 or equivalent chemical treatment, then removing any remaining solids with a high pressure water spray 2. Discharge piping – disassemble and locate mineral clog. Replace clogged length of pipe. c. Ice formation in water transference pipe. Locate and clear the clog and restart system 3. Power failure – determine cause of power failure (tripped breaker...), repair and restart system 4. Flowmeter clogged – inspect meter for Siltation, Mineralization or ice formation. Physically clear the clog, as described above. Restart system
High water alarm is activated	1. The pump is not operating—see below 2. The system has a clog – See number 2, above and locate and clear the clog. Repair and restart system
Pump stops operating – characterized by no flow to the treatment plant	Consult pump-specific operating manual. Correct problem and restart system.
Pumping rate drops – characterized by a reduced flow to treatment plant	Consult pump-specific operating manual. Correct problem and restart system.
Pump operates but does not pump water—characterized by no flow to treatment plant	Check for a clog, if there is a clog, remedy as described above. If there is no clog, consult pump-specific operating manual. Correct problem and restart system.
SPP Extraction Well	
Extraction system is not moving water – characterized by no flow to the treatment plant (as measured on the magnetic flowmeter)	1. The pump is not operating—see below 2. Discharge tubing clogged—inspect pipe for following: a. Siltation in discharge tube—Pull pump, disassemble and locate clog. Clear clog by jetting with a high-pressure water spray or other physical means. Reinstall pump and restart system b. Mineralization on well screen, pump or in discharge tube—Due to the water chemistry in this area, this is known to occur. The SPP pump and discharge tubing will be acidified on a quarterly basis. Attachment 4 provides the instruction for this activity c. Ice formation in water discharge tube. Locate and clear the clog. Repair and restart system d. There is no compressed air to activate the pump. Check air source and repair as necessary. 3. Flowmeter clogged—inspect meter for Siltation, Mineralization or ice formation. Physically clear the clog, as described above. Restart system.

Potential Operating Problems and Possible Solutions

Potential Operating Problems	Possible Solutions
Pump stops operating—characterized by a lack of noise from the pump	Consult the pump specific operating manual. Correct the problem and restart the system.
Pumping rate drops—characterized by a slower pump noise coming from pump or reduced flow to treatment plant	Consult the pump specific operating manual, specifically Step 5, Setting Air Pressure. Correct the problem and restart the system.
Pump operates but does not pump water—characterized by reduced flow to treatment plant	Consult the pump specific operating manual, specifically Disassembly/Reassembly for cleaning. Correct the problem and restart the system.

c. Routine Monitoring and Laboratory Testing

i. Necessary Monitoring Tasks and Their Frequency

The groundwater flow is monitored twice daily, once during each of the two work shifts, by a Vulcan technician. The inspecting technician will visually observe that the flowmeter for each system is measuring flow and then record the flow totalizer reading of each system on the appropriate shift log sheet.

Vulcan has included quarterly inspections of the groundwater collection systems in the plant's Preventative Maintenance Program. The systems will be inspected for the items provided on the Preventative Maintenance Groundwater Intercept Pump by Cell Room and the Preventative Maintenance Groundwater Intercept Pump by NaOH Storage inspection forms (Attachment 4). Completed forms are returned to Vulcan's Technical Manager for review and approval. Records will be retained as described in Section g.

ii. Required Laboratory Tests

The laboratory testing for the groundwater collection systems is described in attachment F3 of Corrective Measures Implementation Plan (CH2MHILL 1998) and provided as part of Attachment 4 of this O&M Plan.

iii. QA/QC Procedures

The QA/QC procedures for the laboratory testing of the groundwater collection systems is provided in attachment F3 of Corrective Measures Implementation Plan (CH2MHILL, 1998) and included as part of Attachment 4.

d. Procedures to be Implemented in Case of System Failure

In case of a system failure, assess possible reasons for the system failure (see Section b) and consult this O&M Plan and the pump's Operating Manual for corrective measure.

Record the estimated length of time that the system has not been operating correctly.

Notify the Technical Manager that a pump system has failed.

The Technical Manager or a designee shall communicate the system failure and the proposed corrective action to the WDNR within 10 working days from the time that the failure was identified.

The Technical Manager or a designee shall verify the completion of the corrective maintenance and record the incident in accordance with the requirements of Section g.

e. Facility Safety Plan

The groundwater collections systems are maintained in compliance with the Vulcan Chemicals–Port Edwards Facility Safety Program. The Vulcan Chemicals–Port Edwards Facility Safety Program is on file at the Port Edwards facility.

f. Description of Equipment

The description of the groundwater collection systems is provided in attachment B2 of Corrective Measures Implementation Plan (CH2MHILL 1998) and provided as part of Attachment 5.

g. Recordkeeping and Reporting Requirements

Totalizer groundwater flows will be recorded and maintained in the shift operating log. The log shall be maintained in accordance with Vulcan's standard operating procedure on record maintenance.

Groundwater monitoring frequency, laboratory testing, and laboratory QC record keeping requirements for the groundwater collection systems are described in Attachment F3 of the Corrective Measures Implementation Plan (CH2M HILL 1998) and provided as part of Attachment 5.

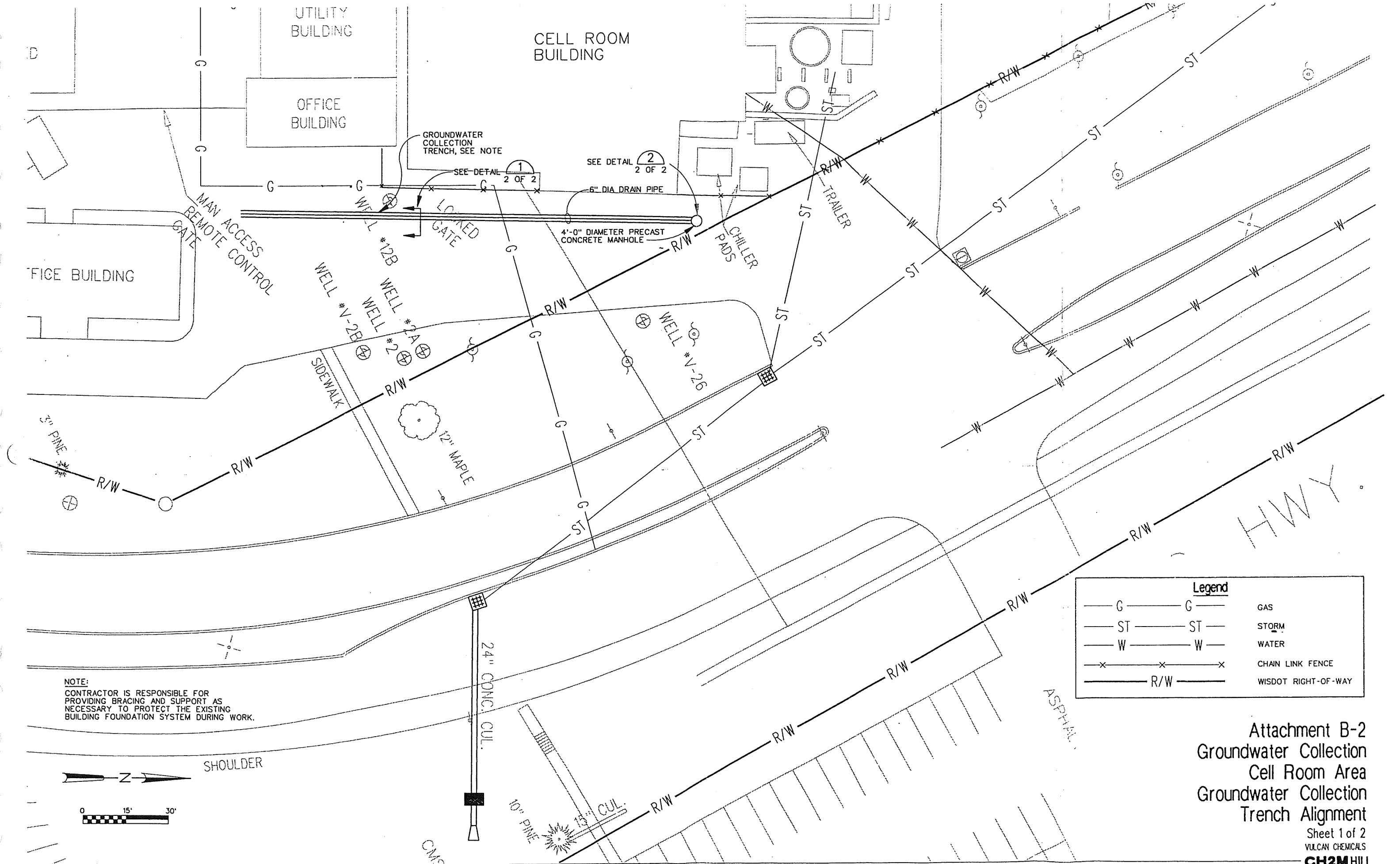
Maintenance records shall be of the detail necessary to describe the cause of any system failure, length of time the system was not operational, and the implemented corrective measure. The Maintenance Planner (or designee) will oversee maintenance recordkeeping. Maintenance records shall be retained in accordance with Vulcan's record maintenance SOP.

h. Operator Training

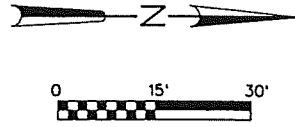
There is no specialized operator training required for the groundwater collection systems.

Attachment 1

Groundwater Collection System Descriptions

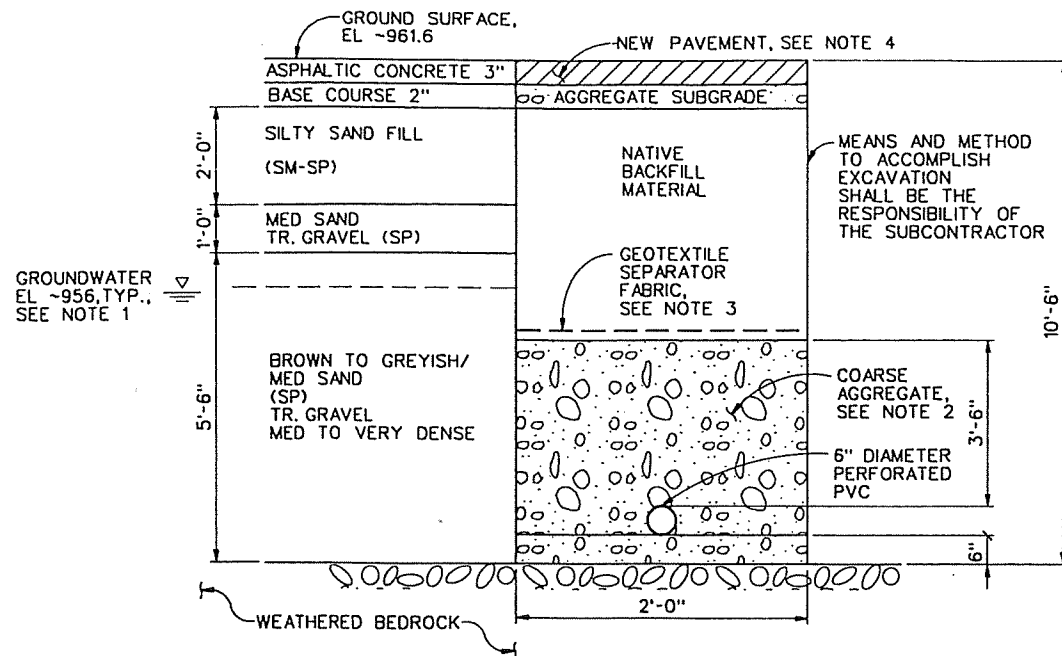


NOTE:
CONTRACTOR IS RESPONSIBLE FOR
PROVIDING BRACING AND SUPPORT AS
NECESSARY TO PROTECT THE EXISTING
BUILDING FOUNDATION SYSTEM DURING WORK.



Legend	
— G —	GAS
— ST —	STORM
— W —	WATER
— x —	CHAIN LINK FENCE
— R/W —	WISDOT RIGHT-OF-WAY

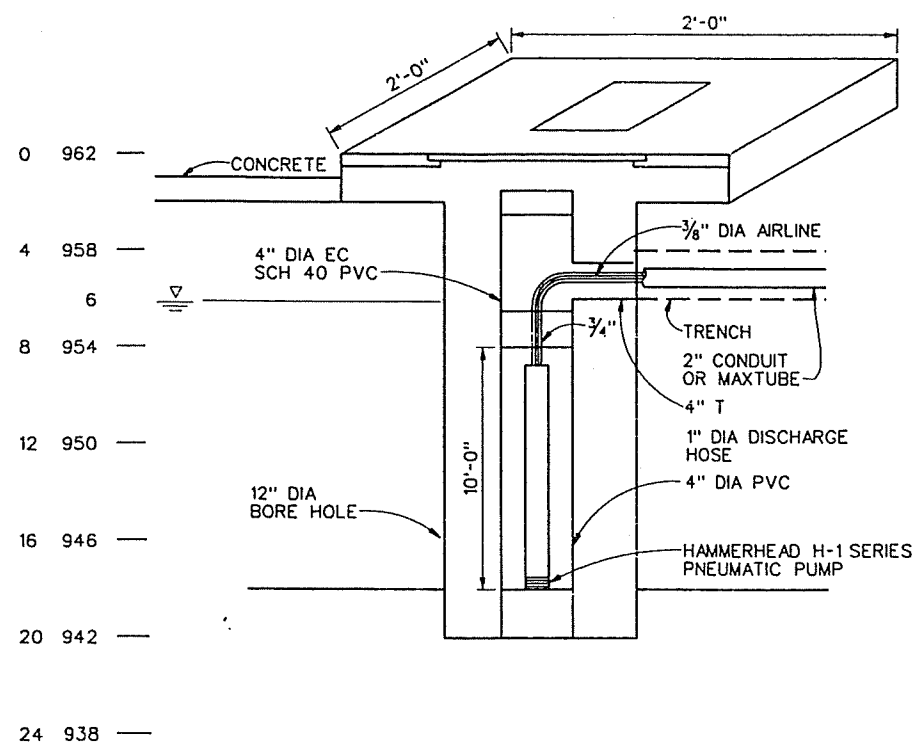
Attachment B-2
Groundwater Collection
Cell Room Area
Groundwater Collection
Trench Alignment
Sheet 1 of 2
VULCAN CHEMICALS
CH2M HILL



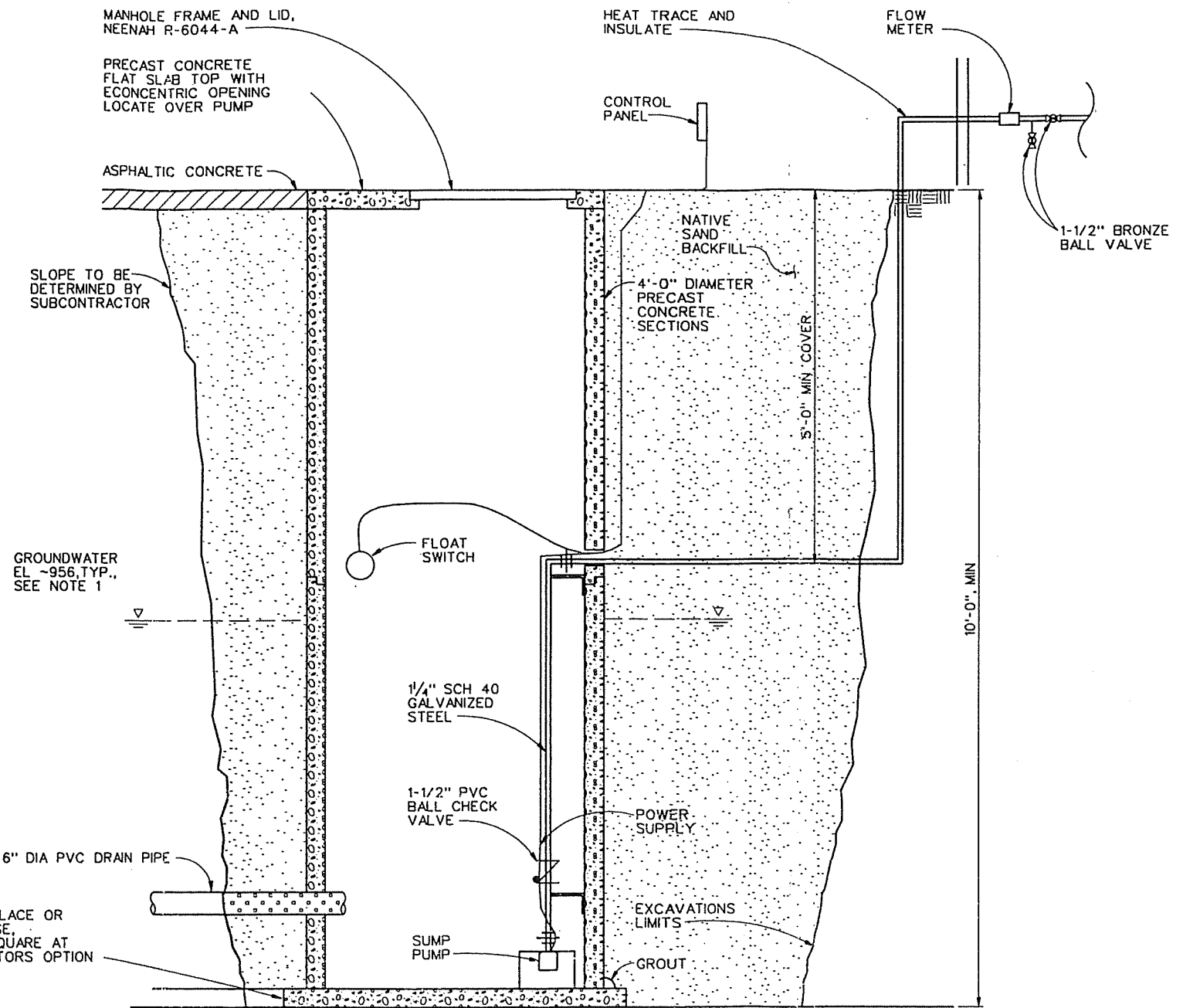
NOTES:

1. GROUNDWATER ELEVATION VARIES. GROUNDWATER AS SHOWN IS APPROXIMATE.
2. PROVIDE COARSE AGGREGATE CONFORMING TO SIZE NO. 2 OF SUBSECTION 501.3.6.4.5 OF THE WISDOT STANDARD SPECIFICATIONS.
3. PROVIDE GEOTEXTILE FABRIC CONFORMING TO SECTION 612.2.8 OF THE WISDOT STANDARD SPECIFICATION.
4. PROVIDE ASPHALTIC CONCRETE PAVEMENT AND AGGREGATE SUBGRADE CONFORMING TO TYPE MV OF SECTION 407 OF THE WISDOT STANDARD SPECIFICATIONS.

COLLECTION TRENCH DETAIL 1
NTS 1 OF 2



**SATURATION PURGE PIT
COLLECTION WELL DETAIL 3**
NTS 1 OF 5 ATTACHMENT B-1



NOTE:

1. GROUNDWATER ELEVATION VARIES. GROUNDWATER AS SHOWN IS APPROXIMATE.

STATISTICS

A. SUMP PUMP

1. 20 GPM AT 38 TON, SUBMERSIBLE STAINLESS STEEL PUMP, 3/8" SOLIDS PASSING 120V 1/2 HP AUTOMATIC OPERATION WITH TILY MERCURY SWITCH
2. EBARA, PRO-DRAINER EPD 5(1/2 HP), 1-1/2" DISCHARGE AND 20' POWER CABLE

B. FLOW METER

1. 70 GPM MAX, 1 PSIDROP @ 20 GPM, 1" NPT CONNECTIONS
2. BADGER METER CO., INC., MODEL RCDL-M70 WITH LOCAL REGISTER

C. FLOAT SWITCH

1. 120V MERCURY ENCAPSULATED LEVEL SWITCH, CABLE SUSPENDED MOUNTING
2. N.D. CONTACT, CLOSE ON RISING LEVEL, 4.5A @ 120 AC CONTACT
3. COLE-PARMER, CATALOG NO. H-43450-10

D. PANEL

1. 120 V SUPPLY, NEMA 4 RATING TO INCLUDE:
HANDSWITCH: PUMP OFF/AUTO
RUN LIGHT: PUMP OPERATION
HIGH LEVEL LIGHT: ACTIVATED BY FLOAT SWITCH

CELL ROOM COLLECTION TRENCH SUMP DETAIL 2
NTS 1 OF 2

Attachment B-2
Groundwater Collection
Typical Details
Sheet 2 of 2
VULCAN CHEMICALS

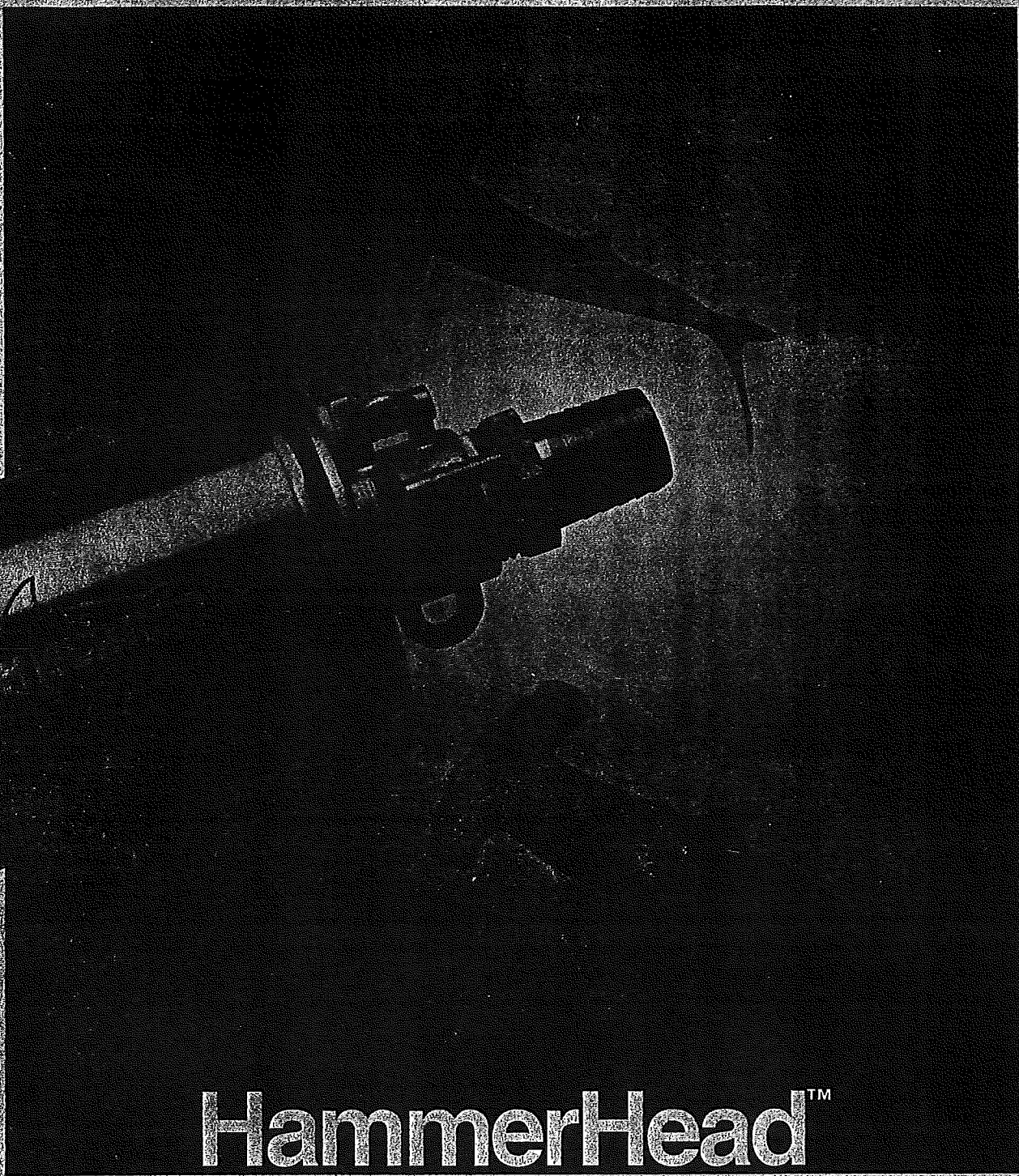
Attachment 2

**Operating Manual for EBARA
Pro-Drainer EPD, 5½ hp, 1½" Discharge Pump**

To be provided on receipt from the manufacturer.

Attachment 3

**Operating Manual for the QED Model H45SSB—
Hammerhead Pump**

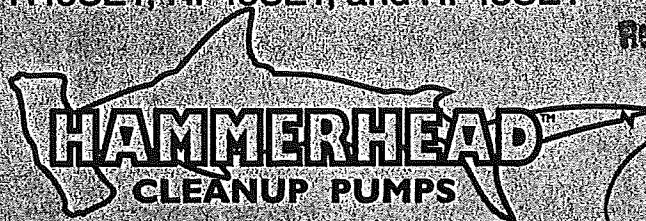


HammerHead™

H4 Series (wells 4" & up)

INSTALLATION & OPERATION MANUAL

Models H45SSB, H45SEB, HF45SSB, HF45SEB,
H45SET, HF45SET, and HF43SET



▼ **GED** GroundWater Specialists®

P.O. Box 3726 Ann Arbor, MI 48106 USA

Received DEC 28 1998
GFC

PU 0271

Part No. 95067
REV.#2 1-2-95

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H4 SERIES MODEL CODE SYSTEM

Each letter or number represents a different descriptive characteristic of the model.

H45SET

H = HammerHead Pump Series
(standard 3/4" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
E = Float (Epoxy for free product)
T = Inlet style (Top)

HF45SET

HF = HammerHead Pump Series
(high flow 1.25" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
E = Float (Epoxy for free product)
T = Inlet style (Top)

HF43SET

HF = HammerHead Pump Series
(high flow 1.25" discharge tube)
4 = Well Size, minimum (4")
3 = Nominal Pump Length (3')
S = Pump Material (Stainless Steel)
E = Float Material (Epoxy for free product)
T = Inlet style (Top)

S4S, S6S, S8S, S4L, S6L, S8L, S4X, S6X, S8X, V4S, V6S, V8S, V4X, V6X, V8X—Well Caps

Example:

S = Slip-fit cap, or **V** (vacuum)
4 = 4" Well Size (or 6" or 8")
S = SPTUBE, or **L** (hose, 1" I.D.),
X (MAXTUBE)

H45SSB

H = HammerHead Pump Series
(standard 3/4" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
S = Float Material (Stainless Steel)
B = Inlet style (Bottom)

H45SEB

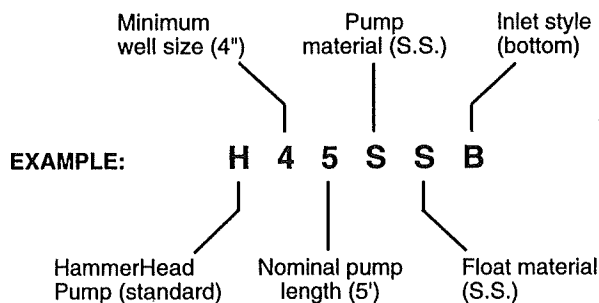
H = HammerHead Pump Series (standard 3/4" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
E = Float Material (Epoxy for free product)
B = Inlet style (Bottom)

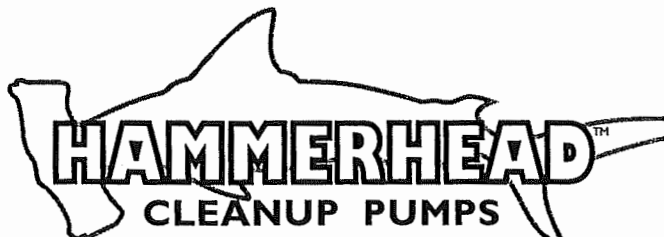
HF45SSB

HF = HammerHead Pump Series
(high flow 1.25" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
S = Float Material (Stainless Steel)
B = Inlet style (Bottom)

HF45SEB

HF = HammerHead Pump Series
(high flow 1.25" discharge tube)
4 = Well Size, minimum (4")
5 = Nominal Pump Length (5')
S = Pump Material (Stainless Steel)
E = Float Material (Epoxy for free product)
B = Inlet style (Bottom)





HammerHead™ H4 Series pumps (patent pending) are high-rate, air-driven pneumatic pumps primarily useful for total fluids applications. They run automatically, with the Hammer Drive magnetic relay and internal float system. The system senses liquid level in the pump, turning the air supply on when the pump is full, and turning it off as soon as the pump empties.

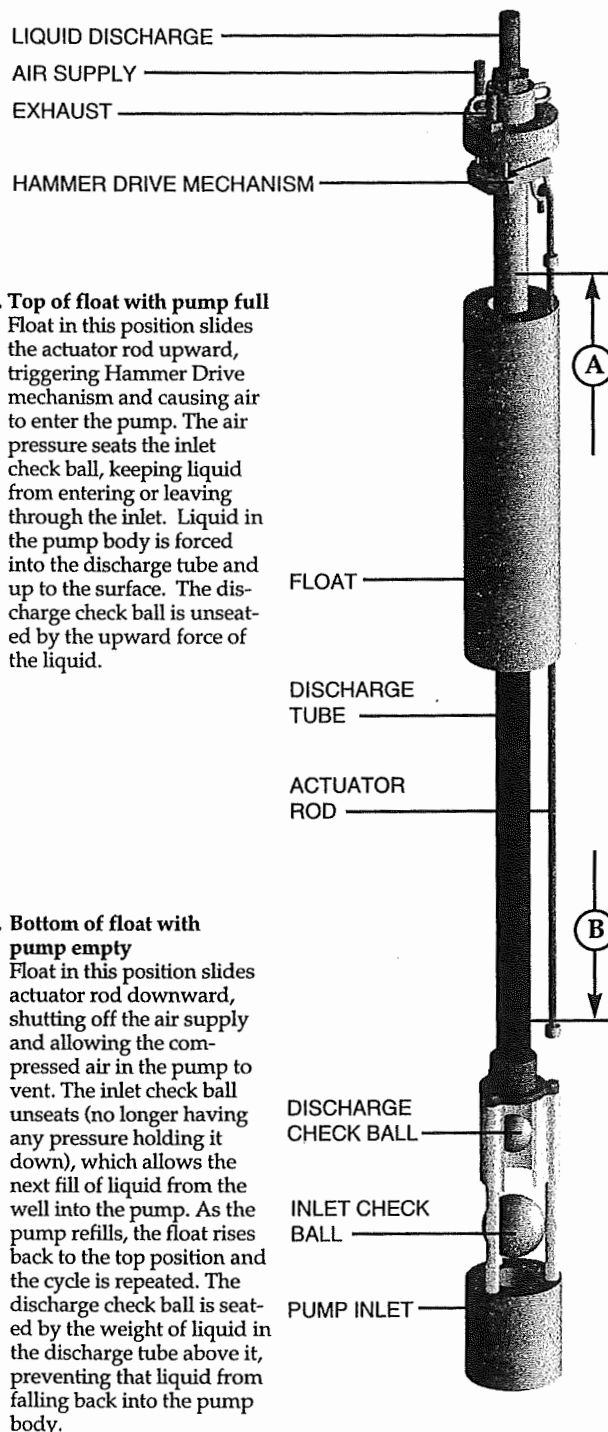
With built-in control, a HammerHead pump doesn't require air cycle timers or on-off level controls at the wellhead, simplifying system design. System setup is easy—just run air to each well. Continued operation is truly hands-off. The pump constantly reacts to changes in well yield, so it always pumps at the highest rate possible, and shuts down automatically when the well drops below pumping level. (NOTE: H4 Series pumps require a minimum of 3.5 feet of liquid above the bottom of the inlet in order to run.)

Because cycling is controlled downwell, a HammerHead pump is either refilling or discharging 100% of the time. There's no waiting between active phases of the cycle for the entire length of air supply tubing to re-pressurize. This operating efficiency enables H4 Series pumps to deliver maximum flow rates of more than 11 gallons per minute while also saving on air supply requirements. It also keeps air out of the liquid discharge system, preventing over-pumping, foaming, and emulsification.

The HammerHead pumping mechanism uses the same high-clearance design and stay-clean ball check valves that set the PULSE PUMP® standard for field performance without clogging or breakdowns. All parts, including the Hammer Drive system, are easily field serviceable.

HOW THE HAMMERHEAD PUMP WORKS

- An H4 Series pump requires a minimum depth of 42" of liquid (measured from the bottom of the pump) to begin pumping.
- The pump automatically shuts off when the liquid level is pumped down below this level, and will automatically begin pumping again once well level has recovered.



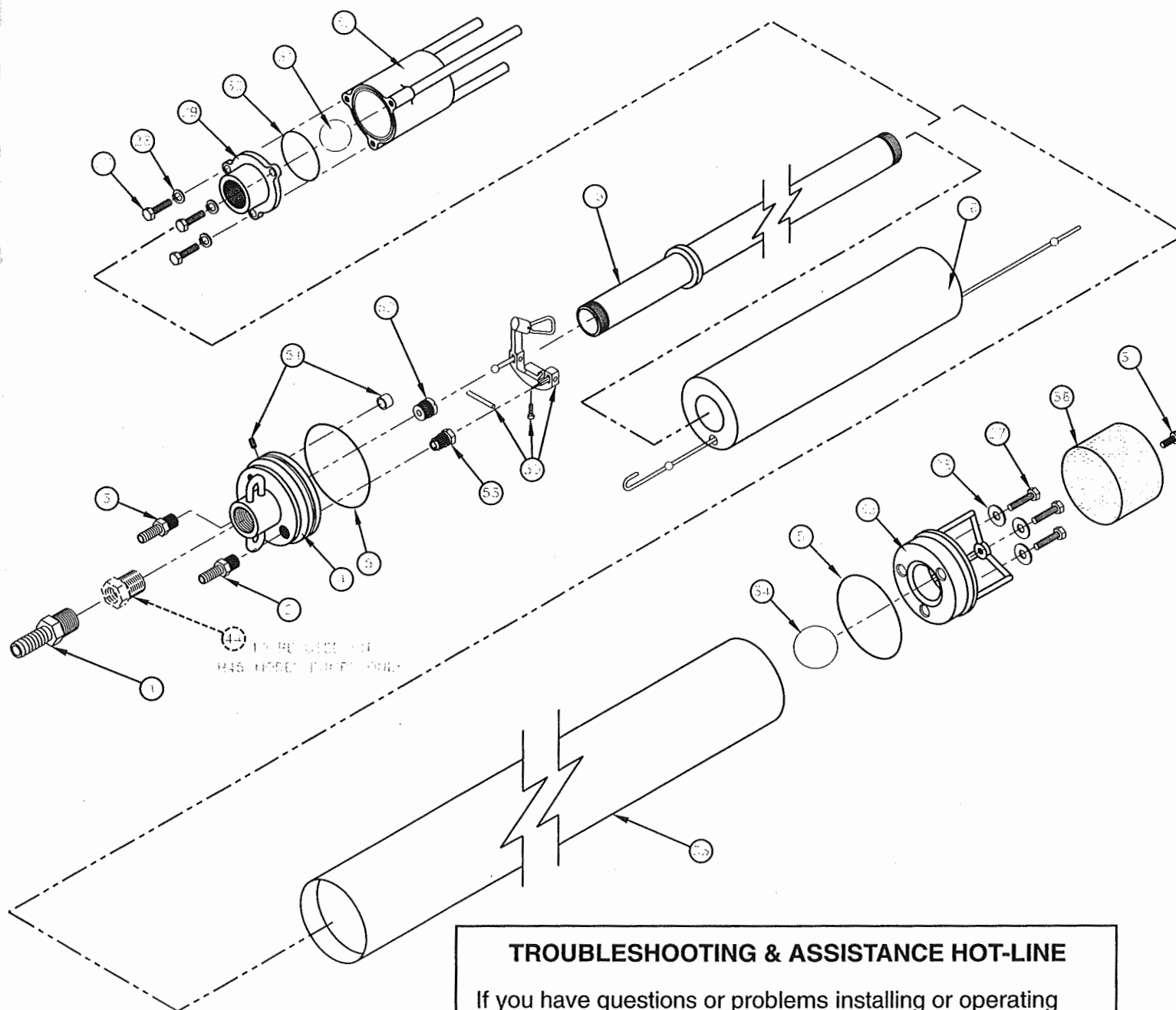
H4 SERIES SPECIFICATIONS

	H4 Series Bottom Inlet	H4 Series Top Inlet	Short H4, Top Inlet
Model No.	H45SSB, H45SEB, HF45SSB, HF45SEB	H45SET, HF45SET	HF43SET
Pump Type	Positive Air Displacement	Positive Air Displacement	Positive Air Displacement
Inlet	Bottom	Top	Top
O.D.	3.5" (89 mm)	3.5" (89 mm)	3.5" (89 mm)
Length	55" (140 cm)	60" (152 cm)	42" (105 cm)
Weight	23.5 lbs. (10.7 kg)	24.0 lbs. (10.9 kg)	16.0 lbs. (7.3 kg)
Materials	Stainless steel construction, with Teflon® inlet and discharge check balls, stainless steel or epoxy float, Viton O-rings	Stainless steel, Q-Tal & brass construction, with Teflon® inlet and discharge check balls, epoxy float, Viton O-rings	Stainless steel, Q-Tal & brass construction, with Teflon® inlet and discharge check balls, epoxy float, Viton O-rings,
Fittings: Type*	Barb	Barb	Barb
Sizes: Liquid Discharge	3/4" (19 mm) O.D. (H45SSB, H45SEB) or 1-1/4" (32 mm) O.D. (HF45SSB, HF45SEB)	3/4" (19 mm) O.D. (H45SET) or 1-1/4" (32 mm) O.D. (HF45SET)	1 1/4" (32 mm) O.D. Tube
Air Supply Exhaust	3/8" (9 mm) O.D. Tubing 1/2" (13 mm) O.D. Tubing	3/8" (9 mm) O.D. Tubing 1/2" (13 mm) O.D. Tubing	3/8" (9 mm) O.D. Tubing 1/2" (13 mm) O.D. Tubing
Pump Stroke	0.8 gal. (2850 ml.)	0.8 gal. (2850 ml.)	0.32 gal. (1200 ml.)
Operating pressure range	10-160 psi (70-1,100 kPa)	10-160 psi (70-1,100 kPa)	10-100 psi (70- 695 kPa)
Maximum lift	300 ft. (90 m)	300 ft. (90 m)	200 ft. (60 m)
Maximum flow rate	14+ GPM (54+ LPM) HF45SSB, HF45SEB	11+ GPM (41+ LPM) HF45SET	10 GPM (38 LPM)
Minimum submergence	42" (107 cm) above pump bottom	Top Inlet Port— 58" (147 cm) above bottom of pump	Top Inlet Port— 38" (97 cm) above bottom of pump
Density of pumped liquid	1.0 g/cc (stainless float); 0.7 g/cc up (epoxy float)	0.7 g/cc up (epoxy float)	0.7 g/cc up (epoxy float)
Cap sizes**	4", 6", and 8" (100, 150, & 200 mm) diameter (standard and vacuum seal)	4", 6", and 8" (100, 150, & 200 mm) diameter (standard and vacuum seal)	4", 6", and 8" (100, 150, & 200 mm) diameter (standard and vacuum seal)

* Note: Pumps are available with tubing or hose; quick disconnect fittings are available on request.

** Special caps available.

PUMP ASSEMBLY DIAGRAM



TROUBLESHOOTING & ASSISTANCE HOT-LINE

If you have questions or problems installing or operating your HammerHead system, QED's 24-hour hot-line will help. Call toll-free (in U.S. and Canada) 1-800-272-9559 for expert assistance with installation, adjustment, or field service. Our on-line specialists can also provide Federal Express PartsBank® shipment of emergency repair parts and expedite factory repair service if necessary.

PARTS LIST—HF45SSB

ITEM	P/N	DESCRIPTION
53	37025	Seat, Air Supply - Kit
52	37030	Seat, Exhaust - Kit
51	37031	Magnet - Kit
50	37024	Cam Assembly - Kit
37	37006	Bolt, hex 1/4-20 x 1/2
36	36852	Screen
35	36832	Inlet, EP
34	36902	Ball , 2 dia. Teflon
33	37151	Body, H4
32	36830	Housing, EP
31	36901	Ball, 1-1/2 dia. Teflon
30	36464	O-ring Viton L/F 2-034
29	36834	Cover, EP
28	35584	Washer, 5/16" Belleville
27	36912	Bolt, 1/4-20 x 1"
26	37008	Actuator Assembly (S.S. Float)
25	36836	Dip-tube, H4
5	35325	O-ring Viton L/F 2-235
4	36831	Head, EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb, 3/8 T x 1/4 MPT
1	37005	Barb, 1-1/4 T x 1 MPT

PARTS LIST—HF45SEB

ITEM	P/N	DESCRIPTION
53	37025	Seat, Air Supply - Kit
52	37030	Seat, Exhaust - Kit
51	37031	Magnet - Kit
50	37024	Cam Assembly - Kit
37	37006	Bolt, hex 1/4-20 x 1/2
36	36852	Screen
35	36832	Inlet, EP
34	36902	Ball , 2 dia. Teflon
33	37151	Body, H4
32	36830	Housing, EP
31	36901	Ball, 1-1/2 dia. Teflon
30	36464	O-ring Viton L/F 2-034
29	36834	Cover, EP
28	35584	Washer, 5/16" Belleville
27	36912	Bolt, 1/4-20 x 1"
26	37054	Actuator Assembly (Epoxy Float)
25	36836	Dip-tube, H4
5	35325	O-ring Viton L/F 2-235
4	36831	Head, EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb, 3/8 T x 1/4 MPT
1	37005	Barb, 1-1/4 T x 1 MPT

PARTS LIST—H45SSB

ITEM	P/N	DESCRIPTION
53	37025	Seat, Air Supply - Kit
52	37030	Seat, Exhaust - Kit
51	37031	Magnet - Kit
50	37024	Cam Assembly - Kit
44	37088	Bushing, Reducer, 3/4 FPT x 1 MPT
37	37006	Bolt, hex 1/4-20 x 1/2
36	36852	Screen
35	36832	Inlet, EP
34	36902	Ball , 2 dia. Teflon
33	37151	Body, H4
32	36830	Housing, EP
31	36901	Ball, 1-1/2 dia. Teflon
30	36464	O-ring Viton L/F 2-034
29	36834	Cover, EP
28	35584	Washer, 5/16" Belleville
27	36912	Bolt, 1/4-20 x 1"
26	37008	Actuator Assembly (S.S. Float)
25	36836	Dip-tube, H4
5	35325	O-ring Viton L/F 2-235
4	36831	Head, EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb, 3/8 T x 1/4 MPT
1	36634	Barb, 3/4 T x 1 MPT

PARTS LIST—H45SEB

ITEM	P/N	DESCRIPTION
53	37025	Seat, Air Supply - Kit
52	37030	Seat, Exhaust - Kit
51	37031	Magnet - Kit
50	37024	Cam Assembly - Kit
44	37088	Bushing, Reducer, 3/4 FPT x 1 MPT
37	37006	Bolt, hex 1/4-20 x 1/2
36	36852	Screen
35	36832	Inlet, EP
34	36902	Ball , 2 dia. Teflon
33	37151	Body, H4
32	36830	Housing, EP
31	36901	Ball, 1-1/2 dia. Teflon
30	36464	O-ring Viton L/F 2-034
29	36834	Cover, EP
28	35584	Washer, 5/16" Belleville
27	36912	Bolt, 1/4-20 x 1"
26	37054	Actuator Assembly (Epoxy Float)
25	36836	Dip-tube, H4
5	35325	O-ring Viton L/F 2-235
4	36831	Head, EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb, 3/8 T x 1/4 MPT
1	36634	Barb, 3/4 T x 1 MPT

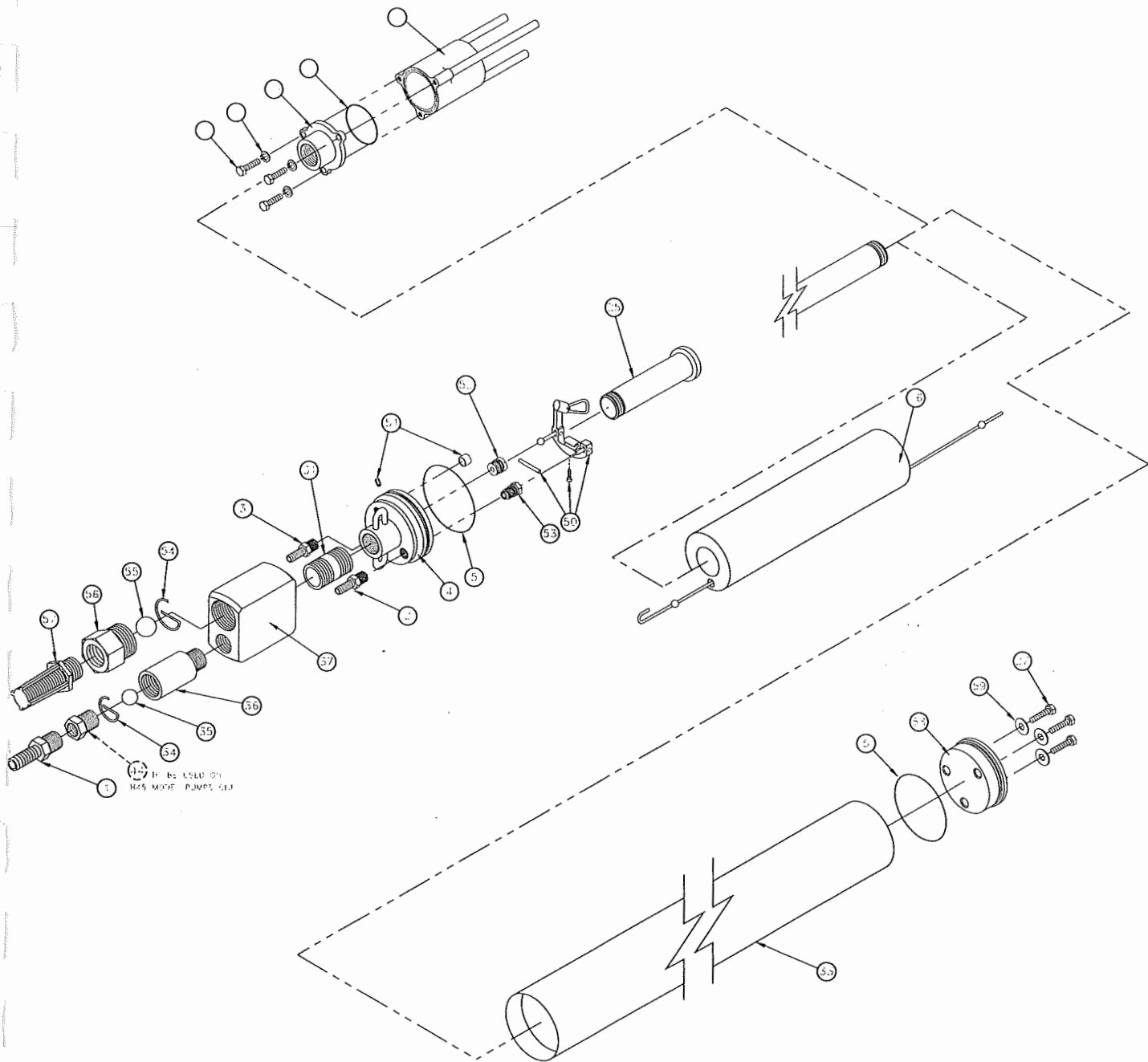
TUBING CLAMPS**HF45SSB, HF45SEB**

37032	Clamp, 1-1/4 O.D.
35209	Clamp, 1/2 O.D.
35187	Clamp, 3/8 O.D.

H45SSB, H45SEB

35211	Clamp, 3/4 O.D.
35209	Clamp, 1/2 O.D.
35187	Clamp, 3/8 O.D.

PUMP ASSEMBLY DIAGRAM



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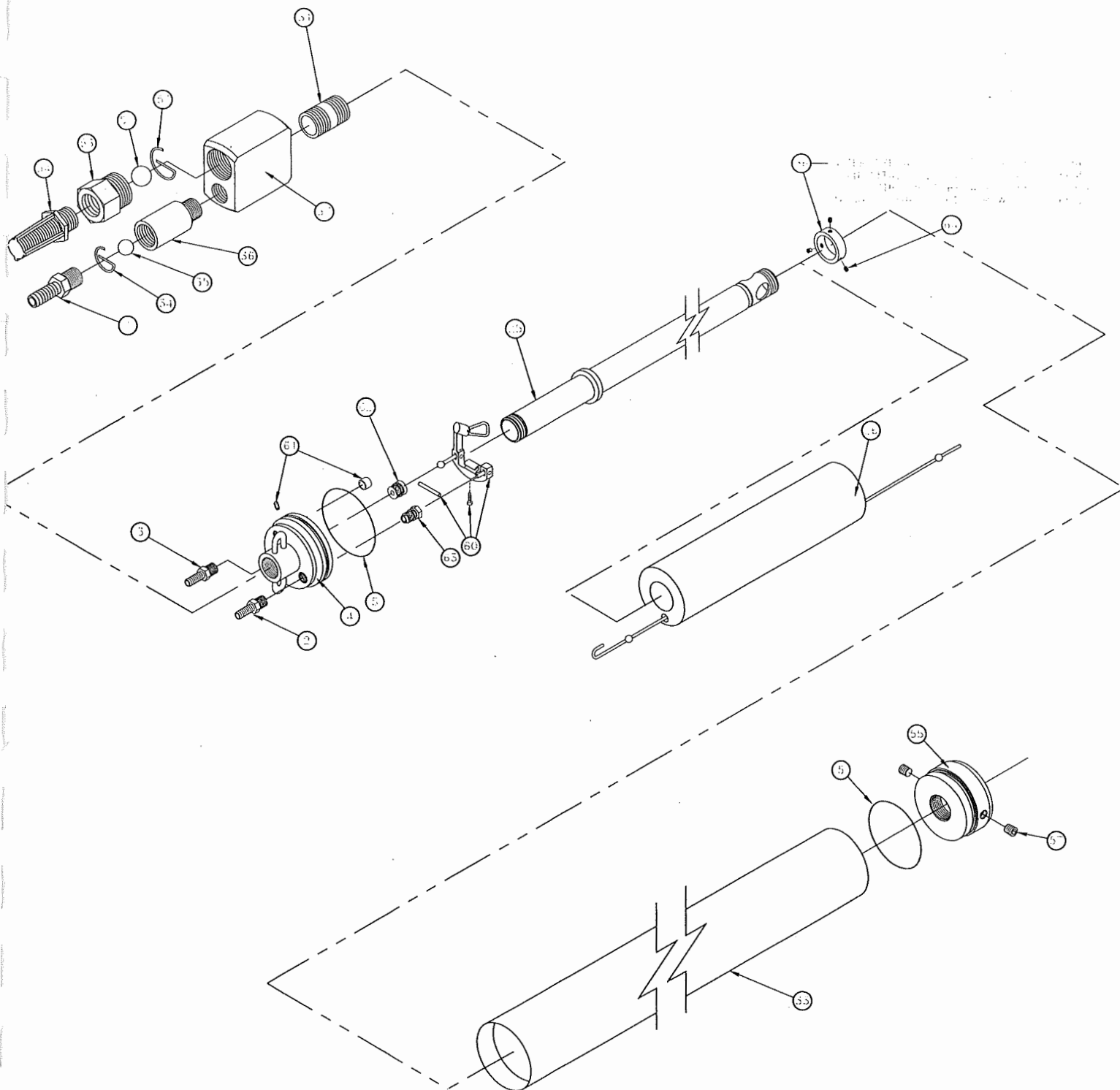
PARTS LIST—H45SET

ITEM	P/N	DESCRIPTION
59	37143	Washer, Sealing
58	37163	Inlet, Solid H4
57	37164	Screen, Nylon H4
56	37169	Seat, Check H4
55	37172	Ball, Teflon 1 3/16" Dia.
54	37170	Ring, Retainer "G"
53	37025	Seat, Air Supply—Kit
52	37030	Seat, Exhaust—Kit
51	37031	Magnet—Kit
50	37024	Cam Assembly—Kit
44	37088	Bushing, Reducer 1" MPT x 3/4" FPT
37	37160	Body, Top Inlet
36	37161	Check, Cartridge
35	36936	Ball, Teflon 7/8" Dia.
34	37162	Ring, Retainer "G"
33	37151	Body W/Shark Logo
32	36830EP	Housing EP
31	37087	Nipple S.S. 1" NPT x 2" Long
30	36464	O-Ring Viton L/F 2-034
29	36834EP	Cover EP
28	35584	Washer, 5/16" Bellville
27	36912	Bolt, 1/4-20 x 1"
26	37054	Actuator Assembly, Epoxy
25	36836	Dip-tube
5	35325	O-Ring Viton L/F 2-235
4	36831EP	Head EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb Kit 3/8" T x 1/4" MPT
1	36634	Barb, 3/4 T x 3/4 MPT

PARTS LIST—HF45SET

ITEM	P/N	DESCRIPTION
59	37143	Washer, Sealing
58	37163	Inlet, Solid H4
57	37164	Screen, Nylon H4
56	37169	Seat, Check H4
55	37172	Ball, Teflon 1 3/16" Dia.
54	37170	Ring, Retainer "G"
53	37025	Seat, Air Supply—Kit
52	37030	Seat, Exhaust—Kit
51	37031	Magnet—Kit
50	37024	Cam Assembly—Kit
37	37160	Body, Top Inlet
36	37161	Check, Cartridge
35	36936	Ball, Teflon 7/8" Dia.
34	37162	Ring, Retainer "G"
33	37151	Body W/Shark Logo
32	36830EP	Housing EP
31	37087	Nipple S.S. 1" NPT x 2" Long
30	36464	O-Ring Viton L/F 2-034
29	36834EP	Cover EP
28	35584	Washer, 5/16" Bellville
27	36912	Bolt, 1/4-20 x 1"
26	37054	Actuator Assembly, Epoxy
25	36836	Dip-tube
5	35325	O-Ring Viton L/F 2-235
4	36831EP	Head EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb Kit 3/8" T x 1/4" MPT
1	37005	Barb, 1 1/4 T x 1 MPT

PUMP ASSEMBLY DIAGRAM



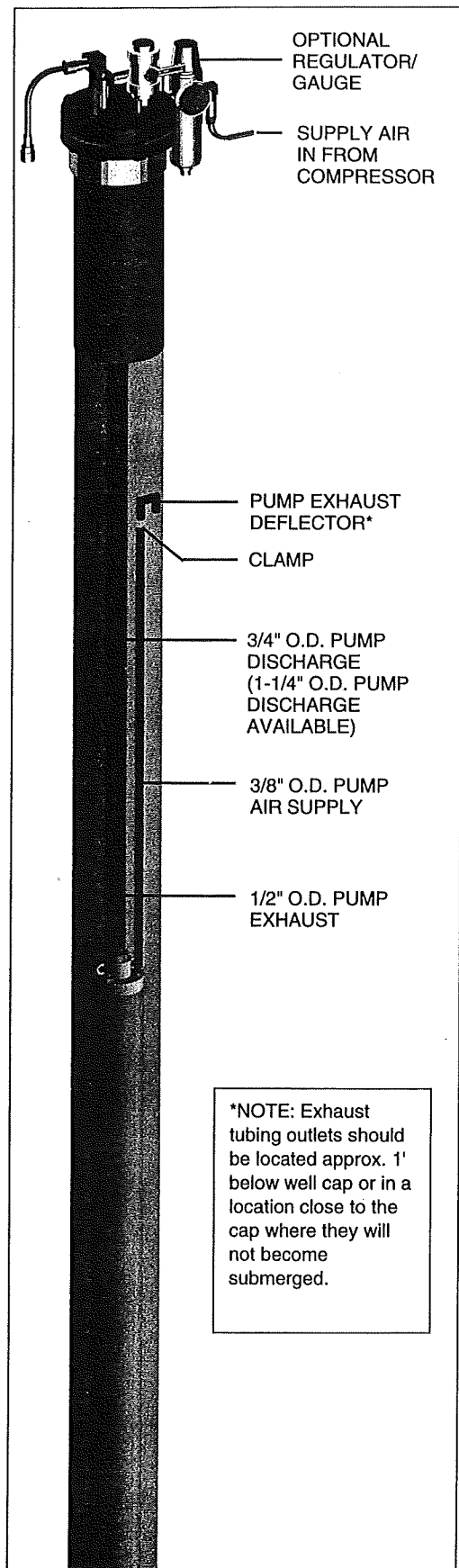
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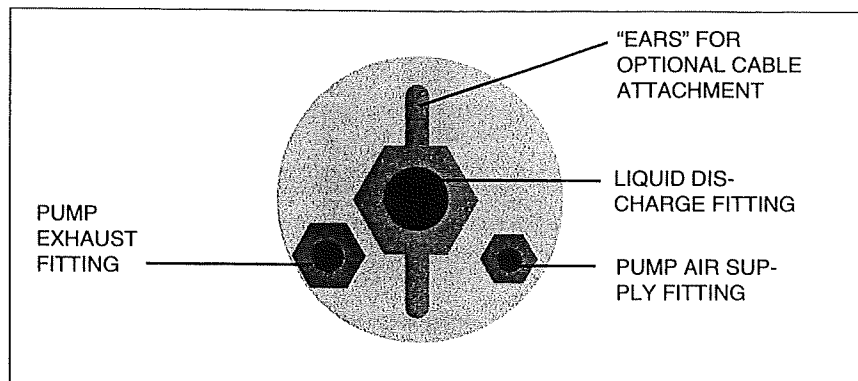
PARTS LIST—HF43SET

ITEM	P/N	DESCRIPTION
63	37025	Seat, Air Supply—Kit
62	37030	Seat, Exhaust—Kit
61	37031	Magnet—Kit
60	37024	Cam Assembly—Kit
57	37227	Plug, Pipe 1/4" MPT Brass
56	37191	Collar, Clamping S.S.
55	37187	Inlet, Solid Short Body
54	37164	Screen, Nylon H4
53	37169	Seat, Check H4
52	37172	Ball, Teflon 1 3/16" Dia.
51	37170	Ring, Retainer "G"
37	37160	Body, Top Inlet
36	37161	Check, Cartridge
35	36936	Ball, Teflon 7/8" Dia.
34	37162	Ring, Retainer "G"
33	37195	Body Short W/Shark Logo
31	37087	Nipple S.S. 1" NPT x 2" Long
26	37190	Actuator Assembly, Epoxy
25	37189	Dip-tube
5	35325	O-Ring Viton L/F 2-235
4	36831EP	Head EP
3	36401	Barb, 1/2 T x 3/8 MPT
2	37159	Check Barb Kit 3/8" T x 1/4" MPT
1	37005	Barb, 1 1/4 T x 1 MPT

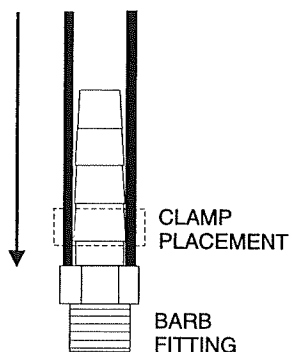
INSTALLATION/OPERATION



*NOTE: Exhaust tubing outlets should be located approx. 1' below well cap or in a location close to the cap where they will not become submerged.



STEP 1. Attach Tubing to Pump

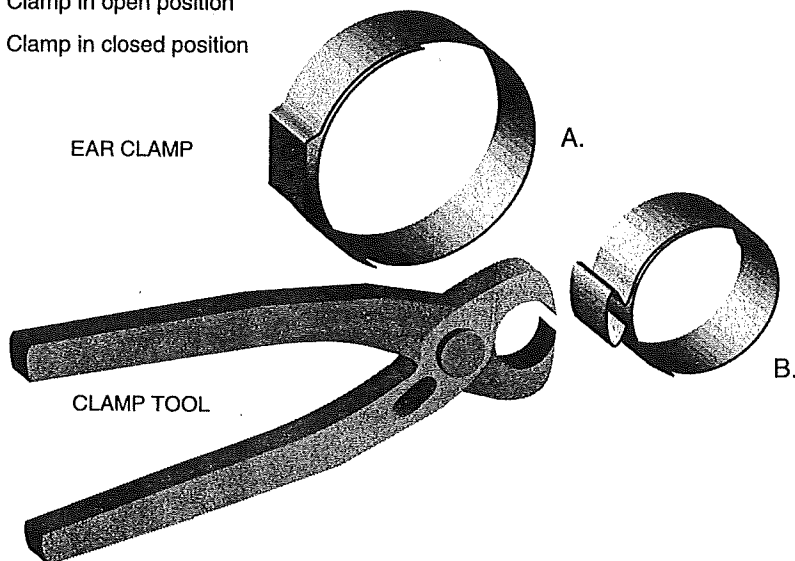


- Cut back sheathing on tubing set approximately 1 foot.
- Slip clamps over appropriate tubes prior to connecting to barbs.
- Push tubing down flush with the fitting's nut if possible; cover at least 3 barbs if 3 or more are present. (Note: in freezing weather, this is easier if tubing is dipped in warm water for a few seconds to soften the nylon.)
- Place clamp over lowest barb completely covered by tubing.

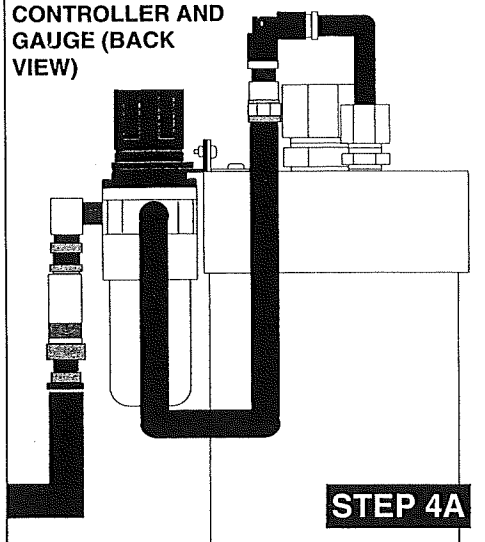
STEP 2. Tighten Clamps

- Place clamp tool over the dimpled ear portion of the clamp and squeeze ear together (as shown).

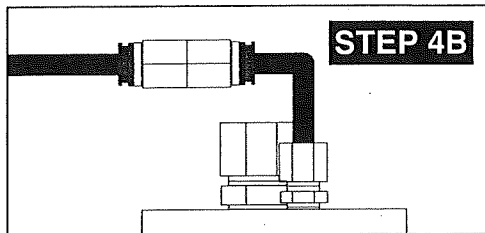
- Clamp in open position
- Clamp in closed position



**CAP, PRESSURE
CONTROLLER AND
GAUGE (BACK
VIEW)**

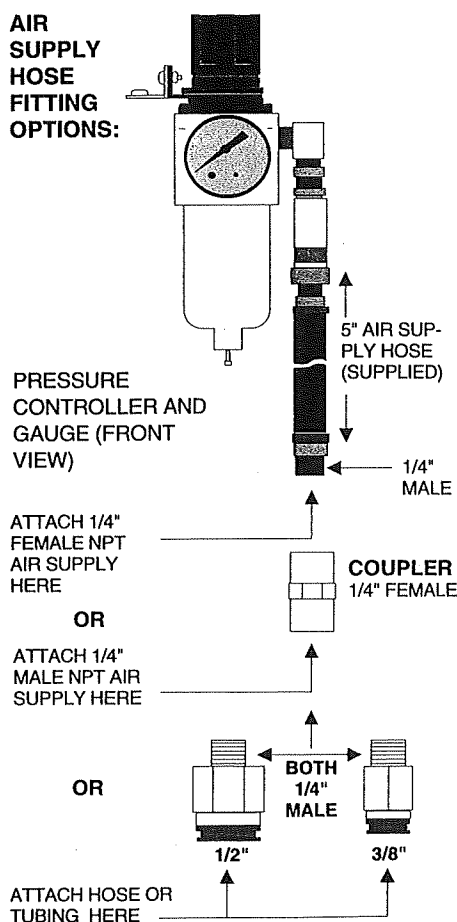


STEP 4A



STEP 4B

**AIR
SUPPLY
HOSE
FITTING
OPTIONS:**



STEP 3. Install Pump in Well

- Lower pump to desired depth.
- Once pump depth has been determined, measure off approximately 1 ft. of tubing length (measured from the top of well casing) from the pump exhaust line.
- Cut exhaust line.
- Attach the pump exhaust deflector to the pump exhaust line. (See clamp instructions in step 2.)
- Pass pump discharge and air supply lines through the well cap: place well cap on casing.
- Re-adjust pump to desired depth.
- Cut air supply and discharge tubes to desired length.
- Tighten fittings down onto air/discharge lines, and tighten well cap clamp if present.

STEP 4. Connect Air Supply and Discharge

- If optional pressure regulator is used, connect short (≈ 1 foot) hose from regulator to pump air supply line with attached push-on elbow; attach 5' flexible hose to quick-connect fitting on regulator and to air supply line from compressor. See illustration at lower left for air supply hose fitting options.

OR

- If optional pressure regulator is not used, connect air supply line from compressor directly to pump air supply line above well cap (fittings and coupler for 3/8" and/or 1/2" connections).

- Connect pump discharge tube to discharge header. (Barb and clamps supplied with pump.)

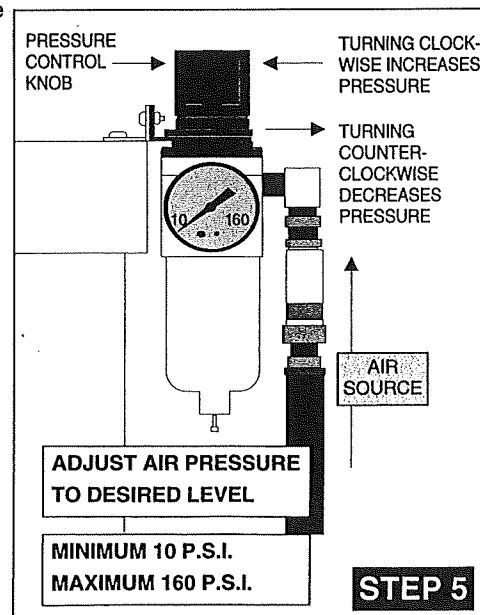
STEP 5. Set Air Pressure

NOTE: Flow Rate is dependent on the amount of air pressure that is received by the pump. Flow rates can be increased by increasing air pressure to the pump or decreased by decreasing air pressure to the pump. For satisfactory performance, pressure should be set at or above 1 psi for every 2 feet of total discharge head—i.e., a pump with T.D.H. of 200' would require 100 psi or more to pump effectively.

- Adjust air pressure to desired level at compressor—minimum 10 psi, maximum 160 psi.

OR

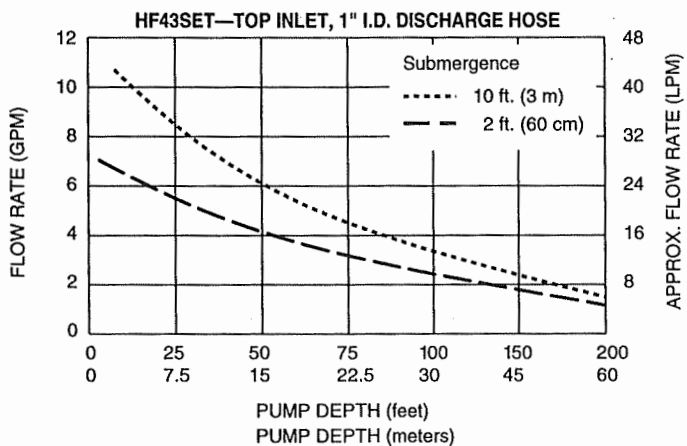
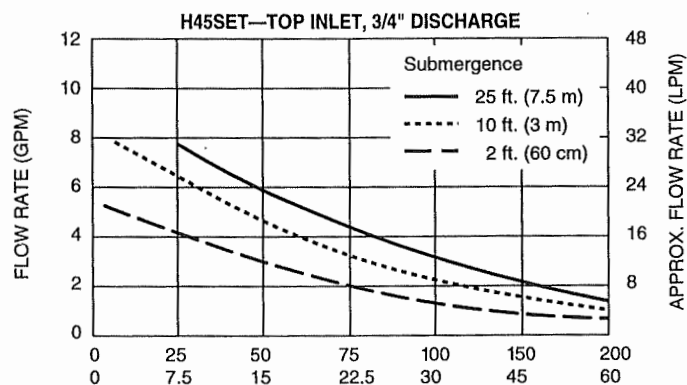
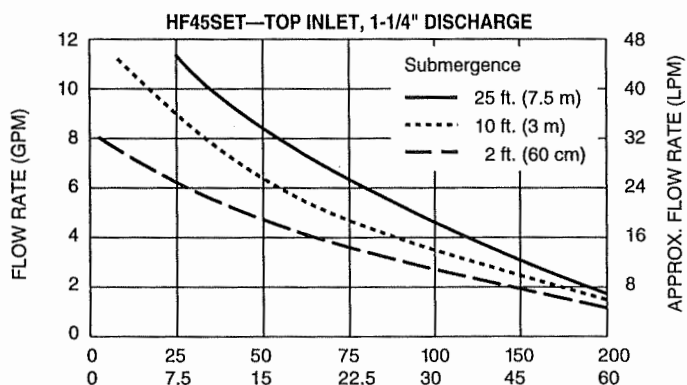
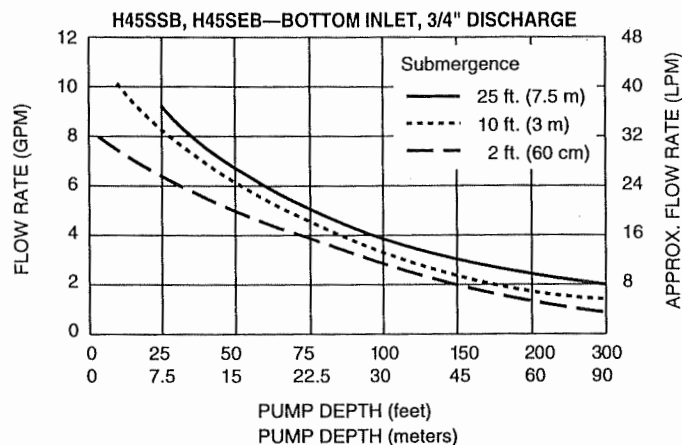
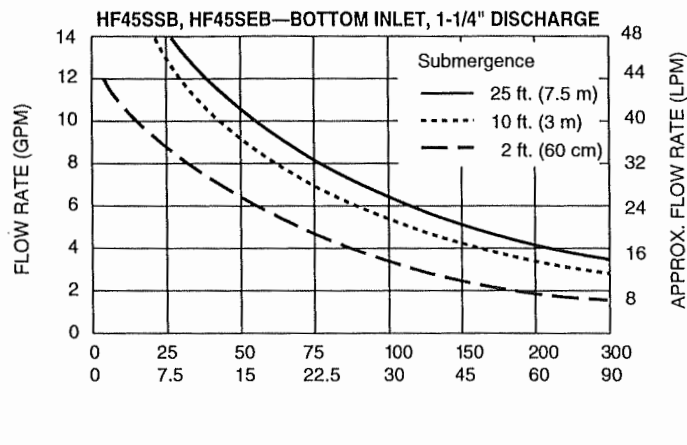
- Adjust air pressure with optional pressure regulator (see illustration).



STEP 5

H4 SERIES FLOW PERFORMANCE CURVES

*100 psi (700 kPa) drive air pressure was supplied for all pump depths less than 150 feet (45 meters); 160 psi was supplied for all pump depths greater than 150 feet.



NOTE: Pump depth is measured down from the top of the well casing to the top of the pump fittings. Submergence is measured up from the lowest inlet point on the pump inlet to the top of the static water or product in the well.

TUBING

Two tubing packages are available for H4 series pumps. The standard SPTUBE provides flow rates up to 8 GPM with H45SSB, H45SEB, and H45SET models. The high flow MAXTUBE increases maximum flow up to 14+ GPM with HF45SSB, HF45SEB, and HF45SET pumps. Hoses and quick-connects are available for all models, including the short-body HF43SET (see "Accessories" for details).

Both sets are QED's exclusive Jacketed Tubing, with a smooth, continuous nylon sheath that helps to prevent hangups and kinks, makes pump installation easier (especially in narrow or obstructed well casing), and eliminates the nicked fingers and other hazards of old-fashioned tubing ties.

Tubing sets are supplied cut to custom lengths. Jacketed tubing and sheath are both Nylon 12, which doesn't swell in water and provides excellent resistance to most liquids and cleanup conditions, including hydrocarbons, fuels, and alkalies. For extremes of acidity, consult QED for alternative.

Model	SPTUBE	MAXTUBE
Description	Contains 4 tubes—discharge, exhaust, air supply, and bubbler tubing*	Contains 3 tubes—discharge, exhaust and air supply
Discharge O.D.	3/4" (19 mm)	1-1/4" (32 mm)
Exhaust O.D.	1/2" (13 mm)	1/2" (13 mm)
Air Supply O.D.	3/8" (9 mm)	3/8" (9 mm)
Bubbler O.D.	1/4" (6 mm)	—
Min. Bend Radius	7" (18 cm)	12" (30 cm)
Max. Pressure	325 psi (2,250 kPa)	165 psi (1,150 kPa)
†Max. Cont. Length	200' (60 m)	150' (45 m)

*Bubbler tubing is used for referenced depth measurement. More information on this is supplied with custom wellhead completion packages.

† These are maximum lengths that can be shipped via UPS. For longer continuous lengths, consult QED.

HAMMERHEAD CAPS AND ACCESSORIES

NOTE: each cap, flange and accessory kit comes with an illustrated instruction sheet.

STANDARD (SLIP-FIT) CAPS

MODEL**	PUMP MODEL	WELL DIAM.	DESCRIPTION	TUBING TYPE
S4S	All H4 pumps	4" (100 mm)	Cap - Standard	SPTUBE
S6S	All H4 pumps	6" (150 mm)	Cap - Standard	SPTUBE
S8S	All H4 pumps	8" (200 mm)	Cap - Standard	SPTUBE
‡S4L	All HF4 pumps	4" (100 mm)	Cap - High Flow	HOSE, 1" I.D.
‡S6L	All HF4 pumps	6" (150 mm)	Cap - High Flow	HOSE, 1" I.D.
‡S8L	All HF4 pumps	8" (200 mm)	Cap - High Flow	HOSE, 1" I.D.
S4X	All HF4 pumps	4" (100 mm)	Cap - High Flow	MAXTUBE
S6X	All HF4 pumps	4" (100 mm)	Cap - High Flow	MAXTUBE
S8X	All HF4 pumps	4" (100 mm)	Cap - High Flow	MAXTUBE

VACUUM CAPS

MODEL**	PUMP MODEL	WELL DIAM.	DESCRIPTION	TUBING TYPE
V4S	H45SSB, H45SEB, H45SET	4" (100 mm)	Cap - Standard - Vacuum	SPTUBE
V6S	H45SSB, H45SEB, H45SET	6" (150 mm)	Cap - Standard - Vacuum	SPTUBE
V8S	H45SSB, H45SEB, H45SET	8" (200 mm)	Cap - Standard - Vacuum	SPTUBE
V4X	HF45SSB, HF45SEB, HF45SET	4" (100 mm)	Cap - High Flow - Vacuum	MAXTUBE
V6X	HF45SSB, HF45SEB, HF45SET	6" (150 mm)	Cap - High Flow - Vacuum	MAXTUBE
V8X	HF45SSB, HF45SEB, HF45SET	8" (200 mm)	Cap - High Flow - Vacuum	MAXTUBE

**Add F after Model Number to include Filter/Regulator/Gauge with cap.

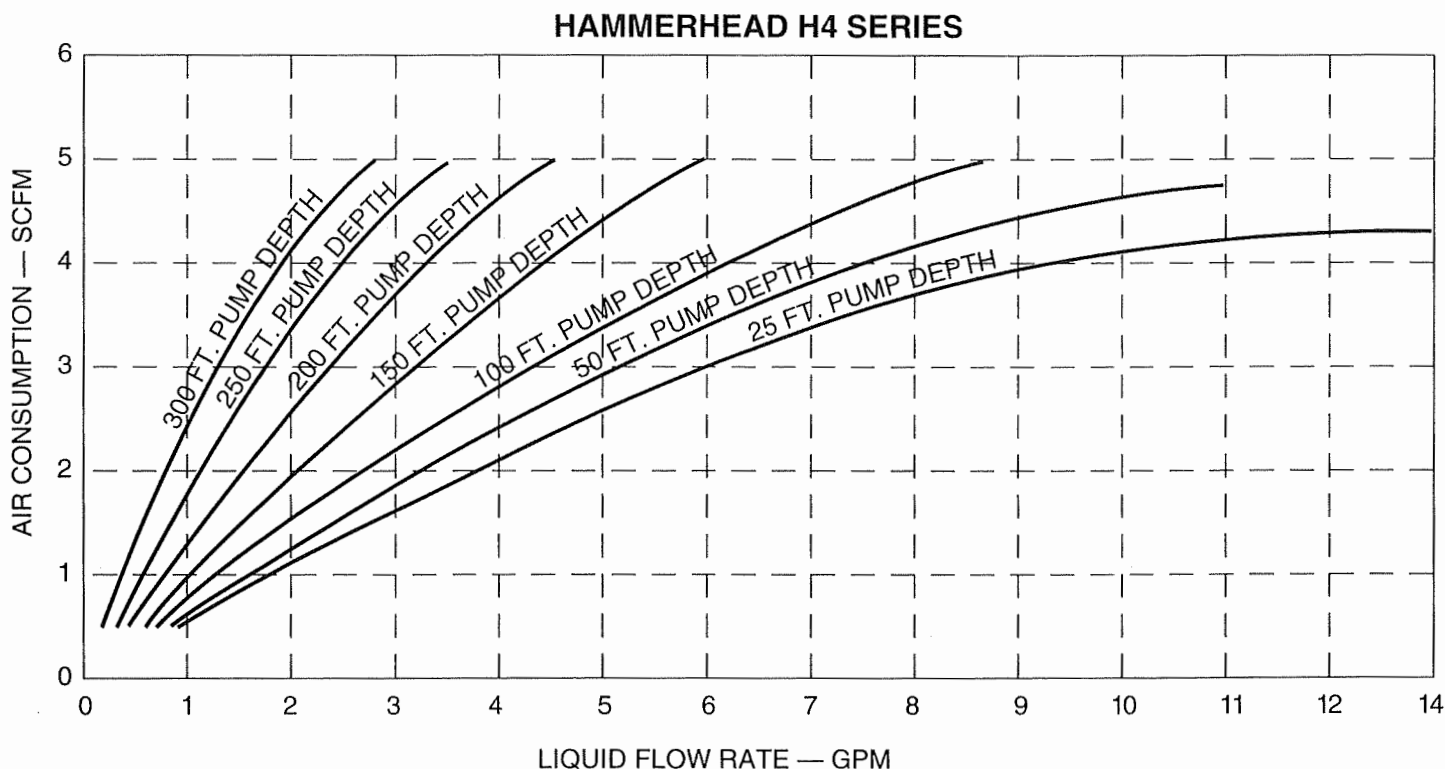
‡ Hose option to be sold with support line (cable or rope)

ACCESSORIES

MODEL	PUMP MODEL	DESCRIPTION	MODEL	PUMP MODEL	DESCRIPTION
37000	All Models	Pump Cycle Counter (for Flow Totalization)	37058	All Models	Kit - Cable Attachment
L374	All Models	Tank Full Shutoff	37060	All Models	Cable - 3/16" (5 mm) S.S. - order by ft.
37050	All Models	Kit - Regulator/Gauge	37207	All Models	Rope - 3/8" (9 mm) Polypro. - order by ft.
KIH4ST	All Bot. Inlet mod.	Kit - Top Inlet Conversion - H4	37212	All Models	Cable Sling Assembly
KIH4SB	All Top Inlet mod.	Kit - Bottom Inlet Conversion - H4	37216	HF4 Series	* Hose - 1" (25 mm) I.D. Discharge (Black)
CH52	All Bot. Inlet mod.	Can - 2' (60 cm) Length (Leachate)	37217	HF4 Series	* Hose - 3/8" (9 mm) I.D. Air Supply (Red)
95067	All Models	HammerHead O&M Manual	37218	HF4 Series	* Hose - 3/8" (9 mm) I.D. Exhaust (Gray)
SPTOOLS	All Models	Clamp Tool, Tube Cutter	37208	HF4 Series	Kit - Quick Connect - Discharge/Air Supply - Pump
			37209	HF4 Series	Kit - Quick Connect - Discharge/Air Supply - Well Top
			36824	All Models	Flow Throttle Valve

* Hose to be sold with quick connects only

AIR CONSUMPTION



IMPORTANT — AIR FLOW IS ACTUAL. A MAXIMUM "ON-TIME" DUTY CYCLE FOR THE COMPRESSOR MUST BE CONSIDERED IN SELECTING A COMPRESSOR CAPACITY.

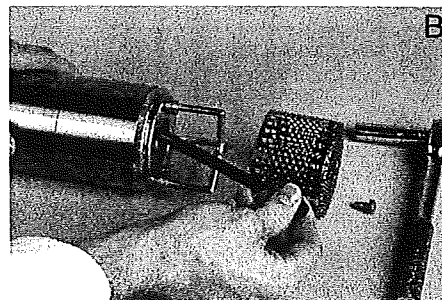
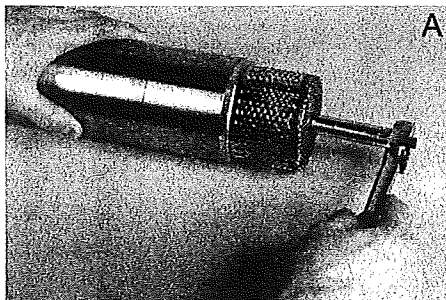
MINIMUM AIR FLOW REQUIRED 0.5 SCFM @ 10 PSI
 MAXIMUM AIR PRESSURE 160 PSI

H4 SERIES: REMOVING SHIPPING FLOAT RESTRAINT BEFORE USE

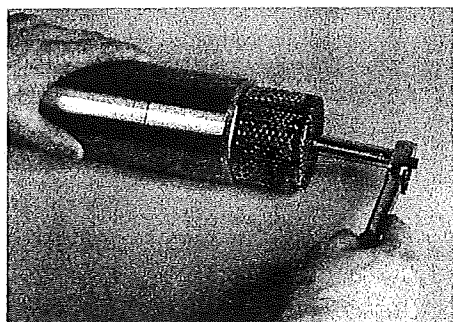
Remove single screw securing inlet screen with 7/16" socket (preferred) or other wrench of your choice (A).

Remove inlet screen and pull out full length of protective shipping tube protruding out of inlet (B).

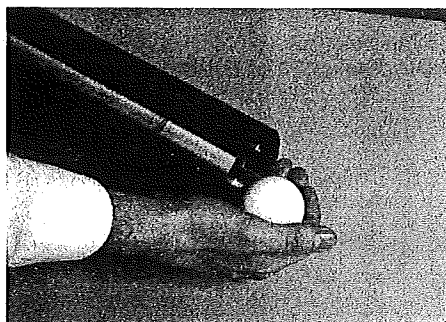
Reattach inlet screen. Internal float should move freely when pump is tipped from bottom to top.



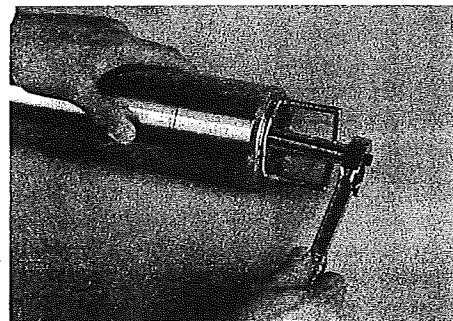
BOTTOM FILLING PUMPS: DISASSEMBLY/REASSEMBLY FOR CLEANING



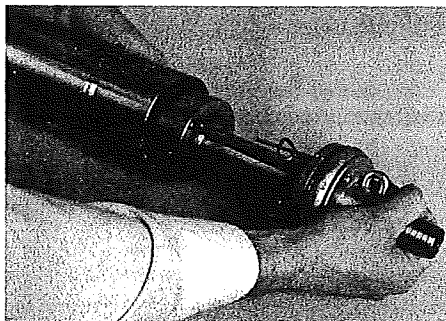
STEP 1: Remove 1 screw from inlet screen using 7/16" socket wrench. Then remove inlet screen.



STEP 4: Tip pump to allow inlet check ball to roll out.



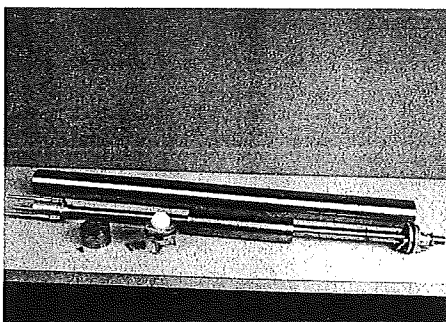
STEP 2: Remove 3 screws and 3 washers from inlet using 7/16" socket wrench.



STEP 5: Remove remaining internal pump subassembly—grasp top of pump, wiggle side to side and twist while pulling out of body.



STEP 3: Remove inlet—wiggle side to side while pulling out.



STEP 6: All parts are now removed from pump. Reverse the process to reassemble pump, starting with STEP 7.

STEP 7: Slide internal subassembly into pump body. O-ring should slide into body. NOTE: body is universal—pump can slide into either end.

STEP 8: Replace inlet check ball (2" diameter) between 3 "legs" inside lower end of pump.

STEP 9: Replace inlet. Push inlet in and rotate until the 3 legs inside body line up with the 3 counterbores. Then, push inlet in the rest of the way, so O-ring is sealed inside pump body.

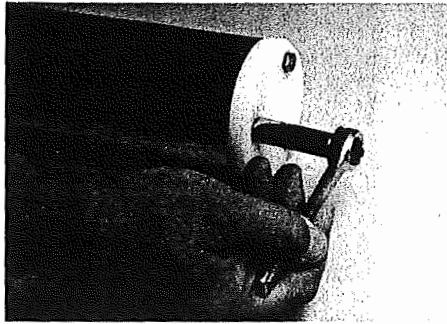
STEP 10: Make sure threads on 3 inlet screws and 3 inlet legs (inside body) are clean and free of silt or sediment. Place washers on screws, insert, and tighten with 7/16" socket wrench.

STEP 11: Place inlet screen over 3 legs of inlet. Insert to reattach screen. As in Step 10, make sure screw and threads are clean. Finish tightening with 7/16" socket wrench.

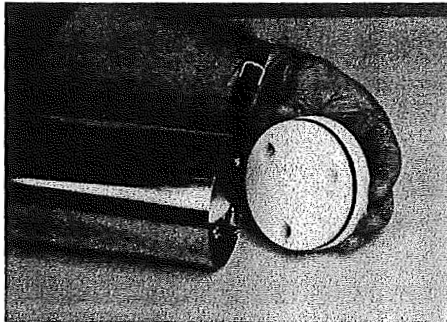
STEP 12: Tip pump over from top to bottom. You should hear float sliding freely inside body.

Note: for field repair or service of parts, please contact customer service at 1-800-624-2026.

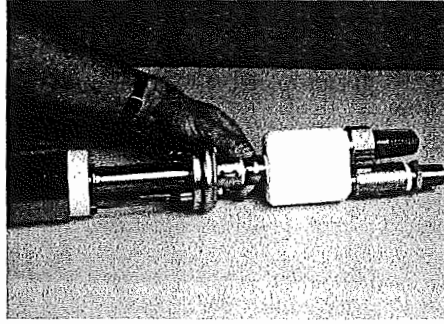
TOP FILLING PUMPS: DISASSEMBLY/REASSEMBLY FOR CLEANING: MODELS H45SET AND HF45SET



STEP 1: Remove 3 screws and 3 sealing washers from bottom plate using the 7/16" socket wrench provided.



STEP 2: Remove bottom plate.



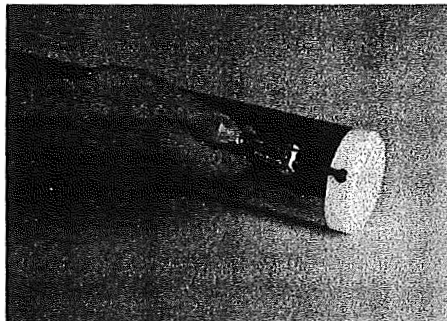
STEP 3: Remove remaining internal pump subassembly—grasp top of pump, wiggle side to side and twist while pulling out of body. Reverse the process to reassemble the pump, starting with STEP 4.

STEP 4: Slide internal subassembly into pump body. O-ring should slide into body. NOTE: body is universal—pump can slide into either end.

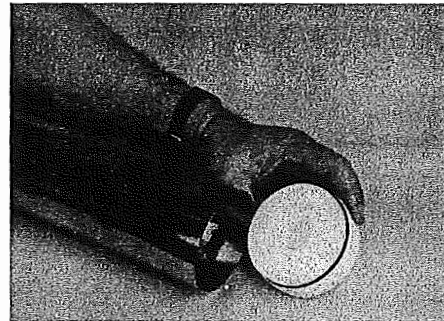
STEP 5: Replace bottom plate. Push in and rotate until the 3 legs (inside body) line up with the 3 counterbores. Then, push the plate in the rest of the way, so O-ring is seated inside pump body.

STEP 6: Make sure threads on 3 bottom plate screws and 3 legs (inside body) are clean and free of silt or sediment. Place sealing washers on screws—insert and tighten. Finish tightening with 7/16" socket wrench. Do not over-torque.

SHORT BODY MODEL HF43SET



STEP 1: Remove 1/4" pipe plug using 1/4" hex wrench.

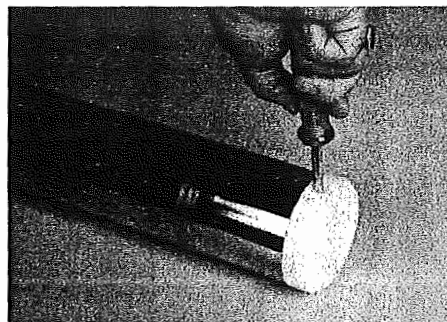


STEP 3: Remove bottom plate.

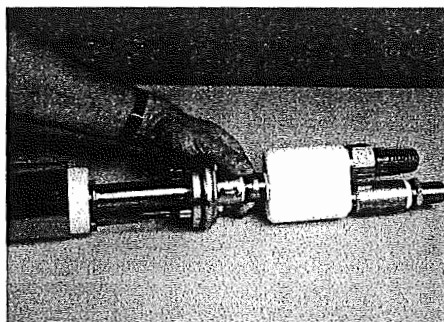
STEP 5: Slide internal subassembly into pump body. O-ring should slide into body. NOTE: body is universal—pump can slide into either end.

STEP 6: Replace bottom plate. Align threads in bottom plate with threads on dip tube.

STEP 7: Insert screw driver into the 1/4" pipe plug hole and tighten bottom plate (clockwise direction). Do not over-tighten. Insert 1/4" pipe plug and tighten with 1/4" hex wrench. It is recommended to use Teflon tape on threads of dip tube and 1/4" pipe plug.



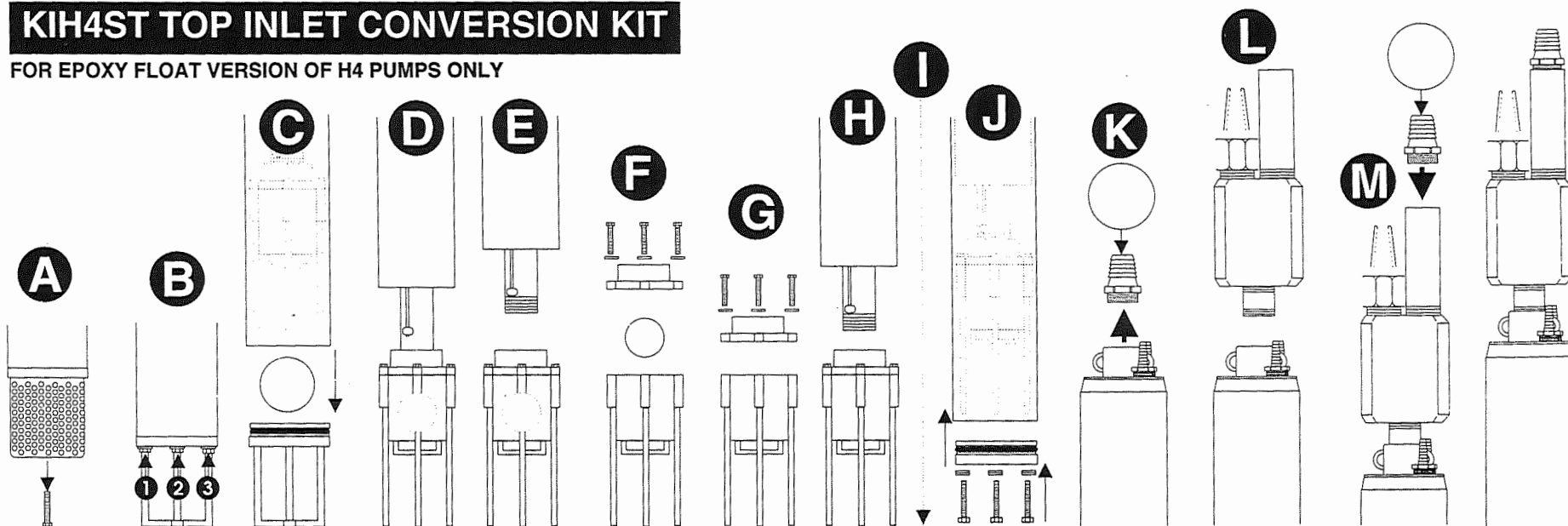
STEP 2: Insert screw driver into hole. Unthread bottom plate (CCW direction).



STEP 4: Remove remaining internal pump subassembly—grasp top of pump, wiggle side to side and twist while pulling out of body. Reverse the process to reassemble the pump, starting with STEP 5.

KIH4ST TOP INLET CONVERSION KIT

FOR EPOXY FLOAT VERSION OF H4 PUMPS ONLY



A. Remove screw from top inlet screen. Remove inlet screen.

B. Locate and remove the three bottom inlet screws and washers.

C. Remove inlet and o-ring. Remove check ball.

D. Remove the pump's body to expose internal components.

E. Unthread discharge check assembly from pump discharge tube.

F. Remove the three screws and washers on the top of the discharge check assembly. Remove check ball.

G. Replace the three screws and washers back into the discharge assembly.

H. Thread the discharge check ball assembly into the discharge tube and tighten securely. Slide the pump's outer shell back over the pump's internal components.

I. If your pump has a stainless steel float assembly you will need to change it to an epoxy float assembly following the directions on the backside of this sheet. Once float assembly has been changed, proceed on to instruction lettered "J".

J. Insert the new solid inlet plate with the o-ring into the open bottom of the pump. Thread the three screws and sealing washers, (supplied with your kit, make sure that the rubber sealing side of the washer is next to the inlet plate itself), into the sloid inlet plate and tighten securely.

K. Remove discharge barb fitting from pump discharge outlet. (NOTE: if your pump is a 3/4" discharge remove the reducing bushing along with the barb).

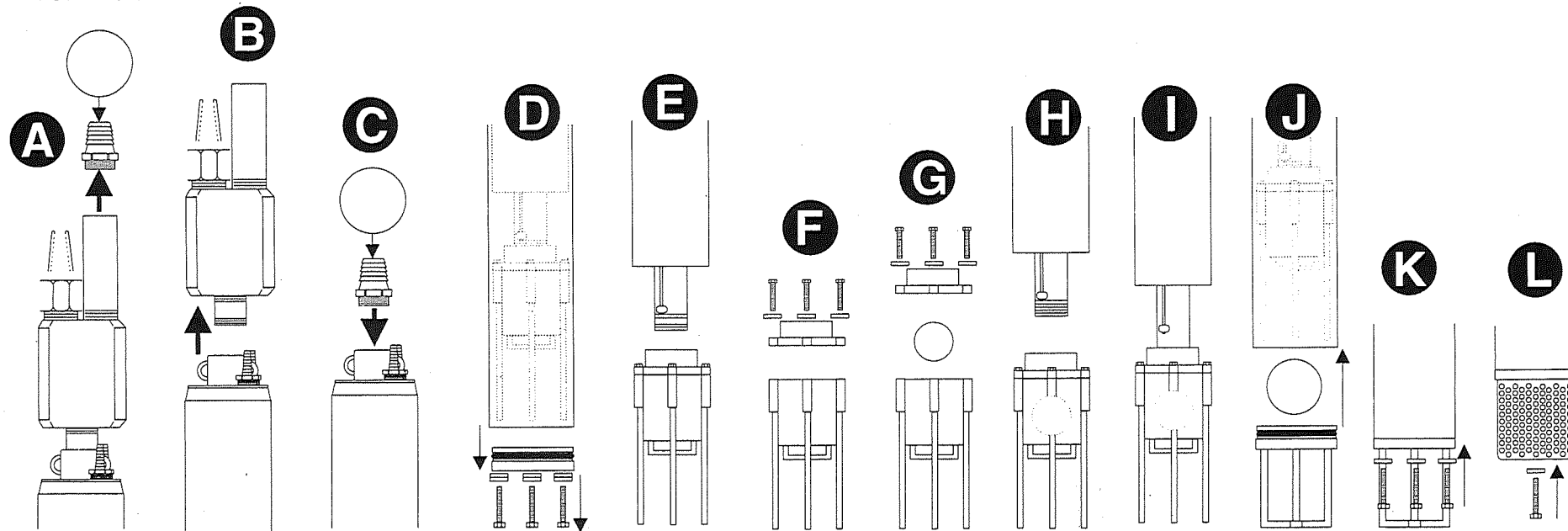
L. Thread the new top inlet adaptor assembly into the pump discharge outlet and tighten securely, (NOTE: align top inlet assembly so that the air line and the exhaust line will straddle the pump body without kinking the tubing.)

M. Thread discharge barb fitting, (along with the reducing bushing if pump is 3/4" discharge), into the discharge outlet of the new top inlet assembly and tighten securely.

NOTE: It is recommended to put Teflon tape on all threads.

KIH4SB BOTTOM INLET CONVERSION KIT

FOR EPOXY FLOAT VERSION OF H4 PUMPS ONLY



A. Unthread and remove pump discharge fitting, (along with the reducing bushing if pump is 3/4" discharge), from the discharge outlet of the top inlet adaptor.

B. Unthread and remove the top inlet adaptor assembly from the pump discharge outlet.

C. Thread discharge barb fitting, (along with the reducing bushing if pump is 3/4" discharge), into the pump discharge outlet. Tighten securely.

D. Remove the three screws and sealing washers holding the solid bottom inlet plate in place. Remove the solid bottom inlet plate and o-ring.

E. Remove the pump's body to expose internal components. Unthread the discharge check ball assembly from the discharge tube.

F. Remove the three screws and washers from the top of the discharge check ball assembly.

G. Place the smaller check ball, (from your kit), into the discharge check ball assembly. Replace the three screws and washers. Tighten securely.

H. Thread discharge check ball assembly back onto the pump discharge tube. Tighten securely.

I. Slide the pump's body back over the pump's internal components.

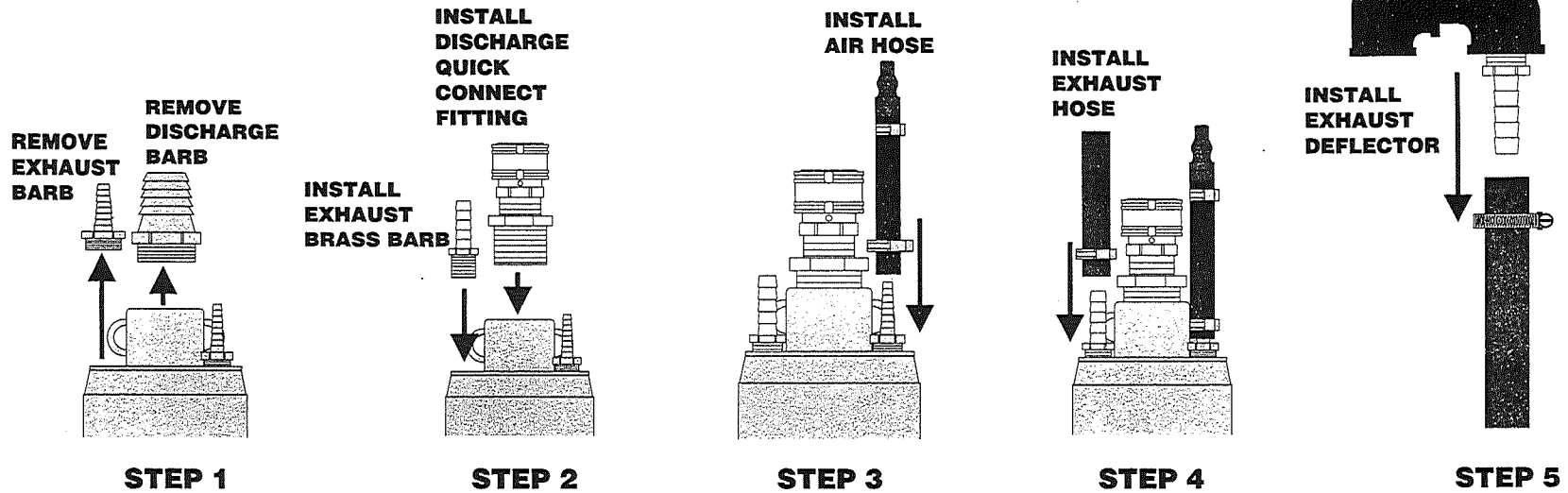
J. Place the larger check ball, (from your kit), into the pump bottom. Insert the inlet and o-ring, (from your kit), into the pump bottom.

K. Align the three screw holes on the inlet and thread in the three screws and sealing washers (provided with your kit). Tighten securely.

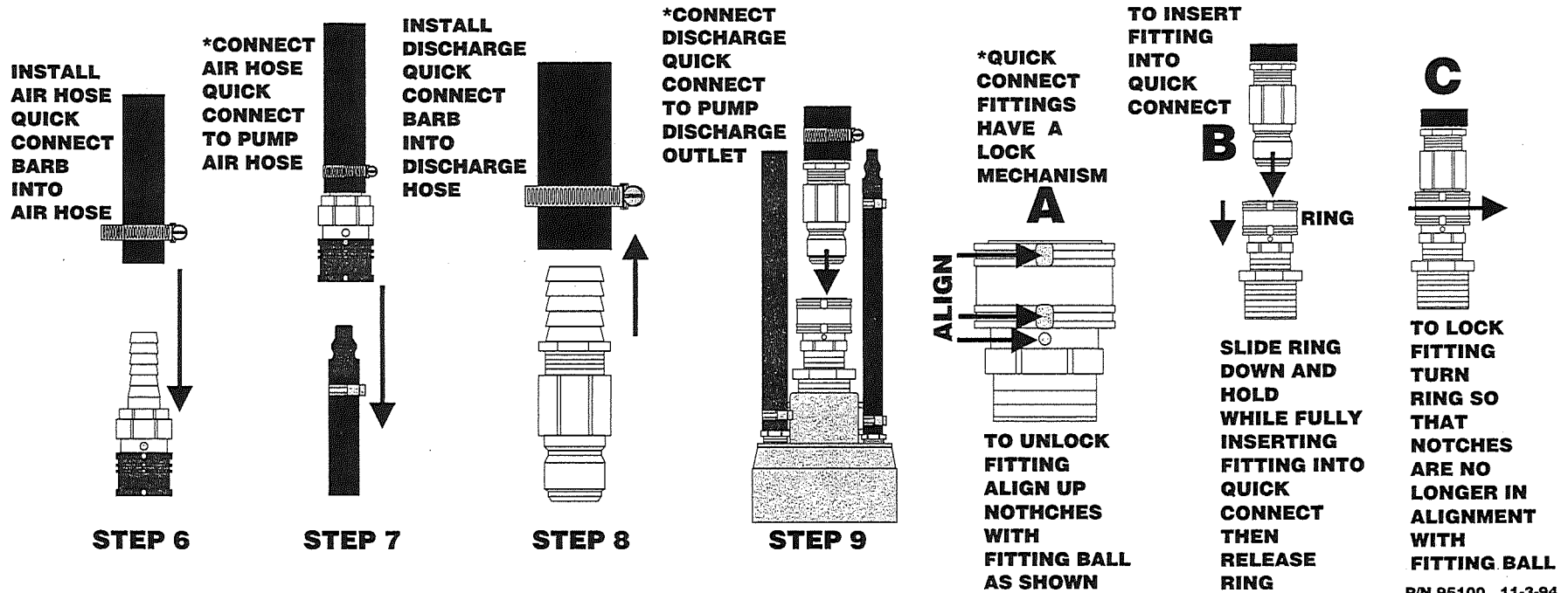
L. Slide the pump inlet screen, (from your kit), over the inlet assembly. Thread in the screw and tighten securely.

NOTE: It is recommended to put Teflon tape on all threads.

37208 KIT FOR USE WITH 4" HAMMERHEADS WITH HOSE



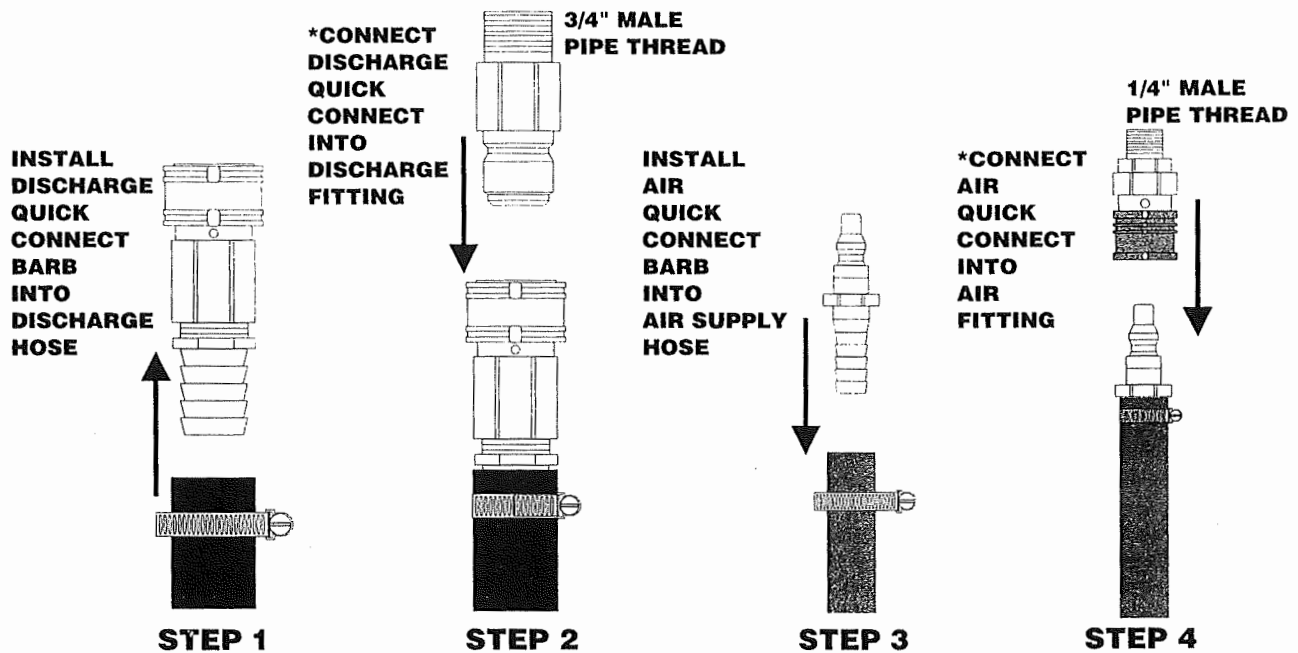
* USE OF LOCKING QUICK CONNECTS



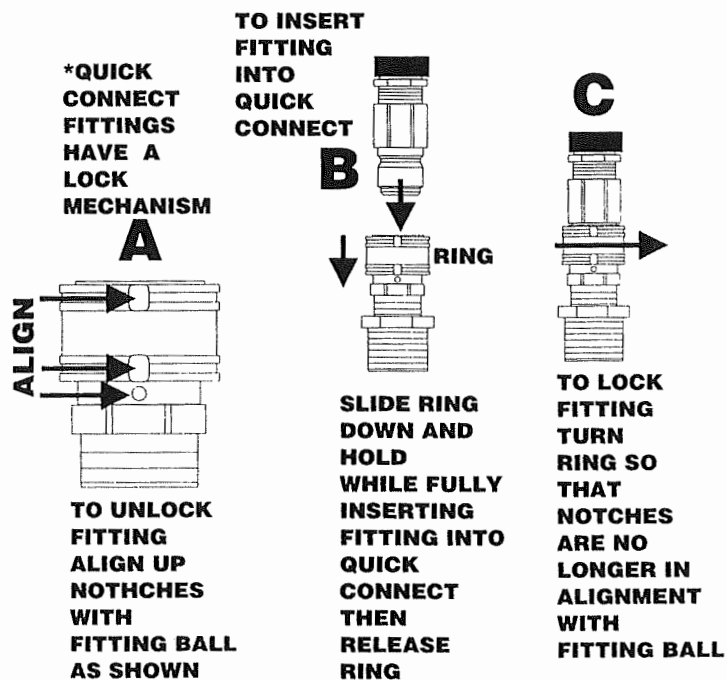
37209 KIT

QUICK CONNECT WELL HEAD FITTINGS

FOR 4" HAMMERHEADS WITH HOSES



* USE OF LOCKING QUICK CONNECTS



P/N 95101 11-3-94

PULSE PUMP™ WARRANTY

QED Environmental Systems, Inc. (QED) warrants to the original purchaser of its products that, subject to the limitations and conditions provided below, the products, materials and/or workmanship shall reasonably conform to the descriptions of the products and shall be free of defects in materials and workmanship. Any failure of the products to conform to this warranty will be remedied by QED in the manner provided herein.

This warranty shall be limited to the duration and the conditions set forth below. All warranty durations are calculated from the original date of purchase.

1. Liquid contacting equipment including pumps (QED bladder style pumps are excluded from this warranty), and tubing are warranted for one year.
2. Control devices, control device mounting, and surface air supply hose are warranted for one year.
3. Separately sold parts and spare parts kits are warranted for ninety (90) days.
4. Repairs performed by QED are warranted for ninety (90) days from date of repair or for the full term of the original warranty, whichever is longer.

Buyer's exclusive remedy for breach of said warranty shall be as follows: if, and only if, QED is notified in writing within the applicable warranty period of the existence of any such defects, shall find the same to be within the term of the warranty running from QED to Buyer, QED will, at its option, as soon as reasonably possible, replace or repair any such product, without charge to Buyer. If QED for any reason, cannot repair a product covered hereby within four (4) weeks after receipt of the original Purchaser's/Buyer's notification of a warranty claim, then QED's sole responsibility shall be, at its option, either to replace the defective product with a comparable new unit at no charge to the Buyer, or to refund the purchase price. In no event shall such allegedly defective products be returned to QED without its consent, and QED's obligations of repair, replacement or refund are conditioned upon the Buyer's return of the defective product to QED.

IN NO EVENT SHALL QED ENVIRONMENTAL SYSTEMS, INC. BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF SAID WARRANTY.

The foregoing warranty does not apply to major subassemblies and other equipment, accessories, and other parts manufactured by others, and such other parts, accessories, and equipment are subject only to the warranties, if any, supplied by their respective manufacturers. QED makes no warranty concerning products or accessories not manufactured by QED. In the event of failure of any such product or accessory, QED will give reasonable assistance to Buyer in obtaining from the respective manufacturer whatever adjustment is reasonable in light of the manufacturer's own warranty.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY (INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), WHICH OTHER WARRANTIES ARE EXPRESSLY EXCLUDED HEREBY, and of any other obligations or liabilities on the part of QED, and QED neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with said products, materials and/or workmanship.

It is understood and agreed that QED shall in no event be liable for incidental or consequential damages resulting from its breach of any of the terms of this agreement, nor for special damages, nor for improper selection of any product described or referred to for a particular application.

This warranty will be void in the event of unauthorized disassembly of component assemblies. Defects in any equipment that result from abuse, operation in any manner outside the recommended procedures, use and applications other than for intended use, or exposure to chemical or physical environment beyond the designated limits of materials and construction will also void this warranty.

Chemical attack to liquid contacting equipment and supplies shall not be covered by this warranty. A range of materials is available from QED and it is the Buyer's responsibility to select materials to fit the Buyer's application. QED will only warrant that the supplied liquid contacting materials will conform to published QED specifications and generally accepted standards for that particular material.

QED shall be released from all obligations under all warranties if any product covered hereby is repaired or modified by persons other than QED's service personnel unless such repair by others is made with the written consent of QED. If any product covered hereby is actually defective within the terms of this warranty, Purchaser must contact QED for determination of warranty coverage. If the return of a component is determined to be necessary, QED will authorize the return of the component, at owner's expense. If the product proves not to be defective within the terms of this warranty, then all costs and expenses in connection with the processing of the Purchaser's claim and all costs for repair, parts and labor as authorized by owner hereunder shall be borne by the Purchaser.

The original Purchaser's sole responsibility in the instance of a warranty claim shall be to notify QED of the defect, malfunction, or other manner in which the terms of this warranty are believed to be violated. You may secure performance of obligations hereunder by contacting the Customer Service Department of QED and:

1. Identify the product involved (by model or serial number or other sufficient description that will allow QED to determine which product is defective).
2. Specifying where, when, and from whom the product was purchased.
3. Describing the nature of the defect or malfunction covered by this warranty.
4. Sending the malfunctioning component, after authorization by QED to:

QED Environmental Systems, Inc.
6155 Jackson Road
Ann Arbor, MI 48103

Telephone: 1-313-995-2547
1-800-624-2026
1-313-995-1170 FAX

Attachment 4

Inspection Forms

**Preventive Maintenance Groundwater Intercept Pump by Cell Room and
Preventive Maintenance Groundwater Intercept Pump by NaOH Storage**

Job Num PU0270_01

PM GROUNDWATER INTERCEPT PUMP BY CELL ROOM

Description PM INSTRUCTIONS:

Active

- 1) CLEAN AND INSPECT PUMP.
- 2) CHECK LEVEL CONTROL AND HIGH ALARM.
- 3) CHECK CONDITION OF ELECTRICAL CONDUIT.
- 4) CHECK PUMP DISCHARGE PIPE.
- 5) CHECK CONDITION OF SUMP WALLS AND MANHOLE.
- 6) CHECK HEAT TAPE AND INSULATION.
- 7) TEST PUMP PERFORMANCE.

CONDITION AS FOUND:

CONDITION AS LEFT:

RECOMMENDATIONS AND WORK ORDER NUMBER FOR ITEMS
MISSED AND/OR FOLLOW-UP WORK:

Primary

Skill	Crew	Est Hours
ME - MECHANICAL MAINTENANCE	01	4.00

Crew/Skill	Crew	Est Hours	
ME	01	4.00	VMC MECHANICAL MAINTENANCE

Rebuild
Up

No PM Job Tp Yes

Expires

Mea Code
Drawing
No

Contact
Phone No

Hours Act	Average	0.00	Times Used
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From Work/Step

Copy

Operatns Parts
Resrces Update

Job Num PU0271_01 PM GROUNDWATER INTERCEPT PUMP BY NAOH STORAGE

Descripti on PM INSTRUCTIONS: Active

- 1) CHECK HEAT TAPE AND INSULATION ON LINE FROM INTERCEPT TO TOP OF COLLECTION TANK.
- 2) CHECK AIR TUBING TO PUMP.
- 3) PULL PUMP, CLEAN, AND INSPECT.
- 4) CHECK CONDITION OF WELL CASING, MANHOLE, AND PIPE.
- 5) CHEMICALLY TREAT THE WELL USING NW-100. SEE BELOW FOR INSTRUCTIONS.
- 6) TEST PUMP PERFORMANCE.

CHEMICAL TREATMENT INSTRUCTIONS:

- 1) REMOVE PUMP AND ADD 9 POUNDS OF NW-100 PELLETIZED CHEMICAL TREATMENT TO THE WELL. VMC P/N ----- (STORES CHANGE REQUEST SUBMITTED.)
- 2) ALLOW NW-100 TO SET IN WELL OVERNIGHT.
- 3) USING A DIAPHRAM PUMP, PUMP THE WELL EMPTY. ALLOW WELL TO REFILL AND PUMP DOWN AGAIN. REPEAT PUMP DOWN 3 MORE TIMES.
- 4) REPEAT STEPS 1, 2, AND 3. RETURN WELL TO OPERATION.

CONDITION AS FOUND:

CONDITION AS LEFT:

Primary

RECOMMENDATIONS AND WORK ORDER NUMBER FOR ITEMS MISSED AND/OR FOLLOW-UP WORK:
Skill Crew Est Hours
Code
ME-MECHANICAL 01 8.00
MAINTENANCE
Crew/ Skill Crew Est Hours

1	ME	01	8.00	VMC MECHANICAL MAINTENANCE
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Rebuild Tp

No PM Job Tp Yes Expires

Mea Code Drawing No

- Contact Phone No

Hours Act	Average	0.00	Times Used
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Copy

From Work/ Step

Operatns Parts
Resrces Update

Attachment 5

Sampling and Analysis Plan

Sampling and Analysis Plan

The purpose of this Sampling and Analysis plan is to provide instruction for the post corrective action (CA) groundwater monitoring occurring at the Vulcan Chemicals Facility in Port Edwards, Wisconsin. The instruction shall be of sufficient detail, that a third party could complete this portion of the corrective action if Vulcan or their designee cannot complete the task.

Number of Samples and Sampling Schedule

The post CA monitoring began in April 1999. The analytical parameters, the number of samples to be collected and analyzed, and the sampling schedule is provided as Table 1. Sample quantities and sampling dates are based upon current plans and projections and are subject to change. Sample locations are provided on Figure 1.

Sample Containers and Preservatives

The types of containers, sample preservation, and holding time requirements for each analysis are summarized in Table 2. The subcontract laboratory(s) will provide all sample containers, preservatives, shipping coolers, and sample packing material necessary to properly ship or courier the samples to the laboratory.

All sample containers shall be the I-CHEM Series 200 type, or equivalent. The laboratory shall follow the "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers," OSWER Directive #9240.0-05 (rev. 6/90). The laboratory shall have available, if requested, information concerning the quality assurance/quality control (QA/QC) program for the sample bottles and the lot number(s) for the supplied sample containers.

Two groundwater monitoring programs will be conducted simultaneously in the field, natural attenuation monitoring and groundwater collection performance monitoring. Natural attenuation monitoring will assess the progress of natural attenuation in reducing chlorinated VOC concentrations. Performance monitoring evaluates the effectiveness of the groundwater collection systems. Each program has different sampling and analytical requirements as described below.

TABLE 2
Post Corrective Action Groundwater Monitoring - Analysis List
Vulcan Chemical Corrective Measures Implementation

Analysis	EPA Method Number	Container Type ^a	Preservation and Storage Requirements	Maximum Holding Times
General Chemistry				
Alkalinity	310.2	Plastic or glass	4°C	14 days
COD	410.4	Plastic or glass	H ₂ SO ₄ to pH < 2, 4°C	28 days
Chloride	300.0 and 325.1	Plastic or glass	4°C	28 days
Nitrate	300.0	Plastic or glass	H ₂ SO ₄ to pH < 2, 4°C	48 days
Sulfate	300.0	Plastic or glass	4°C	28 days
TOC	9060	Plastic or glass	H ₂ SO ₄ to pH < 2, 4°C	28 days
Metals				
Mercury, Total	1631	Glass	HCL to pH < 2, 4°C	28 days
Iron, soluble	6010	Plastic or glass	HNO ₃ to pH < 2, 4°C	180 days
Gases				
Methane, ethane, ethene	EPA RSK 175 or equivalent	40 mL glass volatile vials	4°C, no headspace, HCL to pH < 2	Not determined
Volatile Organics				
VOCs ^b	5030B/8260B	40 mL glass volatile vials	4°C, no headspace, HCL to pH < 2	14 days

^a All bottle lids shall be Teflon® lined.

^b The project-specific VOC list is provided in Table 3

Sample Collection

Natural Attenuation Monitoring

Sample Parameters

Natural attenuation specific groundwater sampling shall be performed at the locations specified in Table 1. The natural attenuation parameters to be sampled and analyzed from these wells include the following:

- Field measurements of dissolved oxygen, specific conductance, pH, temperature, and oxidation reduction potential (eH)
- Laboratory analysis of VOCs, methane, ethene, ethane, total organic carbon (TOC), chemical oxygen demand (COD), nitrate, sulfate, iron, alkalinity, and chloride

Sample Locations

Twenty wells in two hydrostratigraphic units were selected for natural attenuation monitoring, and include the following:

- **Sand and Gravel Aquifer:** V3, V5, V6, V9, V16, V22, V28 (upgradient well), V29, V31, and V32
- **Weathered Bedrock/Bedrock Aquifer:** V2A, V2B, V3A, V4A, V20A, V28A (upgradient well), V29B, V31A, V32A, and V32B

Locations are shown on the attached Figure 1.

Sample Frequency

The DNR approved plan requires monitoring for up to 5 years. The natural attenuation parameters listed in Table 1 will be sampled quarterly for the first year to establish baseline conditions and to evaluate seasonal fluctuations. For the remaining 4 years, VOCs will be sampled semiannually and natural attenuation parameters will be sampled annually. The sampling frequency is summarized in Table 1.

Sampling Procedures

The natural attenuation wells will be sampled using the WDNR low flow method. This sampling procedure is provided as Attachment A to this document.

Performance Monitoring

Sample Parameters

Performance monitoring shall be performed at the locations specified in Table 1. The performance monitoring parameters consist of total mercury and chloride.

Sample Locations

Water from ten monitoring wells, two discharge sampling ports, and one sewer outfall will be sampled and analyzed to monitor the performance of the groundwater extraction systems. The monitoring wells are V2, V2A, V7, V20, V21, V22, V23, V24, V25, and V26. Additionally, samples will be collected at the Collection Trench Discharge, the Extraction Well discharge, and the Wisconsin DOT Storm Sewer Discharge at the East Parcel Wetlands.

Sample Frequency

The Collection Trench Discharge and the Wisconsin DOT Storm Sewer Discharge will initially be sampled monthly for the first three months and then quarterly for the remainder of the first year. The eleven remaining sample locations will be sampled quarterly for the first year. For the remaining 4 years, all sample locations will be sampled semiannually. Performance monitoring sample frequency is summarized in Table 1.

Sampling Procedures

The performance monitoring wells will be purged in accordance with the WDNR low flow method (Attachment A). The mercury samples will be collected with the clean sampling procedure provided as Attachment B.

Investigation Derived Waste

The field service contractor will minimize the quantity of investigation derived waste (IDW). Purge water from the monitoring wells will be contained and discharged in a

wastewater collection sump for treatment at Vulcan's treatment plant. If Vulcan's treatment plant is no longer in operation, the purge water will be containerized and transported offsite for disposal at a properly licensed facility. Tubing used for purging and sampling will be rinsed with tap water and disposed of as a solid waste, as will personal protective equipment.

Required Parameters, Methodology, and Detection Limits

The analytical parameters and analytical methods are provided in Table 2. The project required detection limits are provided in Table 3.

TABLE 3

Groundwater Monitoring - Natural Attenuation and System Monitoring Sampling and Analysis List—Vulcan Chemical Corrective Measures Implementation

Compound	CAS Number	Required Reporting Limit (ug/L)
<i>Volatile Organics</i>		
Vinyl chloride	75-01-4	1.0
1,1-Dichloroethane	75-34-3	1.0
1,2-Dichloroethene (total)	540-59-0	1.0
1,1,1-Trichloroethane	71-55-6	1.0
Carbon tetrachloride	56-23-5	1.0
Trichloroethene	79-01-6	1.0
Benzene	71-43-2	1.0
Tetrachloroethene	127-18-4	1.0
<i>General Chemistry</i>		
Alkalinity	N/A	20,000
COD	N/A	10,000
Chloride	N/A	2000
Nitrate	N/A	1000
Sulfate	N/A	2,000
TOC	N/A	1000
<i>Metals</i>		
Mercury, total	7439-97-6	0.0097
Iron, soluble	7439-89-6	50
<i>Gases</i>		
Methane, ethane, ethene	N/A	10.0

Analytical Performance

Quality Assurance

Sample analysis quality assurance requirements shall be in accordance with the referenced analytical methods and laboratory QAP. Quality control samples exceeding established control limits shall be reported in the case narrative.

Data Review

All generated analytical data is to be checked and reviewed at the laboratory by the analyst generating the data and an experienced data reviewer prior to its release to the client.

The analyst shall review the data to ensure that the following have been conducted:

- Sample preparation information is correct and complete
- Analysis information is correct and complete
- The appropriate standard operating procedures were followed
- Analytical results are correct and complete
- Quality control samples were within established control limits

A second data reviewer shall review the data package to ensure that:

- Calibration data are scientifically sound and appropriate
- Qualitative and quantitative results are correct
- The data package is complete and ready for document archiving

Data Reporting

An electronic data deliverable and a hard copy analytical report shall accompany all analytical results issued by the laboratory. Each analytical report shall contain a case narrative and its corresponding raw data. The electronic data deliverable shall be as required by the client. The data reporting schedule is provided as Table 4.

The case narrative shall include but not be limited to the following:

- Sample summary cross referencing the field and laboratory sample identification, matrix, and date sample was collected in the field and received by the laboratory
- Project summary referencing the analytical methodology
- Discussion of any protocol deviations that may have occurred during sample testing
- Discussion of QC questions that were encountered and the corrective measure taken
- Summary and discussion of samples that are diluted by the presence of an interference, nontarget analyte, or target analytes
- QC samples exceeding established control limits

The raw data for this project shall be collected and documented in such a manner that will allow the generation of data package(s) that can be used by an external data auditor to

reconstruct the analytical process. The sample data shall, at a minimum, consist of the following:

- A. All sample results and QA/QC results, cross referenced with field and laboratory sample ID numbers
- B. Raw data, including but not limited to:
 - 1. Copies of the chain-of-custody's
 - 2. Bench records for the following:
 - a. Sample weight
 - b. Final and dilution volumes
 - c. Sample printouts (for all field samples, blanks, and QA/QC samples performed on a project-related sample)
 - d. Computer- or hand-generated data
 - e. Calculations
 - 3. Instrument calibration records (e.g., readings data), chemist observations, or notes
- C. Exact copies of the sample collection logbook entries for that event

The data provided by the laboratory shall be legible and consecutively paginated.

Low Flow Purging of Monitor Wells SOP

This attachment is taken from the "Groundwater Sampling Field Manual" produced by the Wisconsin Department of Natural Resources Bureau of Drinking Water and Groundwater. PUBL-DG-038 96, released September of 1996.

Wells that do NOT Purge Dry

This section applies to wells that take less than ~ 1 hour for their water levels to recover, or nearly so, after they have been purged. The following purging and sampling procedures are recommended for wells that do not purge dry. The first procedure (A) consistently yields the *highest level of data quality*. The last procedure (C) may yield a *lower level of data quality*:

- A. Low-flow Purging < 1 L/min (0.26 gpm), Low-flow Sampling < 300 mL/min (0.3 L/min or 0.1 gpm) and Monitoring Indicator Parameters for Stability in a Closed Flow-through Cell
1. SLOWLY lower the tube inlet to the *middle* of the well's screened area. (A peristaltic pump with disposable chemically inert tubing will be used. The tubing will be changed between each sample location).
 2. Connect the discharge end of the tubing to the water entry point of the closed flow-through cell.

Closed Flow-Through Cell

Air pockets may exist in the upper neck of each port hole that has a probe inserted into it. Just make sure the probe's sensors are completely submerged in water during use. Avoid exposing the flow-through cell to extreme heat and sun in the summer and freezing temperatures in the winter.

3. Set up and calibrate all indicator parameter instruments and place each probe into its respective port of the closed flow-through cell.
4. Set the pump controller to the desired purging rate (i.e., < 1 L/min).
5. Record the "purging time start," and start purging the well at a rate of 1 L/min or less. During purging, the water level in the well should not significantly decrease and should stabilize after purging for a few minutes. If the water level continues to decline while purging, decrease the purging rate if possible. Record the "purging flow rate" as an average. Use a graduated beaker, cylinder, calibrated bucket or other device to measure the flow rate while purging and sampling.

- 6a. Purge the well until you have taken at least three consecutive readings, spaced ~ 2 minutes apart are within the following ranges for the following indicator parameters:

Dissolved Oxygen	± 0.2 mg/L
Specific Conductance	± 5.0 μ mhos/cm for values < 1000 μ mhos/cm ± 10.0 μ mhos/cm for values > 1000 μ mhos/cm
pH	± 0.1 pH units
Temperature	± 0.1 °C
Turbidity	< 5 NTUs (<i>Required</i> because metals samples will not be filtered)
Eh (<i>Optional</i>)	± 30 mv

Stable pH, specific conductance and temperature readings are considered the most reliable parameters for indicating that stagnant water has been replaced by formation water. You may adjust the $\pm$ ranges and which indicator parameters you use to indicate that stagnant water has been replaced by formation water to reflect site-specific data, geochemistry, and hydrogeologic conditions.

Turbidity stabilization and NTU readings below 5 are required because samples are not being filtered

Or

- 6b. Purge the well until the readings for indicator parameters listed above (or well-specific indicator parameters) vary within ± 10 percent over three or more consecutive readings, spaced ~2 minutes apart.
7. Record the final three stable readings for each indicator parameter on the "Field Data Sheet".
8. Record the "volume purged," "purging time stop," "purged dry (Y/N)," and any problems purging.
9. Record "sample flow rate" as an average, "time sample collected," and any other pertinent information related to the sampling event.
10. Decontaminate sampling equipment and flow through cell between each sampling location.

ATTACHMENT B

Clean Sampling Procedure

Equipment / Personnel Required

- Masterflex "easy loading" peristaltic pump
- 12-volt battery and connectors for peristaltic pump
- Teflon® tubing with neoprene tubing end fittings
 - Previously cut to required length
 - Prepared according to clean analytical procedures
 - Stored in individual ziplock bags, one per worker
- Teflon®-coated weight with clasps (for coring)
- Tyvek coveralls including hood and booties
- Sample kits (supplied by analytical laboratory)
 - Shipped from the analytical laboratory in sample containers and ampoules with acid. Each ziplock bag is sealed within Tyvek coveralls, one pair for each field worker.
- Two field workers, one designated the "clean hands" worker
- A field ice chest or box for storage of "clean" tubing apparatus, Tyvek coveralls) and sample containers and Teflon weights with clasps.
- Another ice chest with sufficient ice to ship samples
- Federal Express labels prepared for shipping to the analytical laboratory
- Garbage bags and shipping tape
- Waterproof field marker
- Field notebook and graphite pencil
- Field vehicle (preferably a van that has been decontaminated, etc.)

3. The clean hands worker conducts the following activities:
 - Removes the tubing apparatus from the ziplock bag and connects the weight with clasps to the Teflon end of the tubing, as needed.
 - Transports the tubing to the sample collection location, taking care to prevent any contamination to the tubing from wind and/or contact with surfaces.
 - Lowers the Teflon end of the tubing with weight to the sample collection location. When sampling manholes, sewers, or channels, care must be taken so the end of the tube does not touch the sides of the manhole bottom of the sewer or channel.
4. The dirty hands worker conducts the following activities:
 - Inserts the neoprene end of the tubing apparatus into the peristaltic pump head
 - Holds the Teflon tubing, which was lowered by the clean hands worker to the sample collection position, with one hand and holds the neoprene end of the tubing extending out of the pump head in the other hand (making sure that the end is directed away from the sample collection area to prevent contamination of the collected sample)
 - Turns the pump switch on to begin the 2-minute minimum purging of the sample tubing

Note: During purging of the tubing and sample collection, the dirty hands worker must take care to maintain the location of the tubing end approximately mid-depth and away from any metal-containing objects.

5. The clean hands worker conducts the following activities:
 - Returns to field van to retrieve sample containers and preservative ampoules

Note: The clean hands worker should not have to contact the outside of the ziplock bag since it was previously opened by the dirty hands worker upon arrival at the sampling site.

 - Transports closed sample container and preservative ampoules to sample collection location
 - After the well is purged in accordance with Attachment A, holds closed sample container within one inch of the tubing end before removing lid and begins collecting sample
 - Adds preservative from ampoule to each three-quarters full sample container, as appropriate.
 - Closes the sample container with lid once the sample container is full

Note: During sample collection, the clean hands worker must prevent contamination of the sample container lid.

 - Transports the closed sample container back inside the field van

6. The dirty hands worker:
 - Removes the flow through cell and raises the Teflon tubing so the sample container can be filled.
 - Once all the sample containers are full, empties the contents of the tubing and turns off the pump
 - Removes the neoprene ends of the tubing from the pump head and disposes of the tubing in a garbage bag
 - Transports the sampling equipment and waste back to the field van
7. Both workers remove their clean sampling ensembles (gloves, Tyvek), dispose of them in a garbage bag, and seal before proceeding to the next sampling location
 - *Steps 1 through 8) are repeated at each sampling location
8. After all samples are collected, either the clean or dirty hands worker:
 - Lines the inside of the ice chest sent by the analytical laboratory with a thick garbage bag
 - Places the double-bagged sample containers (also containing empty ampoules) with double-bagged ice or blue ice in the garbage bag lined ice chest, and tightly seals the garbage bag to prevent any leakage during shipping
 - Prepares the ice chest for shipping to the analytical laboratory by sealing with strong package tape and affixing prepared Federal Express label and delivers to Federal Express location.

Table 1
Vulcan Chemicals Long Term Groundwater Monitoring Program
Sample Number and Schedule

Well	V2	V2A	V2B	V3	V3A	V4A	V5	V6	V7	V9	V16	V20	V20A	V21	V22	V23	V24	V25	V26	V28	V28A	V29	V29B	V31	V31A	V32	V32A	V32B	Trench Discharge	Outfall	SPP Ex Well Discharge
Program	PM-C	NA & PM-C	NA	NA	NA	NA	NA	NA	PM-S	NA	NA	PM-S	NA	PM-S	NA & PM-S	PM-S	PM-S	PM-S	PM-C	NA	NA	NA	NA	NA	NA	NA	NA	NA	PM-C	PM-C	PM-S
Laboratory Analyses																															
Mercury, Total	1	1							1			1		1	1	1	1	1	1										1	1	1
VOCs		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Ethene		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Ethane		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
TOC		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
COD		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Iron		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Nitrate		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Sulfate		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Chloride	1	1	1	1	1	1	1	1		1	1		1		1				1	1	1	1	1	1	1	1	1	1	1	1	
Alkalinity		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Methane		1	1	1	1	1	1	1		1	1		1		1					1	1	1	1	1	1	1	1	1			
Field Measurements																															
DO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Conductivity	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
pH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Temperature	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
eH	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			

Table 1
Vulcan Chemicals Long Term Groundwater Monitoring Program
Sample Number and Schedule

Well	Sampling Date																													
V2	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V2A-PM-C	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V2A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V2A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V2B-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V2B-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V3-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V3-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V3A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V3A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V4A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V4A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V5-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V5-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V6-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V6-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V7	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V9-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V9-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V16-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V16-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V20	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V20A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V20A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V21	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V22	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V22-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V22-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V23	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V24	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V25	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V26	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	
V28-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V28-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V28A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V28A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V29-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V29-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V29B-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V29B-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V31-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V31-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V31A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V31A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32A-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32A-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32B-NA VOCs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
V32B-NA Pmrtrs	Apr-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03																		
Trench Discharge	Apr-99	May-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20
Storm Sewer Outfall	Apr-99	May-99	Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20
SPP Ex Well Discharge	Apr-99		Jun-99	Sep-99	Dec-99	Mar-00	Sep-00	Mar-01	Sep-01	Mar-02	Sep-02	Mar-03	Sep-03	Mar-04	Mar-05	Mar-06	Mar-07	Mar-08	Mar-09	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20



CH2MHILL

CH2M HILL
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Suite 325
Milwaukee, WI
53214
Tel 414.272.2426
Fax 414.272.4408

January 5, 2001

148526.A0.99.GW

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JAN 11 2001
PORT EDWARDS

WID 046536231
FID 772010470

Cindy Koepke
WDNR
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Subject: Vulcan Chemicals Groundwater Corrective Action Program
Proposed Modifications to Saturator Purge Pit Groundwater Collection System

Dear Cindy:

As you are aware, Vulcan has been confronted with operational problems at the Saturator Purge Pit (SPP) collection well for some time. This well was installed as part of the corrective measures implemented in 1998 and was intended to control movement of a mercuric chloride plume remnant near the SPP. The SPP was conditionally closed in 1993 under Vulcan's operating permit, but inaccessible and contaminated soils there continued to affect groundwater. The collection well was installed about 100 feet downgradient of the SPP, the closest point available because of the presence of process piping and the caustic storage tanks immediately adjacent to and downgradient of the former SPP.

Problem Statement

Severe mineral encrustation occurs within the well bore, greatly reducing the well's functionality. We believe the cause of this phenomenon is that groundwaters with very different hydrogeochemical characteristics mix inside the well, resulting in instantaneous and massive precipitation of mineral salts around the screen and pump. Specifically, high pH water in the uppermost groundwater near the caustic storage tanks¹ mixes with more normal pH groundwater in the lower portions of the aquifer. Because the SPP collection well is fully penetrating and screened over the entire saturated thickness of the sand and gravel aquifer, these waters mix instantaneously within the well. Within a very short period of time (2 to 3 days), the encrustation becomes so severe that the pump becomes inoperative and maintenance personnel are required to remove and clean the pump and acidify the well.

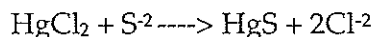
¹ The elevated pH may have been associated with *de minimis* releases from the caustic storage tanks and related piping. However, Vulcan implemented double lining of the tanks and piping in 1999 and installed leak detection in this area. Consequently, it is expected that aquifer pH will gradually return to background conditions over time.

Alternatives Analysis

The SPP collection well is not operating as intended or designed. We have evaluated many options that could be used to correct this situation (see Table 1). However, none of them stands out as optimal and each has one or more serious drawbacks, the foremost of which is safety. Faced with this dilemma, the Vulcan corrective action team decided to take a closer look at whether some degree of "natural attenuation" might be occurring that could justify discontinuation of active groundwater collection. The distribution and concentration of mercury downgradient of the SPP was evaluated to determine whether continued groundwater collection in this area was still needed as a protective corrective measure.

Data Evaluation

Review of historic mercury data shows a rapid decline in mercury concentrations (orders of magnitude) over a short distance from the SPP. This pattern is fairly consistent, suggesting some natural process (other than mechanical dispersion) is reducing transportable mercury in the aquifer system. We believe that excess sulfide in the aquifer (whether naturally occurring or as a result of plant operations) is reacting with the mercury (primarily present as mercuric chloride) and causing mercury to drop out of solution as mercuric sulfide:



Mercuric sulfide is essentially insoluble and unavailable for further transport (it is also non-toxic and unavailable biologically in this form).

To further assess the downgradient distribution and concentration of mercury, Vulcan sampled the monitor wells historically downgradient of the SPP during the scheduled December quarterly sampling event. In addition to wells V24, V25, V23, V20A, V3, and V3A, which are part of the sampling program, Vulcan added wells V9, V30, V31, and V32. These wells were sampled and analyzed for the field parameters (groundwater elevation, temperature, pH, specific conductance, turbidity, D.O., and Eh), and total and dissolved mercury. Wells were sampled using low flow sampling methods and analyzed under the trace metal free protocols.

Results

Distribution of total and dissolved mercury is presented in Figure 1. Examining the figure shows the following and provides strong support for the attenuation theory:

1. Groundwater mercury concentrations downgradient of the SPP are decreasing by an order of magnitude with every 200 feet moving away (east-southeast) from the SPP.
2. Offsite concentrations of total and dissolved mercury downgradient of the SPP do not exceed the NR 140 enforcement standard (ES).
3. Offsite concentrations of dissolved mercury downgradient of the SPP do not exceed the mercury preventive action limit (PAL) except at monitoring well V32. The concentration of 0.24 µg/L exceeds the PAL by 40 nanograms per liter (50 ppt).

Vulcan recognizes that the resources requiring protection at this site are the Wisconsin River and the aquatic species that inhabit the river and its immediate environs. While we did not conduct surface water sampling in December, given the mercury concentrations at V32, concentrations in the surface water would be within the range of background for the Wisconsin River, most likely not being detectable. This means that mercury loadings to the river from the SPP plume would be negligible relative to other anthropogenic sources.

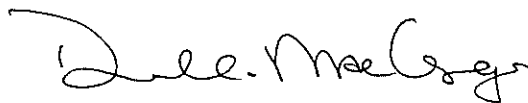
Proposed Modifications

Vulcan proposes the following modification for the SPP plume corrective measure:

1. Discontinue collecting and treating the groundwater down-gradient of the SPP.
2. Continue to monitor wells V24, V25, V23, V7, V21, V22, V20, V20A, V3, and V3A in accordance with the long-term groundwater monitoring program outlined in *Vulcan Chemicals Corrective Measures Implementation Plan* (CH2M HILL 1998). In addition, monitor wells V4, V9, V13, V30, and the storm sewer outfall located between V32 and V13 for total mercury on a quarterly basis for 1 year.
3. Reassess the appropriateness of this modification after 1 year and decide whether SPP plume interception needs to be reactivated. If so, the configuration will differ from system due to the problems mentioned earlier. Also at this time, we would reassess the breadth and frequency of the SPP plume monitoring program to determine whether other modifications are appropriate.

Vulcan believes that the proposed modifications continue to be protective of human health and the environment and looks forward to discussing this with the Department as soon as possible. Please call me or George Gissel to arrange a time that best fits your schedule.

Sincerely,
CH2M HILL



Dan MacGregor
Project Manager

cc: George Gissel/Vulcan Chemical
Mark Hinchey/CH2M HILL
Derek Clayton/CH2M HILL

TABLE 1
Preliminary Alternatives Analysis for the SPP Plume Residual
Vulcan Chemicals Port Edwards Facility

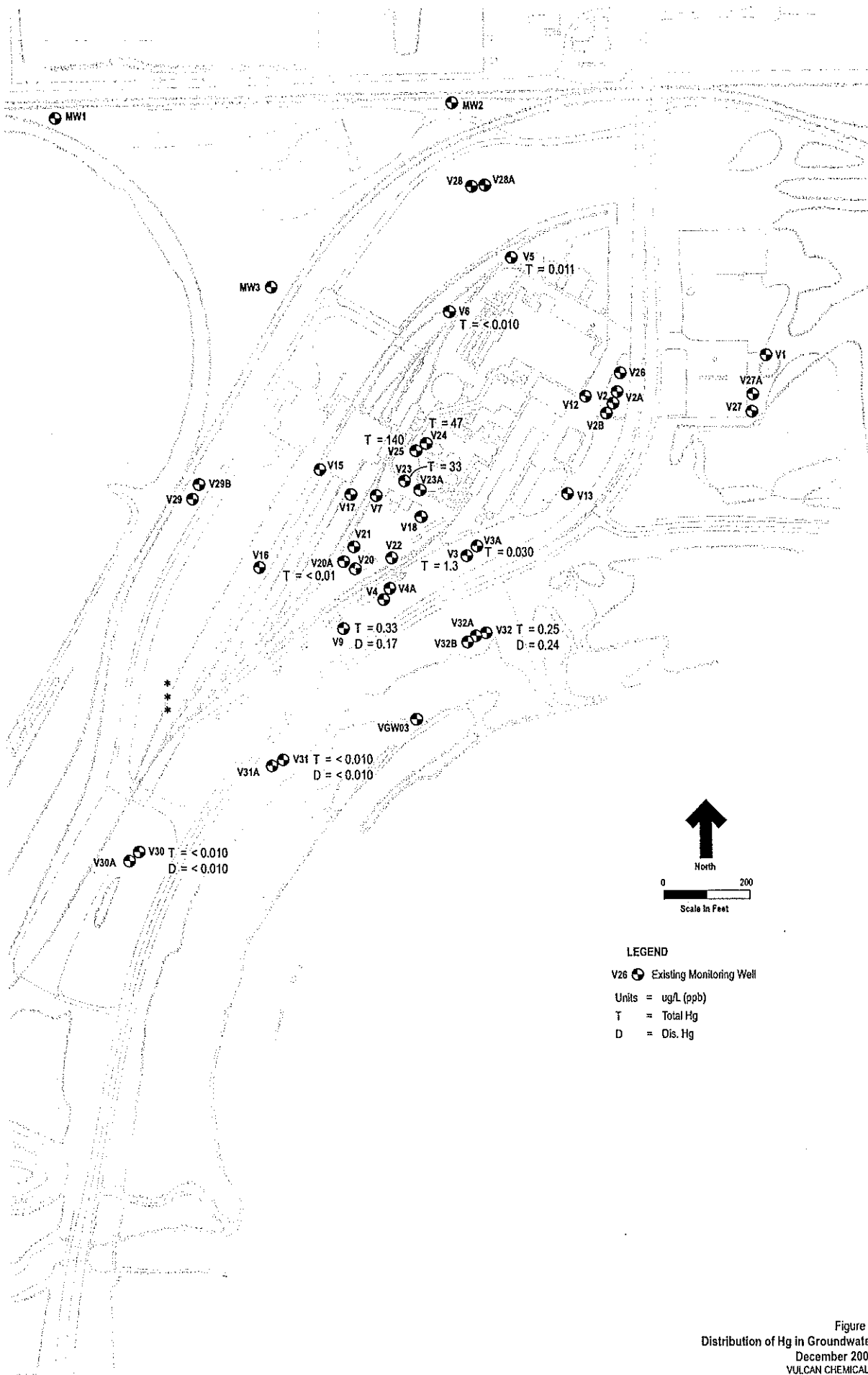
Alternative	Description	Advantages	Disadvantages
Terminate Active Groundwater Collection	Well EW-1 would be abandoned and Vulcan would monitor SPP plume behavior similar to what is done under monitored Natural Attenuation.	1. Problems/costs associated with the groundwater pump and treatment are eliminated. 2. Depending on data, alternative could be protective of human health and environment considering implementation of deed restrictions on groundwater use.	Long-term and rigorous monitoring program will likely be required.
Relocate Collection Well(s)	Abandon EW-1. Move collection well system further downgradient where there is sufficient saturated thickness or where water chemistry is not expected to cause the problems encountered at EW-1.	Goal is to implement a very low maintenance system requiring only periodic inspection and data collection by Vulcan personnel.	1. Plume broadens considerably with increasing distance away from SPP, requiring multiple wells to capture the plume. More wells equals more costs and more maintenance. 2. Flow requiring treatment will increase, perhaps by as much as a factor of 4. Vulcan's treatment facility can not handle an increased flow of this magnitude. 3. Increased distance from ECP leads to increased costs for larger pumps to overcome head loss. Costs for conveyance can be reduced if wells can be located near existing pipe bridges. If not, conveyance and air lines will need to be placed in a trench, which raises costs further.

TABLE 1
Preliminary Alternatives Analysis for the SPP Plume Residual
Vulcan Chemicals Port Edwards Facility

Alternative	Description	Advantages	Disadvantages
Replace EW-1	Replace EW-1 with large diameter sump well. The "Well" would be a manhole type crock fitted with screened inlets around the base and water would be extracted with a submersible sump pump. The idea here is to collect water from the base of aquifer and avoid mixing of waters. If mixing does occur, the large diameter of the well will reduce mineral encrustation problems.	1. Infrastructure is (conveyance to ECP) in place. 2. Large diameter of collection system should reduce frequency of maintenance. 3. May permit slightly higher pumping rate which will facilitate plume capture.	1. Future performance unknown-- may not eliminate mineralization problems. 2. Requires excavation of fairly large hole in an important traffic way. May need sheet piling to stabilize excavation walls during installation.
Acidify EW-1	Retain EW-1 and inject acid (H_2SO_4) into EW-1 to lower pH and eliminate encrustation problem.	1. Moderate cost. 2. Well neutralization could eliminate precipitation problems.	1. Will require fairly sophisticated metering and monitoring system to deliver proper volume of acid to maintain optimal pH. Groundwater chemistry likely to change, which further adds uncertainty to the problem. 2. Will require increased level of monitoring by Vulcan to be sure system is operating correctly and desired level of acidity is maintained. 3. Locating acid delivery system anywhere near a caustic storage area presents unacceptable safety issues. Locating acid delivery system in a more remote location will be expensive and presents additional safety concerns.

TABLE 1
Preliminary Alternatives Analysis for the SPP Plume Residual
Vulcan Chemicals Port Edwards Facility

Alternative	Description	Advantages	Disadvantages
Lower pH in aquifer	Retain EW-1 and inject acid (H ₂ SO ₄) into the aquifer upgradient of EW-1 to lower pH and eliminate encrustation problem.	1. Low cost. 2. Pre-well neutralization could eliminate precipitation problems when waters mix inside the well.	1. Will require fairly sophisticated metering and monitoring system to deliver proper volume of acid to maintain optimal pH. Groundwater chemistry likely to change, which further adds uncertainty to the problem. 2. Will require increased level of monitoring by Vulcan to be sure system is operating correctly and desired level of acidity is maintained. 3. Locating acid delivery system any where near a caustic storage area presents unacceptable safety issues. Locating acid delivery system in a more remote location will be expensive and presents additional safety concerns.
Immobilize Hg in aquifer	Inject sulfide or an alternative material around and downgradient of the SPP to cause the soluble Hg to either precipitate or become bound to the material so it is no longer available for transport.	In situ treatment that chemically alters Hg to an insoluble form eliminates need for long-term groundwater collection and treatment.	1. Current sulfide concentrations in the surrounding soil could already be immobilizing the mercury. 2. Mass and form of residual Hg not known, so some additional study may be needed to obtain this information to permit successful design. 3. Complete mixing in aquifer uncertain. 4. Acceptance uncertain due to regulatory difficulty with injecting materials into aquifers and long-term effectiveness. 5. Effects of unique groundwater chemistry on success of this alternative are not known.
Reactive barrier	Excavate trench perpendicular to the width of the plume and backfill with adsorbent or chemical compound which will bind with the soluble Hg or react with it to render it insoluble.	In situ treatment that chemically alters Hg to an insoluble form eliminates need for long-term groundwater collection and treatment.	1. Mass and form of residual Hg not known, so some additional study may be needed to obtain this information to permit successful design. 2. Need to excavate a trench adjacent to the caustic storage tank, which will cause disruption to vehicular traffic in this area. 3. Effects of unique groundwater chemistry on success not known. 4. High Cost.





State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary

Box 7921
101 South Webster Street
Madison, Wisconsin 53707-7921
TELEPHONE 608-266-2621
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January 24, 2001

GREG PAVELY
PLANT MANAGER
VULCAN MATERIALS COMPANY
PO BOX 161
PORT EDWARDS WI 54469

RECEIVED
JAN 25 2001
PORT EDWARDS

File Ref: HW CA file
FID #772010470

cc: GFG
BSC
RLK

SUBJECT: Your Proposed Modifications to the Saturator Purge Pit Groundwater Collection System

Dear Mr. Pavely:

The Department has reviewed your proposed modifications to the saturator purge pit groundwater collection system. The modifications were proposed in a January 5, 2001, letter submitted by CH2M Hill on your behalf. The Department approves your proposal, subject to compliance with the following conditions:

1. After one year of implementing this proposal, submit for Department review a short evaluation report describing the effect of the modifications on mercury concentrations in groundwater and recommending a "permanent" corrective measure for the saturator purge pit (SPP) plume.
2. The Department considers these modifications to be a pilot project, and except as explicitly stated, this approval does not supersede all or part of any other Department approvals.

After one year, the Department will review your evaluation report for these modifications. If, at that time, the Department approves these modifications as a final remedial action option for the saturator purge pit, then the following will need to happen:

- the Department will issue a modification to your Corrective Measures Implementation Plan approval.
- Vulcan and the Department will work together to draft appropriate institutional controls (for example, groundwater use restriction or other deed restriction) language or to compile whatever information is needed to put Vulcan onto the Department's Geographic Information System registry of cleanup sites with groundwater contamination.

Regardless of the remedial action option chosen, Vulcan will still be carrying out the groundwater monitoring program required by the SPP's NR 685 long-term care license and by the Department's April 10, 2000, groundwater monitoring plan modification.

I also need to make it clear that the Department is not, by approving these modifications, approving natural attenuation of mercury. There are unique geochemical conditions at your facility that appear



to be tying up mercury in the saturated zone. Due to the many operating problems you've had with the SPP extraction well, that system was ineffective in capturing the SPP plume. Yet it appears that the plume may not be expanding. Although it is unlikely that geochemical conditions will change and cause mercury to become available for transport in the future, the Department believes that monitoring and institutional controls are essential to this pilot project and its possible use as a final remedial option.

It is my understanding that you intend to abandon the SPP extraction well in Spring 2001. You have the Department's approval to do so since it will not be part of any final remediation at the SPP and no additional monitoring points are needed in that area.

I will be on maternity leave beginning January 29, 2001. Please direct any correspondence to my supervisor, Bill Evans, at the address below during my leave. Bill will reassign my work, as needed, to other staff.

Bill Evans, RR Team Supervisor
Wisconsin DNR
1300 Clairemont Avenue
Eau Claire, WI 54702
715-839-3710

Sincerely,



Cynthia L. Koepke, P.G., Hydrogeologist
Remediation & Redevelopment Program
West Central Region

cc: Bill Evans - WCR
Mark Gordon - RR/3
Mark Hinchey - CH2M Hill, 135 S. 84th St., Ste. 325, Milwaukee, WI 53214

Wisconsin Department of Natural Resources

 RR Program Submittal Portal[DNR RR forms](#)[Contacts](#)Denise Quigley 

Thank you for your submittal. Your document has been successfully uploaded.

A copy of your confirmation page will also be emailed to you shortly.

Confirmation #: 31736

BRRTS #: 0272000012

Site Name: ERCO WORLDWIDE

Type of Report: Remedial Action Design Report (NR 724)

Fee Amount: 1050.00

Name: Denise Quigley

Company: GHD

Other DNR RR Contact:

This submittal contains:

- None, PFAS is not mentioned in this submittal.

Additional Information:

1. Please print this page and mail it with your check to:

DNR Service Center
Attn: DEENA KINNEY
1300 W CLAIREMONT AVE
EAU CLAIRE, , 54701

2. Please send the paper copy of your submittal to CANDACE SYKORA. Please see the [DNR staff directory](#) to look up the address.

A submittal is not considered complete until the fee (if applicable), paper and electronic copy of the document or report are received, per Wis. Admin. Code § NR 749.04 (1) and § NR 700.11 (3g) respectively.

For more information please see the [Guidance for Submitting Documents to the Remediation and Redevelopment Program \(RR-690\)](#).

If you have questions please contact:

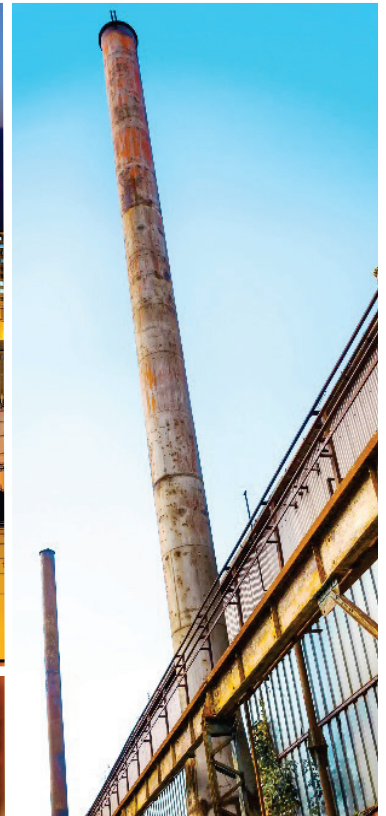
DEENA KINNEY
deena.kinney@wisconsin.gov
(715) 839-2784



Remedial Action Design Report

ERCO Worldwide (USA) Inc.
Port Edwards Plant
Nekoosa, Wisconsin

Glenn Springs Holdings, Inc.





June 29, 2020

Reference No. 11192391-D22101-403

Ms. Candace Sykora
Hydrogeologist, Remediation and Redevelopment
State of Wisconsin Department of Natural Resources
890 Spruce St,
Baldwin, WI 54002

Dear Ms. Sykora:

**Re: Remedial Action Design Report and Infiltration/Injection Request
ERCO Worldwide (USA) Inc., 101 Highway 73 South, Port Edwards, Wisconsin
(Site)
WDNR BRRTS #02-7-000012**

ERCO Worldwide (USA) Inc. (ERCO) is pleased to submit this Remedial Action Design Report (RADR) for chemical stabilization of mercury in groundwater for your review and comment. The RADR was prepared in accordance with the requirements of Chapter NR 724, Wisconsin Administrative Code. GHD prepared the RADR on behalf of ERCO and Glenn Springs Holdings, Inc. (GSH) to address mercury contamination in groundwater in the area of the former Saturator Purge Pit (SPP) at the Site. This report was prepared pursuant to DNR's December 3, 2019 approval of a chemical stabilization groundwater remedy for the mercury source area, as described in the Remedial Action Options Report (RAOR) (GHD, April 2019) and subsequent correspondence with the Wisconsin Department of Natural Resources (DNR).

The proposed remedial action includes injection of a solution to facilitate in situ chemical stabilization of mercury in groundwater. This RADR includes the information required by the "Infiltration and Injection Requests – Submittal, Review and Approval Process" (DNR, PUB-RR-935, March 2013).

As per the instructions on the RR Program Submittal portal web page, we are submitting the RADR electronically via the online RR Submittal Portal on June 29, 2020. ERCO submitted payment by check under separate cover for the DNR review fee per the Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request Form.

Should you have any questions on the above, please do not hesitate to contact Denise Quigley of GHD at 519-340-4196 or denise.quigley@GHD.com.

Yours truly,

Dale Woodfork

Plant Manager ERCO Worldwide

cc: Kevin Hansen, ERCO
Clint Babcock, Glenn Springs Holdings
Denise Quigley, GHD

Engineering • Research • Commitment • Optimization

ERCO Worldwide (USA) Inc.

Port Edwards Plant
101 Highway 73 South
Nekoosa, Wisconsin 54457-8235

Tel: 715-887-4000
Fax: 715-887-4513

www.ercoworldwide.com



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Appendix A Treatability Study Report



Certifications

"I, Shawn G. Horn, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

A handwritten signature in black ink, appearing to read "Shawn G. Horn", written over a horizontal line.

Shawn G. Horn PE E-31044
Signature, Title, and P.E. Number



P.E. Stamp



"I, Charles Ahrens, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

A handwritten signature in blue ink, appearing to read "Charles Ahrens", written over a horizontal line.

Senior Geologist, PG #1268

Signature and Title

A handwritten date "6/29/2020" in blue ink, written over a horizontal line.

Date



List of Acronyms

BRRTS	Bureau for Remediation and Redevelopment Tracking System
DI	Deionized
DO	Dissolved oxygen
DNR	Wisconsin Department of Natural Resources
ES	Wisconsin Enforcement Standard
ft	feet
GHD	GHD Services Inc.
ISCR	In-situ chemical reduction
kg	Kilograms
L	Liter
mg/L	Milligrams per liter
ORP	Oxidation reduction potential
RAOs	Remedial Action Objectives
RAOR	Remedial Action Options Report
RD	Remedial Design
RADR	Remedial Action Design Report
Site	ERCO Port Edwards Plant
SPP	Saturator Purge Pit
TEAPs	Terminal Electron Acceptor Processes
µg/L	Micrograms per liter
Wis. Admin. Code	Wisconsin Administrative Code



Executive Summary and Infiltration and Injection (I/I) Request Components

This Remedial Action Design Report (RADR or Report) was prepared by GHD on behalf of Glenn Springs Holdings, Inc. (GSH) and ERCO Worldwide (ERCO) for the ERCO plant in Port Edwards, Wisconsin (WDNR BRRS #02-72-000012) (Site). The RADR is being submitted to the Wisconsin Department of Natural Resources (DNR) to address mercury contamination in groundwater in the area of the former Saturator Purge Pit (SPP) at the Site. This RADR was prepared pursuant to DNR's December 3, 2019 approval of a chemical stabilization groundwater remedy for the mercury in groundwater, and was prepared in accordance with the requirements of Chapter NR 724, Wisconsin Administrative Code.

The contaminant source on Site consists of residual mercury or mercury compounds in the soil and groundwater near the former SPP. Routine groundwater monitoring (completed quarterly on Site) indicates persistent detections of dissolved mercury in groundwater in the area of source area wells with concentrations ranging in magnitude from 10s to 1,000s of micrograms per liter ($\mu\text{g/L}$). Groundwater samples collected from monitoring wells in the area of the SPP have contained mercury at concentrations greater than the drinking water criterion (which is the NR 140 Wisconsin Enforcement Standard [ES]) of 2 $\mu\text{g/L}$. Current mercury concentrations in groundwater downgradient of the SPP source area plume and the Wisconsin River are less than 2 $\mu\text{g/L}$.

The overburden at the Site is relatively thin (approximately 10 to 25 feet [ft] thick) and consists of sandy overburden above a fractured schist bedrock. The groundwater table is within the sand unit. The overall goal of the injection program proposed in this RADR is to reduce mercury concentrations in the source area and downgradient of the source area on Site such that groundwater reaching the Wisconsin River will continue to have mercury concentrations of less than 2 $\mu\text{g/L}$. The remedial strategy is to reduce the available soluble mass of mercury in the SPP area via chemical stabilization. A reduction in mass and concentration in the source area will prevent the mercury concentrations in groundwater from increasing to greater than 2 $\mu\text{g/L}$ downgradient of the source area plume.

Treatability Study Results

GHD completed a treatability study using Site water to determine the reagent most effective in chemically stabilizing mercury in groundwater. The results (presented in Appendix A) indicate that sodium dithionite is the most effective reagent tested, reducing the concentration of mercury in groundwater by up to 70%. The testing also indicated that over 80% of the mercury initially removed remained out of solution during dissolution testing. This indicates that the mercury removal will be permanent under conditions expected at the Site.

Remedial Design

GHD proposes that nine (9) injection wells be installed in the SPP area and 2 injection wells be installed near V-23, as shown on Figure 3.1. The injection program is focused the areas of highest mercury concentrations in groundwater to maximize the amount of mercury mass treated during the injection program. Existing groundwater data indicate that the current decrease in mercury concentrations in groundwater along the groundwater flowpath are significant, meaning that



treatment in the source area will result in lower concentrations in the downgradient water reaching the Wisconsin River.

The initial injection of reagent will be completed via permanent injection wells. The prescribed dosage rate for the sodium dithionite is 0.6 kilograms (kg) per cubic meter of saturated soil based on the treatability study testing. Based on the properties of the overburden, the injections in the SPP area should be 370 gallons of solution per location and the injections in the V-23 area should be 635 gallons of solution per location. Dosage quantities may be adjusted based on the actual locations of injection wells and updated calculations of saturated soil per location.

A performance monitoring program will be implemented to determine the effectiveness of the treatment, and determine if additional injections are required as well as their potential frequency. The groundwater monitoring program will be based on the existing groundwater monitoring program at the Site, with some additional parameters monitored. Two new monitoring wells are proposed between V-18 and the V-32 well nest as presented on Figure 3.3. A baseline sampling event will be conducted prior to any injections, and the post injection sampling will coincide with the regular Site groundwater monitoring program.

Schedule and Reporting

GHD will provide a field schedule for well installation within 30 days of receiving authorization to proceed. The timing for the well installations and initial injection will depend on DNR's approval of this RADR. GHD will provide the quarterly letter reports within 30 days of receipt of the validated laboratory data. GHD will provide the annual report within 60 days of receipt of the validated laboratory data from the final sampling event of the calendar year covered by the report.

I/I Approval Request Information

The following summarizes information required by DNR according to the "Infiltration and Injection (I/I) Requests – Submittal, Review and Approval Process" (Wisconsin Department of Natural Resources [DNR] PUB-RR-935, March 2013). The I/I Request Component column in the table below summarizes the information required by DNR per PUB-RR-935, followed by a brief summary of the required information and reference to sections within the report that contain additional detail.

Step 1 cover sheet components are included in the Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request (Form 4400-237) submitted to DNR West Central Region and copied to the project brownfields specialist, Ms. Candace Sykora, Remediation & Redevelopment, DNR.

Step 2 I/I Request Components are addressed in this report as follows:

I/I Request Component	Component Details	Applicable Report Section
Site Information	ERCO Worldwide (USA) Inc. – Port Edwards Plant 101 State Highway 73 South Nekoosa, WI 54457-8235	
Identifying Numbers	BRRTS Activity #02-72-000012	1



I/I Request Component	Component Details	Applicable Report Section
Are Compounds being injected or infiltrated or both?	Injected	3.1
Compound(s) or material(s) being injected	Sodium dithionite	2
Type(s) of contaminants being treated	Residual mercury or mercury compounds	1.4
Implementation plan for injection/filtration	See Sections 3.1 and 3.2 for number of proposed injection points, monitoring wells, and injection amounts	3.1 and 3.2
Any necessary constraints on the injection system (e.g., location/depth of nearby private wells that may be affected)	Locations and well screen depths were designed to avoid constraints such as bedrock at 15 ft, and to avoid existing infrastructure (e.g. swales, drains, etc.)	3.1
Time frame for which approval is needed (i.e. beginning and end dates for injection/infiltration and implementation of remedy which is reliant on infiltration or injection) <i>5-year maximum</i>	See Section 4. Approval required by August 31, 2020 to allow field work in fall 2020.	4
Locations of proposed injection wells, infiltration zones, etc.	In the former Saturator Purge Pit (SPP) area, and near monitoring well V-23	Section 3.1 and Figure 3.1
An injection-specific monitoring plan	See Sections 3.2 and 3.3 for details	3.2 and 3.3
Pre-injection vapor screening, vapor potential and safety plan	See Section 3.3.1	3.3.1

Step 2b Additional Information Needed For Injection of Reactive Materials is addressed in this report as follows:

Information Needed for Injection of Reactive Materials	Component Details	Applicable Report Section
Chemical analysis of the proposed injectant/remedial material	Sodium dithionite ($\text{Na}_2\text{S}_2\text{O}_4$) CAS Number 7775-14-6	Section 3 and Appendix A
Mass balance of the injectant vs. natural oxidant demand and contaminant demand (limit addition of excess injectant)	Not applicable. Sodium dithionite is not an oxidant. Laboratory testing showed that a dose of 1 - 2 grams of $\text{Na}_2\text{S}_2\text{O}_4$ per liter (L) of groundwater was effective for treatment	2
Concentrations of the injectant in the groundwater necessary to oxidize the environment	Not applicable. Sodium dithionite is not an oxidant. 1 – 2 g/L $\text{Na}_2\text{S}_2\text{O}_4$ is necessary for mercury precipitation	2
Expected persistence of injectant in the groundwater (i.e., how long will it be effective)	Less than 1 week, based on laboratory testing	



Information Needed for Injection of Reactive Materials	Component Details	Applicable Report Section
Description of the monitoring system in place that can determine the extent of the area affected by the injectant	See Section 3.3.2 and Table 3.3 for details on the proposed monitoring system	3.3.2
Collection of analytical results for groundwater - total Cr before treatment, periodically during treatment and after treatment until Cr has declined to background levels - other trace metals that could exceed PALs (including metals contained in the injectant and native trace metals)	Not applicable. This I/I requirement is aimed at oxidant use. The proposed remedy does not include oxidation. This reagent will precipitate soluble metals and will not mobilize chromium or other metals. The byproducts expected would be transient greater concentrations of sulfate and sulfide. See Section 3.3.2 and Table 3.3 for details on the proposed groundwater monitoring and associated analyses	3.3.2
Use of sentinel wells as part of the monitoring program to show that the injectant is confined to the area to be treated	Not applicable	
A plan for monitoring the injectant and trace metals until those compounds have returned to background levels	Not applicable	



1. Introduction and Site Background

This Remedial Action Design Report (RADR or Report) was prepared by GHD for the ERCO Worldwide (ERCO) plant in Port Edwards, Wisconsin (WDNR BRRTS #02-72-000012) (Site). The RADR is being submitted to the Wisconsin Department of Natural Resources (DNR) to address mercury contamination in groundwater in the area of the former Saturator Purge Pit (SPP) at the Site. This RADR was prepared pursuant to DNR's December 3, 2019 approval of a chemical stabilization groundwater remedy for the mercury source area, as described in the Remedial Action Options Report (RAOR) (GHD, April 2019)¹ and subsequent correspondence with DNR. This RADR was prepared in accordance with the requirements of Chapter NR 724, Wisconsin Administrative Code. GHD has prepared this document on behalf of Glenn Springs Holdings, Inc. (GSH) and ERCO.

This RADR includes information satisfying the requirements of PUB-RR-935 "Infiltration and Injection Requests - Submittal, Review and Approval Process" (DNR, March 2013)². The proposed source area remedy includes injection of chemicals to stabilize the mercury in groundwater in the area of the SPP.

1.1 Contacts

The contact information for the person(s) responsible for completing this evaluation (Responsible Party [RP]), and the environmental consultant preparing this Report on behalf of the RP are provided below.

- **RP Contact**

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- **Environmental Consultant**

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¹ GHD, April 2019. Remedial Action Options Report. April 18, 2019.

² DNR, March 2013. Infiltration and Injection Requests – Submittal, Review and Approval Process. PUB-RR-935. March 2013.



1.2 Site Description and Background

The Site is located approximately nine miles southwest of Wisconsin Rapids in Port Edwards, Wood County, as shown on Figure 1.1. The main plant site encompasses approximately 34 acres adjacent to the west bank of the Wisconsin River in an area that is largely undeveloped. A Site plan is provided on Figure 1.2.

From 1967 to 2009, the plant utilized a mercury-cell chlor-alkali process to manufacture industrial chemicals, including chlorine, sodium hydroxide, potassium hydroxide, and hydrochloric acid.

The principal source of mercury impact to the groundwater was related to the former SPP, which was a 2,000-gallon in-ground concrete tank used to collect and contain solids and brine from the Facility. The tank was in use from 1969 to 1985 and then closed. The SPP was cleaned, backfilled with clean sand and capped with concrete. In July 1990, the concrete pit and fill materials were removed to the depth of the water table where practicable. Some mercury-contaminated soil was left in place because of a concern over the stability of nearby structures. The area was capped with concrete and impermeable resin over an area of approximately 11 feet (ft) by 25 ft.

1.3 Site Geologic/Hydrogeologic Conditions

The overburden at the Site is relatively thin (approximately 10 to 25 ft thick) and consists of (in order of increasing depth).

- A sandy silt fill layer (not present in all boreholes)
- A sand layer (this is the layer through which much of the groundwater flows)
- A clayey silt layer

The overburden layers overlie fractured schist bedrock.

The water table on Site is generally found within the sand layer, and less commonly near the bottom of the sandy silt fill layer. The bulk of the impacted groundwater flow at the Site is expected to occur in the sand unit, as sands are more permeable than the underlying clayey silt, and the water table is generally below the sandy silt fill layer. Seasonal water table fluctuations may result in source area material periodically coming into contact with groundwater, and may partially explain the fluctuations in mercury concentrations observed historically in groundwater samples from several wells on Site.

Groundwater flow on Site is generally to the south toward the Wisconsin River.

1.4 Contaminant Source

The contaminant source on Site consists of residual mercury or mercury compounds in the soil and groundwater near the former SPP. Routine groundwater monitoring (completed quarterly on Site) indicates persistent detections of dissolved mercury in groundwater in the area of source area wells with concentrations ranging in magnitude from 10s to 1,000s of micrograms per liter ($\mu\text{g/L}$). Groundwater samples collected from monitoring wells in the area of the SPP have contained mercury at concentrations greater than the drinking water criterion (which is the NR 140 Wisconsin Enforcement Standard [ES]) of 2 $\mu\text{g/L}$. This area of groundwater impact is from the area of the V-24/V-25 monitoring wells and extends southward along the primary groundwater flow path, toward



V-18. Figure 1.3 illustrates the estimated area where groundwater concentrations may exceed the ES of 2 µg/L for dissolved mercury. This area is approximate, and interpolates groundwater concentrations between wells based on groundwater flow direction and historic data.

As presented in the cross-section shown on Figure 3.2, the silt, which overlies the weathered bedrock, is thin in the area near wells V-24 and V-25. This means that there is a potential hydraulic connection between the source material in the overburden and the fractured bedrock. This connection provides a potential groundwater transport pathway from the source area to the downgradient monitoring well V-32B.

Caustic soda and caustic potash are manufactured at the Site and, if released to the environment, caustics can react with the silica-containing minerals in the soil, producing ions and minerals that can act as medium and long-term secondary sources of elevated pH to the groundwater. The groundwater pH near the source area is elevated, ranging from 10 to 12, and chloride concentrations in groundwater near the SPP area are also high in comparison to samples from other Site wells. In the SPP area, groundwater dissolved oxygen concentrations are generally low and oxidation-reduction potentials are variable, ranging from -100 to +100 millivolts.

1.5 Site Geochemical Conditions

ERCO completed an evaluation of the Site geochemical conditions in 2016 to help determine the types of geochemical processes that are occurring. The evaluation was submitted to DNR as part of the *Geochemical Evaluation and Conceptual Groundwater Model for the Occurrence and Movement of Mercury in Groundwater* (GHD, 2016)³, and is summarized below.

Redox indicator parameters were evaluated to determine the terminal electron acceptor processes (TEAPs) occurring in different areas of the site. The evaluation was based on a weight-of-evidence approach where each line of evidence is considered and then a final decision on the TEAP for a location was based on the overall conclusions from the data. The TEAP evaluation across the Site showed that the Site is generally anoxic, with more anaerobic conditions within the source area and in some downgradient wells. There is also some low-level methane in several wells, indicating that there are localized methanogenic conditions. The overall anoxic conditions indicate that sulfate reduction is not widespread, and the precipitation of Hg-sulfide minerals is not likely to be significant.

Conditions at several wells are mixed, meaning that there is evidence for multiple TEAPs in the same well.

The total organic carbon concentrations in the groundwater are generally less than 10 milligrams per liter (mg/L) and often less than 5 mg/L, indicating that the amount of organic carbon, and therefore, the amount of more mobile methyl mercury, is expected to be low. This is supported by the fact that the reducing conditions are localized. ERCO collected samples in 2019 to confirm this expectation, as summarized below.

³ GHD, 2016. *Geochemical Evaluation and Conceptual Groundwater Model for the Occurrence and Movement of Mercury in Groundwater*. November 22, 2016.



1.5.1 Mercury Speciation

Although a significant amount of data exist to characterize total and dissolved mercury concentrations in groundwater, ERCO did not have data that defined the state of mercury in groundwater. Additional data were collected in March 2019 to fill this data gap, confirm the conclusions of the 2016 TEAP evaluation with respect to methyl mercury, and assist with the selection of remedial options.

On behalf of ERCO, GHD collected groundwater samples from groundwater monitoring wells V-18 and V-24 on March 7, 2019. The wells selected are located within the area of impacted groundwater containing greater than 2 µg/L dissolved mercury, as shown on Figure 1.3. The groundwater samples were analyzed for methyl mercury, total mercury, and dissolved mercury, and the results are presented in Table 1.1, below.

Table 1.1 Mercury Speciation

Monitoring Well	Total Mercury (µg/L)	Dissolved Mercury (µg/L)	Methyl Mercury (µg/L)
V-18	0.19	ND (0.13)	0.0012
V-24	240	210	1.1

Remedial strategies to immobilize or treat methyl mercury would be different from those targeting inorganic mercury. Since the methyl mercury concentrations in the samples from V-18 and V-24 comprise less than one percent of the mercury present in the samples, and because conditions at the Site are generally anoxic, the RAOR determined that chemical stabilization was the most appropriate technology for the reduction of mercury concentrations in the groundwater at the Site.

1.5.2 Remedial Objectives and Selected Remedial Action

As stated in Section 2.1 of the RAOR (GHD, April 2019), Remedial Action Objectives (RAOs) were developed based on the need to prevent mercury in Site groundwater from potentially reaching the Wisconsin River. Specifically the objectives are to:

1. “(R)emove or immobilize residual mercury in the SPP area”, as stated in DNR’s January 24, 2019 letter to ERCO
2. Reduce mercury concentrations on Site to levels such that groundwater reaching the river would have a groundwater concentration less than 2 µg/L
3. Prevent potential migration of mercury-impacted groundwater from the Site to the river or from the Site to deeper bedrock groundwater

As described in the RAOR, ERCO and GSH completed an evaluation of alternatives to select a remedial action based on technical and economic feasibility criteria. Based on the evaluation, chemical stabilization is anticipated to be the most effective remedy that can best meet the RAOs. The proposed chemical stabilization remedy is intended to precipitate dissolved mercury in groundwater and stabilize elemental mercury so that it will not dissolve in groundwater. Precipitation of mercury out of the groundwater would mean that further migration of groundwater that contains mercury would not occur. The proposed remedy will reduce the amount of mobile mercury in



groundwater in the SPP source area, which will result in less dissolved mass migrating toward the Wisconsin River. The proposed remedy would start with the areas of highest concentrations of mercury, allowing for evaluation and adjustment.

As described in Section 3 of the RAOR, the Remedial Design (RD) includes a treatability study, development of a plan for an initial phase of reagent injections, well design, injection plan, a monitoring plan, and a project schedule. These items are described in the following subsections.

2. Treatability Study Results

GHD completed a laboratory treatability study to:

- i) Determine the effectiveness of chemical stabilization for treatment of mercury in Site groundwater.
- ii) Determine the optimum reagent and dose for chemical stabilization of mercury in Site groundwater.
- iii) Assess the reversibility of mercury precipitation in Site groundwater.
- iv) Assess the robustness of the in-situ chemical reduction (ISCR) under varying groundwater conditions.

The results of the treatability study are presented in Appendix A. As part of the study, a volume of Site groundwater from the SPP area (i.e., V-25) was collected for the treatability tests. Sodium dithionite, sodium sulfide, and calcium polysulfide were added to aliquots of Site water at various dosages to determine if these reagents were capable of treating mercury in Site water. The pH and chloride concentration was increased in some concentrations to simulate the different conditions found in the SPP area.

The approximate area of mercury concentrations in groundwater exceeding the ES of 2 µg/L is shown on Figure 1.3. Current mercury concentrations in groundwater samples from wells located between the Port Edwards plant and the Wisconsin River are less than 2 µg/L. As stated in Section 1.5.2, the overall goal of the injection program is to reduce mercury concentrations in the source area on Site such that mercury concentrations in groundwater reaching the river will continue to have mercury concentrations of less than 2 µg/L. A reduction in mass and concentration in the source area will prevent the concentrations downgradient from increasing to above 2 µg/L.

Sodium dithionite was found to be the most effective reagent tested to remove mercury from the Site groundwater over the largest range of geochemical conditions. As summarized in Appendix A, the treatability study demonstrated that sodium dithionite reduced the mercury concentration in the groundwater sample by up to 77 percent. The testing indicated that the mercury removed during treatment remained relatively insoluble in fresh Site water and deionized (DI) water, with only a small portion (<20 %) re-dissolving, indicating that the mercury removal will be permanent under conditions expected at the Site.

Based on the treatability study completed by GHD, GHD recommends that chemical stabilization at the Site include injections of sodium dithionite at a target dose of 2 g/L, which is approximately



0.6 kilograms (kg) of sodium dithionite per cubic meter of saturated soil (1 pound per cubic yard of saturated soil).

3. Remedial Design

The treatability test results indicated that the injection of sodium dithionite would be the most effective treatment for mercury in the groundwater. Because the treatment was not 100% effective in the lab, and based on previous experience with injection technology, GHD expects that more than one injection event may be required in order to effectively treat the mercury in the groundwater at the Site. Therefore injection wells, rather than temporary injection points will be more cost-effective for the treatment system.

3.1 Injection and Monitoring Well Installation

GHD proposes that nine (9) injection wells be installed in the SPP area as shown on Figure 3.1. The injection program is focused on the SPP and the area immediately downgradient, where concentrations of mercury in the groundwater are highest. By targeting the high-concentration areas, the goal is to maximize the amount of mercury mass treated during the injection program. Based on recent data, the current decreases in mercury concentrations in groundwater along the flowpath are significant, meaning that any treatment in the source area will result in lower mercury concentrations in the downgradient wells. The treatability study indicated that the treatment efficiency was lower than GHD has observed in applications of the reagents at other sites, meaning that the chemistry at the Site is complex, and may impede treatment. Therefore, a more focused injection program, over a relatively small area will provide greater control over the injections and chemistry in the subsurface, which will provide the most effective treatment under these conditions. The injection well locations were selected to avoid existing infrastructure while maximizing the treatment coverage in the SPP area. Based on recent concentrations of mercury in samples from on-Site monitoring wells, GHD proposes an additional two (2) injection wells in the area south of the SPP area, near V-23. These two injection wells will be used to help reduce concentrations of mercury in groundwater along the groundwater flowpath between the SPP area and the Wisconsin River.

Injection wells are intended to be set approximately 10 ft apart (5-foot radius of influence) and 10 ft from any existing monitoring well. Actual well locations may be adjusted based on field conditions.

Injection wells will be constructed of 4-inch schedule 40 PVC pipe with 10-slot screens and will be finished with 3-foot, above-ground protective casings as presented on Figure 3.4.

Injected amendments of this kind tend to sink to the bottom of aquifers to which they are injected; therefore injection well screens will be installed from approximately 2 ft from the top of the silty clay that overlies the weathered bedrock to the top of the water table, as shown on the conceptual cross-section presented on Figure 3.2. In the SPP area, screens will be approximately 5 ft, where near V-23, screens will be approximately 10 ft long. The injection wells are anticipated to be completed as traditional wells, with protective lockable casing above ground surface, unless the Site requires flush-mounted construction due to traffic concerns. The existing epoxy coating will be extended around the protective casing following completion.



Two proposed monitoring wells (V-33 and V-34) will be installed at the locations shown on Figure 3.3. The purpose of these monitoring wells is to track the progress of the dissolved mercury plume between V-23 and the V-32 area, which will track the progress of groundwater treatment. The monitoring wells will be constructed from 2-inch schedule 40 PVC pipe with 10-slot screens. Wells screens will be 10 ft long and will be set at the bottom of the sand aquifer, immediately above the silt that overlies the weathered bedrock. Historical logs in the area (V-3A and V-4A) indicate that the depth of the bedrock is approximately 15 ft below ground surface (bgs).

Table 3.1 summarizes the number of proposed injection points and monitoring well locations, as well as the corresponding well screen lengths and intervals.

Table 3.1 Proposed Well Installations

Location	Number of locations	Screen length (ft)	Approximate Screen Interval (ft bgs)
Injection points in SPP area	9	5	5 – 10
Injection points near V-23	2	10	5 – 15
V-33	1	10	5 – 15
V-34	1	10	5 – 15

3.2 Injection Program

As discussed in Appendix A, the treatability study concluded that the prescribed dosage rate for the sodium dithionite is 0.6 kg per cubic meter of saturated soil. In the SPP area (7 ft of saturated thickness), this is 15.6 cubic meters of saturated soil per location. This translates to 9.3 kg of sodium dithionite per injection location. In the V-23 area (12 ft of saturated thickness), each injection location will cover 26.7 cubic meters of saturated soil, requiring 16 kg of sodium dithionite per location.

Standard practice⁴ for the in situ treatment of aqueous contaminants indicates that in order to increase the potential for mixing rather than displacing the impacted water, and to reduce the possibility of plugging the aquifer, each injection should consist of not more than 30% of the available pore space. Assuming that the porosity of the sand aquifer is 0.3, then the injected volume in the SPP area should be no more than 1,400 L (370 gal) per location and the volume in the V-23 area should be 2,400 L (635 gal) per location, as summarized in Table 3.2, below.

Table 3.2 Proposed Injection Amounts

Injection Area	Mass of Sodium Dithionite (kg/well)	Volume of water (gal/well)
SPP (V-24, V-25)	9.3	370
V-23	16.0	635

⁴ Rosansky, S., W. Condit, and R. Sirabian. Best practices for injection and distribution of amendments. Vol. 1303. Technical Report TR-NAVFAC-EXWC-EV, 2013.



Dosage quantities may be adjusted based on the actual locations of injection wells and updated calculations of saturated soil per location.

If wells cannot be installed in the planned locations due to plant constraints, sodium dithionite doses and injection volumes will be adjusted based on the actual well spacings of the wells as installed. Injection solutions will be mixed on-Site by a qualified subcontractor, using potable water supplied by the Facility.

Injections will be completed into injection well locations farthest from the SPP first, using the "outside-in" method, to reduce potential spread of impacted water to unimpacted areas and promote mixing of amendment with impacted groundwater and aquifer solids.

Injections will be completed by gravity into the injection wells. The equipment used to complete the injections will be determined by and supplied by the subcontractor, based on Site conditions. The water levels and pH values in the nearby monitoring wells (V-24, V-25, and V-23) will be monitored during injections to determine if the injected material reaches the monitoring wells during injections. Injection methods and/or volumes may be adjusted based on Site conditions. If the time required to inject the designed amount of volume is longer than the subcontractor expects based on equipment used, or if injection fluids are immediately detected in the monitoring wells, then a reduction in the volumes will be considered.

The injection frequency will depend on the results of the monitoring program (see Section 3.3). The number of injection events will also depend on the results of the monitoring program.

3.3 Performance Monitoring Plan

There is an ongoing groundwater monitoring program at the Site as presented in the November 2016 letter and 2017 email from the DNR. The program, including the locations of monitoring wells and the parameters to be sampled is presented in each annual Groundwater Monitoring Report for the Site (e.g., AECOM, 2018⁵). In accordance with this plan, groundwater is monitored quarterly. The activities described in the performance monitoring program presented in the following section will be conducted in concert with the existing monitoring program. The sample collection, transport, analysis, and data validation proposed in the following plan will be conducted consistent with the procedure and principals presented in the existing monitoring program.

3.3.1 Baseline Sampling

Groundwater samples will be collected from V-23, V-24, V-25, and the two proposed monitoring wells prior to any injections being completed to obtain a pre-injection baseline. Groundwater samples will be analyzed for total and dissolved mercury, sodium, potassium, chloride, sulfide, and sulfate in addition to field stabilization parameters, such as oxidation reduction potential (ORP), dissolved oxygen (DO) and pH.

⁵ AECOM, 2018. Annual Report, Groundwater Monitoring Program January 1 to December 31, 2018. March 2019.



3.3.2 Post Injection Sampling

Post-injection monitoring events will be conducted quarterly, in conjunction with the regular groundwater sampling. The results will be used to determine if additional injections are required, and the most appropriate injection frequency.

Results will be evaluated following each sampling event to determine if additional injections are required and/or if adjustments to the injection/monitoring program are required. For example, if mercury concentrations increase to baseline levels during the first post-injection sampling event, then additional injections may be considered. If mercury concentrations are below 2 µg/L in four consecutive quarterly monitoring events, then the post-injection monitoring program will be discontinued.

Sodium, potassium, chloride, and sulfate are present in Site groundwater; sodium and sulfate will also be introduced through the sodium dithionite injections. The changes in the ratios of these parameters to one another will help determine how fast the sodium dithionite is being exhausted, and how fast the groundwater is flushing the treatment areas, which will ultimately determine the injection frequency, total amount of sodium dithionite required, and potential dosage changes for future injection events. Several of the locations and parameters listed below are already included in the annual monitoring program for the Site. Table 3.3 lists the data required to complete the performance evaluation of the remedy.

Table 3.3 Proposed Monitoring Program

Sample Location	Frequency	Parameters	Rationale
V-23, V-24, V-25, <u>V-33, V-34</u>	Baseline	Field parameters, <u>sodium</u> , <u>potassium</u> , chloride, <u>sulfide</u> , <u>sulfate</u> , <u>total</u> and dissolved mercury	To provide a baseline for comparison to post injection results
V-03R, V-18R, V-23, V-24, V-25, V-32	Quarterly	Total and dissolved mercury	Track the progress of remediation
V-03R, V-18R, V-23, V-24, V-25	Quarterly	Field parameters, <u>sodium</u> , <u>potassium</u> , chloride, <u>sulfide</u> , and <u>sulfate</u>	Track changes in geochemistry due to injections. Track the movement of the spent injection water
V-32, V-32A, V-32B, <u>V-33</u> , <u>V-34</u>	Quarterly	<u>Total</u> and dissolved mercury	Track the progress of remediation. Monitor groundwater quality downgradient of SPP area, upgradient of existing monitoring wells

Note: the underlined text in Table 3.3 indicates additional locations/parameters relative to the ongoing quarterly monitoring program.



3.4 Reporting

Following each sampling event, the groundwater data will be compiled, evaluated and presented in a letter. The letter will include:

- The amounts of sodium dithionite injected during the reporting period (if any)
- Tabulated analytical data
- Recommendations for revisions to the injection and monitoring programs (if any).

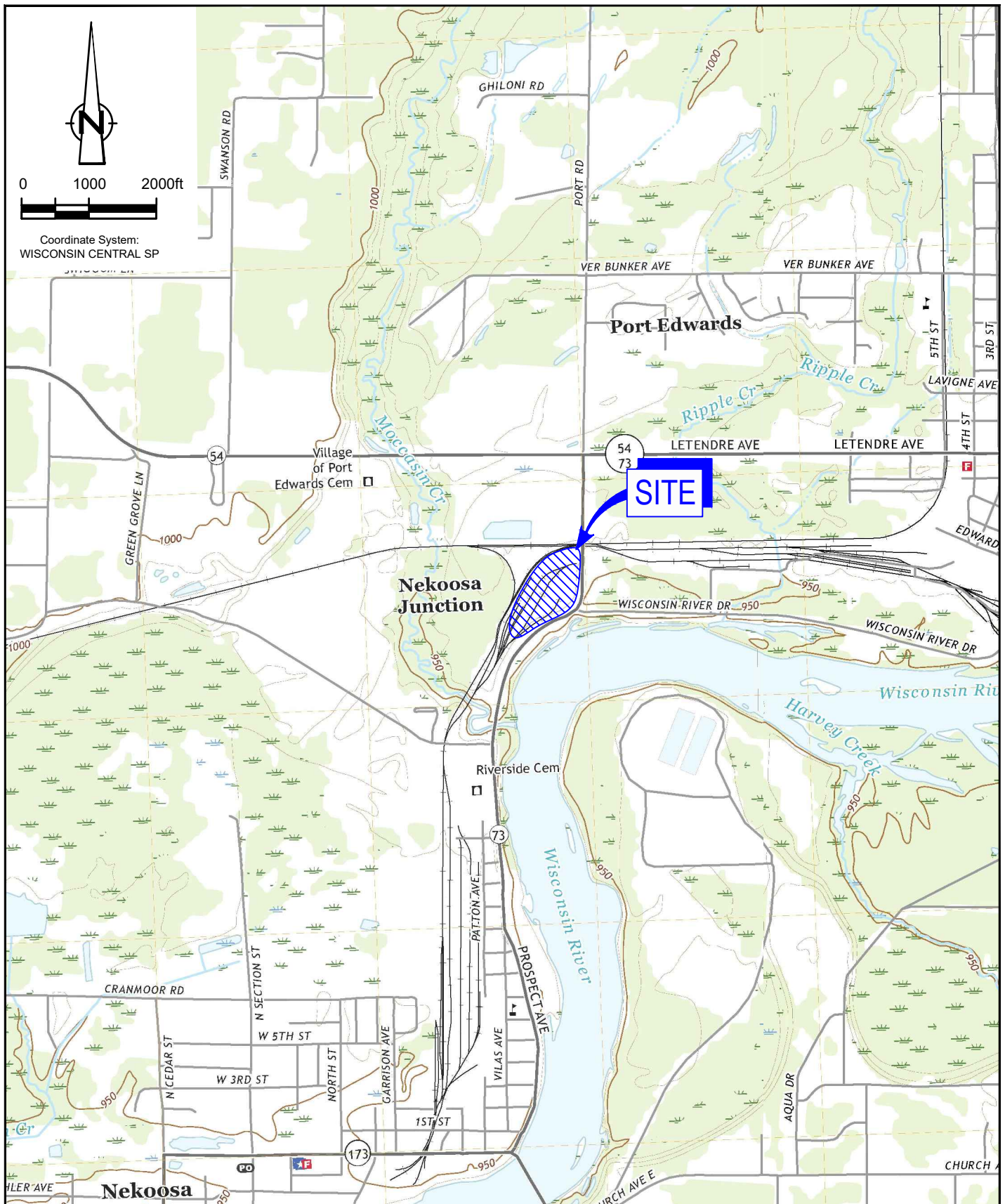
GHD will also prepare a brief annual summary of the activities completed relating to the remedial program during the preceding calendar year for inclusion in the annual groundwater monitoring report for the Site.

4. Schedule

GHD will provide a field schedule for well installation within 30 days of receiving authorization to proceed. The timing for the well installations and initial injection will depend on DNR's approval of this RADR. If approval is received by August 31, 2020, we expect that field work can commence in 2020. The baseline sampling and installation initial injection will not occur between December 1 and March 1, due to local climatic conditions.

GHD will provide the quarterly letter reports within 30 days of receipt of the validated laboratory data. Proposed additional injection events will be discussed in the quarterly letter reports. As an initial estimate, GHD anticipates that the second injection event, if it is required, would occur approximately one year following the initial injection, but this will be confirmed in the quarterly reports.

GHD will provide the annual report within 60 days of receipt of the validated laboratory data from the final sampling event of the calendar year covered by the report.



Source: USGS QUAD MAPS; NEKOOSA AND WISCONSIN RAPIDS SOUTH, 2018.



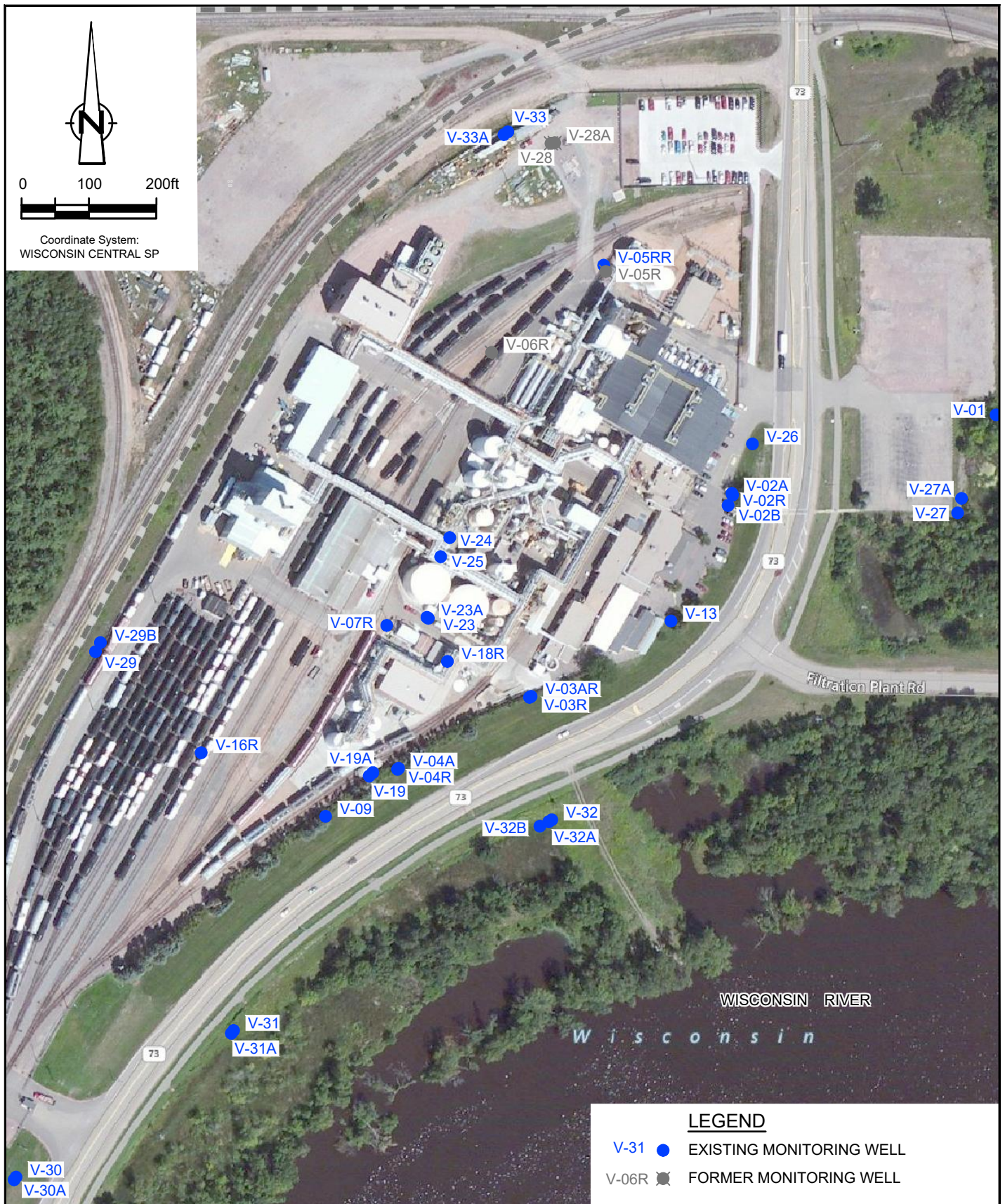
ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN

SITE LOCATION

11192391-00

Apr 7, 2020

FIGURE 1.1



Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date August 2011, Accessed: 2016.



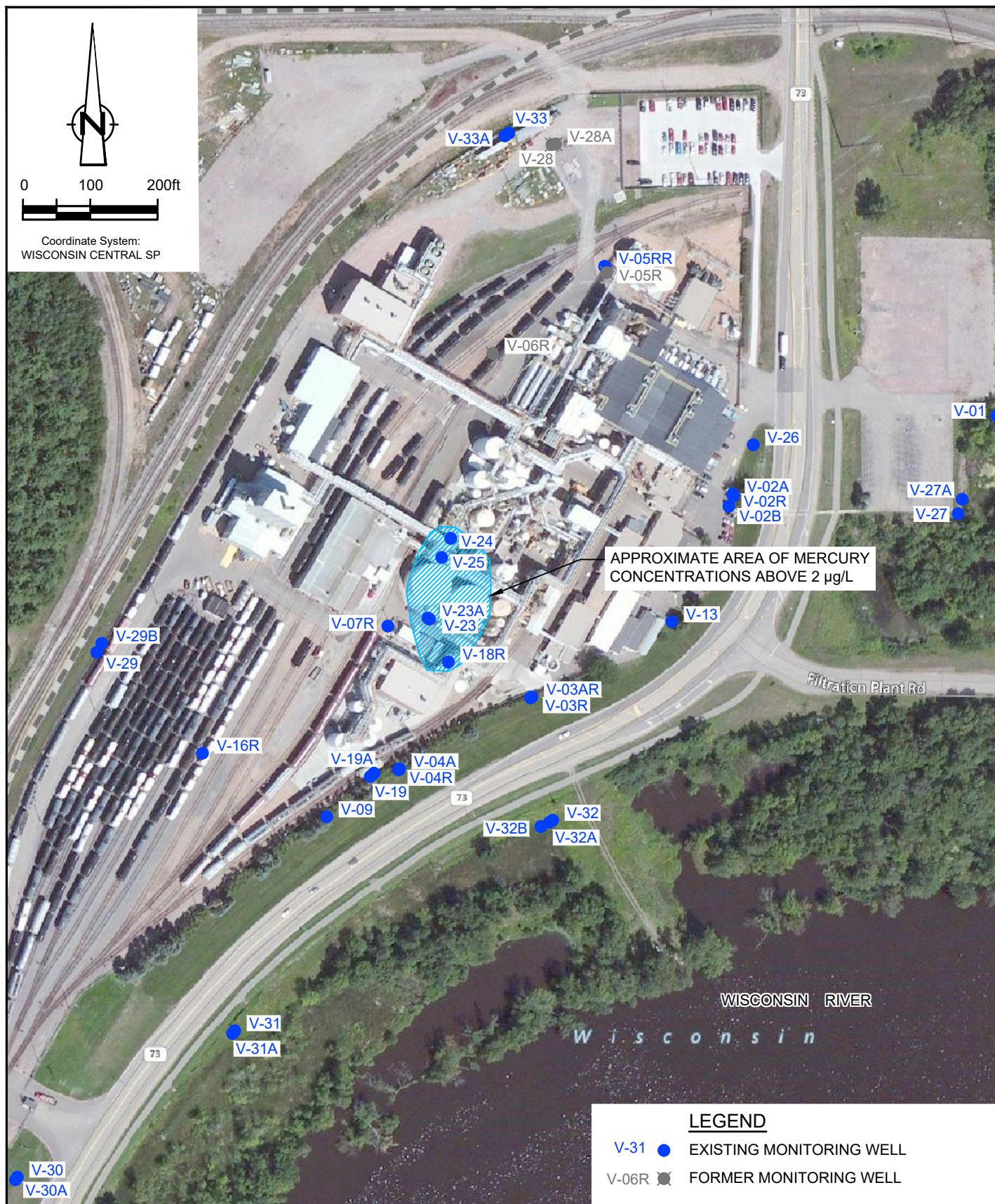
ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN

SITE PLAN

11192391-00

Jun 23, 2020

FIGURE 1.2



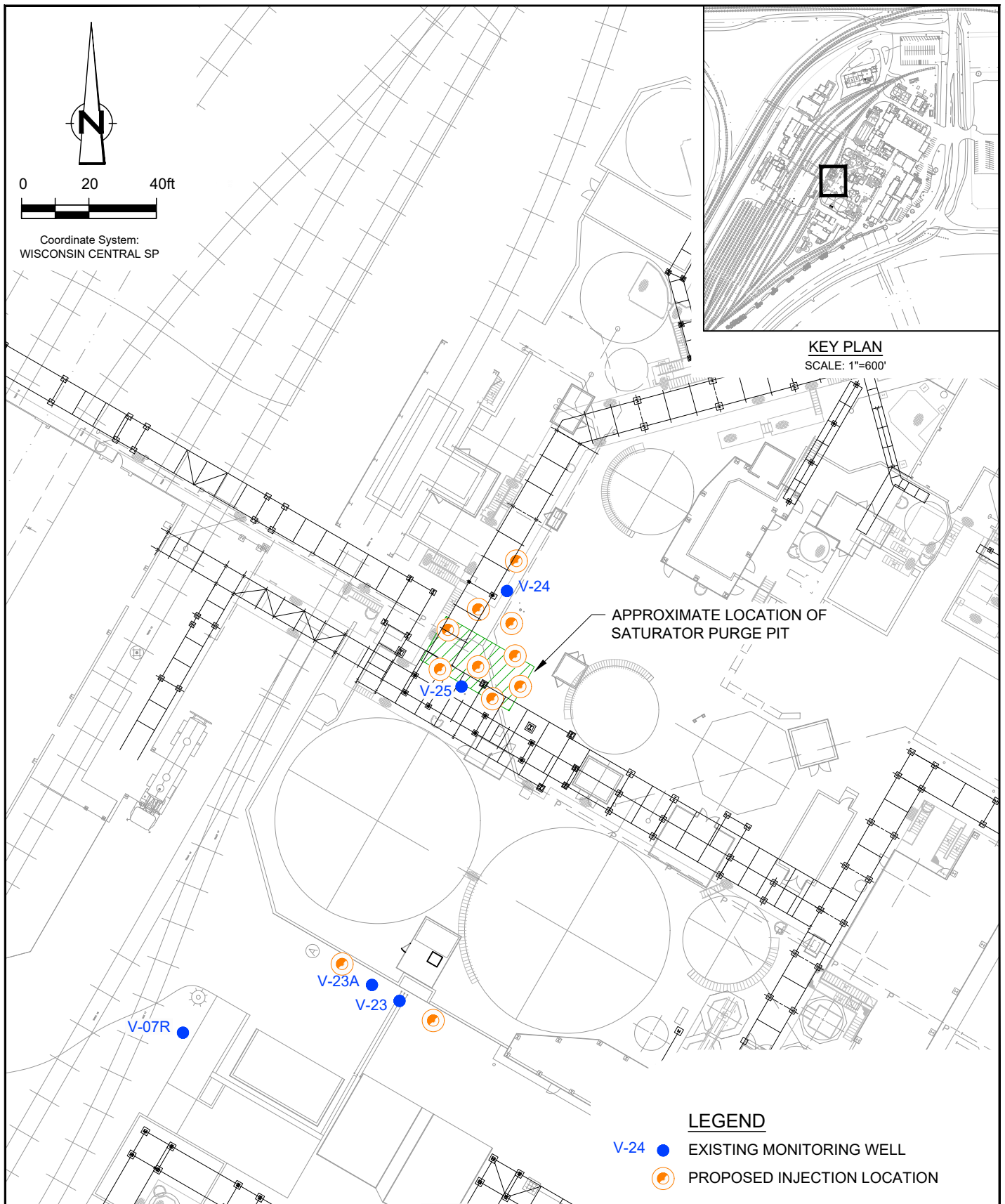
Source: Microsoft Product Screen Shot(s) Reprinted with permission from Microsoft Corporation, Acquisition Date August 2011, Accessed: 2016.



ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN
APPROXIMATE AREA OF
MERCURY IMPACT IN GROUNDWATER

11192391-00
Jun 23, 2020

FIGURE 1.3



Source: ERCO, D-EE06005-27-220000 R7 PE Site Plan Drawing.

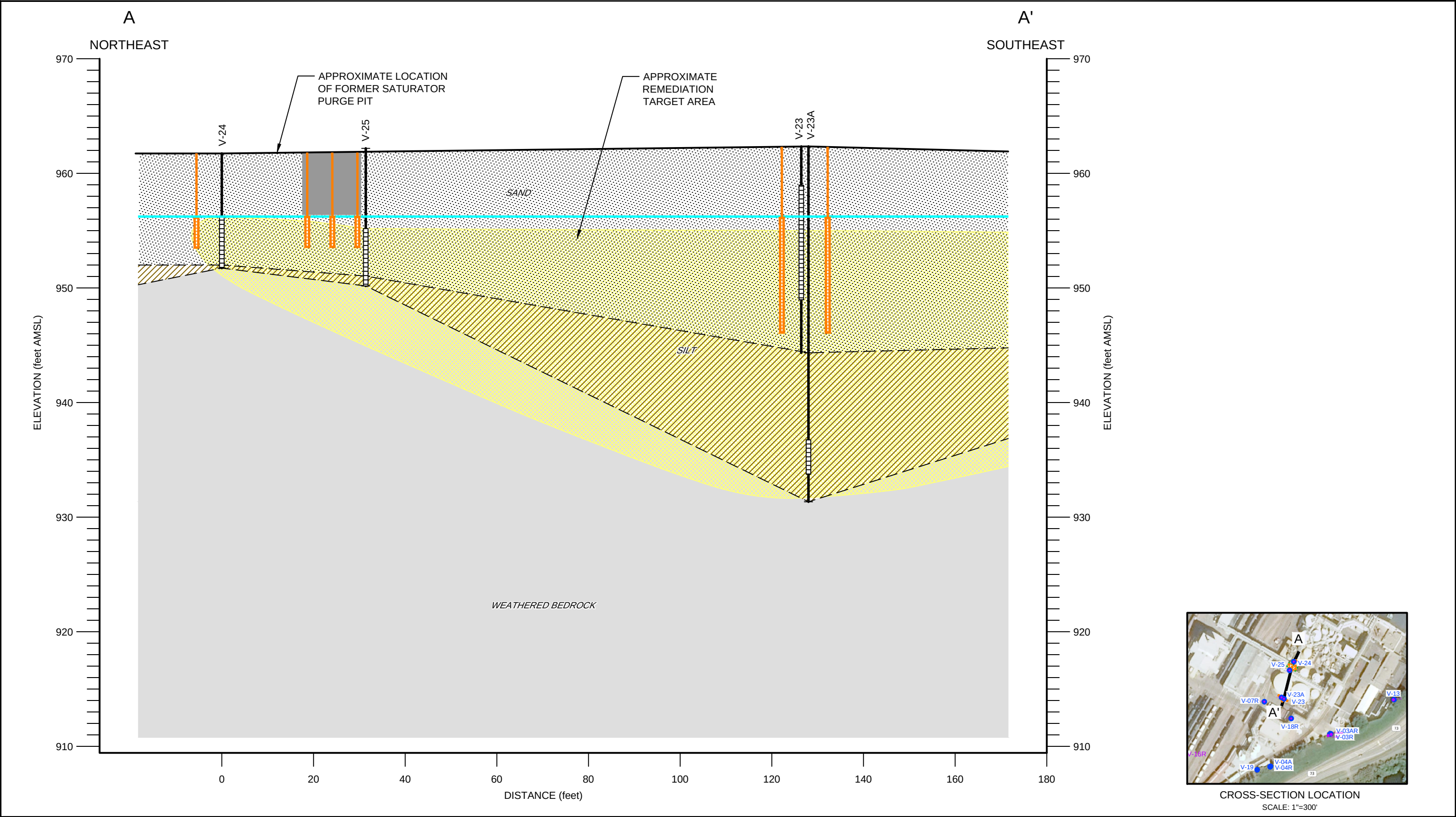


ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN
CHEMICAL STABILIZATION
PROPOSED INJECTION WELL LOCATIONS

11192391-00

Jun 23, 2020

FIGURE 3.1



LEGEND

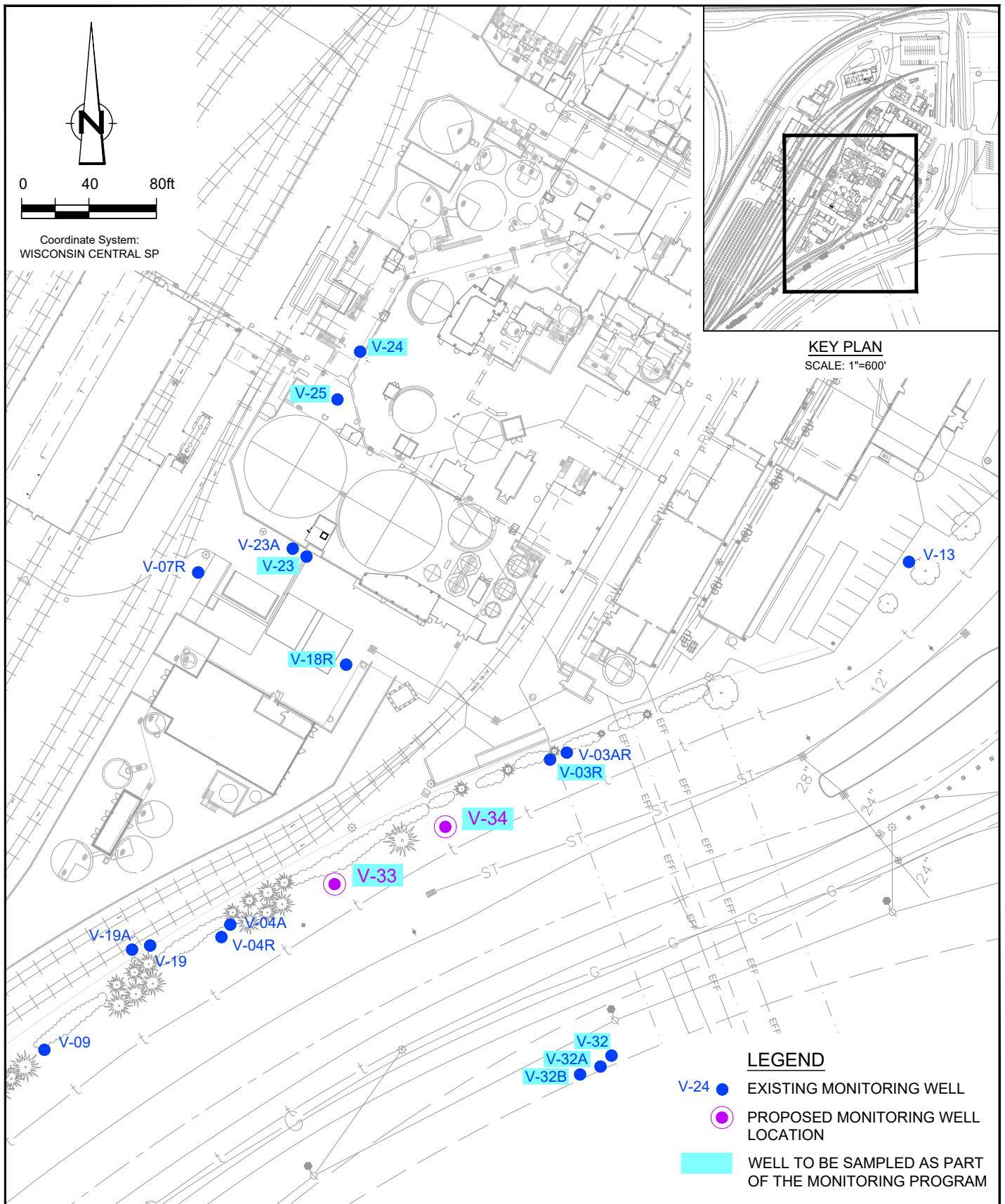
	WELL DESIGNATION		SAND
	GROUND SURFACE		SILT
	OBSERVATION WELL INSTALLATION		WEATHERED BEDROCK
	WATER TABLE		
	SCREENED INTERVAL		
	BOTTOM OF BORING		
	PROPOSED INJECTION WELL INSTALLATION		
	PROPOSED SCREENED INTERVAL		

SCALE: HORZ. 1" = 20'
VERT. 1" = 8'

ERCO WORLDWIDE (USA)
101 STATE HIGHWAY 73 SOUTH
NEKOOSA, WISCONSIN 54457
**CONCEPTUAL TREATMENT AREA
CROSS SECTION A-A'**

11192391-00
Jun 29, 2020

FIGURE 3.2



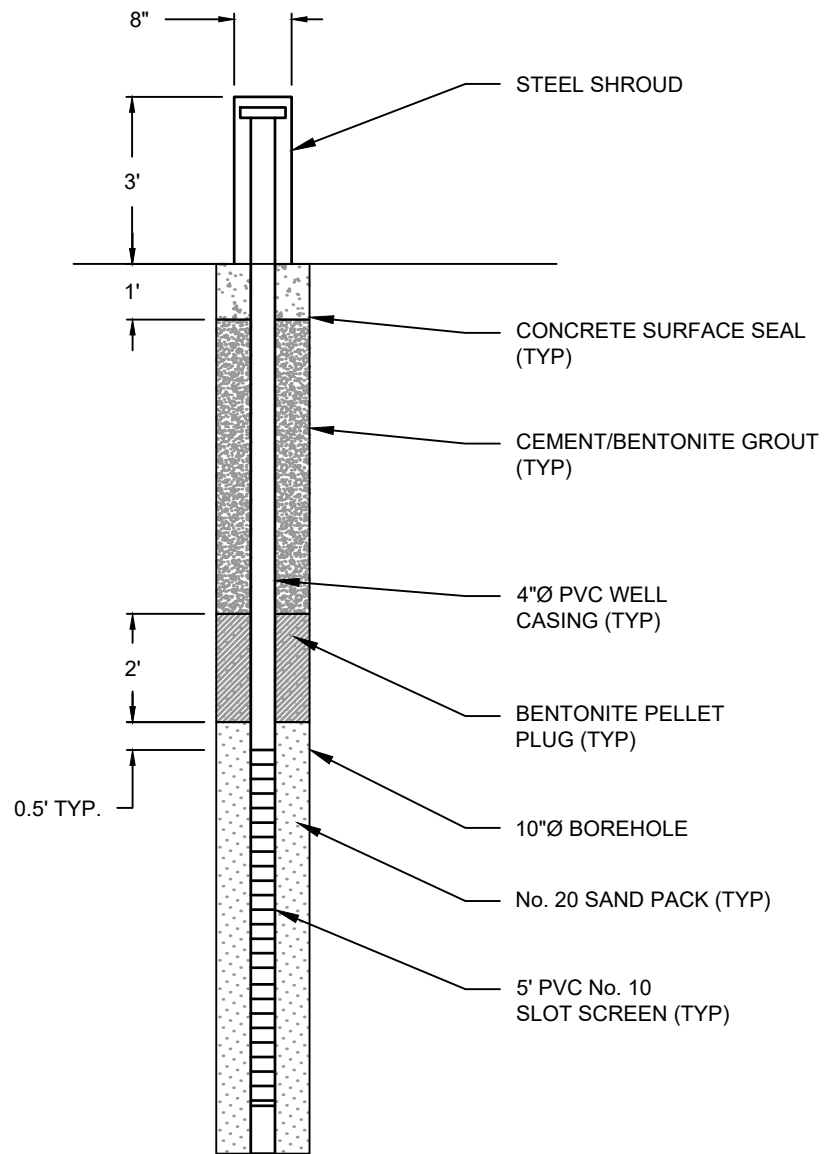
ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN

11192391-00

Jun 23, 2020

PROPOSED MONITORING WELL LOCATIONS

FIGURE 3.3



ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN

11192391-00

Jun 23, 2020

TYPICAL INJECTION WELL CONSTRUCTION DETAILS

FIGURE 3.4

Appendix A

Treatability Study Report



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1. Introduction

Mercury is present at concentrations greater than the applicable criterion in groundwater at the ERCO Worldwide (USA) Inc. Port Edwards Plant (ERCO) located in Nekoosa, Wisconsin (Site). On behalf of ERCO and Glenn Springs Holdings, Inc. (GSH), GHD submitted a Remedial Action Options Report (RAOR) to the State of Wisconsin Department of Natural Resources (DNR) on April 18, 2019. The RAOR recommended chemical stabilization of the mercury to reduce mercury concentrations in groundwater on-Site. The DNR approved this recommendation on December 3, 2019, and requested that ERCO move forward with the chemical stabilization remedy.

GHD completed a laboratory treatability study as part of the remedial design to identify the optimum reagents and doses required for chemical stabilization of the mercury in the groundwater. The treatability study background, objectives, Scope of Work, and results are summarized below.

1.1 In Situ Chemical Stabilization Background

Chemical stabilization of metals like mercury is the process of introducing a suitable reducing chemical reagent into the subsurface to precipitate metals as insoluble metal sulfides. When used in situ, this remedy prevents the continued migration of impacted groundwater by precipitating the metals out of the groundwater. The metal sulfides are stable because they undergo geochemical fixation onto the aquifer matrix (i.e., soil). Reagents such as sodium sulfide, calcium polysulfide, and sodium dithionite can be used for the chemical reduction of metals. For mercury, in situ chemical reduction (ISCR) is based on the injection of a reducing agent into the aquifer in order to promote the precipitation of soluble mercury and converting it into a stable compound, such as mercuric sulfide.

2. Treatability Study Objectives

The primary objectives of this laboratory study were to gather the data necessary to:

- i) Determine the effectiveness of in situ chemical stabilization for treatment of mercury in Site groundwater.
- ii) Determine the optimum reagent and dose for in situ chemical stabilization of mercury in Site groundwater.
- iii) Assess the reversibility of mercury precipitation in Site groundwater.
- iv) Assess the robustness of the ISCR under varying groundwater conditions.

3. Scope of Work

Treatability Study Tasks

The following section describes the tasks involved in the study and the work included under each task.



3.1 Sample Acquisition

The treatability study was conducted using a representative sample of groundwater collected from the Site. ERCO's groundwater monitoring consultant collected 5 gallons of groundwater from well V-25, which is located in the saturator purge pit (SPP) area. The sample was collected on December 19, 2019 in accordance with routine sample collection procedures. The sample was shipped to the GHD's laboratory in Niagara Falls, New York and arrived on December 20, 2019.

3.2 Task 1: Initial Characterization

Upon arrival in the laboratory, the groundwater sample was analyzed for pH, total and dissolved mercury, methyl mercury, total and dissolved metals, chloride, sulfate, sulfide, and total suspended solids (TSS). The analytical results provide a characterization of baseline conditions for the treatability study and are summarized in Table 1. The sample concentrations were similar to what has been detected previously in samples from well V-25.

3.3 Task 2: Reagent Screening Tests

GHD completed a series of microcosm tests using different ISCR reagents and doses in order to identify the optimum reagent for this Site. Reagents commonly used for ISCR treatment of mercury and other metals include sodium dithionite, sodium sulfide, and calcium polysulfide. These reagents were therefore selected for testing.

The tests were conducted using glass serum bottles containing an aliquot of the V-25 groundwater sample. For each series of doses for each reagent, the bottles were incubated with reagent in the dark at lab temperature for a week and then analyzed for pH and dissolved mercury. The tests for each reagent are described further below.

Control samples were run for each batch of tests, as there can be some change in groundwater chemistry upon storage of the water and pouring the water into bottles for the tests. For example, the dissolved mercury concentration in the initial sample was 170 micrograms per liter ($\mu\text{g/L}$), while in the control for the first batch of tests it was 130 $\mu\text{g/L}$, indicating that some mercury was lost during set up of the tests. This loss is not unusual and is the reason that the treated samples are compared to the control for that batch rather than to the initial concentration. In this way, only mercury removal due to treatment is quantified during the testing.

For the sodium sulfide test, the pH was adjusted so a pH-adjusted control was run to determine if any mercury loss is attributable to pH adjustment alone rather than to sodium sulfide treatment.

3.3.1 Sodium Dithionite

As summarized in Table 2, GHD initially tested groundwater treatability using sodium dithionite at doses of 0.25 gram per liter (g/L), 0.5 g/L, and 1 g/L. These doses reduced dissolved mercury concentrations in the groundwater samples to 80 $\mu\text{g/L}$, 77 $\mu\text{g/L}$, and 30 $\mu\text{g/L}$ respectively, which represent percent removals for dissolved mercury of 39 percent, 41 percent, and 77 percent, respectively. As summarized in Table 2, the pH of the samples decreased with increasing sodium dithionite dose. Since mercury removal appeared to increase with dose, GHD tested higher doses of sodium dithionite (1.5 g/L and 2 g/L). These doses reduced dissolved mercury to 5 $\mu\text{g/L}$ and



50 µg/L (66 and 67 percent removal, respectively). These data suggest that the increased doses beyond 1 g/L do not improve mercury removal, although they did decrease the pH. This also suggests that mercury removal by sodium dithionite is not entirely dependent on pH.

3.3.2 Sodium Sulfide

As summarized in Table 3, GHD initially tested groundwater treatability using sodium sulfide at doses of 0.25 g/L, 0.5 g/L, and 1 g/L. These doses did not result in decreased concentrations of dissolved mercury in the microcosms. The pH of the microcosms was also not changed. GHD then tested treatability using higher doses of sodium sulfide (2 g/L and 3 g/L) and observed no reduction in dissolved mercury concentrations. GHD also tested lower doses (1 g/L and 2 g/L) of sodium sulfide in microcosms where the pH had been adjusted to pH 9 to determine whether the high pH was inhibiting the precipitation of mercury. No reductions in the concentration of dissolved mercury were observed with the lower doses at pH 9, and the data show that addition of sodium sulfide to the pH 9 water increased the pH of the samples (10.51 for the sample that received 1 g/L sodium sulfide and 11.35 for the sample that received 2 g/L sodium sulfide).

3.3.3 Calcium Polysulfide

As summarized in Table 4, GHD initially tested groundwater treatability using calcium polysulfide at doses of 0.1 g/L, 0.15 g/L, and 0.29 g/L. No reductions in dissolved mercury were observed as a result of these treatments. GHD then tested treatability of the groundwater using higher doses of calcium polysulfide (0.44 g/L, 0.58 g/L, 0.88 g/L, 1.2 g/L, and 1.7 g/L). A reduction in dissolved mercury was observed only in the test that received 0.58 g/L calcium polysulfide. In this test, the dissolved mercury was reduced to 23 µg/L, which is an 85-percent reduction. The pH of the water appears to decrease slightly with increasing calcium polysulfide dose. These results were duplicated during subsequent testing confirming this dose of calcium polysulfide does result in the removal of mercury from the groundwater.

3.4 Task 3: Reversibility Test

Treatment of Site groundwater with 1 g/L sodium dithionite and 0.58 g/L calcium polysulfide produced the best reduction in the concentration of dissolved mercury, so these doses were chosen for further testing. Reversibility testing was performed to determine whether mercury precipitated by either of these reagents could be resolubilized. GHD treated four 1-liter samples of groundwater with each reagent and dose. The water was allowed to react with the reagent for 1 week, and then the water was removed from each reaction vessel and filtered. The solids captured on the filter were returned to each of the respective reaction vessels. The four vessels were then filled with 250 milliliters (mL) of one of the following: deionized (DI) water at ambient pH, DI water at pH 4, Site water, and DI water containing 1 percent hydrogen peroxide. Hydrogen peroxide is an oxidant and was used to determine to what extent the precipitated mercury could be resolubilized under highly oxidizing conditions.

3.4.1 Sodium Dithionite Test

Based on the 77-percent removal rate shown by the test results summarized in Table 2, the treatment of 1 liter of Site water (originally containing 130 µg/L dissolved mercury) using 1 g/L



sodium dithionite would be expected to yield approximately 100 µg of mercury precipitate. When 250 mL of DI water were added to the precipitate, if all of the mercury that was precipitated was resolubilized, then the mercury concentration in the bottles would be approximately 400 µg/L. For the treatment where Site water was added, the Site water already contained approximately 130 µg/L dissolved mercury; therefore, 130 µg/L would have to be subtracted from the groundwater concentration that was measured prior to calculating, to determine how much mercury was resolubilized.

As summarized in Table 5, the reversibility tests for the samples treated with sodium dithionite showed:

- Approximately 20 percent of the mercury that was precipitated was resolubilized by the DI water.
- Approximately 14 percent of the mercury that was precipitated was resolubilized by DI water at pH 4.
- Approximately 50 percent of the mercury that was precipitated was resolubilized by the DI water that contained hydrogen peroxide. This outcome was expected since it is a strong oxidant that would be able to oxidize some of the mercury that was precipitated.
- Approximately 17.5 percent of the mercury that was precipitated was resolubilized by Site groundwater. The bottles that received Site water contained 200 µg/L dissolved mercury, and since the Site groundwater already contained approximately 130 µg/L, therefore, an additional 70 µg/L were resolubilized. The additional 70 µg/L represents resolubilization of approximately 17.5 percent of the mercury that was precipitated.

3.4.2 Calcium Polysulfide Test

Based on the 83-percent removal rate shown by the test results summarized in Table 4, the treatment of 1 liter of Site water (originally containing 130 µg/L dissolved mercury) using 0.58 g/L calcium polysulfide would be expected to yield approximately 100 µg of mercury precipitate. When 250 mL of DI water were added to precipitate, if all of the mercury that was precipitated was resolubilized, the mercury concentration in the bottles would be approximately 400 µg/L. As summarized in Table 5, the reversibility tests for the samples treated with calcium polysulfide showed:

- Approximately 8 percent of the mercury that was precipitated was resolubilized by the DI water.
- Approximately 11 percent of the mercury that was precipitated was resolubilized by DI water at pH 4.
- Approximately 3.5 percent of the mercury that was precipitated was resolubilized by the DI water that contained hydrogen peroxide. These data suggest that oxidizing conditions did not resolubilize mercury precipitated by calcium polysulfide.
- None of the mercury precipitated was resolubilized by Site groundwater. The bottles that received Site water contained 52 µg/L dissolved mercury, which is less than the mercury concentration in untreated Site water. This suggests that residual calcium polysulfide in the bottle or on the filter further treated some of the mercury in the Site water.



3.5 Task 4: Robustness of the Remedy

GHD completed testing to determine if treatment by the optimum reagent or dose was affected by variations in groundwater chemistry including pH, chloride concentration, and mercury concentration. Groundwater conditions were varied as follows:

- pH was adjusted one standard unit higher than ambient by pH adjustment with sodium hydroxide.
- Chloride was adjusted to 1.5 times the ambient concentration by addition of sodium chloride.
- Mercury was adjusted to 1.5 times the ambient concentration by addition of mercury chloride.

The optimum doses determined in Task 2 (1 g/L sodium dithionite and 0.58 g/L calcium polysulfide) and two times these doses were tested to determine whether a higher dose of reagent is more effective in removing mercury if groundwater conditions change. The samples in the bottles were incubated in the dark at lab temperature for a week and then analyzed for pH and dissolved mercury. The robustness testing data are summarized in Table 6.

For the samples treated with calcium polysulfide, increasing the pH by one pH unit and treating with calcium polysulfide at 0.58 g/L resulted in a dissolved mercury concentration of 150 µg/L, which means that there was no treatment of mercury. As summarized in Table 6, doubling the calcium polysulfide dose did not improve treatment at the elevated pH. At a dose of 0.58 g/L calcium polysulfide, increasing the chloride and increasing the mercury did not inhibit mercury removal; 74 percent removal of mercury was observed in the high chloride sample and 90 percent removal of mercury was observed in the high mercury sample. However, treatment at a dose of 1.16 g/L calcium polysulfide was not effective in removing mercury from groundwater containing high chloride or high mercury.

For the samples treated with sodium dithionite, high pH appeared to inhibit mercury precipitation slightly at the lower dose tested (1 g/L) where only 43 percent removal of mercury was observed; however, when the sodium dithionite dose was increased to 2 g/L, removal of mercury in the high pH groundwater sample rose to 68 percent. As summarized in Table 6, increased chloride in groundwater resulted in treatment of 62 percent of the mercury with the lower sodium dithionite dose (1 g/L), and a similar mercury removal of 70 percent at the higher sodium dithionite dose (2 g/L). The addition of mercury did not appear to affect the effectiveness of groundwater treatment using sodium dithionite, with 78 percent mercury removal observed at the lower dose (1 g/L) and 82 percent removal of mercury observed at the higher dose (2 g/L).

4. Summary

- The groundwater sample received was representative of groundwater conditions that have been observed during previous monitoring events in the SPP area and in the area of well V-25.
- Sodium dithionite and calcium polysulfide were effective for the removal of dissolved mercury from groundwater, although higher doses were required than were initially tested.



- For calcium polysulfide, if the dose is too high, precipitation of mercury from groundwater appears to decrease; therefore, this reagent is effective only within a narrow range of doses. Experience with wastewater treatment at the Site indicates that the addition of too much sulfide causes the formation of mercury-sulfate complexes that have a higher solubility in water. This may explain the lack of treatment with higher doses of calcium polysulfide.
- Sodium sulfide was not effective for the precipitation of mercury from groundwater at any of the doses tested. Lowering the pH of the groundwater to nine did not improve mercury removal.
- For samples treated with sodium dithionite, treatment was not reversed by DI water or DI water at pH 4, or by Site water; treatment was reversed by DI water that contained hydrogen peroxide, but this was expected.
- For samples treated with calcium polysulfide, treatment was not reversed by DI water, DI water at pH 4, Site water, or DI water containing hydrogen peroxide. Moreover, when Site water was added to the precipitated mercury, residual calcium polysulfide appears to have removed additional mercury from the Site water sample.
- Treatment with sodium dithionite was robust over the 1- and 2-g/L dose range and over high pH, high mercury, and high chloride concentrations.
- Treatment with calcium polysulfide was effective only at a dose of 0.58 g/L and not at higher or lower doses. Treatment at this dose was inhibited by higher pH but not by higher chloride or mercury concentrations.

5. Conclusion and Recommendations

The results of this study show that the complex chemistry of the Site groundwater requires careful selection of the reagent and dose used for mercury precipitation. Sodium sulfide, a reagent that has been used at other sites for mercury precipitation, was not effective for treatment of groundwater from the current Site. This is likely due to the high pH of the groundwater as some mercury sulfide complexes are soluble under high pH conditions. It appears that the mercury sulfide complexes formed by treatment of Site groundwater with sodium sulfide are more subject to solubilization at high pH than the mercury sulfide complexes formed by treatment with the other reagents. Although sodium sulfide was tested on water that had been adjusted to pH 9, it is possible that the doses tested at this pH were not high enough. As pH adjustment of the aquifer prior to sodium sulfide treatment is not feasible, GHD did not test this reagent further.

The treatability study completed by GHD indicated that sodium dithionite and calcium polysulfide were effective for the precipitation of mercury from Site groundwater. Treatment with calcium polysulfide occurred only in a narrow dose range and was inhibited by high pH; however, if precipitation of mercury from groundwater did occur, this precipitation was irreversible under the conditions studied. Groundwater treatment with sodium dithionite was effective over a wider dose range and range of pH conditions than calcium polysulfide; however, the testing indicated that mercury precipitated by sodium dithionite could be resolubilized by an oxidant. Since sodium dithionite is a reducing agent, it is expected that an oxidant would be able to resolubilize some of the mercury.



Injection of a reagent into an aquifer for in situ remediation means that a higher dose must be delivered at the injection well, and the concentration of reagent will decrease as it disperses out of the well. Groundwater conditions at the Site also vary from location to location. For this reason, GHD recommends sodium dithionite for ISCR at the Site as it is effective over a wider dose range and a wider range of conditions. Based on the treatability study completed by GHD, GHD recommends that ISCR at the Site include injections of sodium dithionite at a target dose of 2 g/L, which is approximately 0.6 kilogram (kg) per cubic meter of saturated matrix (1.0 pound per cubic yard of saturated matrix). Multiple injection events may be required to achieve a large reduction in mercury concentration at the Site. The timing of the injection events should be determined based on the field conditions observed as a result of the regular monitoring. Injections will be focused in the area near the former saturator purge pit. Groundwater conditions will be monitored pre and post injection to determine the effect of the injections. Once the conditions in the groundwater indicate that the material injected has been exhausted and conditions are returning to pre-injection conditions, and mercury concentrations are still above target levels, then additional injections will be proposed. The estimated cost for this reagent is approximately \$2.10 per cubic meter of saturated matrix or \$1.60 per cubic yard of saturated matrix per injection event.

Table A1

**Initial Characterization of Groundwater Sample
Laboratory Treatability Study
ERCO Worldwide (USA) Inc., Port Edwards Plant
Nekoosa, Wisconsin**

		V-25 Groundwater 12/18/2019
Parameters	Unit	
General Chemistry		
pH	SU	11.62
Chloride	mg/L	5400
Sulfate	mg/L	370
Sulfide	mg/L	27
Total Suspended Solids (TSS)	mg/L	42
Methyl Mercury		
Methyl Mercury	µg/L	0.25
Total Metals		
Aluminum	µg/L	1840 E
Antimony	µg/L	ND(40)
Arsenic	µg/L	ND(40)
Barium	µg/L	9.22
Beryllium	µg/L	ND (4)
Cadmium	µg/L	ND (8)
Calcium	µg/L	1370 E
Chromium	µg/L	14.6 J
Cobalt	µg/L	ND (8)
Copper	µg/L	5.36 J
Iron	µg/L	248
Lead	µg/L	ND (40)
Magnesium	µg/L	113
Manganese	µg/L	ND (8)
Mercury	µg/L	200
Nickel	µg/L	ND (8)
Potassium	µg/L	3120000 E
Selenium	µg/L	ND (20)
Silver	µg/L	ND (2)
Sodium	µg/L	513000 E
Thallium	µg/L	11.9 J
Vanadium	µg/L	12.3
Zinc	µg/L	ND (20)
Dissolved Metals		
Dissolved Aluminum	µg/L	1640 E
Dissolved Antimony	µg/L	ND(40)
Dissolved Arsenic	µg/L	ND(40)
Dissolved Barium	µg/L	6.09
Dissolved Beryllium	µg/L	ND (4)
Dissolved Cadmium	µg/L	ND (8)
Dissolved Calcium	µg/L	1320 E
Dissolved Chromium	µg/L	ND (20)
Dissolved Cobalt	µg/L	ND (8)
Dissolved Copper	µg/L	ND (8)
Dissolved Iron	µg/L	ND (40)

Table A1

**Initial Characterization of Groundwater Sample
Laboratory Treatability Study
ERCO Worldwide (USA) Inc., Port Edwards Plant
Nekoosa, Wisconsin**

V-25 Groundwater 12/18/2019		
Parameters	Unit	
Dissolved Metals-Continued		
Dissolved Lead	µg/L	ND (40)
Dissolved Magnesium	µg/L	76.4
Dissolved Manganese	µg/L	ND (8)
Dissolved Mercury	µg/L	170
Dissolved Nickel	µg/L	ND (8)
Dissolved Potassium	µg/L	3280000 E
Dissolved Selenium	µg/L	ND (20)
Dissolved Silver	µg/L	ND (2)
Dissolved Sodium	µg/L	492000 E
Dissolved Thallium	µg/L	14.8 J
Dissolved Vanadium	µg/L	11.4
Dissolved Zinc	µg/L	ND (20)

Notes:

µg/L micrograms per liter
 SU standard units
 ND (x) - Not detected at reporting limit
 J - Estimated result
 E - Estimated above calibration range

Table A2

**Reagent Screening Tests - Sodium Dithionite
Laboratory Treatability Study
ERCO Worldwide (USA) Inc., Port Edwards Plant
Nekoosa, Wisconsin**

Parameters	Unit	Control Sample Concentration	Sodium Dithionite Dose and Resulting Parameter Concentration				
			0.25 g/L	0.5 g/L	1 g/L	1.5 g/L	2 g/L
General Chemistry							
pH	SU	11.55	11.43	10.76	7.77	6.96	6.83
Dissolved Metals							
Dissolved Mercury	µg/L	130	80	77	30	51	50
Percent Removal of Dissolved Mercury	%		38.5	40.8	76.9	60.8	61.5

Notes:

µg/L - Micrograms per liter
 SU - Standard unit
 g/L - Grams per liter

Table A3

**Reagent Screening Tests - Sodium Sulfide
Laboratory Treatability Study
ERCO Worldwide (USA) Inc. Port Edwards Plant
Nekoosa, Wisconsin**

Parameters	Unit	Control Sample Concentration	Sodium Sulfide Dose and Resulting Parameter Concentration					Control Sample Concentration at pH 9	Sodium Sulfide Dose and Resulting Parameter Concentration, pH 9	
			0.25 g/L	0.5 g/L	1 g/L	2 g/L	3 g/L		1 g/L	2 g/L
General Chemistry										
pH	SU	11.55	11.66	11.69	11.85	12.04	12.14	8.95	10.51	11.35
Dissolved Metals										
Dissolved Mercury	µg/L	130	170	170	170	190	210	150	190	200
Percent Removal of Dissolved Mercury ⁽¹⁾	%		<1	<1	<1	<1	<1		<1	<1

Notes:

µg/L - Micrograms per liter

SU - Standard unit

<1 - Removal of mercury was low or zero

g/L - Grams per liter

⁽¹⁾ - The concentration of mercury in the control sample was less than the concentration of mercury in the test samples after dosing

Table A4

**Reagent Screening Tests - Calcium Polysulfide
Laboratory Treatability Study
ERCO Worldwide (USA) Inc. Port Edwards Plant
Nekoosa, Wisconsin**

			Calcium Polysulfide Dose and Resulting Parameter Concentration							
Parameters	Unit	Control Sample Concentration	0.1 g/L	0.15 g/L	0.29 g/L	0.44 g/L	0.58 g/L	0.88 g/L	1.2 g/L	1.7 g/L
General Chemistry										
pH	SU	11.55	11.52	11.44	11.11	10.4	10.02	8.55	8.84	9.1
Dissolved Metals										
Dissolved Mercury	µg/L	130	160	160	160	170	23	130	150	150
Percent Removal of Dissolved Mercury	%		<1	<1	<1	<1	82.3	<1	<1	<1

Notes:

- µg/L - Micrograms per liter
- SU - Standard unit
- g/L - Grams per liter
- <1 - Removal of mercury was low or zero

Table A5

Reversibility Tests
Laboratory Treatability Study
ERCO Worldwide (USA) Inc., Port Edwards Plant
Nekoosa, Wisconsin

Parameters	Unit	1 g/L Sodium Dithionite Treatment					0.58 g/L Calcium Polysulfide Treatment				
		DI Water Control	DI Water at Ambient pH	DI Water at pH 4	DI Water and 1% H ₂ O ₂	Site Water	DI Water Control	DI Water at Ambient pH	DI Water at pH 4	DI Water and 1% H ₂ O ₂	Site Water
Dissolved Metals											
Dissolved Mercury	µg/L	ND (0.2)	82	54	200	200	ND (0.2)	33	43	14	52
Mercury Concentration if All Precipitated Mercury was Resolubilized	µg/L	-	400	400	400	400	-	400	400	400	400
Percent of Precipitated Mercury that was Resolubilized	%	-	20.5	13.5	50	17.5	-	8.25	10.75	3.5	13

Notes:

- DI - Deionized
- H₂O₂ - Hydrogen peroxide
- µg/L - Micrograms per liter
- g/L - Grams per liter
- ND (x) - Not detected at reporting limit
- - Not applicable

Table A6
Robustness Tests
Laboratory Treatability Study
ERCO Worldwide (USA) Inc. Port Edwards Plant
Nekoosa, Wisconsin

Parameters	Unit	Control 1 High pH	Control 2 1.5x Chloride	Control 3 1.5x Mercury	Calcium Polysulfide						Sodium Dithionite					
					0.58 g/L High pH	0.58 g/L 1.5x Chloride	0.58 g/L 1.5x Mercury	1.16 g/L High pH	1.16 g/L 1.5x Chloride	1.16 g/L 1.5x Mercury	1 g/L High pH	1 g/L 1.5x Chloride	1 g/L 1.5x Mercury	2 g/L High pH	2 g/L 1.5x Chloride	2 g/L 1.5x Mercury
General Chemistry																
pH	SU	12.47	11.60	11.50	12.36	8.88	8.38	12.36	9.41	8.98	12.37	7.59	7.49	12.29	6.63	6.71
Dissolved Metals																
Dissolved Mercury	µg/L	100	110	200	150	29	20	130	130	230	57	42	44	32	33	37
Percent Removal of Dissolved Mercury	%				<1	73.6	90.0	<1	<1	<1	43.0	61.8	78.0	68.0	70.0	81.5

Notes:

µg/L micrograms per liter
SU - Standard unit
<1 removal of mercury was low or zero
g/L - Grams per liter



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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Appendix G – Groundwater Monitoring

Groundwater Monitoring Documents

1. 8/10/2023, GHD, *Recommended Modifications to the Groundwater Monitoring Program.*
2. 11/17/2023, WDNR, *Recommended Modifications to the Groundwater Monitoring Program Approval.*
3. 4/22/2025, AECOM, *ERCO Worldwide 2024 Groundwater Monitoring Report.*

WDNR Reference No: BRRTS #02-72-000012
GHD Reference No: 11192391-LTR-10

August 10, 2023

Ms. Candace Sykora
Hydrogeologist
Wisconsin Department of Natural Resources (DNR)
Remediation and Redevelopment Program, West Central Region
890 Spruce Street
Baldwin, WI 54002

**Recommended Modifications to the Groundwater Monitoring Program
ERCO, 101 Highway 73 South, Nekoosa, WI (Site)**

Dear Ms. Sykora

On behalf of ERCO Worldwide (USA) Inc. (ERCO) and Glenn Springs Holdings (GSH), GHD has prepared this letter to present recommended modifications to the groundwater monitoring program at the ERCO site in Nekoosa, WI (Site). We are submitting these recommendations for your review and approval.

GHD reviewed the historical data and 2022 annual monitoring report (AECOM, 2023) to determine if changes to the monitoring frequency, locations sampled, and/or parameters analyzed are appropriate. Our review concluded that groundwater sampling should continue annually for a modified set of parameters and locations as described in the following sections.

1. Groundwater Monitoring Plan Summary

The current groundwater monitoring plan consists of three components:

1. Corrective Action Monitoring:
 - Annual sampling at 5 locations in the area of the Cell Room building trench discharge area
 - Annual sampling at 10 wells near the former solvent storage (FSS) area and Saturator Purge Pit (SPP), where GHD is currently implementing a chemical stabilization remedy to address mercury concentrations in groundwater
 - Quarterly sampling at 4 wells near the FSS/Saturator Purge Pit (SPP)
 - Annual sampling at 15 wells as part of the monitored natural attenuation (MNA) remedy for volatile organic compounds (VOCs)
2. Long-Term Care Monitoring:
 - Annual sampling of 2 wells and quarterly sampling of 6 wells upgradient and downgradient of the SPP, the former clarifier purge pit, and the former muds bin (collectively referred to as the "SPP area") for dissolved mercury and other parameters

- Quarterly sampling of 2 additional wells pursuant to the Remedial Action Design Report (RADR) (GHD, 2020) in the (SPP) area, where GHD is currently implementing a chemical stabilization remedy to address mercury concentrations in groundwater

3. Perimeter Monitoring:

- Annual sampling of 7 wells, 3 of which are monitored for mercury and related parameters, 5 of which are monitored for VOCs and related parameters, and 4 of which are monitored for dissolved gases related to MNA monitoring

There are over 25 years' worth of groundwater chemistry data for the majority of the wells. The monitoring well network is presented on Figure 1.

2. Monitoring Program Review

GHD completed a systematic data-driven analysis consistent with the approach used by GSH at their other legacy sites, and then completed a thorough hydrogeological review of the data-driven analysis. GHD analyzed the data from the historical annual monitoring program to highlight the compounds and locations that provide the most relevant data.

Table 1a presents a summary of the data collected to date by analyte compared to the Wisconsin NR 140 Enforcement Standard (ES), and Table 1b presents a summary of the data collected to date by analyte compared to the Wisconsin NR 140 Preventive Action Limit (PAL). Table 2a organizes the data by well compared to the ES, and Table 2b presents the data by well compared to the PAL. The total number of samples, exceedances, detections, and non-detections are presented on the tables, as well as the percentages of non-detects and non-exceedances. Analytes with a high percentage of non-detects, or locations with a high percentage of non-detects are highlighted on each table because these low concentrations can indicate an opportunity for reduced frequency of monitoring. The annual monitoring report also contains concentration graphs for each well and parameter of concern, and these graphs were used to review stability of concentrations at the wells.

3. Recommended Changes to the Monitoring Program

3.1 Reduce Quarterly Sampling

As summarized above, the current monitoring program includes annual sampling at some locations and quarterly sampling at other locations. GHD recommends ceasing quarterly sampling at most locations with certain exceptions, as presented below and in Table 3. While there are no universally accepted guidelines published that state conditions for quarterly sampling, GHD's experience is that quarterly sampling can be appropriate under circumstances such as:

- At the beginning of a monitoring program when initial baseline conditions or seasonal variations need to be understood
- Where concentrations of contaminants are increasing rapidly over time, and annual sampling risks missing the point when concentrations will increase above a standard or action limit
- Where the groundwater flow is rapid, and travels from upgradient to downgradient wells within the quarter, meaning that annual sampling could miss important changes in groundwater conditions

None of these conditions are met at the Site, and quarterly sampling is not providing value at a number of locations. Groundwater data have been collected at the Site since 1993 at many locations, and therefore, quarterly sampling is not required to understand initial baseline conditions, or to gain an initial understanding of

the seasonal variations. Further, given the size of the existing database, if seasonal variations were an important factor in transport or attenuation mechanisms at the Site, then the data collected to date would be sufficient to characterize these variations.

GHD reviewed the concentration trend graphs in the 2022 annual report (AECOM, 2023) as part of this assessment. While fluctuations in the concentrations of mercury, chloride and pH in the annual report graphs are apparent over time, the quarterly data do not provide more insight into the behavior of the dissolved contaminants. The quarterly data are not analyzed or discussed in more detail than annual data in the annual report text because it is not necessary to do so to understand the groundwater conditions at the Site. Therefore, GHD believes that the quarterly sampling can be reduced to annual sampling at most locations. This will simplify the program so that all wells are sampled at the same time, saving time and effort. This also reduces the fuel used, materials used, energy used, and waste generated by the sampling program, thereby reducing the environmental footprint of the program.

At most locations, quarterly sampling is also not providing added value in tracking concentration changes over time. The data presented in the 2022 annual report Appendices F, G, and H show concentrations over time for mercury, chloride, and pH. The appendices show graphs for wells where samples are collected annually or quarterly. Some of the graphs show apparent trends over time (e.g., chloride at V-24 and V-32A in Appendix G), but the quarterly data at V-24 does not provide a better understanding of the trend than the annual data at V-32A. Concentrations appear to be changing over time, with longer term trends visible in data from some wells. These observations indicate that quarterly sampling is not providing significant additional information regarding changes in concentrations over time as compared to annual sampling. Quarterly sampling should, however, be retained where source reduction is ongoing in the area of the SPP, as summarized below.

As stated in the 2022 annual report, the groundwater flow velocity at the Site is estimated to be between 200 and 300 feet per year, although the transport of contaminants will be slower than that due to the sorption of VOCs and mercury to soil. The distance between the SPP area and the roadway to the south is over 300 feet, meaning that water will take over a year to migrate that far, and contaminants will take even longer to travel this distance. This relatively long timeframe for migration means that annual sampling would be adequate to monitor for changes in mercury concentrations over time.

There are three exceptions to GHD's proposed change from quarterly to annual sampling:

- The first exception would be in the SPP area, where groundwater is being remediated in situ, and quarterly data are necessary and appropriate to monitor mercury concentrations pursuant to the RADR.
- The second exception is V-32B, which is a sentinel well near the Wisconsin River and where mercury concentrations appear to be increasing over time. While current groundwater concentrations are less than the ES, the concentrations should continue to be monitored quarterly.
- The third area is V-02R because the concentrations of mercury in the Cell Room Building collection trench upgradient from V-02R increased from 0.054 µg/L in June 2021 to 103 µg/L in December 2021. The increase in concentrations in groundwater samples from V-02R may be related to this sharp increase in concentrations in the Cell Room Building collection trench, and quarterly sampling at V-02R is appropriate.

Given the above, GHD recommends that quarterly sampling be terminated, except for the sampling related to the on-going treatment in the SPP area, the sampling at V-32B, and at V-02R, which should continue to be quarterly.

4. Eliminate MNA Parameter Sampling

Tables 1a and 1b compare the detections of the parameters in the current sampling program to the ES and PAL, respectively. The table shows that the majority of the parameter concentrations are less than detection

limits in most samples, with the exception of chlorinated VOCs, mercury and MNA parameters. The current corrective action, long-term care, and perimeter monitoring programs include some sampling for natural attenuation parameters, with samples having been collected from some wells as far back as 1999. There are sufficient data to characterize the redox conditions in the groundwater at the Site and to determine the types and extent of the potential natural attenuation mechanisms. Additional annual data will provide no additional benefit. Therefore, GHD recommends discontinuing sampling for natural attenuation parameters including dissolved gases, dissolved iron, TOC, nitrate, alkalinity and sulfate. The measurement of field stabilization parameters should continue as part of the annual monitoring program where low-flow purging sampling is conducted.

Table 3 presents GHD's proposed changes to the sampling program which include eliminating 18 to 30 quarterly samples per year (depending on the parameter) as well as eliminating up to 19 samples from the annual program (mostly MNA parameters). This will result in the elimination of up to 37 samples per year, plus duplicates and QA/QC samples. GHD's recommended changes will streamline the sampling program without sacrificing data quality, resulting in less sampling waste, less time managing and evaluating unnecessary data, and reducing costs.

5. Recommended Changes to the Sampling Locations and Reporting

Two new monitoring wells (V-34 and V-35) were installed in 2021 between the SPP area and the downgradient V-32 sentry monitoring well cluster to fill a data gap. GHD recommends that these two wells be included in the annual perimeter monitoring program for mercury because these locations are along the flow path between the SPP area and the downgradient monitoring well nest at V-32.

Tables 2a and 2b present the summary of detections and exceedances by well compares to ES and PAL, respectively. The tables show that several wells have a high (over 80%) rate of parameter non-detects and V-19A has over 90% of analyte concentrations below detection limits.

Monitoring well V-16R has a relatively high percentage of parameter non-detects throughout its sampling history (72%), but is not immediately downgradient from the source area, and does not provide meaningful information regarding flow of Site-related contaminants.

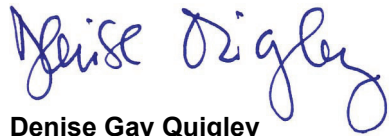
GHD recommends that locations V-16R and V-19A be removed from the annual monitoring program for mercury and VOCs since the concentrations are less than ES and PAL at these locations, these wells are not in a location critical to monitoring the Cell Room area or the SPP area, and there are sufficient downgradient locations to monitor for changes to perimeter water quality. These locations should be retained in the hydraulic monitoring program.

As discussed with you, the annual report includes molar concentration graphs for VOCs. We have reviewed the permits for the Site and this is not a requirement written into any of the permits. Since the molar concentration data are not used to analyze progress at the Site, we recommend discontinuing providing these graphs in the annual report.

GHD recommends that the groundwater monitoring program be reviewed every 2 years to determine if changes are required.

If you have any questions, please call or email me.

Regards



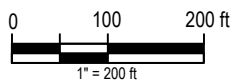
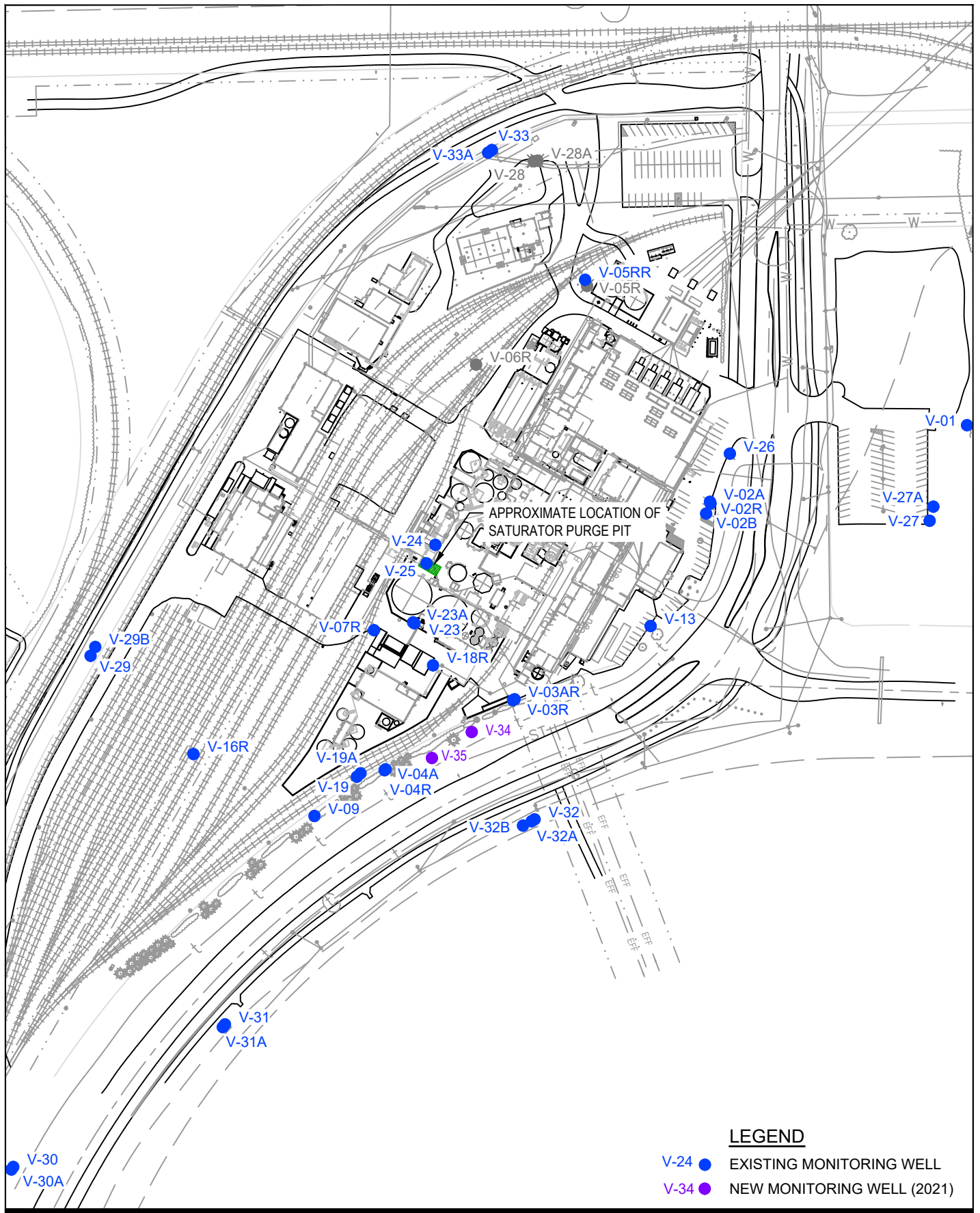
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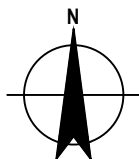
JV/kf/10

Encl.

Copy to: Lauren Lueneberg, ERCO
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Jody Vaillancourt, GHD
Richard Chatfield, GHD



Coordinate System:
NAD87 - WISCONSIN
CENTRAL



ERCO WORLDWIDE
PORT EDWARDS PLANT
NEKOOSA, WISCONSIN

Project No. 11192391
Date March 2022

SITE PLAN

FIGURE 1

Table 1a

**Summary of Detections by Chemical - Compared to ES
ERCO Port Edwards, Nekoosa, WI**

Chemical	Enforcement Standard (µg/L)	Total Number of Samples	Total Exceedances	Total Detects	Total Non-Detects	Percent Non-Detect	Percent Non-Exceedance
1,1,1,2-tetrachloroethane	70	157	0	0	157	100%	100%
1,1,1-trichloroethane	200	713	0	25	688	96%	100%
1,1,2,2-tetrachloroethane	0.2	145	145	1	144	99%	0%
1,1,2-trichloroethane	5	575	8	3	572	99%	99%
1,1-dichloroethane	850	713	0	136	577	81%	100%
1,1-dichloroethene	7	574	2	53	521	91%	100%
1,2,3-trichloropropane	60	167	0	0	167	100%	100%
1,2-dibromoethane	0.05	575	575	0	575	100%	0%
1,2-dichlorobenzene	600	460	0	0	460	100%	100%
1,2-dichloroethane	5	575	6	8	567	99%	99%
1,2-dichloropropane	5	575	95	1	574	100%	83%
1,3-dichlorobenzene	600	477	0	0	477	100%	100%
1,4-dichlorobenzene	75	478	0	4	474	99%	100%
1,4-dioxane	3	71	71	0	71	100%	0%
2-butanone	4000	525	0	6	519	99%	100%
4-methyl-2-pentanone	500	107	0	0	107	100%	100%
acetone	9000	515	0	42	473	92%	100%
benzene	5	713	8	17	696	98%	99%
bromodichloromethane	0.6	575	262	1	574	100%	54%
bromoform	4.4	567	96	1	566	100%	83%
bromomethane (methyl bromide)	10	547	4	0	547	100%	99%
carbon disulfide	1000	525	0	11	514	98%	100%
carbon tetrachloride	5	703	6	3	700	100%	99%
chloride	250	2748	2748	2737	11	0%	0%
chloroethane	400	566	0	4	562	99%	100%
chloroform (trichloromethane)	6	575	9	40	535	93%	98%
chloromethane (methyl chloride)	30	565	1	2	563	100%	100%
cis-1,2-dichloroethene	70	484	53	351	133	27%	89%
dibromochloromethane	60	575	0	1	574	100%	100%
dichlorodifluoromethane (cfc-12)	1000	564	0	3	561	99%	100%
ethylbenzene	700	565	0	2	563	100%	100%
iron	0.3	366	366	288	78	21%	0%
iron (dissolved)	0.3	149	149	110	39	26%	0%
mercury	2	1614	696	1485	129	8%	57%
methyl tert butyl ether (mtbe)	60	468	0	2	466	100%	100%
methylene chloride	5	557	6	17	540	97%	99%
naphthalene	100	459	0	14	445	97%	100%
styrene	50	575	0	7	568	99%	100%
sulfate	250	2546	2530	2525	21	1%	1%
tetrachloroethene	5	713	34	91	622	87%	95%
tetrahydrofuran	50	409	6	21	388	95%	99%
toluene	800	574	0	14	560	98%	100%
trans-1,2-dichloroethene	100	575	2	234	341	59%	100%
trichlorofluoromethane (cfc-11)	3490	563	0	0	563	100%	100%
vinyl chloride	0.2	713	615	288	425	60%	14%

Notes:

value above 90% of total
non-detect values used at detection limit

Table 1b

**Summary of Detections by Chemical - Compared to PAL
ERCO Port Edwards, Nekoosa, WI**

Chemical	Preventive Action Limit (µg/L)	Total Number of Samples	Total Exceedances	Total Detects	Total Non-Detects	Percent Non-Detect	Percent Non-Exceedance
1,1,1,2-tetrachloroethane	7	157	24	0	157	100%	85%
1,1,1-trichloroethane	40	713	0	25	688	96%	100%
1,1,2,2-tetrachloroethane	0.02	145	145	1	144	99%	0%
1,1,2-trichloroethane	0.5	575	410	3	572	99%	29%
1,1-dichloroethane	85	713	0	136	577	81%	100%
1,1-dichloroethene	0.7	574	275	53	521	91%	52%
1,2,3-trichloropropane	12	167	4	0	167	100%	98%
1,2-dibromoethane	0.005	575	575	0	575	100%	0%
1,2-dichlorobenzene	60	460	0	0	460	100%	100%
1,2-dichloroethane	0.5	575	238	8	567	99%	59%
1,2-dichloropropane	0.5	575	349	1	574	100%	39%
1,3-dichlorobenzene	120	477	0	0	477	100%	100%
1,4-dichlorobenzene	15	478	0	4	474	99%	100%
1,4-dioxane	0.3	71	71	0	71	100%	0%
2-butanone	800	525	0	6	519	99%	100%
4-methyl-2-pentanone	50	107	0	0	107	100%	100%
acetone	1800	515	0	42	473	92%	100%
benzene	0.5	713	268	17	696	98%	62%
bromodichloromethane	0.06	575	575	1	574	100%	0%
bromoform	0.44	567	479	1	566	100%	16%
bromomethane (methyl bromide)	1	547	211	0	547	100%	61%
carbon disulfide	200	525	0	11	514	98%	100%
carbon tetrachloride	0.5	703	496	3	700	100%	29%
chloride	125	2748	2748	2737	11	0%	0%
chloroethane	80	566	0	4	562	99%	100%
chloroform (trichloromethane)	0.6	575	271	40	535	93%	53%
chloromethane (methyl chloride)	3	565	176	2	563	100%	69%
cis-1,2-dichloroethene	7	484	117	351	133	27%	76%
dibromochloromethane	6	575	5	1	574	100%	99%
dichlorodifluoromethane (cfc-12)	200	564	0	3	561	99%	100%
ethylbenzene	140	565	0	2	563	100%	100%
iron	0.15	366	366	288	78	21%	0%
iron (dissolved)	0.15	149	149	110	39	26%	0%
mercury	0.2	1614	1295	1485	129	8%	20%
methyl tert butyl ether (mtbe)	12	468	2	2	466	100%	100%
methylene chloride	0.5	557	436	17	540	97%	22%
naphthalene	10	459	0	14	445	97%	100%
styrene	10	575	5	7	568	99%	99%
sulfate	125	2546	2533	2525	21	1%	1%
tetrachloroethene	0.5	713	482	91	622	87%	32%
tetrahydrofuran	10	409	15	21	388	95%	96%
toluene	160	574	0	14	560	98%	100%
trans-1,2-dichloroethene	20	575	28	234	341	59%	95%
trichlorofluoromethane (cfc-11)	698	563	0	0	563	100%	100%
vinyl chloride	0.02	713	713	288	425	60%	0%

Notes:

value above 90% of total
non-detect values used at detection limit

Table 2a

**Summary of Detections by Location Compared to ES
ERCO Port Edwards, Nekoosa, WI**

Row Labels	Total Number of Analyses	Total Detects	Total Non-detects	Total Exceedances	Total Non-Exceedances	Pecent Non-detect	Percent Non-Exceedances
STORM SEWER NO.1	24	23	1	12	12	4%	50%
TRENCH-DISCHARGE	46	45	1	36	10	2%	22%
V-02	973	268	705	329	644	72%	66%
V-02B	805	184	621	185	620	77%	77%
V-03	1560	431	1129	469	1091	72%	70%
V-03A	1309	406	903	420	889	69%	68%
V-04	391	142	249	141	250	64%	64%
V-04A	1036	310	726	229	807	70%	78%
V-05	1026	352	674	329	697	66%	68%
V-05R	362	88	274	91	271	76%	75%
V-07R	215	215	0	198	17	0%	8%
V-09	956	277	679	278	678	71%	71%
V-13	680	224	456	191	489	67%	72%
V-16R	1208	337	871	338	870	72%	72%
V-18	162	160	2	148	14	1%	9%
V-19	317	100	217	96	221	68%	70%
V-19A	507	46	461	70	437	91%	86%
V-23	354	291	63	295	59	18%	17%
V-24	263	238	25	230	33	10%	13%
V-25	280	255	25	249	31	9%	11%
V-26	115	112	3	91	24	3%	21%
V-27	566	110	456	127	439	81%	78%
V-27A	759	104	655	116	643	86%	85%
V-30	755	93	662	109	646	88%	86%
V-30A	762	115	647	117	645	85%	85%
V-31	849	134	715	138	711	84%	84%
V-31A	912	177	735	150	762	81%	84%
V-32	970	219	751	178	792	77%	82%
V-32A	924	207	717	167	757	78%	82%
V-32B	959	293	666	246	713	69%	74%
V-34	19	18	1	5	14	5%	74%
V-35	17	12	5	4	13	29%	76%

Notes:

Duplicates are included in the totals

##	value above 90% of total
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Table 2b

Summary of Detections by Location - Compared to PAL
ERCO Port Edwards, Nekoosa, WI

Location	Total Number of Analyses	Total Detects	Total Non-detects	Exceedances	Non-Exceedances	Percent Non-Detect	Percent Non-Exceedance
STORM SEWER NO.1	24	23	1	19	5	4%	21%
TRENCH-DISCHARGE	46	45	1	45	1	2%	2%
V-02	973	268	705	528	445	72%	46%
V-02B	805	184	621	357	448	77%	56%
V-03	1560	431	1129	756	804	72%	52%
V-03A	1309	406	903	665	644	69%	49%
V-04	391	142	249	223	168	64%	43%
V-04A	1036	310	726	410	626	70%	60%
V-05	1026	352	674	517	509	66%	50%
V-05R	362	88	274	146	216	76%	60%
V-07R	215	215	0	207	8	0%	4%
V-09	956	277	679	442	514	71%	54%
V-13	680	224	456	331	349	67%	51%
V-16R	1208	337	871	577	631	72%	52%
V-18	162	160	2	158	4	1%	2%
V-19	317	100	217	162	155	68%	49%
V-19A	507	46	461	175	332	91%	65%
V-23	354	291	63	313	41	18%	12%
V-24	263	238	25	248	15	10%	6%
V-25	280	255	25	264	16	9%	6%
V-26	115	112	3	95	20	3%	17%
V-27	566	110	456	241	325	81%	57%
V-27A	759	104	655	244	515	86%	68%
V-30	755	93	662	247	508	88%	67%
V-30A	762	115	647	265	497	85%	65%
V-31	849	134	715	286	563	84%	66%
V-31A	912	177	735	328	584	81%	64%
V-32	970	219	751	344	626	77%	65%
V-32A	924	207	717	333	591	78%	64%
V-32B	959	293	666	415	544	69%	57%
V-34	19	18	1	11	8	5%	42%
V-35	17	12	5	10	7	29%	41%

Notes:

Duplicates are included in the totals

##

value above 90% of total

Table 3

**Proposed Modifications to the Sampling Program
ERCO Port Edwards, Nekoosa, WI**

Location	Program	VOC	Mercury	Chloride	SC	pH	Ethene, Ethane, Methane	Dissolved Iron	TOC	Nitrate, Alkalinity	Sulfate	DO	Temp	ORP
Collection Trench	CA		A	A	A	A								
Storm Sewer Outfall -1	CA		A	A	A	A								
V-02BR	CA	A	A	A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-02R	CA		A	A	A	A								
V-03AR	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
	LTC		A	Q	Q	Q					-Q-		Q	
V-03R	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
	LTC		Q	Q	Q	Q					-Q-		Q	
V-04A	CA	A	A	A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-04R	CA		A	A	A	A						A	A	A
V-05RR	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
	LTC		A	Q	Q	Q					-Q-		Q	
V-07R	CA		A	A	A	A								
V-09	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
	P		A	A	A	A					-A-		A	
V-13	P	A	A	A	A	A					-A-		A	
V-16R	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-
	P		A	A	A	A					-A-		-A-	
V-18R	CA		Q	Q	Q	Q								
V-19	CA		A	A	A	A						A	A	A
V-19A	CA	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-	-A-
V-23	CA		A	A	A	A								
	LTC		Q	Q	Q	Q					Q		Q	
V-24	CA		A	A	A	A								
	LTC		Q	Q	Q	Q					-Q-		Q	
V-25	CA		A	A	A	A								
	LTC		Q	Q	Q	Q					-Q-		Q	
V-26	CA		A	A	A	A								
V-27	P	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-27A	P	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-30	P	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-30A	P	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-31	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-31A	CA	A		A	A	A	-A-	-A-	-A-	-A-	-A-	A	A	A
V-32	CA	A	A	A	Q	Q	-A-	-A-	-A-	-A-	-A-	A	A	A
V-32A	CA	A		A	Q	Q	-A-	-A-	-A-	-A-	-A-	A	A	A
V-32B	CA	A	Q	Q	Q	Q	-A-	-A-	-A-	-A-	-A-	A	A	A
Quarterly samples removed from program		0	18	24	30	30	0	0	0	0	18	0	18	0
Annual samples removed from program		3	2	3	3	3	17	17	17	17	19	2	3	2
Samples removed from program		3	20	27	33	33	17	17	17	17	37	2	21	2

Notes

CA	Corrective Action Groundwater Monitoring
MNA	MNA Monitoring
LTC	Long-term Care Monitoring
P	Perimeter Monitoring
Q	Sampled Quarterly
A	Sampled Annually
	Change from Quarterly to Annual Sampling
-A-	Remove from the Sampling Program



November 17, 2023

ERCO Worldwide
Attn: Lauren Lueneburg
101 HWY 73 S
PO Box 161
Nekoosa, WI 54469

RE: Recommended Modifications to the Groundwater Monitoring Program Approval
ERCO, 101 Highway 73 South,
Nekoosa BRRTS# 02-72-000012

Ms. Lueneberg,

On behalf of ERCO Worldwide (USA) Inc. (ERCO) and Glenn Springs Holdings (GSH), GHD prepared and submitted recommended modifications to the groundwater monitoring program at the ERCO site in Nekoosa, WI on August 10, 2023.

The Wisconsin Department of Natural Resources (DNR) has reviewed the submitted modifications to the groundwater monitoring program and approves the following modifications to the groundwater sampling:

- Reduce quarterly sampling to annual with the exceptions of:
 - The SPP area where groundwater is actively being remediated in situ, and quarterly data is necessary and appropriate to monitor mercury concentrations.
 - V-32B, a sentinel well near the Wisconsin River where mercury concentrations appear to be increasing over time.
 - V-02R, the Cell Room Building collection trench, that has had mercury concentrations with recent fluctuations requiring quarterly sampling.
- Eliminate MNA parameters. MNA parameters have been sampled since 1999. Discontinuing natural attenuation parameters including dissolved gases, dissolved iron, TOC, nitrate, alkalinity, and sulfate is appropriate as they no longer have an added benefit for continued evaluation of groundwater impacts.
- Add V-34 and V-35 to the annual monitoring program. These wells were installed in 2021 between SPP area and downgradient sentry monitoring well cluster to fill the data gap.
- Removal of V-16R and 19A from the annual monitoring program for mercury and VOCs. These wells are below enforcement standards (ES) and protective action limits (PAL), not located in the SPP area, and other wells provide sufficient sampling for perimeter and downgradient monitoring.
- Remove molar concentration graphs for VOCs as molar concentration data is not used to evaluate the progress at the Site.
- Review the groundwater monitoring program every 2 years to determine if changes are required.

If you have any questions or concerns, please contact me.

Sincerely,

A handwritten signature in black ink that reads "Candace Sykora". The signature is fluid and cursive, with the first name "Candace" written in a larger, more prominent script than the last name "Sykora".

Candace Sykora
Hydrogeologist
Remediation & Redevelopment
Wisconsin Department of Natural Resources
890 Spruce St, Baldwin, WI 54002
Phone: 715-928-0452
Candace.sykora@wisconsin.gov

Cc: Denise Quigley, GHD
Clint Babcock, Glenn Springs Holdings
Doug Coenen, DNR

**Annual Report
Groundwater Monitoring Program
January 1 to December 31, 2024
ERCO Worldwide – Port Edwards Plant
BRRTs No. 02-72-000012**

**Prepared for:
ERCO Worldwide
Port Edwards Plant
101 Highway 73 South
Nekoosa, Wisconsin 54457**

Privileged and Confidential

**Annual Report
Groundwater Monitoring Program
January 1 to December 31, 2024**

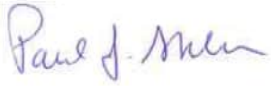
"I, Alex Pliska, hereby certify that I am a scientist as that term is defined in s. NR 712.03 (3), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in Chs. NR 700 to 726, Wis. Adm. Code"



Prepared by:
Alex Pliska
Environmental Scientist
alex.pliska@aecom.com

April 22, 2025
Date

"I, Paul Sklar, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."



Reviewed by
Paul Sklar, P.G.
Project Hydrogeologist
paul.sklar@aecom.com

April 22, 2025
Date

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Appendix J:	GHD Technical Memorandum, <i>2024 Annual Report, Groundwater Remedial Action by Chemical Stabilization, ERCO, 101 Highway 73 South, Nekoosa, Wisconsin, WDNR BRRTS #02-72-000012</i> . April 18, 2025.

Acronyms and Abbreviations

µg/L	micrograms per liter
1,1,1-TCA	1,1,1-trichloroethane
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCA	1,2-dichloroethane
CA	corrective action
CB	competent bedrock
cis-1,2-DCE	cis-1,2-dichloroethene
COCs	contaminants of concern
CRB	cell room building
CVOC	chlorinated volatile organic compound
DO	dissolved oxygen
ERCO	ERCO Worldwide
ES	NR 140 Enforcement Standard
EW	extraction well
FSS	Former Solvent Storage Area
ft/ft	feet per foot
ft/yr	feet per year
ID	identification number
J	estimated concentration
MDL	method detection limit
mg/L	milligrams per liter
MNA	Monitored Natural Attenuation
mV	millivolt
ORP	oxidation reduction potential
PAL	NR 140 Preventive Action Limit
PCE	tetrachloroethene
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SC	specific conductance
Site	Port Edwards Plant
SPP	saturator purge pit
TCE	trichloroethene
TOC	total organic carbon
trans-1,2-DCE	trans-1,2-dichloroethene
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound
WB-C	weathered bedrock-clay unit
WB-C/CB	weathered bedrock-clay/competent bedrock
WDNR	Wisconsin Department of Natural Resources
WisDOT	Wisconsin Department of Transportation

Executive Summary

This report summarizes the results of the groundwater monitoring performed at the ERCO Worldwide (ERCO) Port Edwards Plant (Site) in 2024. The 2024 monitoring program included wells and parameters as presented in the 2010 Groundwater Monitoring Plan and updated per 2016, 2017 and 2023 approvals by the Wisconsin Department of Natural Resources (WDNR) to modify the monitoring program. Groundwater remedial action (RA) was initiated in August 2021 and consisted of sodium dithionite injection at eleven injection wells in proximity to the former saturator purge pit (SPP). A second round of sodium dithionite injections was completed in October 2022. Additional information regarding the remedial action (RA) implemented at the Site is provided in the 2024 Annual Report – Groundwater Remedial Action by Chemical Stabilization, dated April 18, 2025, prepared by GHD. Samples were collected at least once in 2024 from 27 monitoring wells and 2 grab sample locations (cell room building [CRB] collection trench and Storm Sewer Outfall 002).

Hydrogeology

The groundwater monitoring wells are screened in 1 of 3 hydrogeologic units: the (uppermost) sand aquifer, the weathered bedrock-clay (WB-C) zone, or the competent bedrock (CB) zone. Groundwater generally flows south/southeast toward wetlands and the Wisconsin River. Groundwater elevation data from 2024 are generally consistent with historical observations. Estimated horizontal groundwater flow velocities at the site in 2024 ranged from 197 to 337 feet per year (ft/yr).

The groundwater elevation measurements recorded for 10 of the 13 well nests displayed a downward gradient in 2024 (i.e., hydraulic heads in the sand aquifer are higher than in the WB-C unit) and upward gradient in 2 of the 13 well nests in June 2024. The hydraulic gradient was flat at one well nest (V-30/V-30A) in June 2024. In general, well pairs with upward gradients are located closer to the Wisconsin River which is consistent with previous sampling events. Using the 2024 vertical gradients, the estimated vertical linear velocities across the Site range from 0.0 feet per day (ft/d) to 0.086 ft/d.

Groundwater Quality

Volatile Organic Compounds (VOCs)

Methylene chloride was detected at concentrations above the NR 140 enforcement standard (ES) in samples collected from wells V-03R, V-09 (duplicate), V-31, V-31A, and V-32B in June 2024. However, methylene chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank during the June 2024 sampling event. The June 2024 detections of methylene chloride are considered suspect and are not discussed in detail in this report.

Other VOC concentrations in 2024 were generally consistent with those identified in 2023 and were below historic highs, with the exception of:

- cis-1,2-dichloroethene (cis-1,2-DCE) at V-30A (16 micrograms per liter (µg/L))

Results for each of the hydrogeologic units were as follows:

Sand Aquifer: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the sand aquifer zone, with the exception of vinyl chloride (VC) at V-31 which was reported at a concentration of 1.2 µg/L.

WB-C Zone: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the WB-C zone, with the exception of trichloroethylene (TCE), cis-1,2-DCE, and VC at V-31A, which were reported at concentrations of 8.7 µg/L, 77 µg/L, and 1.2 µg/L, respectively. The TCE and VC concentrations in V-31A have consistently exhibited a decreasing trend, while cis-1,2-DCE in V-31A has exhibited an increasing trend. Methylene chloride was detected above the NR 140 ES in monitoring wells V-27A, V-30A, V-31A, and V-32A.

Competent bedrock (CB) Zone: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the CB zone, except for cis-1,2-DCE at monitoring well V-02BR (130 µg/L); and VC at V-02BR (1.5 µg/L) and V-32B (0.60 J µg/L). The TCE, cis-1,2-DCE, and VC concentrations at V-02BR have trended downward since 2003, 2009, and 2002, respectively. The VC concentrations have trended downward since 1996 at V-32B. V-02BR is located downgradient of the CRB. Monitoring Well V-32B is located downgradient of the FSS area.

Results of monitored natural attenuation (MNA), which is the approved remedy for the VOCs at the Site (CH2M HILL, 1998), indicate natural attenuation of chlorinated VOCs (CVOCs) is likely occurring. This conclusion is supported by the continued stable or decreasing trends of parent compounds (tetrachloroethene (PCE) and TCE) with the presence of daughter products, such as cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and VC.

Dissolved Mercury:

Dissolved mercury concentrations in 2024 were generally similar to those reported in 2023 and were below historic highs, with the exception of V-19 (0.12 J µg/L). Dissolved mercury concentrations in 2024 were below the NR 140 ES (2 µg/L) in perimeter wells. The only wells with dissolved mercury concentrations above the NR 140 ES in 2024 were V-23 (3.1 µg/L to 10 µg/L), V-24 (12 µg/L to 490 µg/L) and V-25 (34 µg/L to 100 µg/L). V-24 and V-25 are located in the former SPP area. V-23 is located south and downgradient of the SPP area.

The dissolved mercury concentrations at V-23 illustrate a decreasing long-term trend and are lower as compared to V-24 and V-25 in the SPP area. Dissolved mercury concentrations at V-24 increased in October and December 2024 to levels above pre-injection concentrations. The dissolved mercury concentrations in V-24 appear to be slightly decreasing in the long term; however, recent observations suggest that dissolved mercury concentrations in V-24 do not appear to have been as impacted by the sodium dithionite injections as V-25. Dissolved mercury concentrations at V-25 decreased in March 2024 compared to June to December 2023, but increased in June, decreased in September and increased again in December 2024. The dissolved mercury concentrations at V-25 generally illustrate an overall increasing trend long term. However, the reduced concentrations of dissolved mercury observed between 2021 through 2024 following sodium dithionite injections do illustrate a more recent decreasing trend at V-25 and suggests successful groundwater treatment. As indicated in the GHD Quarterly Reported dated November 19, 2024 (GHD 2024c), ERCO anticipates proceeding with a third round of sodium dithionite injections in Spring 2025 based on the overall success of injections to date in reducing dissolved mercury concentrations.

Chloride:

Chloride conditions in 2024 were generally consistent with those observed historically and were below historic highs at each location sampled. Monitoring wells with the highest chloride concentrations in 2024 include wells downgradient of the CRB (V-02BR, V-02R, and V-13), downgradient of the SPP (V-03AR, V-04A, V-23, V-32A, and V-32B), and immediately adjacent to the SPP (V-24 and V-25). Chloride was detected at these wells at a concentration that exceeded 1,500 mg/L during at least one sampling event in 2024, except for V-02R (640 mg/L), V-13 (830 mg/L) and V-32A (1,200 mg/L). Chloride concentrations in wells V-03AR, V-23, V-24, and V-25 are all exhibiting increasing chloride concentration trends, with the highest 2024 chloride concentration being reported in V-25 (5,600 mg/L). Chloride concentrations in groundwater samples collected from V-02BR, V-13, V-32A and V-32B have been generally stable or decreasing over the long term.

pH:

The pH conditions in 2024 were consistent to values observed in 2023 and were within the range of historic values.

The pH values measured in 2024 were highest (exceeding 8.0) downgradient of the SPP (V-03AR, V-23 and V-32B) and immediately adjacent to the SPP (V-24 and V-25). The long-term pH trend is upward at V-24, V-25, and V-32B, stable to downward at V-23 and downward at V-03AR.

Recommendations:

Based on the results of groundwater monitoring conducted in 2024 and a comparison with historic data, continuation of groundwater monitoring under the current program is recommended for the near future.

It is further recommended that a biennial review of the scope of groundwater monitoring be completed per the November 2023 WDNR modification approval; including locations sampled, parameters analyzed, and frequency of sampling, and that the approval to modify the Groundwater Monitoring Plan include recommendations based on this review.

Section 1. Introduction

This report summarizes results of the 2024 groundwater monitoring performed by AECOM at the ERCO Worldwide (ERCO) Port Edwards Plant (Site). The 2024 monitoring program included wells and parameters as presented in a November 1, 2016, letter from the Wisconsin Department of Natural Resources (WDNR), a follow-up email from the WDNR dated May 16, 2017, and a WDNR letter dated November 17, 2023, approving modifications to the monitoring program. Additional information regarding the remedial actions (RA) implemented at the Site is provided in the 2024 Annual Report – Groundwater Remedial Action by Chemical Stabilization, dated April 18, 2025, prepared by GHD (GHD, 2025). A copy of the 2016 and 2023 WDNR letters and 2017 WDNR email are included in Appendix I. A copy of the 2024 annual report prepared by GHD is included in Appendix J.

Samples were collected at least once in 2024 from 27 monitoring wells and 2 grab sample locations (cell room building [CRB] collection trench and Storm Sewer Outfall 002). The groundwater monitoring wells are screened in 1 of 3 hydrogeologic units: the (uppermost) sand aquifer, the weathered bedrock-clay (WB-C) zone, or the competent bedrock (CB) zone. Monitoring well locations are shown on Figure 1. Background information regarding the groundwater monitoring program described below was obtained from previous reports and discussions with representatives of ERCO.

1.1 General Monitoring Program

The three components of the groundwater monitoring program at the Site consist of:

- Corrective Action (CA) Monitoring
- Long-Term Care Monitoring
- Perimeter Monitoring

Groundwater parameters include dissolved mercury, volatile organic compounds (VOCs), and indicator parameters. Groundwater elevations are also recorded for each well sampled during a sampling event.

Well identification numbers (IDs) without a suffix indicate a sand aquifer (upper aquifer) well. Monitoring well designations with an “A” suffix indicate wells that generally intersect the WB-C Zone. Monitoring well names with a “B” suffix are deeper than the “A” wells and are screened in the CB Zone. An “R” or “RR” suffix indicates a replacement well at a location offset from its original location, but within the same hydrogeologic unit as the original monitoring well.

Monitored Natural Attenuation (MNA) is the selected remedy for VOCs at the site (CH2M HILL, 1998). In anaerobic environments, the main degradation mechanism for chlorinated volatile organic compounds (CVOCs) is reductive dechlorination, which involves the sequential replacement of chlorine atoms on the alkene molecule by hydrogen atoms. CVOCs, such as tetrachloroethene (PCE) and trichloroethene (TCE), which have been detected in groundwater at the Site, are referred to as “parent” compounds. Once these compounds are biodegraded, the resultant compounds are known as “daughter” compounds. For TCE, the sequential dechlorination proceeds to 1,2-dichloroethene (1,2-DCE), (preferentially

cis-1,2-dichloroethene [cis-1,2-DCE]), then to vinyl chloride (VC), and finally to ethene. For 1,1,1-trichloroethane (1,1,1-TCA), the degradation products can include 1,1-dichloroethene (1,1-DCE), VC, and ethene; or 1,1-dichloroethane (1,1-DCA), chloroethane, and ethanol-with the final product in both pathways being carbon dioxide. Reductive dechlorination often results in partial dechlorination that can lead to accumulation of intermediates, such as cis-1,2-DCE and VC.

The effectiveness of natural attenuation for the Site is demonstrated by evaluating groundwater monitoring data for VOCs and for additional field parameters. Decreasing VOC concentrations over time is the primary line of evidence to demonstrate that natural attenuation is occurring at a site. Other parameters reviewed historically to support MNA evaluation included dissolved gases (ethane, ethene, methane), dissolved iron, total organic carbon (TOC), alkalinity, nitrate, sulfate, chloride, dissolved oxygen (DO), specific conductance (SC), pH, temperature, and oxidation-reduction potential (ORP). As approved by the WDNR in a November 2023 letter, natural attenuation parameters including sulfate, ethane, ethene, methane, dissolved iron, TOC, nitrate and alkalinity analysis have been removed from the annual monitoring program.

1.1.1 Corrective Action Monitoring

The monitoring wells and parameters used for CA monitoring in 2024 are presented on Table 1. CA monitoring is conducted under Wisconsin's hazardous waste CA program. The Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) and Corrective Measures Study (CH2M HILL, 1998 and 1999) for this project site identified areas of residual VOC contamination in the vadose zone soil and in the underlying aquifer beneath the CRB and former solvent storage (FSS) area (Figure 1). CA monitoring is conducted near the former CRB, FSS/ former saturator purge pit (SPP), and other site locations.

TABLE 1
Monitoring Wells and Parameters - Corrective Action Groundwater Monitoring
CELL ROOM BUILDING
TRENCH DISCHARGE AREA: ANNUAL

Sampling Point	DNR ID	VOCs	Dissolved Mercury	Chloride	DO	SC	pH	Temp.	ORP
Collection Trench	801		X	X	X	X	X	X	X
V-02R	062		X	X	X	X	X	X	X
V-02BR	064		X	X	X	X	X	X	X
V-26	046		X	X	X	X	X	X	X
Storm Sewer Outfall No. 002	802		X ^a	X	X	X	X	X	X

Saturator Purge Pit (SPP): Annual

Sampling Point	DNR ID	VOCs	Dissolved Mercury	Chloride	DO	SC	pH	Temp.	ORP
V-04A	007		X	X	X	X	X	X	X
V-04R	0026		X	X	X	X	X	X	X
V-07R	030		X	X	X	X	X	X	X
V-19	033		X	X	X	X	X	X	X
V-19A ^b	066		b	b	b	b	b	b	b

TABLE 1 (CONT.)

SPP: QUARTERLY

Sampling Point	DNR ID	VOCs	Dissolved Mercury	Chloride	DO	SC	pH	Temp.	ORP
V-23	041		X	X	X	X	X	X	X
V-24	043		X	X	X	X	X	X	X
V-25	044		X	X	X	X	X	X	X
V-32	058		X	X	X	X	X	X	X
V-32A	059		X	X	X	X	X	X	X
V-18R	065		X	X	X	X	X	X	X
V-32B	060		X	X	X	X	X	X	X
V-34 ^c			X		X	X	X	X	X
V-35 ^c			X		X	X	X	X	X

OTHER CA WELLS WITH VOC MNA MONITORING: ANNUAL

Sampling Point	DNR ID	VOCs	Dissolved Mercury	Chloride	DO	SC	pH	Temp.	ORP
V-02BR	064	X		X	X	X	X	X	X
V-02R	062	X		X	X	X	X	X	X
V-03R	035	X		X	X	X	X	X	X
V-03AR	036	X		X	X	X	X	X	X
V-04A	007	X		X	X	X	X	X	X
V-04R ^d	026	^d		^d	^d	^d	^d	^d	^d
V-05RR	069	X		X	X	X	X	X	X
V-09	015	X		X	X	X	X	X	X
V-16R ^b	061	^b		^b	^b	^b	^b	^b	^b
V-19 ^d	033	^d		^d	^d	^d	^d	^d	^d
V-19A ^b	066	^b		^b	^b	^b	^b	^b	^b
V-31	056	X		X	X	X	X	X	X
V-31A	057	X		X	X	X	X	X	X
V-32	058	X		X	X	X	X	X	X
V-32A	059	X		X	X	X	X	X	X
V-32B	060	X		X	X	X	X	X	X

^a Unfiltered grab sample analyzed for Total Mercury

^b WDNR approval to discontinue VOC and dissolved mercury laboratory analysis at V-16R and V-19A is documented in a WDNR letter dated 11/17/23. Natural attenuation parameters including sulfate, ethane, ethene, methane, dissolved iron, TOC, nitrate and alkalinity analysis were eliminated from the monitoring program (see Appendix I).

^c Monitoring wells V-34 and V-35 were constructed in June 2021 to evaluate the dissolved mercury plume between wells V-23 and V-32 to track the progress of groundwater treatment. Wells V-34 and V-35 are sampled quarterly as part of the monitoring program.

^d WDNR approval to discontinue VOC and natural attenuation laboratory analysis at V-04R and V-19 is documented in a WDNR email dated 5/16/17 (see Appendix I)

Note: Select wells are also sampled quarterly for total mercury, sodium, potassium, and sulfide to assist in evaluating the progress of groundwater treatment. Results are documented in Quarterly Reports for Groundwater Remedial Action by Chemical Stabilization.

1.1.2 Long-Term Care Groundwater Monitoring

Table 2 lists the monitoring wells and parameters used for Long-Term Care Monitoring in 2024. In accordance with NR 664, long-term care monitoring requirements, ERCO conducts groundwater

monitoring upgradient and downgradient of the SPP, the former clarifier purge pit, and the former muds bin (collectively referred to as the “SPP area”) for dissolved mercury and conventional parameters.

TABLE 2
Monitoring Wells and Analytical Parameter List for
Long-Term Care Groundwater Monitoring

Sampling Point	DNR ID	Dissolved Mercury	Chloride	DO	SC	pH	Temp	ORP
<u>Annual</u>								
V-03R	035	X	X	X	X	X	X	X
V-03AR	036	X	X	X	X	X	X	X
V-05RR	069	X	X	X	X	X	X	X
<u>Quarterly</u>								
V-03R	035	a	a	a	a	a	a	a
V-03AR	036	a	a	a	a	a	a	a
V-05RR	069	a	a	a	a	a	a	a
V-23	041	X	X	X	X	X	X	X
V-24	043	X	X	X	X	X	X	X
V-25	044	X	X	X	X	X	X	X

^a WDNR approval to removed V-03R, V-03AR and V-05RR from the Q1, Q3, and Q4 sampling events is documented in a WDNR letter dated 11/17/23. Natural attenuation parameters including sulfate analysis were eliminated from the monitoring program (see Appendix I).

1.1.3 Perimeter Groundwater Monitoring

Table 3 lists the monitoring wells and parameters used for annual NR 140 monitoring in 2024. The perimeter groundwater monitoring program is used to assess mercury concentrations downgradient of the ERCO facility and VOC concentrations at some locations.

TABLE 3
Monitoring Wells and Analytical Parameter List for
Annual Perimeter Groundwater Monitoring

Sampling Point	DNR ID	VOCs	Dissolved Mercury	Chloride	DO	SC	pH	Temp.	ORP
V-09	015		X	X	X	X	X	X	X
V-16R ^{a,b}	061		b	b	b	b	b	b	b
V-13	020	X	X	X	X	X	X	X	X
V-27	047	X		X	X	X	X	X	X
V-27A	049	X		X	X	X	X	X	X
V-30	054	X		X	X	X	X	X	X
V-30A	055	X		X	X	X	X	X	X

^a groundwater elevation required annually.

^b WDNR approval to discontinue VOC and dissolved mercury laboratory analysis at V-16R and V-19A is documented in a WDNR letter dated 11/17/23. (see Appendix I).

1.2 Hydrogeologic Units

Groundwater monitoring at the Site occurs in three hydrogeologic units: an upper or “shallow” aquifer composed of fine sand; an intermediate depth unit composed of highly fractured, low conductivity, weathered bedrock or clay; and a deeper competent bedrock unit. The shallow sand unit is unconfined. Well records indicate that the intermediate unit is not continuous across the entire site. A map of the top of the clay/weathered bedrock unit is provided as Figure 2. The contours shown on Figure 2 indicate that the top of this surface generally slopes toward the Wisconsin River to the south-southeast.

1.3 Monitoring Well Network

A total of 27 monitoring wells and 2 grab sample points (CRB collection trench and Storm Sewer Outfall No. 002) were sampled at least once during 2024 as part of the required groundwater monitoring program. The depth to groundwater was measured at 35 different wells at least once during 2024. Table 4 lists the depth intervals, well screen elevations, and groundwater elevations. A total of 23 monitoring wells are screened in the shallow sand unit, 9 monitoring wells are screened the WB-C Zone, and 3 monitoring wells are screened in the CB Zone.

TABLE 4
Groundwater Elevations

Sampling Point	Well Screened in Sand, Weathered Bedrock, or Bedrock	Top of Casing Elevation (ft)	Top of Screen (ft)	Bottom of Screen (ft)	Mar-24	Jun-24	Sep-24	Dec-24
V-01	Sand	956.75	949.75	944.75		951.21		
V-02R	Sand	963.30	955.10	950.10	956.05	957.56	956.98	956.40
V-03R	Sand	963.71	956.71	951.71		957.43		
V-04R	Sand	962.41	955.91	950.91		956.05		
V-05RR	Sand	964.18	958.43	953.43		958.91		
V-07R	Sand	964.06	958.16	953.16		957.81		
V-09	Sand	962.04	951.34	946.34		955.88		
V-13	Sand	962.28	952.28	947.28		957.45		
V-16R	Sand	964.52	952.32	947.32		956.68		
V-18R	Sand	963.86	956.66	951.66		957.88		
V-19	Sand	963.63	956.73	951.73		956.58		
V-23	Sand	964.40	958.20	948.20	956.02	958.07	957.38	956.75
V-24	Sand	964.50	957.00	952.00	956.67	958.62	958.11	957.24
V-25	Sand	965.13	956.53	951.53	956.48	958.45	957.83	957.20
V-26	Sand	963.02	955.32	950.32		957.74		
V-27	Sand	955.68	949.96	946.96		950.08		
V-29	Sand	970.53	960.83	950.83		957.86		
V-30	Sand	963.52	952.32	942.32		953.52		

TABLE 4
Groundwater Elevations

Sampling Point	Well Screened in Sand, Weathered Bedrock, or Bedrock	Top of Casing Elevation (ft)	Top of Screen (ft)	Bottom of Screen (ft)	Mar-24	Jun-24	Sep-24	Dec-24
V-31	Sand	956.78	948.38	943.38		954.21		
V-32	Sand	952.73	946.53	941.53		949.86		
V-33	Sand	969.23	962.90	952.90		961.91		
V-34	Sand	963.01	957.99	947.99		957.46		
V-35	Sand	962.29	957.40	947.40		957.28		
V-03AR	Weathered Bedrock/Clay	963.57	943.17	938.17		955.50		
V-04A	Weathered Bedrock/Clay	962.60	947.14	942.14		954.30		
V-19A	Weathered Bedrock/Clay	963.26	940.26	935.26		954.30		
V-23A	Weathered Bedrock/Clay	964.72	935.72	932.72		957.56		
V-27A	Weathered Bedrock/Clay	956.86	939.66	934.66		948.86		
V-30A	Weathered Bedrock/Clay	963.48	938.48	933.48		953.52		
V-31A	Weathered Bedrock/Clay	956.72	939.52	934.52		954.15		
V-32A	Weathered Bedrock/Clay	952.36	928.36	923.36		950.46		
V-33A	Weathered Bedrock/Clay	969.51	952.23	945.23		961.85		
V-02BR	Bedrock	963.44	935.14	930.14		955.51		
V-29B	Bedrock	970.57	942.07	937.07		954.71		
V-32B	Bedrock	952.20	901.80	896.80	949.38	950.17	949.84	949.77

BOLD = Water table intersects the well screen.

1.4 Deviations from Groundwater Monitoring Plan

Groundwater sampling and analysis in 2024 was completed in accordance with the WDNR letter dated November 1, 2016 – “Approval of Modifications to the RCRA Ground Water Monitoring Program at ERCO Worldwide,” a follow-up email from the WDNR dated May 16, 2017, and the WDNR letter dated November 17, 2023, with the following exceptions:

- Dissolved mercury samples were preserved in the field using hydrochloric or nitric acid as specified by the analytical laboratory used in 2024 (Eurofins Environmental Testing [Eurofins]). Prior to 2016, dissolved mercury samples were not preserved in the field as specified by the former laboratory (TestAmerica). The groundwater monitoring plan indicates no preservation is

required for low-level mercury analysis. A comparison of 2024 mercury results to historical results did not show 2024 concentrations outside of expected ranges.

- Table 2-2 of the Groundwater Monitoring Plan specifies laboratory method United States Environmental Protection Agency (USEPA) Method 1631E for analysis of total of dissolved low-level mercury. Based on a voicemail message from WDNR project manager Candace Sykora on October 28, 2019, approval was given by the WDNR to complete mercury analysis using USEPA Method 245.1 first and any samples with non-detections are to be re-analyzed by USEPA Method 1631E.
- In accordance with the June 2020 Remedial Action Design Report (RADR) approved by the WDNR, monitoring wells V-34 and V-35 were constructed in June 2021 to evaluate the dissolved mercury plume between wells V-23 and V-32. Wells V-34 and V-35 have been incorporated into the groundwater monitoring program at the ERCO Site and were sampled quarterly initially, and annually in 2024. As indicated by the footnote in Table 1 select wells, including V-34 and V-35, are sampled either quarterly or annually for total mercury, sodium, potassium, and sulfide to assist in evaluating the progress of groundwater treatment.
- In November 2023, WDNR authorized the removal of monitoring wells V-03R, V-03AR and V-05RR from the Q1, Q3, and Q4 sampling events. Additionally, natural attenuation parameters including sulfate, ethane, ethene, methane, dissolved iron, TOC, nitrate and alkalinity analysis was eliminated from the monitoring program. Monitoring wells V-16R and V-19A were removed from the annual monitoring program for VOCs and mercury.

Section 2. Hydrogeology

Groundwater elevations measured in March, June, September, and December 2024 from the wells screened in the sand aquifer are shown on Figures 3, 4, 5, and 6, respectively. The groundwater elevations that are above the top of well screen elevation are noted on the figures. The June 2024 groundwater elevations measured from the three wells screened in the CB are shown on Figure 7. Groundwater flow is generally south/southeast in the sand aquifer consistent with historical results. The southerly flow is toward wetlands and the Wisconsin River, which is a regional discharge zone.

Vertical and horizontal groundwater gradients were calculated from groundwater elevation data collected during the June 2024 sampling event. Horizontal and vertical linear groundwater flow velocities were estimated based on calculated gradients. The 2024 flow calculations are included in Appendix A.

2.1 Vertical Gradients

Vertical hydraulic gradients were calculated for 13 well nests in 2024, as documented in Appendix A. Groundwater elevations at the well nests and the distance between the well screens were used to complete the calculations. The groundwater elevation measurements recorded in June 2024 displayed a downward gradient (i.e., hydraulic heads in the sand aquifer are higher than in the WB-C unit) in 10 well nests and an upward gradient in 2 well nests. The hydraulic gradient was flat at one well nest (V-30/V-30A) in June 2024. The hydraulic gradients observed in 2024 are consistent with the hydraulic gradients observed during 2023. Well pairs with upward gradients are located closer to the Wisconsin River, which is consistent with previous sampling events. Using the 2024 vertical hydraulic gradients, the estimated vertical linear velocities across the Site range from 0.0 feet per day (ft/d) to 0.086 ft/d. Assumptions from previous reports were used for the estimated vertical velocity calculations.

2.2 Horizontal Gradients and Velocities

Horizontal hydraulic gradients in the sand aquifer ranged from 0.014 feet per foot (ft/ft) across the CRB area to 0.023 ft/ft across the former SPP area in June 2024. Estimated horizontal linear velocities across the Site using these gradients range from 197 feet per year (ft/yr) to 337 ft/yr using the 2024 data, which is consistent with previous calculations. Assumptions from previous reports were used for the estimated horizontal velocity calculations.

Section 3. Groundwater Quality

Analytical results for 2024 are presented in this section and are included in Appendices B and H. Wisconsin NR 140 Enforcement Standard (ES) and Preventive Action Limit (PAL) exceedances for 2024 are provided in Appendix C1 and C2, respectively. Graphical trends for VOCs, dissolved mercury, chloride, and pH are provided in Appendices D through G. Detected and non-detected VOC concentrations are plotted on the trend graphs in Appendix D, with the non-detected values plotted at one-half the laboratory detection limit. This data is provided based on a request from the WDNR described in previous reports.

3.1 Volatile Organic Compounds

Groundwater samples submitted for VOC analyses were collected between June 10 and June 14, 2024. The concentrations and distribution of VOCs in the sand aquifer and in the weathered bedrock-clay/competent bedrock (WB-C/CB) zones (Figures 8 and 9) are predominantly limited to TCE and its degradation products: cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), and VC. The concentrations of the parent compound (TCE) have decreased over time, based on previous monitoring data, suggesting that natural degradation is occurring. This decrease can be seen in the graphs included in Appendix D for locations with historical elevated levels of TCE, including V-02BR, V-05RR, V-06R, V-16R, V-20A, V-29, V-29B, V-31A, and V-32B.

VOCs were detected at levels above NR 140 ESs in the following groundwater samples collected in 2024:

- V-02BR (130 µg/L cis-1,2-DCE, and 1.5 µg/L VC)
- V-31 (1.2 µg/L VC)
- V-31A (8.7 µg/L TCE, 77 µg/L cis-1,2-DCE, and 1.2 µg/L VC)
- V-32B (0.60 µg/L VC)

It should be noted that the VOC methylene chloride was also detected at concentrations above the NR 140 ES in samples collected from V-03R, V-09 (duplicate), V-31, V-31A, and V-32B at concentrations of 5.1 µg/L, 5.2 µg/L, 5.3 µg/L, 5.1 µg/L, and 5.3 µg/L respectively. Methylene chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank during the June 2024 sampling event. The detected concentrations are considered suspect, and methylene chloride is not considered a contaminant of concern for the facility.

VOCs were detected at levels below NR 140 ESs, but above NR 140 PALs in groundwater samples collected in 2024 at the following locations:

- V-02BR (4.5 µg/L TCE)
- V-30A (16 µg/L cis-1,2-DCE)

- V-32B (2.3 µg/L TCE)

NR 140 PAL and ES exceedances are summarized in Appendix C1 and C2, respectively.

The following VOC exceeded a historical high in the following groundwater sample collected in 2024:

- Cis-1,2-DCE was detected in 2024 at V-30A (16 µg/L) as reported above at a concentration exceeding the historically reported high of 14 µg/L.

VOC detections in 2024 are indicated on Figures 8 and 9. VOC data collected during the reporting period are presented in Appendix B. Historical VOC data is presented in Appendix H. Appendix D presents VOC concentration graphs of PCE, TCE, cis-1,2-DCE and VC. Based on a review of graphs presented in Appendix D for the wells sampled in 2024 the following conclusions can be drawn:

- Detectable concentrations of TCE in groundwater samples collected at the Site are generally stable or decreasing suggesting natural attenuation is occurring.
- Detected concentrations of cis-2,1-DCE are generally stable to decreasing across the Site. In monitoring wells V-02BR, V-30A, and V-31A an increasing trend is observed. This increase in cis-1,2-DCE coincides with a decrease in TCE concentrations. This interaction suggests that TCE is attenuating into the daughter product cis-1,2-DCE in these areas.
- Detected concentrations of VC appear stable across the Site.
- Demonstrated decrease of VOC concentrations is the primary line of evidence to support the occurrence of natural attenuation.

3.1.1 Cell Room Building Area

One upgradient monitoring well (V-05RR) and 5 downgradient monitoring wells (V-02R, V-02BR, V-13, V-27, and V-27A) associated with the CRB were sampled for VOCs in 2024 (Figures 8 and 9). VOC concentrations detected above the method detection limit (MDL) were observed in two monitoring wells only (V-02BR and V-27A) during the reporting period. A discussion of VOC results for monitoring wells V-02BR and V-27A is provided below.

V-02BR

Cis-1,2-DCE, trans-1,2- DCE, TCE, and VC were detected in monitoring well V-02BR during the reporting period (Table 5). Concentrations of cis-1,2-DCE and VC observed in 2024 exceeded NR 140 ESs. The concentration of TCE observed exceeded its respective NR 140 PAL. TCE and VC concentrations have trended downward since 2003. The cis-1,2-DCE concentrations have generally trended upward since 1997. An increase in daughter product cis-DCE is expected as the attenuation of parent products, including TCE and PCE, occurs. Conditions appear favorable for reductive dechlorination at V-02BR based on the increasing presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 millivolts (mV).

TABLE 5
V-02BR VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
Acetone	<10	2.5 J	2.5 J (2023)

Parameter	June 2024	June 2023	Historical Maximum (Date)
Benzene	<0.5	<0.5	0.119 J (2022)
TCE	4.5	7.5	450 (2003)
cis-1,2-DCE	130	130	211 (2009)
trans-1,2-DCE	3.9	4.1	87 (2002)
VC	1.5	2.0	7.2 (2002)

V-27A

Cis-1,2-DCE was detected above the laboratory MDL in monitoring well V-27A in 2024 (Table 6). The detected cis-1,2-DCE concentration was below the NR 140 PAL. The observed concentrations are consistent with historic observations. cis-1,2-DCE trends are increasing since 2015. This increase coincides with the decrease of parent products TCE and PCE suggesting natural attenuation is occurring in this area. Conditions appear favorable for reductive dechlorination at V-27A based on the presence of increasing daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 mV).

TABLE 6
V-27A VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
cis-1,2-DCE	1.3	1.3	1.3 (2023)

3.1.2 Former Solvent Storage Area

VOC monitoring locations for the FSS area are discussed under 1 of 3 categories: downgradient, sidegradient-south, or sidegradient/upgradient.

FSS Area - Downgradient

Wells V-03AR, V-03R, V-32, V-32A, and V-32B are downgradient of the FSS area (Figures 8 and 9). VOC concentrations detected above the MDL were observed in four of the five monitoring wells (V-03R, V-32, V-32A and V-32B) sampled during the reporting period. Methylene chloride was the only VOC detected at V-03R. As noted above, methylene chloride is likely a laboratory introduced contaminant and the detection at V-03R is considered suspect and not discussed further below. A discussion of VOC results for monitoring wells V-32, V-32A, and V-32B is provided below.

V-32

trans-1,2-DCE was detected above the laboratory MDL in monitoring well V-32 in 2024 (Table 7). The detected trans-1,2-DCE concentration was below the NR 140 PAL. No other VOCs were observed above the laboratory MDL. The observed concentrations are consistent with historic observations. VOC trends are decreasing in monitoring well V-32 since 1997. Conditions appear favorable for reductive dechlorination at V-32 based on the presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 mV).

TABLE 7
V-32 VOC Concentrations (µg/L)

Parameter	June 2023	June 2023	Historical Maximum (Date)
Acetone	<10	1.9 J	1.9 J (2023)
trans-1,2-DCE	1.2	0.82 J	2.9 (2010)

V-32A

Cis-1,2-DCE was detected above the laboratory MDL in monitoring well V-32A in 2024 (Table 8). The detected cis-1,2-DCE concentration was reported as estimated at 0.64 J µg/L, which is below the NR 140 PAL of 7 µg/L. The observed concentration is consistent with historic observations. The cis-1,2-DCE trends are decreasing in monitoring well V-32A since 1997. Conditions appear favorable for reductive dechlorination at V-32A based on the presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 mV).

TABLE 8
V-32A VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
cis-1,2-DCE	0.64 J	0.92 J	22 (1996)
Naphthalene	<1.0	<1.0	0.557 J (2022)

V-32B

Cis-1,2-DCE, trans-1,2-DCE, methylene chloride, naphthalene, TCE and VC were detected at concentrations above the laboratory MDL in monitoring well V-32B during the reporting period (Table 9). As noted above, methylene chloride is likely a laboratory introduced contaminant and the detection at V-32B is considered suspect and not discussed further below. Concentrations of cis-1,2-DCE and trans-1,2-DCE, and naphthalene observed did not exceed any applicable NR 140 criteria. TCE was detected at a concentration of 2.3 µg/L, a value exceeding the NR 140 PAL of 0.5 µg/L but below the NR 140 ES of 5.0 µg/L. VC was detected at an estimated concentration of 0.60 J µg/L, a value exceeding the NR 140 ES of 0.2 µg/L. Conditions generally do not appear to be favorable for reductive dechlorination at V-32B in 2024 based on the following: DO (>0.5 mg/L in 3 of 4 quarters), ORP (>50 mV in 2 of 4 quarters) and pH (>10 in 4 of 4 quarters). Despite presently unfavorable conditions the VOC concentrations have exhibited a decreasing trend in monitoring well V-32B since 2011.

TABLE 9
V-32B VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
cis-1,2-DCE	3.6	2.6	230 (1996)
trans-1,2-DCE	1.7	1.1	27 (1996)
TCE	2.3	1.9	210 (1999)
VC	0.60 J	0.38 J	51 (1996)
Naphthalene	1.4	< 1.0	3.1 (2006)

FSS Area-Sidegradient South

Wells V-04R, V-04A, V-09, V-19, V-19A, V-30, V-30A, V-31, and V-31A are centrally located side/downgradient and south southwest of the FSS area (Figures 8 and 9). WDNR approval to discontinue VOC analysis at V-04R, V-19 and V-19A is documented in WDNR correspondence dated May 16, 2017, and November 17, 2023 (Appendix I). VOC concentrations detected above the MDL were observed in five of the six monitoring wells (V-04A, V-30, V-30A, V-31, and V-31A) sampled during the reporting period. Methylene chloride was detected in samples collected from V-31, V-31A and the duplicate sample from V-09. As noted above, methylene chloride is likely a laboratory introduced contaminant and the detections at V-31, V-31A and V-09 are considered suspect and not discussed further below. A discussion of other VOC results for monitoring wells V-04A, V-30, V-30A, V-31, and V-31A is provided below.

V-04A

Trans-1,2-DCE was detected above the laboratory MDL in monitoring well V-04A in 2024 (Table 10). The detected trans-1,2-DCE concentration of 1.6 µg/L is below the NR 140 PAL. No other VOCs were observed above the laboratory MDL. The observed concentrations are consistent with historic observations. VOC trends appear decreasing/stable in monitoring well V-04A since 2012. Conditions appear unfavorable for reductive dechlorination at V-04A despite the presence of daughter products. Groundwater quality parameters of the following were observed in 2024: DO (>0.5 mg/L) and ORP (>50 mV).

TABLE 10
V-04A VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
Trans-1,2-DCE	1.6	2.0	2.03 (2019)

V-30

Cis-1,2-DCE was detected above the laboratory MDL in monitoring well V-30 in 2024 (Table 11). The detected cis-1,2-DCE concentration of 1.7 µg/L is below the NR 140 PAL of 7 µg/L. The observed concentration is consistent with historic observations. cis-1,2-DCE trends are decreasing in monitoring well V-30 since 2003. Conditions appear favorable for reductive dechlorination at V-30 based on the presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 mV).

TABLE 11
V-30 VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
1,2-DCA	<1.0	<1.0	0.0990 J (2021)
Cis-1,2-DCE	1.7	0.52 J	13 (2003)

V-30A

Cis-1,2-DCE and trans-1,2-DCE were detected above the laboratory MDL in monitoring well V-30A in 2024 (Table 12). The detected cis-1,2-DCE concentration of 16 µg/L is above the NR 140 PAL of 7 µg/L but below the NR 140 ES of 70 µg/L. The observed concentration is consistent with historic observations. Measured conditions appear unfavorable for reductive dechlorination at V-30A based on the groundwater quality parameters of the following in 2024: DO (>0.5 mg/L), ORP (>50 mV), and pH (between 5 and 9). cis-1,2-DCE trends are increasing in monitoring well V-30A since 2007. This increase coincides with a decrease of parent products PCE and TCE suggesting that natural attenuation is occurring despite unfavorable conditions.

TABLE 12
V-30A VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
cis-1,2-DCE	16	14	14 (2002, 2013, and 2023)
trans-1,2-DCE	1.5	1.4	1.9 (2012 and 2013)

V-31

Cis-1,2-DCE, methylene chloride and VC were detected above laboratory MDLs in monitoring well V-31 during the reporting period (Table 13). As noted above, methylene chloride is likely a laboratory introduced contaminant and the detection at V-31 is considered suspect and not discussed further below. The detected VC concentration of 1.2 µg/L is above the NR 140 ES. The detected cis-1,2- concentration of 1.7 µg/L is below applicable NR 140 criteria. VOC daughter product trends in V-31 are increasing since 2022 suggesting attenuation is occurring. Conditions appear neutral for reductive dechlorination at V-31 based on the presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (>50 mV).

TABLE 13
V-31 VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
cis-1,2-DCE	1.7	1.3	10 (2003)
Vinyl Chloride	1.2	<1	6.9 (2008)

V-31A

Cis-1,2-DCE, trans-1,2-DCE, methylene chloride, TCE and VC were detected at concentrations above the laboratory MDL in monitoring well V-31A during the reporting period (Table 14). As noted above, methylene chloride is likely a laboratory introduced contaminant and the detection at V-31A is considered suspect and not discussed further below. The cis-1,2-DCE, TCE, and VC concentrations of 77 µg/L, 8.7 µg/L, and 1.2 µg/L, respectively exceed the applicable NR 140 ESs of 70 µg/L, 5 µg/L, and 0.2 µg/L, respectively. VOC trends in V-31A indicate an increase in cis-1,2-DCE and a coinciding decrease in parent products such as TCE, and PCE. This relationship suggests that natural attenuation is occurring in this area. Conditions are favorable for reductive dechlorination at V-31A based on the presence of daughter products and groundwater quality parameters of the following in 2024: DO (<0.5 mg/L) and ORP (<50 mV).

TABLE 14
V-31A VOC Concentrations (µg/L)

Parameter	June 2024	June 2023	Historical Maximum (Date)
TCE	8.7	14	74 (2001)
cis-1,2-DCE	77	87	87.1 (2021)
trans-1,2-DCE	8.9	10	11.1 (2018)
VC	1.2	1.3	10 (1999)

FSS Area-Sidegradient/Upgradient

Well V-16R is southwest and possibly intermittently downgradient of the FSS area, depending upon groundwater flow direction. See Figure 8 for well location. WDNR approval to discontinue VOC laboratory analysis at V-16R is documented in a WDNR letter dated November 17, 2023 (Appendix I).

VOC Summary

In 2024, VOC detections were generally consistent with 2023 results. TCE exceeded the NR 140 ES of 5.0 µg/L in well V-31A only. VC concentrations exceeded the NR 140 ES in wells V-02BR, V-31, V-31A, and V-32B. Cis-1,2-DCE concentrations exceeded the NR 140 ES of 70 µg/L in wells V-02BR and V-31A. VOC concentrations also exceeded the NR 140 PAL for TCE in wells V-02BR and V-32B, and cis-1,2-DCE in well V-30A. The cis-1,2-DCE concentration of 16 µg/L at V-30A is also reported as a new historic high for that location.

No other VOCs were observed during the reporting period. These observations are generally consistent with historic contaminant conditions in the CRB and FSS downgradient/sidegradient south areas. The concentrations and distribution of VOCs in the sand aquifer and in the WB-C/CB zones of the CRB and FSS downgradient/sidegradient south areas are predominantly limited to TCE and its degradation products. VOC trends in monitoring wells in the CRB and FSS downgradient/sidegradient south areas suggest that conditions favorable to reductive dechlorination are present. VOC concentrations are generally decreasing in all wells in the with exception of monitoring wells V-27A, V-30A and V-31A. Monitoring wells V-27A, V-30A and V-31A exhibit increasing concentrations of cis-1,2-DCE. However, an increase in daughter product cis-1,2-DCE is expected as the attenuation of parent compounds, including TCE and PCE, occurs.

3.2 Mercury

Historic operating and analytical data indicate two mercury source areas in groundwater: the CRB and the former SPP. The sources at both areas have been remediated to the extent practical (CH2M HILL, 1999). Two groundwater collection systems were installed to capture the groundwater and to minimize further aquifer degradation. A collection trench is situated downgradient of the CRB. Use of an extraction well (EW 1) at the SPP was discontinued in 2000 because of severe insoluble mineral encrustation as described in the Revised 2006 Annual Report (CH2M HILL, 2008). Extraction Well EW 1 was abandoned in December 2012.

Routine groundwater monitoring indicated persistent detections of dissolved mercury in groundwater near the SPP area with concentrations ranging in magnitude from 10s to 1,000s of µg/L. Evidence of increasing mercury concentrations in several wells over time prompted the development of Remedial Action Objectives (RAOs) in 2019, based on the need to prevent mercury in groundwater beneath the Site from reaching the Wisconsin River. Specifically, the objectives are to:

1. “(R)emove or immobilize residual mercury in the SPP area”, as stated in DNR’s January 24, 2019, letter to ERCO.
2. Reduce mercury concentrations on Site to levels such that groundwater reaching the river would have a groundwater concentration less than 2 µg/L.
3. Prevent future migration of mercury-impacted groundwater from the Site to the river or from the Site to deeper bedrock groundwater.

ERCO implemented a remediation program that included injections of sodium dithionite near V-23, V-24 and V-25 in August 2021 and October 2022, with continued monitoring of conditions in the downgradient groundwater.

Groundwater samples were collected quarterly from the monitoring wells associated with the SPP area, Clarifier Purge Pit, and the former Muds Bin in 2024 (March 18th, June 10th to 14th, September 3rd, and December 9th).

The dissolved mercury concentrations detected at V-23, V-24, and V-25 in 2024 exceeded the NR 140 ES of 2.0 µg/L in one or more of the quarterly monitoring samples. The dissolved mercury concentrations detected at V-02R, V-07R, V-18R and V-32B were reported as exceeding the NR 140 PAL of 0.2 µg/L during at least one quarterly sampling event in 2024. The dissolved mercury detections in 2024 were below historical highs at each sample location with the exception of V-19, which was reported at a new historical high of 0.12 J µg/L (estimated concentration) during the June 2024 sampling event.

Dissolved mercury concentrations detected in 2024 are provided in Appendix B and Appendix H. A discussion of dissolved mercury detections and trends is provided below. Concentration maps for mercury detected in June 2024 for the sand aquifer and for the WB-C/CB units are provided as Figures 10 and 11 respectively. The June 2024 quarterly sampling data is used to generate figures as the greatest number of wells were sampled, thus providing the largest data set available. Dissolved mercury concentration graphs are included in Appendix E. Non-detectable dissolved mercury levels are plotted as having a concentration of zero on the graphs. Note that some individual graphs have a lengthy period between data points when dissolved mercury analysis was not performed.

Based on a review of the graphs presented in Appendix E, trends of detectable concentrations of dissolved mercury in groundwater samples collected at the Site in 2024 are generally stable or decreasing except for the following:

V-19

Based on a spike in the dissolved mercury concentration detected at V-19 in June 2024 the dissolved mercury concentrations currently illustrate a slightly increasing trend. However, prior to 2024 the dissolved mercury concentrations at V-19 exhibited a stable to decreasing trend and dissolved mercury concentrations have been consistently below the NR 140 PAL in historic samples.

V-25

The dissolved mercury concentrations at V-25 generally illustrate an overall increasing trend long term. However, since 2021, dissolved mercury concentrations have exhibited a decreasing trend in the short term, suggesting successful groundwater treatment resulting from the sodium dithionite injections conducted in 2021 and 2022.

V-32B

Dissolved mercury in V-32B has consistently fluctuated at concentrations above the NR140 PAL and below the NR140 ES since it was first sampled in March 2009. Although dissolved mercury fluctuates between increasing and decreasing trends in the short-term, over the long-term, dissolved mercury in V-32B appears to be gradually increasing, with the highest reported concentration of dissolved mercury being 1.87 µg/L (March 2016). This trend is what triggered the initiation of the groundwater remedial action in the SPP area.

V-35

Although dissolved mercury concentrations have fluctuated above and below the NR 140 PAL and historical data is limited, dissolved mercury concentrations in V-35 currently appear to be exhibiting an increasing trend. The dissolved mercury concentration in V-35 was reported at a historical high concentration of 0.284 µg/L in March 2023, exceeding the NR 140 PAL. Additional data is needed to determine a long-term trend at V-35.

3.2.1 Saturator Purge Pit Area

Monitoring wells V-03AR, V-03R, V-04A, V-04R, V-07R, V-09, V-18R, V-19, V-23, V-24, V-25, V-32, V-32A, V-32B, V-34 and V-35 were analyzed for dissolved mercury, related to contamination in the SPP, during the reporting period. WDNR approval to discontinue dissolved mercury laboratory analysis at V-16R and V-19A is documented in a WDNR letter dated November 17, 2023 (Appendix I). WDNR approval to discontinue dissolved mercury laboratory analysis at V-30 and V-30A is documented in a WDNR letter dated November 1, 2016 (Appendix I).

Results and trends for each well are presented in the order of increasing distance from the SPP area.

V-24

Groundwater samples were collected for dissolved mercury analysis at V-24 in March, June, September, and December 2024. It is noted that V-24 was initially sampled on September 3, 2024, however; due to the anomalous mercury concentrations reported (dissolved mercury concentration greater than the total mercury concentration) V-24 was re-sampled on October 2, 2024. Mercury results from the October 2024 sampling are evaluated in this report. Dissolved mercury was detected at concentrations ranging from 12 µg/L in June 2024 to 490 µg/L in December 2024. The observed values exceed the NR 140 ES of 2 µg/L.

The well was first sampled for dissolved mercury in September 1993. Spikes in dissolved mercury concentrations were measured in 2002 through 2009, and again in June 2012 and December 2013. The maximum dissolved mercury concentration detected in monitoring well V-24 was 2,300 µg/L from samples collected in September 2003 and December 2013. Although dissolved mercury concentrations at V-24 appear to have increased slightly since 2018, the long-term dissolved mercury trend is decreasing.

V-25

Groundwater samples were collected for dissolved mercury analysis at V-25 in March, June, September, and December 2024. Dissolved mercury was detected at concentrations ranging from 34.0 µg/L in March 2024 to 100 µg/L in December 2024, which exceeded the NR 140 ES of 2 µg/L.

The well was first sampled for dissolved mercury in September 1993. Since monitoring began dissolved mercury concentrations in monitoring well V-25 have consistently exceeded the NR 140 ES. Significant spikes in dissolved mercury concentrations were observed in V-25 in 2013 and again in 2020, with a historic high concentration of 4,600 µg/L reported in March 2013 (Appendix E). The dissolved mercury concentrations at V-25 generally illustrate an overall increasing trend long term. However, since 2021, dissolved mercury concentrations have exhibited a decreasing trend in the short term, suggesting successful groundwater treatment resulting from the sodium dithionite injections conducted in 2021 and 2022.

V-23

Groundwater samples were collected for dissolved mercury analysis at V-23 in March, June, September, and December 2024. Dissolved mercury was detected at concentrations ranging from 3.1 µg/L in September 2024 to 10 µg/L in March 2024, which exceeded the NR 140 ES of 2 µg/L.

The well was first sampled for dissolved mercury in June 1992. Dissolved mercury concentrations were elevated between 2003 and 2008; however, concentrations generally decreased from historic

highs in subsequent samples. The maximum dissolved mercury concentration detected at the well was 467 µg/L from a sample collected in June 2006. Dissolved mercury concentrations in V-23 have been variable since 2009 and have generally been greater than the NR 140 ES. However, dissolved mercury concentrations at V-23 illustrate a decreasing long-term trend.

V-18R

A groundwater sample was collected for dissolved mercury analysis at V-18R in June 2024. Dissolved mercury was detected at a concentration of 0.23 µg/L (0.28 µg/L duplicate), slightly above the NR 140 PAL.

The well was first sampled for dissolved mercury in June 2009. The dissolved mercury concentrations at V-18R have been variable over time, and generally less than the NR 140 ES since 2009, prior to spikes in September 2015 and June 2019, followed by relatively stable concentrations between the September 2019 and June 2024 sampling events, at concentrations below the NR 140 ES. The maximum dissolved mercury concentration detected at the well was 39 µg/L from a sample collected in June 2019.

V-07R

A groundwater sample was collected for dissolved mercury analysis at V-07R in June 2024. Dissolved mercury was detected at a concentration of 0.37 µg/L, above the NR 140 PAL.

Dissolved mercury was first sampled at this location in November 1984. The maximum dissolved mercury concentration detected at the well location was 134 µg/L from a sample collected in September 1996 at V-07. Dissolved mercury concentrations at V-07R have been variable over time, fluctuating above and below the NR 140 PAL, but have generally been less than the NR 140 ES since 2007.

V-03R

A groundwater sample was collected for dissolved mercury analysis at V-03R in June 2024. Dissolved mercury was detected at a concentration of 0.015 µg/L, a value below the NR 140 PAL.

The well was first sampled for dissolved mercury in March 1984. The maximum dissolved mercury concentration detected at the well was 8.37 µg/L in September 2020. Dissolved mercury concentrations have been stable at concentrations below the NR 140 PAL since 2011 except for the September 2015 event, which exceeded the NR 140 PAL and the September 2020 spike, which exceeded the NR 140 ES.

V-03AR

A groundwater sample was collected for dissolved mercury analysis at V-03AR in June 2024. Dissolved mercury was detected at 0.0073 µg/L, which is well below the NR 140 PAL.

V-03AR was first sampled for dissolved mercury in March 1984. Dissolved mercury concentrations have been below the NR 140 PAL since June 2001. The maximum dissolved mercury concentration detected at the well was 11 µg/L in October 1985. The dissolved mercury concentrations at V-03AR have remained below the NR 140 ES since 1986.

V-34

A groundwater sample was collected for dissolved mercury analysis at V-34 in June 2024. Dissolved mercury was detected at 0.17 J µg/L at V-34, a value slightly below the NR 140 PAL.

Well V-34 was constructed in 2021 and first sampled in September 2021. Dissolved mercury in V-34 has fluctuated at concentrations above and below the NR140 PAL except for June 2022 when dissolved mercury was detected in the duplicate sample from V-34 at a concentration of 2.91 µg/L, above the NR140 ES. Although historical data is limited, dissolved mercury in V-34 currently appears to be exhibiting a decreasing trend and concentrations have remained below the NR140 ES since 2022. Additional data is needed to determine a long-term trend at V-34.

V-35

A groundwater sample was collected for dissolved mercury analysis at V-35 in June 2024. Dissolved mercury was detected at 0.17 J µg/L at V-35, a value slightly below the NR 140 PAL.

Well V-35 was constructed in 2021 and first sampled in September 2021. The dissolved mercury concentration in V-35 was reported at a historical high concentration of 0.284 µg/L during March 2023, exceeding the NR 140 PAL. Although historical data is limited, dissolved mercury in V-35 currently appears to be exhibiting an increasing trend although concentrations have remained below the NR140 PAL the last two years. Additional data is needed to determine a long-term trend at V-35.

V-04R and V-04A

A groundwater sample was collected for dissolved mercury analysis at V-04R and V-04A in June 2024. Dissolved mercury was detected at 0.0053 µg/L at V-04A, which is below the NR 140 PAL. Dissolved mercury was not detected at V-04R.

The wells were first sampled for dissolved mercury in 1984. Dissolved mercury concentrations have been below the NR 140 PAL since March 1992. The maximum dissolved mercury concentration detected at the wells was 1.8 µg/L, which was detected at both V-04R and V-04A in 1985.

V-19

A groundwater sample was collected for dissolved mercury analysis at V-19 in June 2024. Dissolved mercury was detected at 0.12 J µg/L at V-19, an estimated value below the NR 140 PAL. This value is a historic high value at monitoring well V-19.

The well was first sampled for dissolved mercury in June 2009. Dissolved mercury concentrations have been consistently below the NR 140 PAL in historic samples. Prior to 2024 the dissolved mercury concentrations at V-19 exhibited a stable to decreasing trend. Additional data is needed to determine if the 2024 result is an anomaly.

V-09

A groundwater sample was collected for dissolved mercury analysis at V-09 in June 2024. Dissolved mercury was detected at 0.054 µg/L, which is below the NR 140 PAL.

The well was first sampled for dissolved mercury in March 1984. Dissolved mercury concentrations have been below the NR 140 PAL since June 2001. The maximum dissolved mercury concentration detected at the well was 2.8 µg/L in June 1984.

V-32

A groundwater sample was collected for dissolved mercury analysis at V-32 in 2024. Dissolved mercury was detected at a concentration of 0.011 µg/L, a value below the NR 140 PAL.

Monitoring well V-32 was first sampled for dissolved mercury in December 2000. Dissolved mercury concentrations have been below the NR 140 PAL in historic samples, except for one sample collected in December 2000 (0.24 µg/L). Dissolved mercury trends in monitoring well V-32 are stable.

V-32A

A groundwater sample was collected for dissolved mercury analysis at V-32A in June 2024. Dissolved mercury was detected at a concentration of 0.019 µg/L, a value below the NR 140 PAL.

Monitoring well V-32A was first sampled for dissolved mercury in March 2009. Dissolved mercury concentrations have been consistently below the NR 140 PAL in historic samples. The maximum dissolved mercury concentration detected at the well was 0.0697 µg/L in June 2009.

V-32B

Groundwater samples were collected for dissolved mercury analysis at V-32B in March, June, September, and December 2024. Dissolved mercury was detected at concentrations ranging from 0.98 µg/L in December to 1.4 µg/L in March, which are above the NR 140 PAL, but below the NR 140 ES of 2 µg/L.

V-32B was first sampled for dissolved mercury in March 2009. The maximum dissolved mercury concentration detected at the well was 1.87 µg/L in March 2016. The dissolved mercury concentrations at V-32B have been variable over time between 2009 and 2024 but remain below the NR 140 ES. Well V-32B is located downgradient of the SPP and upgradient of the Wisconsin River and will be used to monitor the long-term success of the groundwater RA in the SPP area that commenced in 2022.

3.2.2 Cell Room Building Area

The long-term program to monitor the behavior of dissolved mercury downgradient of the CRB includes:

- Wells V-02R, V-02BR, V-13, and V-26.
- Collection trench discharge downgradient of the CRB.
- Surface water sample from Wisconsin Department of Transportation (WisDOT) storm sewer at Outfall No. 002.

In addition, upgradient Well V-05RR is sampled and analyzed for mercury. A downgradient “perimeter” well nest, V-27/27A, was historically monitored in this area. However, samples for dissolved mercury analysis have not been collected at V-27 or V-27A per the monitoring modifications approved by the WDNR in a letter dated November 1, 2016 (Appendix I).

CRB Collection Trench

Wastewater generated by the CRB collection trench was previously filtered and discharged to the Site effluent in accordance with the Site’s WPDES wastewater discharge permit. The filtered wastewater was sampled at least monthly and reported to the WDNR on the Site’s monthly Discharge Monitoring Report. However, it is noted that in December 2021 an increase in mercury

concentrations was reported to the WDNR and the filtered wastewater was redirected to the Site's WPDES permitted wastewater treatment system. The increased mercury concentrations in the CRB area were attributed to elevated regional water levels in 2021.

A water sample was collected for dissolved mercury analysis from the CRB collection trench in June 2024. Dissolved mercury was detected at a concentration of 0.36 µg/L, which is above the NR 140 PAL. The CRB collection trench became operational in August 1998 and was first sampled for dissolved mercury in September 2007. Samples collected prior to 2007 were analyzed for total mercury, the concentrations of which are not suitable for comparison to dissolved mercury results.

Stormwater Outfall 002

A stormwater water sample was collected for total mercury analysis from the outfall in June 2024. The sample was not filtered prior to analysis. Total mercury was detected at an estimated concentration of 0.18 J µg/L. Total metals concentrations (unfiltered) are generally not compared to NR 140 groundwater quality standards.

The outfall was first sampled for mercury in April 1999. The maximum total mercury concentration detected at the outfall was 0.61 µg/L in September 2006.

V-02R

Total mercury concentrations in the previous well at this location (V-02), directly downgradient of the CRB trench, had a detection of 199 µg/L in 2004, and was attributed to a hose leak with the pump in the groundwater collection trench. The hose was repaired before the 2006 sampling, which yielded 22.2 µg/L total mercury. The replacement well, V-02R, was installed following the leak.

Groundwater samples were collected for dissolved mercury analysis at V-02R in March, June, September and December 2024. Dissolved mercury was detected at a concentration ranging from 0.21 µg/L in September, below the NR 140 PAL, and 0.85 µg/L in December 2024, exceeding the NR 140 PAL.

V-02R was first sampled for dissolved mercury in September 2008. Dissolved mercury concentrations in V-02R have fluctuated above and below the NR 140 PAL and ES between 2008 to 2024. The maximum dissolved mercury concentration detected at the well was reported in July 2021 with a concentration of 2.61 µg/L.

V-02BR

A groundwater sample was collected for dissolved mercury analysis at V-02BR in June 2024. Dissolved mercury was detected at an estimated concentration of 0.098 J µg/L, which is below the NR 140 PAL.

The well was first sampled for dissolved mercury in June 2009. Dissolved mercury concentrations have been below the NR 140 PAL in historic samples. The maximum dissolved mercury concentration detected at the well was 0.146 µg/L in June 2009. Dissolved mercury concentrations at V-02BR indicate a generally stable concentration trend below the NR 140 PAL since 2009.

V-13

A groundwater sample was collected for dissolved mercury analysis at V-13 in June 2024. Dissolved mercury was detected at an estimated concentration of 0.15 J µg/L, which exceeds the NR 140 PAL.

The well was first sampled for dissolved mercury in March 1984. Dissolved mercury concentrations had been below the NR 140 PAL from October 1997 to June 2016. The maximum dissolved mercury concentration detected at the well was 1.6 µg/L in 1984 and 1985. In recent years, mercury concentrations have fluctuated with a general downward trend. In the short term, dissolved mercury concentrations appear to exhibit a decreasing trend as concentrations have fallen below the NR 140 PAL in 2024.

V-26

A groundwater sample was collected for dissolved mercury analysis at V-26 in June 2024. Dissolved mercury was detected at an estimated concentration of 0.046 J µg, a value below the NR 140 PAL.

The well was first sampled for dissolved mercury in September 1995. The maximum dissolved mercury concentration detected at the well was 7.3 µg/L in September 1996. Dissolved mercury concentrations at V-26 indicate a stable trend with concentrations remaining below the NR 140 ES since 1997.

V-05RR

A groundwater sample was collected for dissolved mercury analysis at V-05RR in June 2024. Dissolved mercury was detected at 0.0057 µg/L, which is below the NR 140 PAL.

Well V-05R was first sampled for dissolved mercury in March 1984. Dissolved mercury concentrations have been below the NR 140 PAL since August 2004. The maximum dissolved mercury concentration detected at the well was 1.0 µg/L in 1985 and 1986. Dissolved mercury concentrations at V-05RR indicate a generally stable or decreasing trend at concentrations below the NR 140 PAL.

Dissolved Mercury Summary

Dissolved mercury was reported as exceeding the NR 140 ES in monitoring wells V-23, V-24, and V-25 with concentrations ranging from 3.1 µg/L (V-23) and 490 µg/L (V-24) during 2024. Dissolved mercury was also reported as exceeding the NR 140 PAL in monitoring wells V-02R, V-07R, V-18R, V-32B and the Trench Discharge with concentrations ranging from 0.21 µg/L (V-02R) and 1.4 µg/L (V-32B). The dissolved mercury concentrations reported during the 2024 sampling event are relatively consistent with historically observed concentrations.

Dissolved mercury concentrations are generally stable or decreasing in monitoring wells across the Site, except for monitoring wells V-19, V-25, V-32B and V-35. However, it is noteworthy that prior to 2024 the dissolved mercury concentrations at V-19 exhibited a stable to decreasing trend. Additional data is needed at V-19 to determine if the 2024 result is an anomaly. Additionally, while dissolved mercury concentrations at V-25 illustrate an overall increasing long-term trend, lower concentrations observed between 2021 and 2024 indicate a recent decreasing trend at V-25. The dissolved mercury concentration trend in V-25 appears to be decreasing significantly since 2020, suggesting successful groundwater treatment from sodium dithionite injections started in 2021. Dissolved mercury in V-32B has consistently fluctuated at concentrations above the NR140 PAL and below the NR140 ES since it was first sampled in

March 2009. Although dissolved mercury fluctuates between increasing and decreasing trends in the short-term, over the long-term, dissolved mercury in V-32B appears to be gradually increasing but concentrations remain below the NR 140 ES. And while dissolved mercury concentrations in V-35 currently exhibit an increasing trend, this well was first sampled in September 2021 and additional data is needed to determine a long-term trend.

3.3 Chloride

Groundwater samples were collected for chloride analysis in March, June, September, and December 2024. Chloride concentrations are provided in Appendix B and Appendix H. June 2024 chloride concentrations are summarized in Figures 12 and 13. The chloride concentration in the sand aquifer zone is highest downgradient/immediately side gradient of the former SPP and the CRB (Figure 12). Elevated chloride concentrations were also detected in the WB-C/CB zone on the downgradient edge of the Site (Figure 13). Chloride trends are depicted on graphs in Appendix F for wells with chloride concentrations that exceeded 1,500 mg/L in 2024 (V-02BR, V-03AR, V-04A, V-23, V-24, V-25, and V-32B). Historic chloride concentrations at V-02R, V-03R, V-05RR, V-13, V-18R, and V-32A have also exceeded 1,500 mg/L. The 2024 chloride values at each of these wells are presented in Table 15 below:

TABLE 15
2024 Chloride Detections (mg/L) in Wells
V-02R, V-02BR, V-03R, V-03AR, V-04A, V-05RR, V-13, V-18R, V-23, V-24, V-25, V-32A, AND V-32B

Well	Low	High
V-02R	--	640
V-02BR	--	1,700
V-03R	--	560
V-03AR	--	4,200
V-04A	--	1,600
V-05RR	--	18
V-13	--	830
V-18R	--	830
V-23	240	1800
V-24	2,600	4900
V-25	1,600	5700
V-32A	--	1,200
V-32B	2,400	2,600

Notes: Where chloride is monitored annually only a high value is presented.

Based on a review of the chloride trend graphs presented in Appendix F, concentrations of chloride in groundwater samples collected from V-03AR, V-23, V-24, and V-25 generally illustrate an increasing trend over the long term. It is noted that a high spike of chloride was observed in V-23 in June 2020 resulting in the overall upward trend, but since then, chloride has returned to levels consistent with historically observed concentrations. Chloride concentration trends in remaining wells are generally stable/decreasing. Chloride concentrations in 2024 were below historical highs at each location sampled.

It should be noted that salt is routinely used for walkway and road de-icing during the winter months at the Site and off-site, including Highway 73. It should also be noted that the original Site design included a salt pile to the east of wells V-24 and V-25. The salt pile was located on a concrete pad. However, the areas immediately adjacent were not originally paved. Salt use at the facility may have and will likely continue to contribute to chloride concentrations observed in groundwater at the Site.

3.4 pH

During the March 2024 sampling event a faulty pH probe was documented by the field team. The issue could not be remedied in the field. The pH values recorded in the field during the March 2024 sampling event are not evaluated in this report as the data points were deemed erroneous based on historical measurements.

The pH values in the sand aquifer and in the WB-C/CB Zone for June 2024 are shown in Figures 14 and 15, respectively.

The area with the highest pH values in the sand aquifer is in the vicinity of the SPP. Elevated pH at wells V-23, V-24, and V-25 in the sand aquifer (Figure 14) is coincidental with elevated mercury concentration at those same wells (Figure 10). The pH values in 2024 ranged from 10.30 to 10.59 at V-23, 10.14 to 12.68 at V-24, and 9.70 to 12.49 at V-25.

The area with the highest pH values in the WB-C/CB Zone is located downgradient of the SPP. The pH values were measured as 8.13 at V-03AR in June 2024 and ranged from 10.17 to 10.69 at V-32B in 2024. The pH value at V-03AR has been measured as high as 11.6 in 1987. The pH trends for wells with historic elevated pH values are depicted on graphs included in Appendix G. Based on a review of pH trend graphs, the pH trends in monitoring wells V-24, V-25, and V-32B have been generally increasing over the long term. All other wells where pH was measured in 2024 exhibit stable or decreasing trends.

Section 4. Conclusions and Recommendations

4.1 Hydrogeology

The groundwater monitoring wells are screened in 1 of 3 hydrogeologic units: the (uppermost) sand aquifer, the weathered bedrock-clay (WB-C) zone, or the competent bedrock (CB) zone. Groundwater generally flows south/southeast toward wetlands and the Wisconsin River. Groundwater elevation data from 2024 are consistent with historical observations. Estimated horizontal groundwater flow velocities at the Site in 2024 ranged from 197 to 337 feet per year (ft/yr).

The groundwater elevation measurements recorded for 10 of the 13 well nests displayed a downward gradient in 2024 (i.e., hydraulic heads in the sand aquifer are higher than in the WB-C unit) and upward gradient in 2 of the 13 well nests in June 2024. The hydraulic gradient was flat at one well nest (V-30/V-30A) in June 2024. In general, well pairs with upward gradients are located closer to the Wisconsin River which is consistent with previous sampling events. Using the 2024 vertical gradients, the estimated vertical linear velocities across the Site range from 0.0 feet per day (ft/d) to 0.086 ft/d. Assumptions from previous reports were used for the estimated vertical velocity calculations. Vertical hydraulic gradient data for June 2024 are presented in Figure 16.

4.2 Groundwater Quality

4.2.1 Volatile Organic Compounds and Dissolved Gases

Results of MNA, which is the approved remedy for the VOCs at the Site (CH2M HILL, 1998), indicate natural attenuation of CVOCs is likely occurring. This conclusion is supported by stable or decreasing trends of parent compounds (PCE and TCE) with the presence of daughter products, such as cis-1,2-DCE, trans-1,2-DCE, and VC. Methylene chloride was detected at concentrations above the NR 140 ES in samples collected from V-03R, V-09 (duplicate), V-31, V-31A, and V-32B. However, methylene chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank during the June 2024 sampling event and the June 2024 detections are considered suspect.

VOC concentrations in 2024 were generally similar to those observed in 2023 and were below historic highs, with the exception of:

- Cis-1,2-DCE at V-30A (16 µg/L)

Results for each of the hydrogeologic units were as follows:

Sand Aquifer: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the sand aquifer zone, with the exception of VC at V-31 which was reported at a concentration of 1.2 µg/L.

WB-C Zone: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the WB-C zone, with the exception of TCE, cis-1,2-DCE, and VC at V-31A, which were reported at concentrations of 8.7 µg/L, 77 µg/L, and 1.2 µg/L, respectively. The TCE and VC concentrations in V-31A have consistently exhibited a decreasing trend, while cis-1,2-DCE in V-31A has exhibited an increasing trend.

CB Zone: VOC concentrations were below NR 140 ESs in groundwater samples collected in 2024 from wells screened in the CB zone, except for cis-1,2-DCE at monitoring well V-02BR (130 µg/L); and VC at V-02BR (1.5 µg/L) and V-32B (0.60 µg/L). The TCE, cis-1,2-DCE, and VC concentrations at V-02BR have trended downward since 2003, 2009, and 2002, respectively. The VC concentrations have trended downward since 1996 at V-32B. V-02BR is located downgradient of the CRB. Monitoring Well V-32B is located downgradient of the FSS area.

The VOC results have indicated generally decreasing contaminant trends at most locations and suggest that natural attenuation is occurring at the Site. As approved by the WDNR in a November 2023 letter, natural attenuation parameters including sulfate, ethane, ethene, methane, dissolved iron, total organic carbon (TOC), nitrate and alkalinity analysis have been removed from the annual monitoring program. In addition, monitoring wells V-16R and V-19A have been removed from the annual monitoring program for VOCs.

4.2.2 Mercury

Dissolved mercury concentrations in 2024 were generally similar to those reported in 2023 and were below historic highs, with the exception of V-19 (0.12 µg/L). Dissolved mercury concentrations in 2024 were below the NR 140 ES (2 µg/L) in perimeter wells. The only wells with dissolved mercury concentrations above the NR 140 ES in 2024 were V-23 (3.1 µg/L to 10 µg/L), V-24 (12 µg/L to 490 µg/L) and V-25 (34 µg/L to 100 µg/L). V-24 and V-25 are located in the former SPP area. V-23 is located south and downgradient of the SPP area.

The dissolved mercury concentrations at V-23 illustrate a decreasing long-term trend and are lower as compared to V-24 and V-25 in the SPP area. Dissolved mercury concentrations at V-24 increased in October and December 2024 to levels above pre-injection concentrations. The dissolved mercury concentrations in V-24 appear to be slightly decreasing in the long term; however, recent observations suggest that dissolved mercury concentrations in V-24 do not appear to have been as impacted by the sodium dithionite injections as V-25. Spikes in dissolved mercury concentrations have been observed in V-25 from 2002 through 2020, with a historic high concentration of 4,600 µg/L reported in March 2013. Dissolved mercury concentrations at V-25 decreased in March 2024 compared to June to December 2023, but increased in June, decreased in September and increased again in December 2024. The dissolved mercury concentrations at V-25 generally illustrate an overall increasing trend long term. However, the reduced concentrations of dissolved mercury observed between 2021 through 2024 following sodium dithionite injections do illustrate a more recent decreasing trend at V-25 and suggests successful groundwater treatment. As indicated in the GHD Quarterly Reported dated November 19, 2024 (GHD 2024c), ERCO anticipates proceeding with a third round of sodium dithionite injections in Spring 2025 based on the overall success of injections to date in reducing dissolved mercury concentrations.

4.2.3 Chloride

Chloride conditions in 2024 were generally consistent with those observed historically and were below historic highs at each location sampled. Monitoring wells with the highest chloride concentrations in 2024 include wells downgradient of the CRB (V-02BR, V-02R, and V-13), downgradient of the SPP (V-03AR, V-04A, V-23, V-32A, and V-32B), and immediately adjacent to the SPP (V-24 and V-25). Chloride was detected at these wells at a concentration that exceeded 1,500 mg/L during at least one sampling event in 2024, except for V-02R (640 mg/L), V-13 (830 mg/L) and V-32A (1,200 mg/L). Chloride concentrations in wells V-03AR, V-23, V-24, and V-25 are all exhibiting increasing chloride concentration trends, with the highest 2024 chloride concentration being reported in V-25 (5,600 mg/L). Chloride concentrations in groundwater samples collected from V-02BR, V-13, V-32A and V-32B have been generally stable or decreasing over the long term.

4.2.4 pH

The pH conditions in 2024 were consistent to values observed in 2023 and were within the range of historic values.

The pH values measured in 2024 were highest (exceeding 8.0) downgradient of the SPP (V-03AR, V-23 and V-32B) and immediately adjacent to the SPP (V-24 and V-25). The long-term pH trend is upward at V-24, V-25, and V-32B, stable to downward at V-23 and downward at V-03AR.

4.3 Recommendations

Based on the results of groundwater monitoring conducted in 2024 and a comparison with historic data, continuation of groundwater monitoring under the current program is recommended for the near future.

It is further recommended that a biennial review of the scope of groundwater monitoring be completed per the November 2023 WDNR modification approval; including locations sampled, parameters analyzed, and frequency of sampling, and that the approval to modify the Groundwater Monitoring Plan include recommendations based on this review.

Section 5. References

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WDNR, 2023. *Approval of Modifications to the RCRA Ground Water Monitoring Program at ERCO Worldwide, 101 STH 73 S, Port Edwards, Wisconsin, WDNR BRRTS #02-72-000012*. November 17, 2023.

Figures

Figures

Figure 1: Monitoring Well Locations

Figure 2: Topographic Elevation Contour Map of the Top of Clay/Weathered Schist Bedrock

Figure 3: Groundwater Elevation Contour Map - Sand Aquifer Elevation - March 2023

Figure 4: Groundwater Elevation Contour Map - Sand Aquifer Elevation - June 2023

Figure 5: Groundwater Elevation Contour Map - Sand Aquifer Elevation - September 2023

Figure 6: Groundwater Elevation Contour Map - Sand Aquifer Elevation - December 2023

Figure 7: Groundwater Elevation Map - Competent Bedrock Zone - June 2023

Figure 8: June 2023 VOC Concentrations ($\mu\text{g/L}$) - Sand Aquifer

Figure 9: June 2023 VOC Concentrations ($\mu\text{g/L}$) - Weathered Bedrock-Clay/Competent Bedrock Zone

Figure 10: June 2023 Mercury Concentrations ($\mu\text{g/L}$) in Sand Aquifer Wells

Figure 11: June 2023 Mercury Concentrations ($\mu\text{g/L}$) in Weathered Bedrock-Clay/Competent Bedrock Zone

Figure 12: June 2023 Chloride Isoconcentration (mg/L) Map for Wells in the Sand Aquifer

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Figure 14: June 2023 pH Map for Wells in Sand Aquifer

Figure 15: June 2023 pH Map for Weathered Bedrock-Clay/Competent Bedrock Zone

Figure 16: Vertical Hydraulic Gradients – June 2023

L:\DCS\Projects\60602946\900 CAD GIS\920 929 GIS Graphics\Figures\2025160602946 Figure 1 Well Locations.mxd Wednesday, February 19, 2025 - 9:17:16 AM

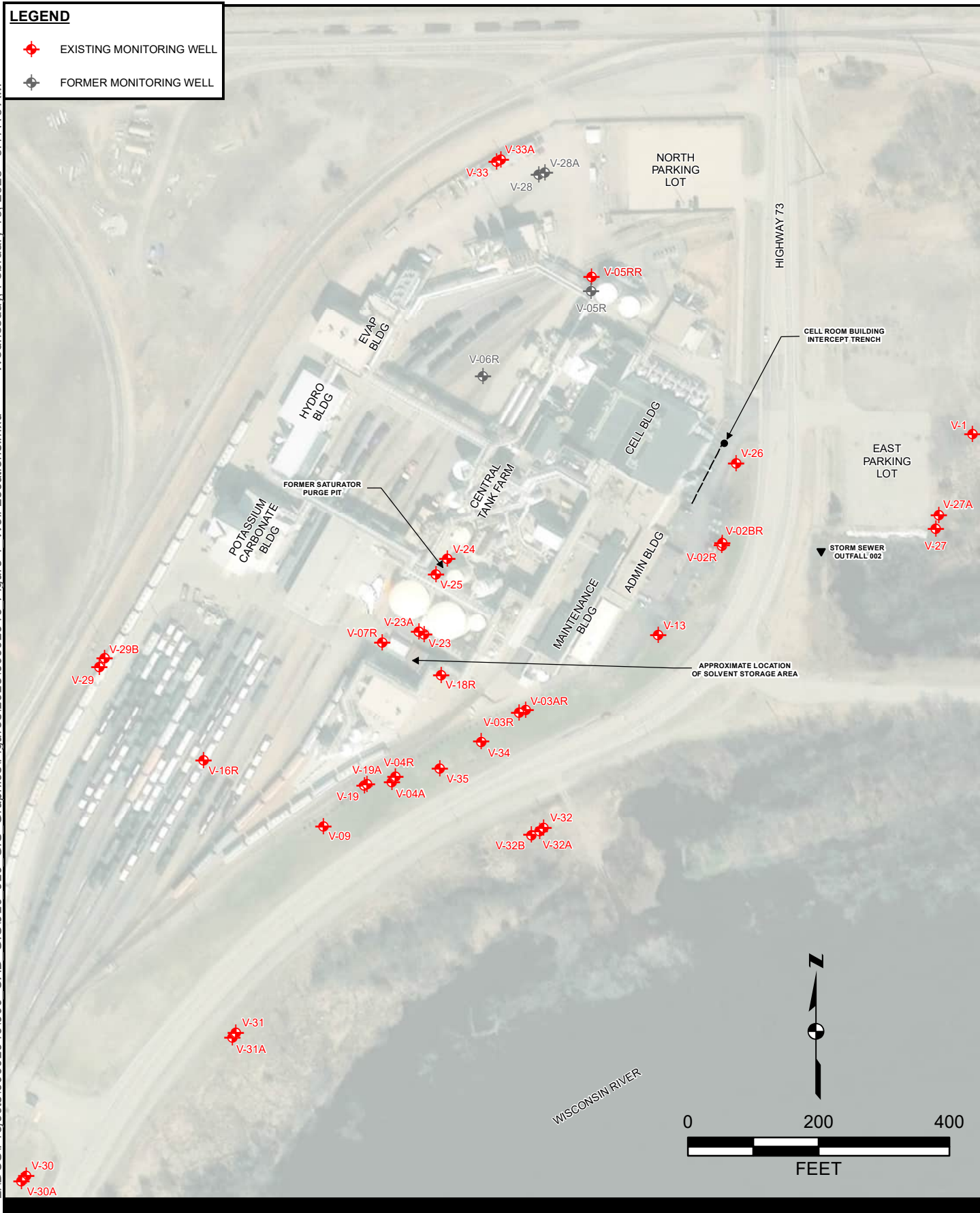


FIGURE 1
MONITORING WELL LOCATIONS
ERCO WORLDWIDE

C:\Users\stockera\OneDrive - AECOM\Dean Fenske\ERCO\60602946 Figure 2 TOP CLAY.mxd Thursday, February 22, 2024 - 11:43:24 AM

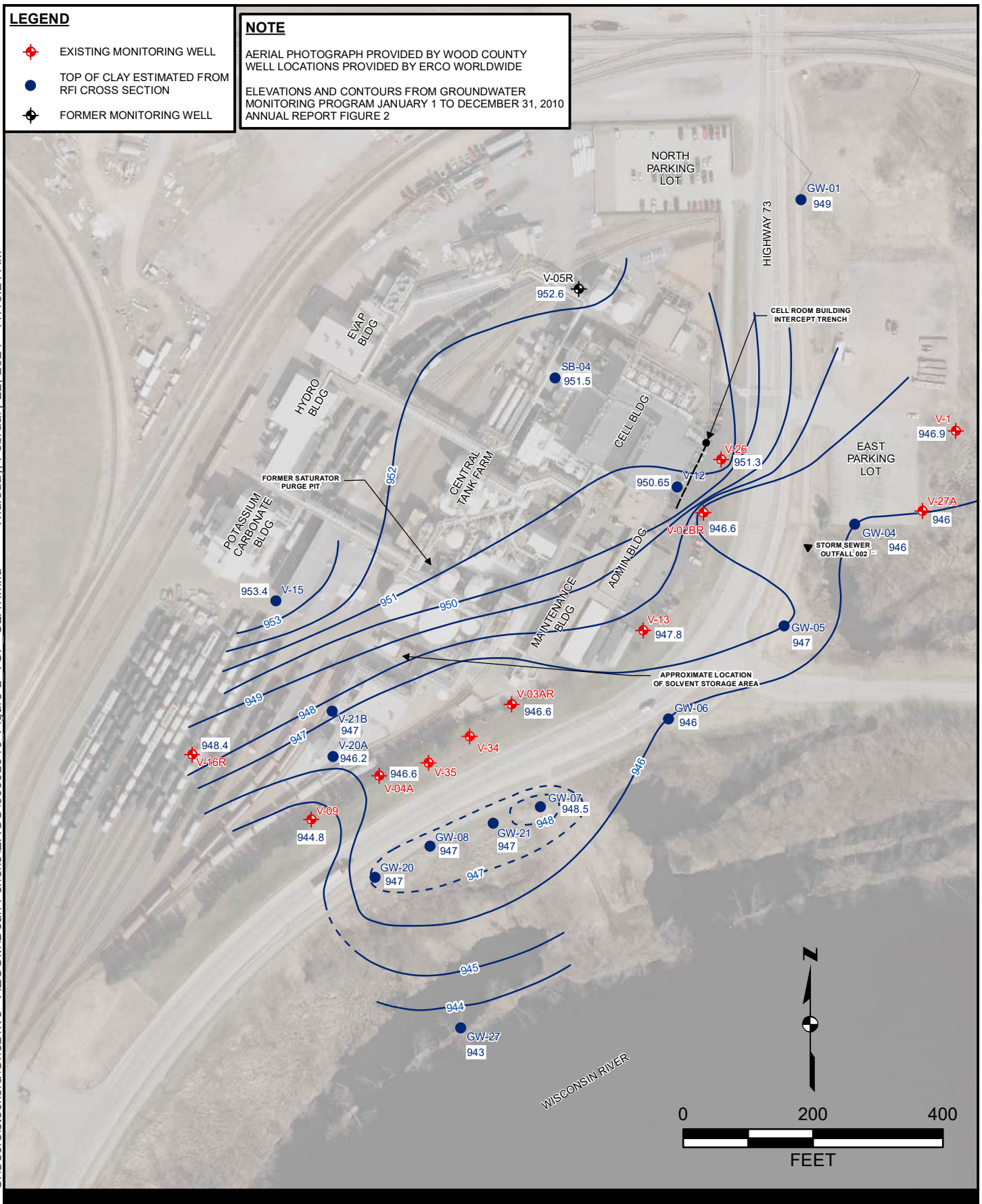


FIGURE 2
TOPOGRAPHICAL ELEVATION CONTOUR MAP
TOP OF CLAY / WEATHERED SCHIST BEDROCK
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

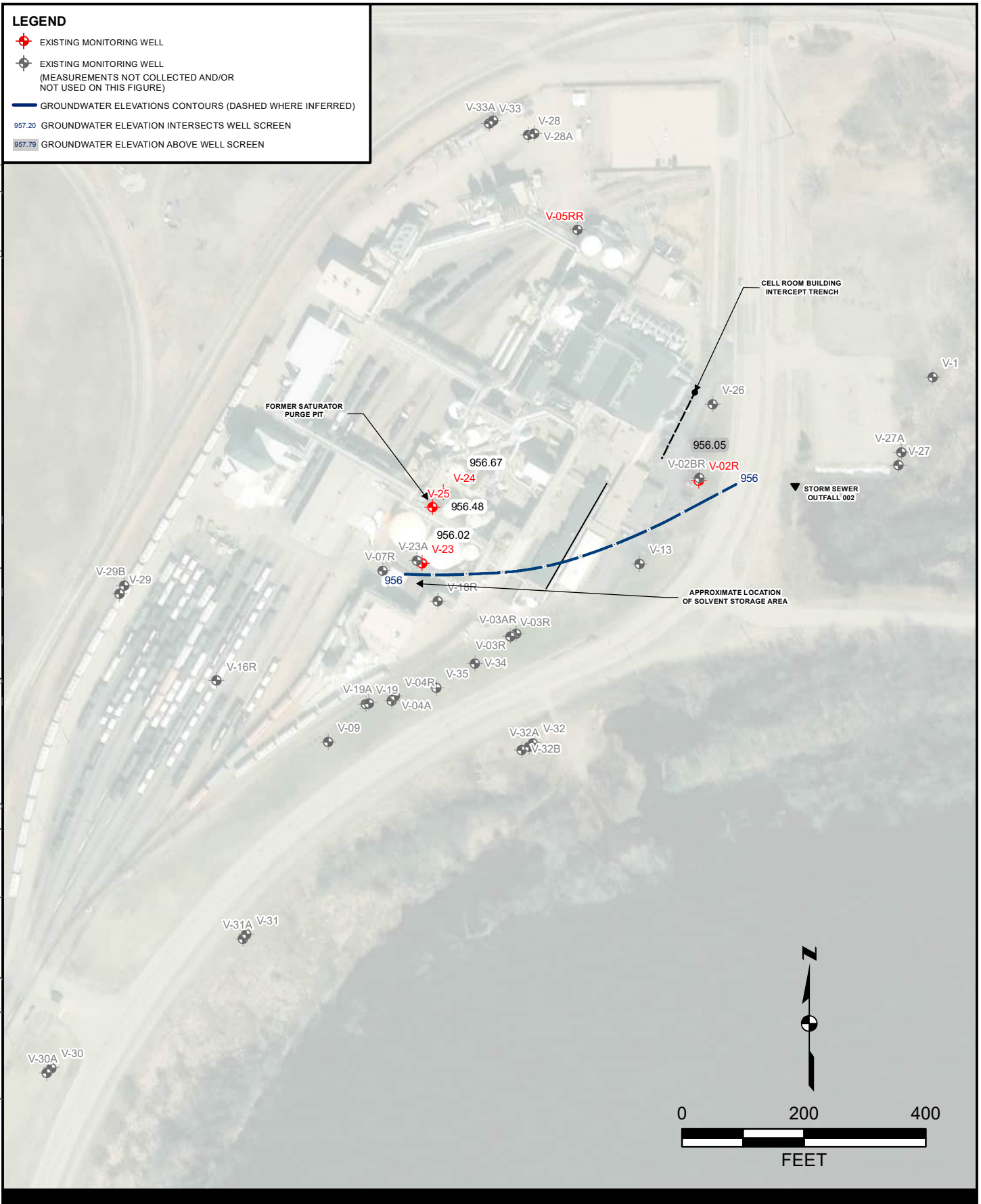


FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
SAND AQUIFER - MARCH 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

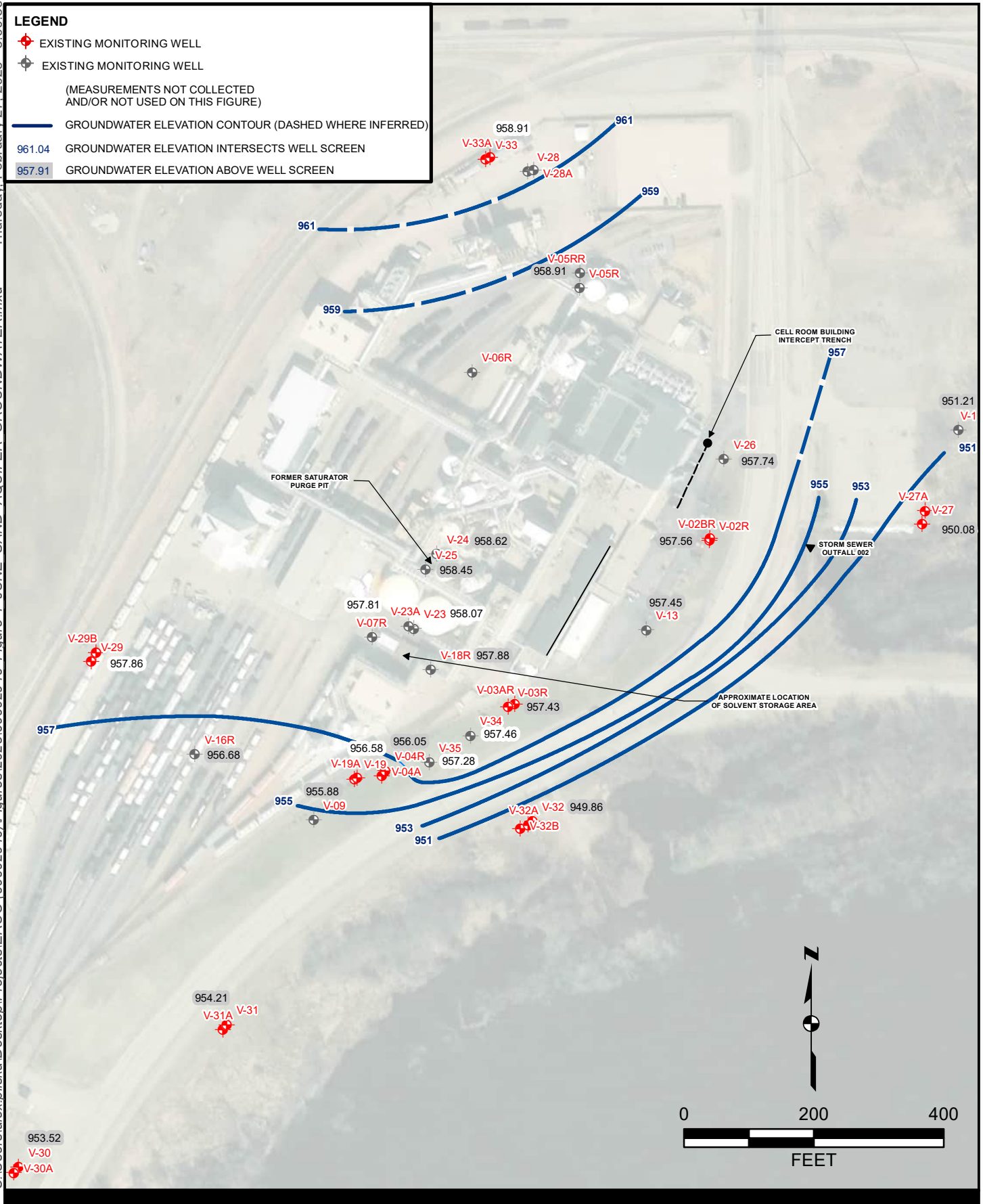


FIGURE 4
GROUNDWATER ELEVATION CONTOUR MAP
SAND AQUIFER - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

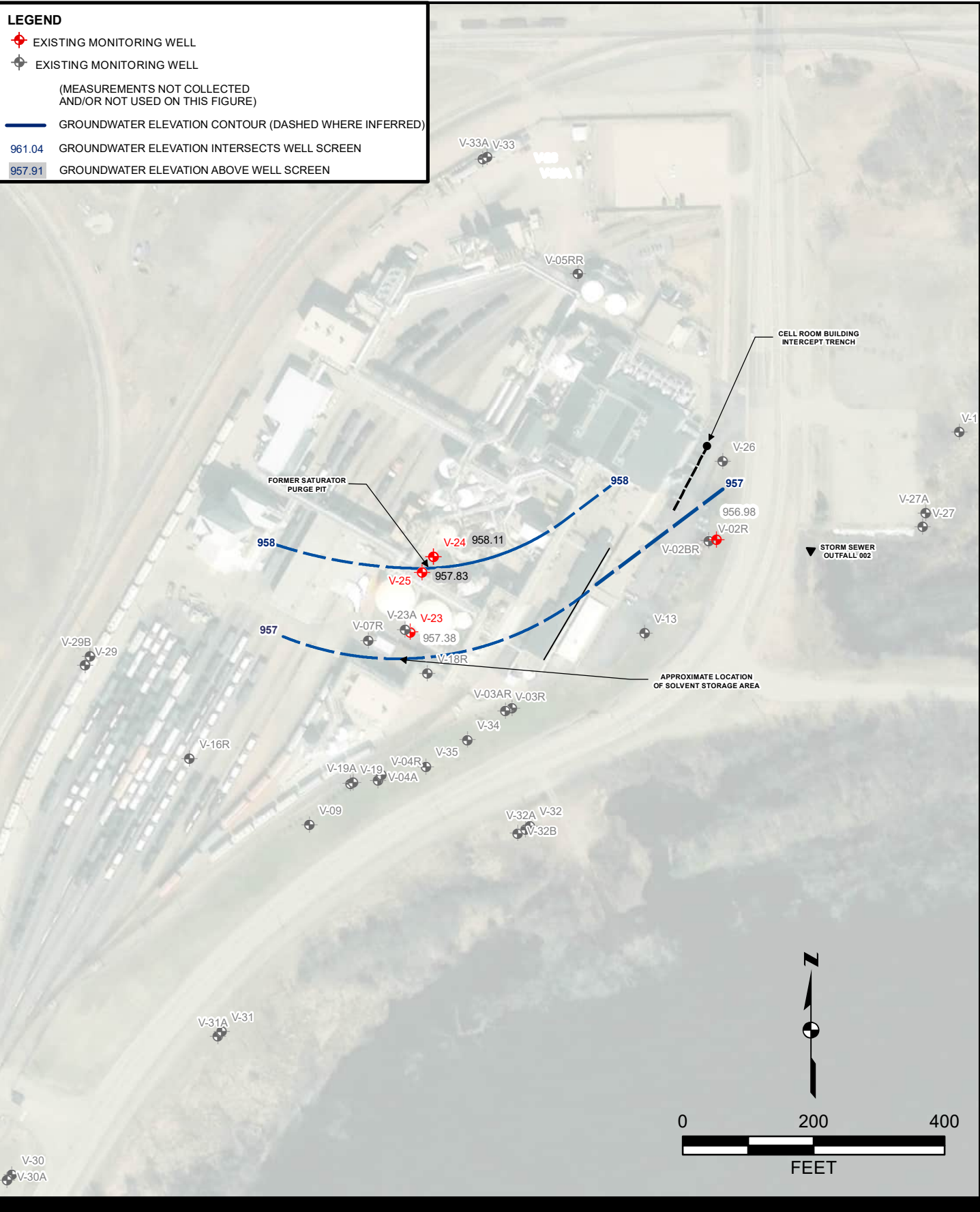


FIGURE 5
GROUNDWATER ELEVATION CONTOUR MAP
SAND AQUIFER - SEPTEMBER 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

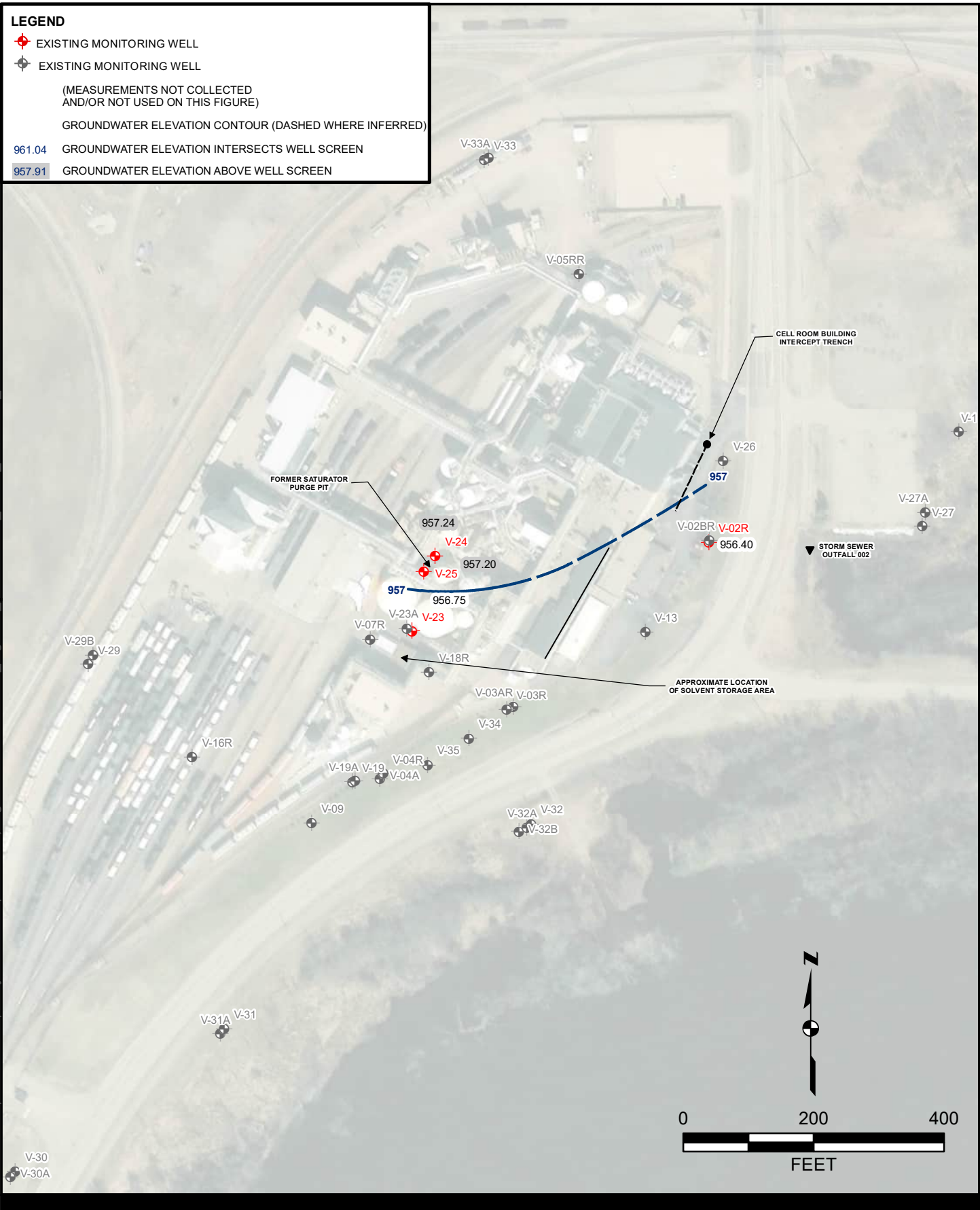


FIGURE 6
GROUNDWATER ELEVATION CONTOUR MAP
SAND AQUIFER - DECEMBER 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

C:\Users\alex.pliska\Desktop\Projects\ERCO (60602946)\Figures\2025\60602946 Figure 7 COMPETENT BEDROCK ZONE.mxd Thursday, February 20, 2025 - 9:38:45 AM

LEGEND

- EXISTING MONITORING WELL
- EXISTING MONITORING WELL
- 955.51 GROUNDWATER ELEVATION

NOTES

1. GROUNDWATER CONTOURS NOT DRAWN DUE TO LIMITED NUMBER OF MONITORING WELLS IN COMPETENT BEDROCK ZONE.

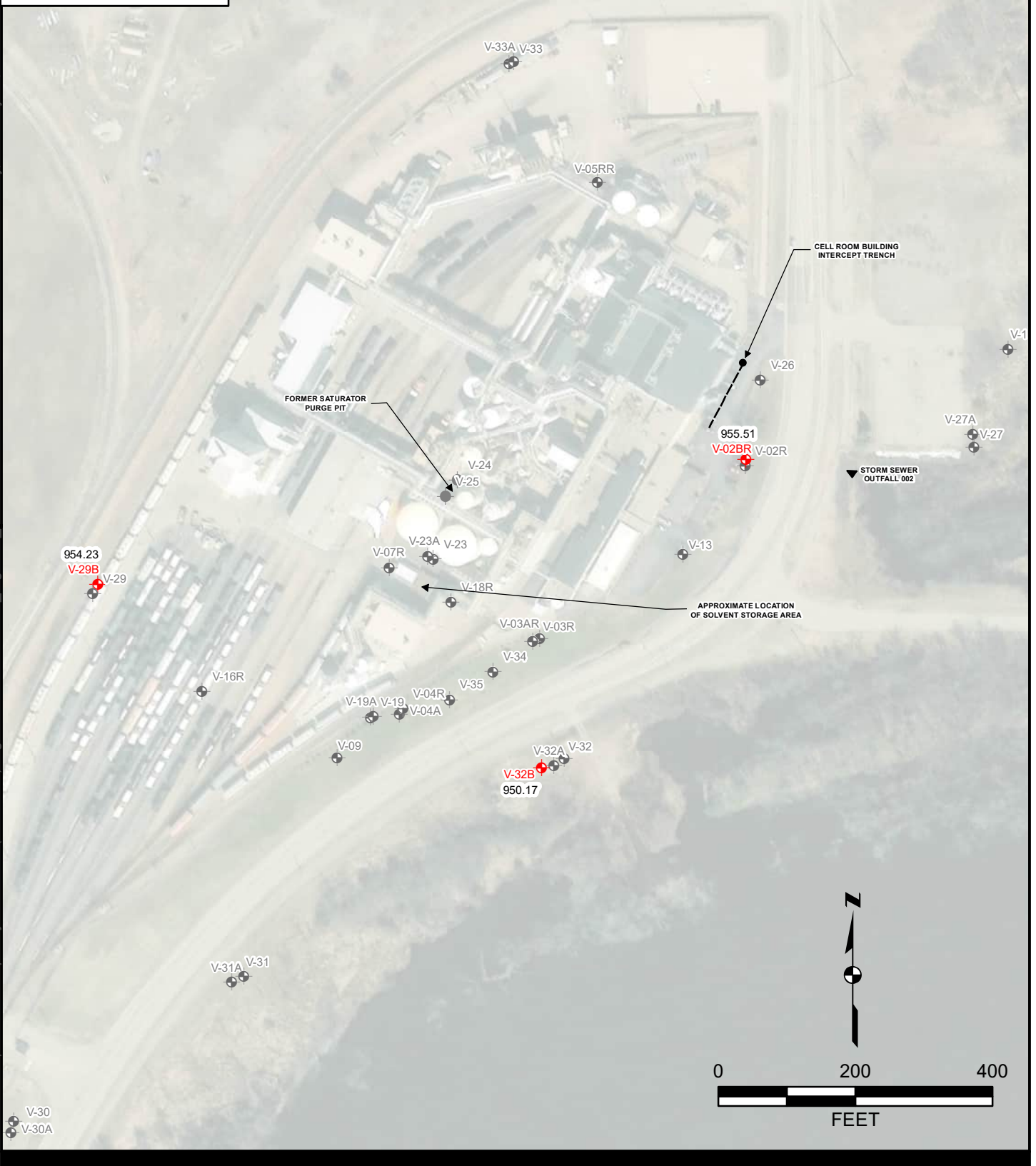


FIGURE 7
GROUNDWATER ELEVATION MAP
COMPETENT BEDROCK ZONE - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

C:\Users\alex.pliska\Desktop\Projects\ERCO (60602946)\Figures\2025\60602946 Figure 8 SAND AQUIFER VOC.mxd

LEGEND



EXISTING MONITORING WELL



EXISTING MONITORING WELL
(MEASUREMENTS NOT COLLECTED
AND/OR NOT USED ON THIS FIGURE)

ABBREVIATIONS AND NR 140 STANDARDS

#	EQUALS OR EXCEEDS WISCONSIN NR140 PREVENTIVE ACTION LIMIT (PAL)
---	--

* EQUALS OR EXCEEDS WISCONSIN NR 140
ENFORCEMENT STANDARD (ES)

J	ESTIMATED CONCENTRATION
---	-------------------------

CIS-1,2-DCE	CIS-1,2-DICHLOROETHENE	PAL=7 µg/L	ES=70 µg/L
TRANS-1,2-DCE	TRANS-1,2-DICHLOROETHENE	PAL=20 µg/L	ES=100 µg/L
METHYLENE CHLORIDE		PAL= 0.5 µg/L	ES= 5.0 µg/L

Methylene Chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank during the June 2024 sampling event. The detected concentrations are considered suspect.

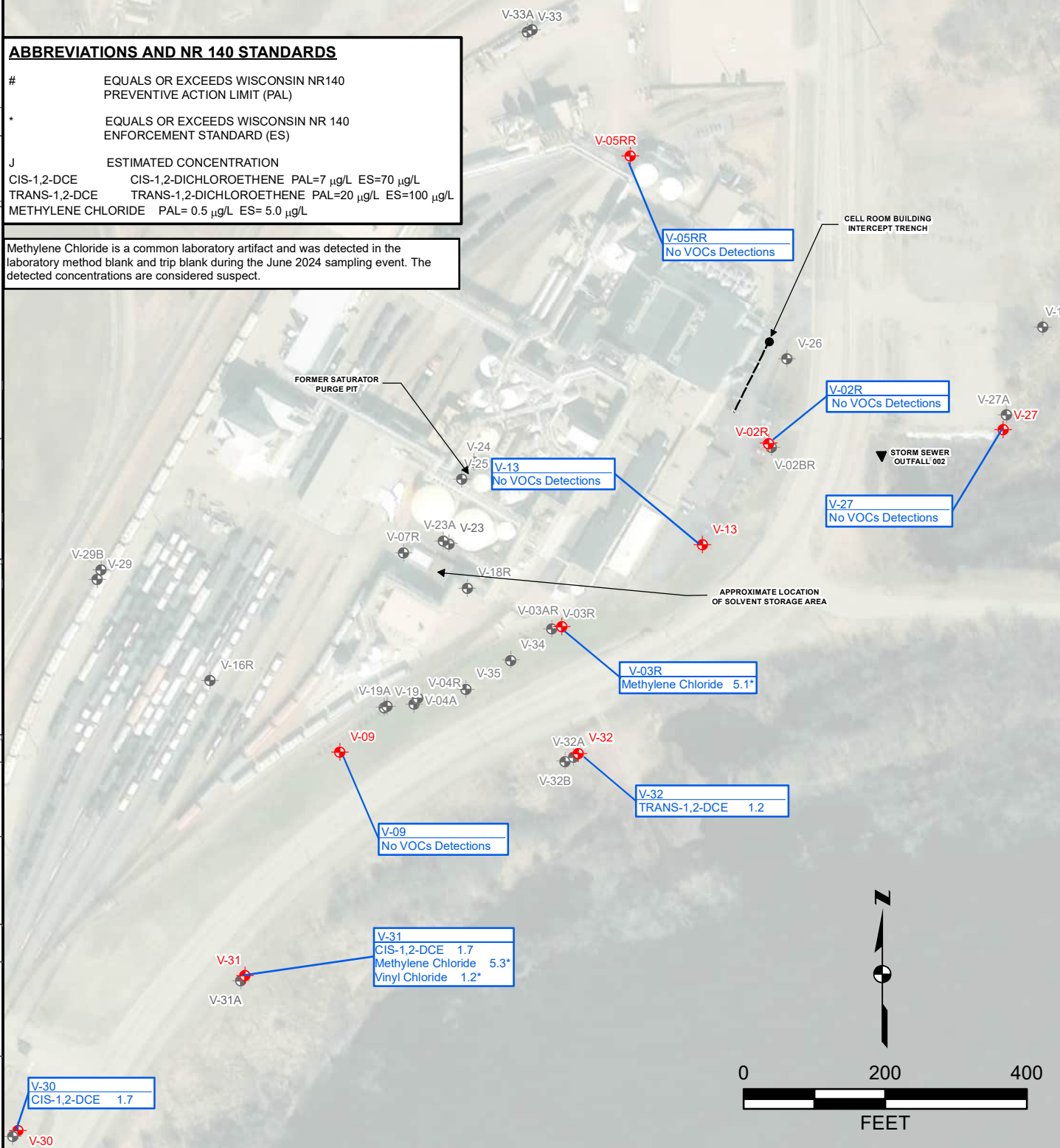


FIGURE 8
VOC CONCENTRATIONS (µg/L) IN
SAND AQUIFER - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

C:\Users\alex.pliska\Desktop\Projects\ERCO (60602946)\Figures\2025\60602946 Figure 9 WEATHERED BEDROCK.mxd Thursday, February 20, 2025 - 10:19:31 AM

LEGEND

- EXISTING MONITORING WELL
- EXISTING MONITORING WELL
(MEASUREMENTS NOT COLLECTED
AND/OR NOT USED ON THIS FIGURE)

ABBREVIATIONS AND NR 140 STANDARDS

#	EQUALS OR EXCEEDS WISCONSIN NR140 PREVENTIVE ACTION LIMIT (PAL)
*	EQUALS OR EXCEEDS WISCONSIN NR 140 ENFORCEMENT STANDARD (ES)
J	ESTIMATED CONCENTRATION
CIS-1,2-DCE	CIS-1,2-DICHLOROETHENE PAL=7 µg/L ES=70 µg/L
TCE	TRICHLOROETHENE PAL=0.5 µg/L ES=5 µg/L
VC	VINYL CHLORIDE PAL=0.02 µg/L ES=0.2 µg/L
TRANS-1,2-DCE	TRANS-1,2-DICHLOROETHENE PAL=20 µg/L ES=100 µg/L
METHYLENE CHLORIDE	PAL= 0.5 µg/L ES= 5.0 µg/L

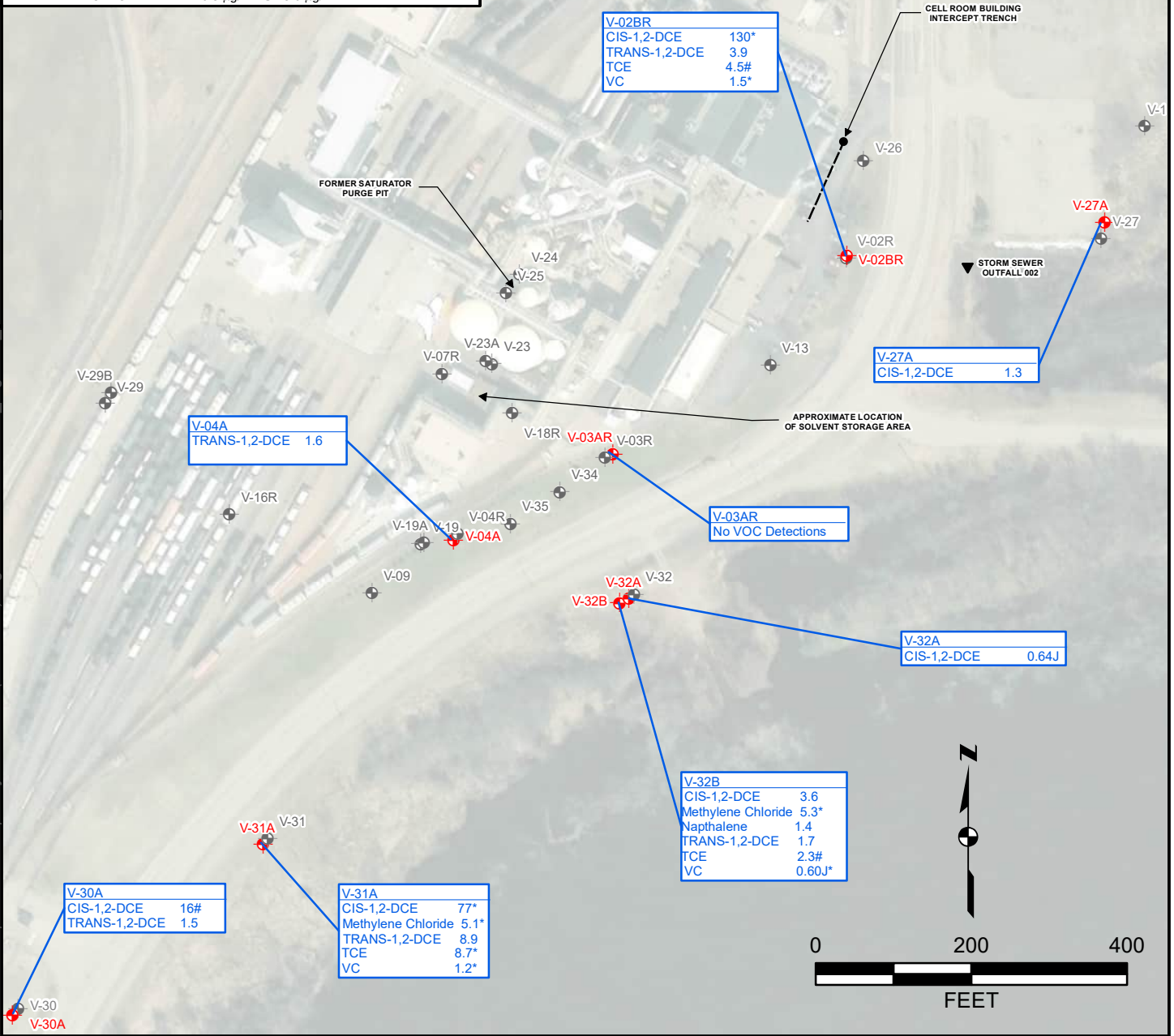
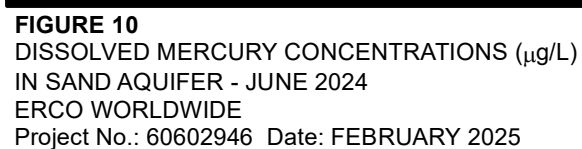


FIGURE 9
VOC CONCENTRATIONS (µg/L) IN
WEATHERED BEDROCK - CLAY/COMPETENT
BEDROCK ZONE - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025



C:\Users\alex.pliska\Desktop\Projects\ERCO (60602946)\Figures\2025\60602946 Figure 11 BEDROCK AQUIFER MERCURY.mxd Thursday, February 20, 2025 - 11:00:02 AM

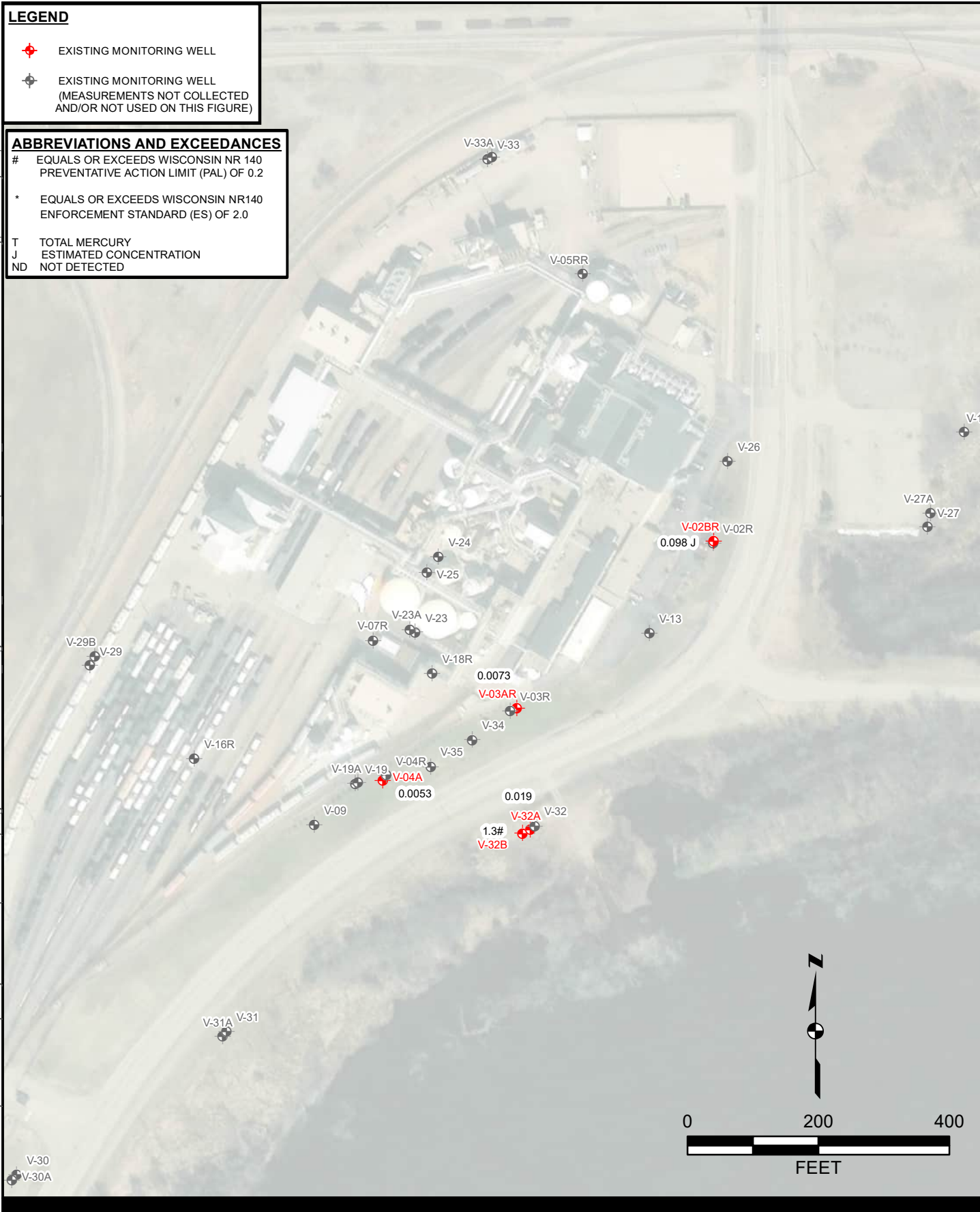


FIGURE 11
DISSOLVED MERCURY CONCENTRATIONS ($\mu\text{g/L}$)
IN WEATHERED BEDROCK - CLAY/COMPETENT
BEDROCK ZONE - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

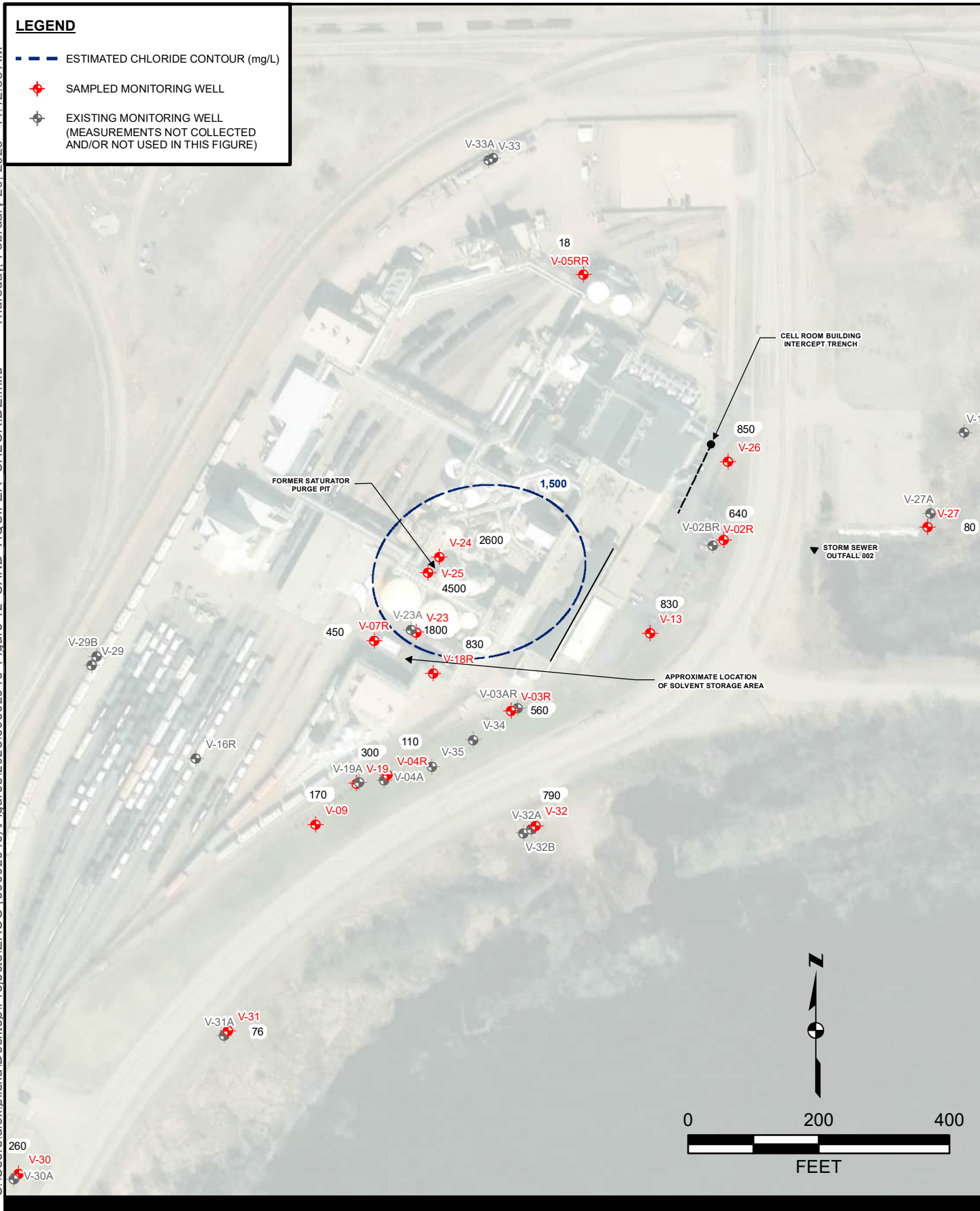


FIGURE 12
CHLORIDE ISOCONCENTRATION MAP
IN SAND AQUIFER
JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

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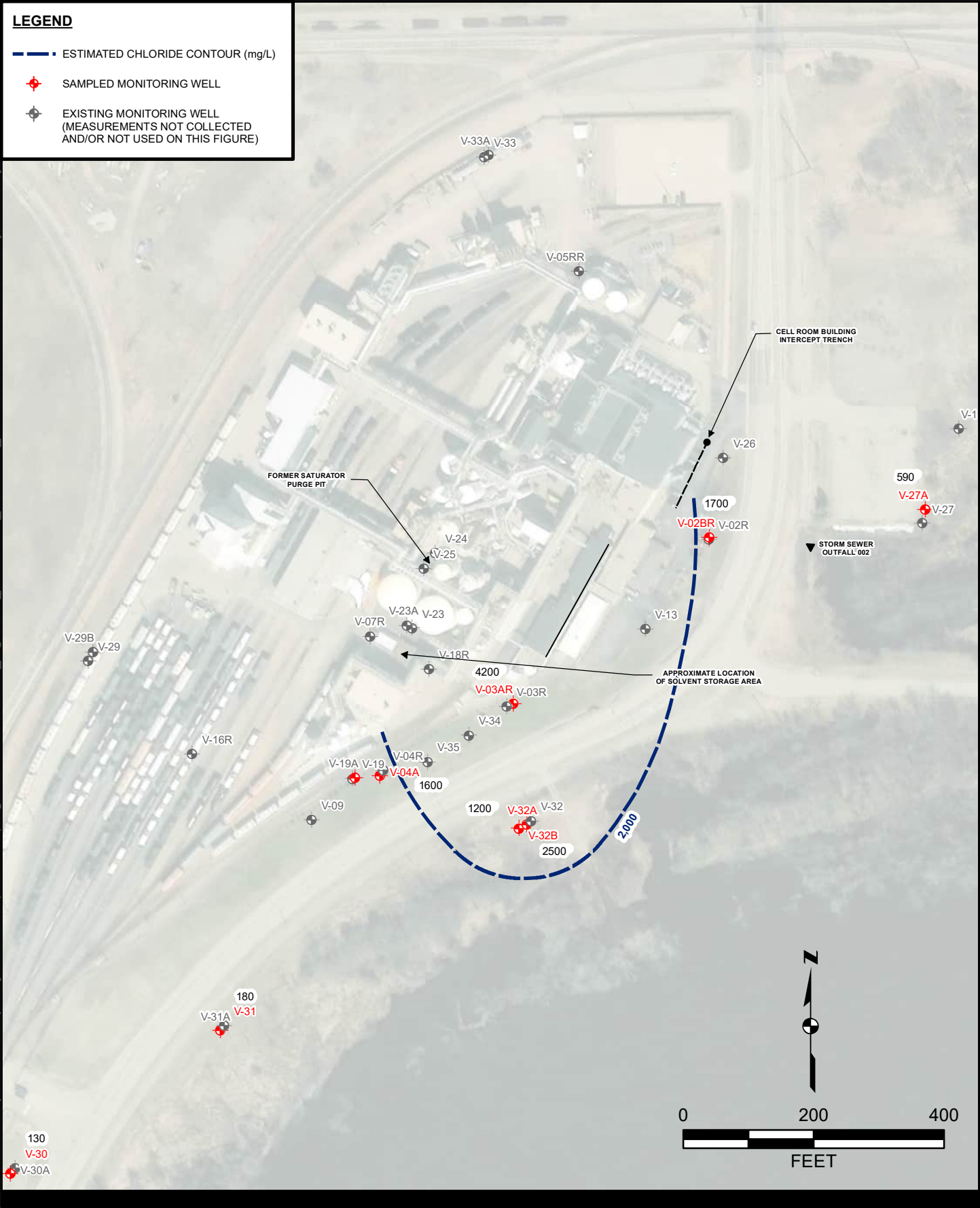


FIGURE 13
CHLORIDE ISOCONCENTRATION MAP
IN WEATHERED BEDROCK - CLAY COMPETENT
JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025



Project No.: 60602946 Date: FEBRUARY 2025

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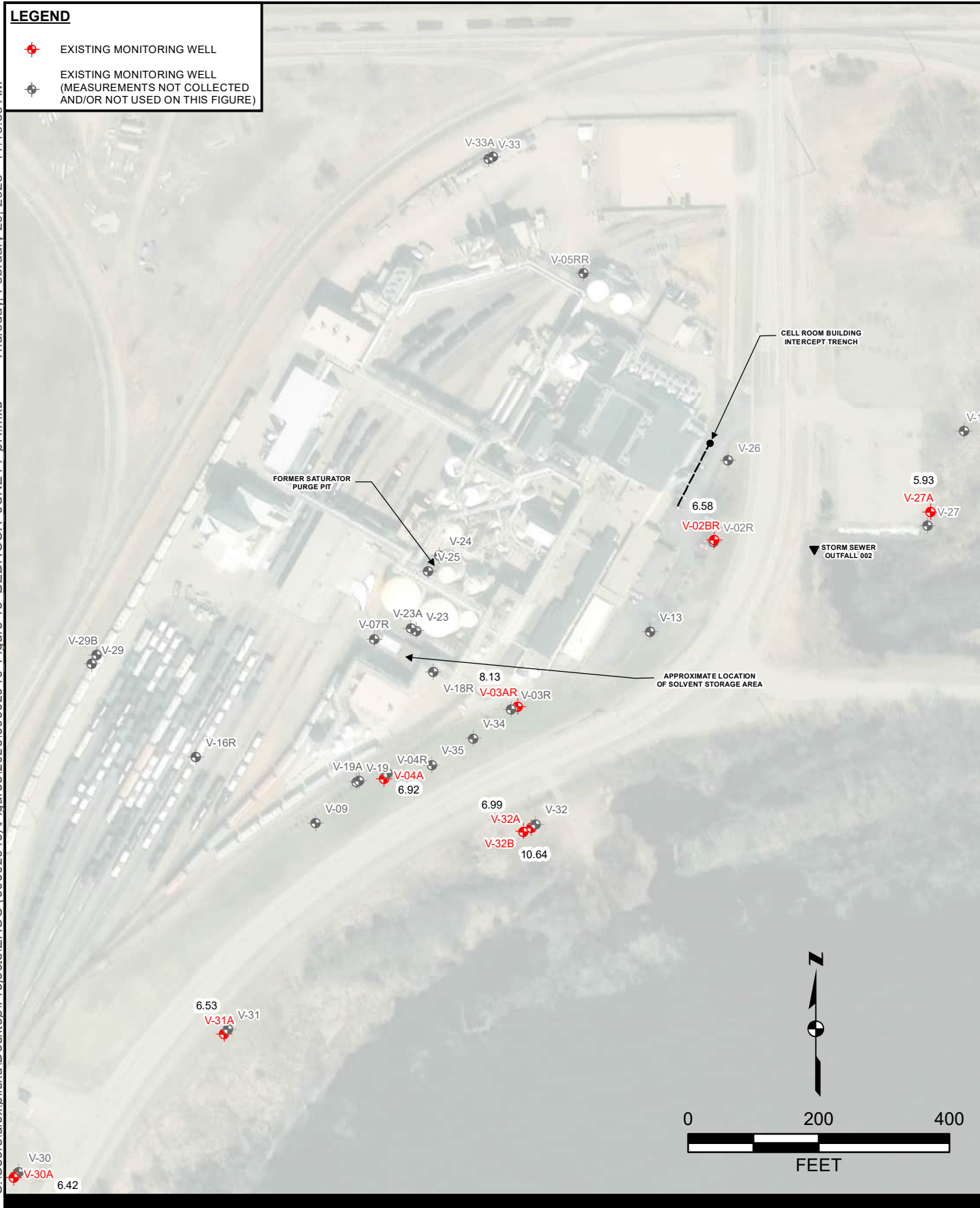


FIGURE 15
pH MAP FOR
WEATHERED BEDROCK - CLAY/COMPETENT
BEDROCK ZONE - JUNE 2024
ERCO WORLDWIDE
Project No.: 60602946 Date: FEBRUARY 2025

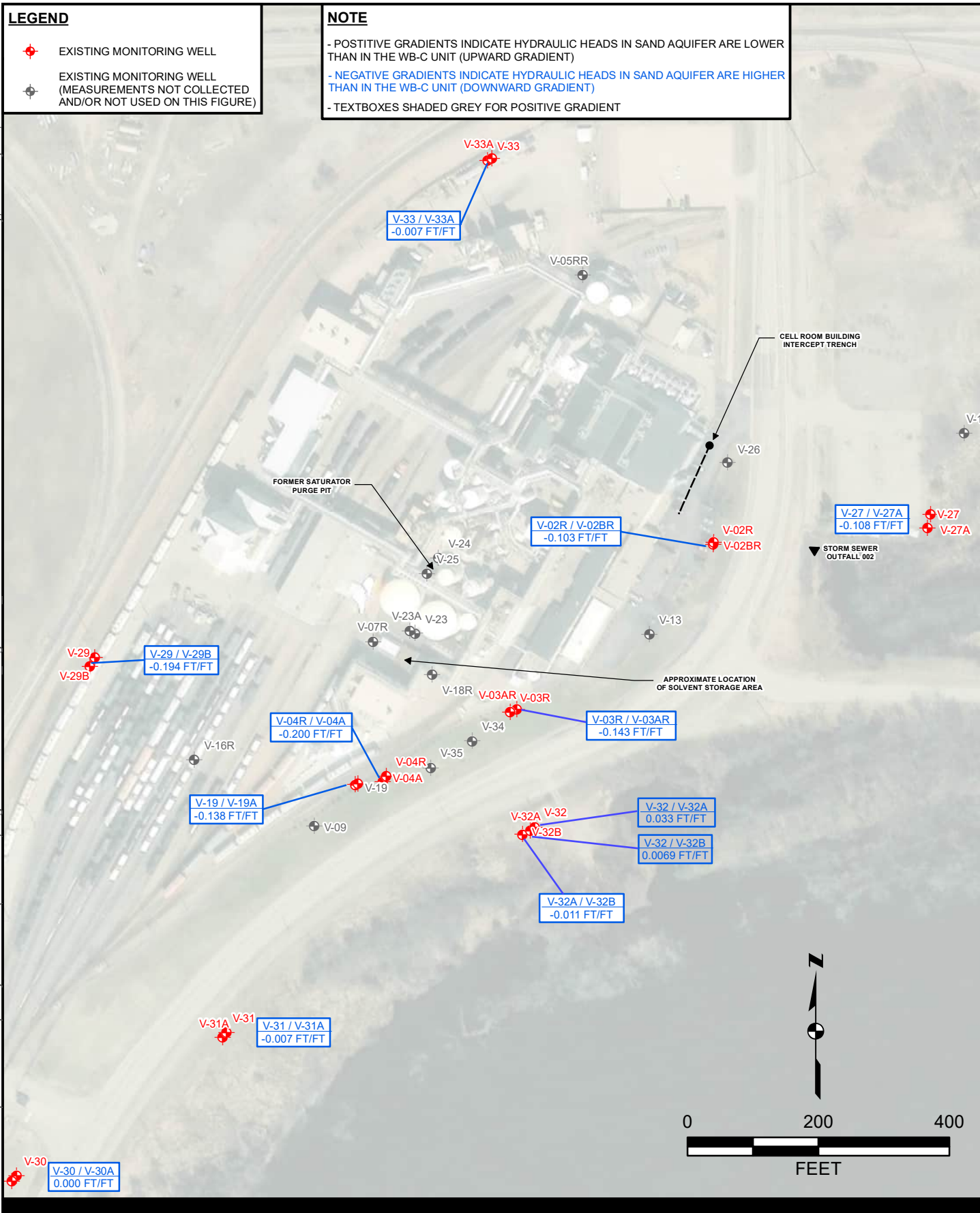


FIGURE 16
VERTICAL HYDRAULIC GRADIENTS - JUNE 2024
ERCO WORLDWIDE

Appendix A

2024 Groundwater Flow Calculations

2024 Groundwater Flow Calculations

Vertical Gradients

Vertical hydraulic gradients were calculated using the following equation:

$$i = \frac{h2 - h1}{L}$$

where:

i = vertical hydraulic gradient in feet/foot
 $h2 - h1$ = difference between groundwater elevations in feet
 L = distance (in feet) between the mid-points of the screens for the water table well and the lower well

Results of the calculations using 2024 measurements are included in Table A-1.

Horizontal Gradients

Horizontal hydraulic gradients were calculated using the following equation:

$$i = \frac{h2 - h1}{L}$$

where:

i = horizontal hydraulic gradient in feet per foot
 $h2 - h1$ = difference between groundwater elevations in feet (absolute value)
 L = distance between wells in feet

Results of the calculations using 2024 measurements are included in Table A-2.

Groundwater Flow Velocities

Vertical and horizontal maximum, minimum, and average linear velocities were calculated for the 2024 sampling events.

Vertical Linear Velocities¹

Vertical linear velocities were calculated using the following equation:

$$v = \frac{k(i)}{n} * 2835$$

where:

v =	average vertical linear velocity in feet/day
k =	vertical hydraulic conductivity (0.00005 centimeters/second)
i =	vertical gradient in feet/foot (absolute value)
n =	effective porosity of 0.33 (dimensionless)
2835 =	conversion factor (centimeters/second to feet/day)

The 2024 data is included in Table A-3, and the results are summarized in Table A-4.

Horizontal Linear Velocities²

Horizontal average linear velocities were calculated across the former storage area to the wetlands and across the Cell Room to the wetlands using the following equation:

$$v = \frac{k(i)}{n} * 365$$

where:

v =	horizontal linear velocity in feet/year
k =	horizontal hydraulic conductivity of 13 feet/day
i =	horizontal hydraulic gradient in feet/foot (absolute value)
n =	porosity of 0.33 (dimensionless)
365 =	conversion factor (days/year)

The 2024 data is included in Table A-5 and the results summarized in Table A-6.

¹Vertical hydraulic conductivity values, in centimeters per second, were derived from geotechnical analyses conducted during the 1995 RFI. The value used was the average hydraulic conductivity. The porosity value was obtained from the geotechnical analyses conducted during the RFI (CH2M HILL 1999). The value used was the average of all soil porosity results.

²Horizontal hydraulic conductivity value derived from pump test conducted by CH2M HILL in August 1993. Porosity value obtained from geotechnical analyses conducted during the 1995 RFI. The value used was the average of all soil porosity results. The porosity value was obtained from the geotechnical analyses conducted during the RFI (CH2M HILL 1999).

Note: Velocity calculations provided above are based on assumptions provided in historical reports.

Table A-1
2024 Vertical Hydraulic Gradients
ERCO Worldwide
Port Edwards, Wisconsin

Well Nest	Distance Between Midpoints of Well Screens (ft)	March 2024		June 2024		September 2024		December 2024	
		Groundwater Elevation (ft)	Vertical Gradient (ft/ft)	Groundwater Elevation (ft)	Vertical Gradient (ft/ft)	Groundwater Elevation (ft)	Vertical Gradient (ft/ft)	Groundwater Elevation (ft)	Vertical Gradient (ft/ft)
V-02R V-02BR	19.96	956.05 --	-- --	957.56 955.51	-0.10 --	956.98 --	-- --	956.40 --	-- --
V-03R V-03AR	13.54	-- --	-- --	957.43 955.50	-0.14 --	-- --	-- --	-- --	-- --
V-04R V-04A	8.77	-- --	-- --	956.05 954.30	-0.20 --	-- --	-- --	-- --	-- --
V-19 V-19A	16.47	-- --	-- --	956.58 954.30	-0.14 --	-- --	-- --	-- --	-- --
V-23 V-23A	18.98	956.02 --	-- --	958.07 957.56	-0.03 --	957.38 --	-- --	956.75 --	-- --
V-27 V-27A	11.30	-- --	-- --	950.08 948.86	-0.11 --	-- --	-- --	-- --	-- --
V-29 V-29B	16.26	-- --	-- --	957.86 954.71	-0.19 --	-- --	-- --	-- --	-- --
V-30 V-30A	11.34	-- --	-- --	953.52 953.52	0.00 --	-- --	-- --	-- --	-- --
V-31 V-31A	8.86	-- --	-- --	954.21 954.15	-0.01 --	-- --	-- --	-- --	-- --
V-32 V-32A	18.17	-- --	-- --	949.86 950.46	0.03 --	-- --	-- --	-- --	-- --
V-32 V-32B	44.73	-- 949.38	-- --	949.86 950.17	0.01 --	-- 949.84	-- --	-- 949.77	-- --
V-32A V-32B	26.56	-- 949.38	-- --	950.46 950.17	-0.01 --	-- 949.84	-- --	-- 949.77	-- --
V-33 V-33A	9.17	-- --	-- --	961.91 961.85	-0.01 --	-- --	-- --	-- --	-- --

Note:

Negative gradients are downward flow

Positive gradients are upward flow

Table A-2
2024 Vertical Hydraulic Gradients
ERCO Worldwide
Port Edwards, Wisconsin

Wells Used	Distance Between Wells (ft)	March 2024		June 2024		September 2024		December 2024	
		Groundwater Elevation (ft)	Horizontal Gradient (ft/ft)	Groundwater Elevation (ft)	Horizontal Gradient (ft/ft)	Groundwater Elevation (ft)	Horizontal Gradient (ft/ft)	Groundwater Elevation (ft)	Horizontal Gradient (ft/ft)
V-05RR V-27	645.28	-- --	--	958.91 950.08	0.014	-- --	--	-- --	--
V-23 V-32	350.46	956.02 --	--	958.07 949.86	0.023	957.38 --	--	956.75 --	--
V-23A V-32A	350.46	-- --	--	957.56 950.46	0.020	-- --	--	-- --	--

Note:

Table A-3
2024 Vertical Hydraulic Gradients
ERCO Worldwide
Port Edwards, Wisconsin

Well Nest	June 2024	
	Vertical Gradient (ft/ft)	Vertical Velocities (ft/d)
V-02R/02BR	-0.10	0.044
V-03R/03AR	-0.14	0.061
V-04R/04A	-0.20	0.086
V-19/19A	-0.14	0.059
V-23/23A	-0.03	0.012
V-27/27A	-0.11	0.046
V-29/29B	-0.19	0.083
V-30/30A	0.00	0.000
V-31/31A	-0.01	0.003
V-32/32A	0.03	0.014
V-32/32B	0.01	0.003
V-32A/32B	-0.01	0.005
V-33/33A	-0.01	0.003

Table A-4
2024 Vertical Hydraulic Gradients
ERCO Worldwide
Port Edwards, Wisconsin

Well Nest	Maximum Gradient (ft/ft)	Minimum Gradient (ft/ft)	Mean Gradient (ft/ft)	Maximum Velocities (ft/d)	Minimum Velocities (ft/d)	Mean Velocities (ft/d)
V-02R/02BR	-0.10	-0.10	-0.10	0.044	0.044	0.044
V-03R/03AR	-0.14	-0.14	-0.14	0.061	0.061	0.061
V-04R/04A	-0.20	-0.20	-0.20	0.086	0.086	0.086
V-19/V-19A	-0.14	-0.14	-0.14	0.059	0.059	0.059
V-23/23A	-0.03	-0.03	-0.03	0.012	0.012	0.012
V-27/27A	-0.11	-0.11	-0.11	0.046	0.046	0.046
V-29/29B	-0.19	-0.19	-0.19	0.083	0.083	0.083
V-30/30A	0.00	0.00	0.00	0.000	0.000	0.000
V-31/31A	-0.01	-0.01	-0.01	0.003	0.003	0.003
V-32/32A	0.03	0.03	0.03	0.014	0.014	0.014
V-32/32B	0.01	0.01	0.01	0.003	0.003	0.003
V-32A/32B	-0.01	-0.01	-0.01	0.005	0.005	0.005
V-33/33A	-0.01	-0.01	-0.01	0.003	0.003	0.003

Table A-5
 2024 Vertical Hydraulic Gradients
 ERCO Worldwide
 Port Edwards, Wisconsin

Flowlines between:	June 2024	
	Horizontal Gradient (ft/ft)	Horizontal Velocities (ft/yr)
V-05RR & V-27	0.014	197
V-23 & V-32	0.023	337
V-23A & V-32A	0.020	291

Note:

Table A-6
 2024 Vertical Hydraulic Gradients
 ERCO Worldwide
 Port Edwards, Wisconsin

Well Nest	Maximum Gradient (ft/ft)	Minimum Gradient (ft/ft)	Mean Gradient (ft/ft)	Maximum Velocities (ft/yr)	Minimum Velocities (ft/yr)	Mean Velocities (ft/yr)
V-05RR & V-27	0.01	0.01	0.01	197	197	197
V-23 & V-32	0.02	0.02	0.02	337	337	337
V-23A & V-32A	0.02	0.02	0.02	291	291	291

Note:

Appendix B

2024 Analytical Results
and QA/QC Review



Data Verification Report

April 15, 2024

Revision 1: May 8, 2024

To	Lauren Lueneburg (lauren.lueneburg@ercoworldwide.com)	Project No.	11218888
Copy to	Dean Fenske; Denise Quigley; Richard Chatfield	DVR No.	15 Rev. 01
From	Sheri Finn/eew	Contact No.	716-205-1977
Project Name	ERCO Worldwide Site	Email	Sheri.finn@ghd.com
Subject	Analytical Results and Data Verification Quarterly Groundwater Monitoring Program Glenn Springs Holdings, Inc. Port Edwards, Wisconsin March 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for water samples collected in support of the quarterly groundwater monitoring program at the ERCO Worldwide Site during March 2024. Samples were submitted to Eurofins Environment Testing located in Universtiy Park, Illinois. The low level dissolved mercury analysis was completed by Eurofins Environment Testing located in Seattle, Washington. A summary of the analytical methodology is presented in Table 1. A sample collection and analysis summary is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, and recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), laboratory duplicates and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Inorganic Superfund Methods Data Review", Environmental Protection Agency (EPA) 542-R-20-006, November 2020.

Item 1 will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in the methods. The sample chain of custody document and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Potassium, chloride and dissolved mercury were detected in the method blanks. Associated potassium and chloride sample results were considerably greater than the concentration found in the blank and no qualification of data was necessary. The dissolved mercury method blank was only associated with the field blank and no qualification was necessary.

4. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS or LCS/LCSD contained all compounds of interest. All LCS/LCSD recoveries and relative percent differences (RPDs) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed internally by the laboratory.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for metals analysis. The duplicate results were evaluated per the "Guidelines" using the laboratory control limits.

All duplicate analyses performed met the above criteria demonstrating acceptable analytical precision with the exception of potassium results which showed some variability. The associated potassium result was qualified as estimated (see Table 4)

7. Field QA/QC Samples

The field QA/QC consisted of one field blank sample and one field duplicate sample set.

7.1 Field Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 2. A positive result was reported, however the field blank sample was the only sample analyzed by the low level mercury method and not associated with the other samples; no qualification of data was necessary.

7.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 2. The RPDs associated with the duplicate sample must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. Positive detections less than the RL but greater than the MDL were reported as estimated (J) in Table 3 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 3.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 3 are acceptable with the qualification noted.

Regards



Sheri Finn
Analyst

Table 1

Summary of Analytical Methods
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
March 2024

Parameter	Method
Mercury - Total and Dissolved	EPA 1631/E245.1
Chloride	EPA 300.0
Sulfide	SM4500-S2-D
Metals - Potassium, Sodium	SW-846 6010

Method References:

- EPA - "Methods for Chemical Analysis of Water and Wastes", US EPA 600/4-79-220, March 1983, with subsequent revisions
- SM - Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
- SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
March 2024

Sample I.D.	Location I.D.	Collection Date (mm/dd/yyyy)	Collection Time (hr/min)	<u>Analytes/Parameters</u>						Comments	SDG
				Dissolved Mercury E1631	Total Mercury E245.1	Dissolved Mercury E245.1	Chloride	Sulfide	Potassium, Sodium		
11218888-FB1-031824	-	03/18/2024	12:10	X						Field Blank	500-247674-1
11218888-V02R-031824	V-02R	03/18/2024	11:05		X	X					
11218888-V23-031824	V-23	03/18/2024	12:00		X	X	X	X	X		
11218888-V24-031824	V-24	03/18/2024	14:40		X	X	X	X	X		
11218888-V25-031824	V-25	03/18/2024	13:45		X	X	X	X	X		
11218888-DUP1-031824	V-25	03/18/2024	13:45		X	X	X	X	X	Field Duplicate of 11218888-V25-031824	
11218888-V32B-031824	V-32B	03/18/2024	09:10		X	X	X				
11218888-V02R-031824	V-02R	03/18/2024	11:05	X							500-247674-2

Notes:

SDG - Sample Delivery Group

Table 3

**Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
March 2024**

Location ID:		Field Blank	V-02R	V-23	V-24
Sample Name:		11218888-FB1-031824	11218888-V02R-031824	11218888-V23-031824	11218888-V24-031824
Sample Date:		03/18/2024	03/18/2024	03/18/2024	03/18/2024
Parameters	Unit				
Metals					
Potassium	mg/L	--	--	1300 J	11000
Sodium	mg/L	--	--	710	330
Mercury (dissolved)	ng/L	0.29 J	--	--	--
Mercury	µg/L	--	0.30	19	47
Mercury (dissolved)	µg/L	--	0.20 U	10	25
General Chemistry					
Chloride	mg/L	--	--	1600	4900
Sulfide	mg/L	--	--	1.0 U	1.0 U

Table 3

**Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
March 2024**

Location ID:		V-25	V-25	V-32B	V-02R
Sample Name:		11218888-V25-031824	11218888-DUP1-031824	11218888-V32B-031824	11218888-V02R-031824
Sample Date:		03/18/2024	03/18/2024 Duplicate	03/18/2024	03/18/2024
Parameters	Unit				
Metals					
Potassium	mg/L	7600	8400	--	--
Sodium	mg/L	190	170	--	--
Mercury (dissolved)	ng/L	--	--	--	280
Mercury	µg/L	100	100	1.5	--
Mercury (dissolved)	µg/L	34	34	1.4	--
General Chemistry					
Chloride	mg/L	5600	5700	2600	--
Sulfide	mg/L	1.0 U	1.0 U	--	--

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

Table 4

Qualified Sample Data Due to Outlying Laboratory Duplicate Results
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
March 2024

Parameter	Sample ID	Analyte	RPD (percent)	RPD Control Limit (percent)		Associated Sample ID	Qualified Result	Units
Metals	11218888-V23-031824	Potassium	24		20	11218888-V23-031824	1300 J	mg/L

Notes:

RPD - Relative Percent Difference
J - Estimated concentration



Data Verification Report

July 31, 2024

To	Lauren Lueneburg (lauren.lueneburg@ercoworldwide.com)	Project No.	11218888
Copy to	Dean Fenske; Denise Quigley; Richard Chatfield	DVR No.	16
From	Sheri Finn/eew	Contact No.	716-205-1977
Project Name	ERCO Worldwide Site	Email	Sheri.finn@ghd.com
Subject	Analytical Results and Data Verification Quarterly Groundwater Monitoring Program Glenn Springs Holdings, Inc. Port Edwards, Wisconsin June 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for water samples collected in support of the quarterly groundwater monitoring program at the ERCO Worldwide Site during June 2024. Samples were submitted to Eurofins Environment Testing located in Universtiy Park, Illinois. The low level dissolved mercury analysis was completed by Eurofins Environment Testing located in Seattle, Washington. A summary of the analytical methodology is presented in Table 1. A sample collection and analysis summary is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, and recovery data from surrogate spikes, laboratory control samples (LCS), matrix spikes (MS), laboratory duplicates and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Inorganic Superfund Methods Data Review", Environmental Protection Agency (EPA) 542-R-20-006, November 2020.

Item 1 will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in the methods. The sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and

analyzed within the required holding times. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Methylene chloride, mercury, dissolved mercury, chloride and sodium were detected in the method blanks. Associated sample results that were similar in concentration to the method blanks were qualified non-detect (see Table 4).

4. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS or LCS/LCSD contained all compounds of interest. All LCS/LCSD recoveries and relative percent differences (RPDs) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed internally by the laboratory for inorganic parameters.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for metals analysis. The duplicate results were evaluated per the "Guidelines" using the laboratory control limits.

All duplicate analyses performed met the above criteria demonstrating acceptable analytical precision.

7. Field QA/QC Samples

The field QA/QC consisted of five trip blank samples, four field blank samples and three field duplicate sample sets.

7.1 Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, five trip blank samples were submitted to the laboratory for volatile organic compound (VOC) analysis. All results were non-detect for the compounds of interest with the exception of methylene chloride. The associated samples were already qualified non-detect with the method blank and no further qualification was necessary.

7.2 Field Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, four field blank samples were submitted for analysis, as identified in Table 2. Results were non-detect for the analytes of interest.

7.3 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, three field duplicate sample sets were collected and submitted "blind" to the laboratory, as specified in Table 2. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. Positive detections less than the RL but greater than the MDL were reported as estimated (J) in Table 3 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 3.

9. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 3 are acceptable with the qualifications noted.

Regards



Sheri Finn
Analyst

Table 1

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Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Parameter	Method
Mercury - Total and Dissolved	EPA 1631/E245.1
Chloride	EPA 300.0
Sulfide	SM4500-S2-D
Metals - Potassium, Sodium	SW-846 6010
Volatile Organic Compounds	SW-846 8260

Method References:

- EPA - "Methods for Chemical Analysis of Water and Wastes", US EPA 600/4-79-220, March 1983, with subsequent revisions
- SM - Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
- SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Sample I.D.	Location I.D.	Collection Date (mm/dd/yyyy)	Collection Time (hr/min)	<u>Analytes/Parameters</u>						Comments	SDG
				Mercury E1631	Mercury E245.1	Compounds	Chloride	Sulfide	Potassium, Sodium		
11218888-FB1-061024	-	06/10/2024	12:40	X	X					Field Blank	5002519751
11218888-FB2-061124	-	06/11/2024	14:25	X	X					Field Blank	5002519751
11218888-FB3-061224	-	06/12/2024	16:10	X	X					Field Blank	5002520621
11218888-FB4-061324	-	06/13/2024	16:20	X	X					Field Blank	5002521441
11218888-Storm Sewer No. 1-061024	STORM SEWER NO.1	06/10/2024	14:40		X		X				5002519751
11218888-Trench Discharge-061324	TRENCH-DISCHARGE	06/13/2024	09:00		X		X				5002521441
11218888-TB1-061024	-	06/10/2024	11:50			X				Trip Blank	5002519751
11218888-TB2-061124	-	06/11/2024	07:00			X				Trip Blank	5002519751
11218888-TB3-061224	-	06/12/2024	07:00			X				Trip Blank	5002520621
11218888-TB4-061324	-	06/13/2024	07:00			X				Trip Blank	5002521441
11218888-TB5-061424	-	06/14/2024	07:00			X				Trip Blank	5002522901
11218888-V02BR-061324	V-02BR	06/13/2024	11:40		X	X	X				5002521441
11218888-V02R-061324	V-02R	06/13/2024	11:00		X	X	X				5002521441
11218888-V03AR-061124	V-03AR	06/11/2024	13:25	X	X	X	X				5002519751and 5002519752
11218888-V03R-061124	V-03R	06/11/2024	14:00	X	X	X	X	X	X		5002519751and 5002519752
11218888-V04A-061124	V-04A	06/11/2024	10:40	X	X	X	X				5002519751and 5002519752
11218888-V04R-061124	V-04R	06/11/2024	10:00		X		X				5002519751
11218888-V05RR-061224	V-05RR	06/12/2024	09:15	X	X	X	X				5002520621 and 5002520622

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Sample I.D.	Location I.D.	Collection Date (mm/dd/yyyy)	Collection Time (hr/min)	<u>Analytes/Parameters</u>						Comments	SDG
				Mercury E1631	Mercury E245.1	Compounds	Chloride	Sulfide	Potassium, Sodium		
11218888-DUP2-061224	V-05RR	06/12/2024	09:15	X	X	X	X			Field Duplicate of 11218888-V05RR-061224	5002520621 and 5002520622
11218888-V07R-061224	V-07R	06/12/2024	13:20		X		X				5002520621
11218888-V09-061124	V-09	06/11/2024	09:10	X	X	X	X				5002519751and 5002519752
11218888-DUP1-061124	V-09	06/11/2024	09:10	X	X	X	X			Field Duplicate of 11218888-V09-061124	5002519751and 5002519752
11218888-V13-061324	V-13	06/13/2024	12:45		X	X	X				5002521441
11218888-V18R-061224	V-18R	06/12/2024	11:00	X	X		X	X	X		5002520621 and 5002520622
11218888-DUP3-061224	V-18R	06/12/2024	11:00	X	X		X	X	X	Field Duplicate of 11218888-V18R-061224	5002520621 and 5002520622
11218888-V19-061224	V-19	06/12/2024	10:15		X		X				5002520621
11218888-V23-061224	V-23	06/12/2024	12:15		X		X	X	X		5002520621
11218888-V24-061224	V-24	06/12/2024	14:40		X		X	X	X		5002520621
11218888-V25-061224	V-25	06/12/2024	14:00		X		X	X	X		5002520621
11218888-V26-061324	V-26	06/13/2024	10:10		X		X				5002521441
11218888-V27-061324	V-27	06/13/2024	13:35			X	X				5002521441
11218888-V27A-061324	V-27A	06/13/2024	14:15			X	X				5002521441
11218888-V30-061424	V-30	06/14/2024	09:00			X	X				5002522901
11218888-V30A-061424	V-30A	06/14/2024	09:35			X	X				5002522901
11218888-V31-061024	V-31	06/10/2024	11:40			X	X				5002519751
11218888-V31A-061024	V-31A	06/10/2024	11:00			X	X				5002519751
11218888-V32-061024	V-32	06/10/2024	12:15	X	X	X	X				5002519751and 5002519752

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Sample I.D.	Location I.D.	Collection Date (mm/dd/yyyy)	Collection Time (hr/min)	<u>Analytes/Parameters</u>						Comments	SDG
				Mercury E1631	Mercury E245.1	Compounds	Chloride	Sulfide	Potassium, Sodium		
11218888-V32A-061024	V-32A	06/10/2024	13:05	X	X	X	X				5002519751and 5002519752
11218888-V32B-061024	V-32B	06/10/2024	14:05		X	X	X				5002519751
11218888-V34-061124	V-34	06/11/2024	12:40		X						5002519751
11218888-V35-061124	V-35	06/11/2024	11:30		X						5002519751

Notes:

SDG - Sample Delivery Group

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		Field Blank	Field Blank	Field Blank	Field Blank	STORM SEWER NO.1
Sample Name:		11218888-FB1-061024	11218888-FB2-061124	11218888-FB3-061224	11218888-FB4-061324	11218888-Storm Sewer No. 1-061024
Sample Date:		06/10/2024	06/11/2024	06/12/2024	06/13/2024	06/10/2024
Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--
Acetone	µg/L	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--
Bromomethane (Methyl bromide)	µg/L	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--
Chloromethane (Methyl chloride)	µg/L	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--
Dibromochloromethane	µg/L	--	--	--	--	--
Dibromomethane	µg/L	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	µg/L	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--
Methyl tert butyl ether (MTBE)	µg/L	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		Field Blank	Field Blank	Field Blank	Field Blank	STORM SEWER NO.1
Sample Name:		11218888-FB1-061024	11218888-FB2-061124	11218888-FB3-061224	11218888-FB4-061324	11218888-Storm Sewer No. 1-061024
Sample Date:		06/10/2024	06/11/2024	06/12/2024	06/13/2024	06/10/2024
Parameters	Unit					
Volatile Organic Compounds (Continued)						
Methylene chloride	µg/L	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--
Styrene	µg/L	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--
Tetrahydrofuran	µg/L	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	µg/L	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--
Metals						
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Mercury	ng/L	--	--	--	--	--
Mercury (dissolved)	ng/L	0.50 U	0.50 U	0.50 U	0.50 U	--
Mercury	µg/L	--	--	--	--	0.18 J
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U	--
General Chemistry						
Chloride	mg/L	--	--	--	--	110
Sulfide	mg/L	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:	TRENCH-DISCHARGE	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Sample Name:	11218888-Trench Discharge-061324	11218888-TB1-061024	11218888-TB2-061124	11218888-TB3-061224	11218888-TB4-061324	11218888-TB5-061424
Sample Date:	06/13/2024	06/10/2024	06/11/2024	06/12/2024	06/13/2024	06/14/2024

Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	--	10 U	10 U	10 U	10 U
Benzene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	--	3.0 U	3.0 U	3.0 U	3.0 U
Carbon disulfide	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	--	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert butyl ether (MTBE)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:	TRENCH-DISCHARGE	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Sample Name:	11218888-Trench Discharge-061324	11218888-TB1-061024	11218888-TB2-061124	11218888-TB3-061224	11218888-TB4-061324	11218888-TB5-061424
Sample Date:	06/13/2024	06/10/2024	06/11/2024	06/12/2024	06/13/2024	06/14/2024

Parameters	Unit					
Volatile Organic Compounds (Continued)						
Methylene chloride	µg/L	--	5.0 U	5.0 U	7.9	7.9
Naphthalene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	--	10 U	10 U	10 U	10 U
Toluene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Metals						
Potassium	mg/L	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--
Mercury	ng/L	--	--	--	--	--
Mercury (dissolved)	ng/L	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--
Mercury (dissolved)	µg/L	0.36	--	--	--	--
General Chemistry						
Chloride	mg/L	670	--	--	--	--
Sulfide	mg/L	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-02BR	V-02R	V-03AR	V-03R	V-04A	V-04R
Sample Name:		11218888-V02BR-061324	11218888-V02R-061324	11218888-V03AR-061124	11218888-V03R-061124	11218888-V04A-061124	11218888-V04R-061124
Sample Date:		06/13/2024	06/13/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024
Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
Acetone	µg/L	10 U	10 U	10 U	10 U	10 U	--
Benzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	--
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Bromomethane (Methyl bromide)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	--
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	--
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Chloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	--
Chloromethane (Methyl chloride)	µg/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--
cis-1,2-Dichloroethene	µg/L	130	1.0 U	1.0 U	1.0 U	1.0 U	--
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Dibromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Dichlorodifluoromethane (CFC-12)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	--
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	--
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-02BR	V-02R	V-03AR	V-03R	V-04A	V-04R
Sample Name:		11218888-V02BR-061324	11218888-V02R-061324	11218888-V03AR-061124	11218888-V03R-061124	11218888-V04A-061124	11218888-V04R-061124
Sample Date:		06/13/2024	06/13/2024	06/11/2024	06/11/2024	06/11/2024	06/11/2024
Parameters	Unit						
Volatile Organic Compounds (Continued)							
Methylene chloride	µg/L	7.3 U	9.1 U	5.0 U	5.1	5.0 U	--
Naphthalene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	10 U	--
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	--
trans-1,2-Dichloroethene	µg/L	3.9	1.0 U	1.0 U	1.0 U	1.6	--
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Trichloroethene	µg/L	4.5	0.50 U	0.50 U	0.50 U	0.50 U	--
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Vinyl chloride	µg/L	1.5	1.0 U	1.0 U	1.0 U	1.0 U	--
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--
Metals							
Potassium	mg/L	--	--	--	14	--	--
Sodium	mg/L	--	--	--	340	--	--
Mercury	ng/L	--	--	--	180	--	--
Mercury (dissolved)	ng/L	--	--	7.3	15	5.3	--
Mercury	µg/L	--	--	--	0.20 U	--	--
Mercury (dissolved)	µg/L	0.098 J	0.45	0.20 U	0.20 U	0.20 U	0.20 U
General Chemistry							
Chloride	mg/L	1700	640	4200	560	1600	110
Sulfide	mg/L	--	--	--	1.0 U	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-05RR	V-05RR	V-07R	V-09	V-09	V-13
Sample Name:		11218888-V05RR-061224	11218888-DUP2-061224	11218888-V07R-061224	11218888-V09-061124	11218888-DUP1-061124	11218888-V13-061324
Sample Date:		06/12/2024	06/12/2024	06/12/2024	06/11/2024	06/11/2024	06/13/2024
		Duplicate				Duplicate	
Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U
Acetone	µg/L	10 U	10 U	--	10 U	10 U	10 U
Benzene	µg/L	0.50 U	0.50 U	--	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	3.0 U	3.0 U	--	3.0 U	3.0 U	3.0 U
Carbon disulfide	µg/L	2.0 U	2.0 U	--	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	--	2.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Dibromomethane	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	3.0 U	3.0 U	--	3.0 U	3.0 U	3.0 U
Ethylbenzene	µg/L	0.50 U	0.50 U	--	0.50 U	0.50 U	0.50 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-05RR	V-05RR	V-07R	V-09	V-09	V-13
Sample Name:		11218888-V05RR-061224	11218888-DUP2-061224	11218888-V07R-061224	11218888-V09-061124	11218888-DUP1-061124	11218888-V13-061324
Sample Date:		06/12/2024	06/12/2024	06/12/2024	06/11/2024	06/11/2024	06/13/2024
		Duplicate				Duplicate	
Parameters	Unit						
Volatile Organic Compounds (Continued)							
Methylene chloride	µg/L	7.3 U	7.6 U	--	5.0 U	5.2	7.4 U
Naphthalene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	10 U	10 U	--	10 U	10 U	10 U
Toluene	µg/L	0.50 U	0.50 U	--	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	0.50 U	0.50 U	--	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U
Metals							
Potassium	mg/L	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--
Mercury	ng/L	--	--	--	--	--	--
Mercury (dissolved)	ng/L	5.7	5.8	--	54	54	--
Mercury	µg/L	--	--	--	--	--	--
Mercury (dissolved)	µg/L	0.20 U	0.10 J	0.37	0.20 U	0.20 U	0.15 J
General Chemistry							
Chloride	mg/L	17	18	450	170	170	830
Sulfide	mg/L	--	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

	Location ID:	V-18R	V-18R	V-19	V-23	V-24	V-25
	Sample Name:	11218888-V18R-061224	11218888-DUP3-061224	11218888-V19-061224	11218888-V23-061224	11218888-V24-061224	11218888-V25-061224
	Sample Date:	06/12/2024	06/12/2024	06/12/2024	06/12/2024	06/12/2024	06/12/2024
		Duplicate					
Parameters	Unit						
Volatile Organic Compounds							
1,1,1-Trichloroethane	µg/L	--	--	--	--	--	--
1,1,2-Trichloroethane	µg/L	--	--	--	--	--	--
1,1-Dichloroethane	µg/L	--	--	--	--	--	--
1,1-Dichloroethene	µg/L	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	--	--	--	--	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	--	--	--	--	--	--
1,2-Dichlorobenzene	µg/L	--	--	--	--	--	--
1,2-Dichloroethane	µg/L	--	--	--	--	--	--
1,2-Dichloropropane	µg/L	--	--	--	--	--	--
1,3-Dichlorobenzene	µg/L	--	--	--	--	--	--
1,4-Dichlorobenzene	µg/L	--	--	--	--	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	--	--	--	--	--
Acetone	µg/L	--	--	--	--	--	--
Benzene	µg/L	--	--	--	--	--	--
Bromodichloromethane	µg/L	--	--	--	--	--	--
Bromoform	µg/L	--	--	--	--	--	--
Bromomethane (Methyl bromide)	µg/L	--	--	--	--	--	--
Carbon disulfide	µg/L	--	--	--	--	--	--
Carbon tetrachloride	µg/L	--	--	--	--	--	--
Chlorobenzene	µg/L	--	--	--	--	--	--
Chloroethane	µg/L	--	--	--	--	--	--
Chloroform (Trichloromethane)	µg/L	--	--	--	--	--	--
Chloromethane (Methyl chloride)	µg/L	--	--	--	--	--	--
cis-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
cis-1,3-Dichloropropene	µg/L	--	--	--	--	--	--
Dibromochloromethane	µg/L	--	--	--	--	--	--
Dibromomethane	µg/L	--	--	--	--	--	--
Dichlorodifluoromethane (CFC-12)	µg/L	--	--	--	--	--	--
Ethylbenzene	µg/L	--	--	--	--	--	--
Methyl tert butyl ether (MTBE)	µg/L	--	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-18R	V-18R	V-19	V-23	V-24	V-25
Sample Name:		11218888-V18R-061224	11218888-DUP3-061224	11218888-V19-061224	11218888-V23-061224	11218888-V24-061224	11218888-V25-061224
Sample Date:		06/12/2024	06/12/2024	06/12/2024	06/12/2024	06/12/2024	06/12/2024
		Duplicate					
Parameters	Unit						
Volatile Organic Compounds (Continued)							
Methylene chloride	µg/L	--	--	--	--	--	--
Naphthalene	µg/L	--	--	--	--	--	--
Styrene	µg/L	--	--	--	--	--	--
Tetrachloroethene	µg/L	--	--	--	--	--	--
Tetrahydrofuran	µg/L	--	--	--	--	--	--
Toluene	µg/L	--	--	--	--	--	--
trans-1,2-Dichloroethene	µg/L	--	--	--	--	--	--
trans-1,3-Dichloropropene	µg/L	--	--	--	--	--	--
Trichloroethene	µg/L	--	--	--	--	--	--
Trichlorofluoromethane (CFC-11)	µg/L	--	--	--	--	--	--
Vinyl chloride	µg/L	--	--	--	--	--	--
Xylenes (total)	µg/L	--	--	--	--	--	--
Metals							
Potassium	mg/L	25	24	--	1200	670	3300
Sodium	mg/L	660	620	--	660	290	370
Mercury	ng/L	--	--	--	--	--	--
Mercury (dissolved)	ng/L	230	280	--	--	--	--
Mercury	µg/L	0.20 U	0.29 U	--	40	31	91
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.12 J	8.9	12	86
General Chemistry							
Chloride	mg/L	790	830	300	1800	2600	4500
Sulfide	mg/L	1.0 U	1.0 U	--	0.38 J	1.0 U	1.0 U

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:	V-26	V-27	V-27A	V-30	V-30A	V-31
Sample Name:	11218888-V26-061324	11218888-V27-061324	11218888-V27A-061324	11218888-V30-061424	11218888-V30A-061424	11218888-V31-061024
Sample Date:	06/13/2024	06/13/2024	06/13/2024	06/14/2024	06/14/2024	06/10/2024
Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	µg/L	--	10 U	10 U	10 U	10 U
Benzene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	--	3.0 U	3.0 U	3.0 U	3.0 U
Carbon disulfide	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U
Carbon tetrachloride	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
Chloroform (Trichloromethane)	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U
Chloromethane (Methyl chloride)	µg/L	--	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	µg/L	--	1.0 U	1.3	1.7	1.7
cis-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	--	3.0 U	3.0 U	3.0 U	3.0 U
Ethylbenzene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert butyl ether (MTBE)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-26	V-27	V-27A	V-30	V-30A	V-31
Sample Name:		11218888-V26-061324	11218888-V27-061324	11218888-V27A-061324	11218888-V30-061424	11218888-V30A-061424	11218888-V31-061024
Sample Date:		06/13/2024	06/13/2024	06/13/2024	06/14/2024	06/14/2024	06/10/2024
Parameters	Unit						
Volatile Organic Compounds (Continued)							
Methylene chloride	µg/L	--	7.8 U	7.5 U	8.0 U	8.1 U	5.3
Naphthalene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrahydrofuran	µg/L	--	10 U	10 U	10 U	10 U	10 U
Toluene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	µg/L	--	1.0 U	1.0 U	1.0 U	1.5	1.0 U
trans-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane (CFC-11)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.2
Xylenes (total)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals							
Potassium	mg/L	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--
Mercury	ng/L	--	--	--	--	--	--
Mercury (dissolved)	ng/L	--	--	--	--	--	--
Mercury	µg/L	--	--	--	--	--	--
Mercury (dissolved)	µg/L	0.046 J	--	--	--	--	--
General Chemistry							
Chloride	mg/L	850	80	590	260	130	76
Sulfide	mg/L	--	--	--	--	--	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:	V-31A	V-32	V-32A	V-32B	V-34	V-35
Sample Name:	11218888-V31A-061024	11218888-V32-061024	11218888-V32A-061024	11218888-V32B-061024	11218888-V34-061124	11218888-V35-061124
Sample Date:	06/10/2024	06/10/2024	06/10/2024	06/10/2024	06/11/2024	06/11/2024
Parameters	Unit					
Volatile Organic Compounds						
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	5.0 U	5.0 U	5.0 U	--	--
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	--	--
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	--	--
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	5.0 U	5.0 U	5.0 U	--	--
Acetone	µg/L	10 U	10 U	10 U	--	--
Benzene	µg/L	0.50 U	0.50 U	0.50 U	--	--
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	--	--
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	--	--
Bromomethane (Methyl bromide)	µg/L	3.0 U	3.0 U	3.0 U	--	--
Carbon disulfide	µg/L	2.0 U	2.0 U	2.0 U	--	--
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	--	--
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	--	--
Chloroethane	µg/L	5.0 U	5.0 U	5.0 U	--	--
Chloroform (Trichloromethane)	µg/L	2.0 U	2.0 U	2.0 U	--	--
Chloromethane (Methyl chloride)	µg/L	5.0 U	5.0 U	5.0 U	--	--
cis-1,2-Dichloroethene	µg/L	77	1.0 U	0.64 J	3.6	--
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--
Dibromomethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--
Dichlorodifluoromethane (CFC-12)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	--
Ethylbenzene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	--
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Location ID:		V-31A	V-32	V-32A	V-32B	V-34	V-35
Sample Name:		11218888-V31A-061024	11218888-V32-061024	11218888-V32A-061024	11218888-V32B-061024	11218888-V34-061124	11218888-V35-061124
Sample Date:		06/10/2024	06/10/2024	06/10/2024	06/10/2024	06/11/2024	06/11/2024
Parameters		Unit					
Volatile Organic Compounds (Continued)							
Methylene chloride	µg/L	5.1	5.0 U	5.0 U	5.3	--	--
Naphthalene	µg/L	1.0 U	1.0 U	1.0 U	1.4	--	--
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Tetrahydrofuran	µg/L	10 U	10 U	10 U	10 U	--	--
Toluene	µg/L	0.50 U	0.50 U	0.50 U	0.50 U	--	--
trans-1,2-Dichloroethene	µg/L	8.9	1.2	1.0 U	1.7	--	--
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Trichloroethene	µg/L	8.7	0.50 U	0.50 U	2.3	--	--
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Vinyl chloride	µg/L	1.2	1.0 U	1.0 U	0.60 J	--	--
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	--	--
Metals							
Potassium	mg/L	--	--	--	--	--	--
Sodium	mg/L	--	--	--	--	--	--
Mercury	ng/L	--	14	21	--	--	--
Mercury (dissolved)	ng/L	--	11	19	--	--	--
Mercury	µg/L	--	0.20 U	0.20 U	1.3	5.7	0.41
Mercury (dissolved)	µg/L	--	0.20 U	0.20 U	1.3	0.17 J	0.17 J
General Chemistry							
Chloride	mg/L	180	790	1200	2500	--	--
Sulfide	mg/L	--	--	--	--	--	--

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

"--" - Not analyzed

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
June 2024

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result *	Sample ID	Original Result	Qualified Result	Units	Sample Delivery Group
VOC	Methylene Chloride	06/20/2024	7.52	11218888-V05RR-061224	7.3	7.3 U	µg/L	5002520621
		06/20/2024	7.52	11218888-DUP2-061224	7.6	7.6 U	µg/L	
		06/21/2024	8.39	11218888-V02R-061324	9.1	9.1 U	µg/L	5002521441
		06/21/2024	8.39	11218888-V02BR-061324	7.3	7.3 U	µg/L	
		06/21/2024	8.39	11218888-V13-061324	7.4	7.4 U	µg/L	
		06/21/2024	8.39	11218888-V27-061324	7.8	7.8 U	µg/L	
		06/21/2024	8.39	11218888-V27A-061324	7.5	7.5 U	µg/L	
		06/21/2024	8.39	11218888-V30-061424	8.0	8.0 U	µg/L	5002522901
		06/21/2024	8.39	11218888-V30A-061424	8.1	8.1 U	µg/L	
Metals	Mercury (dissolved)	06/19/2024	0.047J	11218888-V04R-061124	0.079 J	0.20 U	µg/L	5002519751
	Mercury	06/20/2024	0.114J	11218888-V18R-061224	0.091 J	0.20 U	µg/L	5002520621
				11218888-DUP3-061224	0.29	0.29 U	µg/L	

Notes:

- * - Blank result adjusted for sample factors where applicable
- U - Not detected at the associated reporting limit
- J - Estimated concentration
- VOCs - Volatile Organic Compounds



Data Verification Report

October 1, 2024

To	Lauren Lueneburg (lauren.lueneburg@ercoworldwide.com)	Project No.	11218888
Copy to	Dean Fenske; Denise Quigley; Richard Chatfield; Sheri Finn	DVR No.	17
From	Alicia Ferber/cs/17-NF	Contact No.	720-245-2755
Project Name	ERCO Worldwide Site	Email	Alicia.ferber@ghd.com
Subject	Analytical Results and Data Verification Quarterly Groundwater Monitoring Program Glenn Springs Holdings, Inc. – ERCO Worldwide Site Port Edwards, Wisconsin September 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for water samples collected in support of the quarterly groundwater monitoring program at the ERCO Worldwide Site during September 2024. Samples were submitted to Eurofins Environment Testing located in Universtiy Park, Illinois. A summary of the analytical methodology is presented in Table 1. A sample collection and analysis summary is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report form, method blank data, and recovery data from laboratory control samples (LCS), matrix spikes (MS), laboratory duplicates and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Inorganic Superfund Methods Data Review",
United States Environmental Protection Agency (USEPA) 542-R-20-006, November 2020.

This item will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in the methods. The sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and

analyzed within the required holding times. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of one per analytical batch.

Low level concentrations of chloride were detected in the method blank reflecting potential laboratory contamination. All associated sample results were significantly higher than the method blank concentrations and were reported without qualification. All other method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation

4. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of one per analytical batch.

The LCS or LCS/LCSD contained all compounds of interest. All LCS/LCSD recoveries and relative percent differences (RPDs) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed internally by the laboratory for inorganic parameters. MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated per the "Guidelines" using the laboratory control limits. All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for metals analysis. The duplicate results were evaluated per the "Guidelines" using the laboratory control limits.

All duplicate analyses performed met the above criteria demonstrating acceptable analytical precision.

7. Field QA/QC Samples

The field QA/QC consisted of one field blank sample and one field duplicate sample set.

7.1 Field Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 2. Results were non-detect for the analytes of interest.

7.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 2. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Total vs. Dissolved

Analytical results for total and dissolved mercury were evaluated for variability. The dissolved analyte result was less than the total result. No qualification of the sample results was required.

9. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. No positive analyte detections less than the RL but greater than the sample-specific MDL were reported. Non-detect results were presented as non-detect at the RL in Table 3.

10. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 3 are acceptable without qualification.

Regards,



Alicia Ferber
Analyst

Table 1

Analytical Methods
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September 2024

Parameter	Method
Mercury - Total and Dissolved	EPA 245.1
Chloride	EPA 300
Sulfide	SM4500-S2-F
Metals - Potassium, Sodium	SW-846 6010D

Method References:

EPA	- "Methods for Chemical Analysis of Water and Wastes", US EPA 600/4-79-220, March 1983, with subsequent revisions
SM	- Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
SW-846	- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September 2024

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters				Comments
						Potassium, Sodium	Mercury E245.1	Chloride	Sulfide	
5002560671	11218888-DUP1-090324	V-02R	Water	09/03/2024	10:45		X			FD(11218888-V02R-90324)
	11218888-FB1-90324	Field Blank	Water	09/03/2024	13:30		X			Field Blank
	11218888-V02R-90324	V-02R	Water	09/03/2024	10:45		X			
	11218888-V23-90324	V-23	Water	09/03/2024	11:45	X	X	X	X	
	11218888-V24-90324	V-24	Water	09/03/2024	13:05	X		X	X	
	11218888-V25-90324	V-25	Water	09/03/2024	12:30	X	X	X	X	
	11218888-V32B-90324	V-32B	Water	09/03/2024	09:25		X	X		MS/MSD; DUP

Notes:

DUP - Laboratory Duplicate
FD - Field Duplicate Sample of sample in parenthesis
MS/MSD - Matrix Spike/Matrix Spike Duplicate

Table 3

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September 2024

Location ID:		V-02R	V-02R	V-23
Sample Name:		11218888-V02R-90324	11218888-DUP1-090324	11218888-V23-90324
Sample Date:		09/03/2024	09/03/2024	09/03/2024
			Duplicate	
Parameters	Unit			
Metals				
Potassium	mg/L	--	--	220
Sodium	mg/L	--	--	190
Mercury (dissolved)	ng/L	--	--	--
Mercury	µg/L	1.4	1.4	26
Mercury (dissolved)	µg/L	0.21	0.22	3.1
General Chemistry				
Chloride	mg/L	--	--	240
Sulfide	mg/L	--	--	1.0 U

Table 3

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September 2024

Location ID:		V-24	V-25	V-32B
Sample Name:		11218888-V24-90324	11218888-V25-90324	11218888-V32B-90324
Sample Date:		09/03/2024	09/03/2024	09/03/2024
Parameters	Unit			
Metals				
Potassium	mg/L	3900	960	--
Sodium	mg/L	470	330	--
Mercury (dissolved)	ng/L	--	--	--
Mercury	µg/L	--	80	1.3
Mercury (dissolved)	µg/L	--	36	1.2
General Chemistry				
Chloride	mg/L	3400	1600	2400
Sulfide	mg/L	1.0 U	1.0 U	--

Notes:

U - Not detected at associated reporting limit

-- - Not applicable



Data Verification Report

October 1, 2024

October 22, 2024

To	Lauren Lueneburg (lauren.lueneburg@ercoworldwide.com)	Project No.	11218888
Copy to	Dean Fenske; Denise Quigley; Richard Chatfield; Sheri Finn	DVR No.	17
From	Alicia Ferber/cs/17-NF	Contact No.	720-245-2755
Project Name	ERCO Worldwide Site	Email	Alicia.ferber@ghd.com
Subject	Analytical Results and Data Verification Quarterly Groundwater Monitoring Program Glenn Springs Holdings, Inc. – ERCO Worldwide Site Port Edwards, Wisconsin September and October 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for water samples collected in support of the quarterly groundwater monitoring program at the ERCO Worldwide Site during September and October 2024. Samples were submitted to Eurofins Environment Testing located in Universtiy Park, Illinois. A summary of the analytical methodology is presented in Table 1. A sample collection and analysis summary is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report form, method blank data, and recovery data from laboratory control samples (LCS), matrix spikes (MS), laboratory duplicates and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Inorganic Superfund Methods Data Review",
United States Environmental Protection Agency (USEPA) 542-R-20-006, November 2020.

This item will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in the methods. The sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and analyzed within the required holding times. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of one per analytical batch.

Low level concentrations of chloride were detected in the method blank reflecting potential laboratory contamination. All associated sample results were significantly higher than the method blank concentrations and were reported without qualification. All other method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

4. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of one per analytical batch.

The LCS or LCS/LCSD contained all compounds of interest. All LCS/LCSD recoveries and relative percent differences (RPDs) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed internally by the laboratory for inorganic parameters. MS/MSD analyses were performed as specified in Table 1.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated per the "Guidelines" using the laboratory control limits. All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Duplicate Sample Analyses

Analytical precision is evaluated based on the analysis of laboratory duplicate samples. For this study, duplicate samples were prepared and analyzed by the laboratory for metals analysis. The duplicate results were evaluated per the "Guidelines" using the laboratory control limits.

All duplicate analyses performed met the above criteria demonstrating acceptable analytical precision.

7. Field QA/QC Samples

The field QA/QC consisted of one field blank sample and one field duplicate sample set.

7.1 Field Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 2. Results were non-detect for the analytes of interest.

7.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 2. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Total vs. Dissolved

Analytical results for total and dissolved mercury were evaluated for variability. The dissolved analyte result was less than the total result. No qualification of the sample results was required.

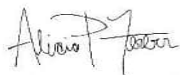
9. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. No positive analyte detections less than the RL but greater than the sample-specific MDL were reported. Non-detect results were presented as non-detect at the RL in Table 3.

10. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 3 are acceptable without qualification.

Regards,



Alicia Ferber
Analyst

Table 1

Analytical Methods
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September and October 2024

Parameter	Method
Mercury - Total and Dissolved	EPA 245.1
Chloride	EPA 300
Sulfide	SM4500-S2-F
Metals - Potassium, Sodium	SW-846 6010D

Method References:

EPA	- "Methods for Chemical Analysis of Water and Wastes", US EPA 600/4-79-220, March 1983, with subsequent revisions
SM	- Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
SW-846	- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September and October 2024

Sample Delivery Group	Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters				Comments
						Potassium, Sodium	Mercury E245.1	Chloride	Sulfide	
5002560671	11218888-DUP1-090324	V-02R	Water	09/03/2024	10:45		X			FD(11218888-V02R-90324)
	11218888-FB1-90324	Field Blank	Water	09/03/2024	13:30		X			Field Blank
	11218888-V02R-90324	V-02R	Water	09/03/2024	10:45		X			
	11218888-V23-90324	V-23	Water	09/03/2024	11:45	X	X	X	X	
	11218888-V24-90324	V-24	Water	09/03/2024	13:05	X		X	X	
	11218888-V25-90324	V-25	Water	09/03/2024	12:30	X	X	X	X	
	11218888-V32B-90324	V-32B	Water	09/03/2024	09:25		X	X		MS/MSD; DUP
	11218888-V24-100224	V-24	Water	10/02/2024	09:20		X			

Notes:

DUP - Laboratory Duplicate
FD - Field Duplicate Sample of sample in parenthesis
MS/MSD - Matrix Spike/Matrix Spike Duplicate

Table 3

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September and October 2024

Location ID:		V-02R	V-02R	V-23
Sample Name:		11218888-V02R-90324	11218888-DUP1-090324	11218888-V23-90324
Sample Date:		09/03/2024	09/03/2024	09/03/2024
			Duplicate	
Parameters	Unit			
Metals				
Potassium	mg/L	--	--	220
Sodium	mg/L	--	--	190
Mercury	µg/L	1.4	1.4	26
Mercury (dissolved)	µg/L	0.21	0.22	3.1
General Chemistry				
Chloride	mg/L	--	--	240
Sulfide	mg/L	--	--	1.0 U

Table 3

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc. - ERCO Worldwide Site
Port Edwards, Wisconsin
September and October 2024

Location ID:		V-24	V-25	V-32B
Sample Name:		11218888-V24-90324	11218888-V25-90324	11218888-V32B-90324
Sample Date:		09/03/2024	09/03/2024	09/03/2024
Parameters	Unit			
Metals				
Potassium	mg/L	3900	960	--
Sodium	mg/L	470	330	--
Mercury	µg/L	--	80	1.3
Mercury (dissolved)	µg/L	--	36	1.2
General Chemistry				
Chloride	mg/L	3400	1600	2400
Sulfide	mg/L	1.0 U	1.0 U	--

Notes:

U - Not detected at associated reporting limit

-- - Not applicable



Data Verification Report

January 14, 2025

To	Lauren Lueneburg (lauren.lueneburg@ercoworldwide.com)	Project No.	11218888
Copy to	Dean Fenske; Denise Quigley; Richard Chatfield	DVR No.	18
From	Sheri Finn/cs/18	Contact No.	716-205-1977
Project Name	ERCO Worldwide Site	Email	Sheri.finn@ghd.com
Subject	Analytical Results and Data Verification Quarterly Groundwater Monitoring Program Glenn Springs Holdings, Inc. Port Edwards, Wisconsin December 2024		

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

1. Introduction

This document details a data verification of analytical results for water samples collected in support of the quarterly groundwater monitoring program at the ERCO Worldwide Site during December 2024. Samples were submitted to Eurofins Environment Testing located in Universtiy Park, Illinois. The low level dissolved mercury analysis was completed by Eurofins Environment Testing located in Tacoma, Washington. A summary of the analytical methodology is presented in Table 1. A sample collection and analysis summary is presented in Table 2. The validated analytical results are summarized in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from , laboratory control samples (LCS), matrix spikes (MS), and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 1 and applicable guidance from the document entitled:

1. "National Functional Guidelines for Inorganic Superfund Methods Data Review",
Environmental Protection Agency (EPA) 542-R-20-006, November 2020.

Item 1 will subsequently be referred to as the "Guidelines" in this report.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in the methods. The sample chain of custody documents and analytical report were used to determine sample holding times. All samples were prepared and

analyzed within the required holding times. All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Method blank results were non-detect for the analytes of interest with the exception of low level mercury. The only associated sample result was for the field blank and therefore was not qualified.

4. Laboratory Control Sample Analyses

LCS or LCS/laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS or LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

The LCS or LCS/LCSD contained all compounds of interest. All LCS/LCSD recoveries and relative percent differences (RPDs) were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision, where applicable.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed internally by the laboratory.

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

6. Field QA/QC Samples

The field QA/QC consisted of one field blank sample and one field duplicate sample set.

6.1 Field Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one field blank sample was submitted for analysis, as identified in Table 2. Results were non-detect for the analyte of interest except for low level mercury. This was the only sample analyzed for low level mercury, and no qualification was needed.

6.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 2. The RPDs associated with the duplicate sample must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criterion is one times the RL value.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision with the exception of mercury analysis. The associated sample results were qualified as estimated (see Table 4).

7. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each compound. Positive detections less than the RL but greater than the MDL were reported as estimated (J) in Table 3 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 3. Dissolved mercury results were less than the total results or were within the normal variability of the method (20%).

8. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 3 are acceptable with the qualifications noted.

Regards,



Sheri Finn
Analyst

Table 1

Summary of Analytical Methods
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
December 2024

Parameter	Method
Mercury - Total and Dissolved	EPA 1631/E245.1
Chloride	EPA 300.0
Sulfide	SM4500-S2-F
Metals - Potassium, Sodium	SW-846 6010
Volatile Organic Compounds	SW-846 8260

Method References:

- EPA - "Methods for Chemical Analysis of Water and Wastes", USEPA 600/4-79-220, March 1983, with subsequent revisions
- SM - "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, with subsequent revisions
- SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions

Table 2

Sample Collection and Analysis Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
December 2024

SDG	Sample I.D.	Location I.D.	Collection Date (mm/dd/yyyy)	Collection Time (hr/min)	<u>Analytes/Parameters</u>					Comments
					Mercury E1631	Mercury E245.1	Chloride	Sulfide	Potassium, Sodium	
500-261466-1	11218888-FB1-120924	-	12/09/2024	14:50	X	X				Field Blank
	11218888-V02R-120924	V-02R	12/09/2024	12:05		X				
	11218888-DUP1-120924	V-02R	12/09/2024	12:05		X				Field Duplicate of 11218888-V02R-120924
	11218888-V23-120924	V-23	12/09/2024	13:15		X	X	X	X	
	11218888-V24-120924	V-24	12/09/2024	14:45		X	X	X	X	
	11218888-V25-120924	V-25	12/09/2024	14:10		X	X	X	X	
	11218888-V32B-120924	V-32B	12/09/2024	10:45		X	X			

Notes:

SDG - Sample Delivery Group
 "-" - Not applicable

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
December 2024

Location ID:		Field Blank	V-02R	V-02R	V-23
Sample Name:		11218888-FB1-120924	11218888-V02R-120924	11218888-DUP1-120924	11218888-V23-120924
Sample Date:		12/09/2024	12/09/2024	12/09/2024	12/09/2024
				Duplicate	
Parameters	Unit				
Metals					
Potassium	mg/L	--	--	--	600
Sodium	mg/L	--	--	--	310
Mercury (dissolved)	ng/L	0.41 J	--	--	--
Mercury	µg/L	--	12 J	4.7 J	15
Mercury (dissolved)	µg/L	0.20 U	0.85	0.86	6.8
General Chemistry					
Chloride	mg/L	--	--	--	730
Sulfide	mg/L	--	--	--	1.0 U

Table 2

Analytical Results Summary
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
December 2024

Location ID:		V-24	V-25	V-32B
Sample Name:		11218888-V24-120924	11218888-V25-120924	11218888-V32B-120924
Sample Date:		12/09/2024	12/09/2024	12/09/2024
Parameters	Unit			
Metals				
Potassium	mg/L	4600	2300	--
Sodium	mg/L	4800	2700	--
Mercury (dissolved)	ng/L	--	--	--
Mercury	µg/L	420	290	1.0
Mercury (dissolved)	µg/L	490	100	0.98
General Chemistry				
Chloride	mg/L	4000	2400	2500
Sulfide	mg/L	7.6	1.0 U	--

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

-- - Not applicable

Table 4

Qualified Sample Data Due to Variability in Field Duplicate Results
Quarterly Groundwater Monitoring Program
Glenn Springs Holdings, Inc.
Port Edwards, Wisconsin
December 2024

Sample Delivery Group	Parameter	Analyte	RPD/Diff		Sample ID	Qualified Result	Field Duplicate Sample ID	Qualified Result	Units
500-261466-1	General Chemistry	Mercury	89	-	11218888-V02R-120924	12 J	11218888-DUP1-120924	4.7 J	µg/L

Notes:

- Diff
- Difference (i.e., >1X RL for waters or >2XRL for soils)
- RPD
- Relative Percent Difference
- J
- Estimated concentration
-
- Not applicable

Appendix C1

2024 NR 140 Groundwater
Quality Standard Preventative
Action Limit (PAL)
Exceedances

Appendix C1
2024 NR 140 Preventive Action Limit (PAL) Exceedances
ERCO Worldwide Groundwater Monitoring

Well ID	WDNR Point ID	WDNR Parameter No	WDNR Parameter	Result	DNR Units	PAL	Date
Trench Discharge	801	940	CHLORIDE, TOTAL OR DISSOLVED	670	MG/L	125	6/13/2024
Trench Discharge	801	801	MERCURY, DISSOLVED	0.36	UG/L	0.2	6/13/2024
V-02BR	64	940	CHLORIDE, TOTAL OR DISSOLVED	1700	MG/L	125	6/13/2024
V-02BR	64	77093	CIS-1,2-DICHLOROETHENE	130	UG/L	7	6/13/2024
V-02BR	64	39180	TRICHLOROETHENE	4.5	UG/L	0.5	6/13/2024
V-02BR	64	39175	VINYL CHLORIDE	1.5	UG/L	0.02	6/13/2024
V-02R	62	940	CHLORIDE, TOTAL OR DISSOLVED	640	MG/L	125	6/13/2024
V-02R	62	801	MERCURY, DISSOLVED	0.28	UG/L	0.2	3/18/2024
V-02R	62	801	MERCURY, DISSOLVED	0.45	UG/L	0.2	6/13/2024
V-02R	62	801	MERCURY, DISSOLVED	0.21	UG/L	0.2	9/3/2024
V-02R	62	801	MERCURY, DISSOLVED	0.85	UG/L	0.2	12/9/2024
V-02R (dup)	62	801	MERCURY, DISSOLVED	0.22	UG/L	0.2	9/3/2024
V-02R (dup)	62	801	MERCURY, DISSOLVED	0.86	UG/L	0.2	12/9/2024
V-03AR	36	940	CHLORIDE, TOTAL OR DISSOLVED	4200	MG/L	125	6/11/2024
V-03R	35	940	CHLORIDE, TOTAL OR DISSOLVED	560	MG/L	125	6/11/2024
V-03R	35	940	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	0.5	6/11/2024
V-04A	7	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	6/11/2024
V-07R	30	940	CHLORIDE, TOTAL OR DISSOLVED	450	MG/L	125	6/12/2024
V-07R	30	801	MERCURY, DISSOLVED	0.37	UG/L	0.2	6/12/2024
V-09	15	940	CHLORIDE, TOTAL OR DISSOLVED	170	MG/L	125	6/11/2024
V-09 (dup)	15	940	CHLORIDE, TOTAL OR DISSOLVED	170	MG/L	125	6/11/2024
V-09 (dup)	15	940	METHYLENE CHLORIDE ⁽¹⁾	5.2	UG/L	0.5	6/11/2024
V-13	20	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	125	6/13/2024
V-18R	65	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	125	6/12/2024
V-18R	65	940	MERCURY, DISSOLVED	0.23	UG/L	0.2	6/12/2024
V-18R (dup)	65	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	125	6/12/2024
V-18R (dup)	65	940	MERCURY, DISSOLVED	0.28	UG/L	0.2	6/12/2024
V-19	33	940	CHLORIDE, TOTAL OR DISSOLVED	300	MG/L	125	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	3/18/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1800	MG/L	125	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	240	MG/L	125	9/3/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	730	MG/L	125	12/9/2024
V-23	41	801	MERCURY, DISSOLVED	10	UG/L	0.2	3/18/2024
V-23	41	801	MERCURY, DISSOLVED	8.9	UG/L	0.2	6/12/2024
V-23	41	801	MERCURY, DISSOLVED	3.1	UG/L	0.2	9/3/2024
V-23	41	801	MERCURY, DISSOLVED	6.8	UG/L	0.2	12/9/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4900	MG/L	125	3/18/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	125	6/12/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	3400	MG/L	125	9/3/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4000	MG/L	125	12/9/2024
V-24	43	801	MERCURY, DISSOLVED	25	UG/L	0.2	3/18/2024
V-24	43	801	MERCURY, DISSOLVED	12	UG/L	0.2	6/12/2024
V-24	43	801	MERCURY, DISSOLVED	400	UG/L	0.2	10/2/2024
V-24	43	801	MERCURY, DISSOLVED	490	UG/L	0.2	12/9/2024

Appendix C1
2024 NR 140 Preventive Action Limit (PAL) Exceedances
ERCO Worldwide Groundwater Monitoring

V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	5600	MG/L	125	3/18/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	4500	MG/L	125	6/12/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	9/3/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	125	12/9/2024
V-25	44	801	MERCURY, DISSOLVED	34	UG/L	0.2	3/18/2024
V-25	44	801	MERCURY, DISSOLVED	86	UG/L	0.2	6/12/2024
V-25	44	801	MERCURY, DISSOLVED	36	UG/L	0.2	9/3/2024
V-25	44	801	MERCURY, DISSOLVED	100	UG/L	0.2	12/9/2024
V-25 (dup)	44	940	CHLORIDE, TOTAL OR DISSOLVED	5700	MG/L	125	3/18/2024
V-25 (dup)	44	801	MERCURY, DISSOLVED	34	UG/L	0.2	3/18/2024
V-31	56	940	CHLORIDE, TOTAL OR DISSOLVED	850	MG/L	125	6/13/2024
V-27A	49	940	CHLORIDE, TOTAL OR DISSOLVED	590	MG/L	125	6/13/2024
V-30	54	940	CHLORIDE, TOTAL OR DISSOLVED	260	MG/L	125	6/14/2024
V-30A	55	940	CHLORIDE, TOTAL OR DISSOLVED	130	MG/L	125	6/14/2024
V-30A	55	77093	CIS-1,2-DICHLOROETHENE	16	UG/L	7	6/14/2024
V-31	56	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	0.5	6/10/2024
V-31	56	34423	VINYL CHLORIDE	1.2	UG/L	0.02	6/10/2024
V-31A	57	940	CHLORIDE, TOTAL OR DISSOLVED	180	MG/L	125	6/10/2024
⁽¹⁾ Methylene Chloride	57	77093	CIS-1,2-DICHLOROETHENE	77	UG/L	7	6/10/2024
V-31A	57	39180	TRICHLOROETHENE	8.7	UG/L	0.5	6/10/2024
V-31A	57	39175	VINYL CHLORIDE	1.2	UG/L	0.02	6/10/2024
V-31A	57	34423	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	0.5	6/10/2024
V-32	58	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	125	6/10/2024
V-32A	59	940	CHLORIDE, TOTAL OR DISSOLVED	1200	MG/L	125	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	125	3/18/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	125	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	125	9/3/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	125	12/9/2024
V-32B	60	801	MERCURY, DISSOLVED	1.4	UG/L	0.2	3/18/2024
V-32B	60	801	MERCURY, DISSOLVED	1.3	UG/L	0.2	6/10/2024
V-32B	60	801	MERCURY, DISSOLVED	1.2	UG/L	0.2	9/3/2024
V-32B	60	801	MERCURY, DISSOLVED	0.98	UG/L	0.2	12/9/2024
V-32B	60	39180	TRICHLOROETHENE	2.3	UG/L	0.5	6/10/2024
V-32B	60	39175	VINYL CHLORIDE	0.60 J	UG/L	0.02	6/10/2024
V-32B	60	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	0.5	6/10/2024

[Current groundwater standards](#) | [Wisconsin DNR](#)

MG/L = Milligrams per Liter

PAL = Preventive Action Limit

UG/L = Micrograms per Liter

WDNR = Wisconsin Department of Natural Resources

⁽¹⁾ Methylene Chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank. The detected concentrations are considered suspect and methylene chloride is not considered a contaminant of concern for the facility.

Appendix C1
2024 Preventive Action Limit (PAL) Exceedances (sorted)
ERCO Worldwide Groundwater Monitoring

Well ID	WDNR Point ID	WDNR Parameter No	WDNR Parameter	Result	DNR Units	PAL	Date
Trench Discharge	801	940	CHLORIDE, TOTAL OR DISSOLVED	670	MG/L	125	6/13/2024
V-02BR	64	940	CHLORIDE, TOTAL OR DISSOLVED	1700	MG/L	125	6/13/2024
V-02R	62	940	CHLORIDE, TOTAL OR DISSOLVED	640	MG/L	125	6/13/2024
V-03AR	36	940	CHLORIDE, TOTAL OR DISSOLVED	4200	MG/L	125	6/11/2024
V-03R	35	940	CHLORIDE, TOTAL OR DISSOLVED	560	MG/L	125	6/11/2024
V-04A	7	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	6/11/2024
V-07R	30	940	CHLORIDE, TOTAL OR DISSOLVED	450	MG/L	125	6/12/2024
V-09	15	940	CHLORIDE, TOTAL OR DISSOLVED	170	MG/L	125	6/11/2024
V-09 (dup)	15	940	CHLORIDE, TOTAL OR DISSOLVED	170	MG/L	125	6/11/2024
V-13	20	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	125	6/13/2024
V-18R	65	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	125	6/12/2024
V-18R (dup)	65	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	125	6/12/2024
V-19	33	940	CHLORIDE, TOTAL OR DISSOLVED	300	MG/L	125	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	3/18/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1800	MG/L	125	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	240	MG/L	125	9/3/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	730	MG/L	125	12/9/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4900	MG/L	125	3/18/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	125	6/12/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	3400	MG/L	125	9/3/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4000	MG/L	125	12/9/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	5600	MG/L	125	3/18/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	4500	MG/L	125	6/12/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	125	9/3/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	125	12/9/2024
V-25 (dup)	44	940	CHLORIDE, TOTAL OR DISSOLVED	5700	MG/L	125	3/18/2024
V-26	46	940	CHLORIDE, TOTAL OR DISSOLVED	850	MG/L	125	6/13/2024
V-27A	49	940	CHLORIDE, TOTAL OR DISSOLVED	590	MG/L	125	6/13/2024
V-30	54	940	CHLORIDE, TOTAL OR DISSOLVED	260	MG/L	125	6/14/2024
V-30A	55	940	CHLORIDE, TOTAL OR DISSOLVED	130	MG/L	125	6/14/2024
V-31A	57	940	CHLORIDE, TOTAL OR DISSOLVED	180	MG/L	125	6/10/2024
V-32	58	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	125	6/10/2024
V-32A	59	940	CHLORIDE, TOTAL OR DISSOLVED	1200	MG/L	125	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	125	3/18/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	125	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	125	9/3/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	125	12/9/2024
V-02BR	64	77093	CIS-1,2-DICHLOROETHENE	130	UG/L	7	6/13/2024
V-30A	55	77093	CIS-1,2-DICHLOROETHENE	16	UG/L	7	6/14/2024
V-31A	57	77093	CIS-1,2-DICHLOROETHENE	77	UG/L	7	6/10/2024

Appendix C1
2024 Preventive Action Limit (PAL) Exceedances (sorted)
ERCO Worldwide Groundwater Monitoring

Trench Discharge	801	801	MERCURY, DISSOLVED	0.36	UG/L	0.2	6/13/2024
V-02R	62	801	MERCURY, DISSOLVED	0.28	UG/L	0.2	3/18/2024
V-02R	62	801	MERCURY, DISSOLVED	0.45	UG/L	0.2	6/13/2024
V-02R	62	801	MERCURY, DISSOLVED	0.21	UG/L	0.2	9/3/2024
V-02R	62	801	MERCURY, DISSOLVED	0.85	UG/L	0.2	12/9/2024
V-02R (dup)	62	801	MERCURY, DISSOLVED	0.22	UG/L	0.2	9/3/2024
V-02R (dup)	62	801	MERCURY, DISSOLVED	0.86	UG/L	0.2	12/9/2024
V-07R	30	801	MERCURY, DISSOLVED	0.37	UG/L	0.2	6/12/2024
V-18R	65	940	MERCURY, DISSOLVED	0.23	UG/L	0.2	6/12/2024
V-18R (dup)	65	940	MERCURY, DISSOLVED	0.28	UG/L	0.2	6/12/2024
V-23	41	801	MERCURY, DISSOLVED	10	UG/L	0.2	3/18/2024
V-23	41	801	MERCURY, DISSOLVED	8.9	UG/L	0.2	6/12/2024
V-23	41	801	MERCURY, DISSOLVED	3.1	UG/L	0.2	9/3/2024
V-23	41	801	MERCURY, DISSOLVED	6.8	UG/L	0.2	12/9/2024
V-31	56	801	MERCURY, DISSOLVED	25	UG/L	0.2	3/18/2024
V-24	43	801	MERCURY, DISSOLVED	12	UG/L	0.2	6/12/2024
V-24	43	801	MERCURY, DISSOLVED	400	UG/L	0.2	10/2/2024
V-24	43	801	MERCURY, DISSOLVED	490	UG/L	0.2	12/9/2024
V-25	44	801	MERCURY, DISSOLVED	34	UG/L	0.2	3/18/2024
V-25	44	801	MERCURY, DISSOLVED	86	UG/L	0.2	6/12/2024
V-25	44	801	MERCURY, DISSOLVED	36	UG/L	0.2	9/3/2024
V-25	44	801	MERCURY, DISSOLVED	100	UG/L	0.2	12/9/2024
⁽¹⁾ Methylene Chloride	44	801	MERCURY, DISSOLVED	34	UG/L	0.2	3/18/2024
V-32B	60	801	MERCURY, DISSOLVED	1.4	UG/L	0.2	3/18/2024
V-32B	60	801	MERCURY, DISSOLVED	1.3	UG/L	0.2	6/10/2024
V-32B	60	801	MERCURY, DISSOLVED	1.2	UG/L	0.2	9/3/2024
V-32B	60	801	MERCURY, DISSOLVED	0.98	UG/L	0.2	12/9/2024
V-03R	35	940	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	0.5	6/11/2024
V-09 (dup)	15	940	METHYLENE CHLORIDE ⁽¹⁾	5.2	UG/L	0.5	6/11/2024
V-31	56	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	0.5	6/10/2024
V-31A	57	34423	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	0.5	6/10/2024
V-32B	60	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	0.5	6/10/2024
V-02BR	64	39180	TRICHLOROETHENE	4.5	UG/L	0.5	6/13/2024
V-31A	57	39180	TRICHLOROETHENE	8.7	UG/L	0.5	6/10/2024
V-32B	60	39180	TRICHLOROETHENE	2.3	UG/L	0.5	6/10/2024
V-02BR	64	39175	VINYL CHLORIDE	1.5	UG/L	0.02	6/13/2024
V-31	56	34423	VINYL CHLORIDE	1.2	UG/L	0.02	6/10/2024
V-31A	57	39175	VINYL CHLORIDE	1.2	UG/L	0.02	6/10/2024
V-32B	60	39175	VINYL CHLORIDE	0.60 J	UG/L	0.02	6/10/2024

[Current groundwater standards | Wisconsin DNR](#)

MG/L = Milligrams per Liter

PAL = Preventive Action Limit

UG/L = Micrograms per Liter

WDNR = Wisconsin Department of Natural Resources

⁽¹⁾ Methylene Chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank. The detected concentrations are considered suspect and methylene chloride is not considered a contaminant of concern for the facility.

Appendix C2

2024 NR 140 Groundwater
Quality Standard
Enforcement Standard
(ES) Exceedances

Appendix C2
2024 Enforcement Standard (ES) Exceedances
ERCO Worldwide Groundwater Monitoring

Well ID	WDNR Point ID	WDNR Parameter No	WDNR Parameter	Result	DNR Units	ES	Date
Trench Discharge	801	940	CHLORIDE, TOTAL OR DISSOLVED	670	MG/L	250	6/13/2024
V-02BR	64	940	CHLORIDE, TOTAL OR DISSOLVED	1700	MG/L	250	6/13/2024
V-02BR	64	77093	CIS-1,2-DICHLOROETHENE	130	UG/L	70	6/13/2024
V-02BR	64	39175	VINYL CHLORIDE	1.5	UG/L	0.2	6/13/2024
V-02R	62	940	CHLORIDE, TOTAL OR DISSOLVED	640	MG/L	250	6/13/2024
V-03AR	36	940	CHLORIDE, TOTAL OR DISSOLVED	4200	MG/L	250	6/11/2024
V-03R	35	940	CHLORIDE, TOTAL OR DISSOLVED	560	MG/L	250	6/11/2024
V-03R	35	940	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	5	6/11/2024
V-04A	7	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	6/11/2024
V-07R	30	940	CHLORIDE, TOTAL OR DISSOLVED	450	MG/L	250	6/12/2024
V-09 (dup)	15	940	METHYLENE CHLORIDE ⁽¹⁾	5.2	UG/L	5	6/11/2024
V-13	20	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	250	6/13/2024
V-18R	65	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	250	6/12/2024
V-18R (dup)	65	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	250	6/12/2024
V-19	33	940	CHLORIDE, TOTAL OR DISSOLVED	300	MG/L	250	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	3/18/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1800	MG/L	250	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	730	MG/L	250	12/9/2024
V-23	41	801	MERCURY, DISSOLVED	10	UG/L	2	3/18/2024
V-23	41	801	MERCURY, DISSOLVED	8.9	UG/L	2	6/12/2024
V-23	41	801	MERCURY, DISSOLVED	3.1	UG/L	2	9/3/2024
V-23	41	801	MERCURY, DISSOLVED	6.8	UG/L	2	12/9/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4900	MG/L	250	3/18/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	250	6/12/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	3400	MG/L	250	9/3/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4000	MG/L	250	12/9/2024
V-24	43	801	MERCURY, DISSOLVED	25	UG/L	2	3/18/2024
V-24	43	801	MERCURY, DISSOLVED	12	UG/L	2	6/12/2024
V-24	43	801	MERCURY, DISSOLVED	400	UG/L	2	10/2/2024
V-24	43	801	MERCURY, DISSOLVED	490	UG/L	2	12/9/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	5600	MG/L	250	3/18/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	4500	MG/L	250	6/12/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	9/3/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	250	12/9/2024
V-25	44	801	MERCURY, DISSOLVED	34	UG/L	2	3/18/2024
V-25	44	801	MERCURY, DISSOLVED	86	UG/L	2	6/12/2024
V-25	44	801	MERCURY, DISSOLVED	36	UG/L	2	9/3/2024
V-25	44	801	MERCURY, DISSOLVED	100	UG/L	2	12/9/2024
V-25 (dup)	44	940	CHLORIDE, TOTAL OR DISSOLVED	5700	MG/L	250	3/18/2024
V-25 (dup)	44	801	MERCURY, DISSOLVED	34	UG/L	2	3/18/2024
V-26	46	940	CHLORIDE, TOTAL OR DISSOLVED	850	MG/L	250	6/13/2024
V-27A	49	940	CHLORIDE, TOTAL OR DISSOLVED	590	MG/L	250	6/13/2024
V-30	54	940	CHLORIDE, TOTAL OR DISSOLVED	260	MG/L	250	6/14/2024

Appendix C2
2024 Enforcement Standard (ES) Exceedances
ERCO Worldwide Groundwater Monitoring

V-31	56	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	5	6/10/2024
V-31	56	34423	VINYL CHLORIDE	1.2	UG/L	0.2	6/10/2024
V-31A	57	77093	CIS-1,2-DICHLOROETHENE	77	UG/L	70	6/10/2024
V-31A	57	39180	TRICHLOROETHENE	8.7	UG/L	5	6/10/2024
V-31A	57	39175	VINYL CHLORIDE	1.2	UG/L	0.2	6/10/2024
V-31A	57	34423	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	5	6/10/2024
V-32	58	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	250	6/10/2024
V-32A	59	940	CHLORIDE, TOTAL OR DISSOLVED	1200	MG/L	250	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	250	3/18/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	250	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	250	9/3/2024
V-31	56	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	250	12/9/2024
V-32B	60	39175	VINYL CHLORIDE	0.60 J	UG/L	0.2	6/10/2024
V-32B	60	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	5	6/10/2024

[Current groundwater standards | Wisconsin DNR](#)

ES = Enforcement Standard

MG/L = Milligrams per Liter

UG/L = Micrograms per Liter

WDNR = Wisconsin Department of Natural Resources

⁽¹⁾ Methylene Chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank. The detected concentrations are considered suspect and methylene chloride is not considered a contaminant of concern for the facility.

Appendix C2
2023 Enforcement Standard (ES) Exceedances (sorted)
ERCO Worldwide Groundwater Monitoring

Well ID	WDNR Point ID	WDNR Parameter No	WDNR Parameter	Result	DNR Units	ES	Date
Trench Discharge	801	940	CHLORIDE, TOTAL OR DISSOLVED	670	MG/L	250	6/13/2024
V-02BR	64	940	CHLORIDE, TOTAL OR DISSOLVED	1700	MG/L	250	6/13/2024
V-02R	62	940	CHLORIDE, TOTAL OR DISSOLVED	640	MG/L	250	6/13/2024
V-03AR	36	940	CHLORIDE, TOTAL OR DISSOLVED	4200	MG/L	250	6/11/2024
V-03R	35	940	CHLORIDE, TOTAL OR DISSOLVED	560	MG/L	250	6/11/2024
V-04A	7	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	6/11/2024
V-07R	30	940	CHLORIDE, TOTAL OR DISSOLVED	450	MG/L	250	6/12/2024
V-13	20	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	250	6/13/2024
V-18R	65	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	250	6/12/2024
V-18R (dup)	65	940	CHLORIDE, TOTAL OR DISSOLVED	830	MG/L	250	6/12/2024
V-19	33	940	CHLORIDE, TOTAL OR DISSOLVED	300	MG/L	250	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	3/18/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	1800	MG/L	250	6/12/2024
V-23	41	940	CHLORIDE, TOTAL OR DISSOLVED	730	MG/L	250	12/9/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4900	MG/L	250	3/18/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	250	6/12/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	3400	MG/L	250	9/3/2024
V-24	43	940	CHLORIDE, TOTAL OR DISSOLVED	4000	MG/L	250	12/9/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	5600	MG/L	250	3/18/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	4500	MG/L	250	6/12/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	1600	MG/L	250	9/3/2024
V-25	44	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	250	12/9/2024
V-25 (dup)	44	940	CHLORIDE, TOTAL OR DISSOLVED	5700	MG/L	250	3/18/2024
V-26	46	940	CHLORIDE, TOTAL OR DISSOLVED	850	MG/L	250	6/13/2024
V-27A	49	940	CHLORIDE, TOTAL OR DISSOLVED	590	MG/L	250	6/13/2024
V-30	54	940	CHLORIDE, TOTAL OR DISSOLVED	260	MG/L	250	6/14/2024
V-32	58	940	CHLORIDE, TOTAL OR DISSOLVED	790	MG/L	250	6/10/2024
V-32A	59	940	CHLORIDE, TOTAL OR DISSOLVED	1200	MG/L	250	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2600	MG/L	250	3/18/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	250	6/10/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2400	MG/L	250	9/3/2024
V-32B	60	940	CHLORIDE, TOTAL OR DISSOLVED	2500	MG/L	250	12/9/2024
V-02BR	64	77093	CIS-1,2-DICHLOROETHENE	130	UG/L	70	6/13/2024
V-31A	57	77093	CIS-1,2-DICHLOROETHENE	77	UG/L	70	6/10/2024
V-23	41	801	MERCURY, DISSOLVED	10	UG/L	2	3/18/2024
V-23	41	801	MERCURY, DISSOLVED	8.9	UG/L	2	6/12/2024
V-23	41	801	MERCURY, DISSOLVED	3.1	UG/L	2	9/3/2024
V-23	41	801	MERCURY, DISSOLVED	6.8	UG/L	2	12/9/2024
V-24	43	801	MERCURY, DISSOLVED	25	UG/L	2	3/18/2024
V-24	43	801	MERCURY, DISSOLVED	12	UG/L	2	6/12/2024
V-24	43	801	MERCURY, DISSOLVED	400	UG/L	2	10/2/2024
V-24	43	801	MERCURY, DISSOLVED	490	UG/L	2	12/9/2024
V-25	44	801	MERCURY, DISSOLVED	34	UG/L	2	3/18/2024
V-25	44	801	MERCURY, DISSOLVED	86	UG/L	2	6/12/2024
V-25	44	801	MERCURY, DISSOLVED	36	UG/L	2	9/3/2024
V-25	44	801	MERCURY, DISSOLVED	100	UG/L	2	12/9/2024
V-25 (dup)	44	801	MERCURY, DISSOLVED	34	UG/L	2	3/18/2024

Appendix C2
2023 Enforcement Standard (ES) Exceedances (sorted)
ERCO Worldwide Groundwater Monitoring

V-03R	35	940	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	5	6/11/2024
V-09 (dup)	15	940	METHYLENE CHLORIDE ⁽¹⁾	5.2	UG/L	5	6/11/2024
V-31	56	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	5	6/10/2024
V-31A	57	34423	METHYLENE CHLORIDE ⁽¹⁾	5.1	UG/L	5	6/10/2024
V-32B	60	34423	METHYLENE CHLORIDE ⁽¹⁾	5.3	UG/L	5	6/10/2024
V-31A	57	39180	TRICHLOROETHENE	8.7	UG/L	5	6/10/2024
V-02BR	64	39175	VINYL CHLORIDE	1.5	UG/L	0.2	6/13/2024
V-31	56	39175	VINYL CHLORIDE	1.2	UG/L	0.2	6/10/2024
V-31A	57	39175	VINYL CHLORIDE	1.2	UG/L	0.2	6/10/2024
V-32B	60	39175	VINYL CHLORIDE	0.60 J	UG/L	0.2	6/10/2024

[Current groundwater standards | Wisconsin DNR](#)

ES = Enforcement Standard

MG/L = Milligrams per Liter

UG/L = Micrograms per Liter

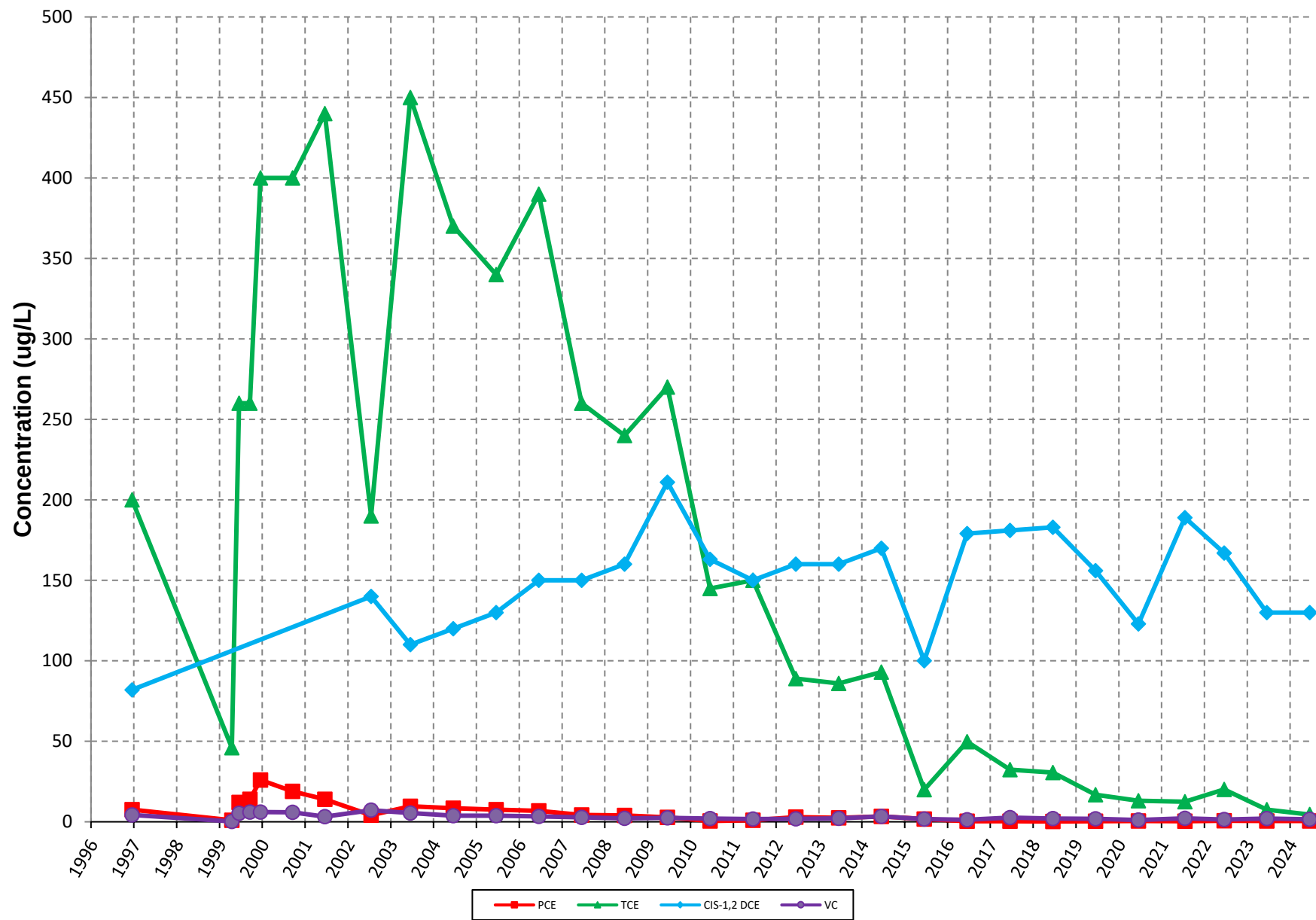
WDNR = Wisconsin Department of Natural Resources

⁽¹⁾ Methylene Chloride is a common laboratory artifact and was detected in the laboratory method blank and trip blank. The detected concentrations are considered suspect and methylene chloride is not considered a contaminant of concern for the facility.

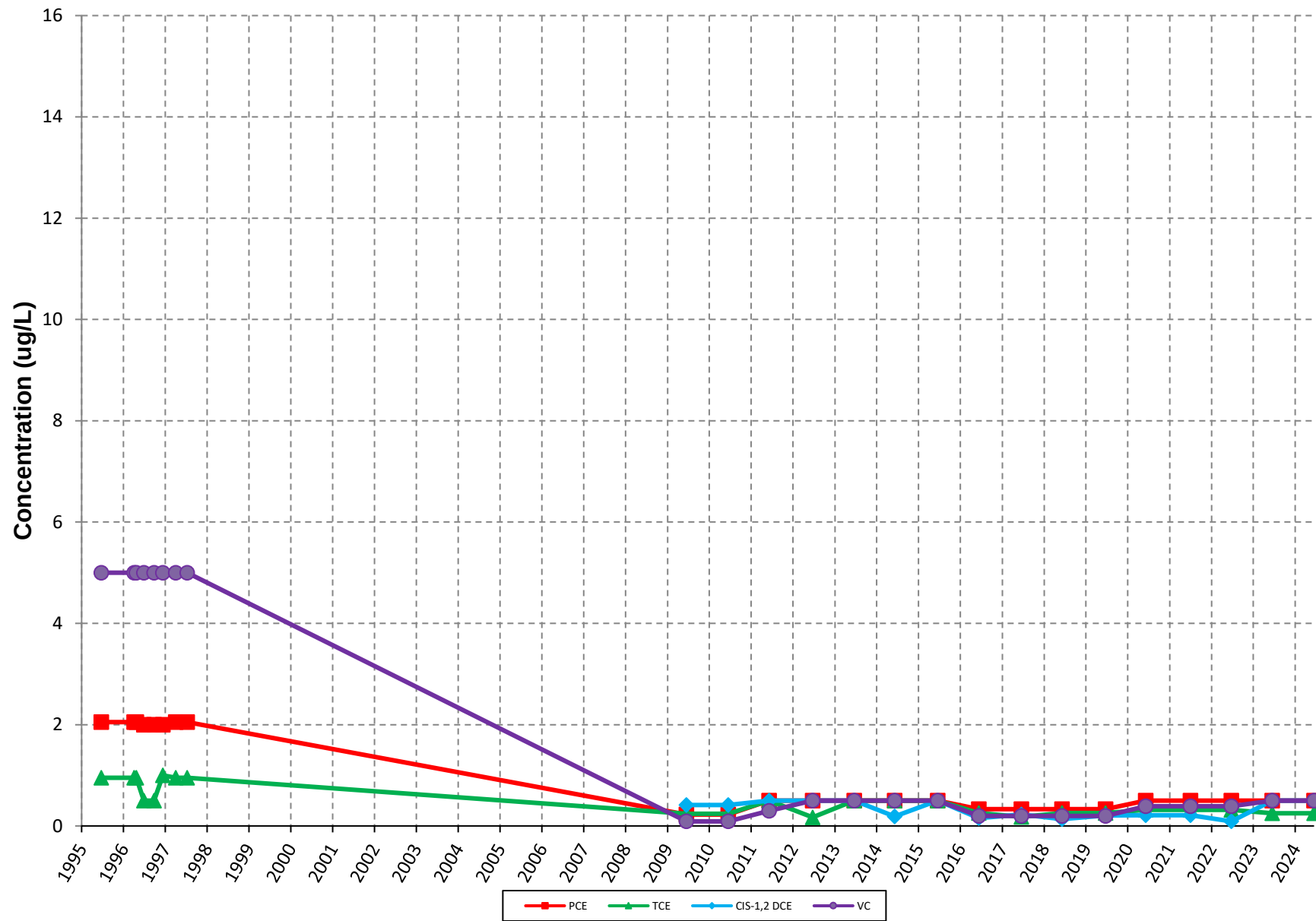
Appendix D

VOC Concentration Graphs

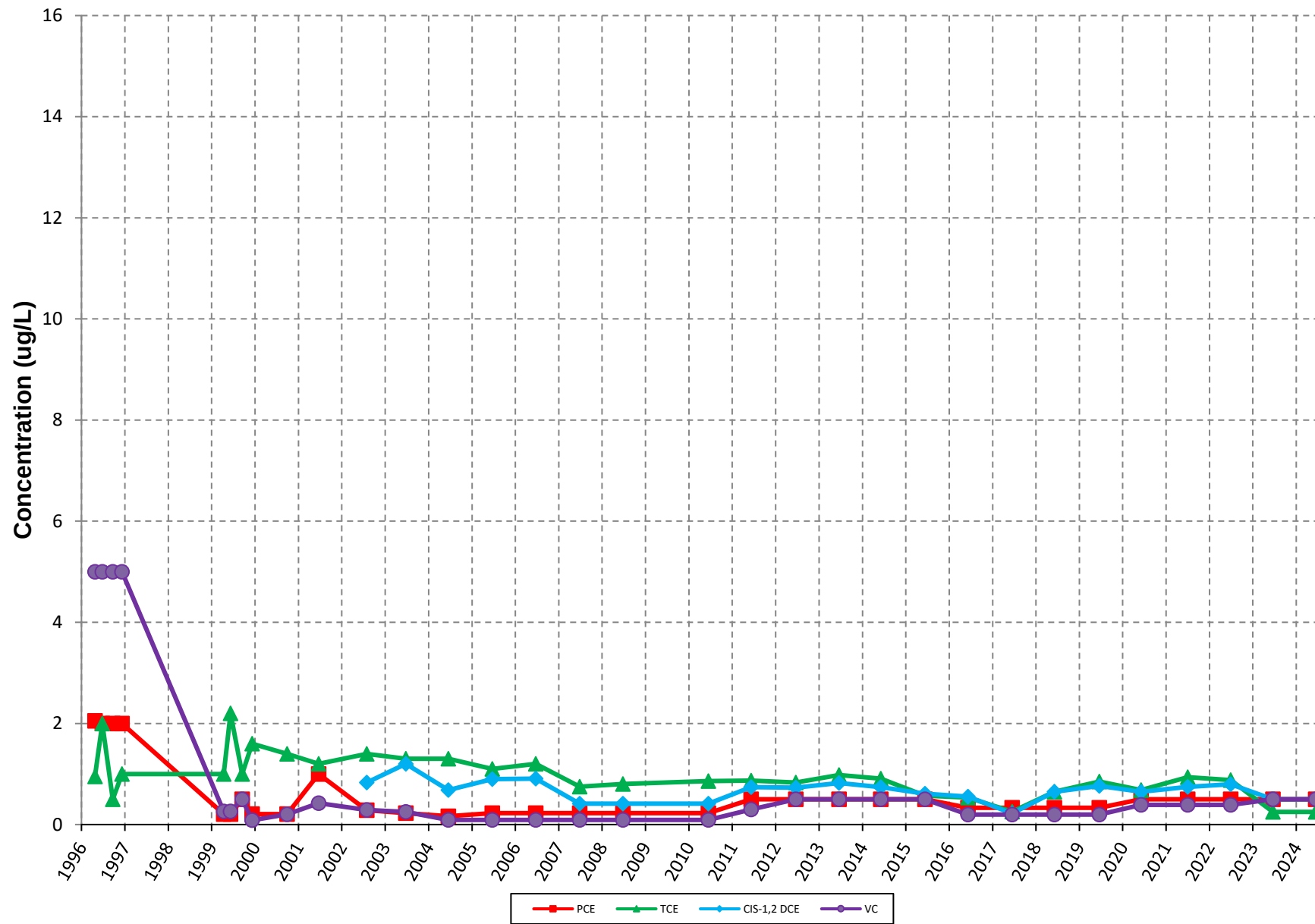
V-02BR



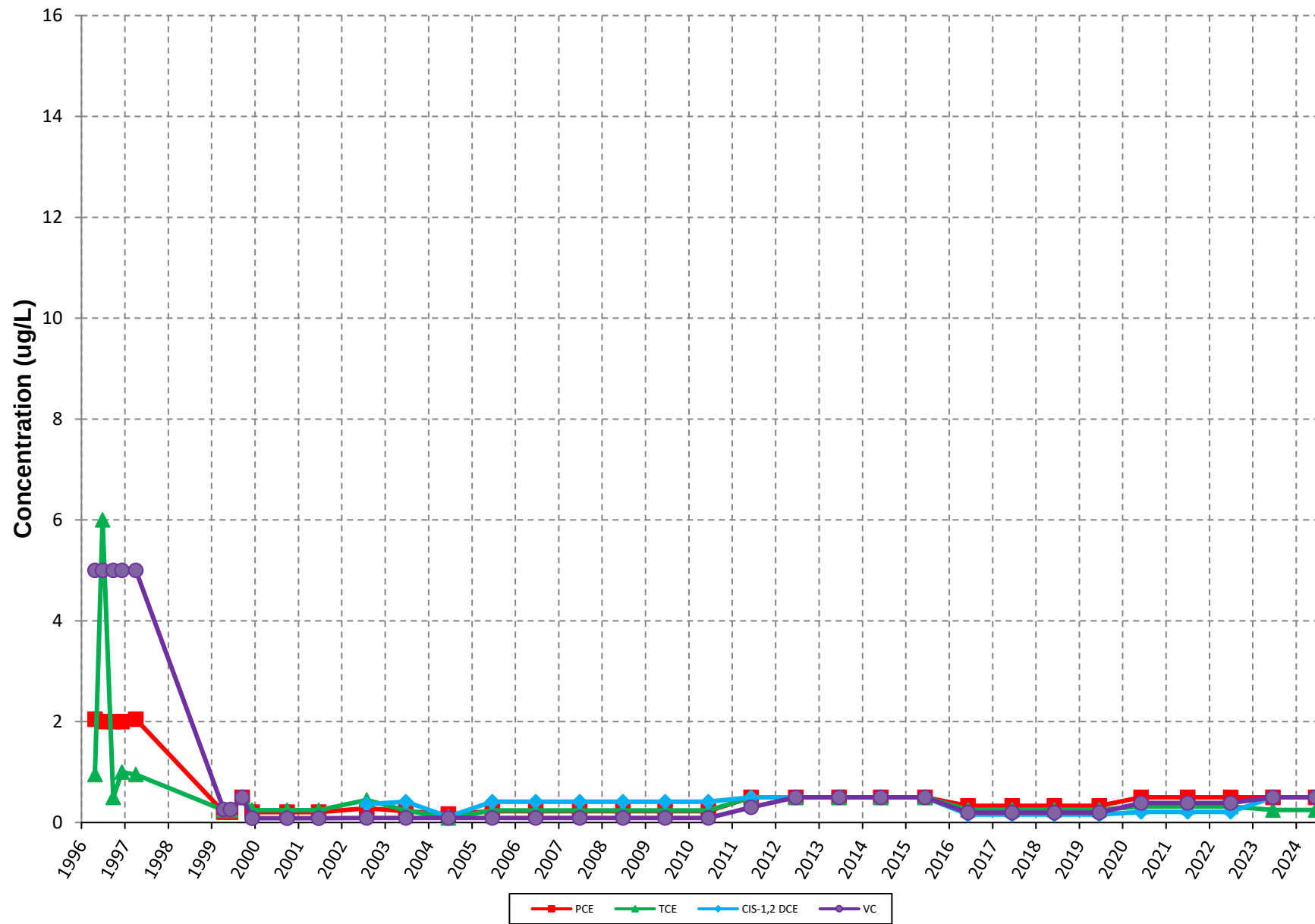
V-02R



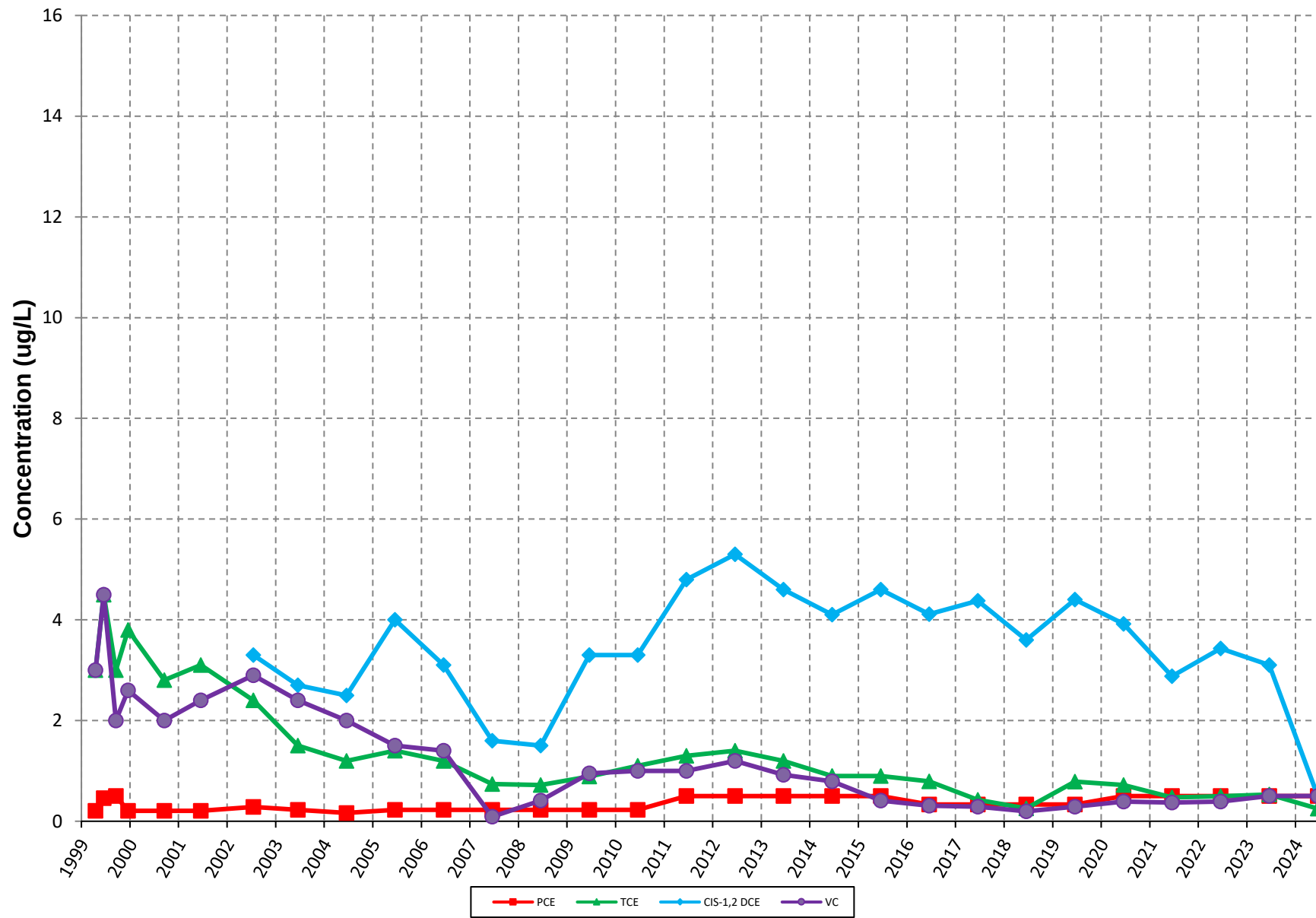
V-03AR



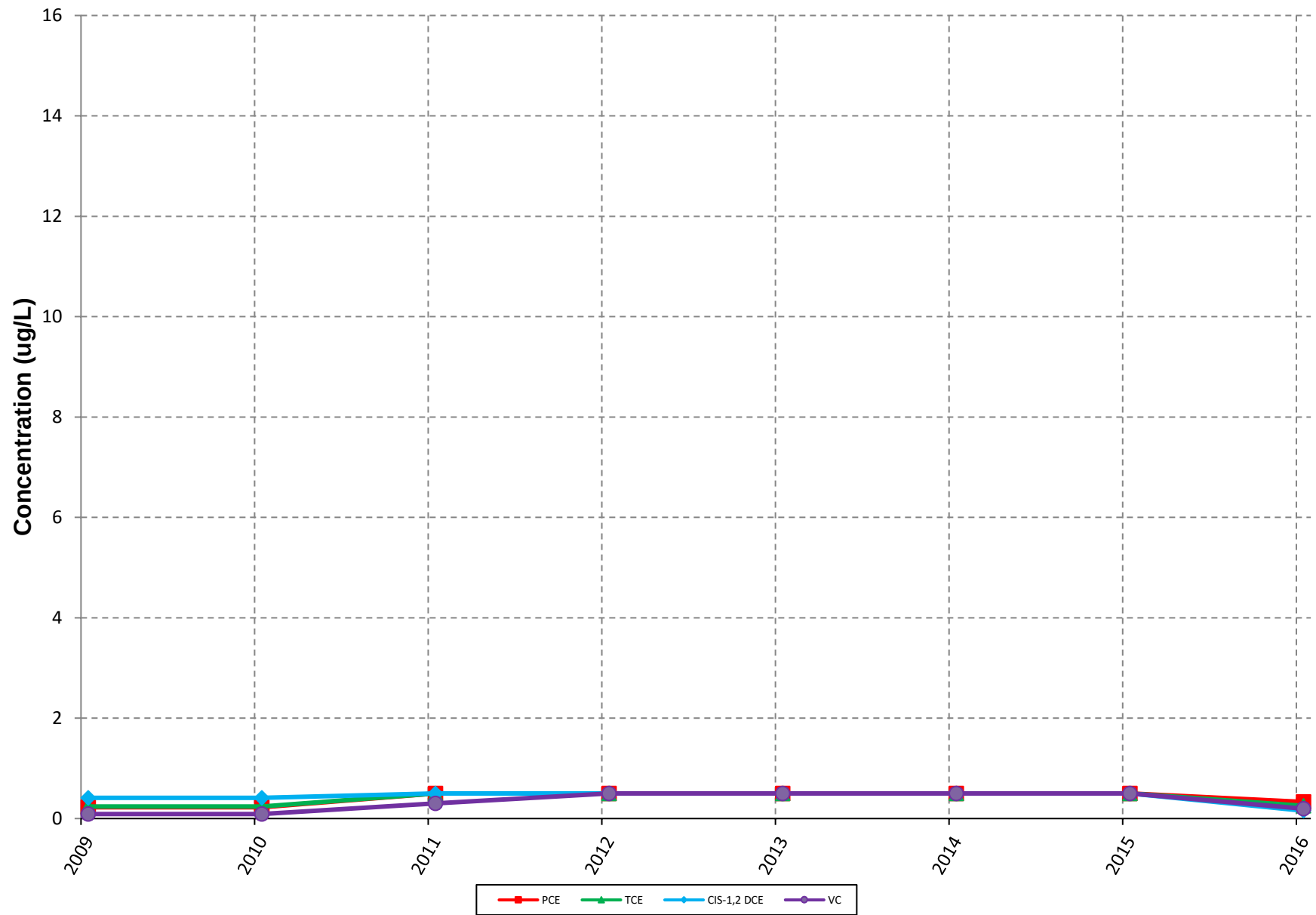
V-03R



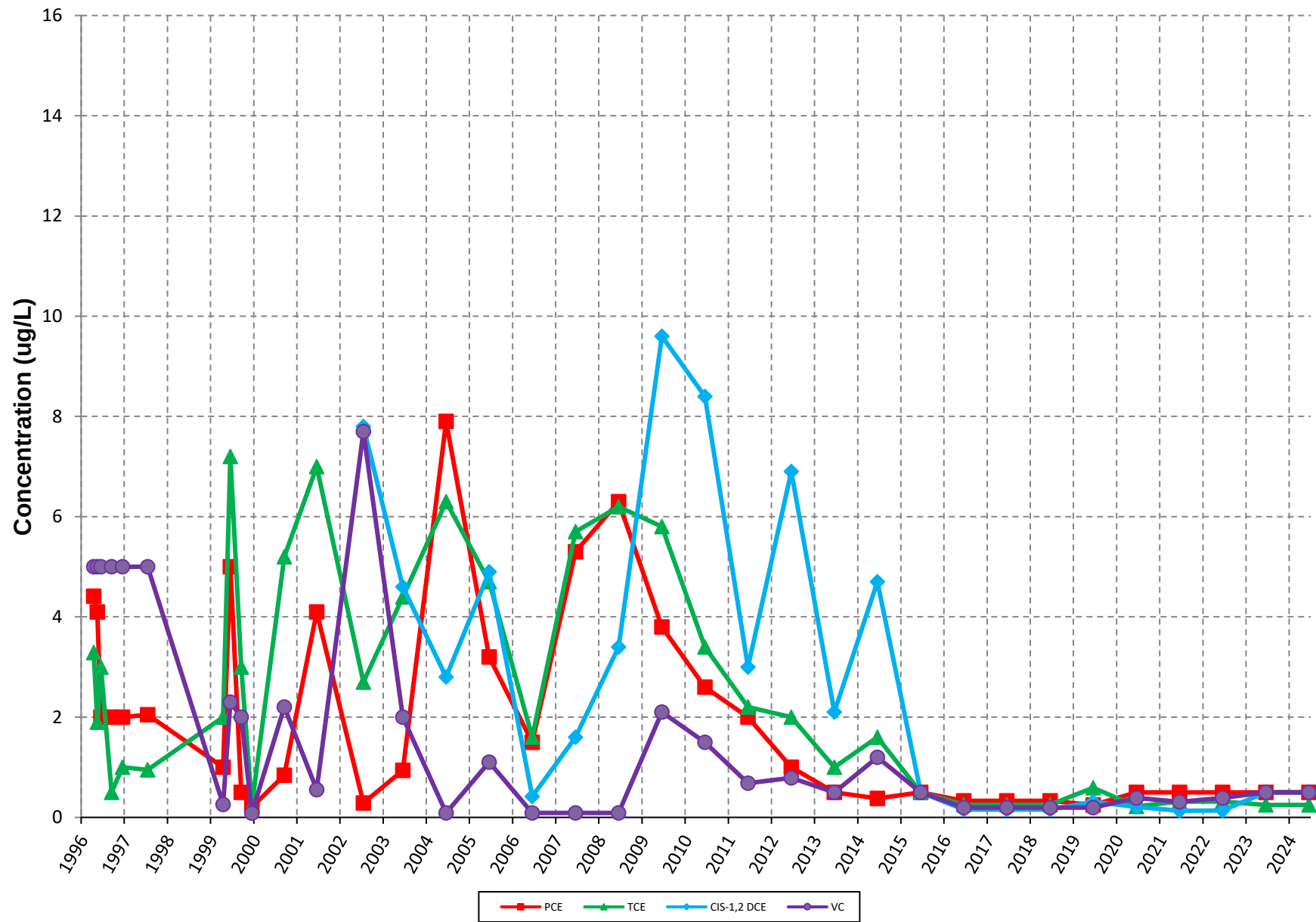
V-04A



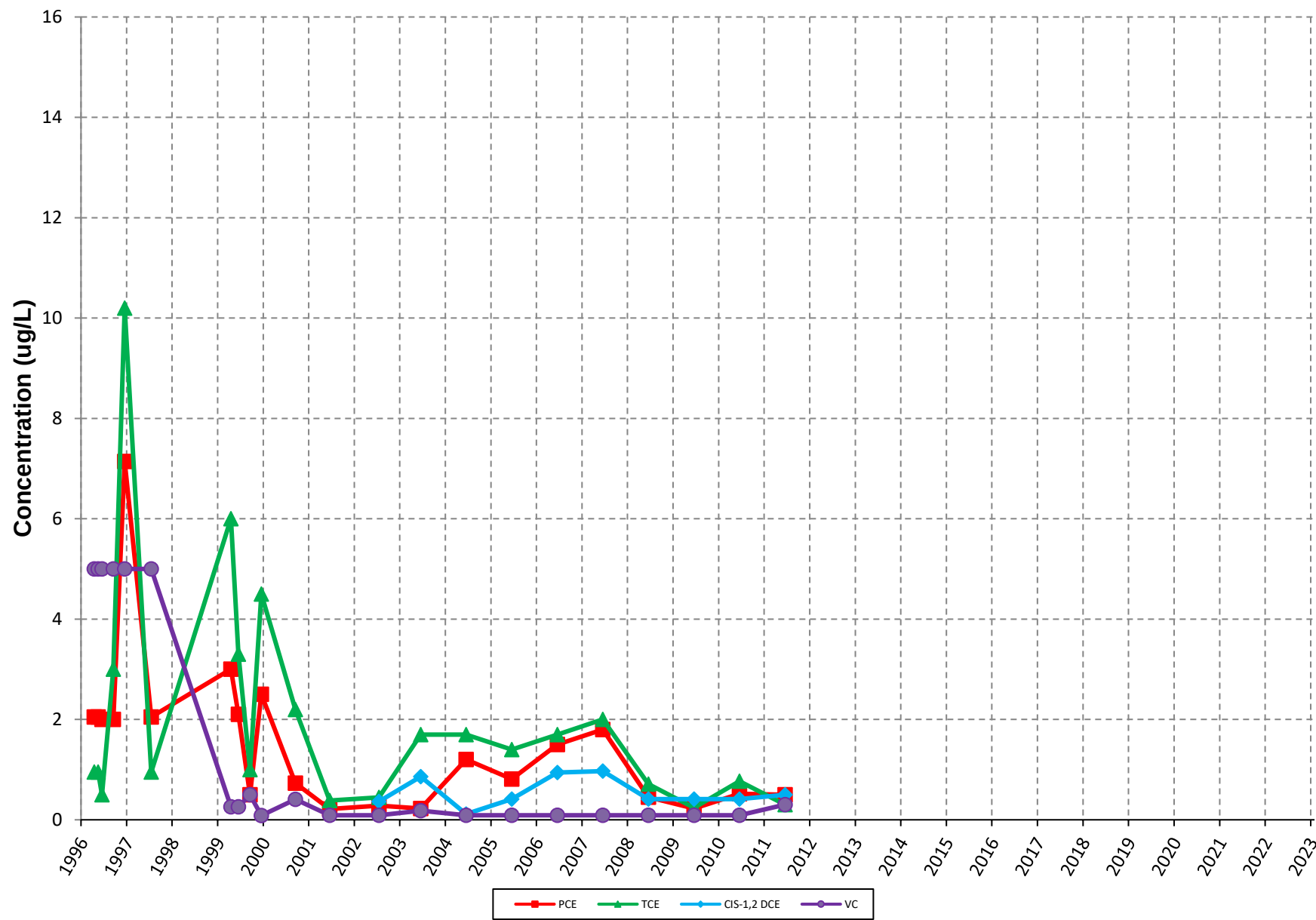
V-04R



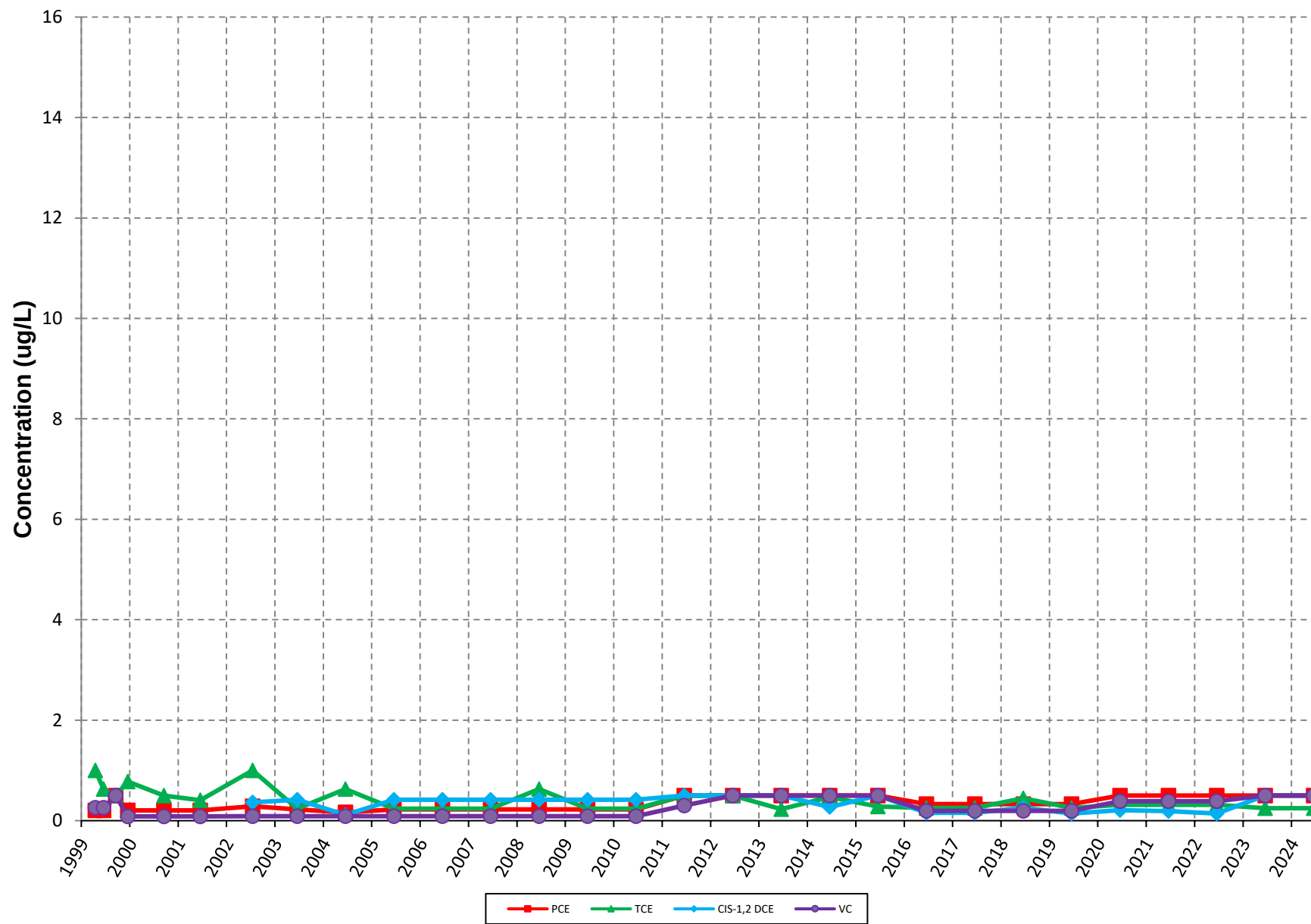
V-05R and V-05RR



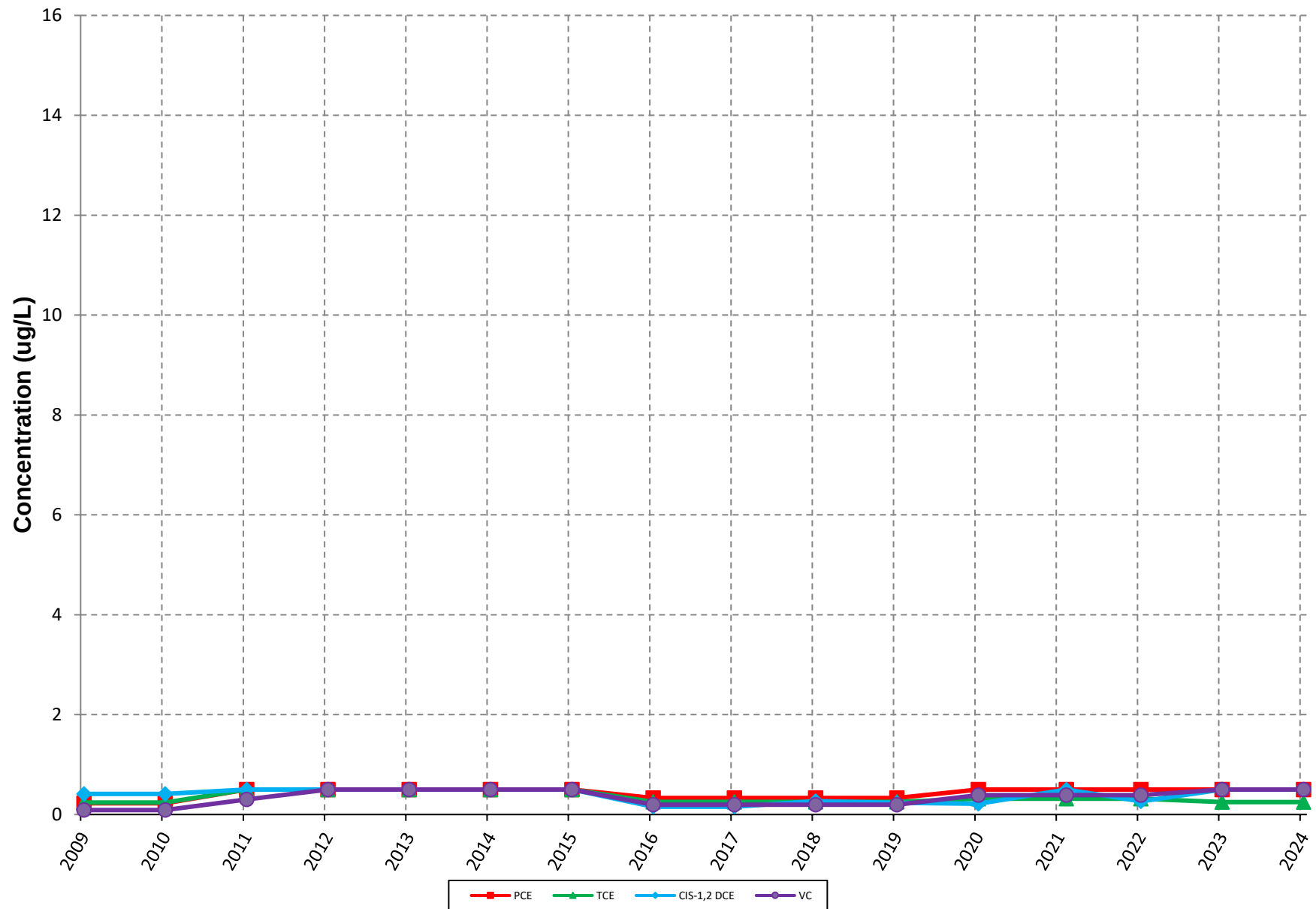
V-06R



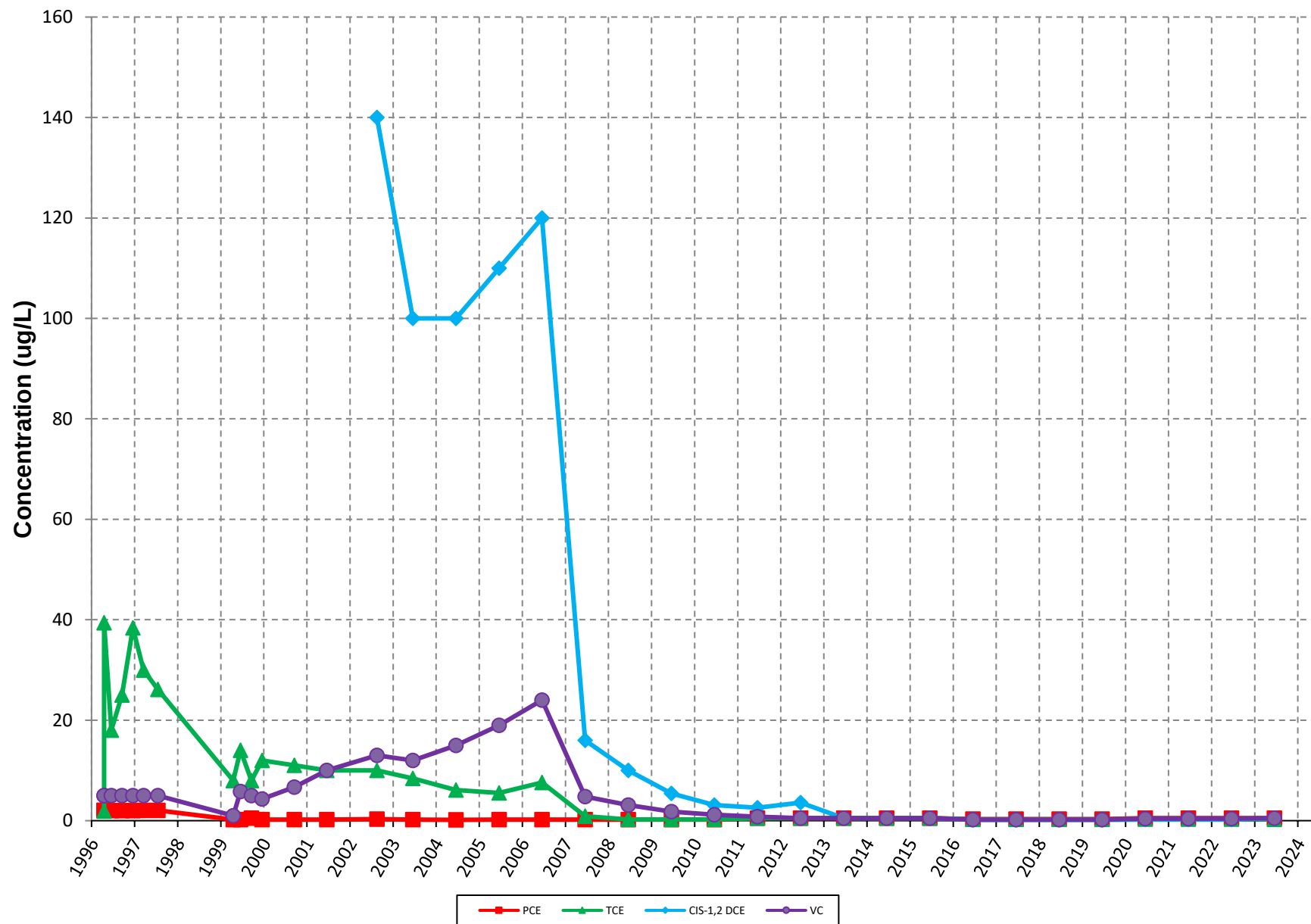
V-09



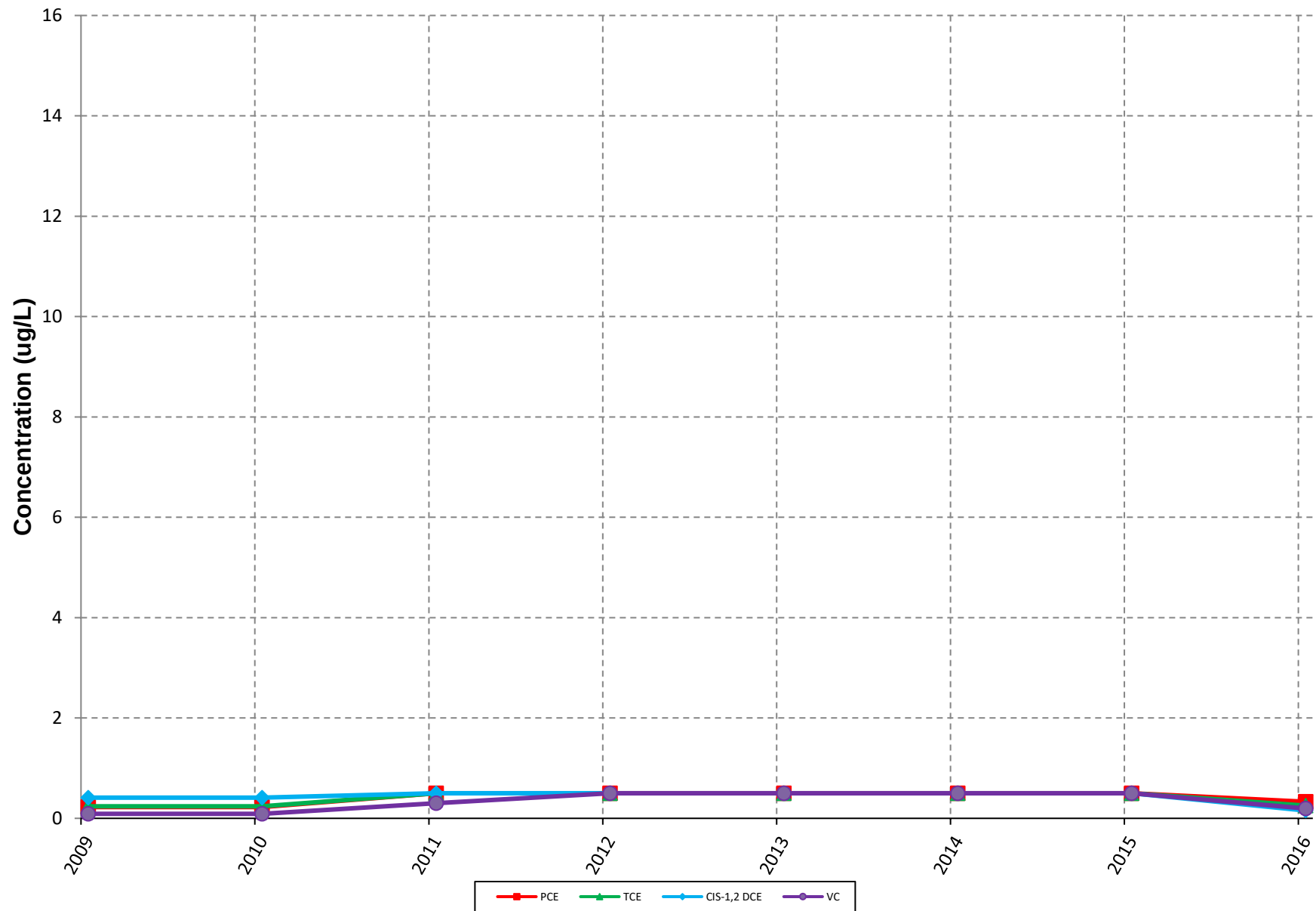
V-13



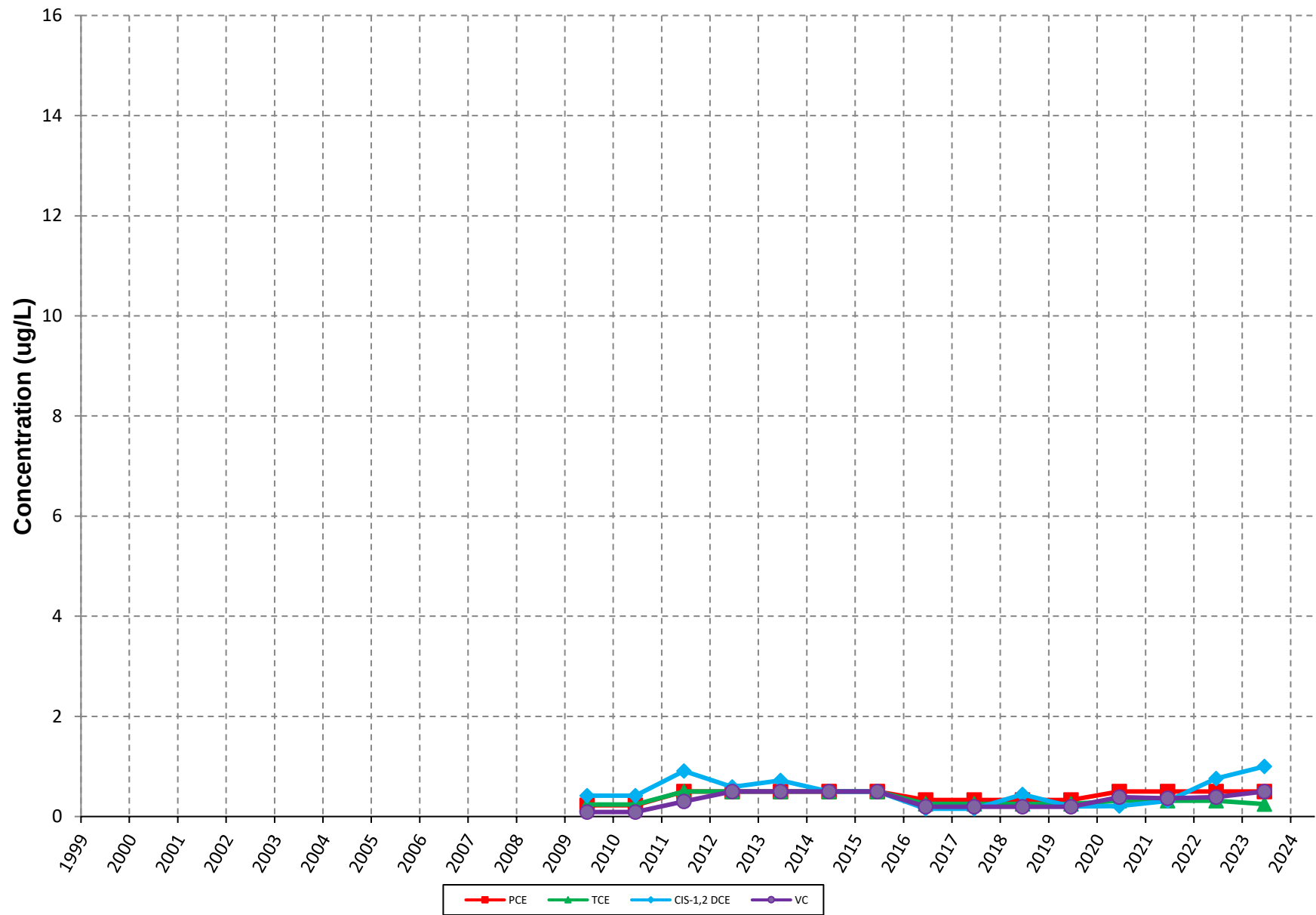
V-16R



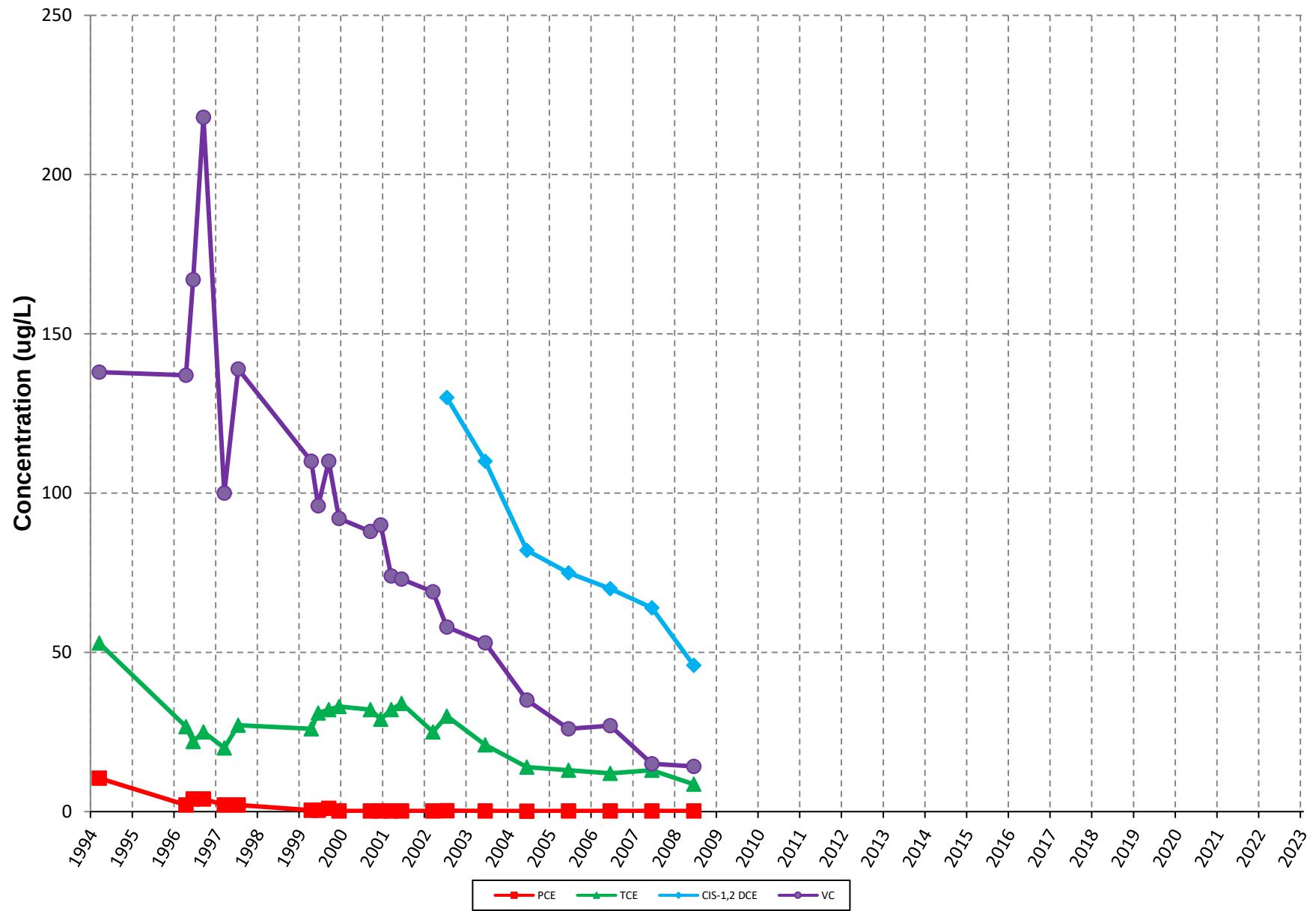
V-19



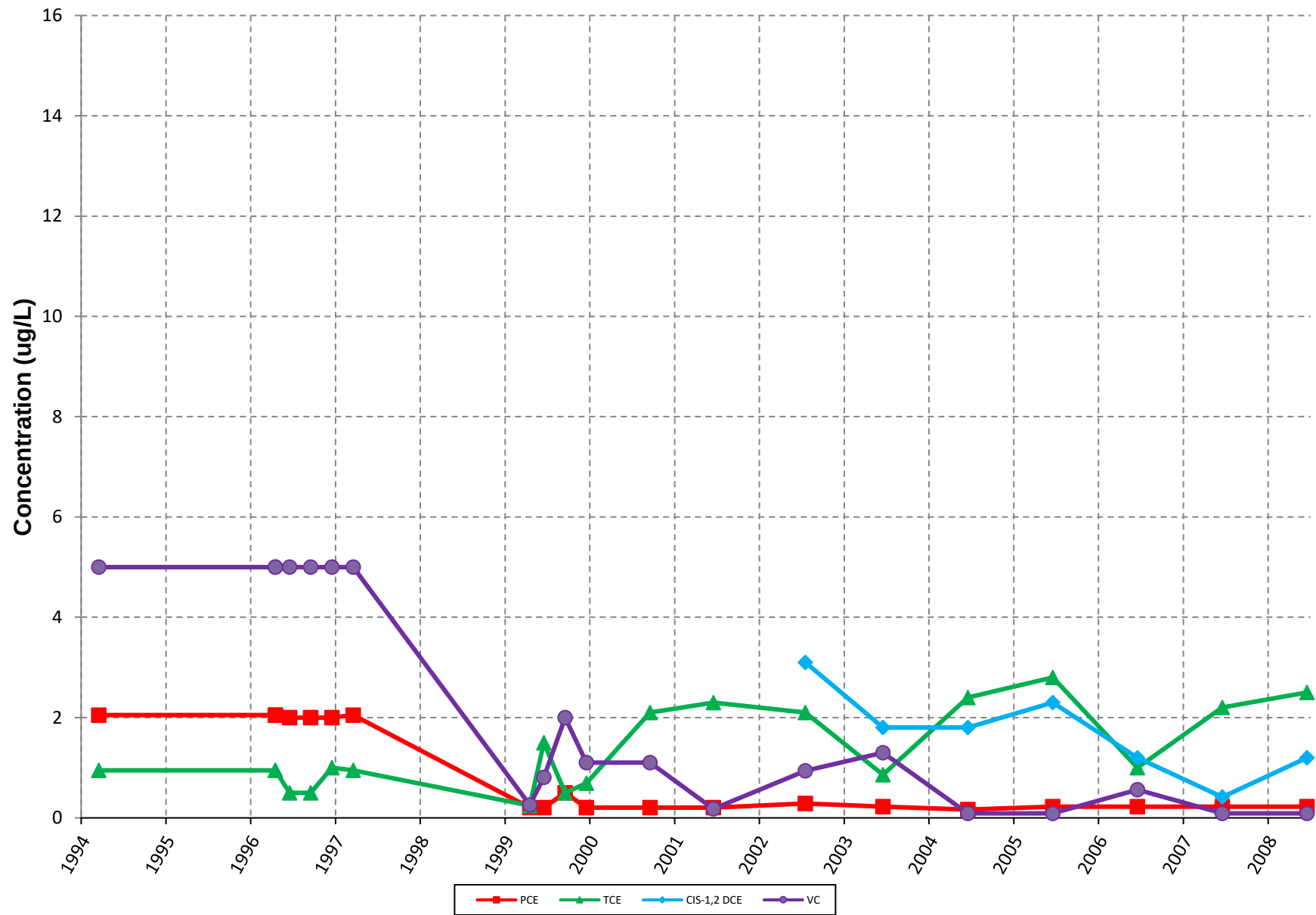
V-19A



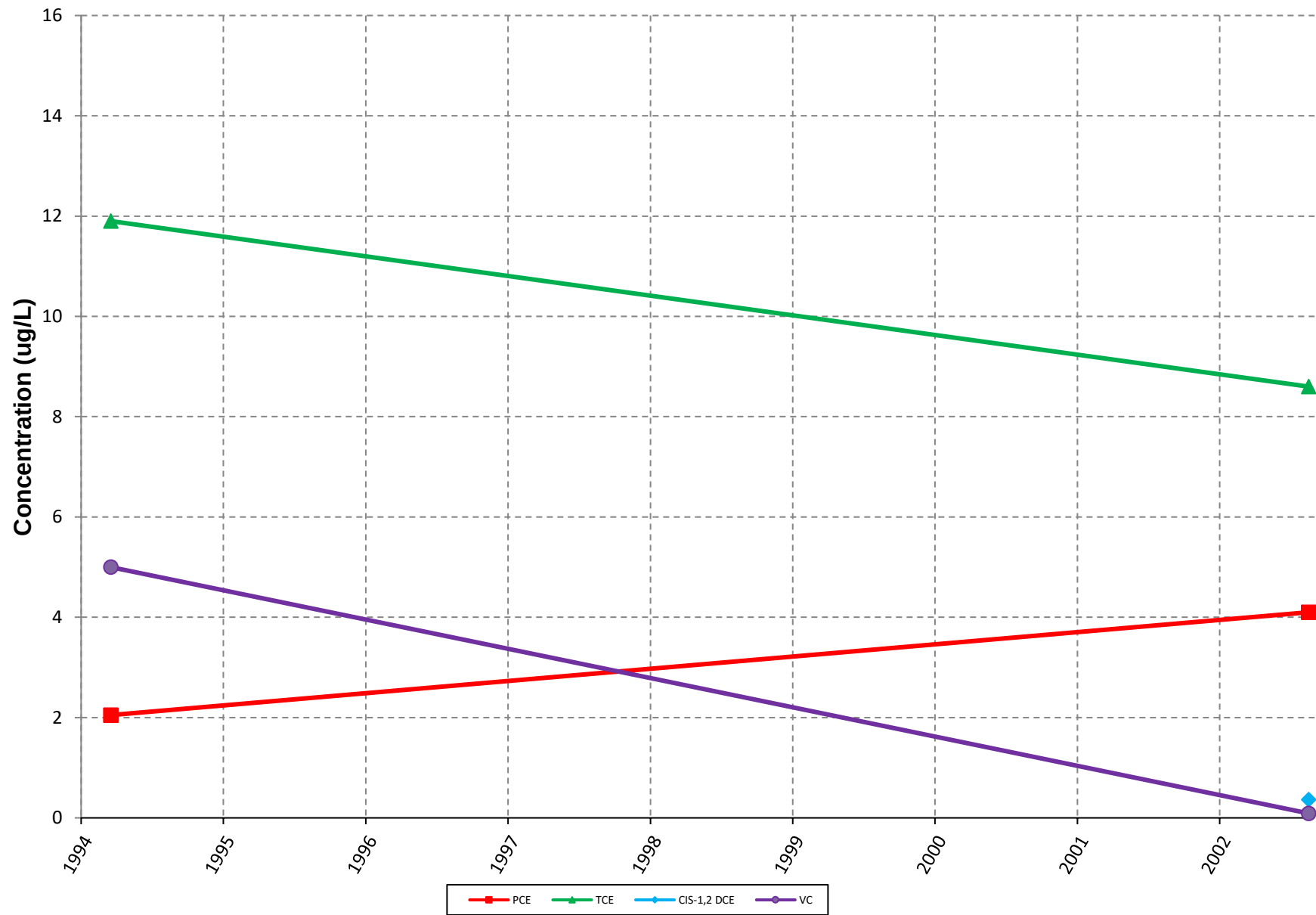
V-20A



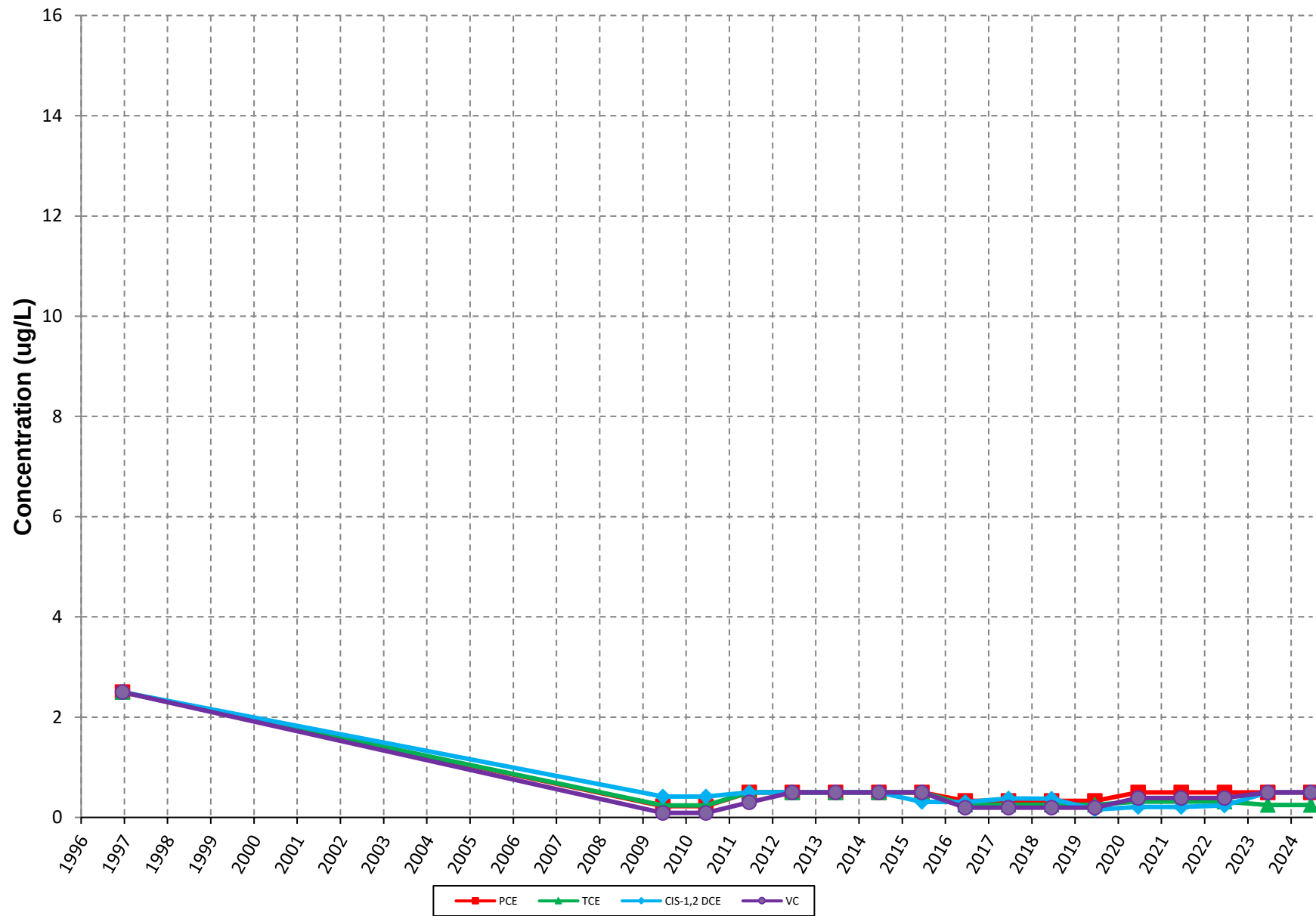
V-22



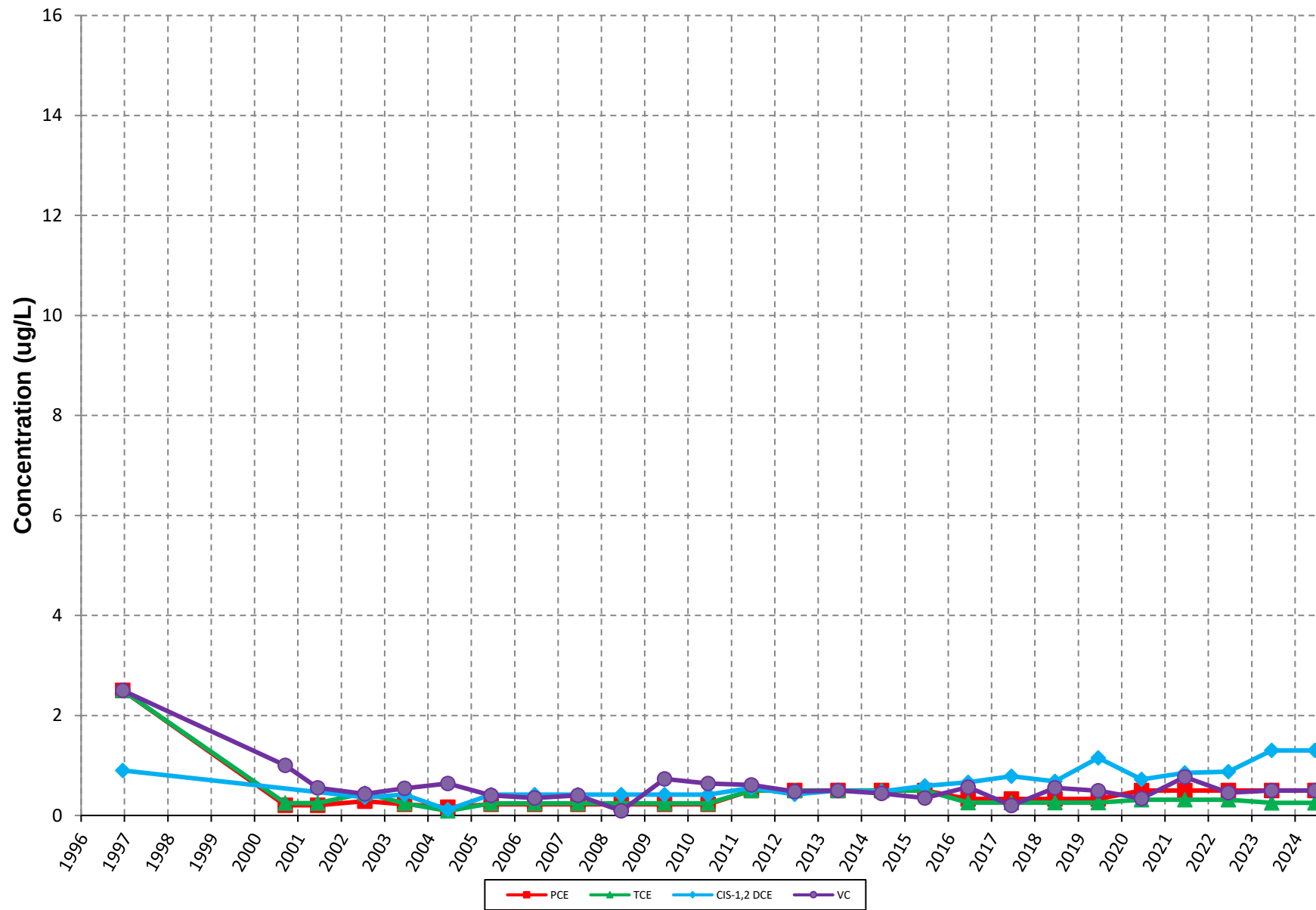
V-23



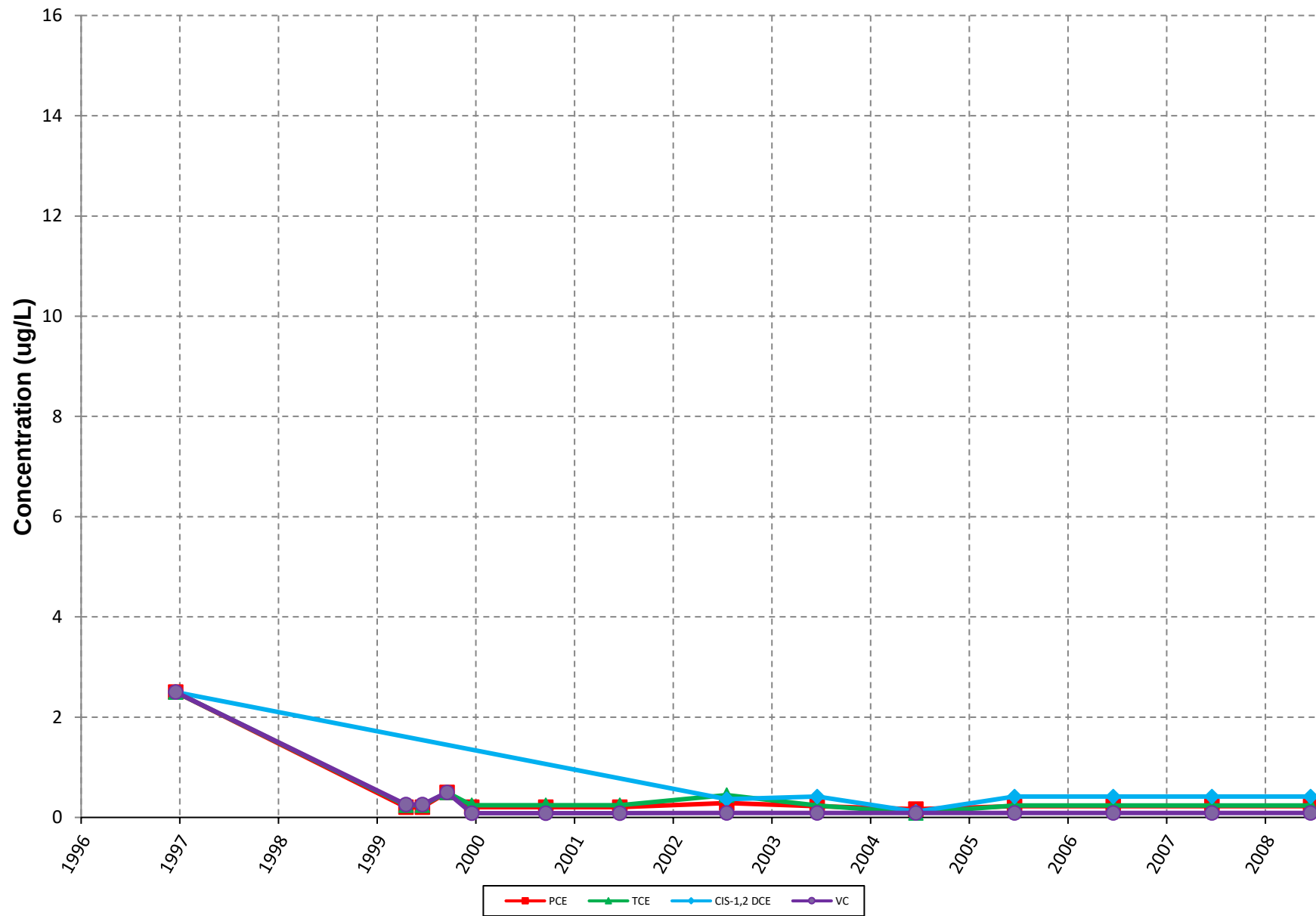
V-27



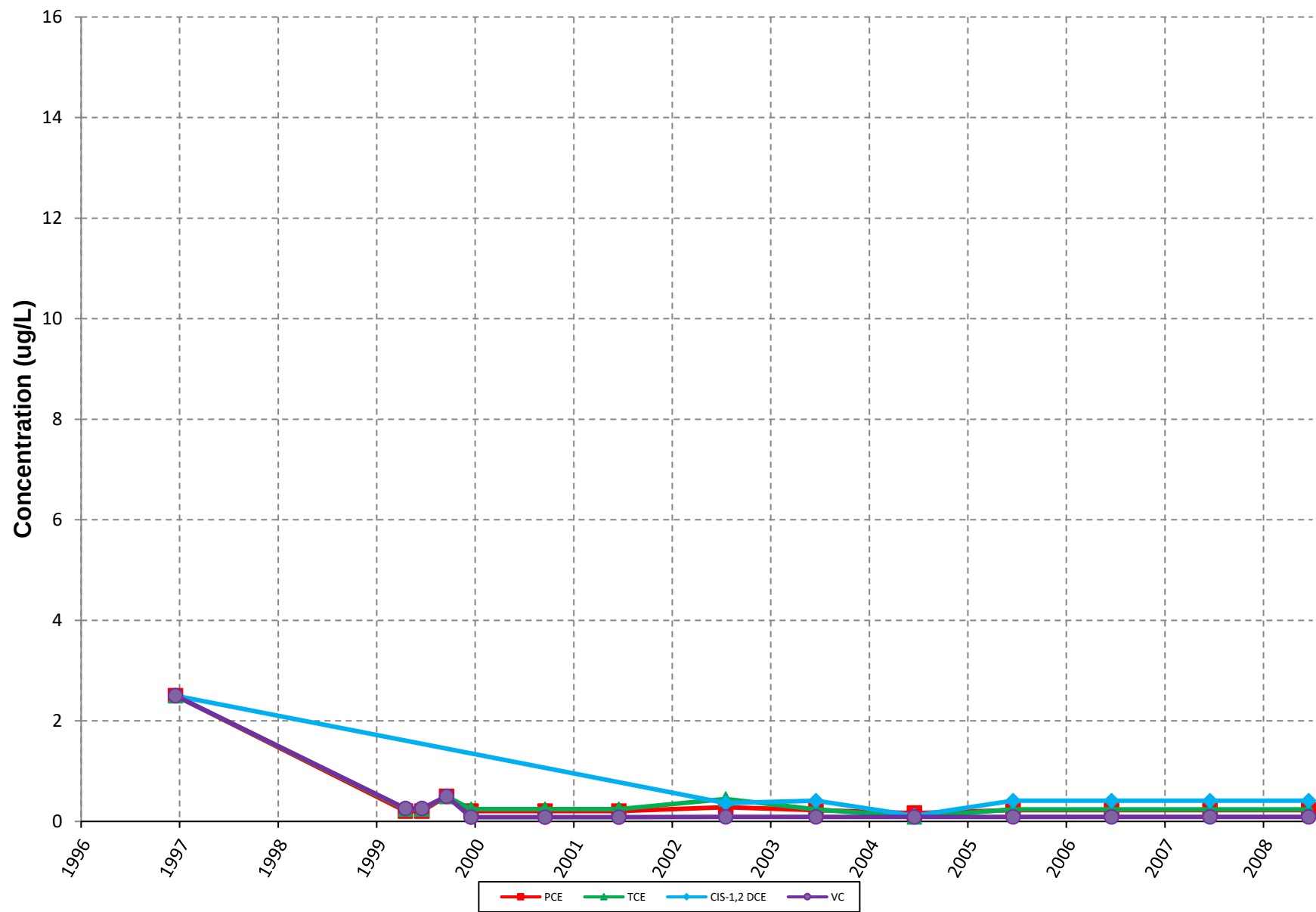
V-27A



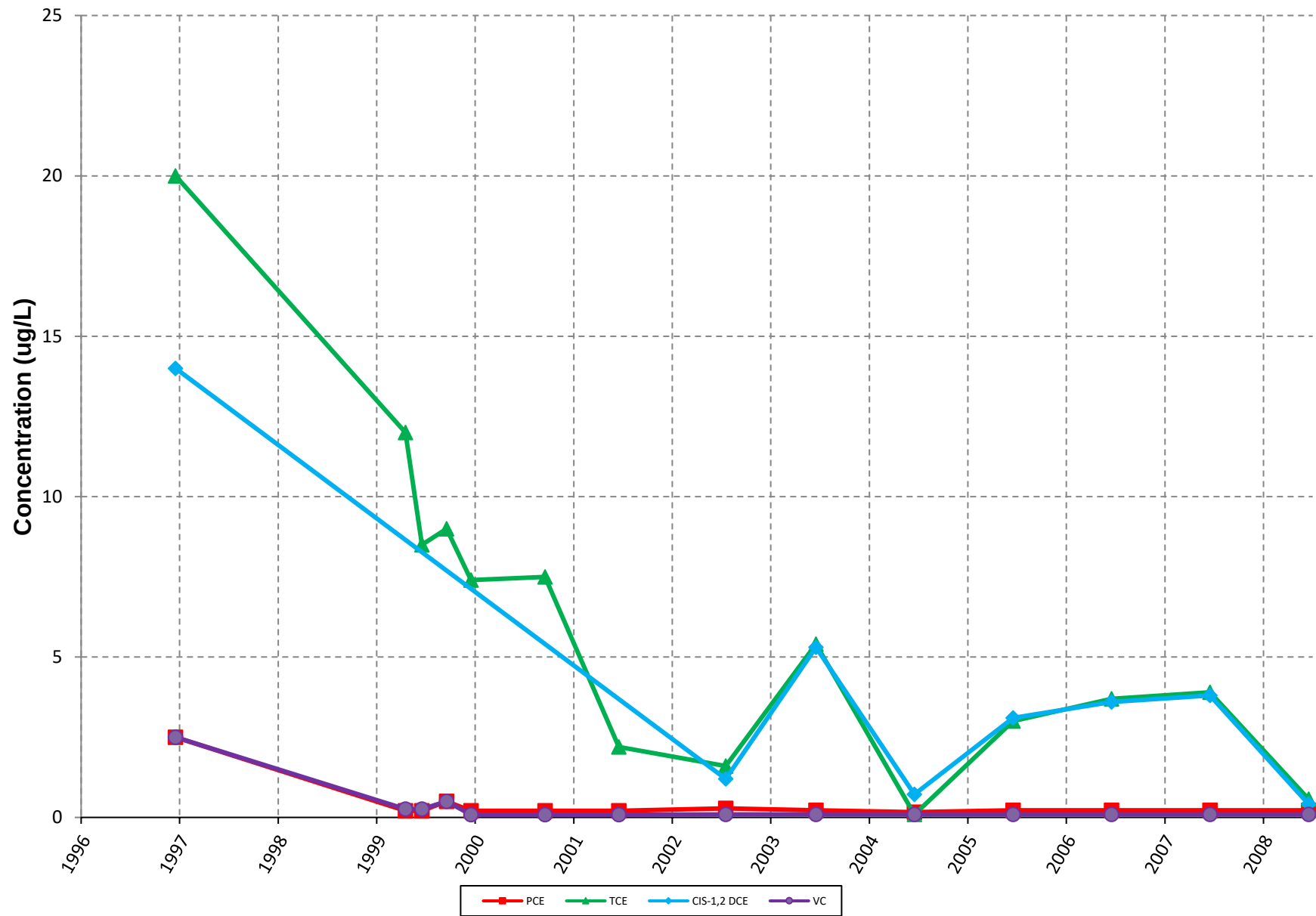
V-28



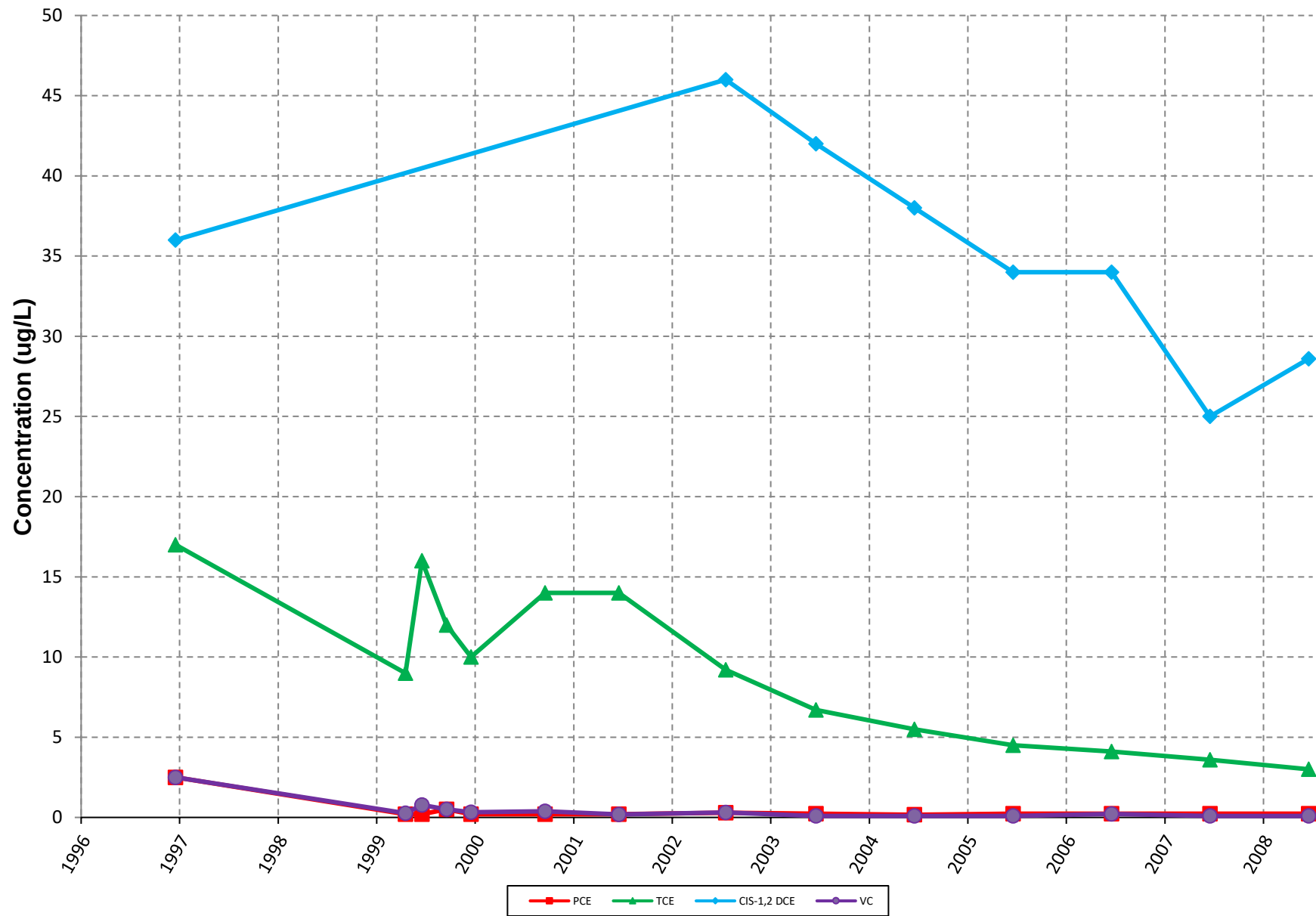
V-28A



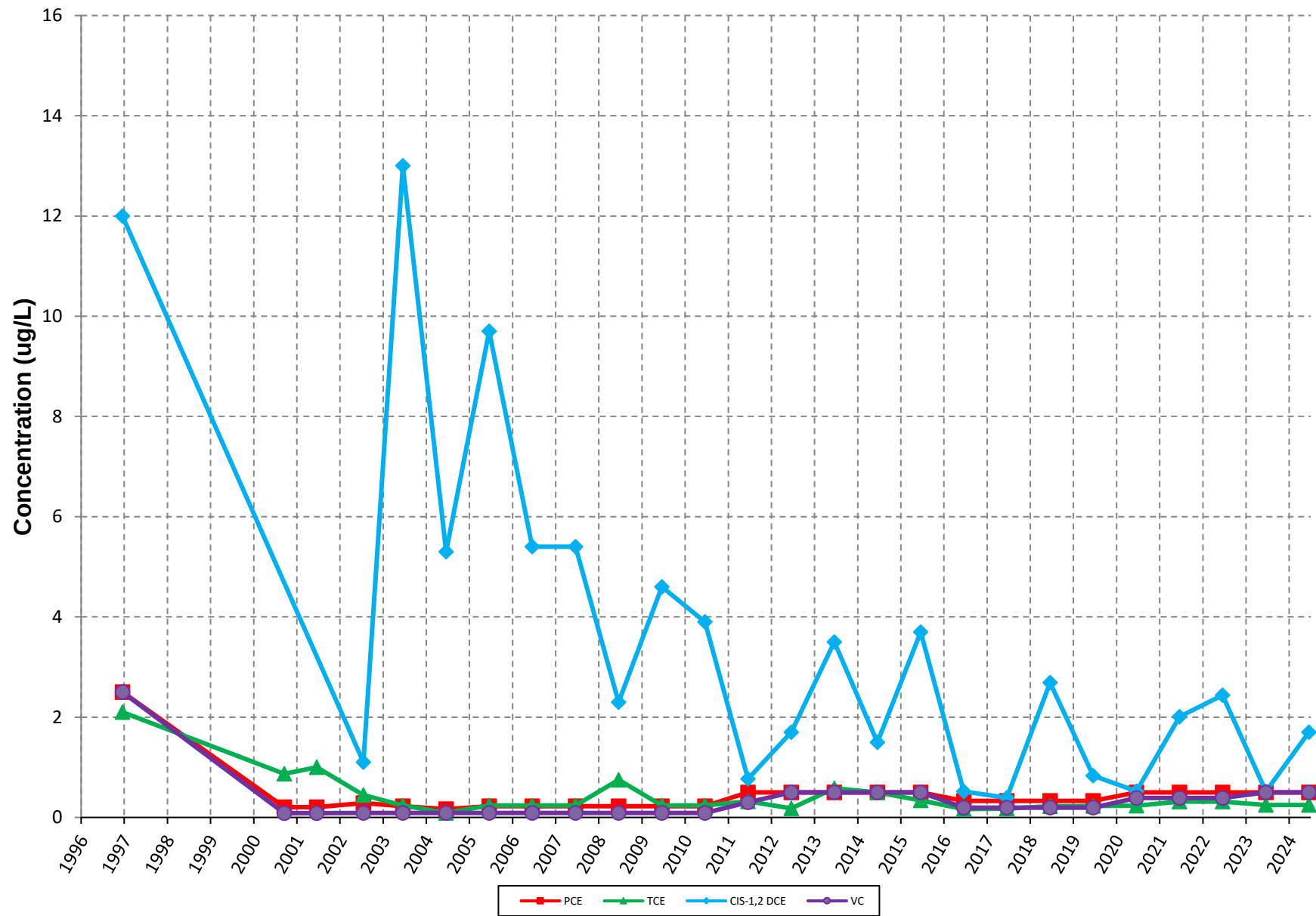
V-29



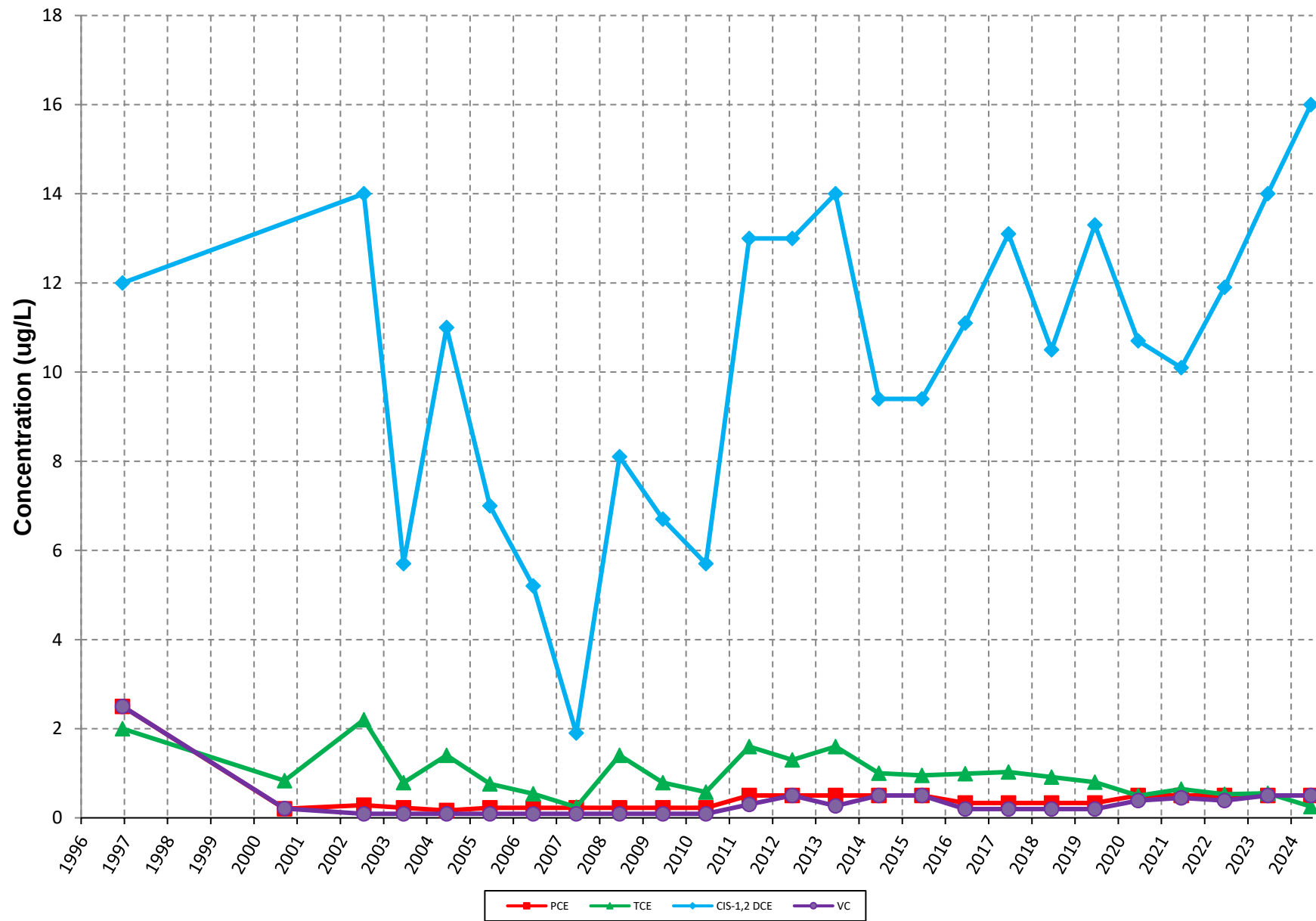
V-29B



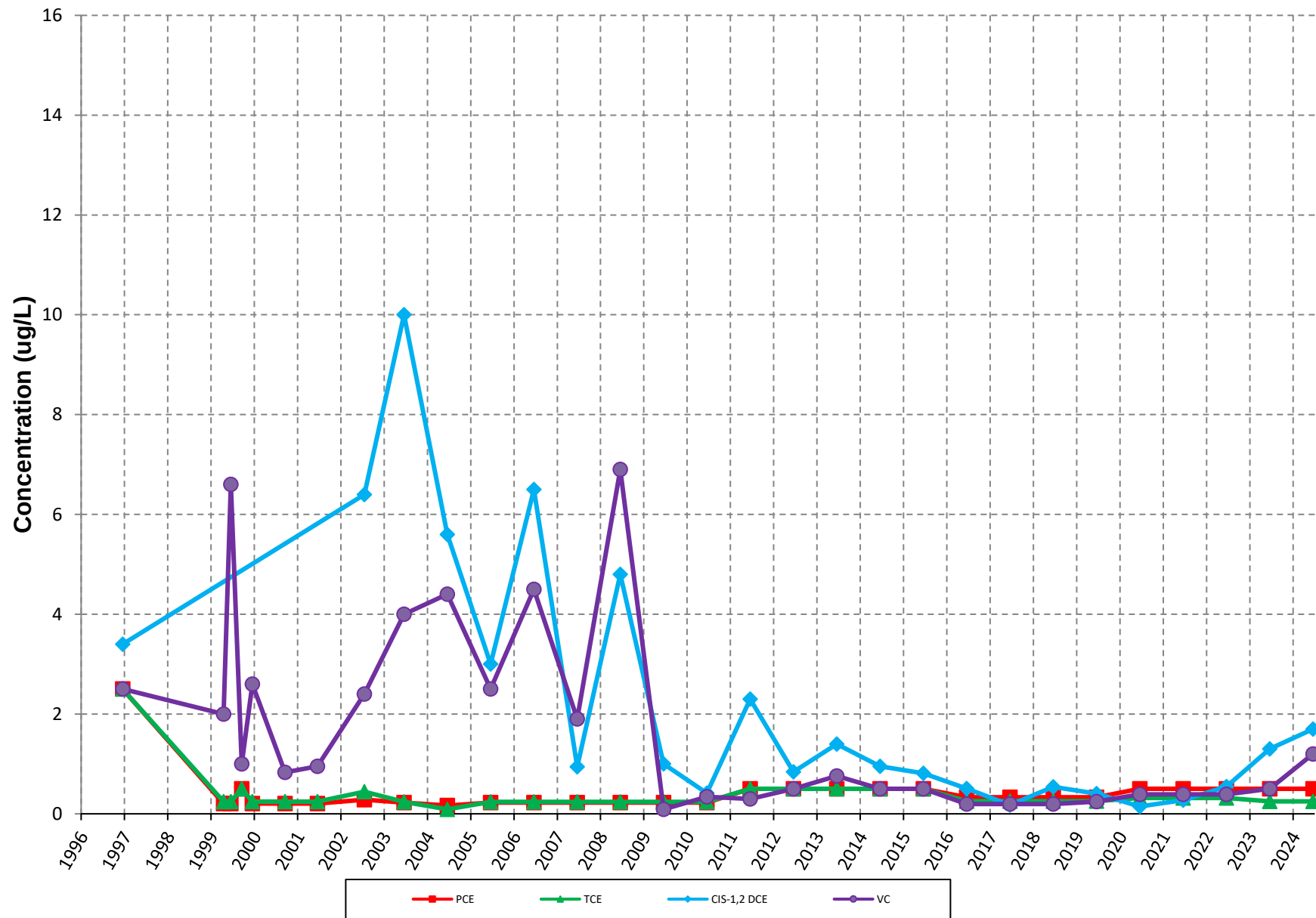
V-30



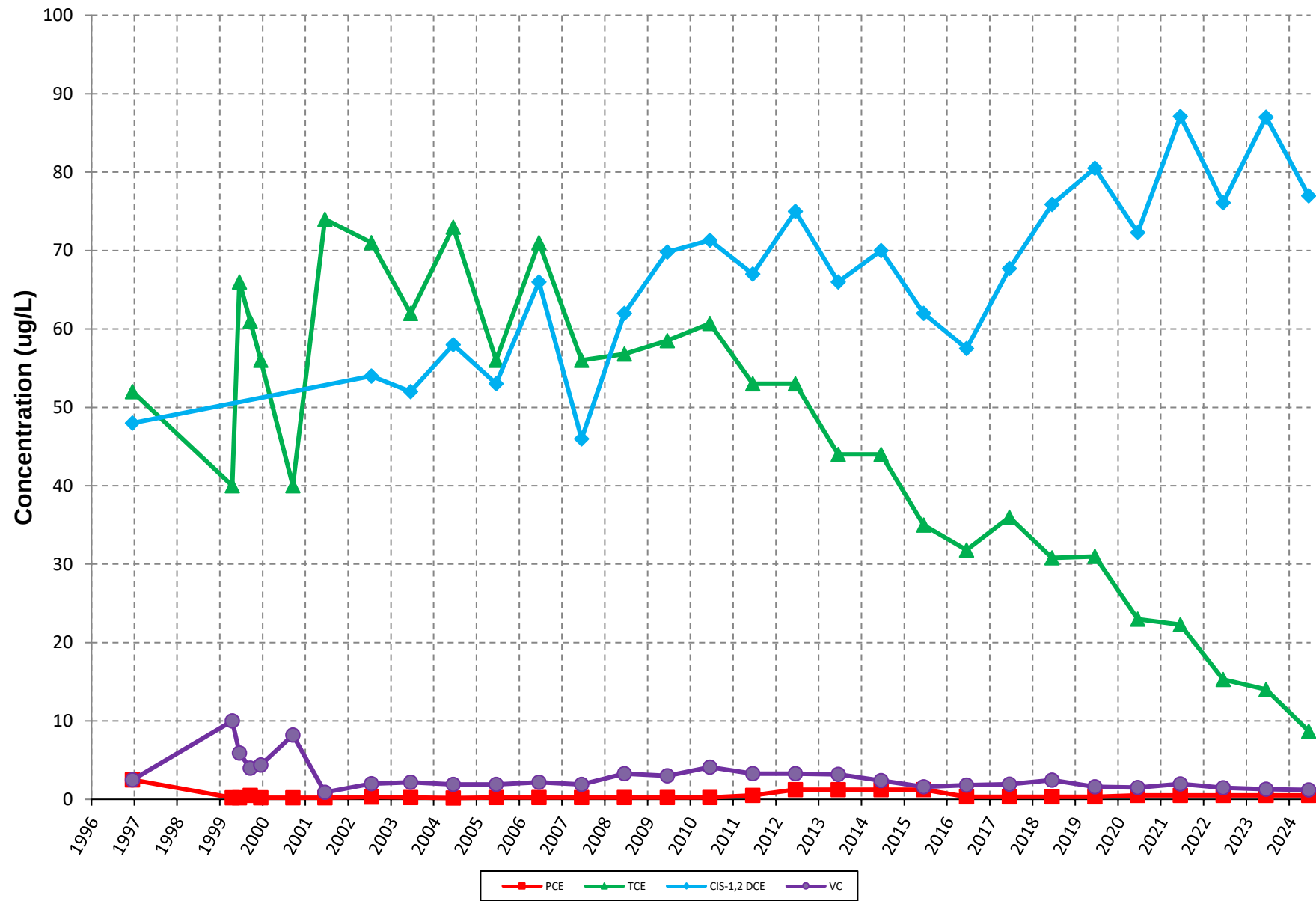
V-30A



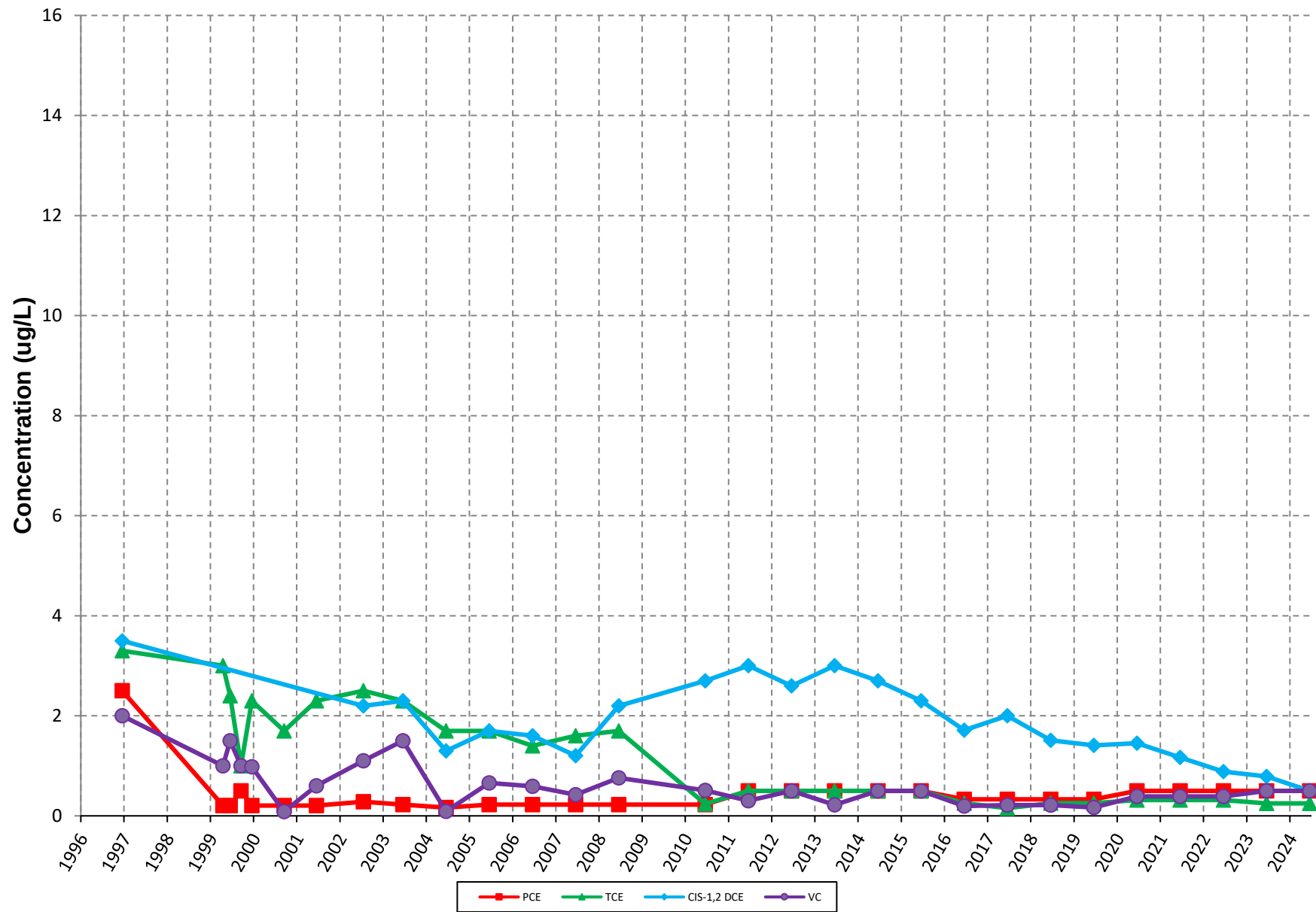
V-31



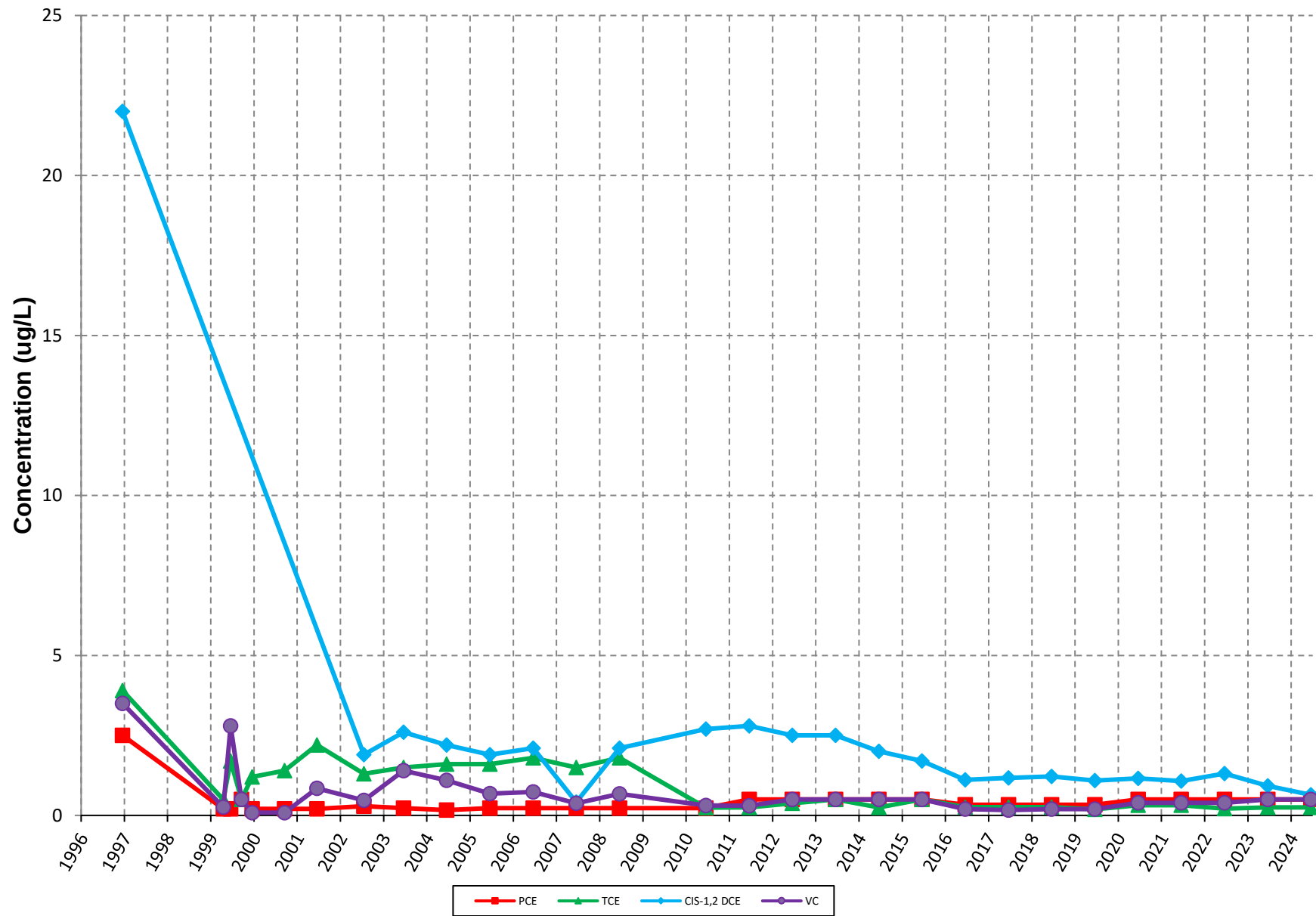
V-31A



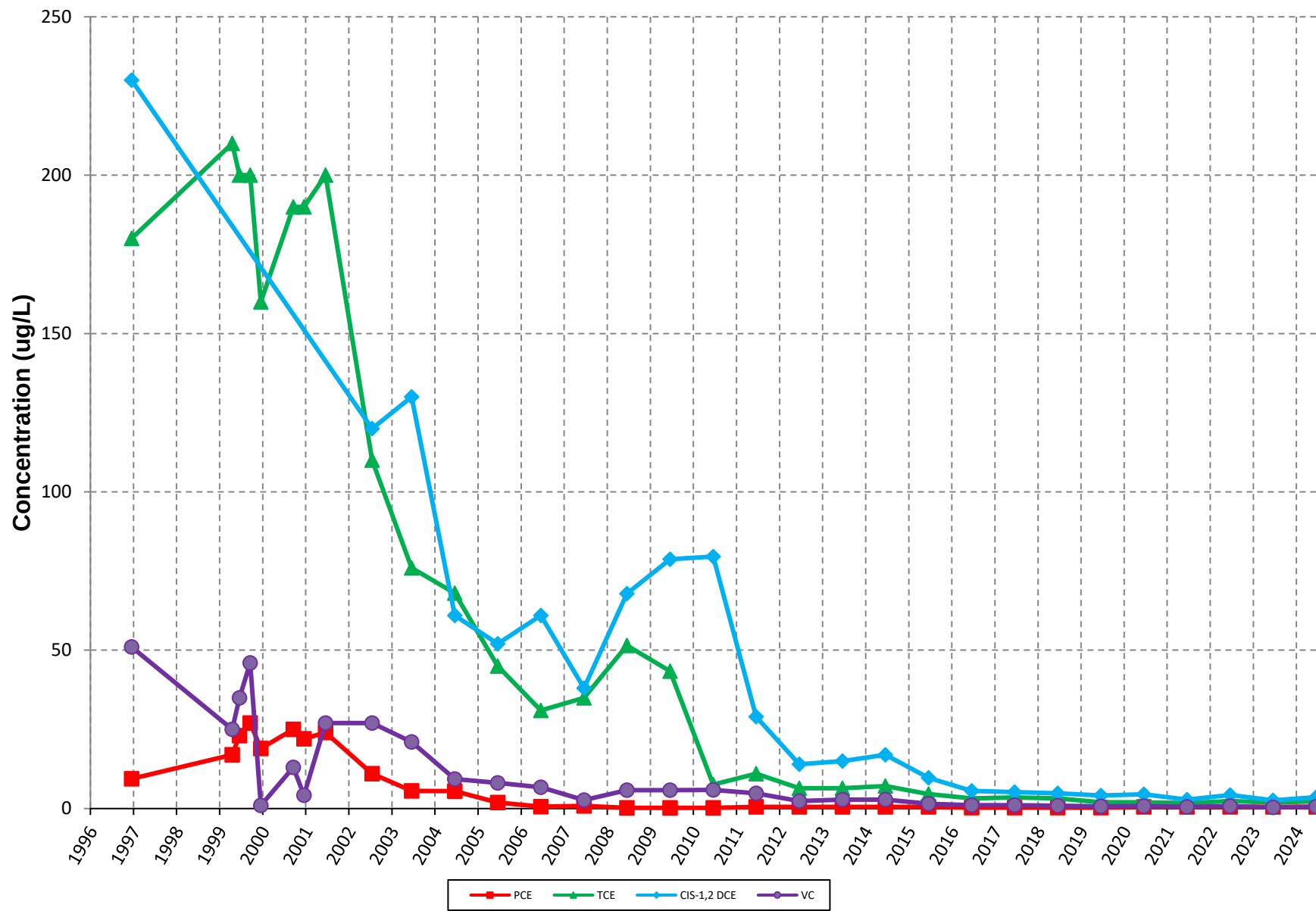
V-32



V-32A



V-32B



Appendix E

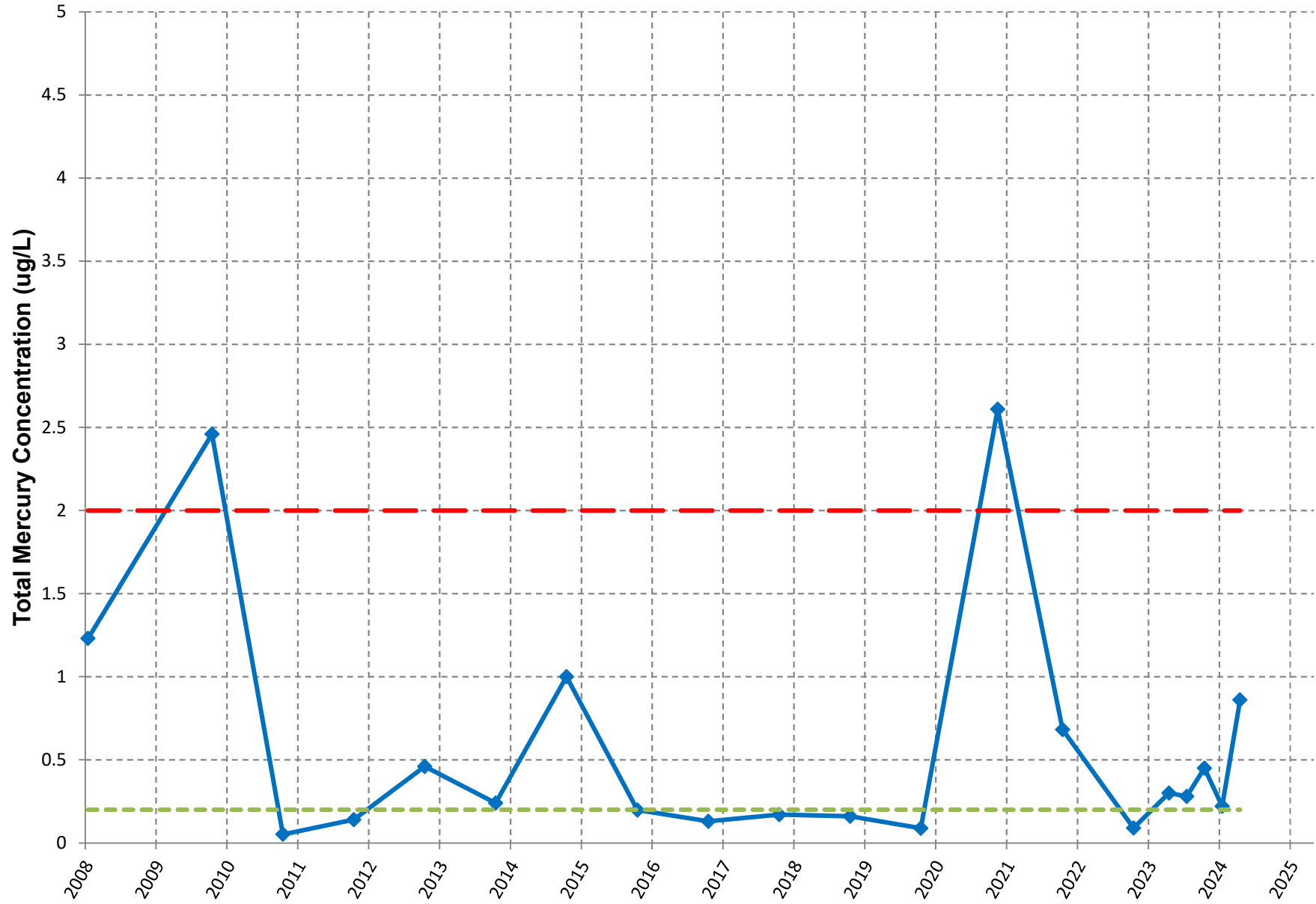
Mercury Concentration Graphs

Note: 0 to 5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-02R

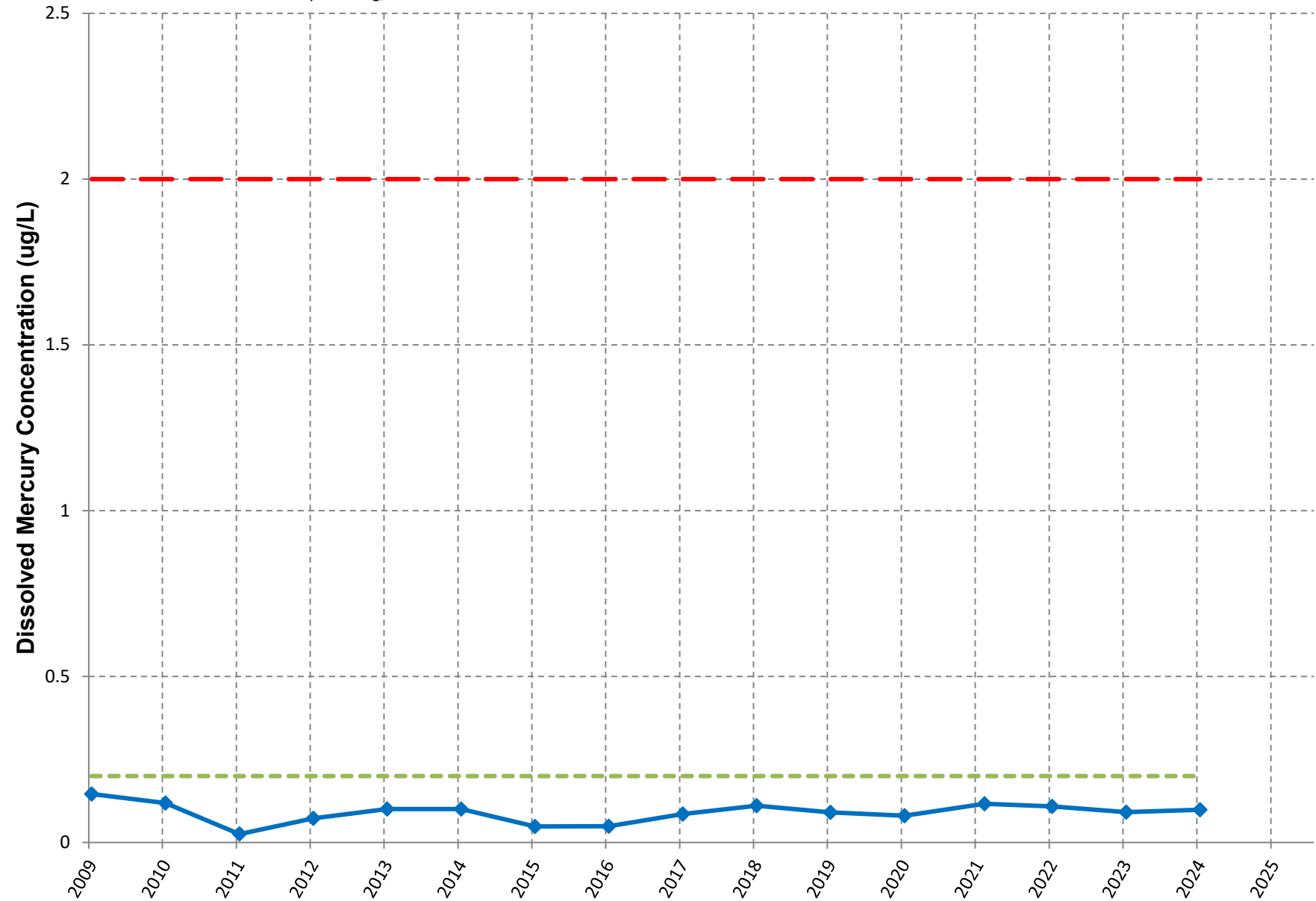


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-02BR

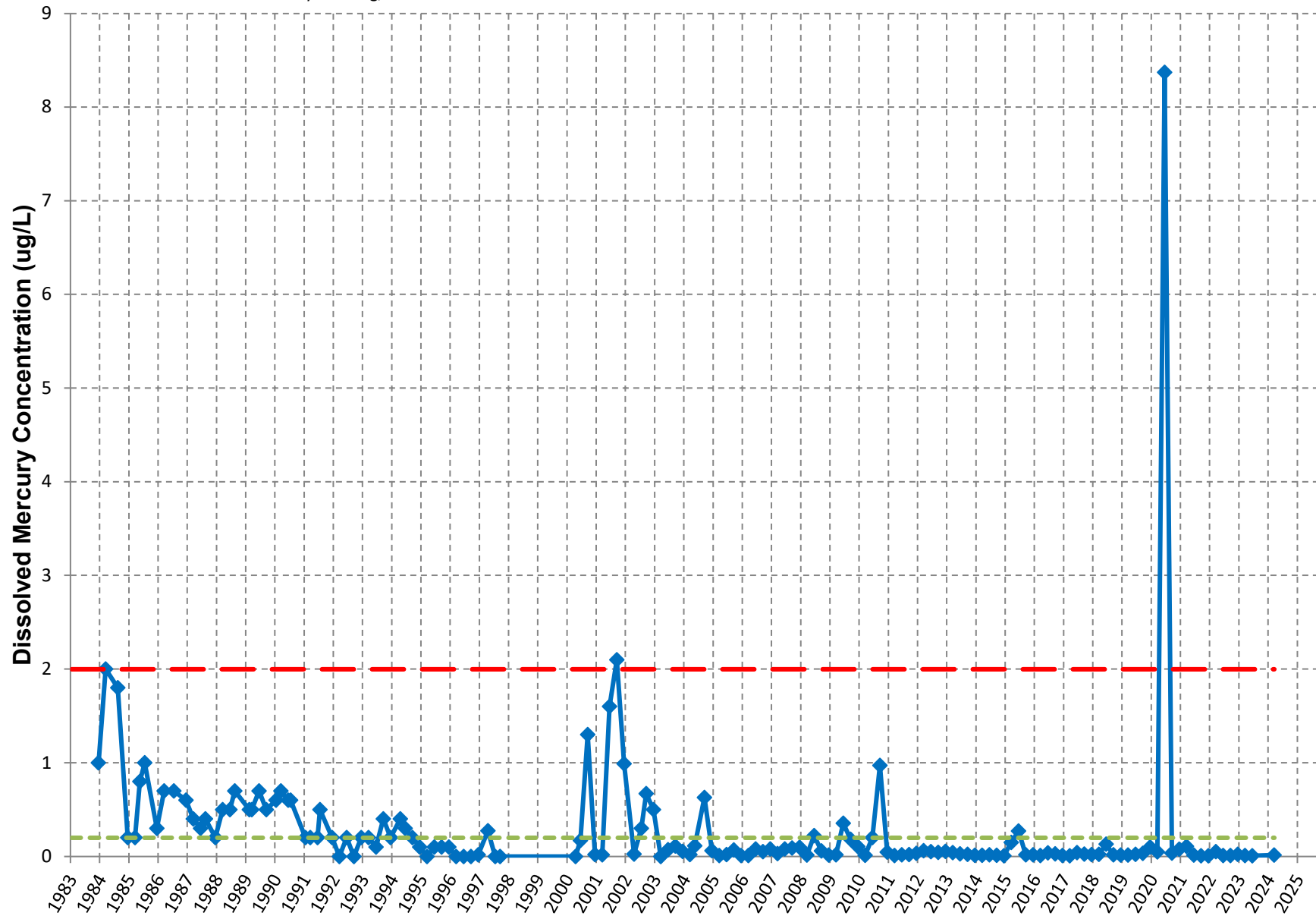


Note: 0 to 9 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-03R

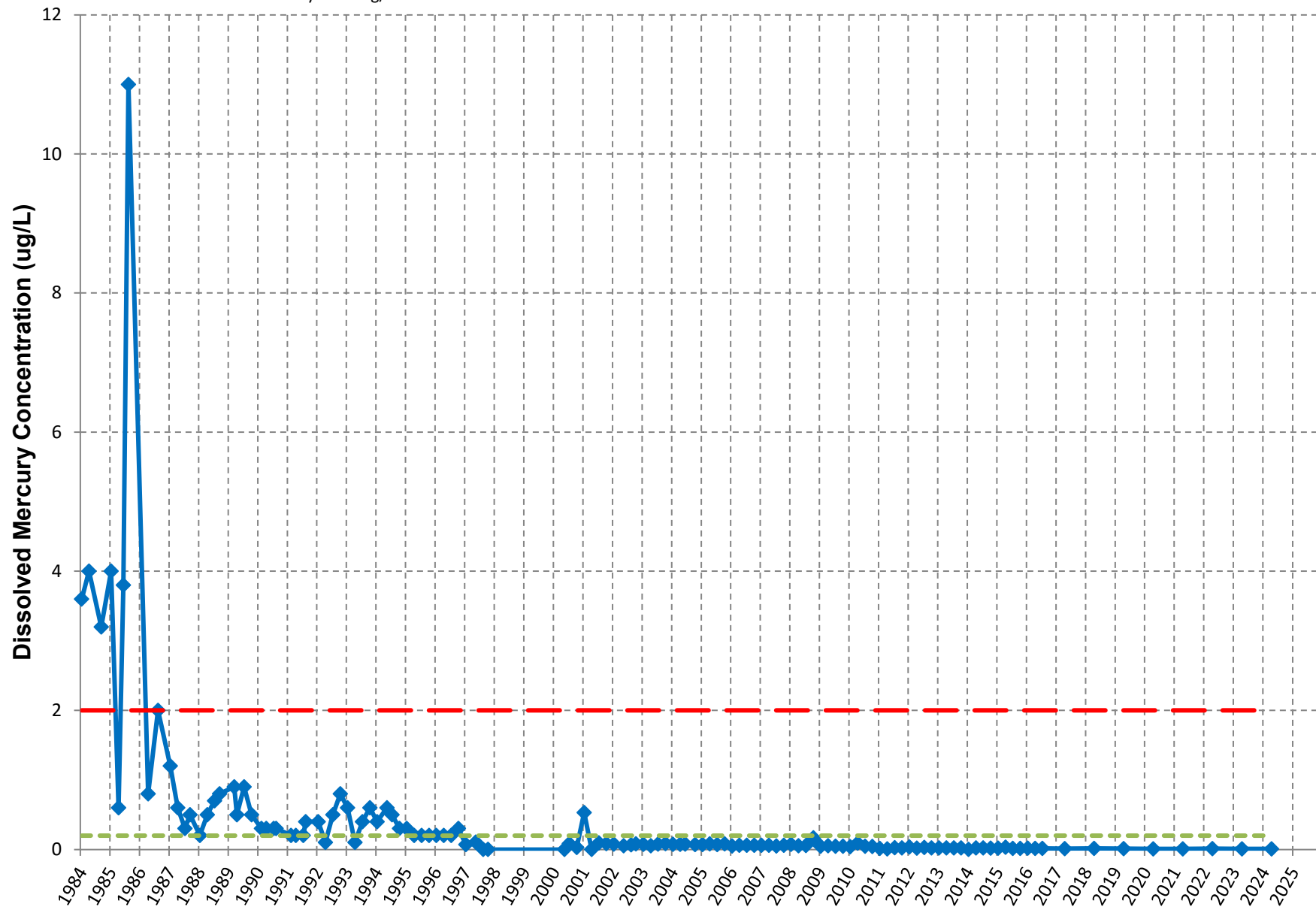


Note: 0 to 12 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-03AR

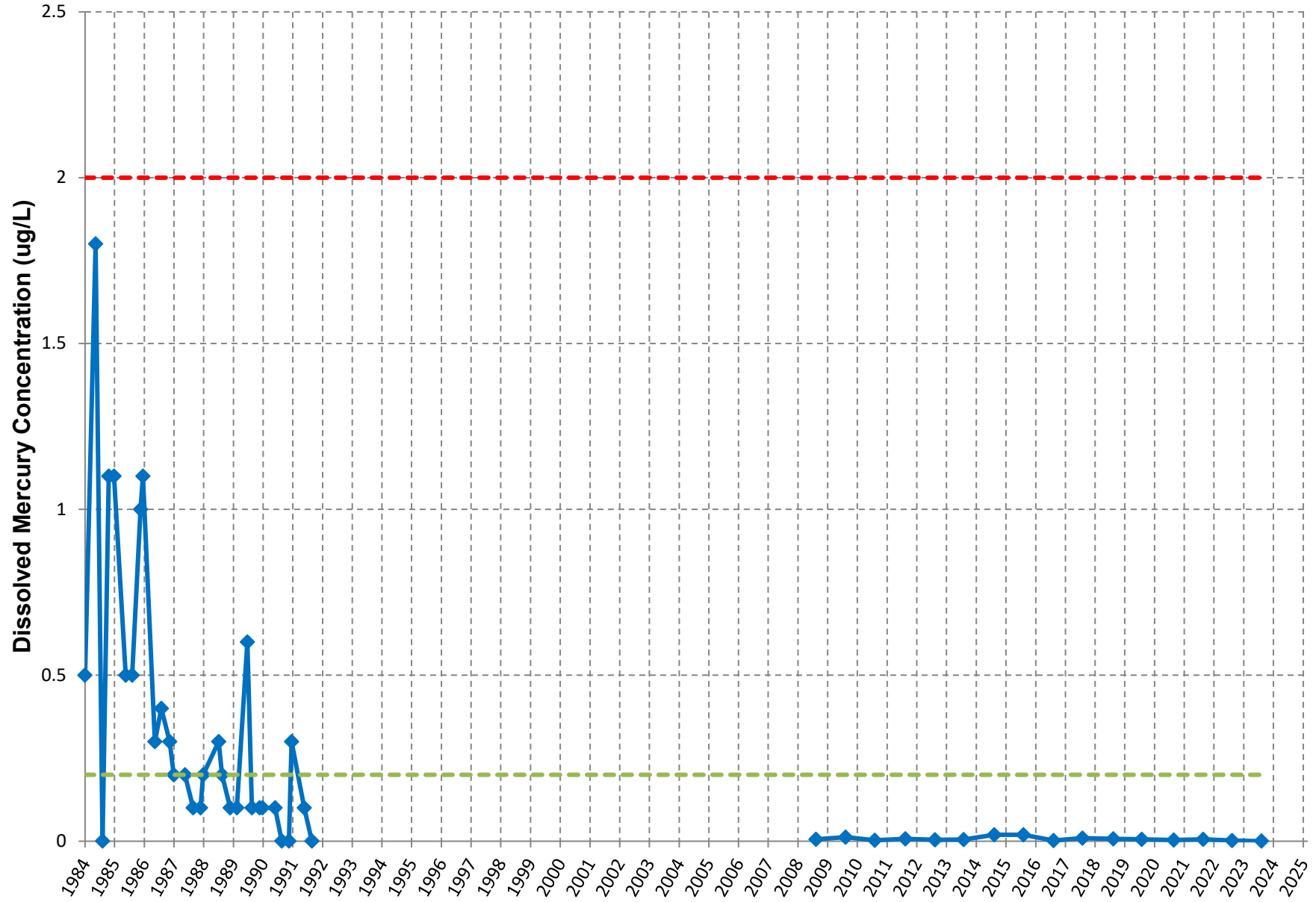


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-04R

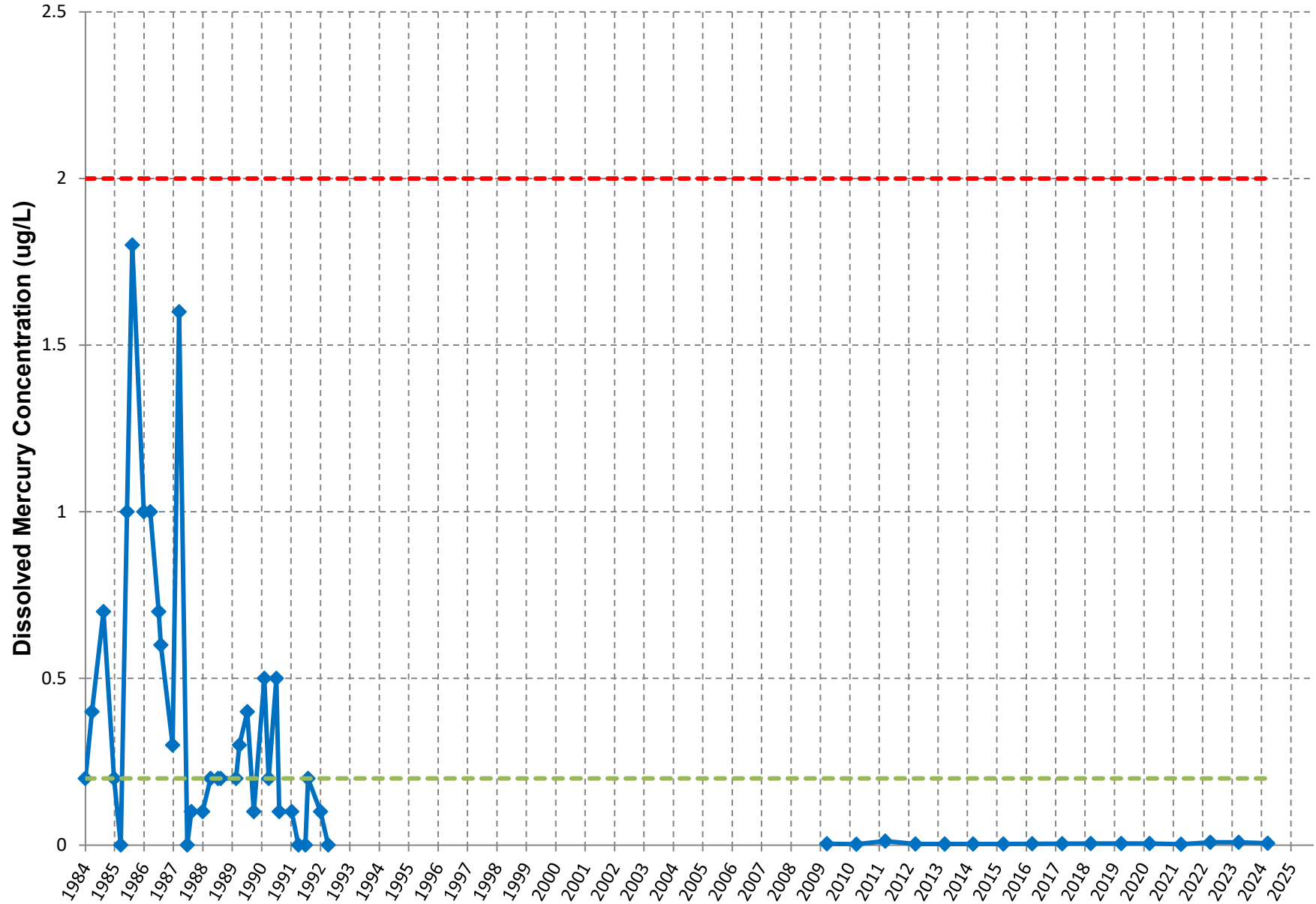


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-04A

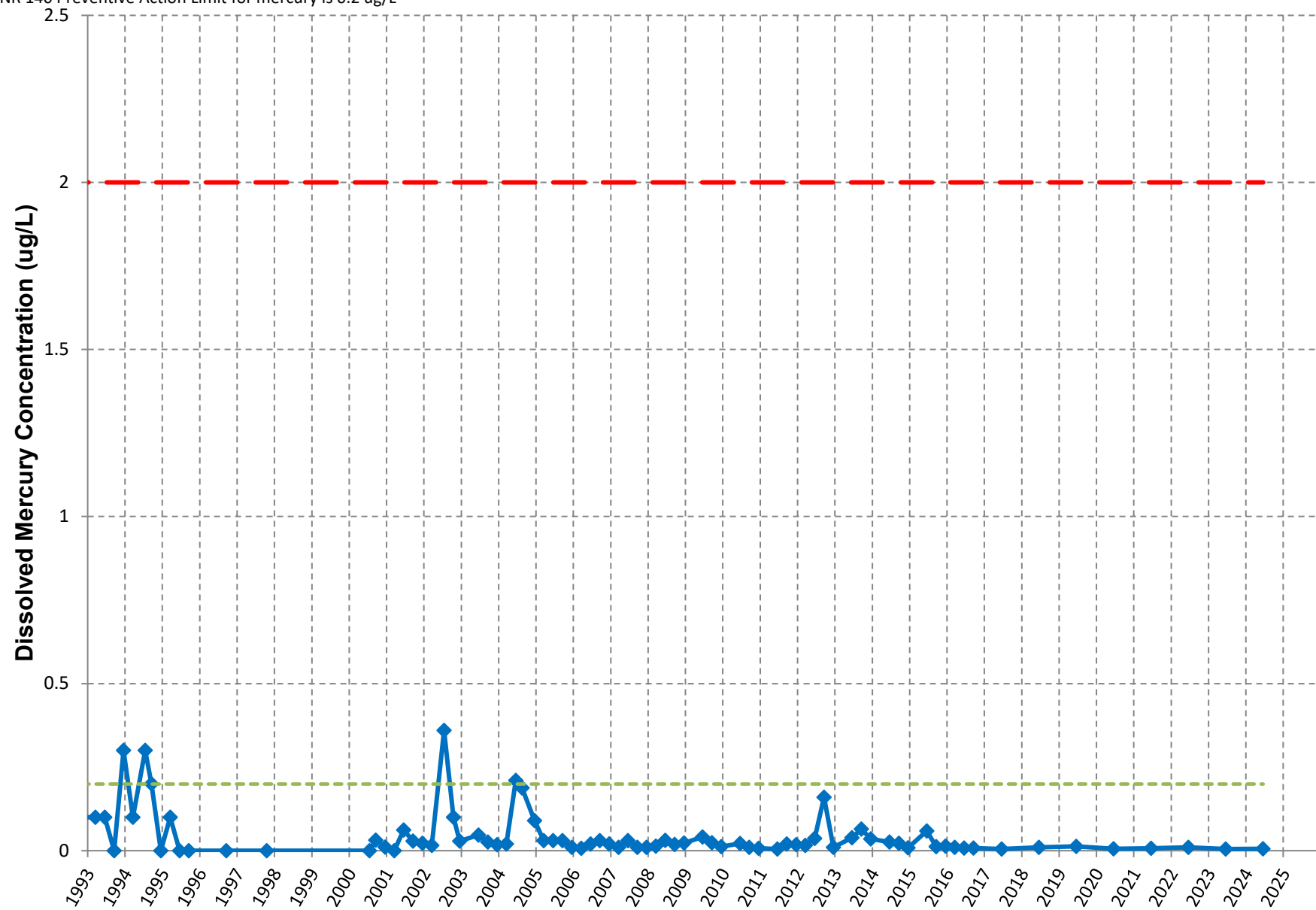


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-05R/V-05RR

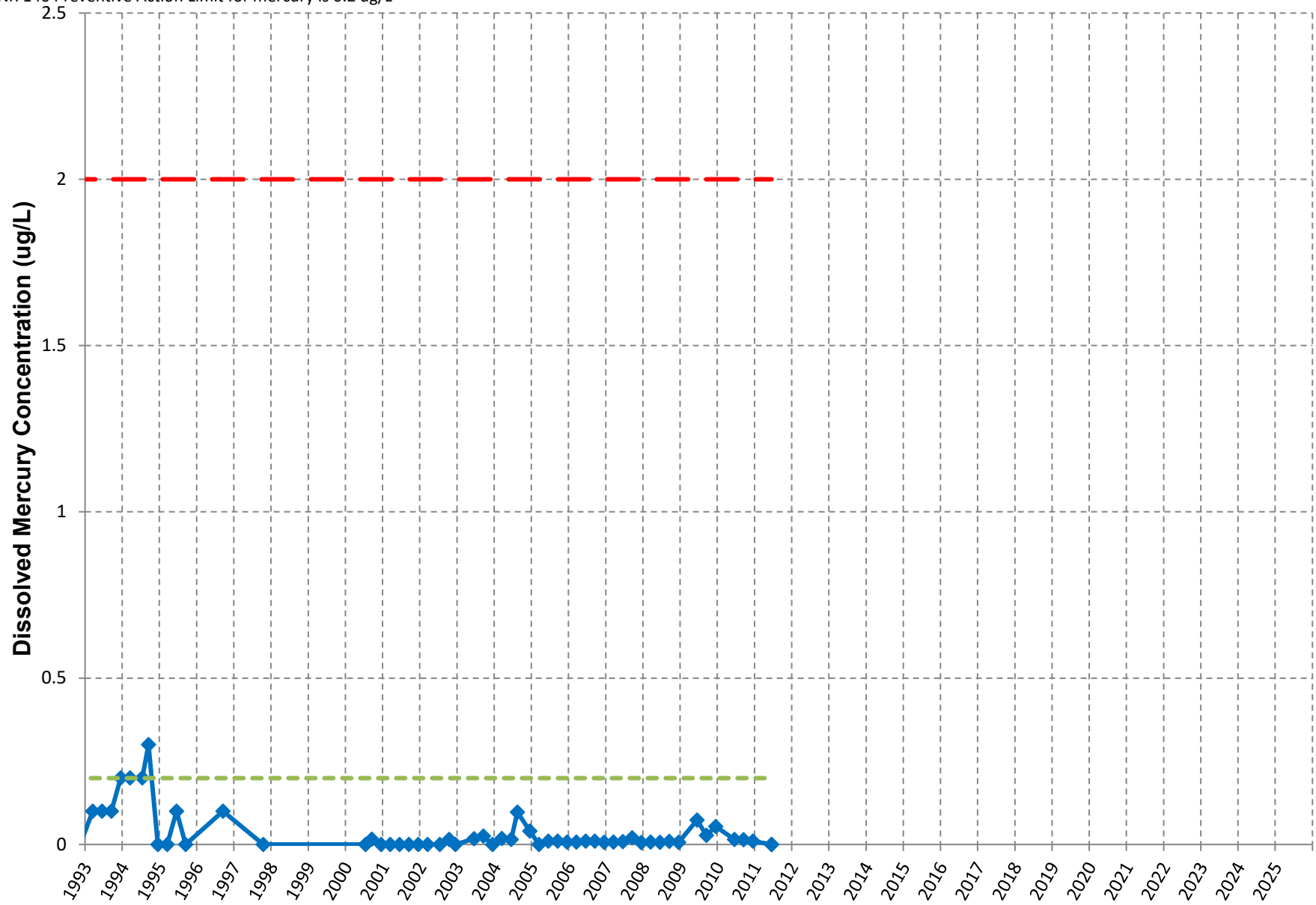


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-06R

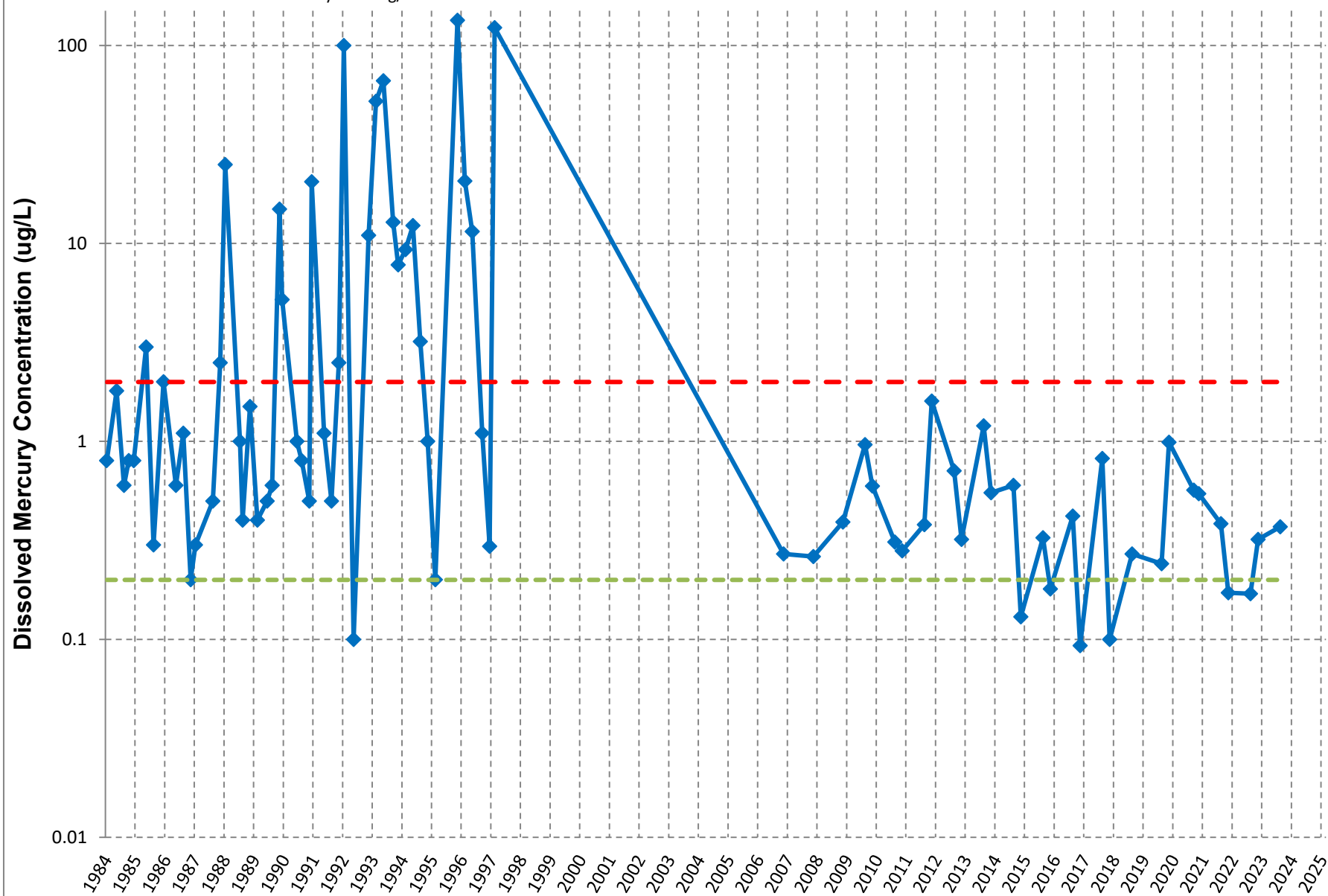


Note: 0 to 150 ug/L log scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-07R

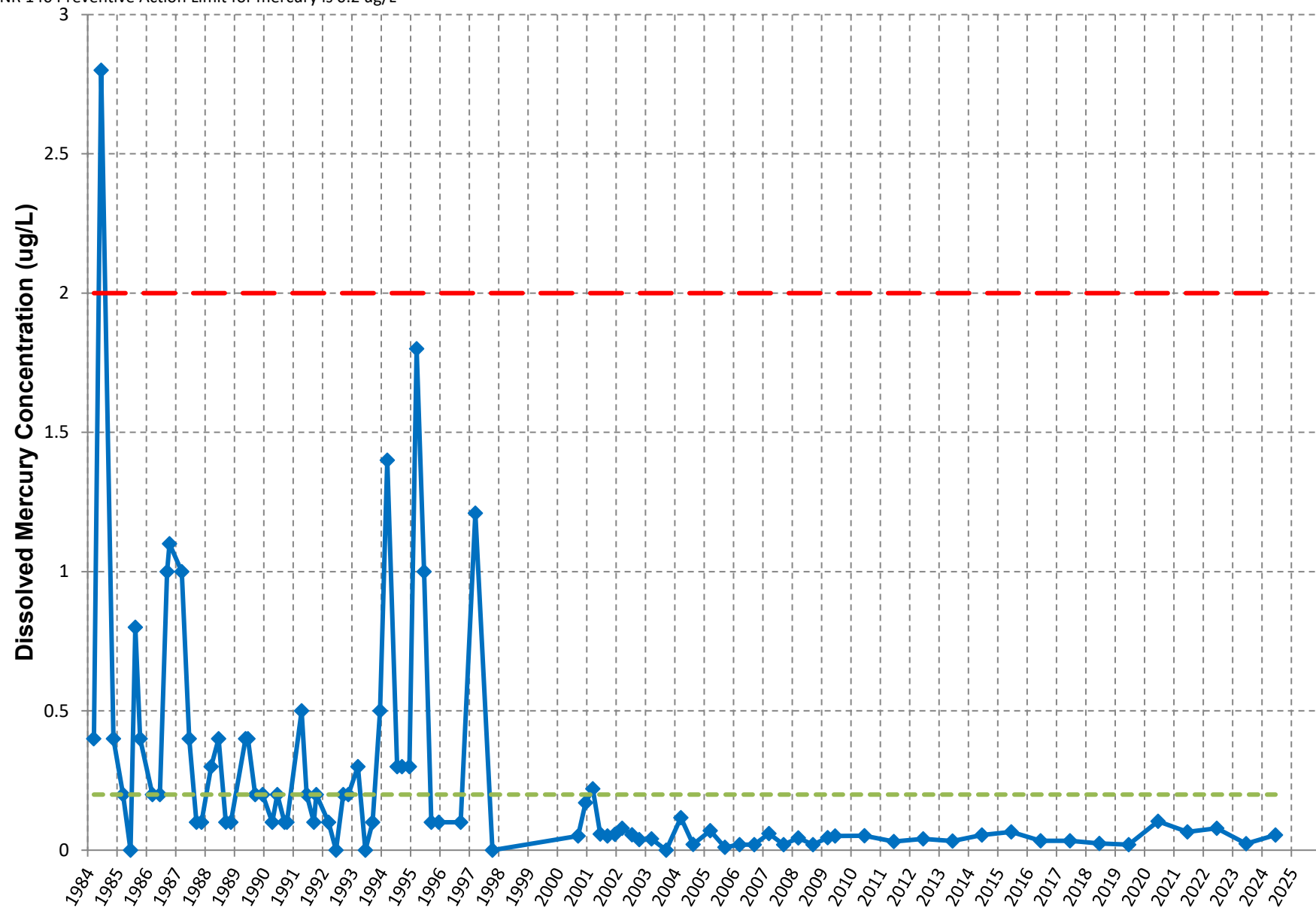


Note: 0 to 3 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

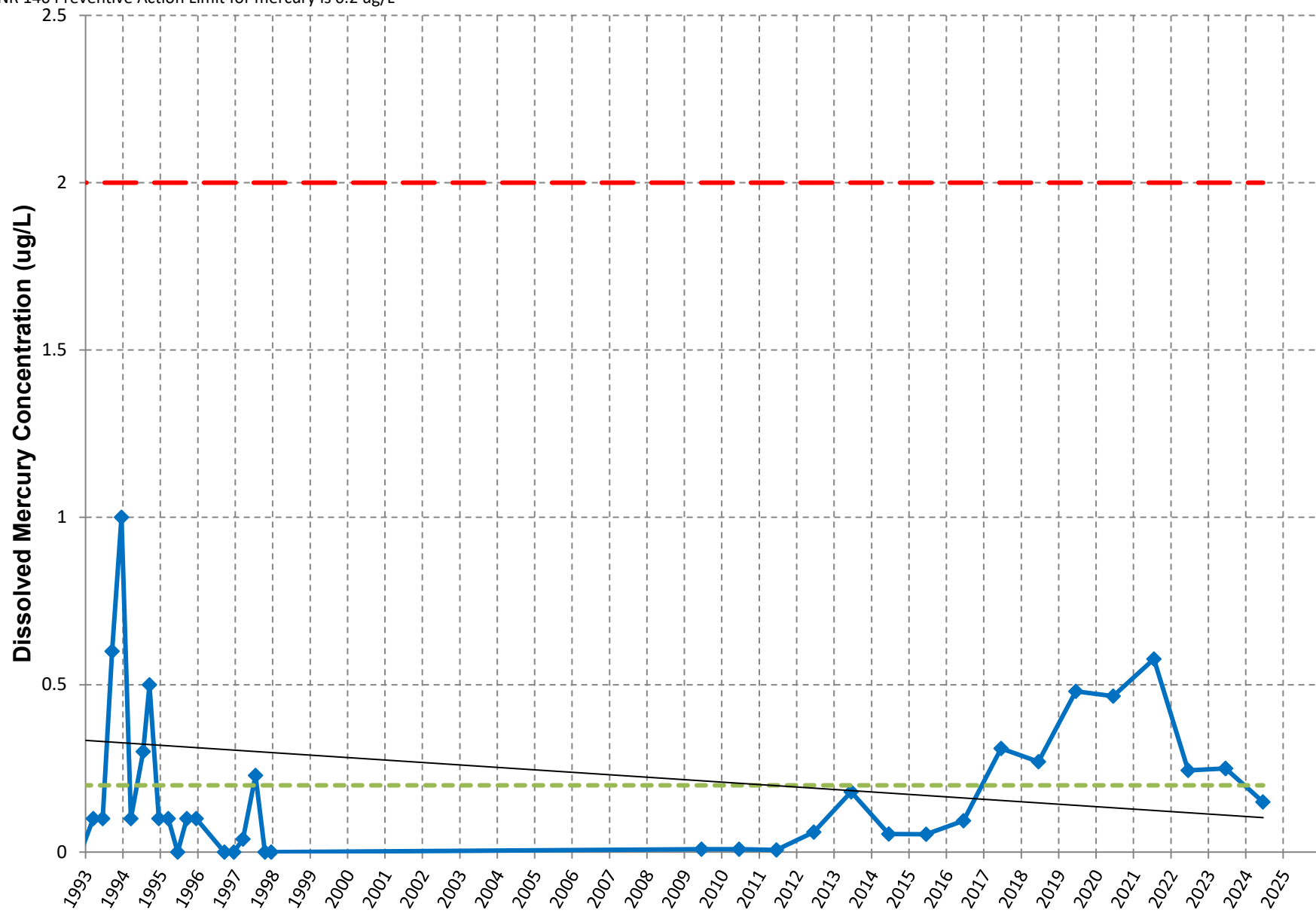
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-09



Note: 0 to 2.5 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-13

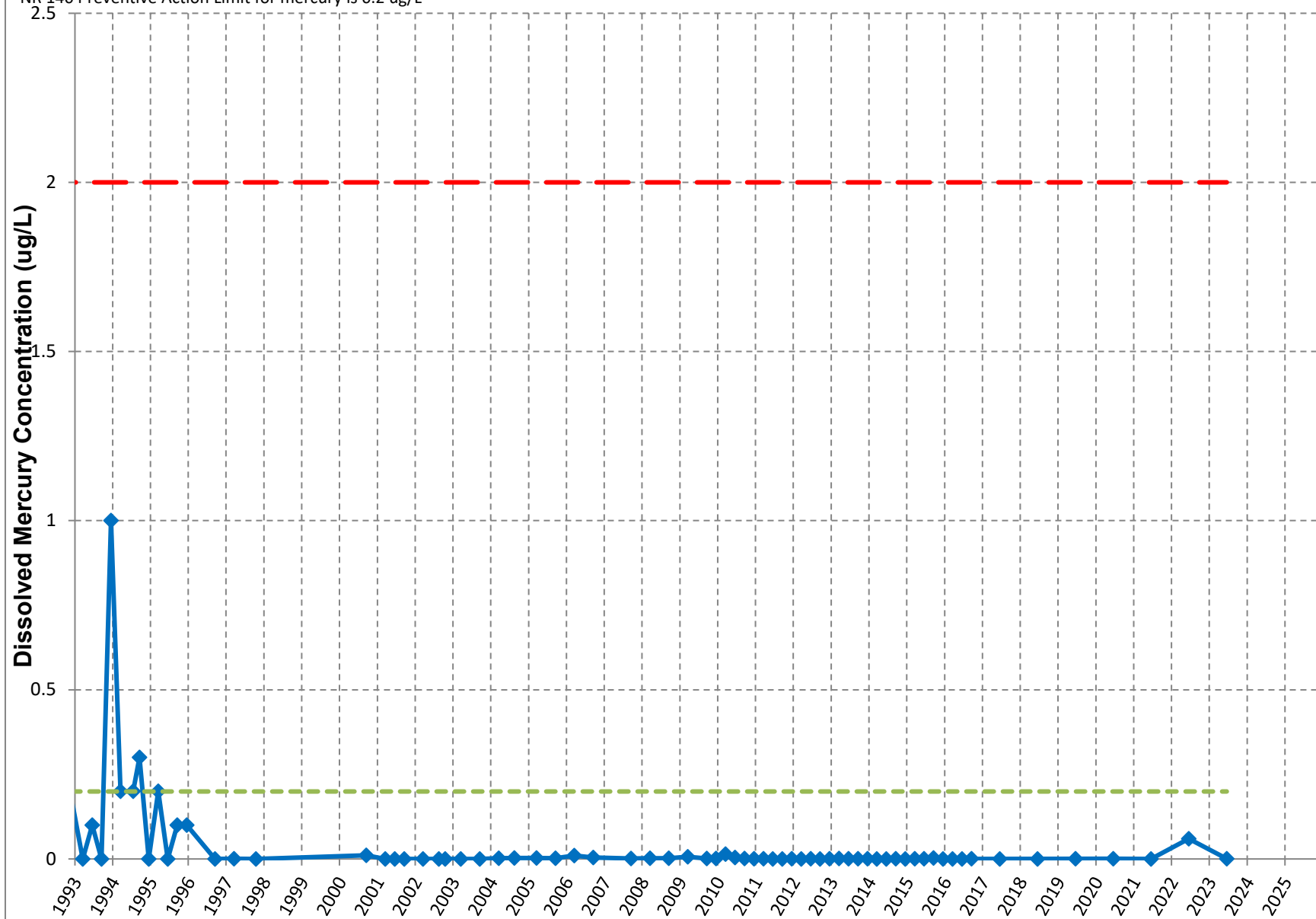


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

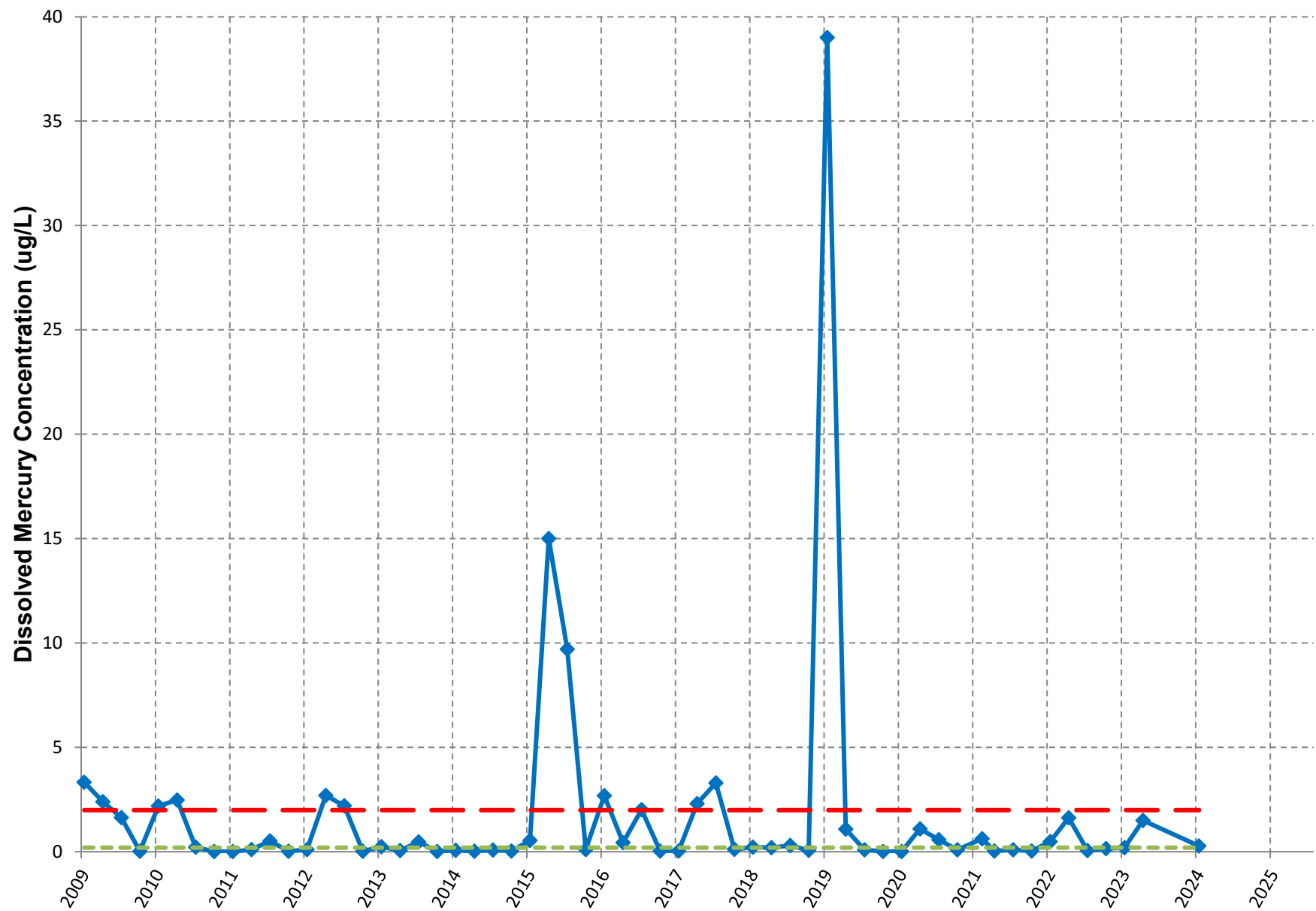
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-16R



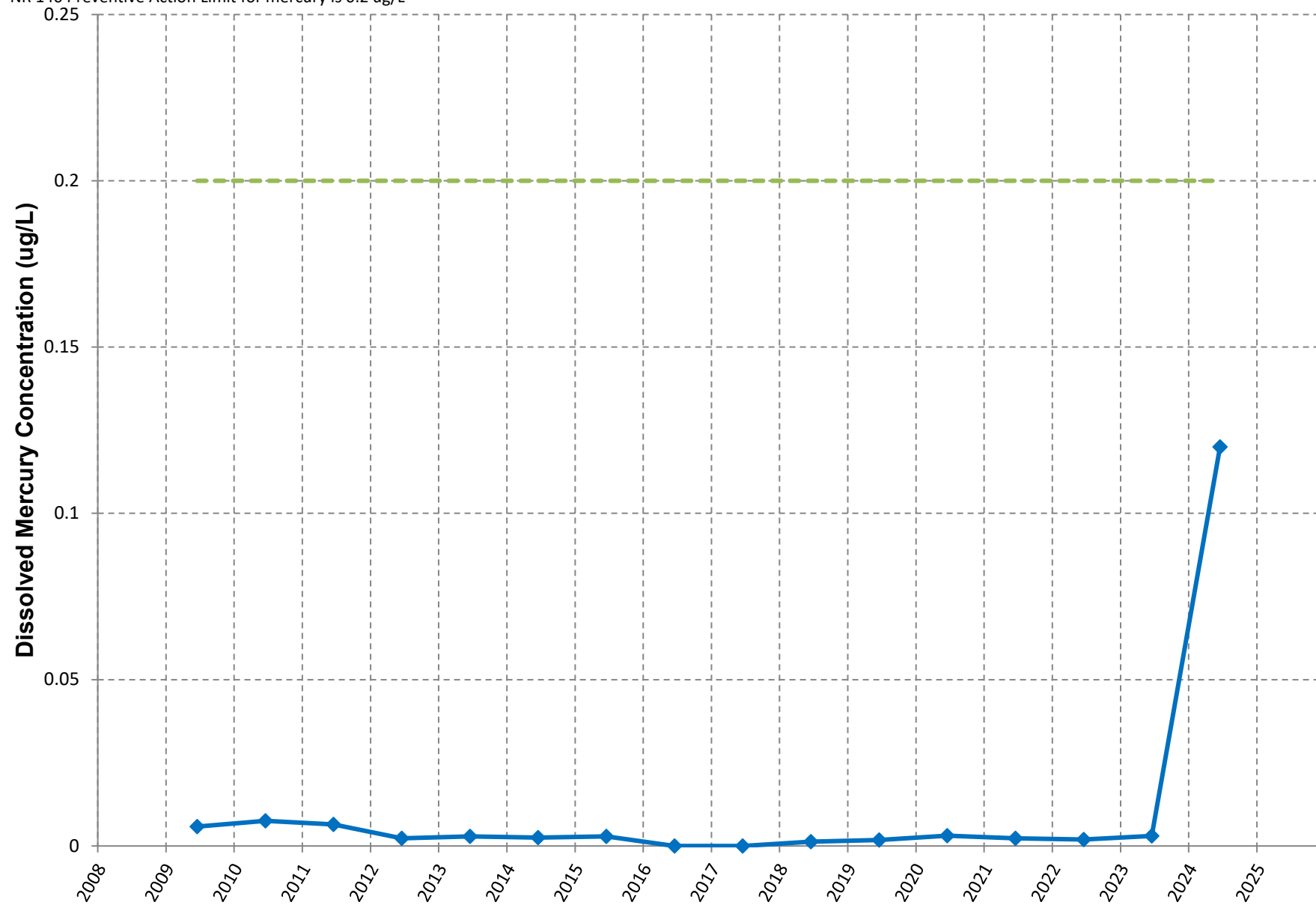
Note: 0 to 40 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L

V-18R



Note: 0 to 0.25 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-19

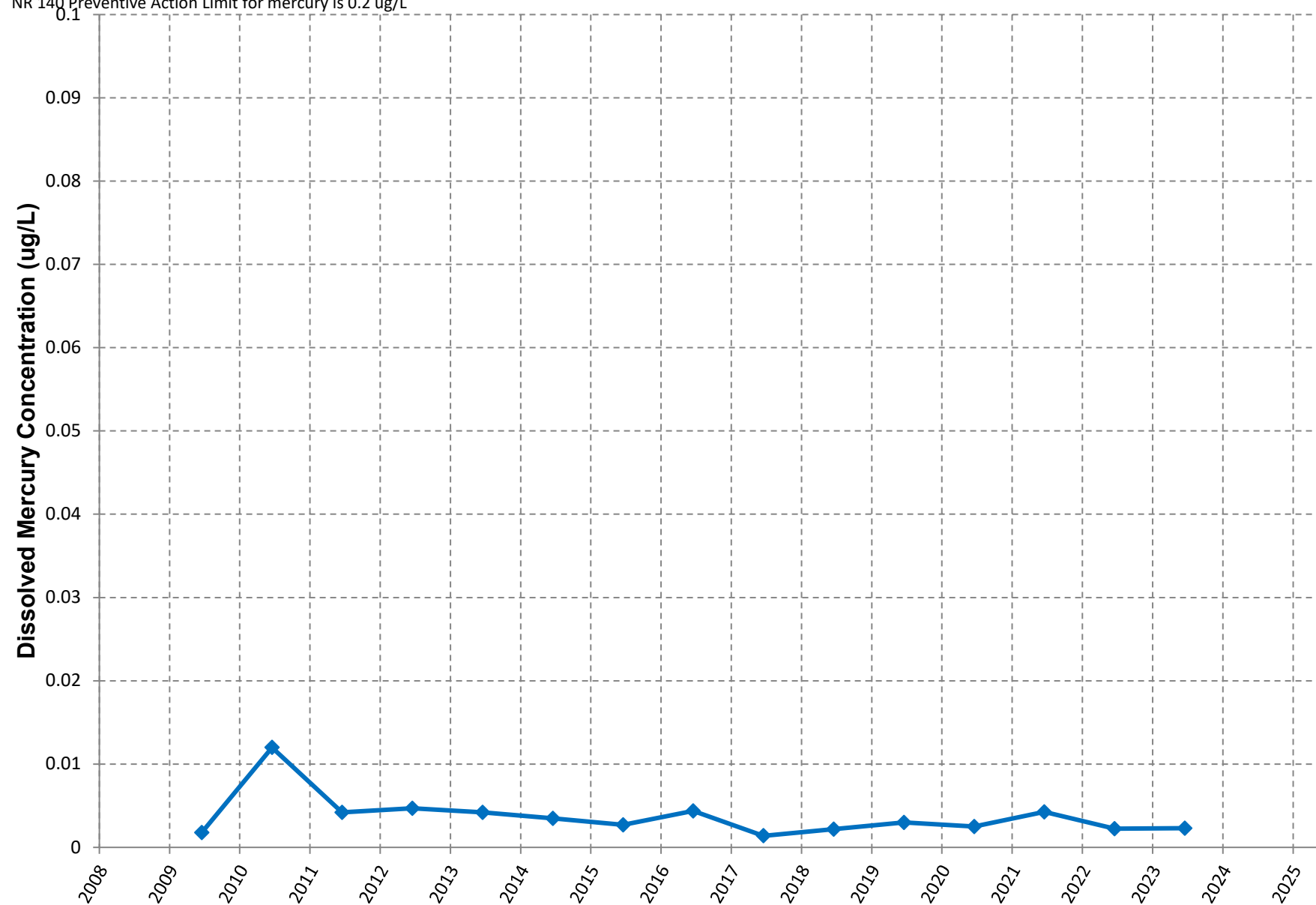


Note: 0 to 0.1 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

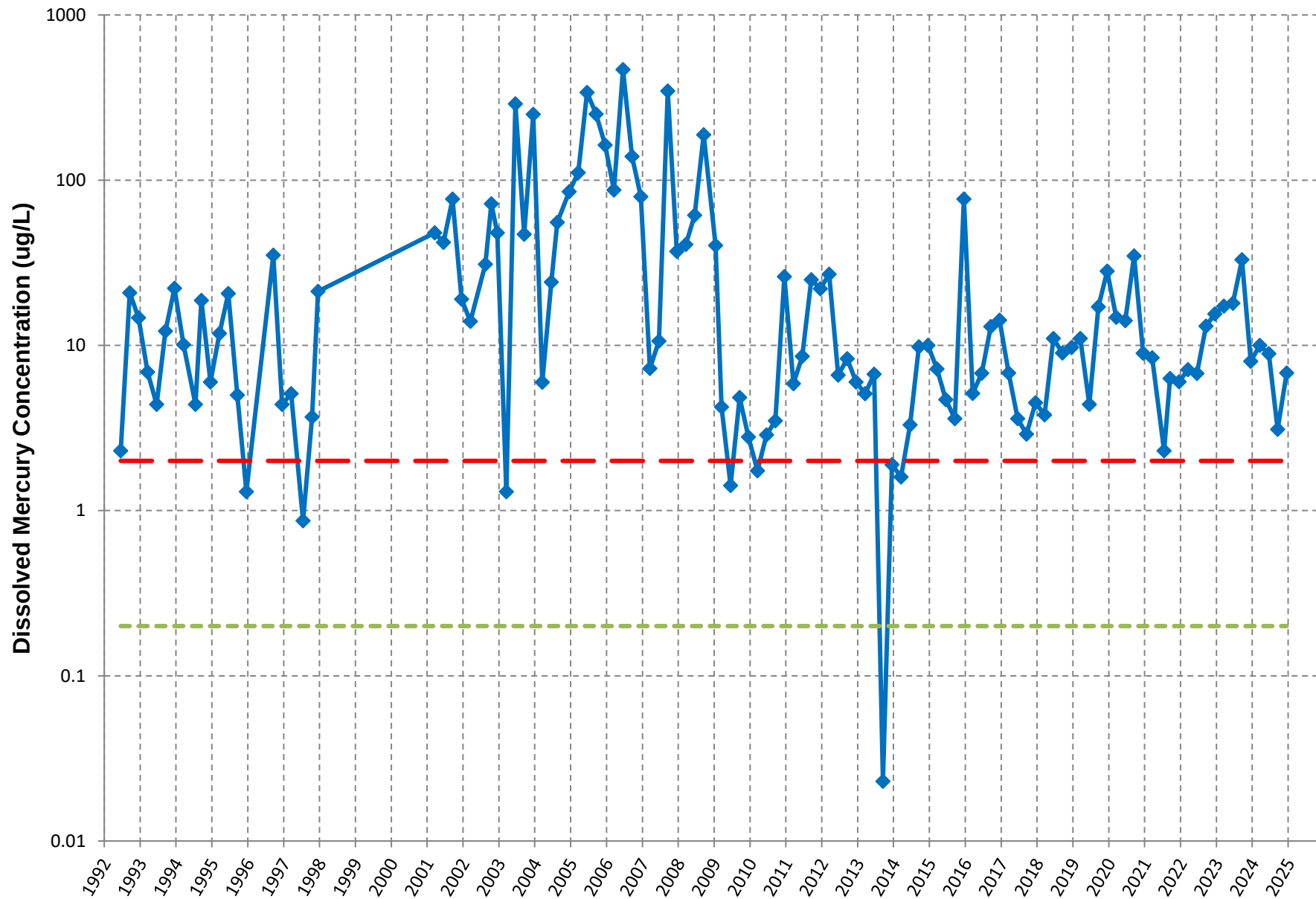
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-19A



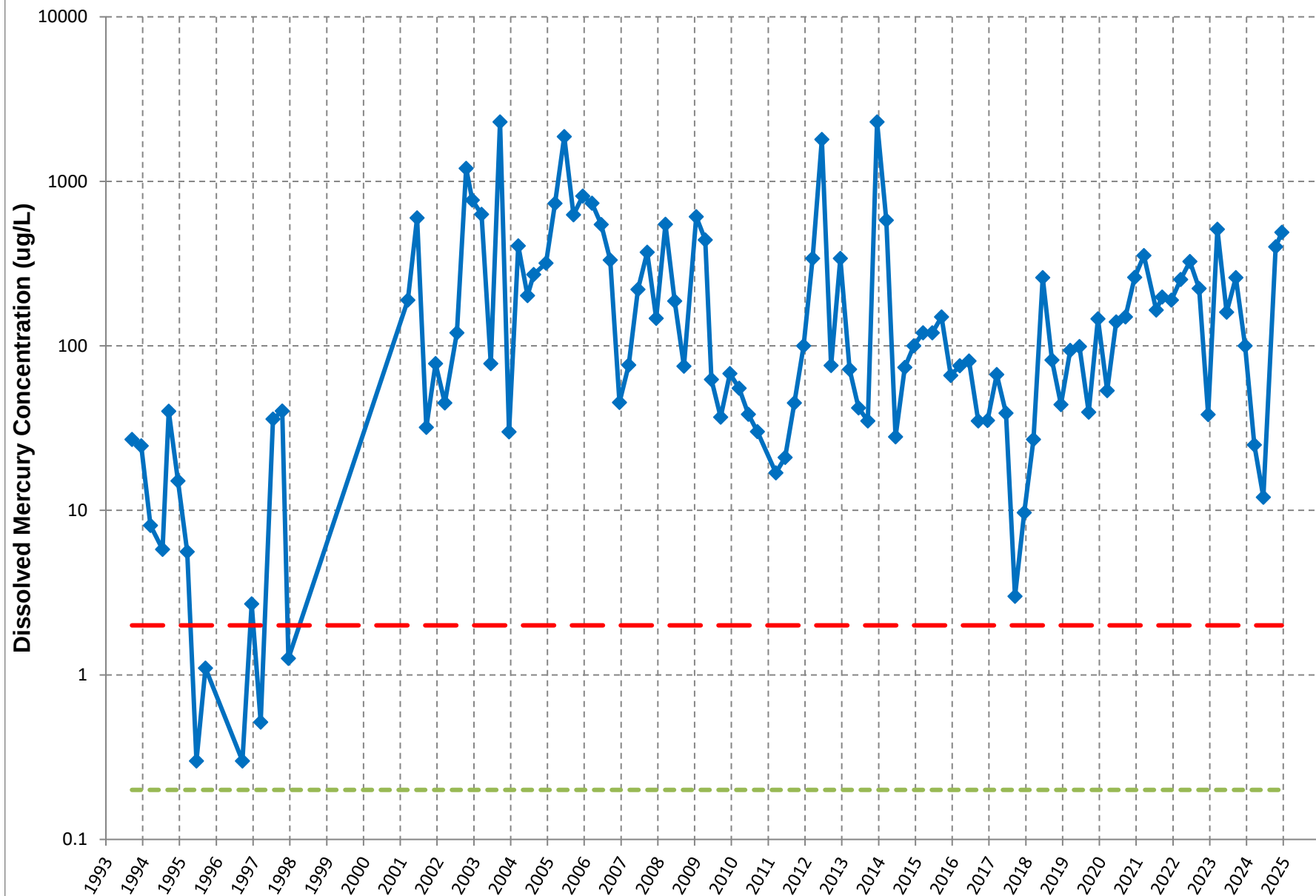
Note: 0 to 1000 ug/L log scale used
NR 140 Enforcement Standard for mercury is 2 ug/L

V-23



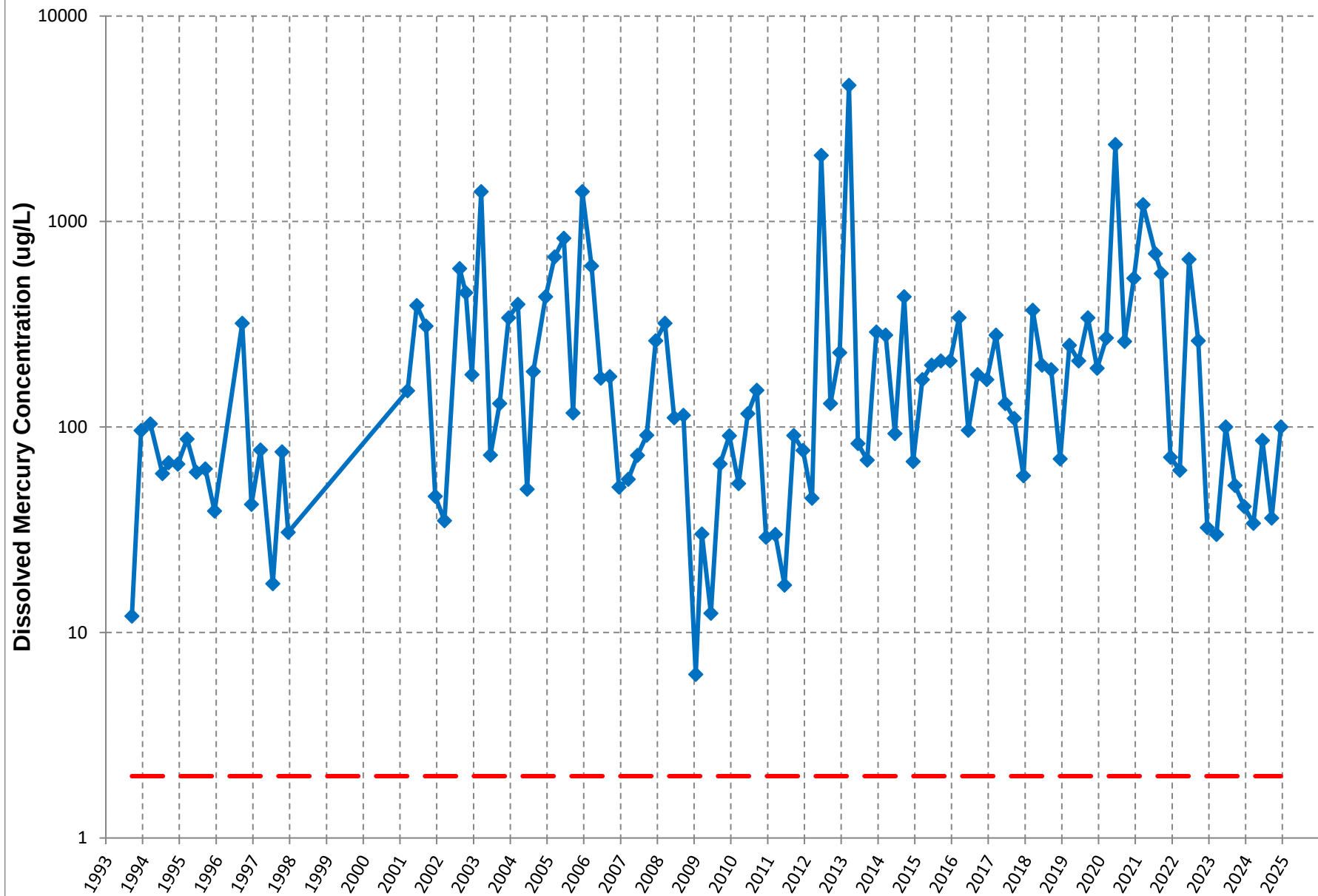
Note: 0 to 10,000 ug/L log scale used
NR 140 Enforcement Standard for mercury is 2 ug/L

V-24



Note: 0 to 10,000 ug/L log scale used
NR 140 Enforcement Standard for mercury is 2 ug/L

V-25

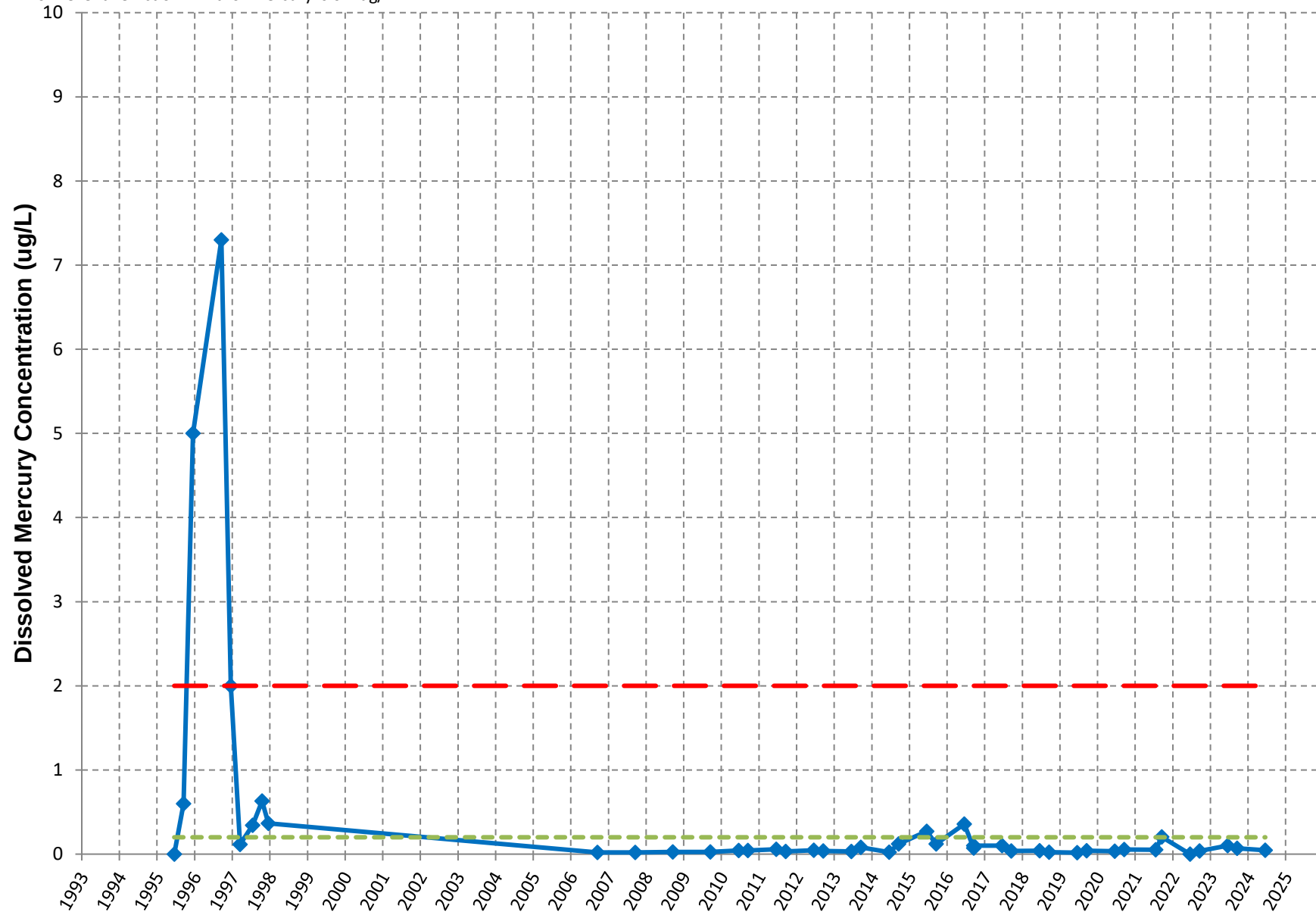


Note: 0 to 10 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-26

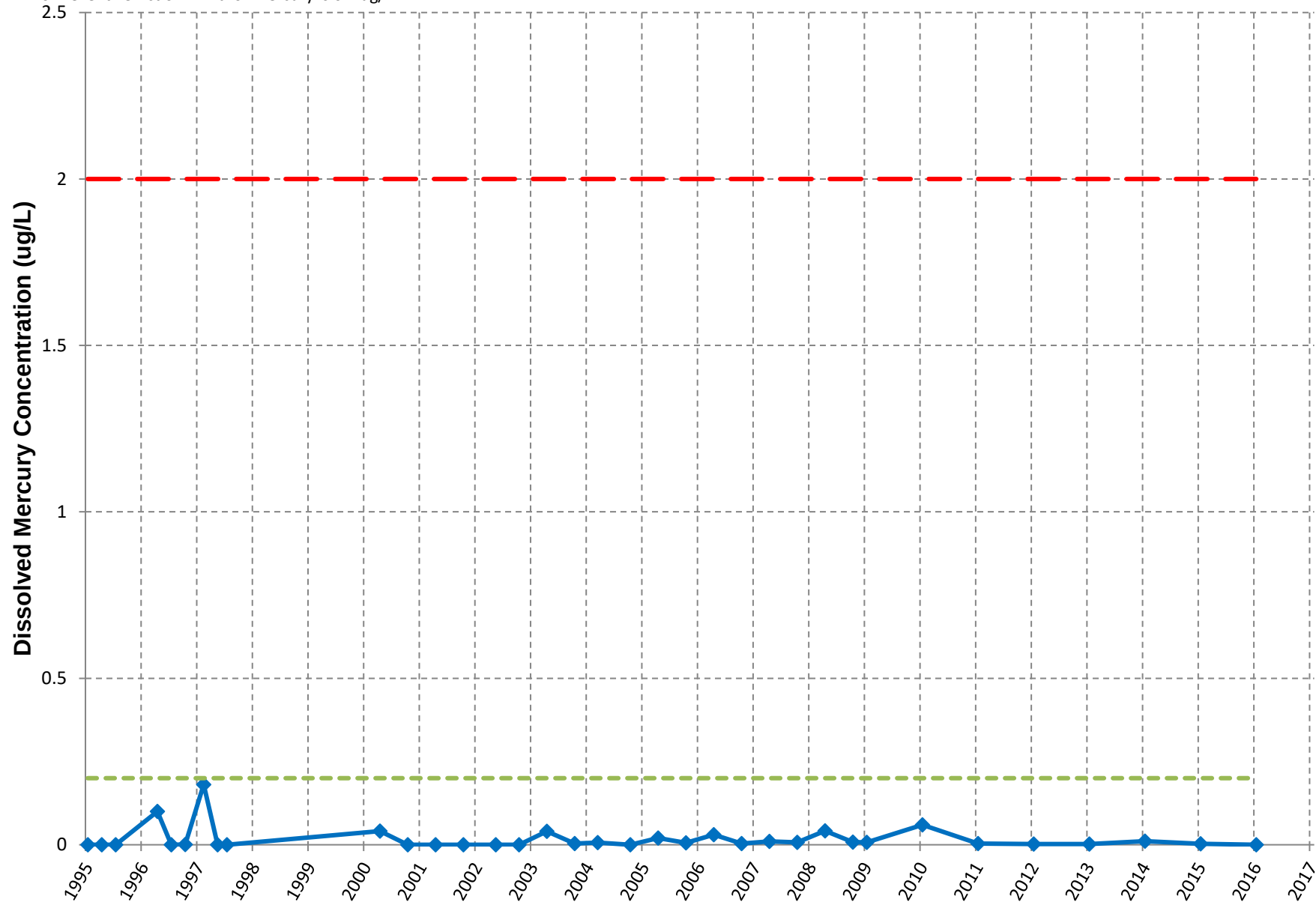


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-27

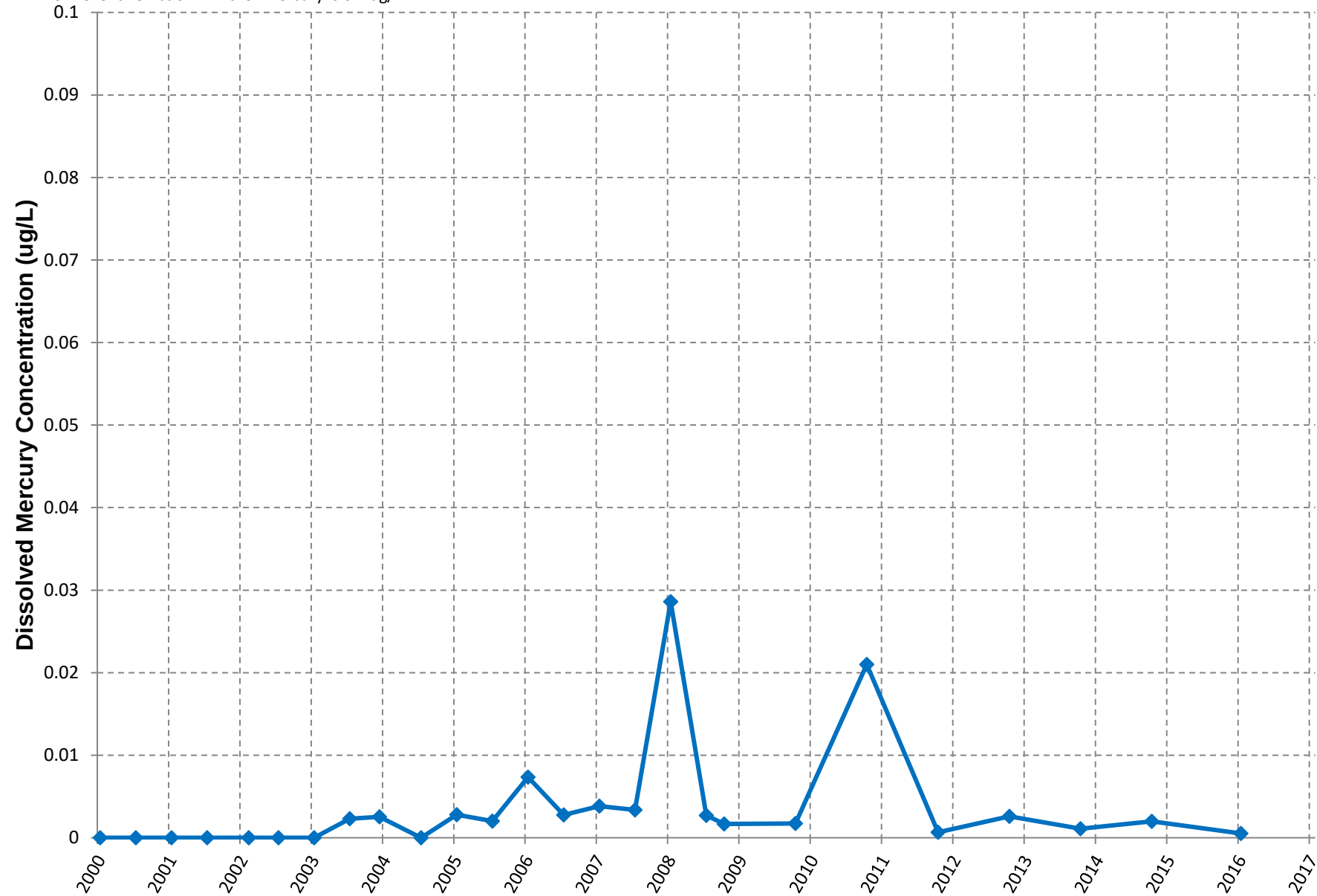


Note: 0 to 0.1 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-27A

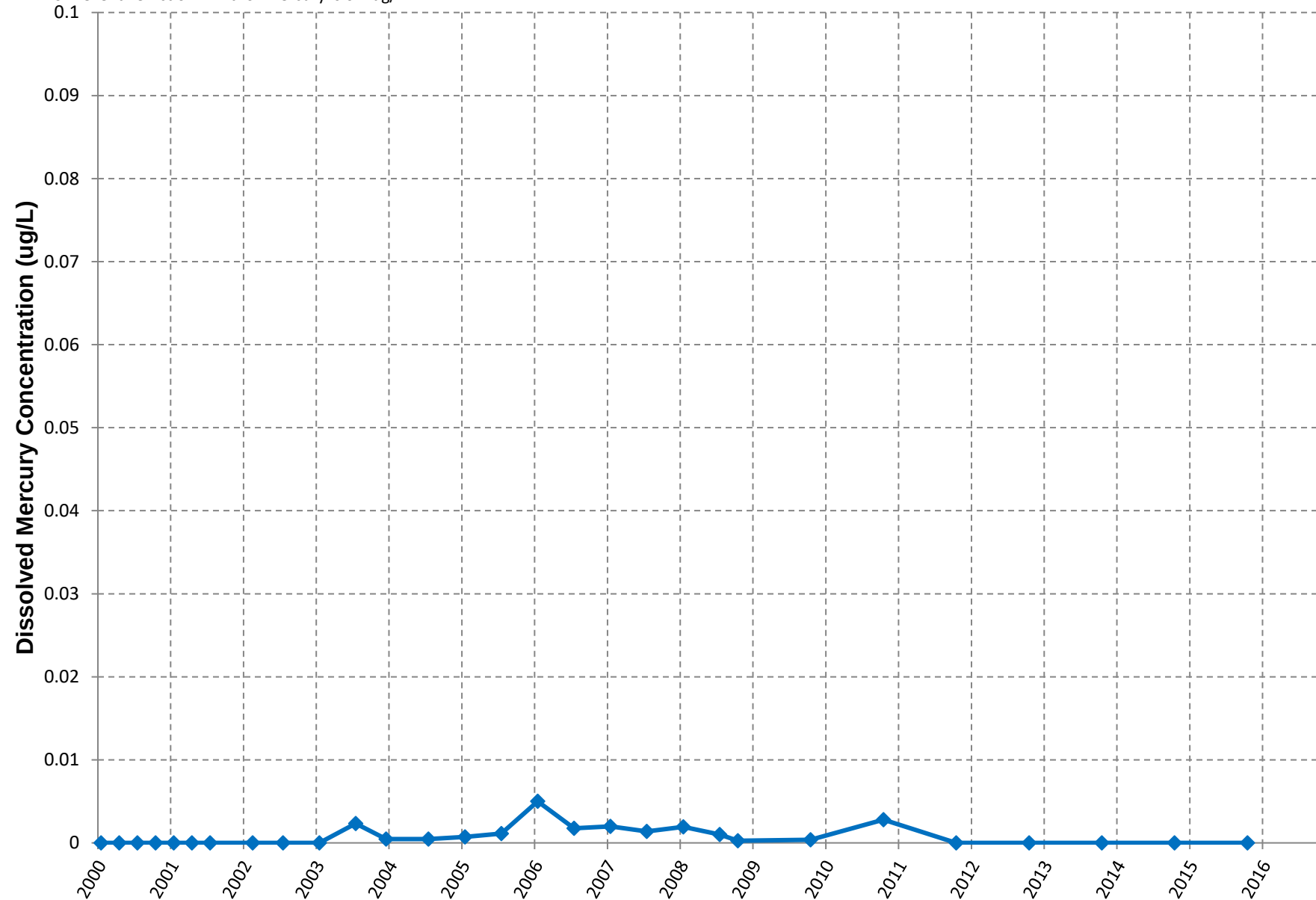


Note: 0 to 0.1 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-30

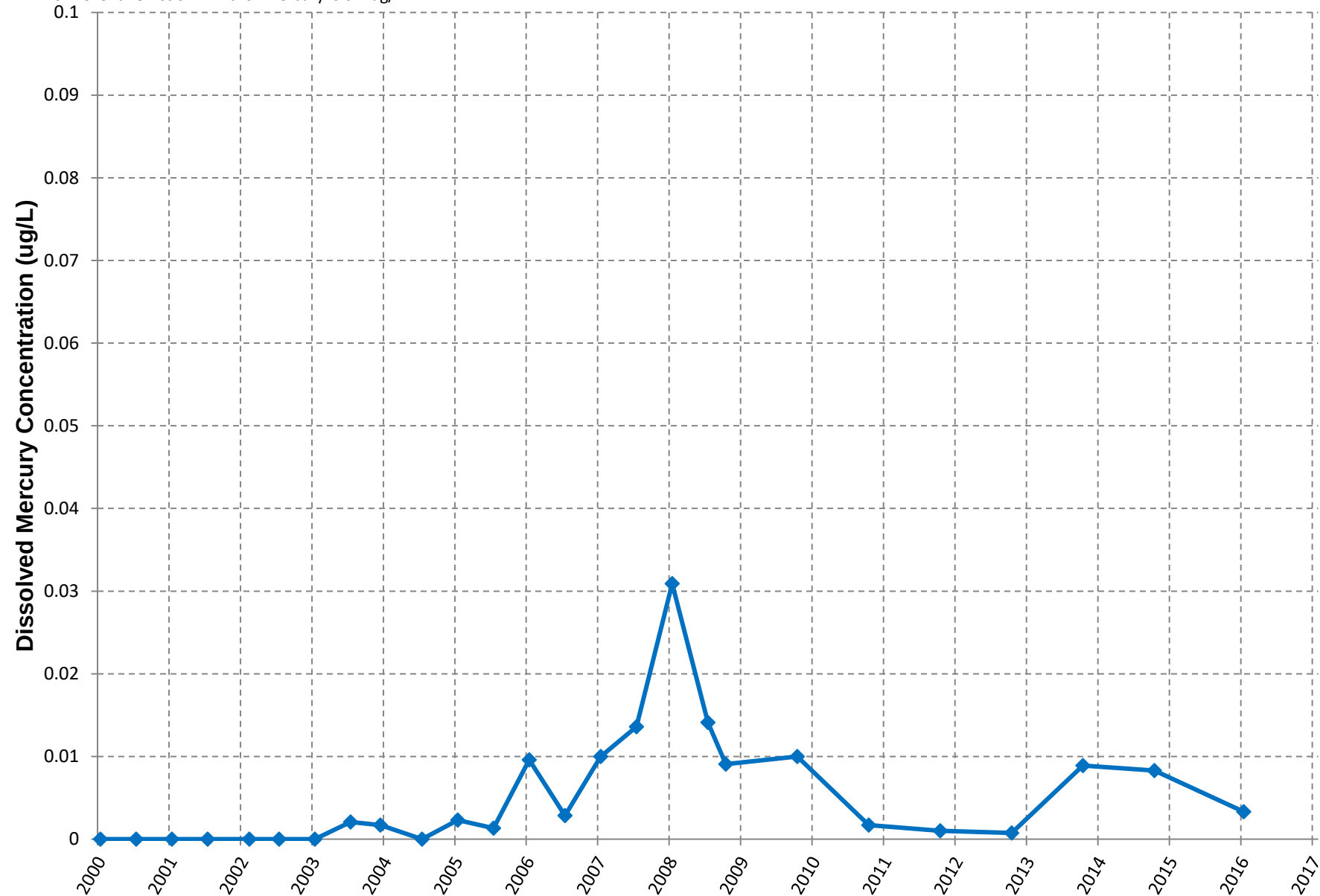


Note: 0 to 0.1 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-30A

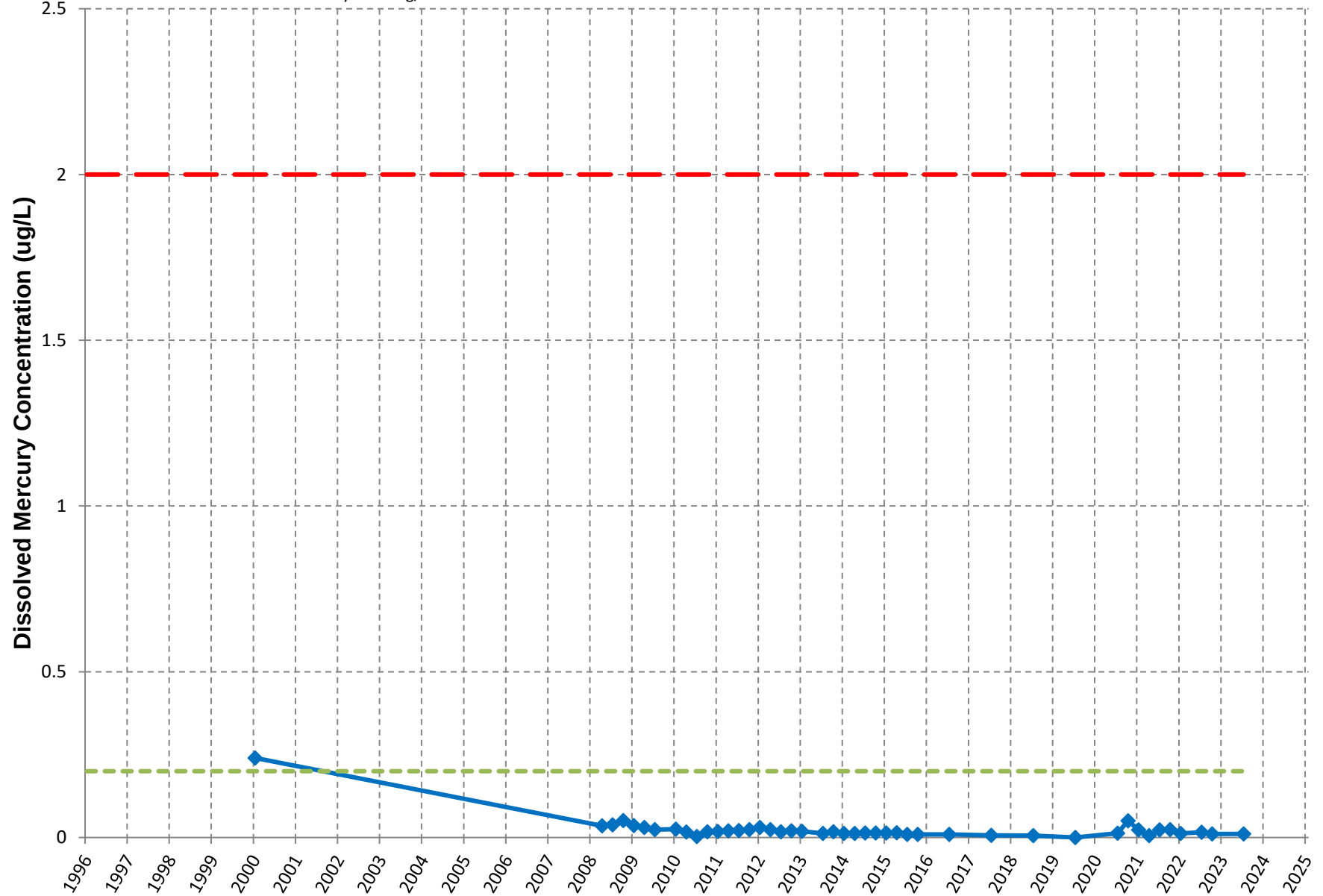


V-32

Note: 0 to 2.5 ug/L scale used

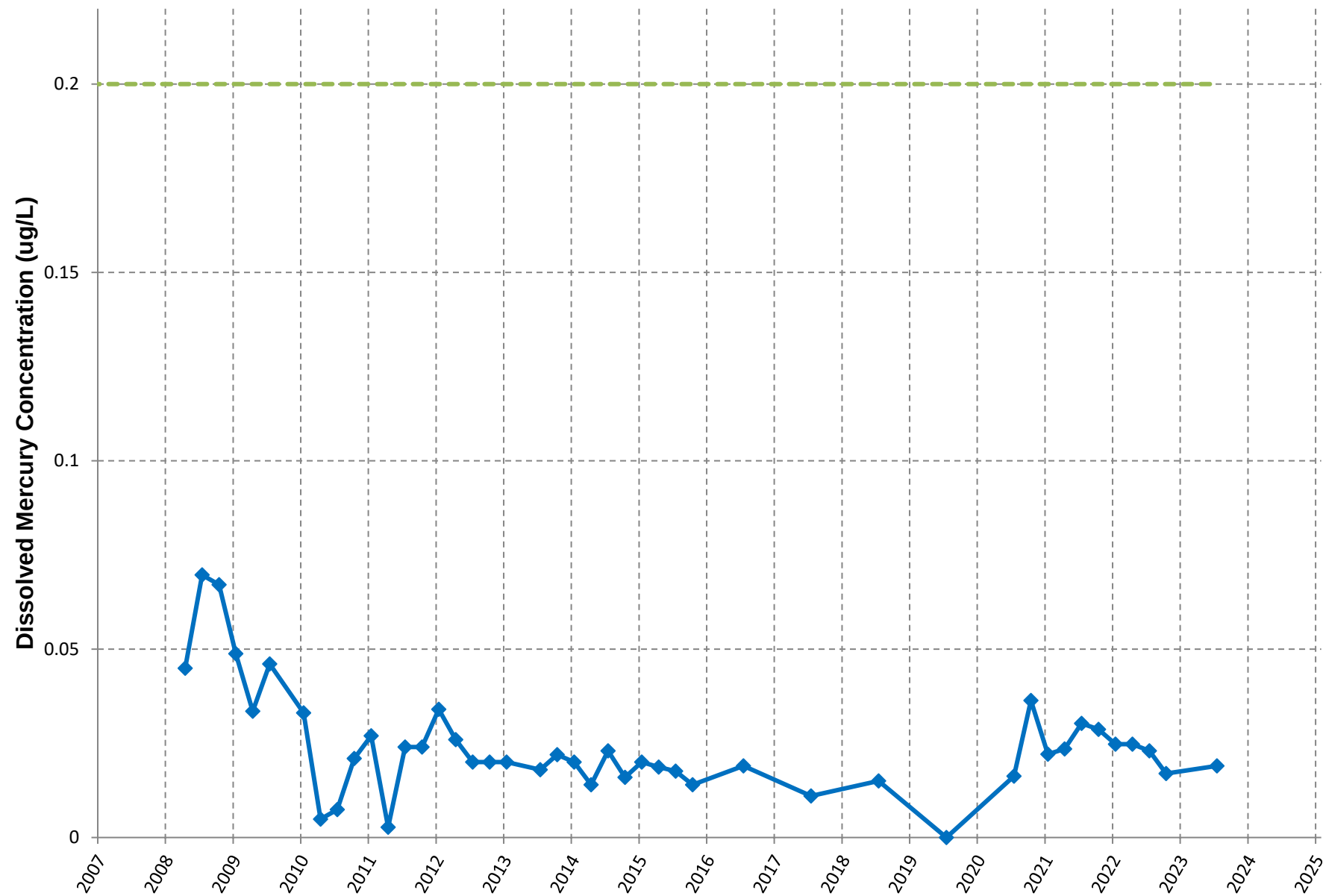
NR 140 Enforcement Standard for mercury is 2 ug/L

NR 140 Preventive Action Limit for mercury is 0.2 ug/L



Note: 0 to 0.22 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-32A

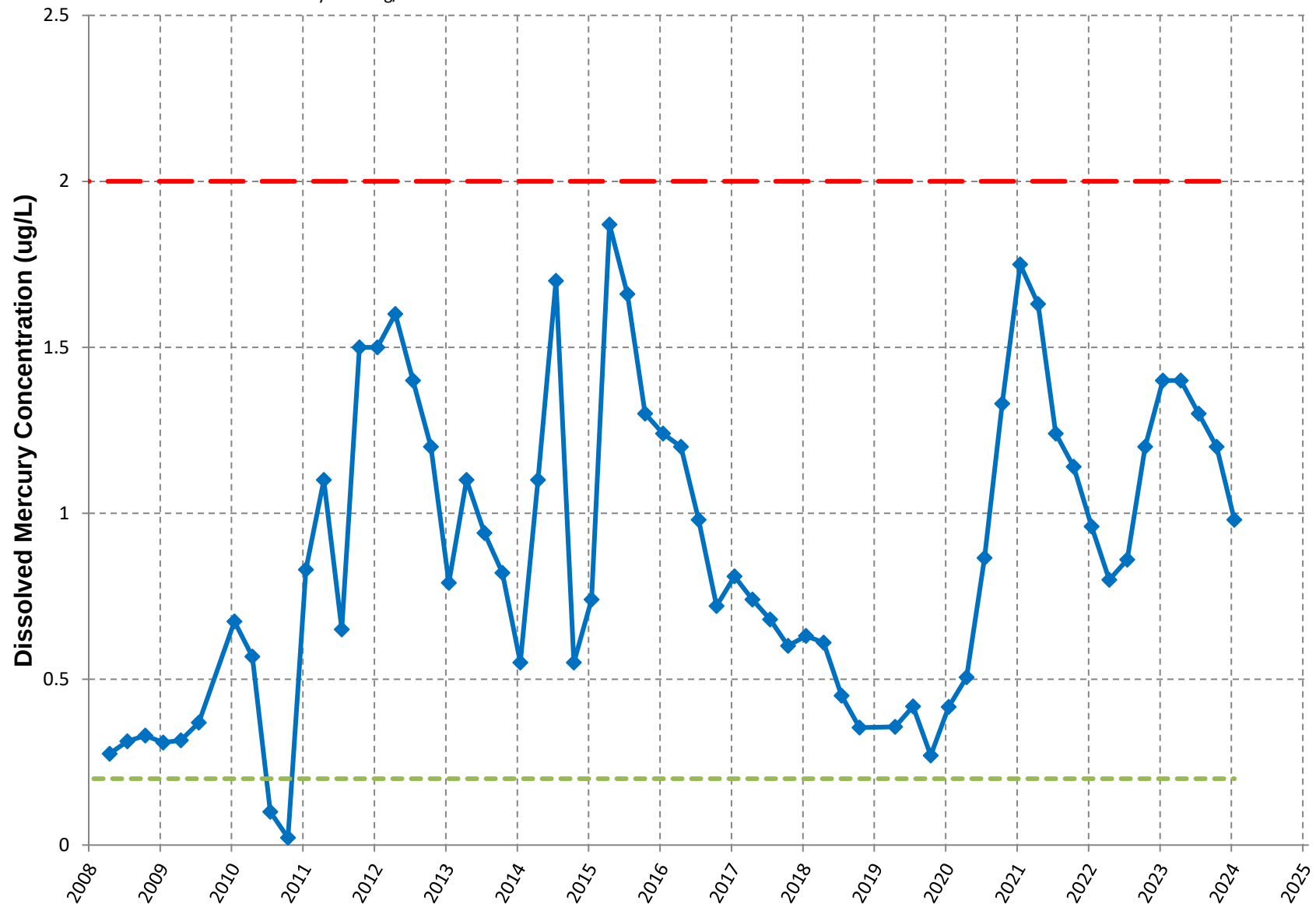


Note: 0 to 2.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

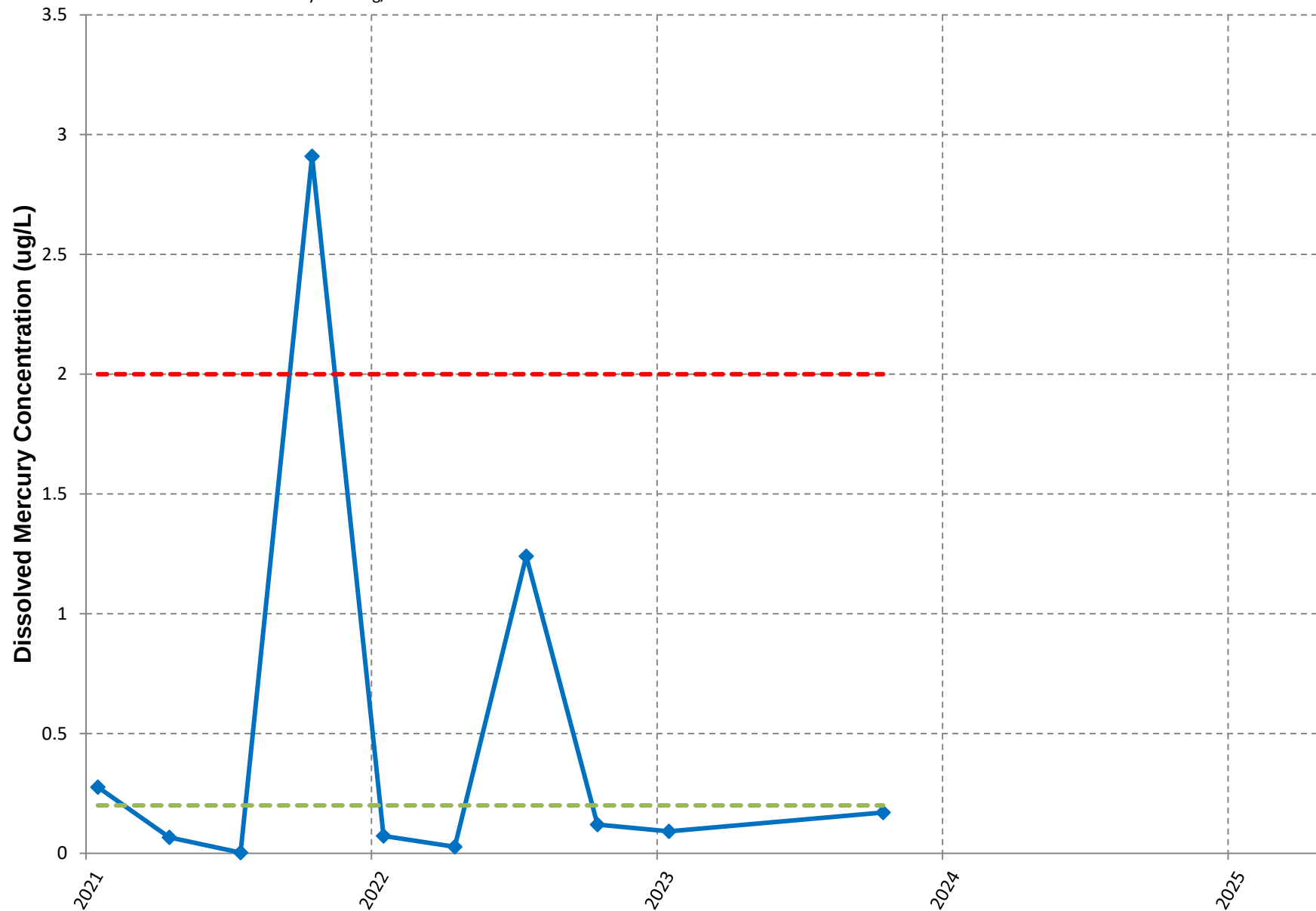
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-32B



Note: 0 to 3.5 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-34

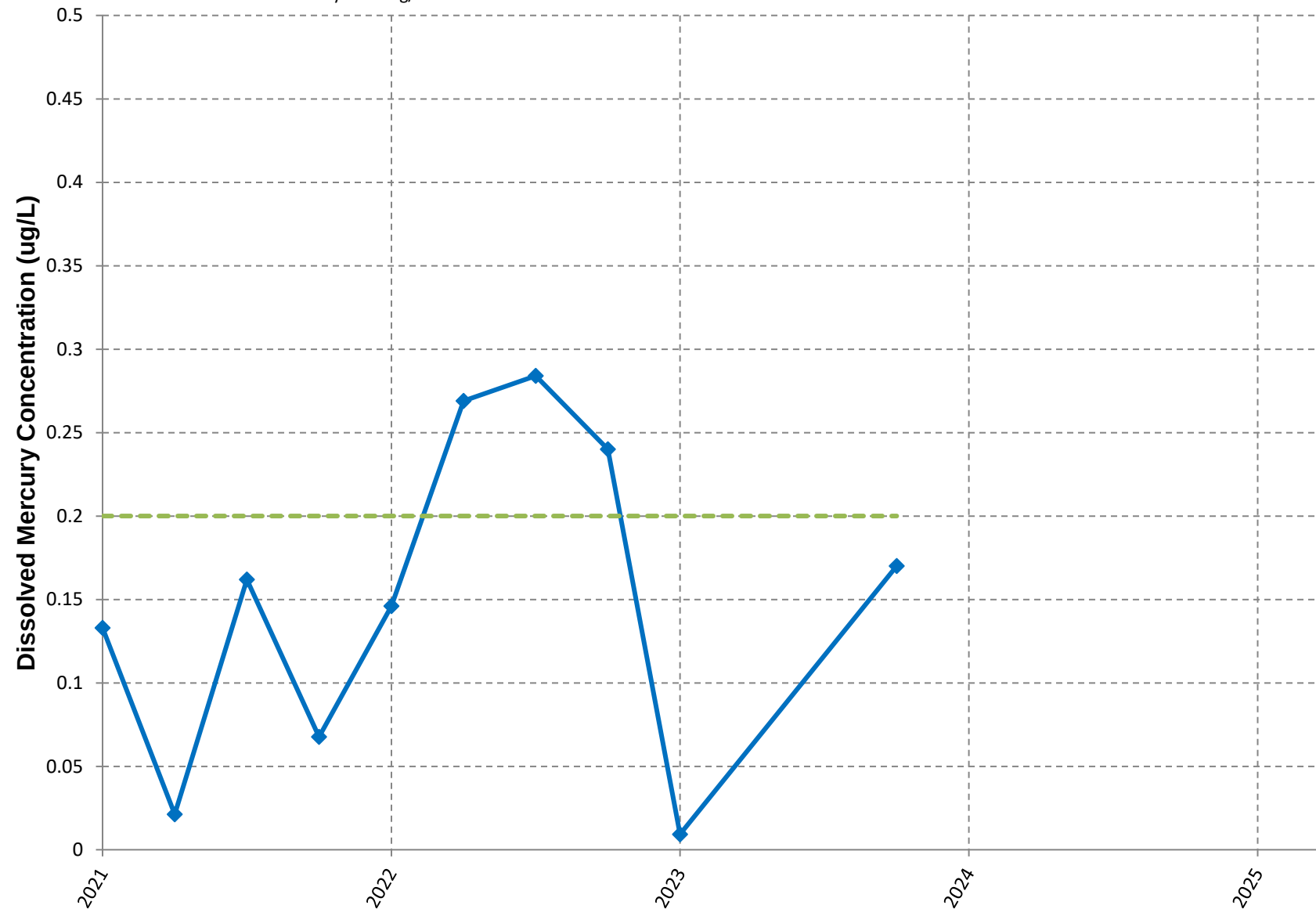


Note: 0 to 0.5 ug/L scale used

NR 140 Enforcement Standard for mercury is 2 ug/L

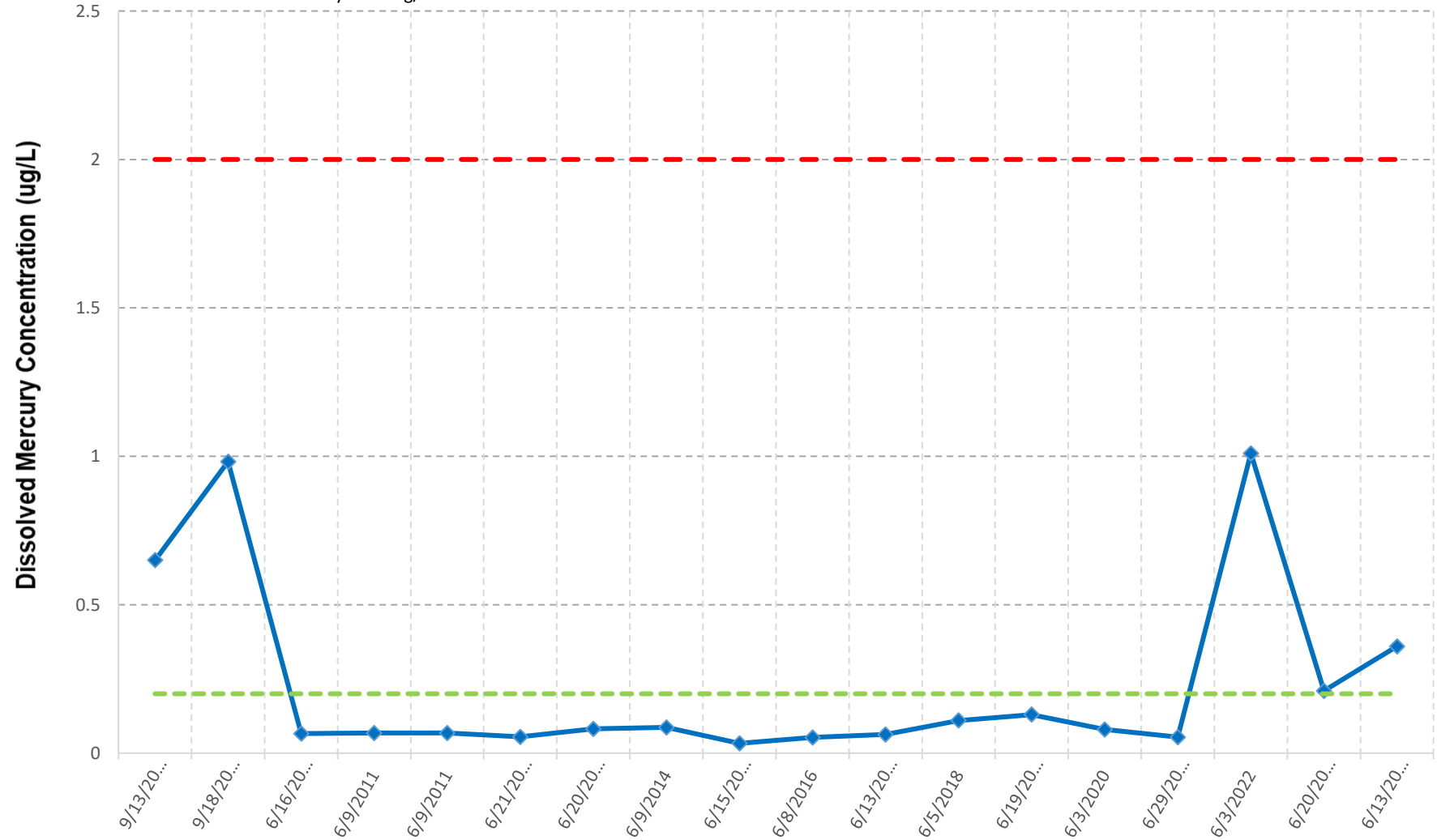
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

V-35



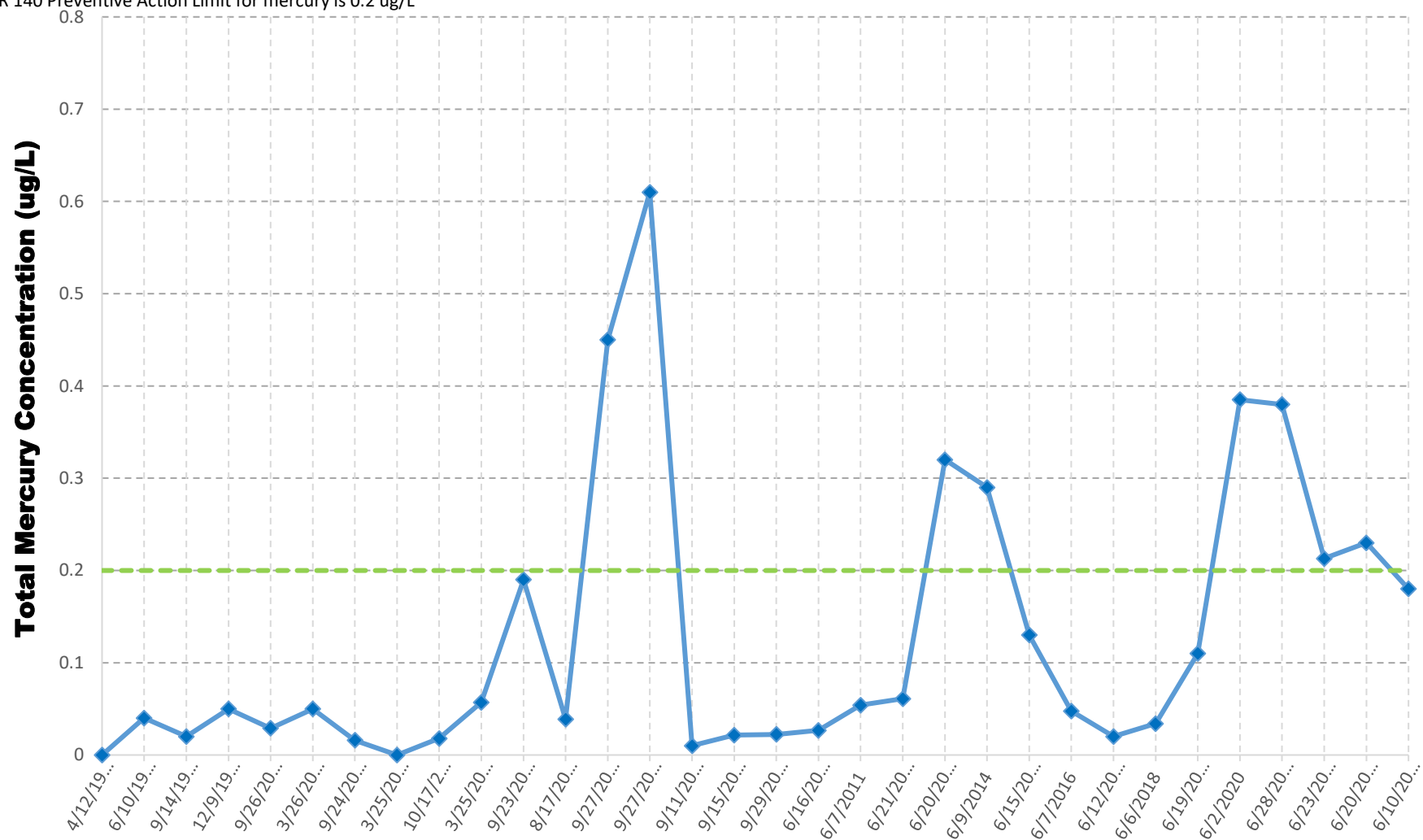
Note: 0 to 2.5 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

CRB Collection Trench



Note: 0 to 0.8 ug/L scale used
NR 140 Enforcement Standard for mercury is 2 ug/L
NR 140 Preventive Action Limit for mercury is 0.2 ug/L

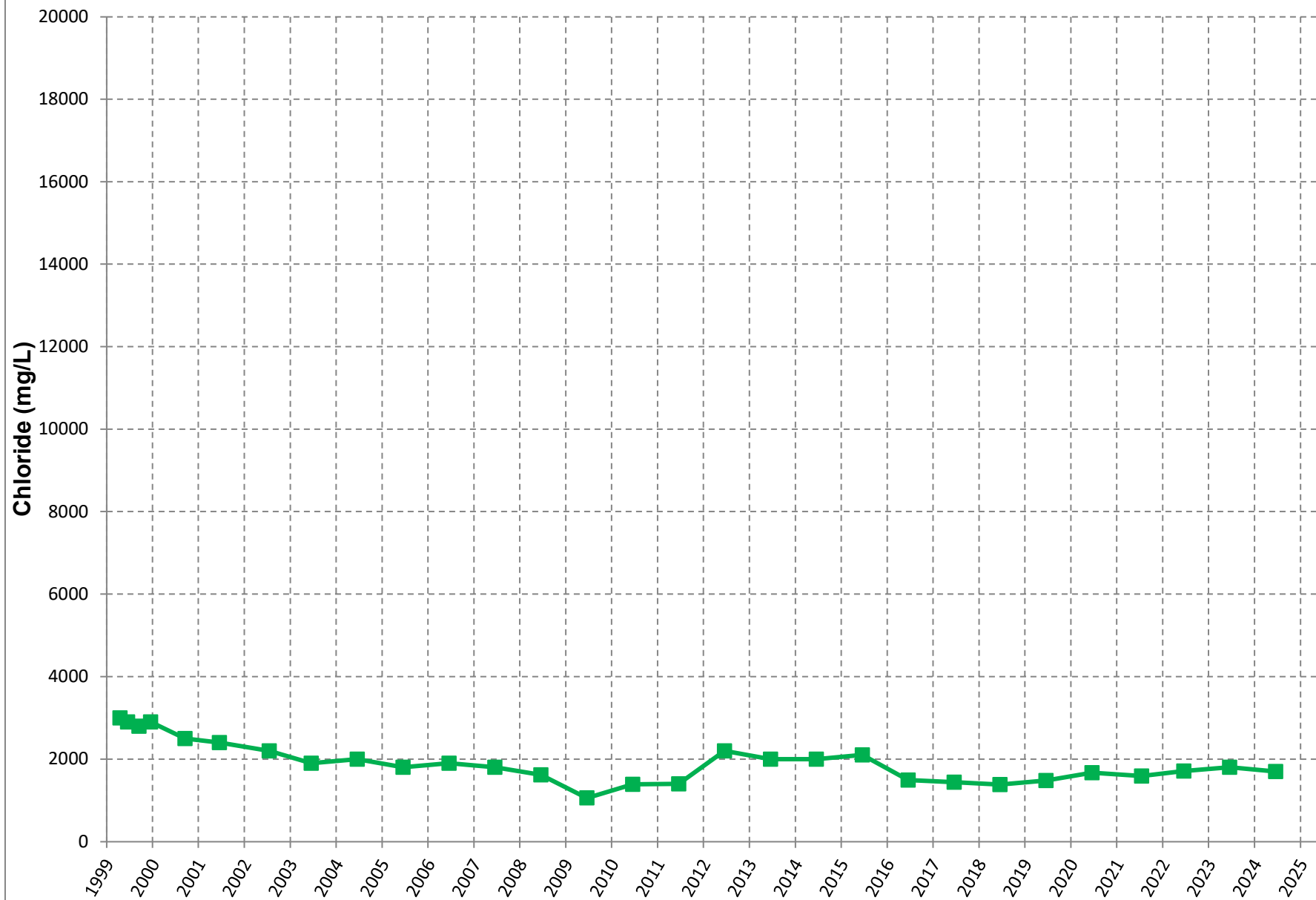
Outfall 002



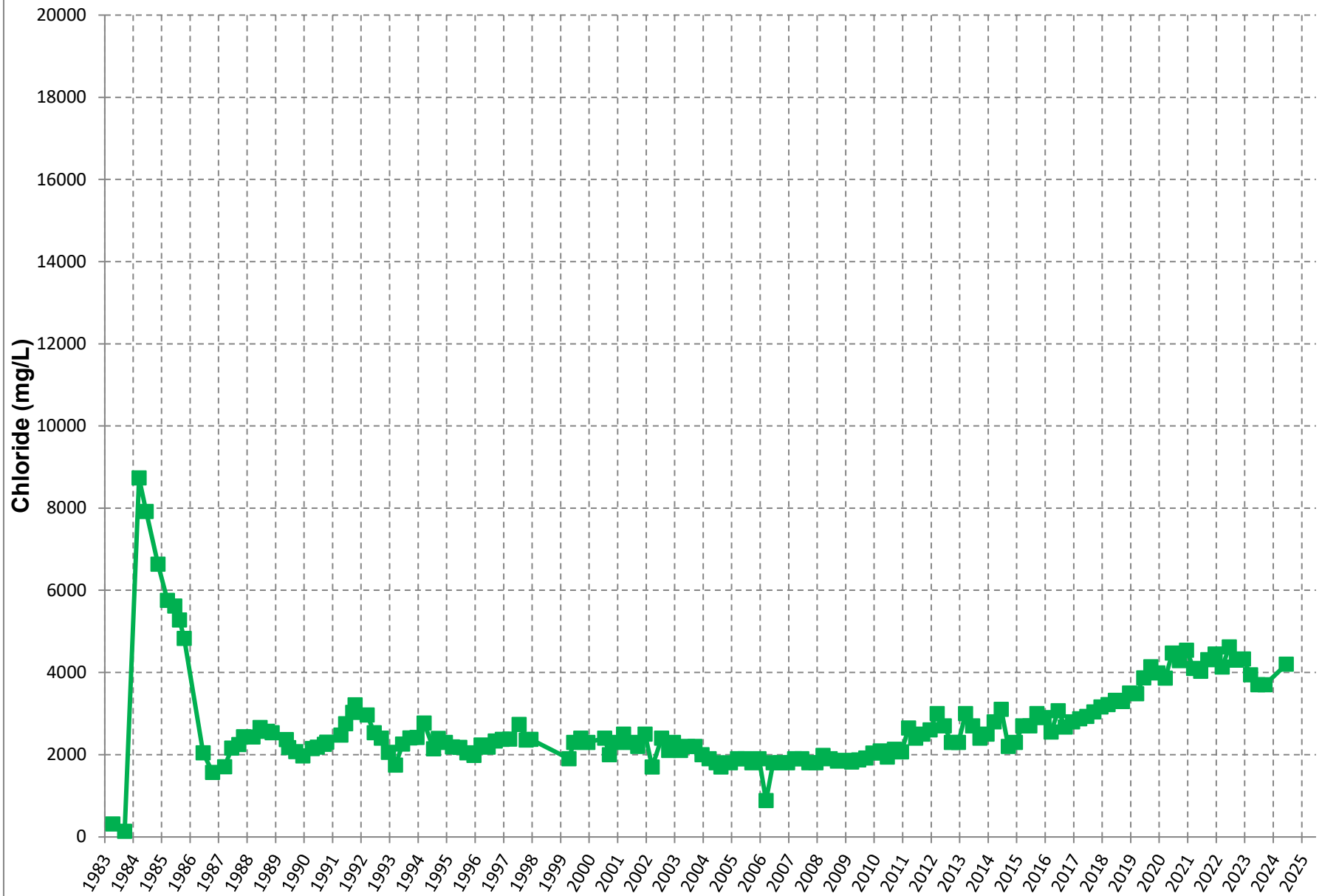
Appendix F

Chloride Graphs: V-02R,
V-02BR, V-03AR, V-23,
V-24, V-25, and V-32B

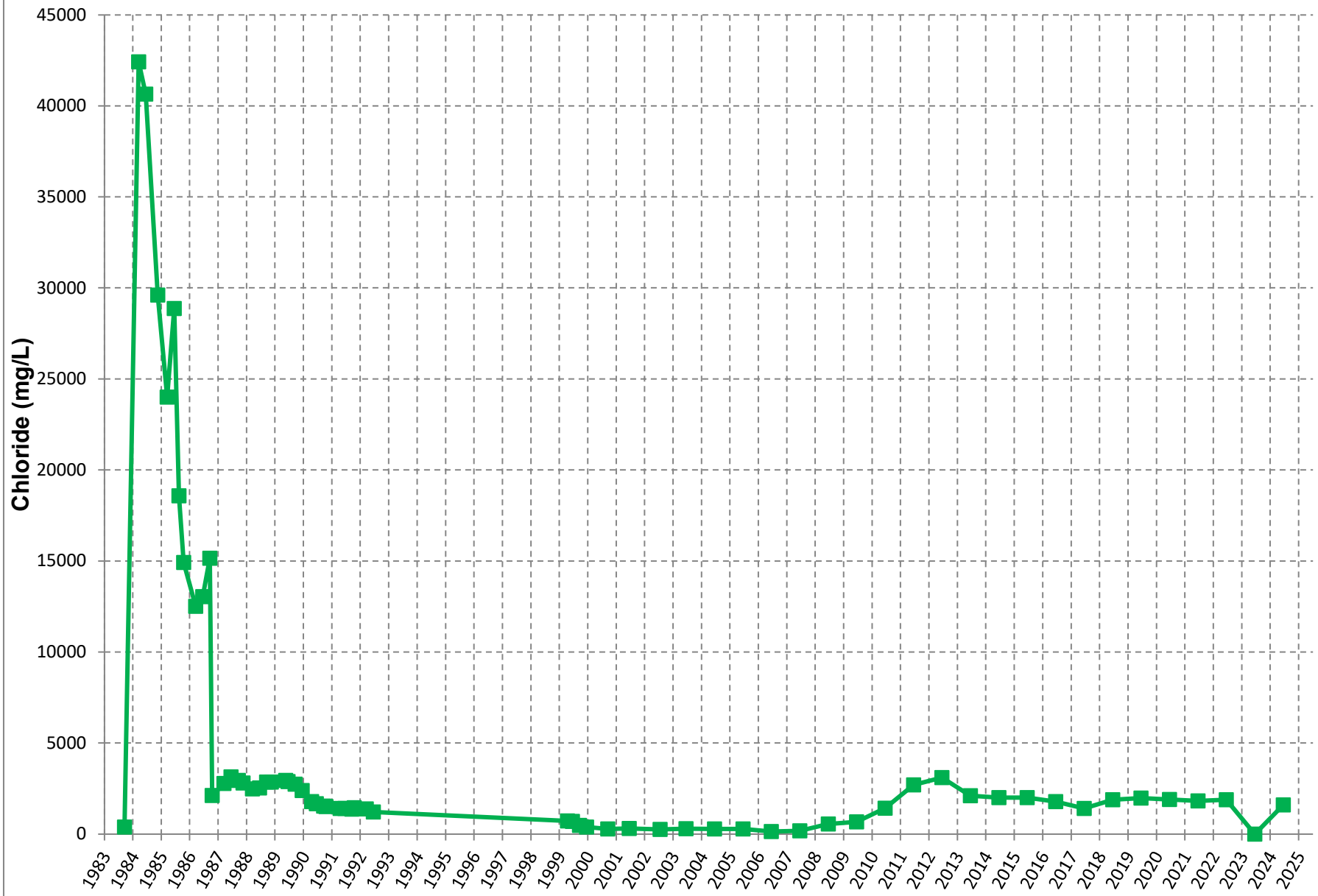
V-02B and V-02BR Chloride Trend



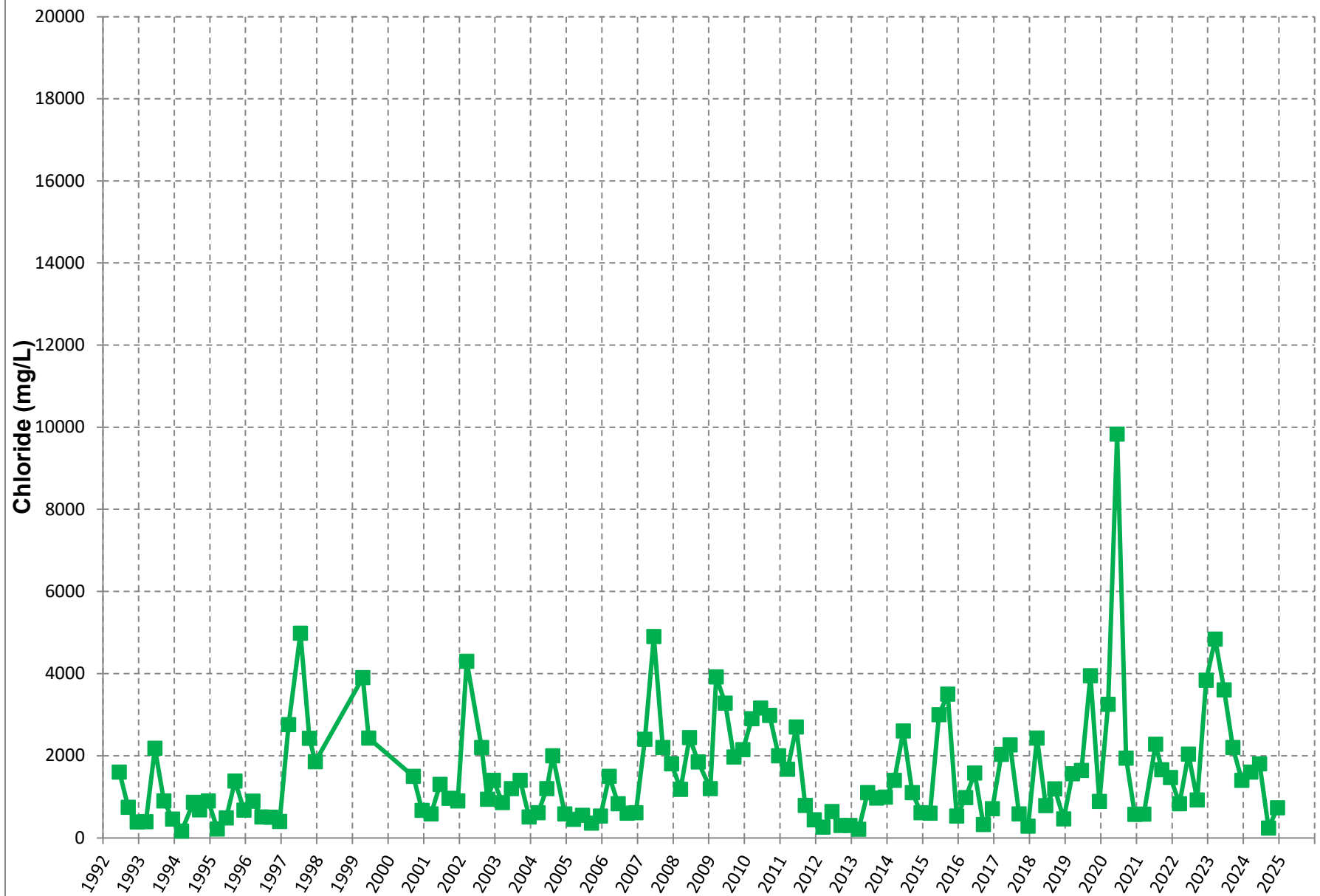
V-03AR Chloride Trend



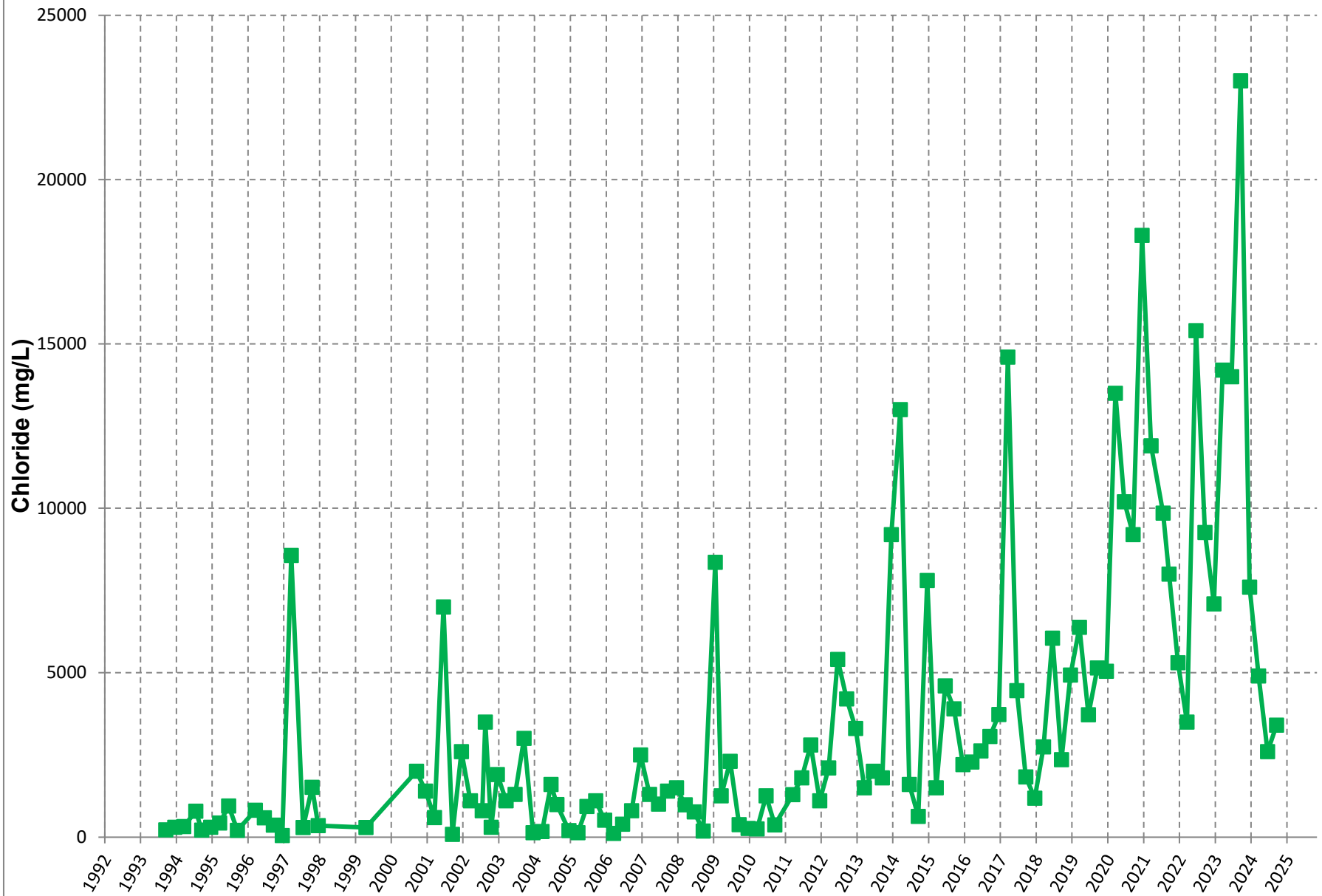
V-04A Chloride Trend



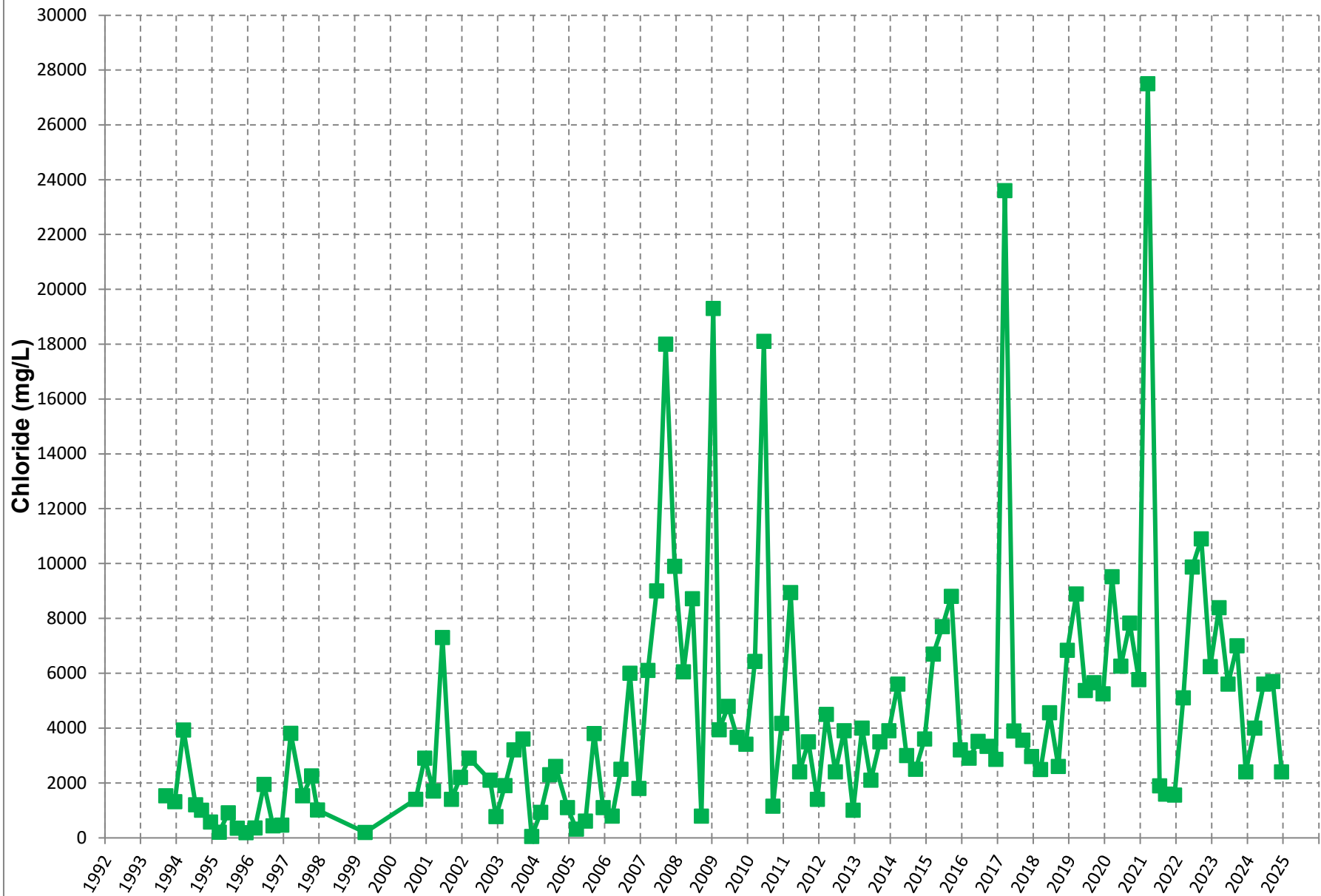
V-23 Chloride Trend



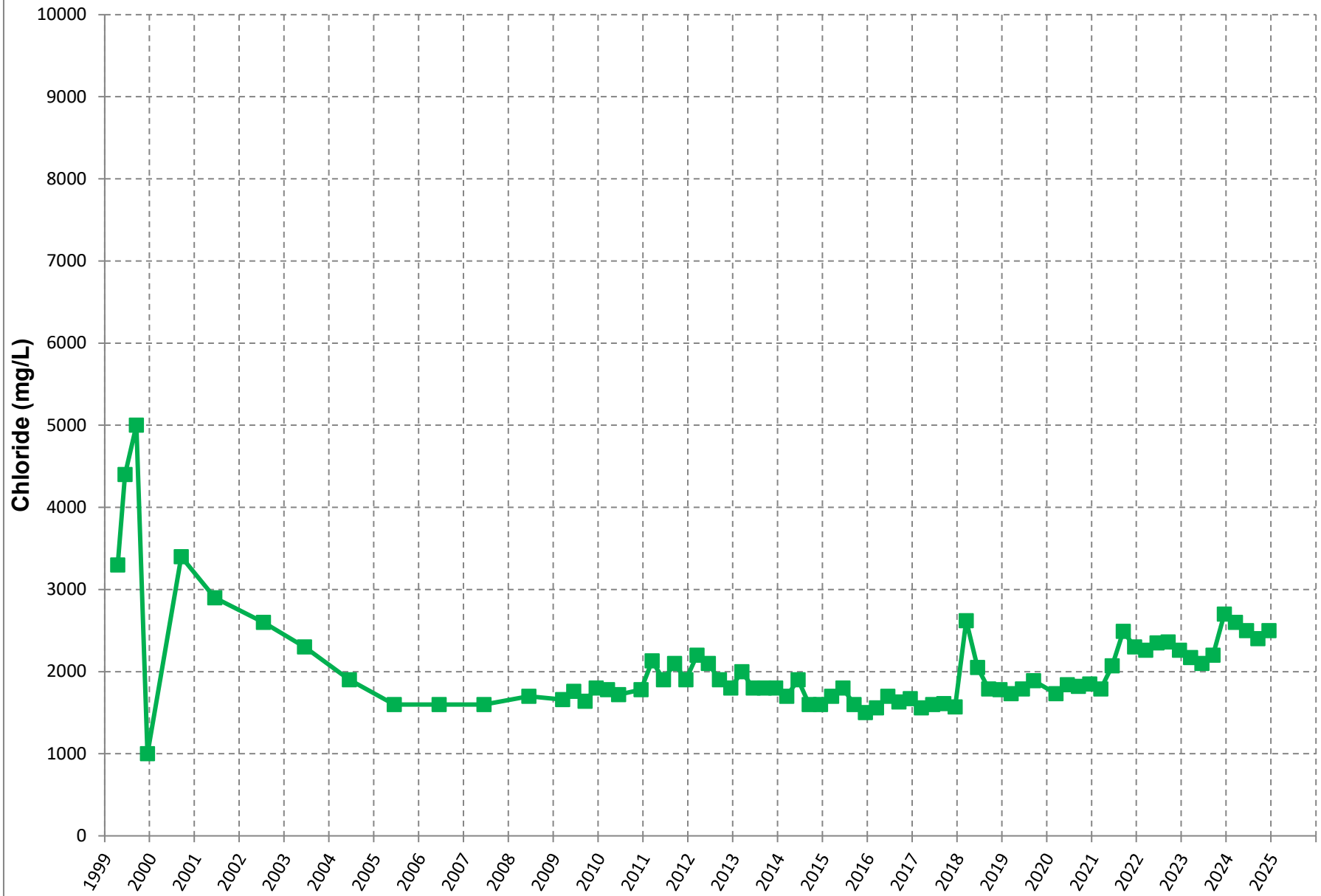
V-24 Chloride Trend



V-25 Chloride Trend



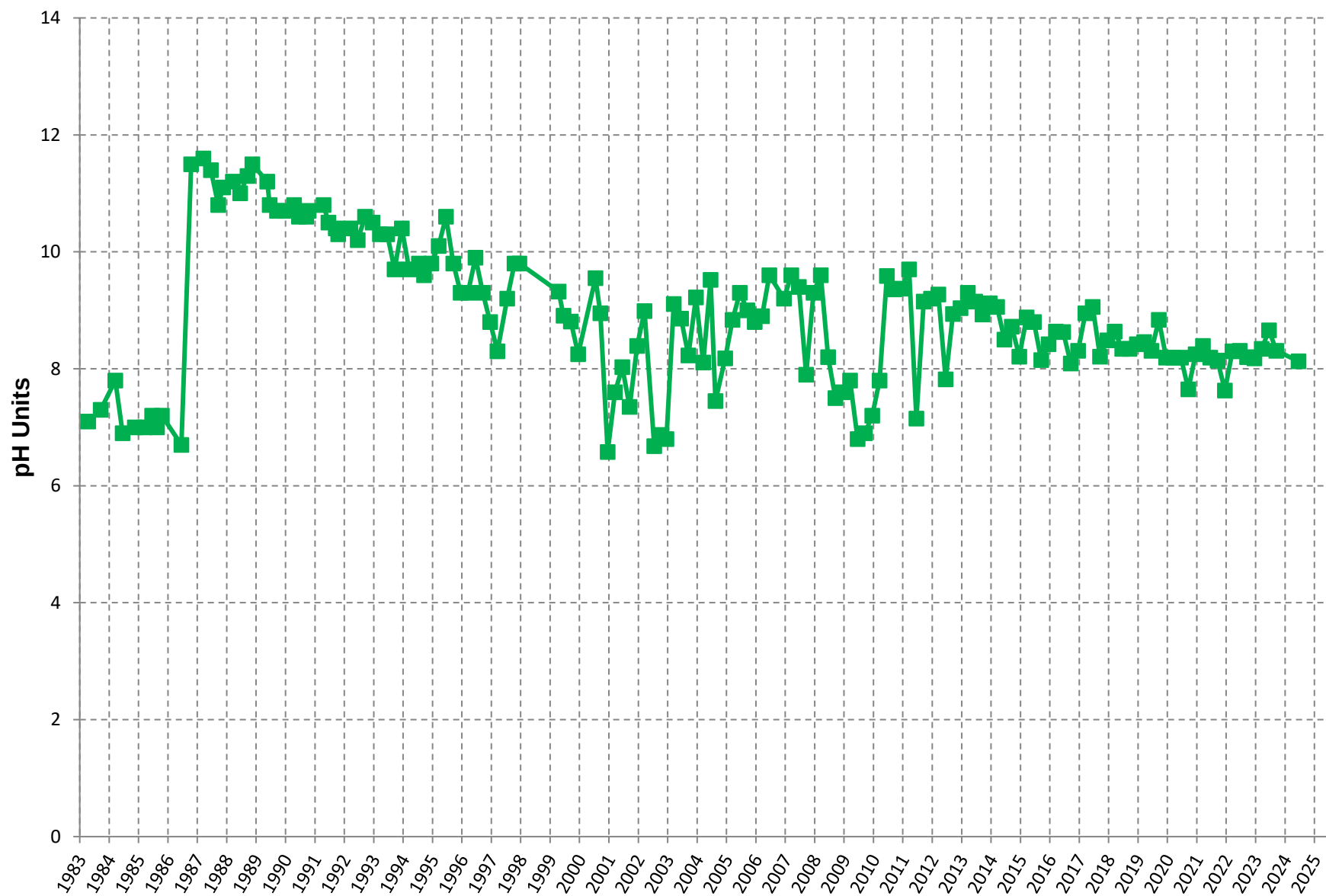
V-32B Chloride Trend



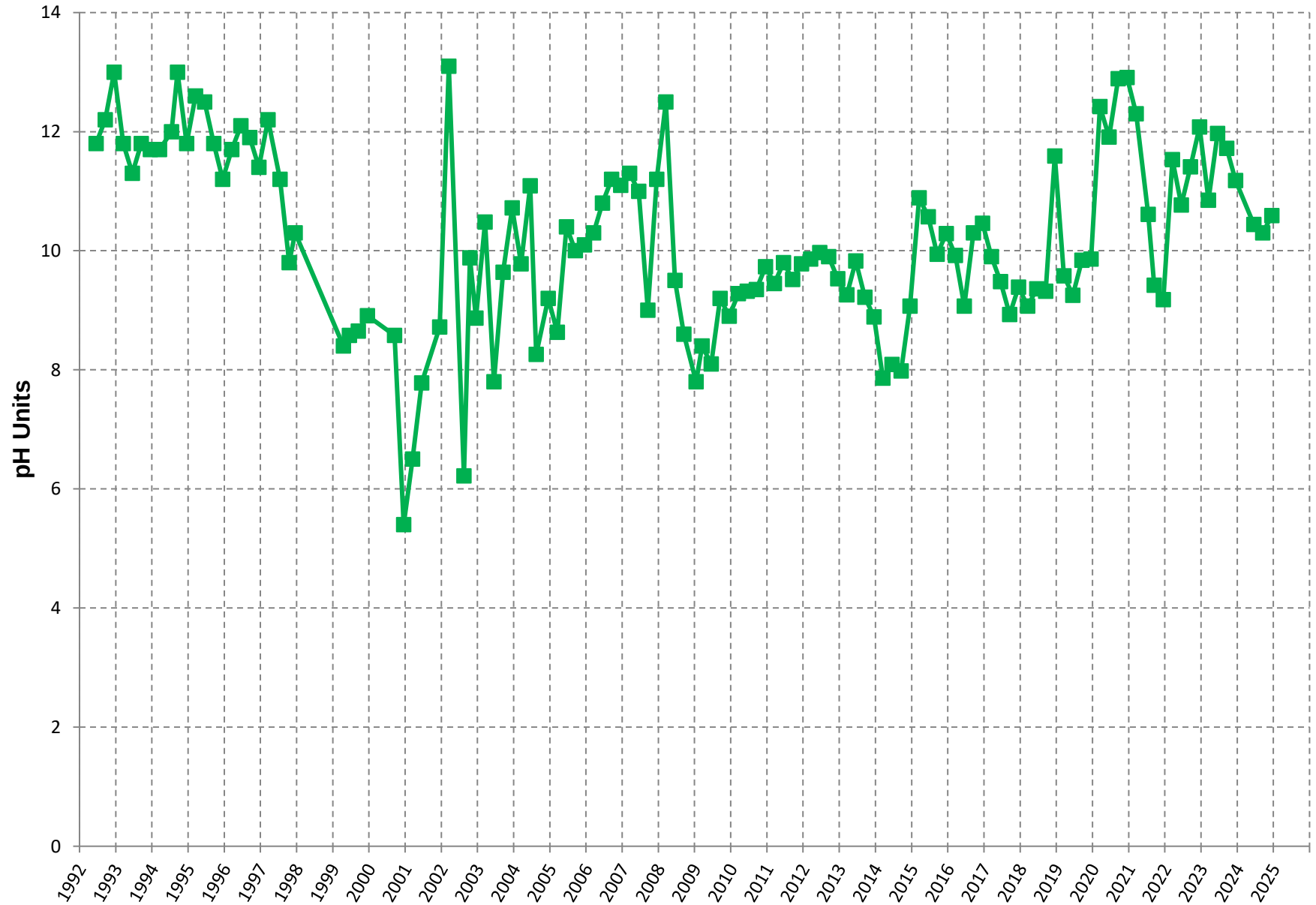
Appendix G

pH Graphs: V-03AR, V-23,
V-24, V-25, and V-32B

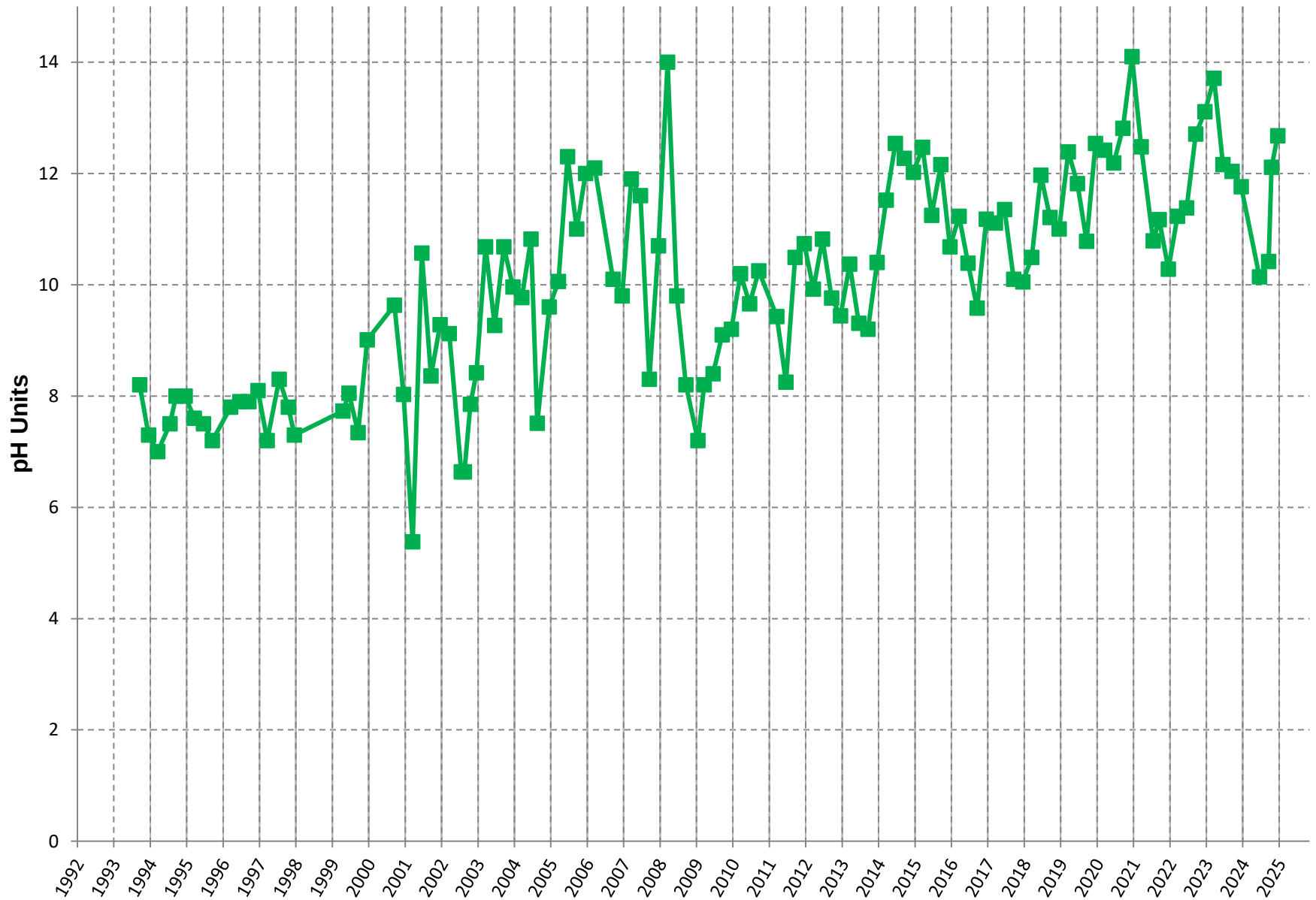
V-03AR pH Trend



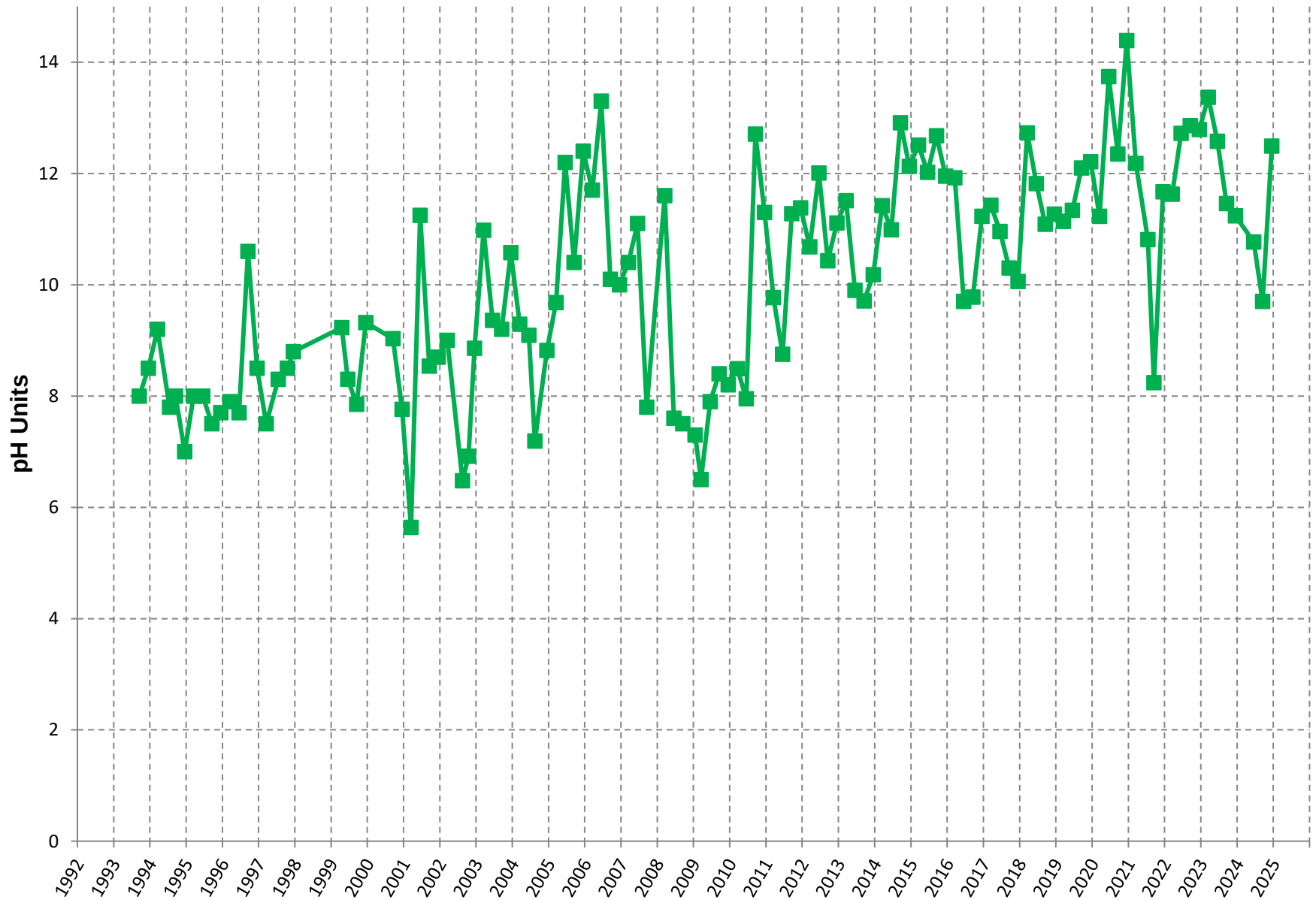
V-23 pH Trend



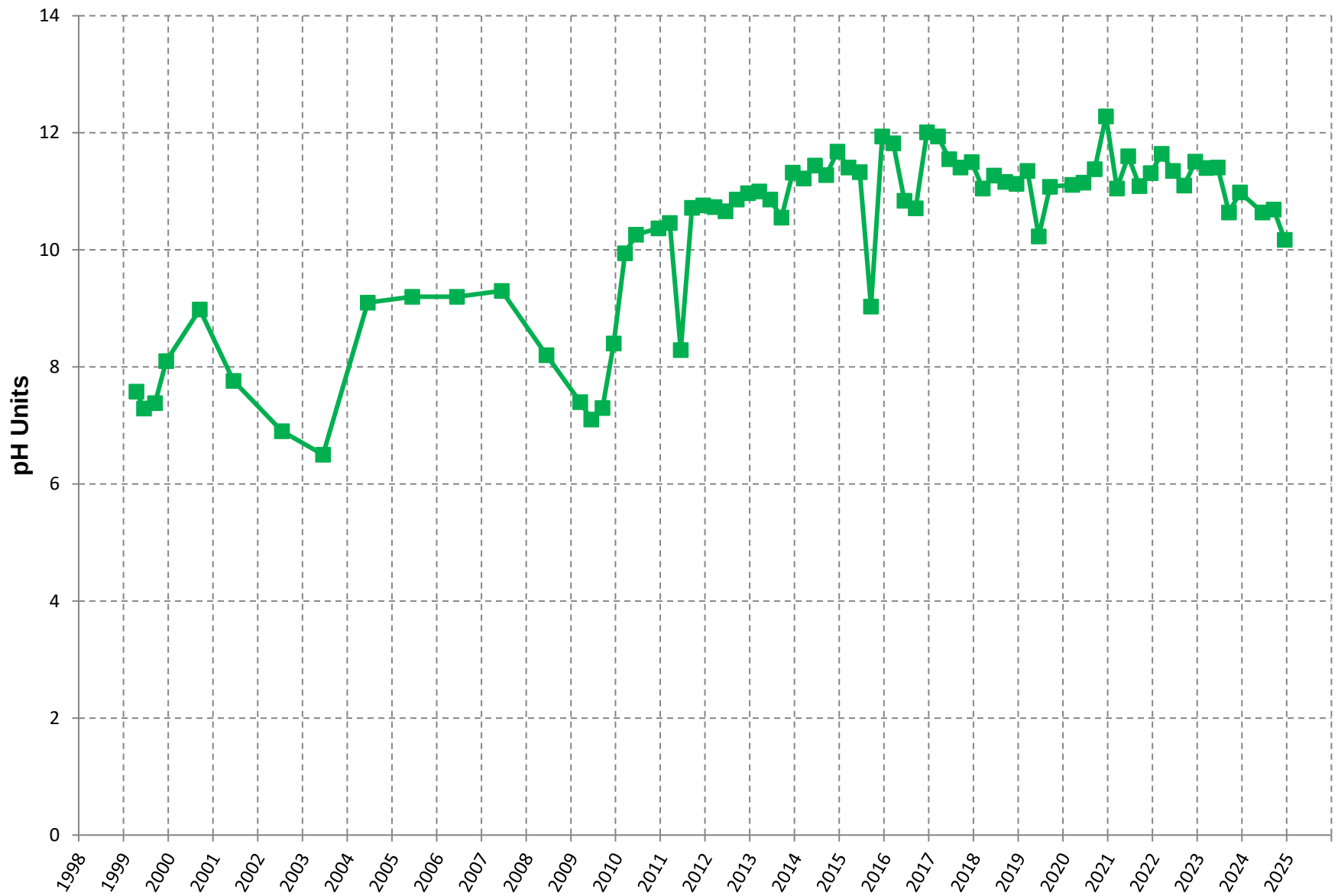
V-24 pH Trend



V-25 pH Trend



V-32B pH Trend



Appendix H

Historical Data Table

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
					Potential millivolts																									
Cell Room	Outfall	4/12/1999	8.1			7.7	780	7.6										0.05 U												
Cell Room	Outfall	5/11/1999	0.5		170	7.2	790	13.4						280																
Cell Room	Outfall	6/10/1999																	0.04											
Cell Room	Outfall	9/14/1999																	0.02											
Cell Room	Outfall	12/9/1999																	0.05											
Cell Room	Outfall	9/26/2000	6.02		95	8.81	1350	15.5	0					210				0.029												
Cell Room	Outfall	3/26/2001			-50	7.41	2480		1.6					270				0.05												
Cell Room	Outfall	9/24/2001												220				0.016												
Cell Room	Outfall	3/25/2002												200				0.051 U												
Cell Room	Outfall	10/17/2002												66				0.018												
Cell Room	Outfall	3/25/2003			-60	9.18	1330							170				0.057												
Cell Room	Outfall	9/23/2003												180				0.19												
Cell Room	Outfall	8/17/2004												170		34		0.0388												
Cell Room	Outfall	9/27/2005												180				0.45												
Cell Room	Outfall	9/27/2006												280				0.61												
Cell Room	Outfall	9/11/2007												190						0.01										
Cell Room	Outfall	9/15/2008												163						0.0215										
Cell Room	Outfall	9/29/2009												202						0.0224										
Cell Room	Outfall	6/16/2010	4		2511	7.31	1420	12	15					173				0.0267												
Cell Room	Outfall	6/7/2011	8.93		123.5	6.47	741	16.46	4.0					160				0.054												
Cell Room	Outfall	6/21/2012	8		24	7.87	9010	20.64	0					170				0.061												
Cell Room	Outfall	6/20/2013	10.23		10.4	7.38	1710	16.48	5.0					420						0.32										
Cell Room	Outfall	6/9/2014	9.10		-25.5	7.13	1369	13.14	3.9					330				0.29												
Cell Room	Outfall	6/15/2015	9.17		66.8	7.34	961	16.27	2.0					200				0.13												
Cell Room	Outfall	6/7/2016	9.15		-5.8	7.46	893	14.42	0.0					164				0.0476												
Cell Room	Outfall	6/12/2017	4.02		-18.3	6.85	905	18.64	5.7					36.3				0.02												
Cell Room	Outfall	6/6/2018	8.69		-22.9	7.57	1183	15.36	1.2					226				0.034												
Cell Room	Outfall	6/19/2019	6.13		-29.4	6.68	897		2.9					162				0.11												
Cell Room	Outfall	6/2/2020	7.85		56.2	7.83	684	16.90	3.0					157				0.333 U / 0.385												
Cell Room	Outfall	6/28/2021	6.61		37.2	6.93	1152	19.70	10.0					155				0.202 J / 0.38												
Cell Room	Outfall	6/23/2022	7.21		86.9	7.76	760	16.7	U					165				0.294 J / 0.213												
Cell Room	Outfall	6/20/2023	8.56		56	7.50	880	20.15	12.1					180				0.23												
Cell Room	Outfall	6/10/2024	9.39		52.1	7.69	679	17.20	2.6					110				0.18 J		--		--	--	--	--	--	--	--	--	--
Cell Room	Trench	4/15/1999												900																
Cell Room	Trench	5/11/1999	4.5			6.96	1880	16.8										1.6												
Cell Room	Trench	6/10/1999																3.7												
Cell Room	Trench	9/16/1999																22												
Cell Room	Trench	12/9/1999																0.92												
Cell Room	Trench	9/27/2000												940				0.22												
Cell Room	Trench	3/27/2001			45	7.52	3080		500					800				2.1												
Cell Room	Trench	9/26/2001												720				2.2												
Cell Room	Trench	3/27/2002												700				0.42												
Cell Room	Trench	10/17/2002												350				0.69												
Cell Room	Trench	3/27/2003												920				20												
Cell Room	Trench	9/24/2003												740				3.5												
Cell Room	Trench	8/19/2004												810				0.505 J												
Cell Room	Trench	9/29/2005												680				0.86												
Cell Room	Trench	9/28/2006																												

TABLE I-1
ERCO Historical Data Master Table

		Field Tests				Gases				Gen Chem				Metals				VOA												
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
Cell Room	V-02	9/20/1991				7.2	2290							270		69		24	15.7											
Cell Room	V-02	10/23/1991				7.2	4380							772		47		79	20											
Cell Room	V-02	3/27/1992				6.7	7530							1388		23		42	23.3											
Cell Room	V-02	6/29/1992				8.4	1720							240		16		196	53.3											
Cell Room	V-02	9/23/1992				8	935							121		6		112	52											
Cell Room	V-02	11/11/1992				8.4	2550							292		1		58	36											
Cell Room	V-02	3/30/1993				8.7	3180							536		21		31.2	11.3											
Cell Room	V-02	6/22/1993				8.3	2800							612		27		53.2	4.6											
Cell Room	V-02	9/29/1993				8.7	2200							316		19		42.6	6.4											
Cell Room	V-02	12/3/1993				9	2200							320		17		126	13.4											
Cell Room	V-02	3/23/1994				8.4	2410							398		24		154	11.4											
Cell Room	V-02	7/1/1994				8.9	2810							338		29		32.5	9.2											
Cell Room	V-02	9/29/1994				8.8	4900							354		20		50.4	26.7											
Cell Room	V-02	12/14/1994				8.1	3010							371		17		34.9	7.2											
Cell Room	V-02	3/16/1995				8.3	2840							475		10		17.4	7.9											
Cell Room	V-02	6/15/1995				7.8	2680							529		23		26.2	6.1											
Cell Room	V-02	6/22/1995																2.3				3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Cell Room	V-02	9/27/1995				8	1380	18.5						153		18		53.2	10.7											
Cell Room	V-02	12/14/1995				7.6	3050	8.5						430		20		16.7	2.9											
Cell Room	V-02	3/14/1996				7.7	2810	8.4						490		18														
Cell Room	V-02	4/2/1996																				3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Cell Room	V-02	4/23/1996																				3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Cell Room	V-02	6/27/1996																				3 U		3 U	4 U	2 U	0 J	10 U		2 U
Cell Room	V-02	9/25/1996																				3 U		3 U	4 U	2 U	10 U	10 U		2 U
Cell Room	V-02	9/30/1996				8.6	2440	18.7						351		32		21	3.3											
Cell Room	V-02	12/9/1996				7.4	2660	5.9						357		45		19.6	6.7			4 U		5 U	5 U	3 U	10 U	20 U		3 U
Cell Room	V-02	3/31/1997				7.6	2120	11.9						346.1		39.1		11.1	7.62											
Cell Room	V-02	4/2/1997																				3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Cell Room	V-02	7/7/1997				8.8	1870	21.5						319		17		13.8	5.26											
Cell Room	V-02	7/9/1997																				3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Cell Room	V-02	10/8/1997				8.4	2700							419		3.2		26.6	0.525											
Cell Room	V-02	12/16/1997				9	2600							438		19.6		9.8	6.02											
Cell Room	V-02	4/15/1999	1.39	955.8	175	7.34	2700	8.5						1300																
Cell Room	V-02	6/7/1999	0.32	954.2		6.95	1760	14.2										8												
Cell Room	V-02	9/14/1999		954.2																										
Cell Room	V-02	12/8/1999		953.5														30												
Cell Room	V-02	9/27/2000	2.5	953.51	-100	8.63	2320	14.9	191					360				1												
Cell Room	V-02	3/26/2001		953.5										5200				0.55												
Cell Room	V-02	6/19/2001		953.08																										
Cell Room	V-02	9/24/2001		955.87										26				74												
Cell Room	V-02	3/25/2002		955.391										870				4.3												
Cell Room	V-02	7/29/2002		955.291																										
Cell Room	V-02	10/17/2002		954.931										47				57												
Cell Room	V-02	3/25/2003		954.331	75	8.45	4830							1900				8.6												
Cell Room	V-02	9/23/2003		954.73										570				110												
Cell Room	V-02	8/18/2004		954.821										1200				199												
Cell Room	V-02	9/28/2005	0.5	954.671	105	6.4	4840	16.8	2																					

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases			Gen Chem			Metals				VOA												
			Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L		
Area	StationId	CollectDate																													
Cell Room	V-02A	12/14/1995				5.5	14000	7.4						4702		1611		0.1		0.1											
Cell Room	V-02A	3/14/1996				5.8	13000	9.8						4681		1565															
Cell Room	V-02A	4/23/1996																					3.8 U	5 U	4.7 U	2.8 U	10 U	20 U	2.8 U		
Cell Room	V-02A	6/26/1996																				3 U	3 U	4 U	2 U	0 J	10 U		2 U		
Cell Room	V-02A	6/27/1996				6.3	9680							4520		1648															
Cell Room	V-02A	9/18/1996																				3 U	3 U	4 U	2 U	10 U	10 U		2 U		
Cell Room	V-02A	9/30/1996				5.9	10700	19.2						2895		741		0.2		0.1											
Cell Room	V-02A	12/6/1996																				4 U	5 U	5 U	3 U	10 U	20 U		3 U		
Cell Room	V-02A	12/9/1996				5.6	12700	10.8						4284		1802		0.5		0.05 U											
Cell Room	V-02A	3/31/1997				5.5	9840	9.9						4481.1		1586		0.231		0.091											
Cell Room	V-02A	7/2/1997																													
Cell Room	V-02A	7/7/1997				5.8	8690	15.2						4864		1715		0.086		0.086											
Cell Room	V-02A	10/8/1997				6.4	5000 J							4544		556		0.566		0.1 U											
Cell Room	V-02A	12/16/1997				6.5	5000 J							4429		1929		0.1 U		0.1 U											
Cell Room	V-02A	4/13/1999	2.18	946.6	30	6.72	9640	11.8																							
Cell Room	V-02A	9/14/1999	0.67	951.6		6.63	9140	16.2						5000	0.09 U	1900		0.2			33					1 U					
Cell Room	V-02A	12/8/1999		951.2						2.3 U	1.4 U	320									22					0.53 U		0.61 U			
Cell Room	V-02A	12/9/1999	0.57			7.59	14480	13.9																							
Cell Room	V-02A	9/27/2000	1.1	952.08	-100	8.67	14950	15.6	1.5	10 U	10 U	9400	510	4000	0.08 U	1600	25	0.096							0.53 U		0.61 U				
Cell Room	V-02A	3/26/2001	0.49	951.17		7.1	13660	8.9	2.8					4300																	
Cell Room	V-02A	6/19/2001	0.62	950.32		7.17	7350	12.4	4	10 U	10 U	1900	990	4000	0.13 U	1600 U	11	0.12							0.53 U		0.61 U				
Cell Room	V-02A	9/24/2001	0.69	943.57	-55	6.48	7100	16.7	31					4100				0.085													
Cell Room	V-02A	3/25/2002	0.84	953.706	-10	8.45	14390	8.9	0					4000				0.11													
Cell Room	V-02A	7/30/2002	0.48	953.326	-80	6.45	6960	16.8	14	10 U	10 U	3900	940	4100	0.02 U	1500	16	0.32			11			0.69 U	0.72 U	0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U
Cell Room	V-02A	10/15/2002	0.71	951.236	-55	6.67	12500	16.1	43					3900					0.17												
Cell Room	V-02A	3/26/2003	0.91	952.646	35	7.75	10750	9.4	73					3900				0.19													
Cell Room	V-02A	6/24/2003		951.906	-100 <	6.68	10720		11	10 U	10 U	2600	830	3900	0.05 U	1500	9.9				22			0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
Cell Room	V-02A	9/23/2003	0.8	951.41	-100 <	6.56	11180	14.3	0					3900				0.11													
Cell Room	V-02A	6/17/2004	1.42	953.95	-80 <	6.93	13530	16.2	11	10 U	10 U	2600	920	3700	0.05 U	1600	13				0.16 U			0.22 U	0.39 U	0.22 U	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U
Cell Room	V-02A	8/18/2004	0.79	953.146	-80	5.8	13230	15.3	5					3500				0.058 J													
Cell Room	V-02A	6/21/2005	0.41	956.096		6.3	8260	15	10	10 U	10 U	7200	850	3100	0.07 U	1300	11				2200			2.2 U	1 U	1.9 U	1.4 U	2.2 U	1.4 U	2.1 U	0.9 U
Cell Room	V-02A	9/28/2005	0.61	955.896	10	6.2	3980	15.7	720					720				0.24													
Cell Room	V-02A	6/21/2006	0.9	954.89	85	6.3	3460	14.3	2	10 U	10 U	3300	380	640	0.44 U	260	16				3400			0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
Cell Room	V-02A	9/27/2006												490				0.47													
Cell Room	V-02A	6/27/2007	1.18	955.55	-100	6.6	9520	15.4	0	10 U	10 U	3000	960	2400	0.08 U	860	10				11000			0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
Cell Room	V-02A	9/12/2007	0.48	954.09	-100	5.7	4030	13.8	0					640						0.05											
Cell Room	V-02A	6/23/2008	0.46	954.71	-70	6.7	8370	9.6	1	1.6 U	1.4 U	5150	968	2740	0.23 J	1030	11.7				11200			0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
Cell Room	V-02A	9/15/2008	0.92	952.11	-100	6.4	7760	12.1	0					2570					0.0555												
Cell Room	V-02B	12/10/1996																													
Cell Room	V-02B	4/15/1999	0.54	957.6	75	6.75	7270	12.1		2 U	1 U	620		3000	0.017 U	1400					17			5 U	5 U	5 U	2.5	5 U	5 U		

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		Field Tests					Gases				Gen Chem				Metals				VOA													
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L			
SPP	V-03AR	3/16/1987				11.6	8800							1706		583			2	1.2												
SPP	V-03AR	6/4/1987				11.4	8800							2161		465			1.3	0.6												
SPP	V-03AR	9/15/1987				10.8	10000 J							2244		400			1.4	0.3												
SPP	V-03AR	11/3/1987				11.1	10000 J							2433		406			0.1	0.5												
SPP	V-03AR	3/22/1988				11.2	10000 J							2427		432			2.1	0.2												
SPP	V-03AR	6/30/1988				11	10000 J							2661		422			2.3	0.5												
SPP	V-03AR	9/28/1988				11.3	10720							2565		400			3	0.7												
SPP	V-03AR	11/1/1988				11.5	11100							2536		415			2.9	0.8												
SPP	V-03AR	5/10/1989				11.2	10020							2364		313			2.4	0.9												
SPP	V-03AR	6/21/1989				10.8	8690							2172		295			2.6	0.5												
SPP	V-03AR	9/28/1989				10.7	8580							2074		278			4.3	0.9												
SPP	V-03AR	12/18/1989				10.7	8780							1970		205			3.2	0.5												
SPP	V-03AR	4/27/1990				10.8	9160							2147		163			0.5	0.3												
SPP	V-03AR	6/21/1990				10.6	8630							2182		160			0.4	0.3												
SPP	V-03AR	9/25/1990				10.6	8650							2251		134			0.6	0.3												
SPP	V-03AR	10/30/1990				10.7	9260							2301		145			0.5	0.3												
SPP	V-03AR	4/2/1991				10.8	10000							2475		135			0.4	0.2												
SPP	V-03AR	6/25/1991				10.5	10190							2749		130			0.3	0.2												
SPP	V-03AR	9/20/1991				10.4	11040							3030		113			0.2	0.2												
SPP	V-03AR	10/23/1991				10.3	10700							3212		131			0.5	0.4												
SPP	V-03AR	3/27/1992				10.4	11600							2963		95			0.7	0.4												
SPP	V-03AR	6/29/1992				10.2	10600							2535		76			0.4	0.1												
SPP	V-03AR	9/23/1992				10.6	9010							2402		184			0.8	0.5												
SPP	V-03AR	12/14/1992				10.5	9200							2055		86			1.3	0.8												
SPP	V-03AR	3/30/1993				10.3	7920							1747		143			1.2	0.6												
SPP	V-03AR	6/22/1993				10.3	9500							2258		144			0.3	0.1												
SPP	V-03AR	9/29/1993				9.7	8630							2407		202			1.5	0.4												
SPP	V-03AR	12/3/1993				10.4	8800							2417		147			0.9	0.6												
SPP	V-03AR	3/23/1994				9.7	9330							2769		150			1	0.4												
SPP	V-03AR	7/1/1994				9.8	8520							2144		165			0.7	0.6												
SPP	V-03AR	9/29/1994				9.6	8660							2393		168			0.8	0.5												
SPP	V-03AR	12/14/1994				9.8	7810							2297		157			0.8	0.3												
SPP	V-03AR	3/16/1995				10.1	7790							2189		73			1	0.3												
SPP	V-03AR	6/15/1995				10.6	7750							2179		110			0.4	0.2												
SPP	V-03AR	6/23/1995																	0.31													
SPP	V-03AR	9/27/1995				9.8	7500	17.6						2047		135			0.4	0.2												
SPP	V-03AR	12/14/1995				9.3	7570	12.6						1981		121			0.4	0.2												
SPP	V-03AR	3/14/1996				9.3	8100	12.6						2236		115			0.4	0.2												
SPP	V-03AR	4/23/1996																					3.8 U	5 U	4.7 U	2.8 U	10 U	20 U			2.8 U	
SPP	V-03AR	6/25/1996																					3 U	3 U	4 U	2 U	0 J	10 U			2 U	
SPP	V-03AR	6/27/1996				9.9	6900							2180		117			0.4	0.2												
SPP	V-03AR	9/19/1996																					3 U	3 U	4 U	2 U	10 U	10 U			2 U	
SPP	V-03AR	9/30/1996				9.3	8140	14.9						2331		72			0.3	0.2				3 U	3 U	4 U	2 U	10 U	10 U			2 U
SPP	V-03AR	12/6/1996																					4 U	5 U	5 U	3 U	10 U	20 U			3 U	
SPP	V-03AR	12/9/1996				8.8	7710	12.1						2371		132			0.5	0.3												
SPP	V-03AR	3/31/1997																														

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem				Metals				VOA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

TABLE I-1
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		Field Tests				Gases				Gen Chem				Metals				VOA												
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-03R	6/27/1996				6.1	2800	9.5						1626		26			1	0.1 U										
SPP	V-03R	9/24/1996				6.9	4030	15.4															3 U	3 U	4 U	2 U	10 U	10 U		2 U
SPP	V-03R	9/30/1996				7.2	2450							936		10		0.4	0.05 U											
SPP	V-03R	12/6/1996				7	1950															4 U	5 U	5 U	3 U	10 U	20 U		3 U	
SPP	V-03R	12/9/1996												1138		12		0.4	0.05 U											
SPP	V-03R	3/31/1997												913.1		12.5		1.58	0.016											
SPP	V-03R	4/2/1997																				3.8 U	5 U	4.7 U	2.8 U	10 U	20 U		2.8 U	
SPP	V-03R	7/7/1997												1507		12.8		0.343	0.273											
SPP	V-03R	10/8/1997												626		2.8		1.55	0.1 U											
SPP	V-03R	12/16/1997												488		7.2		0.909	0.1 U											
SPP	V-03R	4/13/1999	0.5	956.3		7.2	4080	10.3		2 U	1 U	1000		1800	0.017 U	89				15			0.53 U				0.61 U			
SPP	V-03R	6/8/1999	0.46	956.3		6.96	3100	15.4		2.3 U	1.4 U	830		1400		24				10			0.53 U				0.61 U			
SPP	V-03R	9/14/1999	0.57	956.3		7.34	1660	17.7		10 U	10 U	630		670	0.09 U	10				9.7			1 U			1 U				
SPP	V-03R	12/7/1999	0.52	955.3		8.01	2780	12.5		2.3 U	1.4 U	960		720	0.08 U	6.2				4.5			0.53 U			0.61 U				
SPP	V-03R	7/18/2000	0.48	953.99	-100	11.14	2380	16.8	21.5					1300		30			0.3 U											
SPP	V-03R	9/26/2000	0.49	953.38	-100	8.7	2420	19	97.2	10 U	10 U	1100	180	600	0.08 U	16	48		0.17			0.53 U				0.61 U				
SPP	V-03R	12/6/2000												420		8.1														
SPP	V-03R	12/7/2000		952.35																1.3										
SPP	V-03R	3/26/2001	0.78	952.45		7.25	6910	7	15					2400		27				0.02										
SPP	V-03R	6/19/2001	0.46	951.37	-70	7.8	3000	15.1	31	10 U	10 U	240	110	1700 U	0.13 U	37	20		0.016	0.016 U		0.53 U			0.61 U					
SPP	V-03R	9/25/2001	1.07	951.13		8.46	1180	17.7	94					580		14				1.6										
SPP	V-03R	12/11/2001	0.65	952.99		5	8.31	1650	13.1	113				400		13				2.1										
SPP	V-03R	3/26/2002	0.62	956.704		90	8.91	1270	6.9	53				280		30				0.99										
SPP	V-03R	7/30/2002	0.58	957.594	-80	6.6	2780	20.6	26	10 U	10 U	520	250	73	0.26	4.2	11		0.025	6.8		0.69 U	0.72 U	0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U	
SPP	V-03R	10/15/2002	0.42	957.124		6.91	3440	16.6	25					1000		21				0.3										
SPP	V-03R	12/17/2002	0.6	955.424		80	6.22	2540	9.3	31				680		14				0.67										
SPP	V-03R	3/26/2003	0.45	955.284	-100	8.38	1750	7.1	38					470		14				0.5										
SPP	V-03R	6/24/2003		956.294	-100 <	7.23	5960		60	10 U	10 U	860	120	2400	0.05 U	28	4.1		0.015 U	10		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-03R	9/23/2003	0.53	955.87	-55	7.17	2820	20	32					920		56				0.071										
SPP	V-03R	12/18/2003					8.95	3940		0				1700		14				0.11										
SPP	V-03R	3/23/2004	0.89	955.94	-100 <	7.82	3180	6.6	14					1300		16				0.0538										
SPP	V-03R	6/16/2004	0.43	957.78		-40	7.48	7160	15.5	18	10 U	10 U	400	140	2200	0.59	53	3.5		0.0193	0.023 U		0.22 U	0.39 U	0.22 U	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U
SPP	V-03R	8/17/2004	0.33	956.654		-25	6.52	5280	16.6	24				1400		38				0.113										
SPP	V-03R	12/14/2004	0.88	958.33		25	7.8	3090	9	30				820		15				0.63										
SPP	V-03R	3/29/2005	0.7	955.774		-40	8.15	3870	8	7				1100		17				0.06										
SPP	V-03R	6/21/2005	0.34	956.804		6.9	10110	16.9	25	10 U	10 U	490	100 J	3500	0.07 U	47	6.8		0.0086	560		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-03R	9/27/2005	0.4	956.374		-20	6.9	7030	17.5	12				2300		35				0.02										
SPP	V-03R	12/21/2005	0.45	955.224		35	6.4	5400	9.4	0				1400		20				0.07										
SPP	V-03R	3/27/2006	0.33	955.174		-20	6.7	2550	7.7	0				1200		50				0.01										
SPP	V-03R	6/21/2006	0.36	955.78		55	6.5	8600	14.6	48	10 U	10 U	810	110	3000	0.44 U	59	4		0.01	8800		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-03R	9/26/2006												1700		24				0.08										
SPP	V-03R	12/12/2006	0.86	954.75		110																								

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		Field Tests					Gases				Gen Chem				Metals				VOA										
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction	pH	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L
					Potential millivolts																								
SPP	V-03R	12/16/2020	0.33	956.11	-147.2	8.23	2517	9.30	12				697		3.48				0.333 U / 0.0342										
SPP	V-03R (dup)	12/16/2020	0.33	956.11	-147.2	8.23	2517	9.30	12				711		3.14				0.333 U / 0.052										
SPP	V-03R	3/17/2021	1.16	955.96	-99.2	7.66	1268	6.00	15				479		4.37				0.078 / 0.333 U										
SPP	V-03R	6/30/2021	0.81	957.67	11.1	6.93	4586	18.40	10.0	0.987 U	1.41 U	471	959	2.32	14.2	5.08		0.333 U / 0.108	1080		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-03R	9/16/2021	0.17	957.39	-138.1	7.61	4058	21.00	3				1480		2.31		0.333 U / 0.0269	0.333 U / 0.0148											
SPP	V-03R	12/14/2021	4.00	955.74	-106.8	7.36	3368	10.90	5				1490		19.8 U		0.333 U / 0.018	0.109 J / 0.00786											
SPP	V-03R	3/28/2022	0.83	956.03	-82.6	7.73	2889	5.50	4				1270		7.02 J			0.333 U / 0.0062											
SPP	V-03R	6/27/2022	0.16	956.80	-106	7.23	3448	17	5	0.987 U	1.41 U	1610	1030	2	6.41	3.97	0.333 U / 0.0119	0.333 U / 0.0514	2430		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-03R	9/16/2022	0.23	957.15	-124.6	7.31	3036	19.80	23				904		2.89		0.333 U / 0.0365	0.00913 / 0.333 U											
SPP	V-03R	12/16/2022	0.39	956.55	-21.3	7.34	2411	9.40					1080		1.98 U		0.0253 / 0.333 U	0.00892 / 0.333 U											
SPP	V-03R	3/20/2023	0.12	955.92	-20.3	7.67	2157	7.10	0.6				878		1.19 J		0.0581 / 0.333 U	0.0221 / 0.333 U											
SPP	V-03R	6/19/2023	0.00	957.04	-151	7.64	2570	19.90	5.1	170 U	150 U	2200	710	1.0 U	1.0	3.8	0.20 U / 0.026	0.0084 / 0.20 U	3500		1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-03R	9/5/2023	0.15	956.18	-192	7.35	2855	20.70	4.81				830		0.35 J		0.047 / 0.20 U	0.20 U / 0.0069											
SPP	V-03R	6/11/2024	0.13	957.40	-118	7.26	1917	14.70	28.1				560				0.20 U / 0.18	0.20 U / 0.015			1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-04A	9/28/1983				7	2000						387		0.383			0.8											
SPP	V-04A	3/26/1984				6.8	10000 J						42423		6712			0.2											
SPP	V-04A	6/18/1984				6.1	10000						40648		6387			5.6											
SPP	V-04A	11/7/1984				6.8	10000 J						29605		4841			3											
SPP	V-04A	3/19/1985				6.7	10000 J						23997		4293			3.2											
SPP	V-04A	6/11/1985				7	10000 J						28869		3616			1.5		0.2 U									
SPP	V-04A	8/27/1985				6.9	10000 J						18576		3134			3.3											
SPP	V-04A	10/31/1985				6.9	10000 J						14919		2961			1.5											
SPP	V-04A	3/24/1986				7	10000 J						12514		2451			2.3											
SPP	V-04A	6/11/1986				6.2	10000 J						13037		1982			5											
SPP	V-04A	9/23/1986				6.1	10000 J						15150		1332			1.8											
SPP	V-04A	10/20/1986				7.2	8400						2118		8400			3.1											
SPP	V-04A	3/16/1987				7	10000 J						2779		435			0.3											
SPP	V-04A	6/4/1987				6.8	10000 J						3145		453			0.4											
SPP	V-04A	9/15/1987				6.6	10000 J						2948		450			1.4		0.1 U									
SPP	V-04A	11/3/1987				6.8	10000 J						2803		423			0.2											
SPP	V-04A	3/22/1988				6.7	9600						2479		379			0.1											
SPP	V-04A	6/30/1988				6.9	3800						2531		332			1.2											
SPP	V-04A	9/28/1988				6.8	10110						2856		310			5.1											
SPP	V-04A	11/1/1988				6.7	11080						2860		306			1.7											
SPP	V-04A	5/10/1989				6.7	10500						2940		300			1.6											
SPP	V-04A	6/21/1989				6.7	9560						2882		298			3.7											
SPP	V-04A	9/28/1989				6.8	9920						2735		230			2.4											
SPP	V-04A	12/18/1989				6.8	8980						2394		265			3.6											
SPP	V-04A	4/27/1990				6.7	7490						1777		229			0.5											
SPP	V-04A	6/21/1990				6.7	6620						1665		229			0.4											
SPP	V-04A	9/25/1990				6.7	6280						1536		206			0.6											
SPP	V-04A	10/30/1990				6.7	6400						1516		181			0.2											
SPP	V-04A	4/2/1991				6.8	5850						1406		226														

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		Field Tests					Gases				Gen Chem				Metals				VOA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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TABLE I-1
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		Field Tests					Gases				Gen Chem			Metals				VOA													
			Dissolved	Elevation	Oxidation-Reduction	pH	Specific	Temperature	Turbidity	Ethane	Ethene	Methane	Alkalinity	Chloride	Nitrogen	Sulfate	Total Organic	Total Mercury	Dissolved Mercury		Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane		
Area	StationId	CollectDate	Oxygen mg/L	ft	Potential millivolts	units	Conductance us/cm	deg c	ntu	µg/L	µg/L	µg/L	Total mg/L	mg/L	Nitrate mg/L	mg/L	Carbon mg/L	µg/L	µg/L	Iron µg/L	Iron µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Perimeter	V-06R	3/22/1988				6.6	290							14		32		0.8	0.2												
Perimeter	V-06R	6/30/1988				6.8	330							19		45		0.8	0.2												
Perimeter	V-06R	9/28/1988				7.1	865							120		65		0.9	0.2												
Perimeter	V-06R	11/1/1988				7.1	684							47		57		0.6	0.1												
Perimeter	V-06R	5/10/1989				6.6	758							106		83		0.8	0.3												
Perimeter	V-06R	6/21/1989				7.3	469							53		40		3.1	0.4												
Perimeter	V-06R	9/28/1989				6.7	606							55		49		2.3	0.3												
Perimeter	V-06R	12/18/1989				6.8	987							132		53		3.3	0.3												
Perimeter	V-06R	4/27/1990				6.9	702							205		62		3.3	0.8												
Perimeter	V-06R	6/21/1990				7	629							92		43		6.4	1.8												
Perimeter	V-06R	9/25/1990				6.5	329							47		11		0.8	0.3												
Perimeter	V-06R	10/30/1990				6.6	343							33		5		0.2	0.2												
Perimeter	V-06R	4/2/1991				7	578							95		35		0.4	0.1												
Perimeter	V-06R	6/25/1991				6.8	288							27		21		0.3	0.1												
Perimeter	V-06R	9/20/1991				6.9	493							41		14		8	0.1												
Perimeter	V-06R	10/23/1991				6.6	489							33		22		0.3	0.2												
Perimeter	V-06R	3/27/1992				6.6	565							77		17		1	0.4												
Perimeter	V-06R	6/29/1992				6.7	326							29		15		0.3	0.1 U												
Perimeter	V-06R	9/23/1992				6.8	358							34		10		0.3	0.1												
Perimeter	V-06R	11/11/1992				6.8	471							25		5		0.3	0.1 U												
Perimeter	V-06R	3/30/1993				6.1	192							154		7		0.4	0.1												
Perimeter	V-06R	6/22/1993				6.6	459							20		16		0.4	0.1												
Perimeter	V-06R	9/29/1993				6.6	350							20		7		0.2	0.1												
Perimeter	V-06R	12/3/1993				6.6	240							19		17		0.7	0.2												
Perimeter	V-06R	3/23/1994				7.1	497							56		15		0.6	0.2												
Perimeter	V-06R	7/1/1994				6.7	371							23		11		0.3	0.2												
Perimeter	V-06R	9/29/1994				6.8	326							15		29		2.1	0.3												
Perimeter	V-06R	12/14/1994				6.2	581							21		21		0.3	0.1 U												
Perimeter	V-06R	3/16/1995				6.4	732							106		26		1.1	0.1 U												
Perimeter	V-06R	6/15/1995				7	357							30		10		0.4	0.1												
Perimeter	V-06R	9/27/1995				7.3	463	20.9						32		52		0.3	0.1 U												
Perimeter	V-06R	3/14/1996				6	598	10.2						92		35															
Perimeter	V-06R	4/23/1996																													
Perimeter	V-06R	5/13/1996																					3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Perimeter	V-06R	6/26/1996																					3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Perimeter	V-06R	9/24/1996																					3 U		3 U	4 U	2 U	0 J	10 U		2 U
Perimeter	V-06R	9/30/1996				7.1	352	18.2						29		22		0.2	0.1					3 U		3 U	4 U	2 U	10 U	20 U	
Perimeter	V-06R	12/5/1996																						4 U		5 U	5 U	3 U	10 U	20 U	3 U
Perimeter	V-06R	7/2/1997																					3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
Perimeter	V-06R	10/8/1997				6.8	575							46.1		7.9		1.71	0.1 U												
Perimeter	V-06R	12/16/1997				6.8	475																								
Perimeter	V-06R	4/14/1999	0.3	958.7		7.49	390	8.3			2 U	3 J	1800		65	0.017	25									0.53 U			0.61 U		
Perimeter	V-06R	6/10/1999	0.32	958.7		7.34	360	15.7			2.3 U	1.4 U	2100		29		36									0.53 U			0.61 U		
Perimeter	V-06R	9/16/1999	0.37	958.5		7.4		18.7			10 U	10 U	610		18	0.5	24									0.53 U			0.61 U		
Perimeter	V-06R	12/7/1999	0.39	957.7		8.52	340	8.2			2.3 U	1.4 U	1100		17	0.28	34									1 U			0.61 U		
Perimeter	V-06R	7/18/2000	0.27	955.64	-100	9.42	400																								

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-07	11/3/1987				11.1	10000 J							4761		363			0.6	0.3										
SPP	V-07	6/30/1988				8.6	10000 J							3914		163			14.4	0.5										
SPP	V-07	9/28/1988				10.4	20000 J							7961		751			80	2.5										
SPP	V-07	11/1/1988				12.5	13680							2536		195			40	25										
SPP	V-07	5/10/1989				10.3	13070							3883		184			22.4	1										
SPP	V-07	6/21/1989				7.7	13310							4355		158			50	0.4										
SPP	V-07	9/28/1989				8.2	9770							2592		214			10	1.5										
SPP	V-07	12/18/1989				8.3	8230							1981		163			6	0.4										
SPP	V-07	4/27/1990				10.2	11110							2716		196			19	0.5										
SPP	V-07	6/21/1990				10.3	10220							3275		159			25.4	0.6										
SPP	V-07	9/25/1990				8	3660							820		96			46	14.9										
SPP	V-07	10/30/1990				9.1	3160							468		90			20.7	5.2										
SPP	V-07	4/2/1991				10.6	3450							724		68			20	1										
SPP	V-07	6/25/1991				8.8	4610							1128		59			9.2	0.8										
SPP	V-07	9/20/1991				7.9	4780							1355		153			3.2	0.5										
SPP	V-07	10/23/1991				8.3	3940							960		145			54.4	20.5										
SPP	V-07	3/27/1992				8.2	4710							928		52			27.2	1.1										
SPP	V-07	6/29/1992				8.5	6050							1524		73			3.2	0.5										
SPP	V-07	9/23/1992				7.9	5560							1477		90			31.6	2.5										
SPP	V-07	11/11/1992				8.6	1730							283		21			136	100										
SPP	V-07	3/30/1993				8.3	3660							834		42			1.9	0.1										
SPP	V-07	6/22/1993				7.7	6040							1644		86			36	0.1 U										
SPP	V-07	9/29/1993				8.9	2700							575		66			22	11										
SPP	V-07	12/3/1993				9.5	2000							400		46			107.5	52.3										
SPP	V-07	3/23/1994				9.2	1890							436		41			112.6	66.4										
SPP	V-07	7/1/1994				8.7	4410							992		55			25.1	12.8										
SPP	V-07	9/29/1994				8.7	6670							931		67			8.3	7.8										
SPP	V-07	12/14/1994				8.2	2130							592		46			25.1	9.3										
SPP	V-07	3/16/1995				8.1	1280							297		35			21.2	12.3										
SPP	V-07	6/15/1995				8.5	3070							724		51			7	3.2										
SPP	V-07	9/27/1995				8.8	4040		25					894		95			54.8	1										
SPP	V-07	12/14/1995				8	2940		14.5					689		77			3.9	0.2										
SPP	V-07	3/14/1996				7.2	1820		9					322		222														
SPP	V-07	6/27/1996				8.1	3590							1218		107														
SPP	V-07	9/30/1996				8.9	611		24.6					184		37			175	134										
SPP	V-07	12/9/1996				8	1240		10.6					274		49			26.2	20.7										
SPP	V-07	3/31/1997				7.2	1480		14.8					396.8		60.5			45.3	11.5										
SPP	V-07	7/7/1997				8.1	3820		24.2					1327		119.7			18.8	1.1										
SPP	V-07	10/8/1997				7.9	3900							1075		48.5			14.1	0.295										
SPP	V-07	12/16/1997				8.8	700							151		25			147	123										
SPP	V-07	4/14/1999	0.74	955.5	165	7.75	880	10.9						180					2											
SPP	V-07	6/10/1999	0.38	955.9	85	7.59	1840	17.6											0.18											
SPP	V-07	9/15/1999	0.35	956	-30	7.46	1970	24.8											0.22											
SPP	V-07	12/8/1999	0.37	954.7	-15	8.7	1410	15.8											110											
SPP	V-07	9/27/2000	0.81	953.97	-100	8.72	5760	23.1	8.9					1700					0.056											
SPP	V-07	3/27/2001	0.56	953.36	-40	7.24	3220	11.7	0																					

TABLE I-1
ERCO Historical Data Master Table

		Field Tests				Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L
SPP	V-09	6/11/1985				7.5	2500							553		615		7.5		0.2 U									
SPP	V-09	8/27/1985				7.2	1400							197		202		6		0.8									
SPP	V-09	10/31/1985				6.9	2000							246		592		7.2		0.4									
SPP	V-09	3/24/1986				6.7	2200							486		278		4		0.2									
SPP	V-09	6/11/1986				6.6	3800							971		684		3.2		0.2									
SPP	V-09	9/23/1986				6.5	5600							1354		542		5.6		1									
SPP	V-09	10/20/1986				6.7	9500							226		191		11.6		1.1									
SPP	V-09	3/16/1987				6.3	150							259		167		2.5		1									
SPP	V-09	6/4/1987				6.9	2600							642		307		2.8		0.4									
SPP	V-09	9/15/1987				6.8	5600							1670		402		1.8		0.1									
SPP	V-09	11/3/1987				6.9	7300							2063		412		1.9		0.1									
SPP	V-09	3/22/1988				6.9	4200							1148		248		1.6		0.3									
SPP	V-09	6/30/1988				7	4000							1044		211		2		0.4									
SPP	V-09	9/28/1988				7.2	7010							1693		248		1.8		0.1									
SPP	V-09	11/1/1988				7.3	5680							1268		259		2.1		0.1									
SPP	V-09	5/10/1989				6.6	5380							1117		190		2.2		0.4									
SPP	V-09	6/21/1989				7.3	3260							711		230		2.3		0.4									
SPP	V-09	9/28/1989				7	3650							905		161		3		0.2									
SPP	V-09	12/18/1989				7	5110							1123		247		3.6		0.2									
SPP	V-09	4/27/1990				6.7	3350							609		128		1		0.1									
SPP	V-09	6/21/1990				6.9	4030							862		400		1		0.2									
SPP	V-09	9/25/1990				6.7	1790							285		262		0.7		0.1									
SPP	V-09	10/30/1990				6.8	2340							433		238		0.6		0.1									
SPP	V-09	4/2/1991				6.9	2480							360		84		1.4		0.5									
SPP	V-09	6/25/1991				7.1	3170							415		547		0.3		0.2									
SPP	V-09	9/20/1991				6.6	2030							268		335		0.7		0.1									
SPP	V-09	10/23/1991				7	2510							455		216		1.4		0.2									
SPP	V-09	3/27/1992				6.5	2360							404		149		1.1		0.1									
SPP	V-09	6/29/1992				6.7	2950							578		281		1.3		0.1 U									
SPP	V-09	9/23/1992				6.9	3240							564		148		1.3		0.2									
SPP	V-09	11/11/1992				6.7	3060							353		244		2.2		0.2									
SPP	V-09	3/30/1993				6.5	2160							321		107		2		0.3									
SPP	V-09	6/22/1993				6.7	2830							462		470		0.9		0.1 U									
SPP	V-09	9/29/1993				6.8	2970							687		193		1.8		0.1									
SPP	V-09	12/3/1993				7.1	2600							652		191		2.2		0.5									
SPP	V-09	3/23/1994				6.9	2110							403		99		5.4		1.4									
SPP	V-09	7/1/1994				6.7	2110							241		351		3.4		0.3									
SPP	V-09	9/29/1994				6.8	2370							394		262		4		0.3									
SPP	V-09	12/14/1994				6.2	1820							346		146		4.2		0.3									
SPP	V-09	3/16/1995				6.3	1970							392		33		6.7		1.8									
SPP	V-09	6/15/1995				7.4	2050							242		336		5.5		1									
SPP	V-09	9/27/1995				7.2	1720	18.8						243		225		1.4		0.1									
SPP	V-09	12/14/1995				6.3	2201	9.9						327		207		1.2		0.1									
SPP	V-09	3/14/1996				7.1	1890	6.4						357		103													
SPP	V-09	9/30/1996				7.2	2490	17.1						607		110		0.5		0.1									
SPP	V-09	3/31/1997				5.8	946	8.2						183.8		67.2		3.55		1.21									
SPP	V-09	10/8/1997				7	1700							273				0.693		0.1 U									

TABLE I-1
ERCO Historical Data Master Table

		Field Tests				Gases				Gen Chem				Metals				VOA											
			Dissolved	Elevation	Oxidation-Reduction	pH	Specific	Temperature	Turbidity	Ethane	Ethene	Methane	Alkalinity	Chloride	Nitrogen	Sulfate	Total	Dissolved		Dissolved	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	
Area	StationId	CollectDate	Oxygen mg/L	ft	Potential millivolts	units	Conductance us/cm	deg c	ntu	µg/L	µg/L	µg/L	Total mg/L	mg/L	Nitrate mg/L	mg/L	mg/L	µg/L	µg/L	Iron µg/L	Iron µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	V-13	11/7/1984				6.9	800							154		9		2.8	0.4										
	V-13	3/19/1985				6.5	1200							290		23		1.1	1.5										
	V-13	6/11/1985				7.7	1000							234		7		0.8	0.2 U										
	V-13	8/27/1985				7	680							101		11		3.9	1.6										
	V-13	10/31/1985				7	900							180		7		0.4	0.4										
	V-13	3/24/1986				7	510							91		4		1.4	0.2 U										
	V-13	6/11/1986				6.9	1400							369		51		3.6	0.2										
	V-13	9/23/1986				6.6	700							128		17		2.7	1										
	V-13	10/20/1986				6.7	480							84		11		0.2	1										
	V-13	3/16/1987				6.3	660							154		8		1	0.8										
	V-13	6/4/1987				7	150							508		9		1.6	0.3										
	V-13	9/15/1987				6.3	140							381		83		0.5	0.1										
	V-13	11/3/1987				6.8	980							222		2		0.2	0.1										
	V-13	3/22/1988				6.7	690							167		35		0.4	0.7										
	V-13	6/30/1988				6.9	1800							417		82		0.2	0.4										
	V-13	9/28/1988				6.8	2780							571		127		0.3	0.1										
	V-13	11/1/1988				7	2320							491		93		0.6	0.1 U										
	V-13	5/10/1989				6.4	1720							392		13		0.8	0.1										
	V-13	6/21/1989				6.8	2830							835		22		0.9	0.2										
	V-13	9/28/1989				6.9	1680							418		22		1.1	0.3										
	V-13	12/18/1989				7.2	614							51		9		1.3	0.3										
	V-13	4/27/1990				6.6	2160							520		1		0.2	0.1 U										
	V-13	6/21/1990				6.4	5400							1769		28		0.1	0.2										
	V-13	9/25/1990				7	2850							716		19		0.1	0.1										
	V-13	10/30/1990				7.5	849							148		13		2.6	1.1										
	V-13	4/2/1991				7.4	312							37		2		1	0.6										
	V-13	6/25/1991				7.5	718							142		12		0.4	0.2										
	V-13	9/20/1991				7.3	338							24		16		0.6	0.3										
	V-13	10/23/1991				7.6	295							22		16		0.5	0.2										
	V-13	3/27/1992				7	1290							270		14		0.2	0.1										
	V-13	6/29/1992				6.8	1420							268		4		1.1	0.1 U										
	V-13	9/23/1992				8	257							30		1		1.4	0.2										
	V-13	11/11/1992				6.8	736							124		1		1	0.1 U										
	V-13	3/30/1993				6.6	2540							647		2		0.8	0.1										
	V-13	6/22/1993				6.8	2780							981		28		0.9	0.1										
	V-13	9/29/1993				7.5	634							106		15		8	0.6										
	V-13	12/3/1993				7.5	900							228		12		5.1	1										
	V-13	3/23/1994				6.6	2200							602		40		1.4	0.1										
	V-13	7/1/1994				6.7	3300							920		40		0.4	0.3										
	V-13	9/29/1994				7.6	930							199		16		2.5	0.5										
	V-13	12/14/1994				6.4	898							165		12		1.4	0.1										
	V-13	3/16/1995				6.7	1490							400		16		0.7	0.1										
	V-13	6/15/1995				7.1	2780							816		32		0.1	0.1 U										
	V-13	9/27/1995				7.4	655	18.8						149		9		0.4	0.1										
	V-13	12/14/1995				8.2	482	14.9						92		7		0.6	0.1										
	V-13	3/14/1996				8.6	378	7.5						70		8													
	V-13	6/27/1996				7.1	1580							507		24													
	V-13	9/30/1996				7.9	610	19.5						142		9		0.3	0.05 U										
	V-13	12/9/1996				6.3	1900	11.9						584		15		0.2	0.05 U										
	V-13	3/31/1997				6.6	1230	9.3						285.2		22.4		0.389	0.039										
	V-13	7/7/1997				7.1	950	17.1						293		14.6		0.981	0.229										
	V-13	10/8/1997				7.7	440																						

TABLE I-1
ERCO Historical Data Master Table

		Field Tests				Gases				Gen Chem				Metals				VOA												
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-16	12/18/1989				6.8	1000							149		80			1.3	0.2										
SPP	V-16	4/27/1990				6.1	1100							164		83			0.1	0.1 U										
SPP	V-16	6/21/1990				6.3	1000							125		164			0.2	0.3										
SPP	V-16	9/25/1990				6.5	929							162		84			0.1	0.1										
SPP	V-16	10/30/1990				6.4	881							125		72			0.2	0.2										
SPP	V-16	4/2/1991				6.5	124							135		124			0.2	0.2										
SPP	V-16	6/25/1991				6.5	855							109		84			0.3	0.1										
SPP	V-16	9/20/1991				6.6	75							75		54			0.9	0.1 U										
SPP	V-16	10/23/1991				6.5	739							113		64			0.9	0.1 U										
SPP	V-16	3/27/1992				6.2	1440							118		57			0.6	0.1										
SPP	V-16	6/29/1992				6.7	686							83		41			0.5	0.1 U										
SPP	V-16	9/23/1992				6.8	768							134		66		0.1 U	0.1 U											
SPP	V-16	11/11/1992				6.7	747							104		21			0.3	0.2										
SPP	V-16	3/30/1993				6.3	843							116		59			0.2	0.1 U										
SPP	V-16	6/22/1993				6.9	573							119		82			0.1	0.1										
SPP	V-16	9/29/1993				6.4	876							99		124			0.2	0.1 U										
SPP	V-16	12/3/1993				6.9	1000							103		221			0.1	1										
SPP	V-16	3/23/1994				6.6	874							96		87			0.2	0.2										
SPP	V-16	7/1/1994				6.6	707							91		69			0.3	0.2										
SPP	V-16	9/29/1994				6.8	862							64		54			0.4	0.3										
SPP	V-16	12/14/1994				6.2	913							66		95			0.3	0.1 U										
SPP	V-16	3/16/1995				6.2	747							95		108			0.5	0.2										
SPP	V-16	6/15/1995				6.7	604							80		103			0.4	0.1 U										
SPP	V-16	9/27/1995				6.8	1279	19.1						98		71			0.2	0.1										
SPP	V-16	12/14/1995				7	1499	15.5						84		61			0.1	0.1										
SPP	V-16	3/14/1996				5.8	2000	8.7						281		98														
SPP	V-16	4/22/1996				7	1530	18.4															3.8 U	5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
SPP	V-16	4/23/1996				6.5	130	12.2															3.8 U	5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
SPP	V-16	6/25/1996				8.1	2000																3 U	3 U	4 U	2 U	0 J	10 U		2 U
SPP	V-16	9/19/1996				9.2	1650																3 U	3 U	4 U	2 U	10 U	10 U		2 U
SPP	V-16	9/30/1996												251		66		0.2	0.05 U											
SPP	V-16	12/5/1996																					4 U	5 U	5 U	3 U	10 U	20 U		3 U
SPP	V-16	3/27/1997																					3.8 U	5 U	4.7 U	2.8 U	10 U	20 U		2.8 U
SPP	V-16	3/31/1997												131.9		138.2		0.191	0.001											
SPP	V-16	7/2/1997																												
SPP	V-16	10/8/1997												346		21.1		0.341	0.1 U											
SPP	V-16	12/16/1997																												
SPP	V-16	4/14/1999	0.33	954.2	165	9.3	1530	10		2 U	1 U	4		88	0.017	83					0.44					0.61 U				
SPP	V-16	6/10/1999		954.5	35	8.89	1330			2.3 U	1.4 U	15		170		100					0.6					0.61 U				
SPP	V-16	9/15/1999	0.33	954.6	-15	8.64		16.2		10 U	10 U	10 U		250	0.35	200 U					0.17				1 U					
SPP	V-16	12/8/1999	0.33	953.5	-60	8.45	3070	12.6		2.3 U	1.4 U	7.4		123	0.41	110					0.26				0.53 U					
SPP	V-16	9/28/2000	0.74	953	70	8.89	2500	14.9	0.8	10 U	10 U		490	190	0.12 J	120	10			0.011					0.53 U					
SPP	V-16	3/28/2001	0.72	952.39	70		1550	7.3	1			12		130		86				0.01 U										
SPP	V-16	6/21/2001	0.63	954.01	30	8.93	1370	11.4	0	10 U	10 U	10 U	730	210	0.28 Q	74	2.1		0.01 U	0.094			0.53 U		0.61 U					
SPP	V-16	9/26/2001	0.88	953.66	95	7.35	2440	15.6	0					510		77				0.015 U										

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases				Gen Chem				Metals				VOA									
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-16R	3/28/2018	3.93	953.96	225.3	6.96	483	5.25	5.6																					
SPP	V-16R	6/4/2018	5.65	955.63	208.1	7.06	1253	10.22	0.0																					
SPP	V-16R	9/5/2018	2.84	955.82	99.2	8.21	1181	17.12	4.8																					
SPP	V-16R	12/14/2018	3.51	955.1	220.4	7.03	618		17.9																					
SPP	V-16R	3/27/2019	3.84	955.32	137	6.82	290		4																					
SPP	V-16R	6/19/2019	4.78	956.53	197.2	6.63	978		0	0.987 U	1.41 U	0.957 U		166	277	3.54	20.5	1.24		0.00063	15.2 J		0.313 UJ	0.620 UJ	0.380 UJ	0.627 UJ	1.08 UJ	0.643 UJ	0.337 UJ	0.360 UJ
SPP	V-16R	9/18/2019	4.35	955.97	296.2	6.89	940	15.9	2																					
SPP	V-16R	12/19/2019	3.40	955.14	135.5	7.27	339.8	8.2	14																					
SPP	V-16R	3/17/2020	5.10	955.39	202.8	6.58	310.6	4.4	4																					
SPP	V-16R	6/1/2020	4.89	956.13	189.7	6.98	1065	10.70	4.0	0.987 U	1.41 U	0.957 U		173	319	2.24	15.2	1.06	0.333 U / 0.000367 J	107 J		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-16R	9/10/2020	2.16	955.64	73.8	6.92	1088	15.6	1																					
SPP	V-16R	12/16/2020	2.39	954.92	150.3	8.33	542.5	9.1	37																					
SPP	V-16R	3/17/2021	5.44	954.58	167.6	7.26	279.2	5.6	0																					
SPP	V-16R	6/28/2021	3.16	956.17	177.4	6.62	1325	15.40	3.0	0.987 U	1.41 U	0.957 U		163	196	1.09	11.7	0.887 U	0.333 U / 0.000246 J	39.4 J		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-16R	12/14/2021	2.08	954.47	217.1	7.37	585	10.2	6																					
SPP	V-16R	3/24/2022	5.17	954.62	205.5	7.33	306.4	5.9	3																					
SPP	V-16R	6/23/2022	3.15	955.60	166.9	6.55	610	12.5	U	0.987 U	1.41 U	0.957 U		166	126	1.37	8.84	1.2 U	0.0598 / 0.333 U	60.0 U		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 UJ	0.357 U	0.273 U	
SPP	V-16R	12/16/2022	2.53	954.96	-12.1	10.64	547	8.0																						
SPP	V-16R	6/20/2023	1.11	955.68	155	6.63	951	16.27	34.4	7.5 U	7.0 U	4.0 U		130	210	1.2	9.7	1.5	0.00044 J / 0.20 U	130 J		1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-16R	9/7/2023	3.34	954.45	67.4	6.77	1203	16.5	0.70																					
SPP	V-18R	6/17/2009	2.81	957.11	100	7	580	15.3	79					45			52.9			3.33										
SPP	V-18R	9/29/2009	0.53	956.1	35	7.4	1040	18.6	15					126			47.2			2.4										
SPP	V-18R	12/14/2009	1.13	956.08	50	7.9	570	9.2	9					57.6			23			1.64										
SPP	V-18R	3/15/2010	3.11	955.98	0	5.4	1122	7.34	10					3830			48.6		0.0221											
SPP	V-18R	6/16/2010	3.8	956.95	11.5	7.26	629	17.68	0					63.3			54.2		2.19											
SPP	V-18R	9/27/2010	1.05	958.5	-63.6	7.05	1033	19.52	64					110			86.3		2.48											
SPP	V-18R	12/15/2010	1.12	956.56	16.6	6.64	1552	8.68	10					242			38.8		0.222											
SPP	V-18R	3/29/2011	6.69	956.83	-48.6	7.58	1489	6.79	3.1					518			23.2		0.0108											
SPP	V-18R (dup)	3/29/2011	6.69	956.83	-48.6	7.58	1489	6.79	3.1					539			23.4		0.013											
SPP	V-18R	6/9/2011	2.31	957.27	60.9	6.89	1643	14.46	9.5					500			68		0.0044											
SPP	V-18R (dup)	6/9/2011	2.31	957.27	60.9	6.89	1643	14.46	9.5										0.0057											
SPP	V-18R	9/28/2011	1.38	956.68	-70.6	7.15	664	17.64	40					77			23		0.1											
SPP	V-18R	12/5/2011	4.83	956.23	126.8	7.20	317	10.19	45.1					23			10		0.26 J											
SPP	V-18R (dup)	12/5/2011	4.83	956.23	126.8	7.20	317	10.19	45.1					23			10		0.52 J											
SPP	V-18R	3/13/2012	0.77	955.77	-14.3	6.57	12113	7.37	8.2					5000 J			28		0.015											
SPP	V-18R (dup)	3/13/2012	0.77	955.77	-14.3	6.57	12113	7.37	8.2					5200 J			30		0.02											
SPP	V-18R	6/20/2012	0.02	956.74	7	6.66	5980	19.47	6.8					1700					0.1											
SPP	V-18R	9/25/2012	0.67	955.95	-8.2	6.74	2352	19.61	74.2					460			33		2.7 J											
SPP	V-18R (dup)	9/25/2012	0.67	955.95	-8.2	6.74	2352	19.61	74.2					450			31		1.5 J											
SPP	V-18R	12/4/2012	2.87	956.67	68	7.18	816	12	191					220			14		2.2											
SPP	V-18R	3/20/2013	1.29	955.84	100.6	6.70	6538																							

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases				Gen Chem				Metals				VOA														
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L						
SPP	V-19	6/20/2012	1.69	955.57	133	6.46	1970	18.39	17.2	5.6 U	5.0 U	18.3	440	430	5.2	38	5.3		0.0023		100 U			1.0 U											
SPP	V-19	6/19/2013	1.85	956.76	116.1	6.90	1106	11.72	25.3	5.6 U	5.0 U	27.2	470	63	13 J	28	7.2		0.0029		100 U			1.0 U											
SPP	V-19	6/3/2014	4.90	956.72	112.1	6.70	1515	12.29	0.0	5.6 U	5.0 U	2.8 U	400	250	3.3	31	4.5		0.0025			100 U		1.0 U		1.0 U		1.0 U		1.0 U	1.0 U				
SPP	V-19	6/15/2015	5.44	956.47	151	6.90	1098	13.37	0.0	5.6 U	5.0 U	2.8 U	400	14	32	33	5.2		0.0029		100 U			1.0 U		1.0 U		1.0 U		1.0 U	1.0 U				
SPP	V-19	6/6/2016	1.03	956.23	57.4	6.78	1929	12.55	0.0	13.6 U	14.2 U	21.3	423	290	0.375	12.5	4.48		0.0005 U		33.6 J		0.313 U		0.620 U		0.380 U		0.627 U		1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-19	6/13/2017	3.20	956.46	85.1	6.12	1480	13.53	0.0					257					0.00088 U																
SPP	V-19	6/4/2018	4.03	955.84	37.7	6.76	1573	12.60	0.0					321					0.0013																
SPP	V-19	6/20/2019	1.27	956.69	200	6.7	1375			0				374					0.0018																
SPP	V-19	6/2/2020	1.61	956.39	135	6.68	2427	12.60	3.0					823					0.333 U / 0.0031																
SPP	V-19	6/29/2021	4.19	956.86	153.3	6.93	1670	17.60	3.0					82.6					0.333 U / 0.00229																
SPP	V-19	6/28/2022	5.46	955.93	136.1	6.67	880	16.4	4					27.3					0.333 U / 0.00194																
SPP	V-19	6/20/2023	3.80	955.94	140	6.60	1790	15.81	1.0					300					0.003 / 0.20 U																
SPP	V-19	6/12/2024	0.80	956.63	584.6	6.58	1390	16.00	1.8					300					0.12 J																
SPP	V-19A	6/17/2009	0.78	953.07	-45	6.3	2130	10.2	211	0.32 U	0.47 U	359	412	927	0.25 U	36.3	4.5		0.0018	11900			0.9 U		0.42 U		0.75 U		0.57 U		1.7 U	0.56 U	0.83 U	0.36 U	
SPP	V-19A	6/17/2010	1.03	953.18	13.1	6.58	2420	11.57	48	0.32 U	0.47 U	241	611	424	0.2 U	26.1	9		0.012	360			0.9 U		0.42 U		0.75 U		0.57 U		1.7 U	0.56 U	0.83 U	0.36 U	
SPP	V-19A	6/8/2011	0.21	953.58	5.6	5.99	1286	10.87	5.2	5.6 U	5.0 U	227	240	390 J	0.40 U	16	4.4		0.0042				1.0 U		1.4 U		1.0 U		1.0 U		2.9 U	1.9 U	1.0 U	1.0 U	
SPP	V-19A	6/20/2012	0.07	953.47	38	6.4	2170	15.41	5.9	0.46 J	5.0 U	146	450	450	0.10 U	25	6.3		0.0047	100 U			1.0 U		1.0 U		1.0 U		1.0 U		2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-19A	6/19/2013	0.17	955.12	121.1	6.80	1339	10.91	4.2	5.6 U	5.0 U	2.8 U	370	200	2.3	41	5.4		0.0042	100 U			1.0 U		1.0 U		1.0 U		1.0 U		2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-19A	6/3/2014	0.49	954.35	124.2	6.39	1142	12.18	0.0	5.6 U	5.0 U	26.9	320	170	0.57	36	6.9		0.0035		100 U		1.0 U		1.0 U		1.0 U		1.0 U		2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-19A	6/15/2015	0.39	953.95	177.3	6.71	1850	12.26	0.0	5.6 U	5.0 U	2.8 U	410	320	3.2	20	4.0		0.0027		100 U		1.0 U		1.0 U		1.0 U		1.0 U		2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-19A	6/6/2016	0.43	953.96	68.9	6.92	1351	11.52	0.0	13.6 U	14.2 U	55.1	376	190	0.0757 U	8.55	4		0.00439		47.0 U		0.313 U		0.620 U		0.380 U		0.627 U		1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-19A	6/13/2017	0.41	954.31	30.2	6.40	1215	12.51	0.0	13.6 U	14.2 U	156	322	175	0.0757 U	6.42	3.18		0.0014		47.0 U		0.313 U		0.620 U		0.380 U		0.627 U		1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-19A	6/4/2018	0.40	953.64	60.7	6.72	1278	12.32	0.0	0.987 UJ	1.41 U	110	357	196	1.38	22.8	3.48		0.0022		17.1 J		0.313 U		0.620 U		0.380 U		0.627 U		1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-19A	6/20/2019	0.39	954.25	201.5	6.71	953			0	0.987 U	1.41 U	49.0 J	279	220	0.994	22.3	4.19		0.003		51.1		0.313 U		0.620 U		0.380 U		0.627 U		1.08 U	0.643 U	0.337 U	0.360 U
SPP	V-19A	6/2/2020	0.24	953.94	132.1	6.72	1420	12.50	3.0	0.987 U	1.41 U	24.3	338	409	0.063 J	9.25	2.89		0.00252 / 0.333 U	153 U			0.497 U		0.527 U		0.333 U		0.627 U		0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-19A (dup)	6/2/2020	0.24	953.94	132.1	6.72	1420	12.50	3.0	0.987 U	1.41 U	36.7	340	411	0.16 U	9.19	2.81		0.333 U / 0.0026	153 U			0.497 U		0.527 U		0.333 U		0.627 U		0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-19A	6/29/2021	0.28	954.14	166.1	7.03	2194	14.40	7.0	0.987 U	1.41 U	227	482	251	0.16 U	9.21	5.2		0.333 U / 0.00426	377			0.497 U		0.527 U		0.333 U		0.627 U		0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-19A	6/28/2022	0.22	953.38	140.1	6.58	1321	13.5	5	0.987 U	1.41 U	177	428	1480	0.8 U	47.7	3.5		0.333 U / 0.00224	178			0.497 U		0.527 U		0.333 U		0.627 U		0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-19A	6/20/2023	0.00	953.89	0	6.44	1060	13.72	0.0	7.5 U	7.0 U	210	350	190	1.0 U	13	3.7		0.20 U / 0.0023	200 U			1.0 U		1.0 U		1.0 U		1.0 U		5.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-20	6/27/1992				8.6	5910							1432		253				156</															

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem			Metals				VOA																		
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury		Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L						
																			µg/L	µg/L																
SPP	V-20A	9/30/1996				7	5070	16.7						1757		360			0.2	0.1																
SPP	V-20A	12/9/1996				6.2	4850	10.9						1460		317			0.4	0.1																
SPP	V-20A	3/27/1997																					3.8 U		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U					
SPP	V-20A	3/31/1997				6.6	4380	13						1510.6		348.8		0.212	0.001																	
SPP	V-20A	7/2/1997																					1.95 J		5 U	4.7 U	2.8 U	10 U	20 U		2.8 U					
SPP	V-20A	7/7/1997				6.6	5040	14.4						1984		420.9		0.099	0.078																	
SPP	V-20A	10/8/1997				6.8	5000 J							2097		145		0.229	0.1 U																	
SPP	V-20A	12/16/1997				6.6	5000 J							2216		474		0.1 U	0.1 U																	
SPP	V-20A	4/13/1999	0.41	952.2	85	6.6	7720		13		37	1 U	68	3100	0.017 U	830					77						1 J		3 J							
SPP	V-20A	6/9/1999	0.48	952.2		6.5	7830		15.1		38	1.4 U	110	3600		710					85						2.8 J		5							
SPP	V-20A	9/15/1999	0.43	952.3		6.75	7890		14.5		36	10 U	110	4000	0.09 U	790					99						2 U		5							
SPP	V-20A	12/7/1999	0.42	951.8	-75	7.51	11900		13.1		40	1.4 U	92	3600		670					83						3.1		5.7							
SPP	V-20A	7/18/2000	0.54	949.97	-60	9.4	6320		13.6	73				4000				0.01 U																		
SPP	V-20A	9/28/2000	0.87	950.32	-50	8.77	12510		14.8	20.2	50	10 U	180	140	7300	0.12 J	1400	15	0.014				0.53 U						8.2							
SPP	V-20A	12/6/2000		949.86	-60	6.25	10640			1.8	24	10 U	96	150	3600	0.15 U	660	3.2	0.01 U										3.5	9.1						
SPP	V-20A	3/28/2001	1.16	950	-50	9.23	11910		11.8	83	25	10 U	87	70 B	3900	0.15 Q	740	2.8	0.06		31 K							4.9	9							
SPP	V-20A	6/18/2001	0.57	951.12	-60	6.96	6130		14.3	40	16	10 U	62	110	3900	0.13 U	710	2.1	0.016		42							6.3	11							
SPP	V-20A	9/24/2001	0.67	950.97	-45	7.07	5940		15.1	17					3800				0.015 U																	
SPP	V-20A	3/27/2002	1.9	956.755	-10	9.18	11580		12.3	63	11	10 U	60	91	3700	0.46	710	3.7	0.024		24							4.7	9.7							
SPP	V-20A	7/31/2002	0.5	953.335	-60	6.19	6020		16.5	58	24	10 U	97	270	3700	0.24	5.5	9.7	0.015 U		54							6.4	0.72 U	11	7.1	1 U	0.91 U	0.67 U	0.47 U	
SPP	V-20A	10/16/2002	0.35	953.075	5	7.19	10100		15	8					3400 H				0.015 U																	
SPP	V-20A	3/26/2003	1.26	951.975	-70	6.89	8870		11.7	85					3400				0.027																	
SPP	V-20A	6/26/2003	0.28	952.495	-70	7.04	7890		12.3	50	20	10 U	88	110	3500	0.05 U	680	2.8 J			59							3.8	0.42 U	12	5.3	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-20A	9/24/2003	0.62	952.01	-100 <	6.72	7790		15.4	17					3600				0.015 U																	
SPP	V-20A	6/17/2004	0.77	954.39	-60	6.72	10920		13	77	19	10 U	89	130 J	3200	0.05 U	600	5.8			28 J							2.3	0.39 U	8.9	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U	
SPP	V-20A	8/18/2004	0.4	952.955	-60	5.91	10490		14.8	25					3000				0.0191																	
SPP	V-20A	6/23/2005	0.49	952.775	25	6.2	3560		15.6	74	13	10 U	79	110 J	3000	0.07 U	640	3.9			24000							2.4 J	0.42 U	12		5	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-20A	9/28/2005	0.33	952.655	10	6.2	9140		13.8	18					2900				0.02																	
SPP	V-20A	6/22/2006	0.72	952.09	75	10.9	9310		13.1	32	14	10 U	130	150	3000	0.08 U	610	2.9			41000							1.7 J	0.42 U	11	5.3	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-20A	9/27/2006	0.36	952.16	30	6.5	1161		13.9	31					2800				0.02																	
SPP	V-20A	6/28/2007	1.21	952.81	0	6.4	8780		12.9	72	10	10 U	49	140	3000	0.08 U	640	2.2 J			26000							0.9 U	0.42 U	11	5.7	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-20A	9/12/2007	0.45	952.78	-100	5.5	8130		13.2	55					2800					0.01																
SPP	V-20A	6/25/2008	1.37	953.44	-30	6.7	6420		11.1	67	4.9 J	1.4 U	112	98.6	2580	0.16 J	542	3.4			26900							0.9 U	0.42 U	10.9	4.1	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-20A	9/17/2008	0.85	952.76	-35	6.8	5470		12.2	68					2610					0.011																
SPP	V-21	6/27/1992				9.1	9050							2943		195		19.2	0.7																	
SPP	V-21	9/23/1992				9.3	6080							1589		247		15.2	4.3																	
SPP	V-21	12/14/1992				10.5	6320							935		40		32	32.7																	
SPP																																				

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases				Gen Chem			Metals				VOA										
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction	pH	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
					Potential millivolts												mg/L													
SPP	V-23	9/27/2010	0.65	958.66	-75.2	9.35	13445	24.21	3					2980		152			3.5											
SPP	V-23	12/15/2010	0.86	952.83	8.8	9.73	10045	18.66	0					2000		127			26.1											
SPP	V-23	3/29/2011	5.19	957.02	-127.6	9.45		5371	17.3	1.6				1670		5371			5.86											
SPP	V-23	6/9/2011	0.50	957.52	43.2	9.80	8821	22.56	18.5					2700		170			8.6											
SPP	V-23	9/28/2011	0.29	956.91	50.8	9.52	3476	23.95	0.3					790		50			25											
SPP	V-23	12/5/2011	0.22	956.38	0.22	9.78	2384	19.72	182.5					440		32			22											
SPP	V-23 (dup)	12/5/2011	0.22	956.38	0.22	9.78	2384	19.72	182.5					440		31			21											
SPP	V-23	3/13/2012	0.33	956.03	-18.9	9.86	1669	18.88	27.2					260		23			27											
SPP	V-23	6/21/2012	0.08	957.09	-90	9.97	3060	23.91	0					640				6.6												
SPP	V-23	9/25/2012	0.36	956.11	-4.4	9.9	1960	24.52	48.1					300		42		8.3												
SPP	V-23	12/4/2012	0.98	955.97	-18.9	9.53	1648	20.21	36.5					300		41		5.7												
SPP	V-23 (dup)	12/4/2012	0.98	955.97	-18.9	9.53	1648	20.21	36.5									6												
SPP	V-23	3/20/2013	1.31	956.04	9.5	9.26	1377	16.63	0					210		21		5.1												
SPP	V-23	6/19/2013	0.30	957.8	107.2	9.83	4177	23.85	42.1					1100		48 J		6.7												
SPP	V-23	9/17/2013	0.62	956.54	111.1	9.22	3786	24.65	5.8					970		60		0.023												
SPP	V-23 (dup)	9/17/2013		956.54														0.022												
SPP	V-23	12/4/2013	0.4	956.13	25.5	8.89	3800	18.3	0					990		69		1.9												
SPP	V-23	3/26/2014	0.28	955.86	97.2	7.86	10110	13.90	0					1400		87		1.6												
SPP	V-23	6/6/2014	0.37	958.03	18.7	8.09	8243	22.78	1.8					2600		90		3.3												
SPP	V-23	9/12/2014	0.7	958.38	198.7	7.98	4580	22.91	0.7					1100		84 J		9.8												
SPP	V-23	12/5/2014	0.01	956.94	31	9.07	3030	16.3	0					610		63		10 J												
SPP	V-23	3/17/2015	0.48	956.10	17.9	10.89	2589	15.50	0					600		38		7.20 J												
SPP	V-23	6/17/2015	0.22	957.63	12.2	10.57	9976	23.07	0.0					3000		120		4.7												
SPP	V-23	9/10/2015	0.32	958.46	151.1	9.94	10989	23.66	1.5					3500		150		3.4												
SPP	V-23 (Dup)	9/10/2015	0.32	958.46	151.1	9.94	10989	23.66	1.5					3500		150		3.6												
SPP	V-23	12/9/2015	0.35	956.80	20.3	10.29	2062	18.2	3.2					530		29		77												
SPP	V-23	3/14/2016	0.00	956.79	-26.6	9.92	3462	17.25	0					981		23.1		5.12												
SPP	V-23	6/9/2016	0.39	957.58	33.2	9.07	5434	22.99	0.0					1580		96.5		6.79												
SPP	V-23	9/21/2016	0.2	957.65	-32.2	10.30	2019	24.24	0.4					323		33.6		13												
SPP	V-23	12/1/2016	0.3	957.40	-11.8	10.46	2854	19.4	1					710		50.7		14.2												
SPP	V-23 (dup)	12/1/2016	0.3	957.40	-11.8	10.46	2854	19.4	1					702		50.6		13.8												
SPP	V-23	3/29/2017	0.34	957.49	46.4	9.90	8211	19.7	1.5					1980		271		6.4												
SPP	V-23 (dup)	3/29/2017	0.34	957.49	46.4	9.90	8211	19.7	1.5					2030		272		6.8												
SPP	V-23	6/16/2017		957.88	51.2	9.48	8080	23.73	0.0					2260		112		3.1												
SPP	V-23 (dup)	6/16/2017		957.88	51.2	9.48	8080	23.73	0.0					2220				3.6												
SPP	V-23	9/8/2017	0.38	956.63	106.3	8.93	2530	23.51	0					536		43.5		2.9												
SPP	V-23 (dup)	9/8/2017	0.38	956.63	106.3	8.93	2530	23.51	0					582		43.7		2.5												
SPP	V-23	12/5/2017	0.70	956.38	-326.8	9.39	1492	14.9	9.7					281		25.7		4.3												
SPP	V-23 (dup)	12/5/2017	0.70	956.38	-326.8	9.39	1492	14.9	9.7					274		25.3		4.5												
SPP	V-23	3/28/2018	0.62	955.97	145.7	9.07	1960	19.91	0.8					462 J		22.9 J		3.6												
SPP	V-23 (dup)	3/28/2018	0.62	955.97	145.7	9.07	1960	19.91	0.8																					

TABLE I-1
ERCO Historical Data Master Table

		Field Tests						Gases				Gen Chem			Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-24	6/4/2020	4.65	958.43	-84.2	12.19	35777	24.20	6.0					10200		1740				140										
SPP	V-24	9/11/2020	2.47	958.32	-108.3	12.81	29556	21.70	3.0					9200		1140				150										
SPP	V-24	12/17/2020	7.35	957.34	-97.4	14.10	21325	12.10	7.0					18300		1650				261										
SPP	V-24	3/17/2021	3.05	957.07	-50.8	12.48	96111	15.10	0.0					11900		3420				354										
SPP	V-24	7/6/2021	0.33	958.34	-32.6	10.79	61156	28.40	2.0					9850		2450				165 J										
SPP	V-24	9/21/2021	0.03	958.42	-43.7	11.17	28626	22.90	3.0					8000		2770			147		198									
SPP	V-24	12/15/2021	5.92	957.07	7.1	10.28	12471	17.00	4.0					5300		763		178		190 J										
SPP	V-24	3/28/2022	6.26	957.13	-5.6	11.23	10157	14.00	2.0					3500		490				253										
SPP	V-24	6/29/2022	3.39	957.85	-42.6	11.38	23126	25.8	4					15400		2800		733		326										
SPP	V-24	9/21/2022	1.22	958.07	-70.3	12.71	33115	21.50	4					9260		1060			281	223										
SPP	V-24	12/28/2022	7.49	957.76	4.9	13.11	18094	12.8						7090		944			243	38.2										
SPP	V-24	3/21/2023	6.46	957.87	-46.3	13.71	27076	13.3	0.02					14200		2150			335	511										
SPP	V-24	6/22/2023	7.26	957.99	-72	12.16	32077	27.78	16.4					14000		1600			270	160										
SPP	V-24	9/7/2023	1.5	956.93	-138	12.04	30703	24.00	2.31					23000		1400		1000		260										
SPP	V-24	12/20/2023	7.88	957.20	7.7	11.76	32077	16.3	2.4					7600		440			120	100										
SPP	V-24	3/18/2024	6.50	956.75	1.8		37680	11.9	3.18					4900					47	25		--	--	--	--	--	--	--	--	--
SPP	V-24	6/12/2024	0.81	958.70	494.7	10.14	19909	23.70	1.6					2600				31	12		--	--	--	--	--	--	--	--	--	--
SPP	V-24	9/3/2024	0.58	958.19	-101.6	10.42	21113	25.90	2.50					3400				--	--		--	--	--	--	--	--	--	--	--	--
SPP	V-24	10/2/2024	3.47	957.76	-105.8	12.11	39408	22.70	4.75					--				480	400		--	--	--	--	--	--	--	--	--	--
SPP	V-24	12/9/2024	7.01	957.32	42.4	12.68	33211	14.9	2.67					4000					490		--	--	--	--	--	--	--	--	--	--
SPP	V-25	9/29/1993				8	6410							1534		214		3400		67.9										
SPP	V-25	12/3/1993				8.5	2300							1310		141		6480		96.2										
SPP	V-25	3/23/1994				9.2	920							3931		101		3080		103.6										
SPP	V-25	7/1/1994				7.8	4960							1201		106		1120		59.4										
SPP	V-25	9/29/1994				8	6540							1000		105			836	67										
SPP	V-25	12/14/1994				7	2110							572		63		1470		65.9										
SPP	V-25	3/16/1995				8	1570							200		28		224		87.4										
SPP	V-25	6/15/1995				8	3790							906		70			137	60.3										
SPP	V-25	9/27/1995				7.5	1840							352		94			226	62.6										
SPP	V-25	12/14/1995				7.7	1280							188		70		259		39										
SPP	V-25	3/14/1996				7.9	1550							358		133														
SPP	V-25	6/27/1996				7.7	5390							1943		224														
SPP	V-25	9/30/1996				10.6	1840							433		59		1220		320										
SPP	V-25	12/9/1996				8.5	1960							456		55			334	42										
SPP	V-25	3/31/1997				7.5	9080							3810.3		392.4			338	77.4										
SPP	V-25	7/7/1997				8.3	5120							1534		336			276	17.3										
SPP	V-25	10/8/1997				8.5	5000							2257		91.6			921	75.8										
SPP	V-25	12/16/1997				8.8	3900							1008		99.9			947	30.7										
SPP	V-25	4/14/1999	1.1	956.6	165	9.23	680	20.6						190					400											
SPP	V-25	6/10/1999	0.33	956.8	150	8.3	1070	23.4											260											
SPP	V-25	9/16/1999	0.45	956.9	75	7.85		23.3											130											
SPP	V-25	12/9/1999	0.64	955.7	40	9.32	790	20.5											120											
SPP	V-25	9/27/2000	0.84	953.92	4																									

TABLE I-1
ERCO Historical Data Master Table

		Field Tests						Gases				Gen Chem			Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
					Potential millivolts												mg/L													
SPP	V-25	6/9/2014	0.30	958.45	-50.7	10.99	9666	18.50	2.0					3000		73				93 J										
SPP	V-25	9/12/2014	0.32	958.74	-60.7	12.91	26118	19.22	2.9					2400		160 J				430 J										
SPP	V-25 (dup)	9/12/2014	0.32	958.74	-60.7	12.91	26118	19.22	2.9					2500		170 J				73 J										
SPP	V-25	12/5/2014	0.44	957.34	-143	12.13	19200	14.68	0					3600		2300				68 J										
SPP	V-25 (dup)	12/5/2014	0.44	957.34	-143	12.13	19200	14.68	0					3600		2400				61 J										
SPP	V-25	3/17/2015	0.54	956.54	82.3	12.51	22661	12.15	0					6700		440				170 J										
SPP	V-25	6/17/2015	0.57	958.05	88.7	12.02	27861	20.61	0.0					7700		460				200										
SPP	V-25	9/10/2015	0.22	958.82	123.7	12.68	29304	20.11	2.1					8800		360				210										
SPP	V-25	12/9/2015	1.41	957.24	81.5	11.95	11335	14.66	0					3200		140				210										
SPP	V-25	3/15/2016	0.16	957.32	-82.5	11.92	11910	14.44	0					2900		238				341										
SPP	V-25	6/9/2016	0.46	958.04	-6.2	9.70	11084	17.06	0.0					3510		109				96.5										
SPP	V-25	9/21/2016	0.01	958.20	-12.8	9.78	13212	20.49	0.2					3330		294				180										
SPP	V-25	12/1/2016	1.00	957.87	-9.4	11.23	10520	15.21	1					2860		157				170										
SPP	V-25	3/29/2017	1.36	957.92	19.4	11.43	43200	11.8	1.3					23600		633				280										
SPP	V-25	6/16/2017	0.49	958.32	-99.7	10.96	15062	16.30	1.4					3890		173				130										
SPP	V-25	9/8/2017	0.70	957.11	-10.4	10.3	14453	21.12	0.5					3560		174				110										
SPP	V-25	12/5/2017	1.26	956.86	-307.4	10.06	12023	12.96	0.2					2960		148				58										
SPP	V-25	3/28/2018	0.82	956.37	-121.9	12.73	17121	12.06	1.8					2490		119				370										
SPP	V-25	6/7/2018	0.53	957.7	-87.3	11.82	15203	18.62	4.7					4560		477				200										
SPP	V-25 (dup)	6/7/2018	0.53	957.7	-87.3	11.82	15203	18.62	4.7					4430		399				200										
SPP	V-25	9/6/2018	0.75	957.92	-63.4	11.09	10524	22.75	0.0					2600		184 J				190										
SPP	V-25	12/14/2018	1.75	957.24	-59	11.27	21838		0					6840		552				70										
SPP	V-25	3/27/2019	2.23	957.56	-27.1	11.14	27747		0					8890		362				250										
SPP	V-25	6/21/2019	0.37	958.34	14.4	11.34	17536		0					5370		786				210										
SPP	V-25	9/18/2019	0.36	958.05	-63.8	12.1	22273	21.1	4.0					5650		445				340										
SPP	V-25	12/19/2019	1.80	957.35	-65.9	12.21	16336	14.2	5.0					5250		381				193 J										
SPP	V-25	3/17/2020	1.71	957.61	-49.1	11.23	26480	12.1	1.0					9520		582				271										
SPP	V-25	6/4/2020	0.19	958.23	-220.4	13.74	97514	17.40	3.0					6260		1070				2370										
SPP	V-25	9/11/2020	0.29	957.92	-124.6	12.35	22479	22	2.0					7830		541				261										
SPP	V-25	12/17/2020	0.99	957.13	-142.5	14.39	29519	14.3	5.0					5770		1360				529										
SPP	V-25	3/17/2021	2.39	956.90	-33.6	12.18	59782	12.3	0.0					27500		6640				1210										
SPP	V-25	7/6/2021	0.31	958.08	-32.7	10.81	11416	23.90	5.0					1890		631				697 J										
SPP	V-25	9/21/2021	0.03	958.21	18	8.24		21.6	3.0					1590		776		954		559										
SPP	V-25	12/15/2021	0.20	956.83	-61.6	11.67	5203	15.1	7.0					1560		126 J		191		71.2 J										
SPP	V-25	3/28/2022	0.77	956.89	-20.3	11.63	13255	10.5	4.0					5100		742				61.5										
SPP	V-25	6/29/2022	0.28	957.64	-113	12.72	38494	20.3	5					9870		3310				655										
SPP	V-25	9/21/2022	0.59	957.87	-69.8	12.86	39926	20.3	3					10900		1080		339		263										
SPP	V-25	12/28/2022	2.00	956.81	58.6	12.79	15317	12.3						6240		522		51.7		32.4										
SPP	V-25	3/21/2023	0.18	957.11	-75.5	13.37	23459	11.7	0.02					8390		778				30.0										
SPP	V-25	6/22/2023	2.01	957.21	-157	12.58	2140	23.44	0.0					5600		970		610		100										
SPP	V-25 (dup)	6/22/2023	2.01	957.21	-157	12.5																								

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
					Potential millivolts																									
Cell Room	V-26 (dup)	6/4/2020	3.02	956.89	118.7	6.76	969	14.00	2.0				231	242	1.03	12.6				153 U										
Cell Room	V-26	9/10/2020	1.35	956.41	35.2	6.43	772	18.9	1.0					158		13.1			0.055 / 0.333 U											
Cell Room	V-26	7/1/2021	1.34	956.86	57.9	6.88	1297	17.70	3.0					119		17.6			0.333 UJ / 0.0515											
Cell Room	V-26 (dup)	7/1/2021	1.34	956.86	57.9	6.88	1297	17.70	3.0				287	121	1.17	16.5			0.333 U / 0.0512											
Cell Room	V-26	9/20/2021	0.23	956.65	107.2	6.42	1261	20.3	2.0					311					0.205 / 0.197 J											
Cell Room	V-26	6/23/2022	2.53	956.91	105.4	6.8	404.7	16.8	U					20.1		9.2			0.0005 U / 0.333 U											
Cell Room	V-26	9/16/2022	0.38	957.09	75.3	6.99	473.1	20.2	5					27					0.0368 / 0.333 U											
Cell Room	V-26	6/16/2023	0.97	957.12	178.6	6.86	1787	15.70	4.0					620		37			0.20 U / 0.091											
Cell Room	V-26 (dup)	6/16/2023	0.97	957.12	178.6	6.86	1787	15.70	4.0					630		37			0.20 U / 0.1											
Cell Room	V-26	9/5/2023	0.43	956.39	27.0	6.79	1106	22.3	1.66					240					0.093 J / 0.068											
Cell Room	V-26	6/13/2024	0.76	957.71	175.3	6.36	2996	16.30	5.7					850				--	0.046 J			--	--	--	--	--	--	--	--	--
Perimeter	V-27	6/15/1995											610			37			21.3	0.1 U										
Perimeter	V-27	6/20/1995				5.33																								
Perimeter	V-27	6/24/1995											799						1											
Perimeter	V-27	9/27/1995				6.6	552	16					89			11			1.1	0.1 U										
Perimeter	V-27	12/14/1995				5.7	879	5.7					129			7			3.2	0.1 U										
Perimeter	V-27	3/14/1996				6.3	2590	10					822			51														
Perimeter	V-27	6/27/1996				6.9	3380						1032			183														
Perimeter	V-27	9/30/1996				6.5	1249	18.4					317			51			3.4	0.1										
Perimeter	V-27	12/9/1996				6.2	611	6.2					102			9			2.5	0.05 U										
Perimeter	V-27	12/10/1996																				5 U	5 U	5 U	5 U	5 U	5 U			5 U
Perimeter	V-27	3/31/1997				5.9	1940	6					489.8			103.2			0.898	0.001										
Perimeter	V-27	7/7/1997				7	1200	19.3					266			25.7			1.38	0.181										
Perimeter	V-27	10/8/1997				6.6	260						19.6			1.4			1.34	0.1 U										
Perimeter	V-27	12/16/1997				6.3	600						552			11.3			0.612	0.1 U										
Perimeter	V-27	9/28/2000	0.78	947.13	-60	8.48	450	17.9	17.8				31			0.45				0.041										
Perimeter	V-27	3/27/2001	0.42	947.5	-45	7.05	2450	2.8	1.7				890			20 U				0.01 U										
Perimeter	V-27	9/24/2001	0.63	947.39	-30	7.26	260	17.3	14				84			3.3				0.015 U										
Perimeter	V-27	3/25/2002	1.56	949.69	50	8.62	1320	3.5	4				410			39				0.051 U										
Perimeter	V-27	7/29/2002		949.29																										
Perimeter	V-27	10/15/2002	0.3	949.48	-35	6.83	470	14.9	9				58			0.02 U				0.015 U										
Perimeter	V-27	3/26/2003	0.6	949.75	-65	7.25	1590	2.5	45				410			4.5				0.015 U										
Perimeter	V-27	9/23/2003	0.28	949.4	-55	7.79	450	18	17				93			30				0.04										
Perimeter	V-27	3/23/2004	0.48	949.91	-20	7.02	1680	2.7	7				740			27				0.00393										
Perimeter	V-27	8/17/2004	0.44	948.88	-35	5.87	1810	17.3	21				430			21				0.00627										
Perimeter	V-27	3/29/2005	1.71		25	8.5	2970	3.5	10				1100			3.3				0.00414 U										
Perimeter	V-27	9/27/2005	0.54	949.48	20	6.3	810	17.7	17				180			0.83 U				0.02										
Perimeter	V-27	3/27/2006	0.71	949.35	65	5.5	4650	2.4	8				1400			2.4 J				0.00604										
Perimeter	V-27	9/26/2006	0.67	949.15	95	6.6	50	16.1	41				210			14				0.03										
Perimeter	V-27	3/27/2007	2.27	949.64	55	6.7	3550	2.6	3				1000			7.6				0.00375										
Perimeter	V-27	9/11/2007	0.63	949.49	-100	5.4	1550	17.1	31				330			1.8				0.01										
Perimeter	V-27	3/25/2008	0.57	949.34	-45	6.2	6130	0.6	0				2620			13.2				0.00736										
Perimeter	V-27	6/23/2008																												

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases				Gen Chem				Metals		VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
					Reduction- Potential millivolts																									
Perimeter	V-27A	6/14/2023	1.76	948.21		6.43	2035	12.00	119.0		7.5 U	7.0 U	290	270	590	1.0 U	93	5.4			170000		1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Perimeter	V-27A	6/13/2024	0.05	948.87	-77	5.93	2237	14.20	107.2												--	--	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
	V-28	12/10/1996																					5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	V-28	4/15/1999	1.07	960	95	6.96	190	8.7		2 U	1 U	28		26	0.017	15					3.6		0.53 U		0.61 U					
	V-28	6/8/1999	0.48	959.9	75	7.02	170	12.8		2.3 U	1.4 U	2.2 J		32		12					2.8		0.53 U		0.61 U					
	V-28	9/13/1999	0.87	959.8	40	6.47	170	16.5		10 U	10 U	16		200 U	0.63	12					1.3		1 U		1 U					
	V-28	12/6/1999	1.96	962	-75	8.32	240	10.7		2.3 U	1.4 U	0.9 U		15	0.09 J	11					5		0.53 U		0.61 U					
	V-28	7/18/2000	1.02	957.63	25	8.55	280	15.9	30																					
	V-28	9/25/2000	0.86	957.16	-75	7.99	20	15.5	9.2	10 U	10 U	10 U	76	49	0.15 J	11	12					0.53 U		0.61 U						
	V-28	6/20/2001	0.5	958.11	-35	7.62	220	13.2	26	10 U	10 U	10 U	58	62	0.33 Q	9.4	1.6			0.035 U			0.53 U		0.61 U					
	V-28	7/31/2002	0.6	960.79	-35	6.72	290	16.2	76	10 U	10 U	10 U	70	99	0.17	32 Q	5.8				3		0.69 U		0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U
	V-28	6/26/2003	0.38	959.8	-50	5.4	490	12.1	76	10 U	10 U	10 U	72 N	97	0.27 N	6	3.9				6.4		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28	6/17/2004	2.45	962.1	25	8.91	490	12.5	210	10 U	10 U	10 U	170	48	1.1	17	2.4 J			0.032 U		0.22 U	0.39 U	0.22 U	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U	
	V-28	6/22/2005	0.24	960.09	65	6.2	460	13.4	100	10 U	10 U	10 U	70 J	89	0.07 U	5.8	4.2				2900		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28	6/22/2006	0.5	959.42	65	10.9	460	12.2	66	10 U	10 U	10 U	77	73	0.08 U	8	2.7				5400		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28	6/28/2007	0.54	959.59	20	6.4	390	12.5	174	10 U	10 U	10 U	75	67	0.08 U	8.4	2.6 J				3300		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28	6/25/2008	0.61	960.9	28	6.6	420	10.5	131	1.6 U	1.4 U	2 U	69.8	52.2	0.92	14.7	1.5 J				1250		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28	6/18/2009		960.53																										
	V-28	6/17/2010		960.37																										
	V-28	6/9/2011		961.22																										
	V-28	6/21/2012		960.54																										
	V-28A	12/10/1996																					5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
	V-28A	4/15/1999	0.56	960.3	85	6.95	280	10.5		2 U	1 U	0.9 U		36	0.017	31					17		0.53 U		0.61 U					
	V-28A	6/8/1999	0.31	960.2	-10	6.76	320	12		2.3 U	1.4 U	3		37		31					26		0.53 U		0.61 U					
	V-28A	9/13/1999	0.3	960.1	-45	6.71	280	12.6		10 U	10 U	10 U		200 U	0.09 U	27					26		1 U		1 U					
	V-28A	12/6/1999	0.77	962.3		8.59	450	10		2.3 U	1.4 U	0.9 U		37	0.11 J	29					410		0.53 U		0.61 U					
	V-28A	7/18/2000	0.51	957.8	-30	8.52	340	13.1	18																					
	V-28A	9/25/2000	1.48	957.37	-100	7.56	480	13	306	10 U	10 U	10 U	110	37	0.08 U	24						0.53 U		0.61 U						
	V-28A	6/21/2001	0.65	958.27	-55	7.8	250	12.3	240	10 U	10 U	10 U	130	36	0.13 U	22	3.9			0.008 U		0.53 U		0.61 U						
	V-28A	7/31/2002	0.28	960.84	-55	6.67	250	13	0	10 U	10 U	10 U	130	45	0.13	17	9.6					0.69 U	0.72 U	0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U	
	V-28A	6/26/2003	0.24	960.05	-65	5.77	460	11.1	245	10 U	10 U	10 U	100	57	0.25	15	3.1 J					0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U	
	V-28A	6/17/2004	0.51	962.05	-40	7.06	520	11.2	80	10 U	10 U	10 U	150	66	0.05 U	13	3.3 J			0.1 J		0.22 U	0.39 U	0.22 U	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U	
	V-28A	6/22/2005	0.24	960.18	35	6.6	510	12.9	309	10 U	10 U	10 U	130	77	0.07 U	11	3.9				250		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28A	6/22/2006	0.58	959.68	65	6.4	600	11.1	91	10 U	10 U	10 U	130	94	0.08 U	11	3.8				16000		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28A	6/28/2007	0.83	959.77	-100	6.8	640	11.5	738	10 U	10 U	10 U	130	100	0.25 J	9.9	17				14000		0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
	V-28A	6/25/2008	0.41	960.95	-100	6.8	620	9.5	269	1.6 U	1.4 U	2 U	125	98.2	0.26 J	10	7.8													

TABLE I-1
ERCO Historical Data Master Table

		Field Tests					Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-30	3/28/2007	0.31	951.94	110	7.2	1310	7.3	61					200		31			0.00175											
SPP	V-30	6/26/2007	0.42	952.09	-100	6.8	1530	12.5	24														0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-30	9/11/2007	0.63	952.09	-100	5.8	900	11.9	18					100		42			0.00198											
SPP	V-30	3/25/2008	0.34	951.94	-70	6.7	1280	7.2	78					130		34.7			0.00138											
SPP	V-30	6/25/2008	0.46	952.75	-80	6.8	1720	9.8	25													0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U	
SPP	V-30	9/15/2008	0.95	952.11	-65	6.9	790	9.3	29					69.8		57.8			0.00192											
SPP	V-30	3/25/2009	0.77	952.04	-45	6.3	2000	4.6	43					435		42.1			0.000994											
SPP	V-30	6/16/2009	0.53	951.79	-60	6.8	680	11.7	56	0.32 U	0.47 U	6.5	121	75.8	0.25 U	51.4	1.4 U		0.000246 J	6630		0.9 U	0.42 U	0.75 U	0.57 U	1.7 U	0.56 U	0.83 U	0.36 U	
SPP	V-30	6/15/2010	0.9	952.42	-21.9	6.21	1089	11.92	33	0.32 U	0.47 U	28.1	212	117	0.2 U	141	3.07		0.000375 J	6220		0.9 U	0.42 U	0.75 U	0.57 U	1.7 U	0.56 U	0.83 U	0.36 U	
SPP	V-30	6/6/2011	0.30	952.93	-70.4	6.24	1373	11.58	4.2	5.6 U	5.0 U	11.7	160	360	0.37 J	110	3.4		0.0028		12000	1.0 U	1.4 U	1.0 U	1.0 U	2.9 U	1.9 U	1.0 U	1.0 U	
SPP	V-30	6/18/2012	0.1	952.54	-108	6.19	1200	20.83	144	5.6 U	5.0 U	36	330	220	0.10 U	130	4.5		0.0005 U	16000		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/17/2013	0.08	953.29	-44.5	9.29	1311	10.76	12.1	5.6 U	5.0 U	3.2	210	270	0.10 UJ	73	3.2		0.0005 U	13000		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/3/2014	0.32	953.13	-79.8	6.58	1906	11.43	18.1	5.6 U	5.0 U	4.9	240	390	0.10 U	180	3.8		0.0005 U		15000	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/10/2015	0.25	952.62	24.7	6.58	1707	11.30	8.7	5.6 U	5.0 U	36.1	170	170	0.10 UJ	90	2.8		0.00055 U		7000	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/6/2016	0.00	952.84	-72.6	6.65	942	10.49	6.5	13.6 U	14.2 U	30.5	225	135	0.0757 U	91.2	3.11		0.0029 U		6750	0.313 U	0.620 U	0.380 U	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-30	6/12/2017	0.48	952.93	143.5	6.95	1122	12.06	18.5	13.6 U	14.2 U	9.70 U	89.1	260	0.0757 U	43.2	0.896 J			6030	0.313 U	0.620 U	0.380 U	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U		
SPP	V-30	6/4/2018	0.40	952.82	-86.1	6.60	1176	12.23	18.0	0.987 UJ	1.41 U	34.1	162	248	0.0757 U	65.5	1.61			9590	0.313 U	0.620 U	0.380 U	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U		
SPP	V-30	6/17/2019	0.39	953.25	-27.1	6.36	830	29.7	0.987 U	1.41 U	0.957 U	104	266	0.0757 U	35.7	1.31				11000	0.313 U	0.620 U	0.380 U	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U		
SPP	V-30	6/1/2020	0.28	953.02	-53.6	6.57	541	11.00	57.0	0.987 U	1.41 U	18.6	173	105	0.16 U	45.4	1.75			10600	0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U		
SPP	V-30	6/28/2021	0.20	952.88	-55.4	6.54	864	14.70	51.0	0.987 U	1.41 U	130	215	84	0.16 U	30.6	1.5 U			8500	0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.0990 J		
SPP	V-30	6/24/2022	0.25	952.72	-17.5	6.51	510	13.7	27.7	0.611 J	1.41 U	72.3	178	120	0.16 U	19.2	1.88 U			5740	0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U		
SPP	V-30	6/14/2023	1.02	952.88	-44.1	6.38	841	11.50	33.1				170	220	1.0 UJ	47	1.4			10000	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/14/2024	0.01	953.49	-93.8	6.35	998	12.60	21.3	7.5 U	7.0 U	4.0 U	170	260				--	--			1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30A	12/10/1996																				5 U	5 U	5 U	5 U	5 U	5 U		5 U	
SPP	V-30A	7/18/2000	0.46	949.64	-15	9.18	470	14.2	2																					
SPP	V-30A	9/25/2000	0.65	949.27	-65	8.36	640	14.2	5					48		110			0.01 U			0.53 U		0.61 U						
SPP	V-30A	3/26/2001	2.43	948.78	-20	7.53	610	9.3	17.8					56		100			0.01 U											
SPP	V-30A	9/24/2001	3.7	949.63	145	7.31	330	12.5	5					45		100			0.015 U											
SPP	V-30A	3/25/2002	2.86	952.42	95	8.72	600	10.1	3					48		100			0.051 U											
SPP	V-30A	7/29/2002	0.94	952.74	55	6.09	290	13.4	14												0.69 U	0.72 U	0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U		
SPP	V-30A	10/15/2002	0.58	952.37	-5	6.91	600	11.9	0					49		100			0.015 U											
SPP	V-30A	3/25/2003	1.87	951.5	60		550	11.7	0					51		100			0.015 U											
SPP	V-30A	6/26/2003	2.31	951.94	20	7.4	640	11.6	6												0.9 U	0.42 U	0.75 U	0.57 U	0.87 U	0.56 U	0.83 U	0.36 U		
SPP	V-30A	9/23/2003	0.78	951.36	-10	7.06	550	15.1	28					54		100			0.015 U											
SPP	V-30A	3/23/2004	1.66	951.6	-25	7.37	540																							

TABLE I-1
ERCO Historical Data Master Table

		Field Tests				Gases				Gen Chem				Metals				VOA											
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L
SPP	V-31A	6/20/2001	0.57		-35	7.95	550	16.4	4	10 U	10 U	11	85	190	0.13 U	140	0.34 U		0.93		0.53 U		0.53 U		0.61 U				
SPP	V-31A	7/29/2002	0.44	953.5	-80	6.13	540	17.7	1	10 U	10 U	10 U	100	180	0.02 U	140	6 A		5.1		0.69 U		0.72 U	0.48 U	0.85 U	1 U	0.91 U	0.67 U	0.47 U
SPP	V-31A	6/26/2003	1.86	952.5	80	7.18	1130	15.2	28	10 U	10 U	10 U	120	200	0.05 U	120	1 U		8.3		0.9 U		0.42 U	0.75 U	1.3 J	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/15/2004	0.75	954.47	-60	7.36	1020	17.2	12	10 U	10 U	10 U	130	200	0.05 U	110	1 U		1.9 J		0.22 U		0.39 U	0.22 U	0.27 U	0.31 U	0.17 U	0.21 U	0.12 U
SPP	V-31A	6/21/2005	0.44	952.84		6.6	980	18.8	27	10 U	10 U	10 U	120	180	0.07 U	100	0.8 U		890		0.9 U		0.42 U	0.75 U	0.81 J	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/20/2006	0.57	952.35	65	5.9	1090	16.5	8	10 U	10 U	13	120	190	0.08 U	99	0.72 U		4300		0.9 U		0.42 U	0.75 U	0.81 J	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/26/2007	2.4	952.6	-135	6.8	1100	21.2	11	10 U	10 U	10	120	200	0.08 U	110	1.4 U		1800		0.9 U		0.42 U	0.75 U	0.65 J	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/24/2008	0.51	953.41	-65	7.1	1440	13.7	17	1.6 U	1.4 U	11.9	127	203	0.085 U	93.8	1.4 U		5160		0.9 U		0.42 U	0.75 U	0.83 J	0.87 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/18/2009	0.94	952.95	-25	6.7	960	17.1	13	0.32 U	0.47 U	13.9	123	208	0.25 U	94	1.4 U		4960		0.9 U		0.42 U	0.75 U	0.71 J	1.7 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/15/2010	0.79	952.8	1.1	6.42	1067	16.93	23	0.32 U	0.47 U	14.5	131	193	0.2 U	96.8	1.01		1060		0.9 U		0.42 U	0.75 U	0.75 J	1.7 U	0.56 U	0.83 U	0.36 U
SPP	V-31A	6/6/2011	0.30	953.40	2.8	5.64	862	15.15	0.0	5.6 U	5.0 U	12.3	99	270	0.28 J	79	1.3 U			5400	1.0 U	1.4 U	1.0 U	0.68 J	2.9 U	1.9 U	1.0 U	1.0 U	
SPP	V-31A	6/18/2012	0.1	952.98	-68	6.51	1100	18.58	12.9	5.6 U	5.0 U	13.7	130	220	0.10 U	98	1.1		6700		2.5 U		2.5 U	2.5 U	0.51 J	5.0 U	2.5 U	2.5 U	2.5 U
SPP	V-31A	6/17/2013	0.43	953.95	1	9.36	1075	14.67	5.8	5.6 U	5.0 U	15.1	120	220	0.10 U	91	1.3		6800		2.5 U		2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U
SPP	V-31A	6/5/2014	0.79	952.8	1.1	6.42	1067	16.93	23	0.32 U	0.47 U	14.5	131	193	0.2 U	96.8	1.01				4200	2.5 U	2.5 U	2.5 U	2.5 U	0.48 J	5.0 U	2.5 U	2.5 U
SPP	V-31A	6/10/2015	0.57	953.15	16.7	6.60	2009	18.09	0.0	5.6 U	5.0 U	7.3 J	120	220	0.10 U	86	0.94 J			3500	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5.0 U	2.5 U	2.5 U	2.5 U
SPP	V-31A (Dup)	6/10/2015	0.57	953.15	16.7	6.60	2009	18.09	0.0	5.6 U	5.0 U	2.7 J	130	240	0.10 U	85	0.95 J			3500	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	2.0 U	2.0 U
SPP	V-31A	6/8/2016	0.23	953.35	-28.8	6.57	1127	15.32	0.4	13.6 U	14.2 U	17.5	122	224	0.0757 U	84.1	0.963			4470	0.313 U	0.620 U	0.380 U	0.352 J	1.08 U	0.643 U	0.337 U	0.360 U	0.360 U
SPP	V-31A	6/14/2017	0.46	953.76	-15.0	6.85	1134	16.86	20.8	13.6 U	14.2 U	31.8	134	213	0.0757 U	79.4	0.773 J			3680	0.313 U	0.620 U	0.380 U	0.585 J	1.08 U	0.643 U	0.337 U	0.360 U	0.360 U
SPP	V-31A	6/5/2018	0.72	953.23	-22.0	6.67	1138	15.95	1.9	0.987 U	1.41 U	29.6	140	224	0.0757 U	78.7	1.01 J				0.313 U	0.620 U	0.380 U	0.530 J	1.08 U	0.643 U	0.337 U	0.360 U	0.360 U
SPP	V-31A (dup)	6/5/2018	0.72	953.23	-22.0	6.67	1138	15.95	1.9	0.987 U	1.41 U	40.0	138	220	0.0757 U	78.7	0.939 J				0.313 U	0.620 U	0.380 U	0.461 J	1.08 U	0.643 U	0.337 U	0.360 U	0.360 U
SPP	V-31A	6/19/2019	0.71	953.73	61.3	5.96	927	2.9	0.987 U	1.41 U	0.957 U	124	225	0.0757 U	78.5	1.03			2810		0.313 U	0.620 U	0.380 U	0.472 J	1.08 U	0.643 U	0.337 U	0.360 U	0.360 U
SPP	V-31A	6/3/2020	0.35	953.53	-14.9	6.62	933	17.00	15.0	0.987 U	1.41 U	18.8	129	223	0.16 U	76.8	0.805			3270	0.497 U	0.527 U	0.333 U	0.436 J	0.920 U	0.420 U	0.357 U	0.273 U	0.273 U
SPP	V-31A	6/30/2021	0.34	953.49	8.9	6.77	1552	18.80	6.0	0.987 U	1.41 U	0.957 U	135	215	0.16 UJ	72.9 J	1.17 U			2930	0.497 U	0.527 U	0.333 U	0.532 J	0.920 U	0.420 U	0.357 U	0.273 U	0.273 U
SPP	V-31A	6/22/2022	0.23	953.14	-2.2	6.92	891	16.7	U	0.987 U	1.41 U	8.50	120	211	0.183	70.3	0.876 U			3310	0.497 U	0.527 U	0.333 U	0.401 J	0.920 U	0.420 UJ	0.357 U	0.273 U	0.273 U
SPP	V-31A (dup)	6/22/2022	0.23	953.14	-2.2	6.92	891	16.7	U	0.987 U	1.41 U	8.73	120	209	0.184	70.4	0.829 U			3810	0.497 U	0.527 U	0.333 U	0.428 J	0.920 U	0.420 UJ	0.357 U	0.273 U	0.273 U
SPP	V-31A	6/14/2023	0.52	953.27	0	6.77	864	16.80	14.5	7.5 U	7.0 U	5.9	130	190	1.0 U	60	0.70 J			3100	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SPP	V-31A	6/10/2024	0.35	954.18	-31.1	6.53	959	15.80	6.6				180					--	--		1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U
SPP	V-32	12/10/1996																			5 U		5 U	3.5	5 U	5 U	5 U		5 U
SPP	V-32	4/15/1999	0.39	949.7	120	8.64	2920	9		2 U	1 U	660	1100	0.017 U	150				0.2		0.53 U			2					
SPP	V-32	6/9/1999	0.32	949.5	80	8.2	2950	14.6		2.3 U	1.4 U	1000	1200			140			0.082 J		0.53 U			2.3					
SPP	V-32																												

TABLE I-1
ERCO Historical Data Master Table

		Field Tests							Gases				Gen Chem				Metals		VOA													
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation- Reduction	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3- Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L			
					Potential millivolts																											
SPP	V-32A	12/10/1996																					5 U							5 U		
SPP	V-32A	4/15/1999	2.41	949.9	230	7.82	2870	10.5		2 U	1 U	0.9 U		1000	0.017 J	190				3.1		0.53 U		5 U								
SPP	V-32A	6/9/1999	0.42	949.6	140	7.41	2970	13.9		2.3 U	1.4 U	180		1200		170				11		0.53 U										
SPP	V-32A	9/13/1999	1.39	949.6	80	7.52	2740	16.7		10 U	10 U	10 U		1200	0.09 U	200 U				0.68		1 U										
SPP	V-32A	12/6/1999	3.27	949.4	-60	8.33	4160	12.2		2.3 U	1.4 U	25		1100	0.13 J	160				11		0.53 U										
SPP	V-32A	9/26/2000	1.25	948.05	65	9.22	3680	15.5	29.9	10 U	10 U	12	300	920	0.26	120	14					0.53 U										
SPP	V-32A	6/20/2001	0.43	948.1	-10	8.03	2020	15.4	269	10 U	10 U	62	240	1100		120	5			0.26		0.53 U										
SPP	V-32A	7/29/2002	0.62	950.54	185	7.54	1860	15.9	12	10 U	10 U	15	390	890	0.15	120	9.6			0.12		0.69 U		0.72 U								
SPP	V-32A	6/26/2003	1.25	949.78	60	6.9	2940	13.1	51	10 U	10 U	150	330	870	0.05 U	130	4.8			0.028 U		0.9 U		0.42 U		1 U	0.91 U	0.67 U	0.47 U			
SPP	V-32A	6/15/2004	0.28	951.12	45	8.51	3380	13.6	460	10 U	10 U	73	190	810	0.2	94	6.8			0.17 J		0.22 U		0.39 U		0.31 U	0.17 U	0.21 U	0.12 U			
SPP	V-32A	6/22/2005	0.13	949.86	85	8.8	2300	13.7	440	10 U	10 U	170	120	680	0.13 J	89	6.2			17 U		0.9 U		0.42 U		0.84 J	0.57 U	0.87 U	0.36 U			
SPP	V-32A	6/20/2006	0.5	949.55	85	8.5	2770	12.8	320	10 U	10 U	190	310	560	0.44 U	74	5.1			61 J		0.9 U		0.42 U		0.96 J	0.57 U	0.87 U	0.36 U			
SPP	V-32A	6/27/2007	1.35	949.85	-100	8.7	2680	13.4	193	10 U	10 U	110	290	600	0.08 U	86	5			60 J		0.9 U		0.42 U		0.75 U	0.87 U	0.56 U	0.36 U			
SPP	V-32A	6/24/2008	0.46	950.02	-70	7.8	2960	11.4	193	1.6 U	1.4 U	125	312	739	0.2 J	99.1	4.4			235		0.9 U		0.42 U		0.75 U	0.87 U	0.56 U	0.36 U			
SPP	V-32A	3/25/2009	1.52	950.07	-30	7.4	3330	6.9	238					882		109			0.0449													
SPP	V-32A	6/16/2009	0.37	949.81	-60	7.1	2490	13.9	303					820		105			0.0697													
SPP	V-32A	9/28/2009	0.24	948.6	-40	6.9	3400	13.8	143					662		107			0.0671													
SPP	V-32A	12/14/2009	1.15	949.57		8	3950	12.1	114					825		112			0.0488													
SPP	V-32A	3/15/2010	1.06	949.95	-55	7.34	348	12.49	148					966	0.2 U	99.6	3.5															
SPP	V-32A	6/16/2010	4.94	949.94	-26.2	7.57	2028	13.67	100	0.32 U	0.47 U	227	283	996		85.5			0.0461	552		0.9 U		0.42 U		0.79 J	0.57 U	1.7 U	0.56 U	0.83 U	0.36 U	
SPP	V-32A	12/16/2010	1.82	949.12	-107.2	7.88	4386	11.88	82					887		86.4			0.0331													
SPP	V-32A	3/28/2011	0.54	950.2	-142.1	7.56	3926	10.96	2.7					1260		88.6			0.0049													
SPP	V-32A	6/6/2011	0.18	950.02	-51.6	5.63	3393	14.15	16.0	5.6 U	5.0 U	154	250	1100	0.33 J	100	2.7			0.0074	1900		1.0 U		1.4 U		0.89 J	1.0 U	2.9 U	1.9 U	1.0 U	1.0 U
SPP	V-32A	9/27/2011	0.11	950.22	-90.3	7.14	4686	13.95	67.1					990		77			0.021													
SPP	V-32A	12/5/2011	0.86	949.88	-69.3	7.24	4122	12.35	60.3					1200		77			0.027													
SPP	V-32A	3/13/2012	0.92	950.01	-56.1	7.25	4347	12.18	83.2					1400 J		82			0.0027													
SPP	V-32A	6/19/2012	0.1	950.00	-144	6.97	4710	14.71	80	5.6 U	5.0 U	91.8	320	1200	0.059 J	75	4.2		0.021	16000		1.0 U		1.0 U		0.84 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32A (dup)	6/19/2012	0.1	950.00	-144	6.97	4710	14.71	80	5.6 U	5.0 U	118	330	1200	0.053 J	77	4.2		0.024	16000		1.0 U		1.0 U		0.82 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32A	9/24/2012	0.2	949.78	-86.1	6.59	3943	14.67	99.6					1100		87			0.024													
SPP	V-32A	12/3/2012	0.63	949.67	-93.5	7.27	2860	13.04	50					1000		80			0.034													
SPP	V-32A (dup)	12/3/2012	0.63	949.67	-93.5	7.27	2860	13.04	50					1000		81			0.032													
SPP	V-32A	3/20/2013	1.31	949.78	68.3	7.33	3870	6.25	3.2					1100		64			0.026													
SPP	V-32A	6/18/2013	0.70	950.34	30.1	7.13	4280	12.33	6.3	5.6 U	5.0 U	181	330	1200	0.10 U	85	4.7		0.02	7200		1.0 U		1.0 U		0.94 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32A (dup)	6/18/2013	0.28	950.34	-46.8	5.58	1322	14.67	0.0	5.6 U	5.0 U	196	340	1200	0.10 U	86	4.8		0.02	7000		1.0 U		1.0 U		0.92 J	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32A	9/16/2013	1.30	949.82	-37.8	7.05	4470	14.4	20.2					1200		86			0.02													
SPP	V-32A	12/3/2013	1.26	949.76	-56.8	7.34	3944	11.67	10					1200		96			0.02													
SPP	V-32A																															

TABLE I-1
ERCO Historical Data Master Table

		Field Tests						Gases				Gen Chem				Metals				VOA										
Area	StationId	CollectDate	Dissolved Oxygen mg/L	Elevation ft	Oxidation-Reduction Potential millivolts	pH ph units	Specific Conductance us/cm	Temperature deg c	Turbidity ntu	Ethane µg/L	Ethene µg/L	Methane µg/L	Alkalinity, Total mg/L	Chloride mg/L	Nitrogen, Nitrate mg/L	Sulfate mg/L	Total Organic Carbon mg/L	Total Mercury µg/L	Dissolved Mercury µg/L	Iron µg/L	Dissolved Iron µg/L	1,1,1-Trichloroethane µg/L	1,1,2-Trichloroethane µg/L	1,1-Dichloroethane µg/L	1,1-Dichloroethene µg/L	1,2-Dibromo-3-Chloropropane µg/L	1,2-Dibromoethane µg/L	1,2-Dichlorobenzene µg/L	1,2-Dichloroethane µg/L	
SPP	V-32B	9/16/2013	0.97	949.69	-273.6	10.55	11624	13.85	2.4					1800		150				1.2										
SPP	V-32B	12/3/2013	0.65	949.58	-218.3	11.32	10830	10.82	0					1800		150				0.79										
SPP	V-32B	3/25/2014	0.32	949.66	-189.7	11.22	9767	9.02	1.8					1700		120				1.1										
SPP	V-32B	6/5/2014	0.45	950.5	-260.3	11.44	12230	14.07	2.9	5.6 U	1.6 J	119	3900	1900	0.10 U	160	17		0.94	100 U		1.0 U	1.0 U	0.27 J	1.0 U		2.0 U	1.0 U	1.0 U	1.0 U
SPP	V-32B	9/11/2014	0.44	950.5	-86.1	11.28	11607	13.22	1.6					1600		110 J			0.82											
SPP	V-32B	12/4/2014	3.02	949.97	-219	11.68	11670	9.83	0					1600		130			0.55 J											
SPP	V-32B	3/16/2015	0.40	949.88	80.1	11.41	11474	10.12	0					1700		130			1.1 J											
SPP	V-32B	6/16/2015	0.38	950.58	123.9	11.33	12679	13.91	18.8	5.6 U	1.7 J	186	4200	1800	0.10 U	140	13		1.7	100 U		1.0 U	1.0 U	1.0 U	1.0 U		2.0 U	1.0 U	1.0 U	1.0 U
SPP	V-32B	9/9/2015	0.21	950.78	177.3	9.03	11863	14.29	1.3					1600		110			0.55											
SPP	V-32B	12/8/2015	0.29	949.99	277.8	11.94	11408	11.56	0					1500		110			0.74											
SPP	V-32B	3/14/2016	0.00	950.11	-365.6	11.82	11876	11.41	0					1560		105			1.87											
SPP	V-32B	6/8/2016	0.22	950.10	-114.1	10.84	12466	13.57	0.0	13.6 U	8.96 J	275	4270	1700	0.0757 U	113	13.2		1.66	47.0 U		0.313 U	0.620 U	0.205 J	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-32B	9/20/2016	0.8	950.08	-119.3	10.71	12438	14.67	0.1					1630		83			1.3											
SPP	V-32B 0.1 MICRON	9/20/2016		950.08																										
SPP	V-32B	12/1/2016	2.61	950.35	-231.9	12.01	1083	11.6	1					1670		120			1.24											
SPP	V-32B 0.1 MICRON	12/1/2016		950.35															1.26											
SPP	V-32B	3/29/2017	3.72	950.14	-53.6	11.94	11835	10.8	1.8					1560		92.2			1.2											
SPP	V-32B 0.1 MICRON	3/29/2017		950.14															1.1											
SPP	V-32B	6/15/2017	1.80	951.08	-197.8	11.55	11621	14.37	0.0	13.6 U	14.2 U	272	3540	1600	0.0757 U	125	10.1		0.98	47.0 U		0.313 U	0.620 U	0.215 J	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-32B 0.1 MICRON	6/15/2017	1.80	951.08	-197.8	11.55	11621	14.37	0.0										0.85											
SPP	V-32B	9/7/2017	1.95	949.71	-143.1	11.41	12635	13.93	0					1610		119			0.72											
SPP	V-32B 0.1 MICRON	9/7/2017	1.95	949.71	-143.1	11.41	12635	13.93	0										0.75											
SPP	V-32B	12/5/2017	4.04	949.78	-264.2	11.50	10690	10.01	1.6					1570		114			0.81											
SPP	V-32B 0.1 MICRON	12/5/2017	4.04	949.75	-264.2	11.50	10690	10.01	1.6										0.82											
SPP	V-32B	3/28/2018	5.26	949.81	-68.3	11.05	10912	10.65	1.0					2620		119			0.74											
SPP	V-32B	6/6/2018	3.70	949.77	-107.2	11.27	10842	12.30	0.0	0.987 U	1.21 J	233	3300	2050	0.0757 U	134	9.79		0.68	47.0 U		0.313 U	0.620 U	0.184 J	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-32B	9/5/2018	2.8	950.82	-100.0	11.16	10815	15.59	0.0					1790		132			0.6											
SPP	V-32B	12/14/2018	5.4	949.92	-103.2	11.13	9911		0					1780		118			0.63											
SPP	V-32B	3/27/2019	3.77	950.84	-133.7	11.35	9195		0					1730		121			0.61											
SPP	V-32B	6/20/2019	1.2	950.49	-42.2	10.23	7558		0	0.987 U	1.41 U	333	1890	1790	0.0757 U	113	5.45		0.45	174		0.313 U	0.620 U	0.293 J	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-32B (dup)	6/20/2019	1.2	950.49	-42.2	10.23	7558		0	0.987 U	1.41 U	283	1950	1800	0.0757 U	118	6.13		0.39	104		0.313 U	0.620 U	0.242 J	0.627 U	1.08 U	0.643 U	0.337 U	0.360 U	
SPP	V-32B	9/17/2019	1.49	950.72	-17.9	11.08	7802	14.9	2.0					1890 J		131			0.354 J											
SPP	V-32B (dup)	9/17/2019	1.49	950.72	-17.9	11.08	7802	14.90	2.0					821 J		126			0.35 J											
SPP	V-32B	3/17/2020	3.93	950.52	-65.3	11.11	6790	9.9	2.0					1730		125			0.356											
SPP	V-32B (dup)	3/17/2020	3.93	950.52	-65.3	11.11	6790	9.9	2.0					1750		124			0.371											
SPP	V-32B	6/3/2020	2.84	949.56	-78.3	11.15	7513	13.30	3.0	0.987 U	1.41 U	239	2040	1840	0.16 U	142	6.77		0.418	153 U		0.497 U	0.527 U	0.158 J	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-32B	9/10/2020	1.99	950.27	-94.9	11.38	7617	13.2	5.0					1850		142			0.540 U											
SPP	V-32B (dup)	9/10/2020	1.99	950.27	-94.9	11.38	7617	13.20	5.0					1820		139			0.517 U											
SPP	V-32B	12/16/2020	5.51	949.91	-73.8	12.28	9026	9	7.0					1850		159 J			0.416											
SPP	V-32B	3/17/2021	8.26	949.92	20.2	11.05	6400	8.9	0.0					1790		148			0.506 / 0.223 J											
SPP	V-32B (dup)	3/17/2021	8.26	949.92	20.2	11.05	6400	8.9	0.0					1830		155			0.433											
SPP	V-32B	6/30/2021	5.27	949.95	-68.5	11.60	12893	15.20	4.0	0.987 U	1.41 U	204	1950	2070	1.6 U	189	6.42		0.865	41.1 J		0.497 U	0.527 U	0.333 U	0.627 U	0.920 U	0.420 U	0.357 U	0.273 U	
SPP	V-32B	9/16/2021	4.07	950.01	-50.9	11.09	7811	14.6	2.0					2490		253		1.50	1.33											

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA												
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
Cell Room	V-02A	12/14/1995																							
Cell Room	V-02A	3/14/1996																							
Cell Room	V-02A	4/23/1996	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U	2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U		
Cell Room	V-02A	6/26/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U	2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U		
Cell Room	V-02A	6/27/1996																							
Cell Room	V-02A	9/18/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U	2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U		
Cell Room	V-02A	9/30/1996																							
Cell Room	V-02A	12/6/1996	6 U			10 U	10 U	4 U	2 U	5 U	10 U	10 U	3 U	6 U	10 U	2 U	10 U		5 U	3 U	5 U	10 U	7 U		
Cell Room	V-02A	12/9/1996																							
Cell Room	V-02A	3/31/1997																							
Cell Room	V-02A	7/2/1997	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	2.29 J	2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U		
Cell Room	V-02A	7/7/1997																							
Cell Room	V-02A	10/8/1997																							
Cell Room	V-02A	12/16/1997																							
Cell Room	V-02A	4/13/1999																							
Cell Room	V-02A	9/14/1999						1 U						1 U											
Cell Room	V-02A	12/8/1999						0.44 U						0.9 U											
Cell Room	V-02A	12/9/1999																							
Cell Room	V-02A	9/27/2000						0.44 U						0.9 U											
Cell Room	V-02A	3/26/2001																							
Cell Room	V-02A	6/19/2001						0.44 U						0.9 U											
Cell Room	V-02A	9/24/2001																							
Cell Room	V-02A	3/25/2002																							
Cell Room	V-02A	7/30/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	4.1	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U	
Cell Room	V-02A	10/15/2002																							
Cell Room	V-02A	3/26/2003																							
Cell Room	V-02A	6/24/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	4.6	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U	
Cell Room	V-02A	9/23/2003																							
Cell Room	V-02A	6/17/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U	0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	5.4	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U	
Cell Room	V-02A	8/18/2004																							
Cell Room	V-02A	6/21/2005	1.2 U	2.2 U	2.4 U	11 U	5.8 U	1 U	1.4 U	2.3 U	2.3 U	1.6 U	1.2 U	1 U	2.4 U	0.92 U	0.6 U	14	0.48 U	2 U	1.5 U	2.5 U	1.4 U	1.5 U	
Cell Room	V-02A	9/28/2005																							
Cell Room	V-02A	6/21/2006	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	1.2 J	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U	
Cell Room	V-02A	9/27/2006																							
Cell Room	V-02A	6/27/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	13	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U	
Cell Room	V-02A	9/12/2007																							
Cell Room	V-02A	6/23/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	17.4	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U	
Cell Room	V-02A	9/15/2008																							
Cell Room	V-02B	12/10/1996	5 U			5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	82	5 U	5 U	5 U	5 U	5 U	5 U	
Cell Room	V-02B	4/15/1999																							
Cell Room	V-02B	6/7/1999																							
Cell Room	V-02B	9/14/1999																							
Cell Room	V-02B	12/7/1999																							
Cell Room	V-02B	9/26/2000																							
Cell Room	V-02B	6/19/2001																							
Cell Room	V-02B	7/30/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	140	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U	
Cell Room	V-02B	6/24/2003	2.3 U	4.4 U	4.8 U	22 U	22 J	2 U	2.8 U	4.7 U	4.6 U	3.3 U	2.4 U	2 U	4.8 U	1.8 U	1.2 U	110	0.95 U	4 U	3 U	5 U	2.7 U	3 U	
Cell Room	V-02B	6/16/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U	0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	120	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U	
Cell Room	V-02B	6/21/2005	1.2 U	2.2 U	2.4 U	11 U	5.8 U	1 U	1.4 U	2.3 U	2.3 U	1.6 U	1.2 U	1 U	2.4 U	0.92 U	0.6 U	130	0.48 U	2 U	1.5 U	2.5 U	1.4 U	1.5 U	
Cell Room	V-02B	6/21/2006	2.3 U	4.4 U	4.8 U	22 U	12 U	2 U	2.8 U	4.7 U	4.6 U	3.3 U	2.4 U	2 U											

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA												
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
SPP	V-03AR	3/16/1987																							
SPP	V-03AR	6/4/1987																							
SPP	V-03AR	9/15/1987																							
SPP	V-03AR	11/3/1987																							
SPP	V-03AR	3/22/1988																							
SPP	V-03AR	6/30/1988																							
SPP	V-03AR	9/28/1988																							
SPP	V-03AR	11/1/1988																							
SPP	V-03AR	5/10/1989																							
SPP	V-03AR	6/21/1989																							
SPP	V-03AR	9/28/1989																							
SPP	V-03AR	12/18/1989																							
SPP	V-03AR	4/27/1990																							
SPP	V-03AR	6/21/1990																							
SPP	V-03AR	9/25/1990																							
SPP	V-03AR	10/30/1990																							
SPP	V-03AR	4/2/1991																							
SPP	V-03AR	6/25/1991																							
SPP	V-03AR	9/20/1991																							
SPP	V-03AR	10/23/1991																							
SPP	V-03AR	3/27/1992																							
SPP	V-03AR	6/29/1992																							
SPP	V-03AR	9/23/1992																							
SPP	V-03AR	12/14/1992																							
SPP	V-03AR	3/30/1993																							
SPP	V-03AR	6/22/1993																							
SPP	V-03AR	9/29/1993																							
SPP	V-03AR	12/3/1993																							
SPP	V-03AR	3/23/1994																							
SPP	V-03AR	7/1/1994																							
SPP	V-03AR	9/29/1994																							
SPP	V-03AR	12/14/1994																							
SPP	V-03AR	3/16/1995																							
SPP	V-03AR	6/15/1995			2.1 U																				
SPP	V-03AR	6/23/1995			2.1 U																				
SPP	V-03AR	9/27/1995																							
SPP	V-03AR	12/14/1995																							
SPP	V-03AR	3/14/1996																							
SPP	V-03AR	4/23/1996	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U	2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U		
SPP	V-03AR	6/25/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U	2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U		
SPP	V-03AR	6/27/1996																							
SPP	V-03AR	9/19/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U	2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U		
SPP	V-03AR	9/30/1996																							
SPP	V-03AR	12/6/1996	6 U			10 U	10 U	4 U	2 U	5 U	10 U	10 U	3 U	6 U	10 U	2 U	10 U		5 U	3 U	5 U	10 U	7 U		
SPP	V-03AR	12/9/1996																							
SPP	V-03AR	3/31/1997																							
SPP	V-03AR	7/7/1997																							
SPP	V-03AR	10/8/1997																							
SPP	V-03AR	12/16/1997																							
SPP	V-03AR	4/13/1999						0.44 U					0.9 U												
SPP	V-03AR	6/8/1999						0.44 U					0.9 U												
SPP	V-03AR	9/14/1999						1 U					1 U												
SPP	V-03AR	12/7/1999						0.44 U					0.9 U												
SPP	V-03AR	7/18/2000																							
SPP	V-03AR	9/26/2000						0.44 U					0.9 U												
SPP	V-03AR	12/6/2000																							
SPP	V-03AR	3/26/2001																							
SPP	V-03AR	6/19/2001						2.2 U					4.5 U												
SPP	V-03AR	9/25/2001																							
SPP	V-03AR	12/11/2001																							
SPP	V-03AR	3/25/2002																							
SPP	V-03AR	7/30/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U									

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA											
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L
SPP	V-03R	12/16/2020																						
SPP	V-03R (dup)	12/16/2020																						
SPP	V-03R	3/17/2021																						
SPP	V-03R	6/30/2021	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.420 U	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-03R	9/16/2021																						
SPP	V-03R	12/14/2021																						
SPP	V-03R	3/28/2022																						
SPP	V-03R	6/27/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.420 U	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-03R	9/16/2022																						
SPP	V-03R	12/16/2022																						
SPP	V-03R	3/20/2023																						
SPP	V-03R	6/19/2023	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-03R	9/5/2023																						
SPP	V-03R	6/11/2024	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-04A	9/28/1983																						
SPP	V-04A	3/26/1984																						
SPP	V-04A	6/18/1984																						
SPP	V-04A	11/7/1984																						
SPP	V-04A	3/19/1985																						
SPP	V-04A	6/11/1985																						
SPP	V-04A	8/27/1985																						
SPP	V-04A	10/31/1985																						
SPP	V-04A	3/24/1986																						
SPP	V-04A	6/11/1986																						
SPP	V-04A	9/23/1986																						
SPP	V-04A	10/20/1986																						
SPP	V-04A	3/16/1987																						
SPP	V-04A	6/4/1987																						
SPP	V-04A	9/15/1987																						
SPP	V-04A	11/3/1987																						
SPP	V-04A	3/22/1988																						
SPP	V-04A	6/30/1988																						
SPP	V-04A	9/28/1988																						
SPP	V-04A	11/1/1988																						
SPP	V-04A	5/10/1989																						
SPP	V-04A	6/21/1989																						
SPP	V-04A	9/28/1989																						
SPP	V-04A	12/18/1989																						
SPP	V-04A	4/27/1990																						
SPP	V-04A	6/21/1990																						
SPP	V-04A	9/25/1990																						
SPP	V-04A	10/30/1990																						
SPP	V-04A	4/2/1991																						
SPP	V-04A	6/25/1991																						
SPP	V-04A	9/20/1991																						
SPP	V-04A	10/23/1991																						
SPP	V-04A	3/27/1992																						
SPP	V-04A	6/29/1992																						
SPP	V-04A	6/23/1995		1.9 U																				
SPP	V-04A	4/13/1999						0.44 U					0.9 U											
SPP	V-04A	6/8/1999						0.44 U					0.9 U											
SPP	V-04A	9/14/1999						1 U					1 U											
SPP	V-04A	12/7/1999						0.44 U					0.9 U											
SPP	V-04A	9/26/2000						0.44 U					0.9 U											
SPP	V-04A	3/26/2001																						
SPP	V-04A	6/19/2001						0.44 U					0.9 U											
SPP	V-04A	9/25/2001																						
SPP	V-04A	12/11/2001																						
SPP	V-04A	7/30/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	3.3	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
SPP	V-04A																							

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA													
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L		
Perimeter	V-06R	3/22/1988																								
Perimeter	V-06R	6/30/1988																								
Perimeter	V-06R	9/28/1988																								
Perimeter	V-06R	11/1/1988																								
Perimeter	V-06R	5/10/1989																								
Perimeter	V-06R	6/21/1989																								
Perimeter	V-06R	9/28/1989																								
Perimeter	V-06R	12/18/1989																								
Perimeter	V-06R	4/27/1990																								
Perimeter	V-06R	6/21/1990																								
Perimeter	V-06R	9/25/1990																								
Perimeter	V-06R	10/30/1990																								
Perimeter	V-06R	4/2/1991																								
Perimeter	V-06R	6/25/1991																								
Perimeter	V-06R	9/20/1991																								
Perimeter	V-06R	10/23/1991																								
Perimeter	V-06R	3/27/1992																								
Perimeter	V-06R	6/29/1992																								
Perimeter	V-06R	9/23/1992																								
Perimeter	V-06R	11/11/1992																								
Perimeter	V-06R	3/30/1993																								
Perimeter	V-06R	6/22/1993																								
Perimeter	V-06R	9/29/1993																								
Perimeter	V-06R	12/3/1993																								
Perimeter	V-06R	3/23/1994																								
Perimeter	V-06R	7/1/1994																								
Perimeter	V-06R	9/29/1994																								
Perimeter	V-06R	12/14/1994																								
Perimeter	V-06R	3/16/1995																								
Perimeter	V-06R	6/15/1995																								
Perimeter	V-06R	9/27/1995																								
Perimeter	V-06R	3/14/1996																								
Perimeter	V-06R	4/23/1996	6 U			10 U	10 U	4.4 U		2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
Perimeter	V-06R	5/13/1996	6 U			10 U	10 U	4.4 U		2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
Perimeter	V-06R	6/26/1996	6 U			10 U	10 U	4 U		2 U	4 U	10 U	10 U		2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U	
Perimeter	V-06R	9/24/1996	6 U			10 U	10 U	4 U		2 U	4 U	10 U	10 U		2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U	
Perimeter	V-06R	9/30/1996																								
Perimeter	V-06R	12/5/1996	6 U			10 U	10 U	4 U		2 U	5 U	10 U	10 U		3 U	6 U	10 U	2 U	10 U		5 U	3 U	5 U	10 U	7 U	
Perimeter	V-06R	7/2/1997	6 U			10 U	10 U	4.4 U		2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
Perimeter	V-06R	10/8/1997																								
Perimeter	V-06R	12/16/1997																								
Perimeter	V-06R	4/14/1999						0.44 U						0.9 U												
Perimeter	V-06R	6/10/1999						0.44 U						0.9 U												
Perimeter	V-06R	9/16/1999						1 U						1 U												
Perimeter	V-06R	12/7/1999						0.44 U						0.9 U												
Perimeter	V-06R	7/18/2000																								
Perimeter	V-06R	9/27/2000						0.44 U						0.9 U												
Perimeter	V-06R	12/6/2000																								
Perimeter	V-06R	3/27/2001																								
Perimeter	V-06R	6/18/2001						0.44 U						0.9 U												
Perimeter	V-06R	9/26/2001																								
Perimeter	V-06R	12/12/2001																								
Perimeter	V-06R	3/27/2002																								
Perimeter	V-06R	7/31/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U		0.61 U	0.7 U	0.71 U	0.5 U		0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	0.73 U	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
Perimeter	V-06R	10/16/2002																								
Perimeter	V-06R	12/17/2002																								
Perimeter	V-06R	6/25/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U		0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.86 J	0.19 U	0.81 U	0.6 U	0.		

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA												
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2-Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
SPP	V-09	6/11/1985																							
SPP	V-09	8/27/1985																							
SPP	V-09	10/31/1985																							
SPP	V-09	3/24/1986																							
SPP	V-09	6/11/1986																							
SPP	V-09	9/23/1986																							
SPP	V-09	10/20/1986																							
SPP	V-09	3/16/1987																							
SPP	V-09	6/4/1987																							
SPP	V-09	9/15/1987																							
SPP	V-09	11/3/1987																							
SPP	V-09	3/22/1988																							
SPP	V-09	6/30/1988																							
SPP	V-09	9/28/1988																							
SPP	V-09	11/1/1988																							
SPP	V-09	5/10/1989																							
SPP	V-09	6/21/1989																							
SPP	V-09	9/28/1989																							
SPP	V-09	12/18/1989																							
SPP	V-09	4/27/1990																							
SPP	V-09	6/21/1990																							
SPP	V-09	9/25/1990																							
SPP	V-09	10/30/1990																							
SPP	V-09	4/2/1991																							
SPP	V-09	6/25/1991																							
SPP	V-09	9/20/1991																							
SPP	V-09	10/23/1991																							
SPP	V-09	3/27/1992																							
SPP	V-09	6/29/1992																							
SPP	V-09	9/23/1992																							
SPP	V-09	11/11/1992																							
SPP	V-09	3/30/1993																							
SPP	V-09	6/22/1993																							
SPP	V-09	9/29/1993																							
SPP	V-09	12/3/1993																							
SPP	V-09	3/23/1994																							
SPP	V-09	7/1/1994																							
SPP	V-09	9/29/1994																							
SPP	V-09	12/14/1994																							
SPP	V-09	3/16/1995																							
SPP	V-09	6/15/1995																							
SPP	V-09	9/27/1995																							
SPP	V-09	12/14/1995																							
SPP	V-09	3/14/1996																							
SPP	V-09	9/30/1996																							
SPP	V-09	3/31/1997																							
SPP	V-09	10/8/1997																							
SPP	V-09	4/13/1999						0.44 U						0.9 U											
SPP	V-09	6/9/1999						0.44 U						0.9 U											
SPP	V-09	9/14/1999						1 U						1 U											
SPP	V-09	12/7/1999						0.44 U						0.9 U											
SPP	V-09	9/26/2000						0.44 U						0.9 U											
SPP	V-09	12/7/2000																							
SPP	V-09	3/26/2001																							
SPP	V-09	6/19/2001						0.44 U						0.9 U											
SPP	V-09	9/25/2001																							
SPP	V-09	12/11/2001																							
SPP	V-09	3/26/2002																							
SPP	V-09	7/30/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	0.73 U	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U	
SPP	V-09	10/15/2002																							
SPP	V-09	3/26/2003																							
SPP	V-09	6/24/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.53 J	0.24 U	0.83 U	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U	
SPP	V-09	9/23/2003																			</				

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA													
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L		
V-13	V-13	11/7/1984																								
	V-13	3/19/1985																								
	V-13	6/11/1985																								
	V-13	8/27/1985																								
	V-13	10/31/1985																								
	V-13	3/24/1986																								
	V-13	6/11/1986																								
	V-13	9/23/1986																								
	V-13	10/20/1986																								
	V-13	3/16/1987																								
	V-13	6/4/1987																								
	V-13	9/15/1987																								
	V-13	11/3/1987																								
	V-13	3/22/1988																								
	V-13	6/30/1988																								
	V-13	9/28/1988																								
	V-13	11/1/1988																								
	V-13	5/10/1989																								
	V-13	6/21/1989																								
	V-13	9/28/1989																								
	V-13	12/18/1989																								
	V-13	4/27/1990																								
	V-13	6/21/1990																								
	V-13	9/25/1990																								
	V-13	10/30/1990																								
	V-13	4/2/1991																								
	V-13	6/25/1991																								
	V-13	9/20/1991																								
	V-13	10/23/1991																								
	V-13	3/27/1992																								
	V-13	6/29/1992																								
	V-13	9/23/1992																								
	V-13	11/11/1992																								
	V-13	3/30/1993																								
	V-13	6/22/1993																								
	V-13	9/29/1993																								
	V-13	12/3/1993																								
	V-13	3/23/1994																								
	V-13	7/1/1994																								
	V-13	9/29/1994																								
	V-13	12/14/1994																								
	V-13	3/16/1995																								
	V-13	6/15/1995																								
	V-13	9/27/1995																								
	V-13	12/14/1995																								

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA												
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
SPP	V-16	12/18/1989																							
SPP	V-16	4/27/1990																							
SPP	V-16	6/21/1990																							
SPP	V-16	9/25/1990																							
SPP	V-16	10/30/1990																							
SPP	V-16	4/2/1991																							
SPP	V-16	6/25/1991																							
SPP	V-16	9/20/1991																							
SPP	V-16	10/23/1991																							
SPP	V-16	3/27/1992																							
SPP	V-16	6/29/1992																							
SPP	V-16	9/23/1992																							
SPP	V-16	11/11/1992																							
SPP	V-16	3/30/1993																							
SPP	V-16	6/22/1993																							
SPP	V-16	9/29/1993																							
SPP	V-16	12/3/1993																							
SPP	V-16	3/23/1994																							
SPP	V-16	7/1/1994																							
SPP	V-16	9/29/1994																							
SPP	V-16	12/14/1994																							
SPP	V-16	3/16/1995																							
SPP	V-16	6/15/1995																							
SPP	V-16	9/27/1995																							
SPP	V-16	12/14/1995																							
SPP	V-16	3/14/1996																							
SPP	V-16	4/22/1996	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
SPP	V-16	4/23/1996	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
SPP	V-16	6/25/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U		2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U	
SPP	V-16	9/19/1996	6 U			10 U	10 U	4 U	2 U	4 U	10 U	10 U		2 U	4 U	10 U	1 U	10 U		5 U	3 U	10 U	10 U	7 U	
SPP	V-16	9/30/1996																							
SPP	V-16	12/5/1996	6 U			10 U	10 U	4 U	2 U	5 U	10 U	10 U		3 U	6 U	10 U	2 U	10 U		5 U	3 U	5 U	10 U	7 U	
SPP	V-16	3/27/1997	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
SPP	V-16	3/31/1997																							
SPP	V-16	7/2/1997	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U		2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U	
SPP	V-16	10/8/1997																							
SPP	V-16	12/16/1997																							
SPP	V-16	4/14/1999						0.44 U						0.9 U											
SPP	V-16	6/10/1999						0.44 U						0.9 U											
SPP	V-16	9/15/1999						1 U						1 U											
SPP	V-16	12/8/1999						0.44 U						0.9 U											
SPP	V-16	9/28/2000						0.44 U						0.9 U											
SPP	V-16	3/28/2001																							
SPP	V-16	6/21/2001						0.44 U						0.9 U											
SPP	V-16	9/26/2001																							
SPP	V-16	3/27/2002																							
SPP	V-16	8/1/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U		0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	140	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
SPP	V-16	10/17/2002																							
SPP	V-16	3/25/2003																							
SPP	V-16	6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U		0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	100	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-16	9/25/2003																							
SPP	V-16	3/24/2004																							
SPP	V-16	6/16/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U	0.12 U	0.16 U	0.37 U	0.19 U		0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	100	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U
SPP	V-16	8/18/2004																							
SPP	V-16	3/30/2005																							
SPP	V-16	6/23/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U		0.49 U	0.41 U	0.97									

TABLE I-1
ERCO Historical Data Master Table

VOA															VOA														
Area	StationId	CollectDate	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Methyl tert-Butyl Ether					
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L				
SPP	V-19	6/20/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19	6/19/2013	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19	6/3/2014	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19	6/15/2015	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19	6/6/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.311 U	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U					
SPP	V-19	6/13/2017																											
SPP	V-19	6/4/2018																											
SPP	V-19	6/20/2019																											
SPP	V-19	6/2/2020																											
SPP	V-19	6/29/2021																											
SPP	V-19	6/28/2022																											
SPP	V-19	6/20/2023																											
SPP	V-19	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
SPP	V-19A	6/17/2009	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	0.83 U	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U					
SPP	V-19A	6/17/2010	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	0.83 U	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U					
SPP	V-19A	6/8/2011	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.9 U	3.1 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	0.80 U	0.91 J	0.63 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U					
SPP	V-19A	6/20/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.59 J	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U					
SPP	V-19A	6/19/2013	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.72 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19A	6/3/2014	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19A	6/15/2015	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U					
SPP	V-19A	6/6/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.311 U	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U					
SPP	V-19A	6/13/2017	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.311 U	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U					
SPP	V-19A	6/4/2018	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.439	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U					
SPP	V-19A	6/20/2019	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.202 J	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U					
SPP	V-19A	6/2/2020	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.420 U	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U					
SPP	V-19A (dup)	6/2/2020	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.420 U	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U					
SPP	V-19A	6/29/2021	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.309 J	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U					
SPP	V-19A	6/28/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.760	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U					
SPP	V-19A	6/20/2023	1.0 U	1.0 U	1.0 U	5.0 U	3.2 J	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.0	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U					
SPP	V-20	6/27/1992																											
SPP	V-20	9/23/1992																											
SPP	V-20	12/14/1992																											
SPP	V-20	3/30/1993																											
SPP	V-20	6/22/1993																											
SPP	V-20	9/29/1993																											
SPP	V-20	12/3/1993																											
SPP	V-20	3/10/1994	6 U			10 U	10 U	4.4 U	2.2 U	4.7 U	10 U	10 U	2.8 U	6 U	10 U	1.6 U	10 U		5 U	3.1 U	5 U	10 U	7.2 U						
SPP	V-20	3/23/1994																											
SPP	V-20	7/1/1994																											
SPP	V-20	9/29/1994																											
SPP	V-20	12/14/1994																											
SPP	V-20	3/16/1995																											
SPP	V-20	6/15/1995																											
SPP	V-20	6/23/1995			1.9 U																								

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA													
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L		
Cell Room	V-26 (dup)	6/4/2020																								
Cell Room	V-26	9/10/2020																								
Cell Room	V-26	7/1/2021																								
Cell Room	V-26 (dup)	7/1/2021																								
Cell Room	V-26	9/20/2021																								
Cell Room	V-26	6/23/2022																								
Cell Room	V-26	9/16/2022																								
Cell Room	V-26	6/16/2023																								
Cell Room	V-26 (dup)	6/16/2023																								
Cell Room	V-26	9/5/2023																								
Cell Room	V-26	6/13/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Perimeter	V-27	6/15/1995																								
Perimeter	V-27	6/20/1995																								
Perimeter	V-27	6/24/1995																								
Perimeter	V-27	9/27/1995																								
Perimeter	V-27	12/14/1995																								
Perimeter	V-27	3/14/1996																								
Perimeter	V-27	6/27/1996																								
Perimeter	V-27	9/30/1996																								
Perimeter	V-27	12/9/1996																								
Perimeter	V-27	12/10/1996	5 U			5 U	10 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	
Perimeter	V-27	3/31/1997																								
Perimeter	V-27	7/7/1997																								
Perimeter	V-27	10/8/1997																								
Perimeter	V-27	12/16/1997																								
Perimeter	V-27	9/28/2000																								
Perimeter	V-27	3/27/2001																								
Perimeter	V-27	9/24/2001																								
Perimeter	V-27	3/25/2002																								
Perimeter	V-27	7/29/2002																								
Perimeter	V-27	10/15/2002																								
Perimeter	V-27	3/26/2003																								
Perimeter	V-27	9/23/2003																								
Perimeter	V-27	3/23/2004																								
Perimeter	V-27	8/17/2004																								
Perimeter	V-27	3/29/2005																								
Perimeter	V-27	9/27/2005																								
Perimeter	V-27	3/27/2006																								
Perimeter	V-27	9/11/2007																								
Perimeter	V-27	3/25/2008																								
Perimeter	V-27	6/23/2008																								
Perimeter	V-27	9/15/2008																								
Perimeter	V-27	3/26/2009																								
Perimeter	V-27	6/16/2009	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U		0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	0.83 U	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
Perimeter	V-27	6/16/2010	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U		0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	0.83 U	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
Perimeter	V-27	6/6/2011	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U		1.9 U	3.1 U	3.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.2 U	0.80 U	1.0 U	0.63 U	1.0 U	1.0 U	1.0 U	2.0 U	
Perimeter	V-27	6/19/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	
Perimeter	V-27	6/17/2013	1.0 U	1.0 U	1.0 U	1.1 J	14	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-27	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-27	6/10/2015	1.0 U	1.0 U	1.0 U	0.54 J	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.31 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-27	6/6/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U		0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.308 J	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
Perimeter	V-27	6/12/2017	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U		0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.377	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
Perimeter	V-27	6/4/2018	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U		0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.372	0.325 U	0.427 U	0.390 U	0		

TABLE I-1
ERCO Historical Data Master Table

VOA														VOA													
Area	StationId	CollectDate	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon		Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene		cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Methyl tert-Butyl Ether	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Perimeter	V-27A	6/14/2023	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U		1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
	V-27A	6/13/2024	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U		1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
Perimeter	V-28	12/10/1996	5 U			5 U	10 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	
	V-28	4/15/1999						0.44 U						0.9 U													
	V-28	6/8/1999						0.44 U						0.9 U													
	V-28	9/13/1999						1 U						1 U													
	V-28	12/6/1999						0.44 U						0.9 U													
	V-28	7/18/2000																									
	V-28	9/25/2000						0.44 U						0.9 U													
	V-28	6/20/2001						0.44 U						0.9 U													
	V-28	7/31/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U		0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	0.73 U		0.56 U		0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
	V-28	6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
	V-28	6/17/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U		0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	0.23 U		0.16 U		0.13 U	0.26 U	0.27 U	0.22 U	0.25 U
	V-28	6/22/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
	V-28	6/22/2006	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
	V-28	6/28/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
	V-28	6/25/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
	V-28	6/18/2009																									
	V-28	6/17/2010																									
	V-28	6/9/2011																									
	V-28	6/21/2012																									
	Perimeter	V-28A	12/10/1996	5 U			5 U	10 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
V-28A		4/15/1999						0.44 U						0.9 U													
V-28A		6/8/1999						0.44 U						0.9 U													
V-28A		9/13/1999						1 U						1 U													
V-28A		12/6/1999						0.44 U						0.9 U													
V-28A		7/18/2000																									
V-28A		9/25/2000						0.44 U						0.9 U													
V-28A		6/21/2001						0.44 U						0.9 U													
V-28A		7/31/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U		0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	0.73 U		0.56 U		0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
V-28A		6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
V-28A		6/17/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U		0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	0.23 U		0.16 U		0.13 U	0.26 U	0.27 U	0.22 U	0.25 U
V-28A		6/22/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
V-28A		6/22/2006	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
V-28A		6/28/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
V-28A		6/25/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U		0.19 U		0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
V-28A		6/18/2009																									
V-28A		6/17/2010																									
V-28A		6/9/2011																									
V-28A		6/21/2012																									
Perimeter		V-29	12/10/1996	5 U			5 U	10 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	14		5 U		5 U		5 U	5 U
	V-29	4/15/1999						0.44 U						0.9 U													
	V-29	6/8/1999						0.44 U						0.9 U													
	V-29	9/13/1999						1 U						1 U													
	V-29	12/6/1999						0.44 U						0.9 U													
	V-29	7/18/2000																									
	V-29	9/25/2000						0.44 U						0.9 U													
	V-29	6/20/																									

TABLE I-1
ERCO Historical Data Master Table

VOA													VOA												
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
SPP	V-30	3/28/2007																							
SPP	V-30	6/26/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	5.4	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30	9/11/2007																							
SPP	V-30	3/25/2008																							
SPP	V-30	6/25/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	2.3	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30	9/15/2008																							
SPP	V-30	3/25/2009																							
SPP	V-30	6/16/2009	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	4.6	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30	6/15/2010	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	3.9	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30	6/6/2011	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U		1.9 U	3.1 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	0.80 U	0.77 J	0.63 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-30	6/18/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	
SPP	V-30	6/17/2013	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/3/2014	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/10/2015	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-30	6/6/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.516	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-30	6/12/2017	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.391	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-30	6/4/2018	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	2.69	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-30	6/17/2019	0.633 U	0.433 U	0.403 U	4.27 U	4.75 J	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	0.832	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-30	6/1/2020	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U		0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	0.525	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-30	6/28/2021	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U		0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	2.01	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-30	6/24/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U		0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	2.44	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-30	6/14/2023	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U		1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	0.52 J	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-30	6/14/2024	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U		1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	1.7	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-30A	12/10/1996	5 U			5 U	10 U	5 U		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	12	5 U	5 U	5 U	5 U	5 U	
SPP	V-30A	7/18/2000												0.9 U											
SPP	V-30A	9/25/2000						0.44 U						0.9 U											
SPP	V-30A	3/26/2001																							
SPP	V-30A	9/24/2001																							
SPP	V-30A	3/25/2002																							
SPP	V-30A	7/29/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U		0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	14	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
SPP	V-30A	10/15/2002																							
SPP	V-30A	3/25/2003																							
SPP	V-30A	6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	5.7	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30A	9/23/2003																							
SPP	V-30A	3/23/2004																							
SPP	V-30A	6/15/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U		0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	11	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U
SPP	V-30A	8/17/2004																							
SPP	V-30A	3/29/2005																							
SPP	V-30A	6/22/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	7	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-30A	9/27/2005																							
SPP	V-30A	3/27/2006																							
SPP	V-30A	6/20/																							

TABLE I-1
ERCO Historical Data Master Table

VOA														VOA										
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2-Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L
SPP	V-31A	6/20/2001						0.44 U					0.9 U											
SPP	V-31A	7/29/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	54	0.56 U	0.43 U	0.67 U	0.68 U	0.43 U	0.67 U
SPP	V-31A	6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	52	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/15/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U	0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	58	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U
SPP	V-31A	6/21/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	53	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/20/2006	0.46 U	0.87 U	0.95 U	4.3 U	3.6 J	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	66	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/26/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	46	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/24/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	62	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/18/2009	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	69.8	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/15/2010	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U	0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	71.3	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U
SPP	V-31A	6/6/2011	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U	1.9 U	3.1 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	0.80 U	67	0.63 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-31A	6/18/2012	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	75	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	13 U
SPP	V-31A	6/17/2013	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	66	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
SPP	V-31A	6/5/2014	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	70	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
SPP	V-31A	6/10/2015	2.5 U	2.5 U	2.5 U	25 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	62	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
SPP	V-31A (Dup)	6/10/2015	2.0 U	2.0 U	2.0 U	20 U	20 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	62	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
SPP	V-31A	6/8/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	57.5	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-31A	6/14/2017	0.633 U	0.433 U	0.403 U	4.27 U	1.23 J	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	67.7	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-31A	6/5/2018	0.633 U	0.433 U	0.403 U	4.27 U	1.32 J	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	75.9	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-31A (dup)	6/5/2018	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	71.7	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-31A	6/19/2019	0.633 U	0.433 U	0.403 U	4.27 U	4.19 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	80.5	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U
SPP	V-31A	6/3/2020	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	72.3	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-31A	6/30/2021	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	87.1	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-31A	6/22/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	74.2	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-31A (dup)	6/22/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	76.1	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U
SPP	V-31A	6/14/2023	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	87	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U
SPP	V-31A	6/10/2024	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	77	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U
SPP	V-32	12/10/1996	5 U			5 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	3.5	5 U	5 U	5 U	5 U	5 U	
SPP	V-32	4/15/1999						0.44 U					0.9 U											
SPP	V-32	6/9/1999						0.44 U					0.9 U											
SPP	V-32	9/14/1999						1 U					1 U											
SPP	V-32	12/6/1999						0.44 U					0.9 U											
SPP	V-32	9/26/2000						0.44 U					0.9 U											
SPP	V-32	12/7/2000																						
SPP	V-32	6/21/2001						0.44 U					0.9 U											
SPP	V-32	7/29/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U	0.61 U	0.7 U	0.71 U	1 Q	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	2.2 Q	0.56 U					

TABLE I-1
ERCO Historical Data Master Table

		VOA															VOA											
Area	StationId	CollectDate	1,2-Dichloropropane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	2-Butanone	Acetone	Benzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon		Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-		Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Methyl tert-Butyl Ether			
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
SPP	V-32A	12/10/1996		5 U		5 U	10 U	5 U					5 U	5 U		5 U			5 U	22		5 U						
SPP	V-32A	4/15/1999						0.44 U							0.9 U													
SPP	V-32A	6/9/1999						0.44 U							0.9 U													
SPP	V-32A	9/13/1999						1 U							1 U													
SPP	V-32A	12/6/1999						0.44 U							0.9 U													
SPP	V-32A	9/26/2000						0.44 U							0.9 U													
SPP	V-32A	6/20/2001						0.44 U							0.9 U													
SPP	V-32A	7/29/2002	0.53 U	0.54 U	0.39 U	2.4 U	4 U	0.48 U		0.61 U	0.7 U	0.71 U	0.5 U	0.73 U	0.55 U	0.57 U	0.75 U	0.62 U	1.9 Q	0.56 U		0.43 U	0.67 U	0.68 U	0.43 U	0.67 U		
SPP	V-32A	6/26/2003	0.46 U	0.87 U	0.95 U	4.3 U	2.2 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	2.6 J	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	6/15/2004	0.15 U	0.31 U	0.31 U	2.1 U	2.9 U	0.15 U		0.12 U	0.16 U	0.37 U	0.19 U	0.3 U	0.18 U	0.28 U	0.15 U	0.22 U	2.2	0.16 U	0.13 U	0.26 U	0.27 U	0.22 U	0.25 U			
SPP	V-32A	6/22/2005	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	1.9 J	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	6/20/2006	0.46 U	0.87 U	0.95 U	4.3 U	3 J	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.32 J	2.1 J	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	6/27/2007	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	0.83 U	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	6/24/2008	0.46 U	0.87 U	0.95 U	4.3 U	2.3 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	0.37 U	0.24 U	2.1	0.19 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	3/25/2009																										
SPP	V-32A	6/16/2009																										
SPP	V-32A	9/28/2009																										
SPP	V-32A	12/14/2009																										
SPP	V-32A	3/15/2010																										
SPP	V-32A	6/16/2010	0.49 U	0.87 U	0.95 U	4.3 U	5 U	0.41 U		0.56 U	0.94 U	0.91 U	0.66 U	0.49 U	0.41 U	0.97 U	1.3 U	0.24 U	2.7	0.2 U	0.81 U	0.6 U	0.99 U	0.54 U	0.61 U			
SPP	V-32A	12/16/2010																										
SPP	V-32A	3/28/2011																										
SPP	V-32A	6/6/2011	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	1.0 U		1.9 U	3.1 U	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	0.80 U	2.8	0.63 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U			
SPP	V-32A	9/27/2011																										
SPP	V-32A	12/5/2011																										
SPP	V-32A	3/13/2012																										
SPP	V-32A	6/19/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U			
SPP	V-32A (dup)	6/19/2012	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U			
SPP	V-32A	9/24/2012																										
SPP	V-32A	12/3/2012																										
SPP	V-32A (dup)	12/3/2012																										
SPP	V-32A	3/20/2013																										
SPP	V-32A	6/18/2013	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U			
SPP	V-32A (dup)	6/18/2013	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U			
SPP	V-32A	9/16/2013																										
SPP	V-32A	12/3/2013																										
SPP	V-32A	6/5/2014	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U			
SPP	V-32A	9/11/2014																										
SPP	V-32A	12/4/2014																										
SPP	V-32A	3/16/2015																										
SPP	V-32A	6/16/2015	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U			
SPP	V-32A	9/9/2015																										
SPP	V-32A	12/8/2015																										
SPP	V-32A	3/14/2016																										
SPP	V-32A	6/8/2016	0.633 U	0.433 U	0.403 U	4.27 U	3.50 U	0.299 U		0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	1.11	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U			
SPP	V-32A	9/20/2016												</														

TABLE I-1
ERCO Historical Data Master Table

			VOA												VOA										
Area	StationId	CollectDate	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	1,4-Dichlorobenzene µg/L	2-Butanone µg/L	Acetone µg/L	Benzene µg/L	Bromodichloromethane µg/L	Bromoform µg/L	Bromomethane µg/L	Carbon Disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloroform µg/L	Chloromethane µg/L	cis-1,2- Dichloroethene µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dibromomethane µg/L	Dichlorodifluoromethane µg/L	Ethylbenzene µg/L	Methyl tert-Butyl Ether µg/L	
SPP	V-32B	9/16/2013																							
SPP	V-32B	12/3/2013																							
SPP	V-32B	3/25/2014																							
SPP	V-32B	6/5/2014	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32B	9/11/2014																							
SPP	V-32B	12/4/2014																							
SPP	V-32B	3/16/2015																							
SPP	V-32B	6/16/2015	1.0 U	1.0 U	1.0 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	9.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
SPP	V-32B	9/9/2015																							
SPP	V-32B	12/8/2015																							
SPP	V-32B	3/14/2016																							
SPP	V-32B	6/8/2016	0.633 U	0.433 U	0.403 U	1.54 J	5.22 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	5.56	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U	
SPP	V-32B	9/20/2016																							
SPP	V-32B 0.1 MICRON	9/20/2016																							
SPP	V-32B	12/1/2016																							
SPP	V-32B 0.1 MICRON	12/1/2016																							
SPP	V-32B	3/29/2017																							
SPP	V-32B 0.1 MICRON	3/29/2017																							
SPP	V-32B	6/15/2017	0.633 U	0.433 U	0.403 U	4.27 U	17.0	0.299 U	0.267 U	0.620 U	0.523 U	0.149 J	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	5.22	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U	
SPP	V-32B 0.1 MICRON	6/15/2017																							
SPP	V-32B	9/7/2017																							
SPP	V-32B 0.1 MICRON	9/7/2017																							
SPP	V-32B	12/5/2017																							
SPP	V-32B 0.1 MICRON	12/5/2017																							
SPP	V-32B	3/28/2018																							
SPP	V-32B	6/6/2018	0.633 U	0.433 U	0.403 U	4.27 U	5.85	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	4.85	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U	
SPP	V-32B	9/5/2018																							
SPP	V-32B	12/14/2018																							
SPP	V-32B	3/27/2019																							
SPP	V-32B	6/20/2019	0.633 U	0.433 U	0.403 U	4.27 U	4.57 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	3.66	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U	
SPP	V-32B (dup)	6/20/2019	0.633 U	0.433 U	0.403 U	4.27 U	4.77 U	0.299 U	0.267 U	0.620 U	0.523 U	0.337 U	0.530 U	0.467 U	0.470 U	0.287 U	0.510 U	4.10	0.325 U	0.427 U	0.390 U	0.423 U	0.527 U	0.340 U	
SPP	V-32B	9/17/2019																							
SPP	V-32B (dup)	9/17/2019																							
SPP	V-32B	3/17/2020																							
SPP	V-32B (dup)	3/17/2020																							
SPP	V-32B	6/3/2020	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	4.48	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U	
SPP	V-32B	9/10/2020																							
SPP	V-32B (dup)	9/10/2020																							
SPP	V-32B	12/16/2020																							
SPP	V-32B	3/17/2021																							
SPP	V-32B (dup)	3/17/2021																							
SPP	V-32B	6/30/2021	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.176 J	3.20 U	2.79	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U	
SPP	V-32B	9/16/2021																							
SPP	V-32B	12/14/2021																							
SPP	V-32B	3/25/2022																							
SPP	V-32B	6/24/2022	0.497 U	0.997 U	0.400 U	3.97 U	37.7 U	0.314 U	0.453 U	0.430 U	2.02 U	0.321 U	0.427 U	0.390 U	0.640 U	0.370 U	3.20 U	4.25	0.370 U	0.467 U	0.407 U	1.25 U	0.457 U	0.337 U	
SPP	V-32B	9/19/2022																							
SPP	V-32B	12/15/2022																							
SPP	V-32B	3/20/2023	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	5.0 U	2.6	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-32B	6/15/2023																							
SPP	V-32B	9/5/2023																							
SPP	V-32B	12/19/2023																							
SPP	V-32B	3/18/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-32B	6/10/2024	1.0 U	1.0 U	1.0 U	5.0 U	10 U	0.50 U	1.0 U	1.0 U	3.0 U	2.0 U	1.0 U	1.0 U	5.0 U	2.0 U	5.0 U	3.6	1.0 U	1.0 U	1.0 U	3.0 U	0.50 U	1.0 U	
SPP	V-32B	9/3/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-32B	12/9/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-34	9/20/2021																							
SPP	V-34	12/15/2021																							
SPP	V-34	3/25/2022																							
SPP	V-34	6/28/2022																							
SPP	V-34 (dup)	6/28/2022																							
SPP	V-34	9/19/2022																							
SPP	V-34 (dup)	9/19/2022																							
SPP	V-34	12/16/2022																							
SPP	V-34	3/20/2023																							
SPP	V-34	6/19/2023																							
SPP	V-34	9/5/2023																							

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
Cell Room	Outfall	4/12/1999													
Cell Room	Outfall	5/11/1999													
Cell Room	Outfall	6/10/1999													
Cell Room	Outfall	9/14/1999													
Cell Room	Outfall	12/9/1999													
Cell Room	Outfall	9/26/2000													
Cell Room	Outfall	3/26/2001													
Cell Room	Outfall	9/24/2001													
Cell Room	Outfall	3/25/2002													
Cell Room	Outfall	10/17/2002													
Cell Room	Outfall	3/25/2003													
Cell Room	Outfall	9/23/2003													
Cell Room	Outfall	8/17/2004													
Cell Room	Outfall	9/27/2005													
Cell Room	Outfall	9/27/2006													
Cell Room	Outfall	9/11/2007													
Cell Room	Outfall	9/15/2008													
Cell Room	Outfall	9/29/2009													
Cell Room	Outfall	6/16/2010													
Cell Room	Outfall	6/7/2011													
Cell Room	Outfall	6/21/2012													
Cell Room	Outfall	6/20/2013													
Cell Room	Outfall	6/9/2014													
Cell Room	Outfall	6/15/2015													
Cell Room	Outfall	6/7/2016													
Cell Room	Outfall	6/12/2017													
Cell Room	Outfall	6/6/2018													
Cell Room	Outfall	6/19/2019													
Cell Room	Outfall	6/2/2020													
Cell Room	Outfall	6/28/2021													
Cell Room	Outfall	6/23/2022													
Cell Room	Outfall	6/20/2023													
Cell Room	Outfall	6/10/2024	--	--	--	--	--	--	--	--	--	--	--	--	
Cell Room	Trench	4/15/1999													
Cell Room	Trench	5/11/1999													
Cell Room	Trench	6/10/1999													
Cell Room	Trench	9/16/1999													
Cell Room	Trench	12/9/1999													
Cell Room	Trench	9/27/2000													
Cell Room	Trench	3/27/2001													
Cell Room	Trench	9/26/2001													
Cell Room	Trench	3/27/2002													
Cell Room	Trench	10/17/2002													
Cell Room	Trench	3/27/2003													
Cell Room	Trench	9/24/2003													
Cell Room	Trench	8/19/2004													
Cell Room	Trench	9/29/2005													
Cell Room	Trench	9/28/2006													
Cell Room	Trench	9/13/2007													
Cell Room	Trench	9/18/2008													
Cell Room	Trench	9/29/2009													
Cell Room	Trench	6/16/2010													
Cell Room	Trench	6/9/2011													
Cell Room	Trench	6/21/2012													
Cell Room	Trench	6/20/2013													
Cell Room	Trench	6/9/2014													
Cell Room	Trench	6/15/2015													
Cell Room	Trench	6/8/2016													
Cell Room	Trench	6/13/2017													
Cell Room	Trench	6/5/2018													
Cell Room	Trench	6/19/2019													
Cell Room	Trench	6/3/2020													
Cell Room	Trench	6/29/2021													
Cell Room	Trench	6/28/2022													
Cell Room	Trench	6/15/2023													
Cell Room	Trench	6/13/2024	--	--	--	--	--	--	--	--	--	--	--	--	
	V-01	6/18/2009													
	V-01	6/16/2010													
	V-01	6/9/2011													
	V-01	6/21/2012													
Cell Room	V-02	4/26/1983													
Cell Room	V-02	9/28/1983													
Cell Room	V-02	3/26/1984													
Cell Room	V-02	6/18/1984													
Cell Room	V-02	11/7/1984													
Cell Room	V-02	3/19/1985													
Cell Room	V-02	6/11/1985													
Cell Room	V-02	8/27/1985													
Cell Room	V-02	10/31/1985													
Cell Room	V-02	3/24/1986													
Cell Room	V-02	6/11/1986													
Cell Room	V-02	9/23/1986													
Cell Room	V-02	10/20/1986													
Cell Room	V-02	3/16/1987													
Cell Room	V-02	6/4/1987													
Cell Room	V-02	9/15/1987													
Cell Room	V-02	11/3/1987													
Cell Room	V-02	3/22/1988													
Cell Room	V-02	6/30/1988													
Cell Room	V-02	9/28/1988													
Cell Room	V-02	11/1/1988													
Cell Room	V-02	5/10/1989													
Cell Room	V-02	6/21/1989													
Cell Room	V-02	9/28/1989													
Cell Room	V-02	12/18/1989													
Cell Room	V-02	4/27/1990													
Cell Room	V-02	6/21/1990													
Cell Room	V-02	9/25/1990													
Cell Room	V-02	10/30/1990													
Cell Room	V-02	4/2/1991													
Cell Room	V-02	6/25/1991													

TABLE I-1
ERCO Historical Data Master Table

VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
Cell Room	V-02	9/20/1991												
Cell Room	V-02	10/23/1991												
Cell Room	V-02	3/27/1992												
Cell Room	V-02	6/29/1992												
Cell Room	V-02	9/23/1992												
Cell Room	V-02	11/11/1992												
Cell Room	V-02	3/30/1993												
Cell Room	V-02	6/22/1993												
Cell Room	V-02	9/29/1993												
Cell Room	V-02	12/3/1993												
Cell Room	V-02	3/23/1994												
Cell Room	V-02	7/1/1994												
Cell Room	V-02	9/29/1994												
Cell Room	V-02	12/14/1994												
Cell Room	V-02	3/16/1995												
Cell Room	V-02	6/15/1995												
Cell Room	V-02	6/22/1995	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U
Cell Room	V-02	9/27/1995												
Cell Room	V-02	12/14/1995												
Cell Room	V-02	3/14/1996												
Cell Room	V-02	4/2/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U
Cell Room	V-02	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U
Cell Room	V-02	6/27/1996	2 U		10 U	4 U		6 U	1 U		10 U	1 U	10 U	10 U
Cell Room	V-02	9/25/1996	2 U		10 U	4 U		6 U	1 U		10 U	1 U	10 U	10 U
Cell Room	V-02	9/30/1996												
Cell Room	V-02	12/9/1996	3 U		10 U	4 U		6 U	2 U		10 U	2 U	10 U	10 U
Cell Room	V-02	3/31/1997												
Cell Room	V-02	4/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U
Cell Room	V-02	7/7/1997												
Cell Room	V-02	7/9/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U
Cell Room	V-02	10/8/1997												
Cell Room	V-02	12/16/1997												
Cell Room	V-02	4/15/1999												
Cell Room	V-02	6/7/1999												
Cell Room	V-02	9/14/1999												
Cell Room	V-02	12/8/1999												
Cell Room	V-02	9/27/2000												
Cell Room	V-02	3/26/2001												
Cell Room	V-02	6/19/2001												
Cell Room	V-02	9/24/2001												
Cell Room	V-02	3/25/2002												
Cell Room	V-02	7/29/2002												
Cell Room	V-02	10/17/2002												
Cell Room	V-02	3/25/2003												
Cell Room	V-02	9/23/2003												
Cell Room	V-02	8/18/2004												
Cell Room	V-02	9/28/2005												
Cell Room	V-02	9/27/2006												
Cell Room	V-02	9/12/2007												
Cell Room	V-02	6/23/2008												
Cell Room	V-02A	4/26/1983												
Cell Room	V-02A	9/28/1983												
Cell Room	V-02A	3/26/1984												
Cell Room	V-02A	6/18/1984												
Cell Room	V-02A	11/7/1984												
Cell Room	V-02A	3/19/1985												
Cell Room	V-02A	6/11/1985												
Cell Room	V-02A	8/27/1985												
Cell Room	V-02A	10/31/1985												
Cell Room	V-02A	3/24/1986												
Cell Room	V-02A	6/11/1986												
Cell Room	V-02A	9/23/1986												
Cell Room	V-02A	10/20/1986												
Cell Room	V-02A	3/16/1987												
Cell Room	V-02A	6/4/1987												
Cell Room	V-02A	9/15/1987												
Cell Room	V-02A	11/3/1987												
Cell Room	V-02A	3/22/1988												
Cell Room	V-02A	6/30/1988												
Cell Room	V-02A	9/28/1988												
Cell Room	V-02A	11/1/1988												
Cell Room	V-02A	5/10/1989												
Cell Room	V-02A	6/21/1989												
Cell Room	V-02A	9/28/1989												
Cell Room	V-02A	12/18/1989												
Cell Room	V-02A	4/27/1990												
Cell Room	V-02A	6/21/1990												
Cell Room	V-02A	9/25/1990												
Cell Room	V-02A	10/30/1990												
Cell Room	V-02A	4/2/1991												
Cell Room	V-02A	6/25/1991												
Cell Room	V-02A	9/20/1991												
Cell Room	V-02A	10/23/1991												
Cell Room	V-02A	3/27/1992												
Cell Room	V-02A	6/29/1992												
Cell Room	V-02A	9/23/1992												
Cell Room	V-02A	11/11/1992												
Cell Room	V-02A	3/30/1993												
Cell Room	V-02A	6/22/1993												
Cell Room	V-02A	9/29/1993												
Cell Room	V-02A	12/3/1993												
Cell Room	V-02A	3/23/1994												
Cell Room	V-02A	7/1/1994												
Cell Room	V-02A	9/29/1994												
Cell Room	V-02A	12/14/1994												
Cell Room	V-02A	3/16/1995												
Cell Room	V-02A	6/15/1995												
Cell Room	V-02A	9/27/1995												

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
Cell Room	V-02A	12/14/1995													
Cell Room	V-02A	3/14/1996													
Cell Room	V-02A	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	26.6	10 U	10 U	
Cell Room	V-02A	6/26/1996	2 U		6 J	4 U		6 U	1 U		10 U	28	10 U	10 U	
Cell Room	V-02A	6/27/1996													
Cell Room	V-02A	9/18/1996	2 U		10 U	4 U		6 U	8		10 U	38	10 U	10 U	
Cell Room	V-02A	9/30/1996													
Cell Room	V-02A	12/6/1996	3 U		10 U	4 U		6 U	5.48		10 U	31.7	10 U	6.36 J	
Cell Room	V-02A	12/9/1996													
Cell Room	V-02A	3/31/1997													
Cell Room	V-02A	7/2/1997	2.8 U		10 U	4.1 U		6 U	4.44		10 U	29.1	10 U	3.63 J	
Cell Room	V-02A	7/7/1997													
Cell Room	V-02A	10/8/1997													
Cell Room	V-02A	12/16/1997													
Cell Room	V-02A	4/13/1999													
Cell Room	V-02A	9/14/1999				1 U					16			2	
Cell Room	V-02A	12/8/1999				0.41 U					18			2.3	
Cell Room	V-02A	12/9/1999													
Cell Room	V-02A	9/27/2000				0.41 U					15			1.6	
Cell Room	V-02A	3/26/2001													
Cell Room	V-02A	6/19/2001				0.41 U					8.2		0.51 U		
Cell Room	V-02A	9/24/2001													
Cell Room	V-02A	3/25/2002													
Cell Room	V-02A	7/30/2002	0.85 U	0.59 U	0.43 U&	0.57 U	170	0.47 U	1.6 Q	0.51 U	8.5	0.52 U	0.71	1.5 U	
Cell Room	V-02A	10/15/2002													
Cell Room	V-02A	3/26/2003													
Cell Room	V-02A	6/24/2003	0.43 U	0.74 U	0.86 U	0.45 U	88	0.67 U	1.5 J	0.19 U	7.3	0.79 U	0.79	2.6 U	
Cell Room	V-02A	9/23/2003													
Cell Room	V-02A	6/17/2004	0.33 U	0.33 U	0.19 U	0.33 U	130	0.17 U	0.21 U	0.16 U	9.2	0.28 U	0.97	0.59 U	
Cell Room	V-02A	8/18/2004													
Cell Room	V-02A	6/21/2005	1.1 U	1.8 U	2.2 U	1.1 U	240	1.7 U	2.2 U	0.48 U	8.5	2 U	2.3	6.5 U	
Cell Room	V-02A	9/28/2005													
Cell Room	V-02A	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	47	0.67 U	0.89 U	0.19 U	0.88 J	0.79 U	0.18 U	2.6 U	
Cell Room	V-02A	9/27/2006													
Cell Room	V-02A	6/27/2007	0.43 U	0.74 U	0.86 U	0.45 U	200	0.67 U	1.7 J	0.19 U	7	0.79 U	1.9	2.6 U	
Cell Room	V-02A	9/12/2007													
Cell Room	V-02A	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	245	0.67 U	2.6	0.19 U	14.3	0.79 U	3.4	2.6 U	
Cell Room	V-02A	9/15/2008													
Cell Room	V-02B	12/10/1996	5 U		5 U	7.6		5 U	24		5 U	200	5 U	4.3	
Cell Room	V-02B	4/15/1999				1 J						46		0.52 U	
Cell Room	V-02B	6/7/1999				12						260		5.3	
Cell Room	V-02B	9/14/1999				14						260		6	
Cell Room	V-02B	12/7/1999				26						400		6.1	
Cell Room	V-02B	9/26/2000				19						400		5.9	
Cell Room	V-02B	6/19/2001				14						440		6.3 U	
Cell Room	V-02B	7/30/2002	0.85 U	0.59 U	0.43 U&	4.1	2 U	0.47 U	87		0.51 U	190	0.52 U	7.2	
Cell Room	V-02B	6/24/2003	2.2 U	3.7 U	4.3 U	9.6	8.5 U	3.4 U	35		0.95 U	450	4 U	5.4	
Cell Room	V-02B	6/16/2004	0.33 U	0.33 U	0.19 U	8.5	0.82 U	0.17 U	41		0.16 U	370 J	0.28 U	3.8	
Cell Room	V-02B	6/21/2005	1.1 U	1.8 U	2.2 U	7.5	4.2 U	1.7 U	44		0.48 U	340	2 U	3.8	
Cell Room	V-02B	6/21/2006	2.2 U	3.7 U	4.3 U	6.8 J	8.5 U	3.4 U	40		0.95 U	390	4 U	3.3	
Cell Room	V-02B	6/27/2007	2.2 U	3.7 U	4.3 U	4.2 J	8.5 U	3.4 U	43		0.95 U	260	4 U	2.7 J	
Cell Room	V-02B	6/23/2008	0.43 U	0.74 U	0.86 U	3.9	1.7 U	0.67 U	46.9		0.19 U	240	0.79 U	2.2	
Cell Room	V-02BR	6/15/2009	0.43 U	0.89 U	0.86 U	2.7	1.7 U	0.67 U	17.9		0.19 U	270	0.79 U	2.4	
Cell Room	V-02BR	6/14/2010	0.86 U	1.8 U	1.7 U	0.9 U	3.4 U	1.3 U	12.2		0.38 U	145	1.6 U	2	
Cell Room	V-02BR	6/8/2011	2.8 U	10 U	2.0 U	2.0 U	10 U	2.0 U	8.3		1.3 U	150	2.0 U	1.7	
Cell Room	V-02BR	6/20/2012	5.7 U	5.7 U	5.7 U	5.7 U	29 U	5.7 U	7		5.7 U	89	5.7 U	1.9 J	
Cell Room	V-02BR	6/19/2013	5.0 U	5.0 U	5.0 U	5.0 U	25 U	5.0 U	7.1		5.0 U	86	5.0 U	2.2 J	
Cell Room	V-02BR	6/6/2014	6.7 U	6.7 U	6.7 U	6.7 U	33 U	6.7 U	7.1		6.7 U	93	6.7 U	6.7 U	
Cell Room	V-02BR	6/16/2015	3.3 U	3.3 U	3.3 U	3.3 U	17 U	3.3 U	3.2 J		3.3 U	20	3.3 U	3.3 U	
Cell Room	V-02BR	6/9/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	5.69		0.740 U	49.7	0.433 U	1.33	
Cell Room	V-02BR	6/15/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	5.88 J		0.740 U	32.4 J	0.433 U	2.62 J	
Cell Room	V-02BR	6/6/2018	3.57 U	0.580 U	0.390 U	0.208 J	6.07 U	1.37 U	6.17		0.740 U	30.6	0.433 U	2.04	
Cell Room	V-02BR	6/20/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	5.30		0.740 U	16.8	0.433 U	1.82	
Cell Room	V-02BR	6/4/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	3.61		0.393 U	13.1	0.533 U	1.07	
Cell Room	V-02BR	7/1/2021	1.43 U	0.580 U	0.393 U	0.341 J	3.10 U	0.927 U	5.35		0.393 U	12.5	0.533 U	2.12	
Cell Room	V-02BR	6/23/2022	1.43 U	0.580 U	0.393 U	0.709 J	3.10 U	0.927 U	5.38		0.393 UJ	20.1	0.533 U	1.38	
Cell Room	V-02BR	6/15/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	4.1		1.0 U	7.5	1.0 U	2.0	
Cell Room	V-02BR	6/13/2024	7.3 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	3.9		1.0 U	4.5	1.0 U	1.5	
Cell Room	V-02R	9/15/2008													
Cell Room	V-02R	6/15/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	
Cell Room	V-02R	6/14/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	
Cell Room	V-02R	6/7/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	1.0 U	1.0 U	0.60 U	
Cell Room	V-02R	6/20/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	0.17 J	1.0 U	1.0 U	
Cell Room	V-02R	6/19/2013	1.0 U	1.0 U	1.0 U	1.0 U	0.57 J	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	
Cell Room	V-02R	6/6/2014	1.0 U	0.64 J	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	
Cell Room	V-02R	6/16/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	
Cell Room	V-02R	6/9/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	
Cell Room	V-02R	6/15/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.177 J	0.433 U	0.393 U	
Cell Room	V-02R	6/6/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	
Cell Room	V-02R	6/20/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	
Cell Room	V-02R	6/4/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U		0.393 U	0.633 U	0.533 U	0.780 U	
Cell Room	V-02R	7/1/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U		0.393 U	0.633 U	0.533 U	0.780 U	
Cell Room	V-02R	6/22/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.						

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VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
SPP	V-03AR	3/16/1987													
SPP	V-03AR	6/4/1987													
SPP	V-03AR	9/15/1987													
SPP	V-03AR	11/3/1987													
SPP	V-03AR	3/22/1988													
SPP	V-03AR	6/30/1988													
SPP	V-03AR	9/28/1988													
SPP	V-03AR	11/1/1988													
SPP	V-03AR	5/10/1989													
SPP	V-03AR	6/21/1989													
SPP	V-03AR	9/28/1989													
SPP	V-03AR	12/18/1989													
SPP	V-03AR	4/27/1990													
SPP	V-03AR	6/21/1990													
SPP	V-03AR	9/25/1990													
SPP	V-03AR	10/30/1990													
SPP	V-03AR	4/2/1991													
SPP	V-03AR	6/25/1991													
SPP	V-03AR	9/20/1991													
SPP	V-03AR	10/23/1991													
SPP	V-03AR	3/27/1992													
SPP	V-03AR	6/29/1992													
SPP	V-03AR	9/23/1992													
SPP	V-03AR	12/14/1992													
SPP	V-03AR	3/30/1993													
SPP	V-03AR	6/22/1993													
SPP	V-03AR	9/29/1993													
SPP	V-03AR	12/3/1993													
SPP	V-03AR	3/23/1994													
SPP	V-03AR	7/1/1994													
SPP	V-03AR	9/29/1994													
SPP	V-03AR	12/14/1994													
SPP	V-03AR	3/16/1995													
SPP	V-03AR	6/15/1995													
SPP	V-03AR	6/23/1995													
SPP	V-03AR	9/27/1995													
SPP	V-03AR	12/14/1995													
SPP	V-03AR	3/14/1996													
SPP	V-03AR	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U	
SPP	V-03AR	6/25/1996	2 U		10 U	4 U		6 U	1 U		10 U	2	10 U	10 U	
SPP	V-03AR	6/27/1996													
SPP	V-03AR	9/19/1996	2 U		10 U	4 U		6 U	1 U		10 U	1 U	10 U	10 U	
SPP	V-03AR	9/30/1996													
SPP	V-03AR	12/6/1996	3 U		10 U	4 U		6 U	2 U		10 U	2 U	10 U	10 U	
SPP	V-03AR	12/9/1996													
SPP	V-03AR	3/31/1997													
SPP	V-03AR	7/7/1997													
SPP	V-03AR	10/8/1997													
SPP	V-03AR	12/16/1997													
SPP	V-03AR	4/13/1999				0.41 U					1		0.52 U		
SPP	V-03AR	6/8/1999				0.41 U					2.2		0.52 U		
SPP	V-03AR	9/14/1999				1 U					1		1 U		
SPP	V-03AR	12/7/1999				0.41 U					1.6		0.17 U		
SPP	V-03AR	7/18/2000													
SPP	V-03AR	9/26/2000				0.41 U					1.4 J		0.2 J		
SPP	V-03AR	12/6/2000													
SPP	V-03AR	3/26/2001													
SPP	V-03AR	6/19/2001				2 U					2.4 U		0.85 U		
SPP	V-03AR	9/25/2001													
SPP	V-03AR	12/11/2001													
SPP	V-03AR	3/25/2002													
SPP	V-03AR	7/30/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U		0.51 U	1.4 Q	0.52 U	0.29 Q	1.5 U
SPP	V-03AR	10/15/2002													
SPP	V-03AR	12/17/2002													
SPP	V-03AR	3/26/2003													
SPP	V-03AR	6/24/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.3 J	0.79 U	0.25 J	2.6 U
SPP	V-03AR	9/23/2003													
SPP	V-03AR	12/18/2003													
SPP	V-03AR	3/23/2004													
SPP	V-03AR	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U		0.16 U	1.3	0.28 U	0.18 U	0.59 U
SPP	V-03AR	8/17/2004													
SPP	V-03AR	12/14/2004													
SPP	V-03AR	3/29/2005													
SPP	V-03AR	6/21/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.1 J	0.79 U	0.18 U	2.6 U
SPP	V-03AR	9/27/2005													
SPP	V-03AR	12/21/2005													
SPP	V-03AR	3/27/2006													
SPP	V-03AR	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.2 J	0.79 U	0.18 U	2.6 U
SPP	V-03AR	9/26/2006													
SPP	V-03AR	12/12/2006													
SPP	V-03AR	3/27/2007													
SPP	V-03AR	6/27/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.75 J	0.79 U	0.18 U	2.6 U
SPP	V-03AR	9/11/2007													
SPP	V-03AR	12/18/2007													
SPP	V-03AR	3/25/2008													
SPP	V-03AR	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.8 J	0.79 U	0.18 U	2.6 U
SPP	V-03AR	9/17/2008													
SPP	V-03AR	12/18/2008													
SPP	V-03AR	3/25/2009													
SPP	V-03AR	6/15/2009													
SPP	V-03AR	9/28/2009													
SPP	V-03AR	12/14/2009													
SPP	V-03AR	3/15/2010													
SPP	V-03AR	6/14/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.86 J	0.79 U	0.18 U	2.6 U
SPP	V-03AR	9/27/2010													
SPP	V-03AR	12/16/2010													
SPP	V-03AR	3/29/2011													
SPP	V-03AR	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	0.87 J	1.0 U	0.60 U	3.0 U
SPP	V-03AR	9/27/2011													
SPP	V-03AR	12/5/2011													

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
SPP	V-03AR	3/13/2012													
SPP	V-03AR	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.55 J	1.0 U	0.83 J	1.0 U	1.0 U	2.0 U	
SPP	V-03AR	9/24/2012													
SPP	V-03AR	12/3/2012													
SPP	V-03AR	3/20/2013													
SPP	V-03AR	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	0.69 J	1.0 U	0.65 J	1.0 U	0.98 J	1.0 U	1.0 U	2.0 U	
SPP	V-03AR	9/16/2013													
SPP	V-03AR	12/4/2013													
SPP	V-03AR	3/25/2014													
SPP	V-03AR	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.51 J	1.0 U	0.91 J	1.0 U	1.0 U	2.0 U	
SPP	V-03AR	9/11/2014													
SPP	V-03AR	12/4/2014													
SPP	V-03AR	3/16/2015													
SPP	V-03AR	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.51 J	1.0 U	0.57 J	1.0 U	1.0 U	2.0 U	
SPP	V-03AR	9/9/2015													
SPP	V-03AR	12/8/2015													
SPP	V-03AR	3/14/2016													
SPP	V-03AR	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.350 J	0.740 U	0.532	0.433 U	0.393 U	1.50 U	
SPP	V-03AR	9/20/2016													
SPP	V-03AR	12/1/2016													
SPP	V-03AR	3/29/2017													
SPP	V-03AR	6/14/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.353 J	0.740 U	0.512 U	0.433 U	0.393 U	1.50 U	
SPP	V-03AR	9/7/2017													
SPP	V-03AR	12/5/2017													
SPP	V-03AR	3/28/2018													
SPP	V-03AR	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.423 J	0.740 U	0.647	0.433 U	0.393 U	1.05 U	
SPP	V-03AR	9/5/2018													
SPP	V-03AR (dup)	9/5/2018													
SPP	V-03AR	12/14/2018													
SPP	V-03AR	3/27/2019													
SPP	V-03AR	6/18/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.474 J	0.740 U	0.852	0.433 U	0.393 U	1.05 U	
SPP	V-03AR	9/17/2019													
SPP	V-03AR	12/18/2019													
SPP	V-03AR	3/17/2020													
SPP	V-03AR	6/3/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.364 J	0.393 U	0.681	0.533 U	0.780 U	1.50 U	
SPP	V-03AR	9/10/2020													
SPP	V-03AR	12/16/2020													
SPP	V-03AR	3/17/2021													
SPP	V-03AR	6/30/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.449 J	0.393 U	0.939	0.533 U	0.780 U	0.580 U	
SPP	V-03AR	9/16/2021													
SPP	V-03AR	12/14/2021													
SPP	V-03AR	3/28/2022													
SPP	V-03AR	6/27/2022	1.43 U	0.580 UJ	0.393 U	1.00 U	3.10 U	0.927 U	0.414 J	0.393 U	0.877	0.533 U	0.780 U	0.580 U	
SPP	V-03AR	9/16/2022													
SPP	V-03AR	12/16/2022													
SPP	V-03AR	3/20/2023													
SPP	V-03AR	6/19/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
SPP	V-03AR	9/5/2023													
SPP	V-03AR	6/11/2024	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
SPP	V-03R	4/26/1983													
SPP	V-03R	9/28/1983													
SPP	V-03R	3/26/1984													
SPP	V-03R	6/18/1984													
SPP	V-03R	11/7/1984													
SPP	V-03R	3/19/1985													
SPP	V-03R	6/11/1985													
SPP	V-03R	8/27/1985													
SPP	V-03R	10/31/1985													
SPP	V-03R	3/24/1986													
SPP	V-03R	6/11/1986													
SPP	V-03R	10/20/1986													
SPP	V-03R	3/16/1987													
SPP	V-03R	6/4/1987													
SPP	V-03R	9/15/1987													
SPP	V-03R	11/3/1987													
SPP	V-03R	3/22/1988													
SPP	V-03R	6/30/1988													
SPP	V-03R	9/28/1988													
SPP	V-03R	11/1/1988													
SPP	V-03R	5/10/1989													
SPP	V-03R	6/21/1989													
SPP	V-03R	9/28/1989													
SPP	V-03R	12/18/1989													
SPP	V-03R	4/27/1990													
SPP	V-03R	6/21/1990													
SPP	V-03R	9/25/1990													
SPP	V-03R	10/30/1990													
SPP	V-03R	4/2/1991													
SPP	V-03R	6/25/1991													
SPP	V-03R	9/20/1991													
SPP	V-03R	10/23/1991													
SPP	V-03R	3/27/1992													
SPP	V-03R	6/29/1992													
SPP	V-03R	9/23/1992													
SPP	V-03R	12/14/1992													
SPP	V-03R	3/30/1993													
SPP	V-03R	6/22/1993													
SPP	V-03R	9/29/1993													
SPP	V-03R	12/3/1993													
SPP	V-03R	3/23/1994													
SPP	V-03R	7/1/1994													
SPP	V-03R	9/29/1994													
SPP	V-03R	12/14/1994													
SPP	V-03R	3/16/1995													
SPP	V-03R	6/15/1995													
SPP	V-03R	6/22/1995													
SPP	V-03R	6/24/1995													
SPP	V-03R	9/27/1995													
SPP	V-03R	12/14/1995													
SPP	V-03R	3/14/1996													
SPP	V-03R	4/23/1996	2.8 U		10 U	4.1 U	6 U	1.6 U	10 U	1.9 U	10 U	10 U			
SPP	V-03R	6/26/1996	2 U		11	4 U	6 U	1 U	10 U	6	10 U	10 U			

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
SPP	V-03R	6/27/1996													
SPP	V-03R	9/24/1996	2 U		10 U	4 U		6 U	1 U		10 U	1 U	10 U		
SPP	V-03R	9/30/1996													
SPP	V-03R	12/6/1996	3 U		10 U	4 U		6 U	2 U		10 U	2 U	10 U	10 U	
SPP	V-03R	12/9/1996													
SPP	V-03R	3/31/1997													
SPP	V-03R	4/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U	
SPP	V-03R	7/7/1997													
SPP	V-03R	10/8/1997													
SPP	V-03R	12/16/1997													
SPP	V-03R	4/13/1999				0.41 U					0.49 U		0.52 U		
SPP	V-03R	6/8/1999				0.41 U					0.49 U		0.52 U		
SPP	V-03R	9/14/1999				1 U					1 U		1 U		
SPP	V-03R	12/7/1999				0.41 U					0.49 U		0.17 U		
SPP	V-03R	7/18/2000													
SPP	V-03R	9/26/2000				0.41 U					0.49 U		0.17 U		
SPP	V-03R	12/6/2000													
SPP	V-03R	12/7/2000													
SPP	V-03R	3/26/2001													
SPP	V-03R	6/19/2001				0.41 U					0.49 U		0.17 U		
SPP	V-03R	9/25/2001													
SPP	V-03R	12/11/2001													
SPP	V-03R	3/26/2002													
SPP	V-03R	7/30/2002	0.85 U	0.59 U	0.43 U	0.57 U	2 U	0.47 U	0.79 U	0.51 U	0.89 U	0.52 U	0.18 U	1.5 U	
SPP	V-03R	10/15/2002													
SPP	V-03R	12/17/2002													
SPP	V-03R	3/26/2003													
SPP	V-03R	6/24/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/23/2003													
SPP	V-03R	12/18/2003													
SPP	V-03R	3/23/2004													
SPP	V-03R	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U		0.16 U	0.18 U	0.28 U	0.18 U	0.59 U
SPP	V-03R	8/17/2004													
SPP	V-03R	12/14/2004													
SPP	V-03R	3/29/2005													
SPP	V-03R	6/21/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/27/2005													
SPP	V-03R	12/21/2005													
SPP	V-03R	3/27/2006													
SPP	V-03R	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/26/2006													
SPP	V-03R	12/12/2006													
SPP	V-03R	3/27/2007													
SPP	V-03R	6/27/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/11/2007													
SPP	V-03R	12/18/2007													
SPP	V-03R	3/25/2008													
SPP	V-03R	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/17/2008													
SPP	V-03R	12/18/2008													
SPP	V-03R	3/25/2009													
SPP	V-03R	6/15/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/28/2009													
SPP	V-03R	12/14/2009													
SPP	V-03R	3/15/2010													
SPP	V-03R	6/14/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
SPP	V-03R	9/27/2010													
SPP	V-03R	12/16/2010													
SPP	V-03R	3/28/2011													
SPP	V-03R	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	1.0 U	1.0 U	0.60 U	3.0 U
SPP	V-03R	9/27/2011													
SPP	V-03R	12/5/2011													
SPP	V-03R	3/13/2012													
SPP	V-03R	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-03R	9/24/2012													
SPP	V-03R	12/3/2012													
SPP	V-03R	3/20/2013													
SPP	V-03R	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-03R	9/16/2013													
SPP	V-03R	12/4/2013													
SPP	V-03R (dup)	12/4/2013													
SPP	V-03R	3/25/2014													
SPP	V-03R	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-03R	9/11/2014													
SPP	V-03R (dup)	9/11/2014													
SPP	V-03R	12/4/2014													
SPP	V-03R	3/16/2015													
SPP	V-03R	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-03R	9/9/2015													
SPP	V-03R	12/8/2015													
SPP	V-03R (Dup)	12/8/2015													
SPP	V-03R	3/14/2016													
SPP	V-03R	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-03R (dup)	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-03R	9/20/2016													
SPP	V-03R	12/1/2016													
SPP	V-03R	3/29/2017													
SPP	V-03R	6/14/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-03R (dup)	6/14/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-03R	9/7/2017													
SPP	V-03R	12/5/2017													
SPP	V-03R	3/28/2018													
SPP	V-03R	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-03R (dup)	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-03R	9/5/2018													
SPP	V-03R	12/14/2018													
SPP	V-03R	3/27/2019													
SPP	V-03R	6/18/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-03R	9/17/2019													
SPP	V-03R	12/18/2019													
SPP	V-03R	3/17/2020													
SPP	V-03R	6/3/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U	
SPP	V-03R	9/10/2020													

TABLE I-1
ERCO Historical Data Master Table

VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
SPP	V-03R	12/16/2020												
SPP	V-03R (dup)	12/16/2020												
SPP	V-03R	3/17/2021												
SPP	V-03R	6/30/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U
SPP	V-03R	9/16/2021												
SPP	V-03R	12/14/2021												
SPP	V-03R	3/28/2022												
SPP	V-03R	6/27/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U
SPP	V-03R	9/16/2022												
SPP	V-03R	12/16/2022												
SPP	V-03R	3/20/2023												
SPP	V-03R	6/19/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U
SPP	V-03R	9/5/2023												
SPP	V-03R	6/11/2024	5.1	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U
SPP	V-04A	9/28/1983												
SPP	V-04A	3/26/1984												
SPP	V-04A	6/18/1984												
SPP	V-04A	11/7/1984												
SPP	V-04A	3/19/1985												
SPP	V-04A	6/11/1985												
SPP	V-04A	8/27/1985												
SPP	V-04A	10/31/1985												
SPP	V-04A	3/24/1986												
SPP	V-04A	6/11/1986												
SPP	V-04A	9/23/1986												
SPP	V-04A	10/20/1986												
SPP	V-04A	3/16/1987												
SPP	V-04A	6/4/1987												
SPP	V-04A	9/15/1987												
SPP	V-04A	11/3/1987												
SPP	V-04A	3/22/1988												
SPP	V-04A	6/30/1988												
SPP	V-04A	9/28/1988												
SPP	V-04A	11/1/1988												
SPP	V-04A	5/10/1989												
SPP	V-04A	6/21/1989												
SPP	V-04A	9/28/1989												
SPP	V-04A	12/18/1989												
SPP	V-04A	4/27/1990												
SPP	V-04A	6/21/1990												
SPP	V-04A	9/25/1990												
SPP	V-04A	10/30/1990												
SPP	V-04A	4/2/1991												
SPP	V-04A	6/25/1991												
SPP	V-04A	9/20/1991												
SPP	V-04A	10/23/1991												
SPP	V-04A	3/27/1992												
SPP	V-04A	6/29/1992												
SPP	V-04A	6/23/1995												
SPP	V-04A	4/13/1999				0.41 U					3		3	
SPP	V-04A	6/8/1999				0.46 J					4.5		4.5	
SPP	V-04A	9/14/1999				1 U					3		2	
SPP	V-04A	12/7/1999				0.41 U					3.8		2.6	
SPP	V-04A	9/26/2000				0.41 U					2.8		2	
SPP	V-04A	3/26/2001												
SPP	V-04A	6/19/2001				0.41 U						3.1		2.4
SPP	V-04A	9/25/2001												
SPP	V-04A	12/11/2001												
SPP	V-04A	7/30/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U		0.51 U	2.4 Q	0.52 U 2.9	1.5 U
SPP	V-04A	6/24/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.5 J	0.79 U 2.4	2.6 U
SPP	V-04A	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U		0.16 U	1.2	0.28 U 2	0.59 U
SPP	V-04A	6/22/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.4 J	0.79 U 1.5	2.6 U
SPP	V-04A	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.91 J		0.19 U	1.2 J	0.79 U 1.4	2.6 U
SPP	V-04A	6/27/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.74 J	0.79 U 0.18 U	2.6 U
SPP	V-04A	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.72 J	0.79 U 0.41 J	2.6 U
SPP	V-04A	6/15/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.89 J	0.79 U 0.95 J	2.6 U
SPP	V-04A	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.9 J		0.19 U	1.1	0.79 U 1	2.6 U
SPP	V-04A	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.3		0.63 U	1.3	1.0 U 1.0	3.0 U
SPP	V-04A (dup)	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.3		0.63 U	1.2	1.0 U 0.99	3.0 U
SPP	V-04A	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.7		1.0 U	1.4	1.0 U 1.2	2.0 U
SPP	V-04A	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.2		1.0 U	1.2	1.0 U 0.92 J	2.0 U
SPP	V-04A	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.83 J		1.0 U	0.90 J	1.0 U 0.69 J	2.0 U
SPP	V-04A (dup)	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.93 J		1.0 U	0.86 J	1.0 U 0.79 J	2.0 U
SPP	V-04A	6/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.2		1.0 U	0.90 J	1.0 U 0.41 J	2.0 U
SPP	V-04A	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	1.14		0.740 U	0.794	0.433 U 0.309 J	1.50 U
SPP	V-04A	6/13/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.26		0.740 U	0.847 U	0.433 U 0.289 J	1.50 U
SPP	V-04A	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.17		0.740 U	0.510 U	0.433 U 0.393 U	1.05 U
SPP	V-04A	6/18/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	2.03		0.740 U	0.789	0.433 U 0.290 J	1.05 U
SPP	V-04A (dup)	6/18/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.96		0.740 U	0.861	0.433 U 0.287 J	1.05 U
SPP	V-04A	6/2/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	1.97		0.393 U	0.721	0.533 U 0.780 U	1.50 U
SPP	V-04A	6/29/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	1.25		0.393 U	0.473 J	0.533 U 0.371 J	0.580 U
SPP	V-04A	6/27/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	1.88		0.393 U	0.496 J	0.533 U 0.780 U	0.580 U
SPP	V-04A	6/16/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	2.0		1.0 U	0.53	1.0 U 1.0 U	1.0 U
SPP	V-04A	6/11/2024	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.6		1.0 U	0.50 U	1.0 U 1.0 U	1.0 U
SPP	V-04R	4/26/1983												
SPP	V-04R	9/28/1983												
SPP	V-04R	11/7/1984												
SPP	V-04R	3/19/1985												
SPP	V-04R	6/11/1985												
SPP	V-04R	8/27/1985												
SPP	V-04R	10/31/1985												
SPP	V-04R	3/24/1986												
SPP	V-04R	6/11/1986												
SPP	V-04R	9/23/1986												
SPP	V-04R	10/20/1986												
SPP	V-04R	3/16/1987												
SPP	V-04R	6/4/1987												
SPP	V-04R	9/15/1987												
SPP	V-04R	11/3/1987												
SPP	V-04R	3/22/1988												
SPP	V-04R	6/30/1988												

TABLE I-1
ERCO Historical Data Master Table

VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
SPP	V-04R	9/28/1988														
SPP	V-04R	11/1/1988														
SPP	V-04R	5/10/1989														
SPP	V-04R	6/21/1989														
SPP	V-04R	9/28/1989														
SPP	V-04R	12/18/1989														
SPP	V-04R	4/27/1990														
SPP	V-04R	6/21/1990														
SPP	V-04R	9/25/1990														
SPP	V-04R	10/30/1990														
SPP	V-04R	4/2/1991														
SPP	V-04R	6/25/1991														
SPP	V-04R	9/20/1991														
SPP	V-04R	10/23/1991														
SPP	V-04R	3/27/1992														
SPP	V-04R	6/29/1992														
SPP	V-04R	6/23/1995														
SPP	V-04R	6/23/2008														
SPP	V-04R	6/15/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-04R	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-04R	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U		
SPP	V-04R	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-04R	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-04R	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-04R	6/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-04R	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
SPP	V-04R	6/13/2017														
SPP	V-04R	6/5/2018														
SPP	V-04R	6/18/2019														
SPP	V-04R	6/2/2020														
SPP	V-04R	6/29/2021														
SPP	V-04R (dup)	6/29/2021														
SPP	V-04R	6/27/2022														
SPP	V-04R	6/16/2023														
SPP	V-04R	6/11/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Perimeter	V-05R	4/26/1983														
Perimeter	V-05R	9/28/1983														
Perimeter	V-05R	3/26/1984														
Perimeter	V-05R	6/18/1984														
Perimeter	V-05R	11/7/1984														
Perimeter	V-05R	3/19/1985														
Perimeter	V-05R	6/11/1985														
Perimeter	V-05R	8/27/1985														
Perimeter	V-05R	10/31/1985														
Perimeter	V-05R	3/24/1986														
Perimeter	V-05R	6/11/1986														
Perimeter	V-05R	9/23/1986														
Perimeter	V-05R	10/20/1986														
Perimeter	V-05R	3/16/1987														
Perimeter	V-05R	6/4/1987														
Perimeter	V-05R	9/15/1987														
Perimeter	V-05R	11/3/1987														
Perimeter	V-05R	3/22/1988														
Perimeter	V-05R	6/30/1988														
Perimeter	V-05R	9/28/1988														
Perimeter	V-05R	11/1/1988														
Perimeter	V-05R	5/10/1989														
Perimeter	V-05R	6/21/1989														
Perimeter	V-05R	9/28/1989														
Perimeter	V-05R	12/18/1989														
Perimeter	V-05R	4/27/1990														
Perimeter	V-05R	6/21/1990														
Perimeter	V-05R	9/25/1990														
Perimeter	V-05R	10/30/1990														
Perimeter	V-05R	4/2/1991														
Perimeter	V-05R	6/25/1991														
Perimeter	V-05R	9/20/1991														
Perimeter	V-05R	10/23/1991														
Perimeter	V-05R	3/27/1992														
Perimeter	V-05R	6/29/1992														
Perimeter	V-05R	9/23/1992														
Perimeter	V-05R	11/11/1992														
Perimeter	V-05R	3/30/1993														
Perimeter	V-05R	6/22/1993														
Perimeter	V-05R	9/29/1993														
Perimeter	V-05R	12/3/1993														
Perimeter	V-05R	3/23/1994														
Perimeter	V-05R	7/1/1994														
Perimeter	V-05R	9/29/1994														
Perimeter	V-05R	12/14/1994														
Perimeter	V-05R	3/16/1995														
Perimeter	V-05R	6/15/1995														
Perimeter	V-05R	9/27/1995														
Perimeter	V-05R	3/14/1996														
Perimeter	V-05R	4/23/1996	2.8 U		10 U	4.41		6 U	1.6 U	10 U	3.29	10 U	10 U			
Perimeter	V-05R	5/13/1996	2.8 U		10 U	4.1		6 U	1.6 U	10 U	1.9	10 U	10 U			
Perimeter	V-05R	6/27/1996	2 U		10 U	4 U		6 U	1 U	10 U	3	10 U	10 U			
Perimeter	V-05R	9/25/1996	2 U		10 U	4 U		6 U	1 U	10 U	1 U	10 U	10 U			
Perimeter	V-05R	9/30/1996														
Perimeter	V-05R	12/6/1996	3 U		10 U	4 U		6 U	2 U	10 U	2 U	10 U	10 U			
Perimeter	V-05R	7/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9 U	10 U	10 U			
Perimeter	V-05R	10/8/1997														
Perimeter	V-05R	12/16/1997														
Perimeter	V-05R	4/14/1999				1					2		0.52 U			
Perimeter	V-05R	6/10/1999				5					7.2		2.3			
Perimeter	V-05R	9/16/1999				1 U					3		2			
Perimeter	V-05R	12/7/1999				0.41 U					0.49 U		0.17 U			
Perimeter	V-05R	12/9/1999														
Perimeter	V-05R	7/18/2000														
Perimeter	V-05R	9/27/2000				0.84 J					5.2		2.2			

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
Perimeter	V-05R	12/6/2000													
Perimeter	V-05R	3/27/2001													
Perimeter	V-05R	6/18/2001				4.1					7		1.1 U		
Perimeter	V-05R	9/26/2001													
Perimeter	V-05R	12/12/2001													
Perimeter	V-05R	3/27/2002													
Perimeter	V-05R	7/31/2002	0.85 U	0.59 U	0.43 U&	0.57 U	5.6 Q	0.47 U	1.2 Q	0.51 U	2.7 Q	0.52 U	7.7	1.5 U	
Perimeter	V-05R	10/16/2002													
Perimeter	V-05R	12/17/2002													
Perimeter	V-05R	6/25/2003	0.43 U	0.74 U	0.86 U	0.94 J	1.7 U	0.67 U	0.89 U	0.19 U	4.4	0.79 U	2	2.6 U	
Perimeter	V-05R	9/24/2003													
Perimeter	V-05R	12/18/2003													
Perimeter	V-05R	3/24/2004													
Perimeter	V-05R	6/17/2004	0.33 U	0.33 U	0.19 U	7.9	0.82 U	0.17 U	0.21 U	0.16 U	6.3	0.28 U	0.18 U	0.59 U	
Perimeter	V-05R	8/19/2004													
Perimeter	V-05R	12/14/2004													
Perimeter	V-05R	3/30/2005													
Perimeter	V-05R	6/23/2005	0.43 U	0.74 U	0.86 U	3.2	1.7 U	0.67 U	0.89 U	0.19 U	4.7	0.79 U	1.1	2.6 U	
Perimeter	V-05R	9/29/2005													
Perimeter	V-05R	12/21/2005													
Perimeter	V-05R	3/27/2006													
Perimeter	V-05R	6/22/2006	0.43 U	0.74 U	0.86 U	1.5	1.7 U	0.67 U	0.89 U	0.19 U	1.6	0.79 U	0.18 U	2.6 U	
Perimeter	V-05R	9/28/2006													
Perimeter	V-05R	12/12/2006													
Perimeter	V-05R	3/27/2007													
Perimeter	V-05R	6/28/2007	0.43 U	0.74 U	0.86 U	5.3	1.7 U	0.67 U	0.89 U	0.19 U	5.7	0.79 U	0.18 U	2.6 U	
Perimeter	V-05R	9/13/2007													
Perimeter	V-05R	12/18/2007													
Perimeter	V-05R	3/26/2008													
Perimeter	V-05R	6/26/2008	0.43 U	0.74 U	0.86 U	6.3	1.7 U	0.67 U	0.89 U	0.19 U	6.2	0.79 U	0.18 U	2.6 U	
Perimeter	V-05R	9/18/2008													
Perimeter	V-05R	12/18/2008													
Perimeter	V-05R	6/17/2009	0.43 U	0.89 U	0.86 U	3.8	1.7 U	0.67 U	0.89 U	0.19 U	5.8	0.79 U	2.1	2.6 U	
Perimeter	V-05R	9/29/2009													
Perimeter	V-05R	12/15/2009													
Perimeter	V-05R	6/17/2010	0.43 U	0.89 U	0.86 U	2.6	1.7 U	0.67 U	0.89 U	0.19 U	3.4	0.79 U	1.5	2.6 U	
Perimeter	V-05R	9/28/2010													
Perimeter	V-05R	12/16/2010													
Perimeter	V-05R	6/7/2011	1.4 U	5.0 U	1.0 U	2.0	5.0 U	1.0 U	1.0 U	0.63 U	2.2	1.0 U	0.68	3.0 U	
Perimeter	V-05R	9/27/2011													
Perimeter	V-05R	12/5/2011													
Perimeter	V-05R	3/13/2012													
Perimeter	V-05R	6/20/2012	1.0 U	1.0 U	1.0 U	1	0.91 J	1.0 U	1.1	1.0 U	2	1.0 U	0.79 J	2.0 U	
Perimeter	V-05R (dup)	6/20/2012	1.0 U	1.0 U	1.0 U	0.73 J	1.2 J	1.0 U	1.1	1.0 U	1.8	1.0 U	0.71 J	2.0 U	
Perimeter	V-05R	9/24/2012													
Perimeter	V-05R	12/3/2012													
Perimeter	V-05R	6/19/2013	1.0 U	1.0 U	1.0 U	1.0 U	0.88 J	1.0 U	0.25 J	1.0 U	1.0	1.0 U	1.0 U	2.0 U	
Perimeter	V-05R (dup)	6/19/2013	1.0 U	1.0 U	1.0 U	1.0 U	1.5 J	1.0 U	0.21 J	1.0 U	0.97 J	1.0 U	1.0 U	2.0 U	
Perimeter	V-05R	9/17/2013													
Perimeter	V-05R	12/3/2013													
Perimeter	V-05R	6/6/2014	1.0 U	1.0 U	1.0 U	0.38 J	0.99 J	1.0 U	0.67 J	1.0 U	1.6	1.0 U	1.2	2.0 U	
Perimeter	V-05RR	9/11/2014													
Perimeter	V-05RR	12/4/2014													
Perimeter	V-05RR	6/17/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
Perimeter	V-05RR	9/9/2015													
Perimeter	V-05RR	12/8/2015													
Perimeter	V-05RR	3/14/2016													
Perimeter	V-05RR	6/8/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
Perimeter	V-05RR	9/20/2016													
Perimeter	V-05RR	12/1/2016													
Perimeter	V-05RR	3/29/2017													
Perimeter	V-05RR	6/13/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
Perimeter	V-05RR	9/7/2017													
Perimeter	V-05RR	12/5/2017													
Perimeter	V-05RR	3/28/2018													
Perimeter	V-05RR	6/4/2018	3.57 U	0.580 UJ	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
Perimeter	V-05RR	9/5/2018													
Perimeter	V-05RR	12/14/2018													
Perimeter	V-05RR	6/18/2019	3.57 U	0.580 U	0.390 U	0.246 J	6.07 U	1.37 U	0.507 U	0.740 U	0.590	0.433 U	0.393 U	1.05 U	
Perimeter	V-05RR	9/17/2019													
Perimeter	V-05RR	12/18/2019													
Perimeter	V-05RR	3/17/2020													
Perimeter	V-05RR	6/2/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.220 J	0.533 U	0.780 U	1.50 U	
Perimeter	V-05RR	9/10/2020													
Perimeter	V-05RR	12/16/2020													
Perimeter	V-05RR	3/17/2021													
Perimeter	V-05RR	6/29/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.309 J	0.580 U	
Perimeter	V-05RR	9/20/2021													
Perimeter	V-05RR	12/14/2021													
Perimeter	V-05RR	3/24/2022													
Perimeter	V-05RR	6/23/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 UJ	0.633 U	0.533 U	0.780 U	0.580 U	
Perimeter	V-05RR	9/16/2022													
Perimeter	V-05RR	12/15/2022													
Perimeter	V-05RR	3/20/2023													
Perimeter	V-05RR	6/19/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-05RR	9/6/2023													
Perimeter	V-05RR (dup)	9/6/2023													
Perimeter	V-05RR	6/12/2024	7.3 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-05RR (dup)	6/12/2024	7.6 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
Perimeter	V-06R	4/26/1983													
Perimeter	V-06R	9/28/1983													
Perimeter	V-06R	6/18/1984													
Perimeter	V-06R	11/7/1984													
Perimeter	V-06R	6/11/1985													
Perimeter	V-06R	8/27/1985													
Perimeter	V-06R	10/31/1985													
Perimeter	V-06R	3/24/1986													
Perimeter	V-06R	6/11/1986													
Perimeter	V-06R	9/23/1986													
Perimeter	V-06R	10/20/1986													
Perimeter	V-06R	3/16/1987													
Perimeter	V-06R	6/4/1987													
Perimeter	V-06R	9/15/1987													
Perimeter	V-06R	11/3/1987													

TABLE I-1
ERCO Historical Data Master Table

VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
Perimeter	V-06R	3/22/1988														
Perimeter	V-06R	6/30/1988														
Perimeter	V-06R	9/28/1988														
Perimeter	V-06R	11/1/1988														
Perimeter	V-06R	5/10/1989														
Perimeter	V-06R	6/21/1989														
Perimeter	V-06R	9/28/1989														
Perimeter	V-06R	12/18/1989														
Perimeter	V-06R	4/27/1990														
Perimeter	V-06R	6/21/1990														
Perimeter	V-06R	9/25/1990														
Perimeter	V-06R	10/30/1990														
Perimeter	V-06R	4/2/1991														
Perimeter	V-06R	6/25/1991														
Perimeter	V-06R	9/20/1991														
Perimeter	V-06R	10/23/1991														
Perimeter	V-06R	3/27/1992														
Perimeter	V-06R	6/29/1992														
Perimeter	V-06R	9/23/1992														
Perimeter	V-06R	11/11/1992														
Perimeter	V-06R	3/30/1993														
Perimeter	V-06R	6/22/1993														
Perimeter	V-06R	9/29/1993														
Perimeter	V-06R	12/3/1993														
Perimeter	V-06R	3/23/1994														
Perimeter	V-06R	7/1/1994														
Perimeter	V-06R	9/29/1994														
Perimeter	V-06R	12/14/1994														
Perimeter	V-06R	3/16/1995														
Perimeter	V-06R	6/15/1995														
Perimeter	V-06R	9/27/1995														
Perimeter	V-06R	3/14/1996														
Perimeter	V-06R	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U		
Perimeter	V-06R	5/13/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U		
Perimeter	V-06R	6/26/1996	2 U		10 U	4 U		6 U	1 U		10 U	1 U	10 U	10 U		
Perimeter	V-06R	9/24/1996	2 U		10 U	4 U		6 U	1 U		10 U	3	10 U	10 U		
Perimeter	V-06R	9/30/1996														
Perimeter	V-06R	12/5/1996	3 U		10 U	7.14		6 U	2 U		10 U	10.2	10 U	10 U		
Perimeter	V-06R	7/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U		
Perimeter	V-06R	10/8/1997														
Perimeter	V-06R	12/16/1997														
Perimeter	V-06R	4/14/1999				3					6			0.52 U		
Perimeter	V-06R	6/10/1999				2.1					3.3			0.52 U		
Perimeter	V-06R	9/16/1999				1 U					1			1 U		
Perimeter	V-06R	12/7/1999				2.5					4.5			0.17 U		
Perimeter	V-06R	7/18/2000														
Perimeter	V-06R	9/27/2000				0.73 J					2.2			0.41 J		
Perimeter	V-06R	12/6/2000														
Perimeter	V-06R	3/27/2001														
Perimeter	V-06R	6/18/2001				0.43 U					0.77 U			0.18 U		
Perimeter	V-06R	9/26/2001														
Perimeter	V-06R	12/12/2001														
Perimeter	V-06R	3/27/2002														
Perimeter	V-06R	7/31/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U		0.51 U	0.89 U	0.52 U	0.18 U	1.5 U	
Perimeter	V-06R	10/16/2002														
Perimeter	V-06R	12/17/2002														
Perimeter	V-06R	6/25/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1.7	0.79 U	0.18	2.6 U	
Perimeter	V-06R	9/24/2003														
Perimeter	V-06R	12/18/2003														
Perimeter	V-06R	3/24/2004														
Perimeter	V-06R	6/17/2004	0.33 U	0.33 U	0.19 U	1.2	0.82 U	0.17 U	0.21 U		0.16 U	1.7	0.28 U	0.18 U	0.59 U	
Perimeter	V-06R	8/19/2004														
Perimeter	V-06R	12/14/2004														
Perimeter	V-06R	3/30/2005														
Perimeter	V-06R	6/23/2005	0.43 U	0.74 U	0.86 U	0.81 J	1.7 U	0.67 U	0.89 U		0.19 U	1.4 J	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/29/2005														
Perimeter	V-06R	12/21/2005														
Perimeter	V-06R	3/28/2006														
Perimeter	V-06R	6/22/2006	0.43 U	0.74 U	0.86 U	1.5	1.7 U	0.67 U	0.89 U		0.19 U	1.7	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/28/2006														
Perimeter	V-06R	12/12/2006														
Perimeter	V-06R	3/27/2007														
Perimeter	V-06R	6/28/2007	0.43 U	0.74 U	0.86 U	1.8	1.7 U	0.67 U	0.89 U		0.19 U	2	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/13/2007														
Perimeter	V-06R	12/18/2007														
Perimeter	V-06R	3/26/2008														
Perimeter	V-06R	6/26/2008	0.43 U	0.74 U	0.86 U	0.45 J	1.7 U	0.67 U	0.89 U		0.19 U	0.71 J	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/18/2008														
Perimeter	V-06R	12/18/2008														
Perimeter	V-06R	6/17/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/29/2009														
Perimeter	V-06R	12/15/2009														
Perimeter	V-06R	6/17/2010	0.43 U	0.89 U	0.86 U	0.52 J	1.7 U	0.67 U	0.89 U		0.19 U	0.77 J	0.79 U	0.18 U	2.6 U	
Perimeter	V-06R	9/27/2010														
Perimeter	V-06R	12/17/2010														
Perimeter	V-06R	6/7/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	0.30 J	1.0 U	0.60 U	3.0 U	
Perimeter	V-06R (dup)	6/7/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	0.29 J	1.0 U	0.60 U	3.0 U	
SPP	V-07	9/28/1983														
SPP	V-07	11/7/1984														
SPP	V-07	3/19/1985														
SPP	V-07	6/11/1985														
SPP	V-07	8/27/1985														
SPP	V-07	10/31/1985														
SPP	V-07	3/24/1986														
SPP	V-07	6/11/1986														
SPP	V-07	10/20/1986														
SPP	V-07	3/16/1987														
SPP	V-07	6/4/1987														
SPP	V-07	9/15/1987														

TABLE I-1
ERCO Historical Data Master Table

VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
SPP	V-07	11/3/1987												
SPP	V-07	6/30/1988												
SPP	V-07	9/28/1988												
SPP	V-07	11/1/1988												
SPP	V-07	5/10/1989												
SPP	V-07	6/21/1989												
SPP	V-07	9/28/1989												
SPP	V-07	12/18/1989												
SPP	V-07	4/27/1990												
SPP	V-07	6/21/1990												
SPP	V-07	9/25/1990												
SPP	V-07	10/30/1990												
SPP	V-07	4/2/1991												
SPP	V-07	6/25/1991												
SPP	V-07	9/20/1991												
SPP	V-07	10/23/1991												
SPP	V-07	3/27/1992												
SPP	V-07	6/29/1992												
SPP	V-07	9/23/1992												
SPP	V-07	11/11/1992												
SPP	V-07	3/30/1993												
SPP	V-07	6/22/1993												
SPP	V-07	9/29/1993												
SPP	V-07	12/3/1993												
SPP	V-07	3/23/1994												
SPP	V-07	7/1/1994												
SPP	V-07	9/29/1994												
SPP	V-07	12/14/1994												
SPP	V-07	3/16/1995												
SPP	V-07	6/15/1995												
SPP	V-07	9/27/1995												
SPP	V-07	12/14/1995												
SPP	V-07	3/14/1996												
SPP	V-07	6/27/1996												
SPP	V-07	9/30/1996												
SPP	V-07	12/9/1996												
SPP	V-07	3/31/1997												
SPP	V-07	7/7/1997												
SPP	V-07	10/8/1997												
SPP	V-07	12/16/1997												
SPP	V-07	4/14/1999												
SPP	V-07	6/10/1999												
SPP	V-07	9/15/1999												
SPP	V-07	12/8/1999												
SPP	V-07	9/27/2000												
SPP	V-07	3/27/2001												
SPP	V-07	9/26/2001												
SPP	V-07	3/26/2002												
SPP	V-07	7/29/2002												
SPP	V-07	10/16/2002												
SPP	V-07	3/25/2003												
SPP	V-07	9/24/2003												
SPP	V-07	8/19/2004												
SPP	V-07	9/28/2005												
SPP	V-07	9/27/2006												
SPP	V-07	9/12/2007												
SPP	V-07	6/25/2008												
SPP	V-07	9/17/2008												
SPP	V-07R	6/18/2009												
SPP	V-07R	9/29/2009												
SPP	V-07R	6/16/2010												
SPP	V-07R	9/27/2010												
SPP	V-07R	6/7/2011												
SPP	V-07R	9/28/2011												
SPP	V-07R (dup)	9/28/2011												
SPP	V-07R	6/20/2012												
SPP	V-07R	9/25/2012												
SPP	V-07R	6/19/2013												
SPP	V-07R	9/17/2013												
SPP	V-07R	6/6/2014												
SPP	V-07R (dup)	6/6/2014												
SPP	V-07R	9/11/2014												
SPP	V-07R	6/17/2015												
SPP	V-07R (Dup)	6/17/2015												
SPP	V-07R	9/9/2015												
SPP	V-07R	6/9/2016												
SPP	V-07R (dup)	6/9/2016												
SPP	V-07R	9/20/2016												
SPP	V-07R	6/15/2017												
SPP	V-07R	9/7/2017												
SPP	V-07R	6/7/2018												
SPP	V-07R	9/5/2018												
SPP	V-07R	6/20/2019												
SPP	V-07R	9/18/2019												
SPP	V-07R	6/4/2020												
SPP	V-07R	9/11/2020												
SPP	V-07R	7/6/2021												
SPP	V-07R	9/21/2021												
SPP	V-07R	6/29/2022												
SPP	V-07R	9/16/2022												
SPP	V-07R	6/22/2023												
SPP	V-07R (dup)	6/22/2023												
SPP	V-07R	9/7/2023												
SPP	V-07R (dup)	9/7/2023												
SPP	V-07R	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-09	4/26/1983												
SPP	V-09	9/28/1983												
SPP	V-09	3/26/1984												
SPP	V-09	6/18/1984												
SPP	V-09	11/7/1984												
SPP	V-09	3/19/1985												

TABLE I-1
ERCO Historical Data Master Table

VOA																
Area	StationId	CollectDate	Methylene Chloride	Naphthalene	Styrene	Tetrachloroethene	Tetrahydrofuran	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride	Xylenes,		Total µg/L
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
SPP	V-09	6/11/1985														
SPP	V-09	8/27/1985														
SPP	V-09	10/31/1985														
SPP	V-09	3/24/1986														
SPP	V-09	6/11/1986														
SPP	V-09	9/23/1986														
SPP	V-09	10/20/1986														
SPP	V-09	3/16/1987														
SPP	V-09	6/4/1987														
SPP	V-09	9/15/1987														
SPP	V-09	11/3/1987														
SPP	V-09	3/22/1988														
SPP	V-09	6/30/1988														
SPP	V-09	9/28/1988														
SPP	V-09	11/1/1988														
SPP	V-09	5/10/1989														
SPP	V-09	6/21/1989														
SPP	V-09	9/28/1989														
SPP	V-09	12/18/1989														
SPP	V-09	4/27/1990														
SPP	V-09	6/21/1990														
SPP	V-09	9/25/1990														
SPP	V-09	10/30/1990														
SPP	V-09	4/2/1991														
SPP	V-09	6/25/1991														
SPP	V-09	9/20/1991														
SPP	V-09	10/23/1991														
SPP	V-09	3/27/1992														
SPP	V-09	6/29/1992														
SPP	V-09	9/23/1992														
SPP	V-09	11/11/1992														
SPP	V-09	3/30/1993														
SPP	V-09	6/22/1993														
SPP	V-09	9/29/1993														
SPP	V-09	12/3/1993														
SPP	V-09	3/23/1994														
SPP	V-09	7/1/1994														
SPP	V-09	9/29/1994														
SPP	V-09	12/14/1994														
SPP	V-09	3/16/1995														
SPP	V-09	6/15/1995														
SPP	V-09	9/27/1995														
SPP	V-09	12/14/1995														
SPP	V-09	3/14/1996														
SPP	V-09	9/30/1996														
SPP	V-09	3/31/1997														
SPP	V-09	10/8/1997														
SPP	V-09	4/13/1999					0.41 U					1 J		0.52 U		
SPP	V-09	6/9/1999					0.41 U					0.63 J		0.52 U		
SPP	V-09	9/14/1999					1 U					1 U		1 U		
SPP	V-09	12/7/1999					0.41 U					0.78 J		0.17 U		
SPP	V-09	9/26/2000					0.41 U					0.5 J		0.17 U		
SPP	V-09	12/7/2000														
SPP	V-09	3/26/2001														
SPP	V-09	6/19/2001				0.41 U						0.81 U		0.17 U		
SPP	V-09	9/25/2001														
SPP	V-09	12/11/2001														
SPP	V-09	3/26/2002														
SPP	V-09	7/30/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U	0.51 U	1 Q	0.52 U	0.18 U	1.5 U		
SPP	V-09	10/15/2002														
SPP	V-09	3/26/2003														
SPP	V-09	6/24/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	9/23/2003														
SPP	V-09	3/23/2004														
SPP	V-09	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U	0.16 U	0.63	0.28 U	0.18 U	0.59 U		
SPP	V-09	8/17/2004														
SPP	V-09	3/29/2005														
SPP	V-09	6/22/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	9/27/2005														
SPP	V-09	3/27/2006														
SPP	V-09	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	9/26/2006														
SPP	V-09	3/27/2007														
SPP	V-09	6/28/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	9/11/2007														
SPP	V-09	3/25/2008														
SPP	V-09	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.63 J	0.79 U	0.18 U	2.6 U		
SPP	V-09	9/17/2008														
SPP	V-09	3/25/2009														
SPP	V-09	6/15/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-09	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U		
SPP	V-09	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-09	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.23 J	1.0 U	1.0 U	2.0 U		
SPP	V-09	6/4/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.47 J	1.0 U	1.0 U	2.0 U		
SPP	V-09	6/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.28 J	1.0 U	1.0 U	2.0 U		
SPP	V-09	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
SPP	V-09	6/13/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
SPP	V-09	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.448 J	0.433 U	0.393 U	1.05 U		
SPP	V-09	6/18/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U		
SPP	V-09	6/2/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U		
SPP	V-09	6/29/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U		
SPP	V-09	6/27/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U		
SPP	V-09	6/19/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-09	6/11/2024	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-09 (dup)	6/11/2024	5.2	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
V-13		4/26/1983														
V-13		9/28/1983														
V-13		3/26/1984														
V-13		6/18/1984														

TABLE I-1
ERCO Historical Data Master Table

VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
V-13	V-13	11/7/1984														
	V-13	3/19/1985														
	V-13	6/11/1985														
	V-13	8/27/1985														
	V-13	10/31/1985														
	V-13	3/24/1986														
	V-13	6/11/1986														
	V-13	9/23/1986														
	V-13	10/20/1986														
	V-13	3/16/1987														
	V-13	6/4/1987														
	V-13	9/15/1987														
	V-13	11/3/1987														
	V-13	3/22/1988														
	V-13	6/30/1988														
	V-13	9/28/1988														
	V-13	11/1/1988														
	V-13	5/10/1989														
	V-13	6/21/1989														
	V-13	9/28/1989														
	V-13	12/18/1989														
	V-13	4/27/1990														
	V-13	6/21/1990														
	V-13	9/25/1990														
	V-13	10/30/1990														
	V-13	4/2/1991														
	V-13	6/25/1991														
	V-13	9/20/1991														
	V-13	10/23/1991														
	V-13	3/27/1992														
	V-13	6/29/1992														
	V-13	9/23/1992														
	V-13	11/11/1992														
	V-13	3/30/1993														
	V-13	6/22/1993														
	V-13	9/29/1993														
	V-13	12/3/1993														
	V-13	3/23/1994														
	V-13	7/1/1994														
	V-13	9/29/1994														
	V-13	12/14/1994														
	V-13	3/16/1995														
	V-13	6/15/1995														
	V-13	9/27/1995														
	V-13	12/14/1995														
	V-13	3/14/1996														
	V-13	6/27/1996														
	V-13	9/30/1996														
	V-13	12/9/1996														
	V-13	3/31/1997														
	V-13	7/7/1997														
	V-13	10/8/1997														
	V-13	12/16/1997														
	V-13	3/27/2001														
	V-13	6/21/2001														
	V-13	9/24/2001														
	V-13	12/11/2001														
	V-13	3/26/2002														
	V-13	6/23/2008														
	V-13	6/16/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
	V-13	6/14/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
	V-13	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U		
	V-13	6/20/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
	V-13	6/18/2013	1.0 U	1.0 U	1.0 U	1.0 U	1.3 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
	V-13	6/5/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
	V-13	6/16/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
	V-13	6/7/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
	V-13	6/14/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
	V-13	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U		
	V-13	6/19/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U		
	V-13 (dup)	6/19/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U		
	V-13	6/3/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U		
	V-13	7/1/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U		
	V-13	6/23/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 UJ	0.633 U	0.533 U	0.780 U	0.580 U		
	V-13	6/16/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
	V-13	6/13/2024	7.4 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-16	4/26/1983														
SPP	V-16	9/28/1983														
SPP	V-16	3/26/1984														
SPP	V-16	6/18/1984														
SPP	V-16	11/7/1984														
SPP	V-16	3/19/1985														
SPP	V-16	6/11/1985														
SPP	V-16	8/27/1985														
SPP	V-16	10/31/1985														
SPP	V-16	3/24/1986														
SPP	V-16	6/11/1986														
SPP	V-16	9/23/1986														
SPP	V-16	10/20/1986														
SPP	V-16	3/16/1987														
SPP	V-16	6/4/1987														
SPP	V-16	9/15/1987														
SPP	V-16	11/3/1987														
SPP	V-16	3/22/1988														
SPP	V-16	6/30/1988														
SPP	V-16	9/28/1988														
SPP	V-16	11/1/1988														
SPP	V-16	5/10/1989														
SPP	V-16	6/21/1989														
SPP	V-16	9/28/1989														

TABLE I-1
ERCO Historical Data Master Table

VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
SPP	V-16	12/18/1989												
SPP	V-16	4/27/1990												
SPP	V-16	6/21/1990												
SPP	V-16	9/25/1990												
SPP	V-16	10/30/1990												
SPP	V-16	4/2/1991												
SPP	V-16	6/25/1991												
SPP	V-16	9/20/1991												
SPP	V-16	10/23/1991												
SPP	V-16	3/27/1992												
SPP	V-16	6/29/1992												
SPP	V-16	9/23/1992												
SPP	V-16	11/11/1992												
SPP	V-16	3/30/1993												
SPP	V-16	6/22/1993												
SPP	V-16	9/29/1993												
SPP	V-16	12/3/1993												
SPP	V-16	3/23/1994												
SPP	V-16	7/1/1994												
SPP	V-16	9/29/1994												
SPP	V-16	12/14/1994												
SPP	V-16	3/16/1995												
SPP	V-16	6/15/1995												
SPP	V-16	9/27/1995												
SPP	V-16	12/14/1995												
SPP	V-16	3/14/1996												
SPP	V-16	4/22/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9	10 U	10 U
SPP	V-16	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	39.4	10 U	10 U
SPP	V-16	6/25/1996	2 U		22	4 U		6 U	1 U		10 U	18	10 U	10 U
SPP	V-16	9/19/1996	2 U		10 U	4 U		6 U	1 U		10 U	25	10 U	10 U
SPP	V-16	9/30/1996												
SPP	V-16	12/5/1996	3 U		10 U	4 U		6 U	2 U		10 U	38.4	10 U	10 U
SPP	V-16	3/27/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	30	10 U	10 U
SPP	V-16	3/31/1997												
SPP	V-16	7/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	26.1	10 U	10 U
SPP	V-16	10/8/1997												
SPP	V-16	12/16/1997												
SPP	V-16	4/14/1999				0.41 U					8		1	
SPP	V-16	6/10/1999				0.41 U					14		5.8	
SPP	V-16	9/15/1999				1 U					8		5	
SPP	V-16	12/8/1999				0.41 U					12		4.3	
SPP	V-16	9/28/2000				0.41 U					11		6.7	
SPP	V-16	3/28/2001												
SPP	V-16	6/21/2001				0.41 U					10		10	
SPP	V-16	9/26/2001												
SPP	V-16	3/27/2002												
SPP	V-16	8/1/2002	0.85 U	0.59 U	0.43 U&	0.57 U	3.3 Q	0.47 U	6.9	0.51 U	10	0.52 U	13	1.5 U
SPP	V-16	10/17/2002												
SPP	V-16	3/25/2003												
SPP	V-16	6/26/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	5.6	0.19 U	8.4	0.79 U	12	2.6 U
SPP	V-16	9/25/2003												
SPP	V-16	3/24/2004												
SPP	V-16	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	5.4	0.16 U	6.1	0.28 U	15	0.59 U
SPP	V-16	8/18/2004												
SPP	V-16	3/30/2005												
SPP	V-16	6/23/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	6.5	0.19 U	5.5	0.79 U	19	2.6 U
SPP	V-16	9/29/2005												
SPP	V-16	3/28/2006												
SPP	V-16	6/22/2006	0.43 U	0.74 U	0.86 U	0.45 U	5 J	0.67 U	6.9	0.19 U	7.6	0.79 U	24	2.6 U
SPP	V-16	9/28/2006												
SPP	V-16R	6/28/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	1.3 J	0.19 U	0.91 J	0.79 U	4.8	2.6 U
SPP	V-16R	9/13/2007												
SPP	V-16R	3/26/2008												
SPP	V-16R	6/25/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	3.1	2.6 U
SPP	V-16R	9/18/2008												
SPP	V-16R	3/26/2009												
SPP	V-16R	6/18/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	1.8	2.6 U
SPP	V-16R	9/29/2009												
SPP	V-16R	12/15/2009												
SPP	V-16R	3/16/2010												
SPP	V-16R	6/17/2010	0.65 J	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	1.2	2.6 U
SPP	V-16R	9/28/2010												
SPP	V-16R	12/17/2010												
SPP	V-16R	3/28/2011												
SPP	V-16R	6/7/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.79	3.0 U
SPP	V-16R	9/27/2011												
SPP	V-16R	12/5/2011												
SPP	V-16R	3/13/2012												
SPP	V-16R	6/18/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.27 J	1.0 U	1.0 U	1.0 U	0.52 J	2.0 U
SPP	V-16R	9/24/2012												
SPP	V-16R	12/3/2012												
SPP	V-16R	3/19/2013												
SPP	V-16R	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-16R	9/16/2013												
SPP	V-16R	12/3/2013												
SPP	V-16R	3/25/2014												
SPP	V-16R	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-16R	9/11/2014												
SPP	V-16R	12/4/2014												
SPP	V-16R	3/16/2015												
SPP	V-16R	6/8/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
SPP	V-16R	9/9/2015												
SPP	V-16R	12/8/2015												
SPP	V-16R	3/14/2016												
SPP	V-16R	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U
SPP	V-16R	9/20/2016												
SPP	V-16R	12/1/2016												
SPP	V-16R	3/29/2017												
SPP	V-16R	6/12/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U
SPP	V-16R	9/7/2017												
SPP	V-16R	12/5/2017												

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
SPP	V-16R	3/28/2018													
SPP	V-16R	6/4/2018	3.57 U	0.580 UJ	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-16R	9/5/2018													
SPP	V-16R	12/14/2018													
SPP	V-16R	3/27/2019													
SPP	V-16R	6/19/2019	3.57 UJ	0.580 UJ	0.390 UJ	0.663 UJ	6.07 UJ	1.37 UJ	0.507 UJ	0.740 UJ	0.510 UJ	0.433 UJ	0.393 UJ	1.05 UJ	
SPP	V-16R	9/18/2019													
SPP	V-16R	12/19/2019													
SPP	V-16R	3/17/2020													
SPP	V-16R	6/1/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U	
SPP	V-16R	9/10/2020													
SPP	V-16R	12/16/2020													
SPP	V-16R	3/17/2021													
SPP	V-16R	6/28/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U	
SPP	V-16R	12/14/2021													
SPP	V-16R	3/24/2022													
SPP	V-16R	6/23/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 UJ	0.633 U	0.533 U	0.780 U	0.580 U	
SPP	V-16R	12/16/2022													
SPP	V-16R	6/20/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U	
SPP	V-16R	9/7/2023													
SPP	V-18R	6/17/2009													
SPP	V-18R	9/29/2009													
SPP	V-18R	12/14/2009													
SPP	V-18R	3/15/2010													
SPP	V-18R	6/16/2010													
SPP	V-18R	9/27/2010													
SPP	V-18R	12/15/2010													
SPP	V-18R	3/29/2011													
SPP	V-18R (dup)	3/29/2011													
SPP	V-18R	6/9/2011													
SPP	V-18R (dup)	6/9/2011													
SPP	V-18R	9/28/2011													
SPP	V-18R	12/5/2011													
SPP	V-18R (dup)	12/5/2011													
SPP	V-18R	3/13/2012													
SPP	V-18R (dup)	3/13/2012													
SPP	V-18R	6/20/2012													
SPP	V-18R	9/25/2012													
SPP	V-18R (dup)	9/25/2012													
SPP	V-18R	12/4/2012													
SPP	V-18R	3/20/2013													
SPP	V-18R (dup)	3/20/2013													
SPP	V-18R	6/19/2013													
SPP	V-18R	9/16/2013													
SPP	V-18R	12/4/2013													
SPP	V-18R	3/25/2014													
SPP	V-18R (dup)	3/25/2014													
SPP	V-18R	6/6/2014													
SPP	V-18R (dup)	6/6/2014													
SPP	V-18R	9/11/2014													
SPP	V-18R	12/4/2014													
SPP	V-18R	3/16/2015													
SPP	V-18R (Dup)	3/16/2015													
SPP	V-18R	6/17/2015													
SPP	V-18R	9/9/2015													
SPP	V-18R (Dup)	9/9/2015													
SPP	V-18R	12/9/2015													
SPP	V-18R (Dup)	12/9/2015													
SPP	V-18R	3/14/2016													
SPP	V-18R (dup)	3/14/2016													
SPP	V-18R	6/9/2016													
SPP	V-18R	9/21/2016													
SPP	V-18R 0.1 MICRON	9/21/2016													
SPP	V-18R	12/1/2016													
SPP	V-18R 0.1 MICRON	12/1/2016													
SPP	V-18R	3/29/2017													
SPP	V-18R 0.1 MICRON	3/29/2017													
SPP	V-18R	6/15/2017													
SPP	V-18R 0.1 MICRON	6/15/2017													
SPP	V-18R	9/7/2017													
SPP	V-18R 0.1 MICRON	9/7/2017													
SPP	V-18R	12/5/2017													
SPP	V-18R 0.1 MICRON	12/5/2017													
SPP	V-18R	3/28/2018													
SPP	V-18R 0.1 MICRON	3/28/2018													
SPP	V-18R	6/7/2018													
SPP	V-18R 0.1 MICRON	6/7/2018													
SPP	V-18R	9/6/2018													
SPP	V-18R 0.1 MICRON	9/6/2018													
SPP	V-16R	12/14/2018													
SPP	V-16R 0.1 MICRON	12/14/2018													
SPP	V-16R	3/27/2019													
SPP	V-18R	6/21/2019													
SPP	V-18R	9/18/2019													
SPP	V-18R	12/19/2019													
SPP	V-18R	3/17/2020													
SPP	V-18R	6/4/2020													
SPP	V-18R	9/11/2020													
SPP	V-18R	12/17/2020													
SPP	V-18R	3/17/2021													
SPP	V-18R	7/6/2021													
SPP	V-18R	9/20/2021													
SPP	V-18R	12/15/2021													
SPP	V-18R (dup)	12/15/2021													
SPP	V-18R	3/24/2022													
SPP	V-18R (dup)	3/24/2022													
SPP	V-18R	6/28/2022													
SPP	V-18R	9/16/2022													
SPP	V-18R	12/15/2022													
SPP	V-18R	3/21/2023													
SPP	V-18R (dup)	3/21/2023													
SPP	V-18R	6/20/2023													
SPP	V-18R	9/6/2023													
SPP	V-18R	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-18R (dup)	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-19	6/17/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U	
SPP	V-19	6/17/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U	
SPP	V-19	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U	

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
SPP	V-19	6/20/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19	6/19/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19	6/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-19	6/13/2017													
SPP	V-19	6/4/2018													
SPP	V-19	6/20/2019													
SPP	V-19	6/2/2020													
SPP	V-19	6/29/2021													
SPP	V-19	6/28/2022													
SPP	V-19	6/20/2023													
SPP	V-19	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--	
SPP	V-19A	6/17/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U	
SPP	V-19A	6/17/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U	
SPP	V-19A	6/8/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U	
SPP	V-19A	6/20/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19A	6/19/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.20 J	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19A	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19A	6/15/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	
SPP	V-19A	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-19A	6/13/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U	
SPP	V-19A	6/4/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-19A	6/20/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U	
SPP	V-19A	6/2/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U	
SPP	V-19A (dup)	6/2/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U	
SPP	V-19A	6/29/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.365 J	0.580 U	
SPP	V-19A	6/28/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U	
SPP	V-19A	6/20/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	0.34 J	
SPP	V-20	6/27/1992													
SPP	V-20	9/23/1992													
SPP	V-20	12/14/1992													
SPP	V-20	3/30/1993													
SPP	V-20	6/22/1993													
SPP	V-20	9/29/1993													
SPP	V-20	12/3/1993													
SPP	V-20	3/10/1994	2.8 U		10 U	4.1 U		6 U	3.95	10 U	9.91	10 U	10 U		
SPP	V-20	3/23/1994													
SPP	V-20	7/1/1994													
SPP	V-20	9/29/1994													
SPP	V-20	12/14/1994													
SPP	V-20	3/16/1995													
SPP	V-20	6/15/1995													
SPP	V-20	6/23/1995													
SPP	V-20	6/24/1995													
SPP	V-20	9/27/1995													
SPP	V-20	12/14/1995													
SPP	V-20	3/14/1996													
SPP	V-20	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	6.6	10 U	10 U		
SPP	V-20	4/24/1996	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9	10 U	10 U		
SPP	V-20	6/27/1996													
SPP	V-20	6/28/1996	2 U		2 J	4 U		6 U	1 U	10 U	9	10 U	10 U		
SPP	V-20	9/25/1996	2 U		10 U	4 U		6 U	1 U	10 U	9	10 U	10 U		
SPP	V-20	9/30/1996													
SPP	V-20	12/9/1996													
SPP	V-20	3/31/1997													
SPP	V-20	4/2/1997	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9 U	10 U	10 U		
SPP	V-20	7/7/1997													
SPP	V-20	7/9/1997	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	6.2	10 U	10 U		
SPP	V-20	10/8/1997													
SPP	V-20	12/16/1997													
SPP	V-20	4/14/1999													
SPP	V-20	6/9/1999													
SPP	V-20	9/15/1999													
SPP	V-20	12/8/1999													
SPP	V-20	9/28/2000													
SPP	V-20	3/28/2001													
SPP	V-20	9/25/2001													
SPP	V-20	3/27/2002													
SPP	V-20	7/29/2002													
SPP	V-20	10/16/2002													
SPP	V-20	3/25/2003													
SPP	V-20	9/24/2003													
SPP	V-20	8/18/2004													
SPP	V-20	9/28/2005													
SPP	V-20	9/27/2006													
SPP	V-20	9/12/2007													
SPP	V-20	6/25/2008													
SPP	V-20	9/17/2008													
SPP	V-20A	6/27/1992													
SPP	V-20A	9/23/1992													
SPP	V-20A	12/14/1992													
SPP	V-20A	3/30/1993													
SPP	V-20A	6/22/1993													
SPP	V-20A	9/29/1993													
SPP	V-20A	12/3/1993													
SPP	V-20A	3/10/1994	14 U		50 U	21 U		30 U	585	50 U	52.9	50 U	138		
SPP	V-20A	3/23/1994													
SPP	V-20A	7/1/1994													
SPP	V-20A	9/29/1994													
SPP	V-20A	12/14/1994													
SPP	V-20A	3/16/1995													
SPP	V-20A	6/15/1995													
SPP	V-20A	6/23/1995													
SPP	V-20A	6/24/1995													
SPP	V-20A	9/27/1995													
SPP	V-20A	3/14/1996													
SPP	V-20A	4/23/1996	2.8 U		10 U	4.1 U		6 U	61.2	10 U	26.7	10 U	137		
SPP	V-20A	6/25/1996	4 U		3 J	8 U		12 U	31	20 U	22	20 U	167		
SPP	V-20A	6/27/1996													
SPP	V-20A	9/24/1996	4 U		20 U	8 U		12 U	46	20 U	25	20 U	218		

TABLE I-1
ERCO Historical Data Master Table

VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
SPP	V-20A	9/30/1996												
SPP	V-20A	12/9/1996												
SPP	V-20A	3/27/1997	2.8 U		10 U	4.1 U		6 U	30		10 U	20	10 U	100
SPP	V-20A	3/31/1997												
SPP	V-20A	7/2/1997	2.8 U		10 U	4.1 U		6 U	33.5		10 U	27.1	10 U	139
SPP	V-20A	7/7/1997												
SPP	V-20A	10/8/1997												
SPP	V-20A	12/16/1997												
SPP	V-20A	4/13/1999				0.82 U					26			110
SPP	V-20A	6/9/1999				0.82 U					31			96
SPP	V-20A	9/15/1999				2 U					32			110
SPP	V-20A	12/7/1999				0.41 U					33			92
SPP	V-20A	7/18/2000												
SPP	V-20A	9/28/2000				0.41 U					32			88
SPP	V-20A	12/6/2000				0.41 U					29			90
SPP	V-20A	3/28/2001				0.41 U					32			74
SPP	V-20A	6/18/2001				0.41 U					34			73
SPP	V-20A	9/24/2001												
SPP	V-20A	3/27/2002				0.41 U					25			69
SPP	V-20A	7/31/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	41	0.51 U	30	0.52 U	58	1.5 U
SPP	V-20A	10/16/2002												
SPP	V-20A	3/26/2003												
SPP	V-20A	6/26/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	43	0.19 U	21	0.79 U	53	2.6 U
SPP	V-20A	9/24/2003												
SPP	V-20A	6/17/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	28	0.16 U	14	0.28 U	35	0.59 U
SPP	V-20A	8/18/2004												
SPP	V-20A	6/23/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	27	0.19 U	13	0.79 U	26	2.6 U
SPP	V-20A	9/28/2005												
SPP	V-20A	6/22/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	29	0.19 U	12	0.79 U	27	2.6 U
SPP	V-20A	9/27/2006												
SPP	V-20A	6/28/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	19	0.19 U	13	0.79 U	15	2.6 U
SPP	V-20A	9/12/2007												
SPP	V-20A	6/25/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	17.6	0.19 U	8.6	0.79 U	14.2	2.6 U
SPP	V-20A	9/17/2008												
SPP	V-21	6/27/1992												
SPP	V-21	9/23/1992												
SPP	V-21	12/14/1992												
SPP	V-21	3/30/1993												
SPP	V-21	6/22/1993												
SPP	V-21	9/29/1993												
SPP	V-21	12/3/1993												
SPP	V-21	3/10/1994	2.8 U		10 U	4.1 U		6 U	12.4	10 U	22.8	10 U	13.4	
SPP	V-21	3/23/1994												
SPP	V-21	7/1/1994												
SPP	V-21	9/29/1994												
SPP	V-21	12/14/1994												
SPP	V-21	3/16/1995												
SPP	V-21	6/15/1995												
SPP	V-21	9/27/1995												
SPP	V-21	12/14/1995												
SPP	V-21	3/14/1996												
SPP	V-21	6/27/1996												
SPP	V-21	9/30/1996												
SPP	V-21	12/9/1996												
SPP	V-21	3/31/1997												
SPP	V-21	7/7/1997												
SPP	V-21	10/8/1997												
SPP	V-21	12/16/1997												
SPP	V-21	4/14/1999												
SPP	V-21	6/9/1999												
SPP	V-21	9/15/1999												
SPP	V-21	12/8/1999												
SPP	V-21	9/28/2000												
SPP	V-21	3/27/2001												
SPP	V-21	9/24/2001												
SPP	V-21	3/26/2002												
SPP	V-21	7/29/2002												
SPP	V-21	10/16/2002												
SPP	V-21	3/25/2003												
SPP	V-21	9/24/2003												
SPP	V-21	8/18/2004												
SPP	V-21	9/28/2005												
SPP	V-21	9/27/2006												
SPP	V-21	9/12/2007												
SPP	V-21	6/25/2008												
SPP	V-21	9/17/2008												
SPP	V-22	6/27/1992												
SPP	V-22	9/23/1992												
SPP	V-22	12/14/1992												
SPP	V-22	3/30/1993												
SPP	V-22	6/22/1993												
SPP	V-22	9/29/1993												
SPP	V-22	12/3/1993												
SPP	V-22	3/10/1994	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9 U	10 U	10 U	
SPP	V-22	3/23/1994												
SPP	V-22	7/1/1994												
SPP	V-22	9/29/1994												
SPP	V-22	12/14/1994												
SPP	V-22	3/16/1995												
SPP	V-22	6/15/1995												
SPP	V-22	9/27/1995												
SPP	V-22	12/14/1995												
SPP	V-22	3/14/1996												
SPP	V-22	4/22/1996	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9 U	10 U	10 U	
SPP	V-22	4/23/1996	2.8 U		10 U	4.1 U		6 U	1.6 U	10 U	1.9 U	10 U	10 U	
SPP	V-22	6/26/1996	2 U		1 J	4 U		6 U	1 U	10 U	1 U	10 U	10 U	
SPP	V-22	6/27/1996												
SPP	V-22	9/19/1996	2 U		10 U	4 U		6 U	1 U	10 U	1 U	10 U	10 U	
SPP	V-22	9/30/1996												

TABLE I-1
ERCO Historical Data Master Table

VOA																	
Area	StationId	CollectDate	Methylene Chloride	Naphthalene	Styrene	Tetrachloroethene	Tetrahydrofuran	Toluene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl Chloride	Xylenes, Total			
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SPP	V-22	12/5/1996	3 U		10 U	4 U		6 U	2 U		10 U	2 U	10 U	10 U			
SPP	V-22	12/9/1996															
SPP	V-22	3/27/1997	2.8 U		10 U	4.1 U		6 U	1.6 U		10 U	1.9 U	10 U	10 U			
SPP	V-22	3/31/1997															
SPP	V-22	7/7/1997															
SPP	V-22	10/8/1997															
SPP	V-22	12/16/1997															
SPP	V-22	4/13/1999				0.41 U					0.49 U		0.52 U				
SPP	V-22	6/9/1999				0.41 U					1.5 J		0.81 J				
SPP	V-22	9/15/1999				1 U					1 U		2				
SPP	V-22	12/8/1999				0.41 U					0.69 J		1.1				
SPP	V-22	9/28/2000				0.41 U					2.1		1.1				
SPP	V-22	3/28/2001															
SPP	V-22	6/18/2001				0.41 U					2.3		0.36 U				
SPP	V-22	9/25/2001															
SPP	V-22	3/26/2002															
SPP	V-22	7/31/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U		0.51 U	2.1 Q	0.52 U	0.94	1.5 U		
SPP	V-22	10/16/2002															
SPP	V-22	3/25/2003															
SPP	V-22	6/26/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.86 J	0.79 U	1.3	2.6 U		
SPP	V-22	9/24/2003															
SPP	V-22	6/17/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U		0.16 U	2.4	0.28 U	0.18 U	0.59 U		
SPP	V-22	8/18/2004															
SPP	V-22	6/23/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	2.8	0.79 U	0.18 U	2.6 U		
SPP	V-22	9/28/2005															
SPP	V-22	6/22/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	1 J	0.79 U	0.56 J	2.6 U		
SPP	V-22	9/27/2006															
SPP	V-22	6/28/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	2.2	0.79 U	0.18 U	2.6 U		
SPP	V-22	9/12/2007															
SPP	V-22	6/25/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	2.5	0.79 U	0.18 U	2.6 U		
SPP	V-22	9/17/2008															
SPP	V-23	6/27/1992															
SPP	V-23	9/23/1992															
SPP	V-23	12/14/1992															
SPP	V-23	3/30/1993															
SPP	V-23	6/22/1993															
SPP	V-23	9/29/1993															
SPP	V-23	12/3/1993															
SPP	V-23	3/10/1994	2.8 U		10 U	4.1 U		6 U	3.61		10 U	11.9	10 U	10 U			
SPP	V-23	3/23/1994															
SPP	V-23	7/1/1994															
SPP	V-23	9/29/1994															
SPP	V-23	12/14/1994															
SPP	V-23	3/16/1995															
SPP	V-23	6/15/1995															
SPP	V-23	9/27/1995															
SPP	V-23	12/14/1995															
SPP	V-23	3/14/1996															
SPP	V-23	6/27/1996															
SPP	V-23	9/30/1996															
SPP	V-23	12/9/1996															
SPP	V-23	3/31/1997															
SPP	V-23	7/7/1997															
SPP	V-23	10/8/1997															
SPP	V-23	12/16/1997															
SPP	V-23	4/14/1999															
SPP	V-23	6/7/1999															
SPP	V-23	9/15/1999															
SPP	V-23	12/8/1999															
SPP	V-23	9/28/2000															
SPP	V-23	12/6/2000															
SPP	V-23	3/28/2001															
SPP	V-23	6/18/2001															
SPP	V-23	9/25/2001															
SPP	V-23	12/11/2001															
SPP	V-23	3/26/2002															
SPP	V-23	8/1/2002	0.9 Q	0.59 U	0.43 U&	4.1	2 U	0.47 U	0.79 U		0.51 U	8.6	0.52 U	0.18 U	1.5 U		
SPP	V-23	10/17/2002															
SPP	V-23	12/17/2002															
SPP	V-23	3/26/2003															
SPP	V-23	6/26/2003															
SPP	V-23	9/24/2003															
SPP	V-23	12/18/2003															
SPP	V-23	3/24/2004															
SPP	V-23	6/17/2004															
SPP	V-23	8/18/2004															
SPP	V-23	12/14/2004															
SPP	V-23	3/29/2005															
SPP	V-23	6/23/2005															
SPP	V-23	9/28/2005															
SPP	V-23	12/21/2005															
SPP	V-23	3/28/2006															
SPP	V-23	6/22/2006															
SPP	V-23	9/27/2006															
SPP	V-23	12/12/2006															
SPP	V-23	3/28/2007															
SPP	V-23	6/29/2007															
SPP	V-23	9/13/2007															
SPP	V-23	12/18/2007															
SPP	V-23	3/26/2008															
SPP	V-23	6/25/2008															
SPP	V-23	9/17/2008															
SPP	V-23	1/8/2009															
SPP	V-23	3/26/2009															
SPP	V-23	6/17/2009															
SPP	V-23	9/29/2009															
SPP	V-23	12/14/2009															
SPP	V-23	3/15/2010															
SPP	V-23	6/16/2010															

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VOA														
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L
SPP	V-23	9/27/2010												
SPP	V-23	12/15/2010												
SPP	V-23	3/29/2011												
SPP	V-23	6/9/2011												
SPP	V-23	9/28/2011												
SPP	V-23	12/5/2011												
SPP	V-23 (dup)	12/5/2011												
SPP	V-23	3/13/2012												
SPP	V-23	6/21/2012												
SPP	V-23	9/25/2012												
SPP	V-23	12/4/2012												
SPP	V-23 (dup)	12/4/2012												
SPP	V-23	3/20/2013												
SPP	V-23	6/19/2013												
SPP	V-23	9/17/2013												
SPP	V-23 (dup)	9/17/2013												
SPP	V-23	12/4/2013												
SPP	V-23	3/26/2014												
SPP	V-23	6/6/2014												
SPP	V-23	9/12/2014												
SPP	V-23	12/5/2014												
SPP	V-23	3/17/2015												
SPP	V-23	6/17/2015												
SPP	V-23	9/10/2015												
SPP	V-23 (Dup)	9/10/2015												
SPP	V-23	12/9/2015												
SPP	V-23	3/14/2016												
SPP	V-23	6/9/2016												
SPP	V-23	9/21/2016												
SPP	V-23	12/1/2016												
SPP	V-23 (dup)	12/1/2016												
SPP	V-23	3/29/2017												
SPP	V-23 (dup)	3/29/2017												
SPP	V-23	6/16/2017												
SPP	V-23 (dup)	6/16/2017												
SPP	V-23	9/8/2017												
SPP	V-23 (dup)	9/8/2017												
SPP	V-23	12/5/2017												
SPP	V-23 (dup)	12/5/2017												
SPP	V-23	3/28/2018												
SPP	V-23 (dup)	3/28/2018												
SPP	V-23	6/7/2018												
SPP	V-23	9/6/2018												
SPP	V-23 (dup)	9/6/2018												
SPP	V-23	12/14/2018												
SPP	V-23 (dup)	12/14/2018												
SPP	V-23	3/27/2019												
SPP	V-23 (dup)	3/27/2019												
SPP	V-23	6/21/2019												
SPP	V-23	9/18/2019												
SPP	V-23	12/19/2019												
SPP	V-23 (dup)	12/19/2019												
SPP	V-23	3/17/2020												
SPP	V-23	6/4/2020												
SPP	V-23 (dup)	6/4/2020												
SPP	V-23	9/11/2020												
SPP	V-23	12/17/2020												
SPP	V-23	3/17/2021												
SPP	V-23	7/6/2021												
SPP	V-23 (dup)	7/6/2021												
SPP	V-23	9/21/2021												
SPP	V-23 (dup)	9/21/2021												
SPP	V-23	12/15/2021												
SPP	V-23	3/28/2022												
SPP	V-23 (dup)	3/28/2022												
SPP	V-23	6/29/2022												
SPP	V-23	9/19/2022												
SPP	V-23 (dup)	9/19/2022												
SPP	V-23	12/16/2022												
SPP	V-23 (dup)	12/16/2022												
SPP	V-23	3/21/2023												
SPP	V-23	6/22/2023												
SPP	V-23	9/6/2023												
SPP	V-23	12/19/2023												
SPP	V-23 (dup)	12/19/2023												
SPP	V-23	3/18/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-23	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-23	9/3/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-23	12/9/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-23A	6/27/1992												
SPP	V-23A	9/23/1992												
SPP	V-23A	12/14/1992												
SPP	V-23A	3/30/1993												
SPP	V-23A	6/22/1993												
SPP	V-23A	9/29/1993												
SPP	V-23A	12/3/1993												
SPP	V-23A	3/10/1994	7 U		25 U	10 U		15 U	390	25 U	19.5	25 U	25 U	
SPP	V-23A	3/23/1994												
SPP	V-23A	7/1/1994												
SPP	V-23A	9/29/1994												
SPP	V-23A	12/14/1994												
SPP	V-23A	3/16/1995												
SPP	V-23A	6/15/1995												
SPP	V-23A	9/27/1995												
SPP	V-23A	12/14/1995												
SPP	V-23A	3/14/1996												
SPP	V-23A	6/27/1996												
SPP	V-23A	9/30/1996												
SPP	V-23A	12/9/1996												
SPP	V-23A	3/31/1997												
SPP	V-23A	7/7/1997												
SPP	V-23A	10/8/1997												
SPP	V-23A	12/16/1997												
SPP	V-23A	6/17/2009												
SPP	V-23A	6/16/2010												
SPP	V-23A	6/9/2011												

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VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
SPP	V-23A	6/21/2012														
SPP	V-24	9/29/1993														
SPP	V-24	12/3/1993														
SPP	V-24	3/23/1994														
SPP	V-24	7/1/1994														
SPP	V-24	9/29/1994														
SPP	V-24	12/14/1994														
SPP	V-24	3/16/1995														
SPP	V-24	6/15/1995														
SPP	V-24	9/27/1995														
SPP	V-24	3/14/1996														
SPP	V-24	6/27/1996														
SPP	V-24	9/30/1996														
SPP	V-24	12/9/1996														
SPP	V-24	3/31/1997														
SPP	V-24	7/7/1997														
SPP	V-24	10/8/1997														
SPP	V-24	12/16/1997														
SPP	V-24	4/14/1999														
SPP	V-24	6/10/1999														
SPP	V-24	9/16/1999														
SPP	V-24	12/9/1999														
SPP	V-24	9/27/2000														
SPP	V-24	12/6/2000														
SPP	V-24	3/28/2001														
SPP	V-24	6/21/2001														
SPP	V-24	9/26/2001														
SPP	V-24	12/12/2001														
SPP	V-24	3/26/2002														
SPP	V-24	7/31/2002														
SPP	V-24	8/1/2002														
SPP	V-24	10/16/2002														
SPP	V-24	12/17/2002														
SPP	V-24	3/27/2003														
SPP	V-24	6/25/2003														
SPP	V-24	9/25/2003														
SPP	V-24	12/18/2003														
SPP	V-24	3/24/2004														
SPP	V-24	6/17/2004														
SPP	V-24	8/19/2004														
SPP	V-24	12/14/2004														
SPP	V-24	3/30/2005														
SPP	V-24	6/23/2005														
SPP	V-24	9/29/2005														
SPP	V-24	12/21/2005														
SPP	V-24	3/28/2006														
SPP	V-24	6/22/2006														
SPP	V-24	9/28/2006														
SPP	V-24	12/12/2006														
SPP	V-24	3/27/2007														
SPP	V-24	6/29/2007														
SPP	V-24	9/13/2007														
SPP	V-24	12/18/2007														
SPP	V-24	3/26/2008														
SPP	V-24	6/26/2008														
SPP	V-24	9/18/2008														
SPP	V-24	1/8/2009														
SPP	V-24	3/26/2009														
SPP	V-24	4/15/2009														
SPP	V-24	6/17/2009														
SPP	V-24	9/29/2009														
SPP	V-24	12/15/2009														
SPP	V-24	3/16/2010														
SPP	V-24	6/17/2010														
SPP	V-24	9/28/2010														
SPP	V-24	3/29/2011														
SPP	V-24	6/9/2011														
SPP	V-24	9/28/2011														
SPP	V-24	12/6/2011														
SPP	V-24	3/14/2012														
SPP	V-24	6/21/2012														
SPP	V-24	9/25/2012														
SPP	V-24	12/4/2012														
SPP	V-24	3/20/2013														
SPP	V-24	6/19/2013														
SPP	V-24	9/17/2013														
SPP	V-24	12/4/2013														
SPP	V-24	3/26/2014														
SPP	V-24	6/9/2014														
SPP	V-24	9/12/2014														
SPP	V-24	12/5/2014														
SPP	V-24	3/17/2015														
SPP	V-24	6/17/2015														
SPP	V-24	9/10/2015														
SPP	V-24	12/9/2015														
SPP	V-24	3/15/2016														
SPP	V-24	6/9/2016														
SPP	V-24	9/21/2016														
SPP	V-24	12/1/2016														
SPP	V-24	3/29/2017														
SPP	V-24	6/16/2017														
SPP	V-24	9/8/2017														
SPP	V-24	12/5/2017														
SPP	V-24	3/28/2018														
SPP	V-24	6/7/2018														
SPP	V-24	9/6/2018														
SPP	V-24	12/14/2018														
SPP	V-24	3/27/2019														
SPP	V-24	6/21/2019														
SPP	V-24	9/18/2019														
SPP	V-24	12/19/2019														
SPP	V-24	3/17/2020														

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SPP	V-24	6/4/2020												
SPP	V-24	9/11/2020												
SPP	V-24	12/17/2020												
SPP	V-24	3/17/2021												
SPP	V-24	7/6/2021												
SPP	V-24	9/21/2021												
SPP	V-24	12/15/2021												
SPP	V-24	3/28/2022												
SPP	V-24	6/29/2022												
SPP	V-24	9/21/2022												
SPP	V-24	12/28/2022												
SPP	V-24	3/21/2023												
SPP	V-24	6/22/2023												
SPP	V-24	9/7/2023												
SPP	V-24	12/20/2023												
SPP	V-24	3/18/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-24	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-24	9/3/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-24	10/2/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-24	12/9/2024	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-25	9/29/1993												
SPP	V-25	12/3/1993												
SPP	V-25	3/23/1994												
SPP	V-25	7/1/1994												
SPP	V-25	9/29/1994												
SPP	V-25	12/14/1994												
SPP	V-25	3/16/1995												
SPP	V-25	6/15/1995												
SPP	V-25	9/27/1995												
SPP	V-25	12/14/1995												
SPP	V-25	3/14/1996												
SPP	V-25	6/27/1996												
SPP	V-25	9/30/1996												
SPP	V-25	12/9/1996												
SPP	V-25	3/31/1997												
SPP	V-25	7/7/1997												
SPP	V-25	10/8/1997												
SPP	V-25	12/16/1997												
SPP	V-25	4/14/1999												
SPP	V-25	6/10/1999												
SPP	V-25	9/16/1999												
SPP	V-25	12/9/1999												
SPP	V-25	9/27/2000												
SPP	V-25	12/6/2000												
SPP	V-25	3/28/2001												
SPP	V-25	6/21/2001												
SPP	V-25	9/26/2001												
SPP	V-25	12/12/2001												
SPP	V-25	3/26/2002												
SPP	V-25	8/1/2002												
SPP	V-25	10/16/2002												
SPP	V-25	12/17/2002												
SPP	V-25	3/27/2003												
SPP	V-25	6/25/2003												
SPP	V-25	9/25/2003												
SPP	V-25	12/18/2003												
SPP	V-25	3/24/2004												
SPP	V-25	6/17/2004												
SPP	V-25	8/19/2004												
SPP	V-25	12/14/2004												
SPP	V-25	3/30/2005												
SPP	V-25	6/23/2005												
SPP	V-25	9/29/2005												
SPP	V-25	12/21/2005												
SPP	V-25	3/28/2006												
SPP	V-25	6/22/2006												
SPP	V-25	9/28/2006												
SPP	V-25	12/12/2006												
SPP	V-25	3/27/2007												
SPP	V-25	6/29/2007												
SPP	V-25	9/13/2007												
SPP	V-25	12/18/2007												
SPP	V-25	3/26/2008												
SPP	V-25	6/26/2008												
SPP	V-25	9/18/2008												
SPP	V-25	1/8/2009												
SPP	V-25	3/26/2009												
SPP	V-25	6/16/2009												
SPP	V-25	6/17/2009												
SPP	V-25	9/29/2009												
SPP	V-25	12/15/2009												
SPP	V-25	3/16/2010												
SPP	V-25	6/17/2010												
SPP	V-25	9/28/2010												
SPP	V-25	12/17/2010												
SPP	V-25	3/29/2011												
SPP	V-25	6/9/2011												
SPP	V-25	9/28/2011												
SPP	V-25 (dup)	9/28/2011												
SPP	V-25	12/6/2011												
SPP	V-25	3/14/2012												
SPP	V-25 (dup)	3/14/2012												
SPP	V-25	6/21/2012												
SPP	V-25 (dup)	6/21/2012												
SPP	V-25	9/25/2012												
SPP	V-25	12/4/2012												
SPP	V-25	3/20/2013												
SPP	V-25 (dup)	3/20/2013												
SPP	V-25	6/19/2013												
SPP	V-25 (dup)	6/19/2013												
SPP	V-25	9/17/2013												
SPP	V-25	12/4/2013												
SPP	V-25	3/26/2014												

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VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
SPP	V-25	6/9/2014														
SPP	V-25	9/12/2014														
SPP	V-25 (dup)	9/12/2014														
SPP	V-25	12/5/2014														
SPP	V-25 (dup)	12/5/2014														
SPP	V-25	3/17/2015														
SPP	V-25	6/17/2015														
SPP	V-25	9/10/2015														
SPP	V-25	12/9/2015														
SPP	V-25	3/15/2016														
SPP	V-25	6/9/2016														
SPP	V-25	9/21/2016														
SPP	V-25	12/1/2016														
SPP	V-25	3/29/2017														
SPP	V-25	6/16/2017														
SPP	V-25	9/8/2017														
SPP	V-25	12/5/2017														
SPP	V-25	3/28/2018														
SPP	V-25	6/7/2018														
SPP	V-25 (dup)	6/7/2018														
SPP	V-25	9/6/2018														
SPP	V-25	12/14/2018														
SPP	V-25	3/27/2019														
SPP	V-25	6/21/2019														
SPP	V-25	9/18/2019														
SPP	V-25	12/19/2019														
SPP	V-25	3/17/2020														
SPP	V-25	6/4/2020														
SPP	V-25	9/11/2020														
SPP	V-25	12/17/2020														
SPP	V-25	3/17/2021														
SPP	V-25	7/6/2021														
SPP	V-25	9/21/2021														
SPP	V-25	12/15/2021														
SPP	V-25	3/28/2022														
SPP	V-25	6/29/2022														
SPP	V-25	9/21/2022														
SPP	V-25	12/28/2022														
SPP	V-25	3/21/2023														
SPP	V-25	6/22/2023														
SPP	V-25 (dup)	6/22/2023														
SPP	V-25	9/6/2023														
SPP	V-25	12/19/2023														
SPP	V-25	3/18/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-25 (dup)	3/18/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-25	6/12/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-25	9/3/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPP	V-25	12/9/2024	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cell Room	V-26	6/20/1995														
Cell Room	V-26	6/24/1995														
Cell Room	V-26	9/27/1995														
Cell Room	V-26	12/14/1995														
Cell Room	V-26	3/14/1996														
Cell Room	V-26	6/27/1996														
Cell Room	V-26	9/30/1996														
Cell Room	V-26	12/9/1996														
Cell Room	V-26	3/31/1997														
Cell Room	V-26	7/7/1997														
Cell Room	V-26	10/8/1997														
Cell Room	V-26	12/16/1997														
Cell Room	V-26	4/13/1999														
Cell Room	V-26	6/7/1999														
Cell Room	V-26	9/14/1999														
Cell Room	V-26	12/8/1999														
Cell Room	V-26	9/27/2000														
Cell Room	V-26	3/27/2001														
Cell Room	V-26	9/24/2001														
Cell Room	V-26	3/25/2002														
Cell Room	V-26	7/29/2002														
Cell Room	V-26	10/15/2002														
Cell Room	V-26	3/26/2003														
Cell Room	V-26	9/23/2003														
Cell Room	V-26	8/18/2004														
Cell Room	V-26	6/21/2005														
Cell Room	V-26	9/27/2005														
Cell Room	V-26	9/26/2006														
Cell Room	V-26	9/12/2007														
Cell Room	V-26	6/23/2008														
Cell Room	V-26	9/15/2008														
Cell Room	V-26	6/15/2009														
Cell Room	V-26	9/28/2009														
Cell Room	V-26	6/14/2010														
Cell Room	V-26	9/27/2010														
Cell Room	V-26	6/7/2011														
Cell Room	V-26	9/27/2011														
Cell Room	V-26	6/20/2012														
Cell Room	V-26	9/24/2012														
Cell Room	V-26 (dup)	9/24/2012														
Cell Room	V-26	6/18/2013														
Cell Room	V-26	9/16/2013														
Cell Room	V-26	6/4/2014														
Cell Room	V-26	9/11/2014														
Cell Room	V-26	6/16/2015														
Cell Room	V-26 (Dup)	6/16/2015														
Cell Room	V-26	9/9/2015														
Cell Room	V-26	6/8/2016														
Cell Room	V-26	9/20/2016														
Cell Room	V-26 (dup)	9/20/2016														
Cell Room	V-26	6/15/2017														
Cell Room	V-26	9/7/2017														
Cell Room	V-26	6/6/2018														
Cell Room	V-26	9/5/2018														
Cell Room	V-26	6/19/2019														
Cell Room	V-26	9/17/2019														
Cell Room	V-26	6/4/2020														

TABLE I-1
ERCO Historical Data Master Table

VOA															
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L	
Cell Room	V-26 (dup)	6/4/2020													
Cell Room	V-26	9/10/2020													
Cell Room	V-26	7/1/2021													
Cell Room	V-26 (dup)	7/1/2021													
Cell Room	V-26	9/20/2021													
Cell Room	V-26	6/23/2022													
Cell Room	V-26	9/16/2022													
Cell Room	V-26	6/16/2023													
Cell Room	V-26 (dup)	6/16/2023													
Cell Room	V-26	9/5/2023													
Cell Room	V-26	6/13/2024	--	--	--	--	--	--	--	--	--	--	--	--	
Perimeter	V-27	6/15/1995													
Perimeter	V-27	6/20/1995													
Perimeter	V-27	6/24/1995													
Perimeter	V-27	9/27/1995													
Perimeter	V-27	12/14/1995													
Perimeter	V-27	3/14/1996													
Perimeter	V-27	6/27/1996													
Perimeter	V-27	9/30/1996													
Perimeter	V-27	12/9/1996													
Perimeter	V-27	12/10/1996	5 U		5 U	5 U		5 U	5 U		5 U	5 U	5 U	5 U	
Perimeter	V-27	3/31/1997													
Perimeter	V-27	7/7/1997													
Perimeter	V-27	10/8/1997													
Perimeter	V-27	12/16/1997													
Perimeter	V-27	9/28/2000													
Perimeter	V-27	3/27/2001													
Perimeter	V-27	9/24/2001													
Perimeter	V-27	3/25/2002													
Perimeter	V-27	7/29/2002													
Perimeter	V-27	10/15/2002													
Perimeter	V-27	3/26/2003													
Perimeter	V-27	9/23/2003													
Perimeter	V-27	3/23/2004													
Perimeter	V-27	8/17/2004													
Perimeter	V-27	3/29/2005													
Perimeter	V-27	9/27/2005													
Perimeter	V-27	3/27/2006													
Perimeter	V-27	9/26/2006													
Perimeter	V-27	3/27/2007													
Perimeter	V-27	9/11/2007													
Perimeter	V-27	3/25/2008													
Perimeter	V-27	6/23/2008													
Perimeter	V-27	9/15/2008													
Perimeter	V-27	3/26/2009													
Perimeter	V-27	6/16/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
Perimeter	V-27	6/16/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
Perimeter	V-27	6/6/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	1.0 U	1.0 U	0.60 U	3.0 U
Perimeter	V-27	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Perimeter	V-27	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Perimeter	V-27	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Perimeter	V-27	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Perimeter	V-27	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	1.50 U
Perimeter	V-27	6/12/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	1.50 U
Perimeter	V-27	6/4/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	1.05 U
Perimeter	V-27	6/17/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U		0.740 U	0.510 U	0.433 U	0.393 U	1.05 U
Perimeter	V-27	6/1/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U		0.393 U	0.633 U	0.533 U	0.780 U	1.50 U
Perimeter	V-27	6/28/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U		0.393 U	0.633 U	0.533 U	0.780 U	0.580 U
Perimeter	V-27	6/22/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U		0.393 U	0.633 U	0.533 U	0.780 U	0.580 U
Perimeter	V-27	6/14/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U		1.0 U	0.50 U	1.0 U	1.0 U	1.0 U
Perimeter	V-27	6/13/2024	7.8 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U		1.0 U	0.50 U	1.0 U	1.0 U	1.0 U
Perimeter	V-27A	12/10/1996	5 U		5 U	5 U		5 U	5 U		5 U		5 U	5 U	5 U
Perimeter	V-27A	9/28/2000				0.41 U					0.49 U			1	
Perimeter	V-27A	3/27/2001				0.41 U					0.49 U			1.1 U	
Perimeter	V-27A	6/21/2001													
Perimeter	V-27A	9/24/2001													
Perimeter	V-27A	3/25/2002													
Perimeter	V-27A	7/29/2002	0.85 Q	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.79 U		0.51 U	0.89 U	0.52 U	0.43 Q	1.5 U
Perimeter	V-27A	10/15/2002													
Perimeter	V-27A	3/26/2003													
Perimeter	V-27A	6/26/2003	0.44 J	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.54 J	2.6 U
Perimeter	V-27A	9/23/2003													
Perimeter	V-27A	3/23/2004													
Perimeter	V-27A	6/16/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U		0.16 U	0.18 U	0.28 U	0.64	0.59 U
Perimeter	V-27A	8/17/2004													
Perimeter	V-27A	3/29/2005													
Perimeter	V-27A	6/22/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.4 J	2.6 U
Perimeter	V-27A	9/27/2005													
Perimeter	V-27A	3/27/2006													
Perimeter	V-27A	6/21/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.35 J	2.6 U
Perimeter	V-27A	9/26/2006													
Perimeter	V-27A	3/27/2007													
Perimeter	V-27A	6/27/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.4 J	2.6 U
Perimeter	V-27A	9/11/2007													
Perimeter	V-27A	3/25/2008													
Perimeter	V-27A	6/23/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.18 U	2.6 U
Perimeter	V-27A	9/15/2008													
Perimeter	V-27A	3/26/2009													
Perimeter	V-27A	6/16/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.73 J	2.6 U
Perimeter	V-27A	6/16/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U		0.19 U	0.48 U	0.79 U	0.64 J	2.6 U
Perimeter	V-27A	6/6/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		0.63 U	1.0 U	1.0 U	0.61	3.0 U
Perimeter	V-27A	6/19/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	0.48 J	2.0 U
Perimeter	V-27A	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	2.0 U
Perimeter	V-27A	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	0.44 J	2.0 U
Perimeter	V-27A	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	0.35 J	2.0 U
Perimeter	V-27A	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U							

TABLE I-1
ERCO Historical Data Master Table

VOA																
Area	StationId	CollectDate	Methylene Chloride µg/L	Naphthalene µg/L	Styrene µg/L	Tetrachloroethene µg/L	Tetrahydrofuran µg/L	Toluene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene µg/L	Trichlorofluoromethane µg/L	Vinyl Chloride µg/L	Xylenes, Total µg/L		
SPP	V-30	3/28/2007														
SPP	V-30	6/26/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-30	9/11/2007														
SPP	V-30	3/25/2008														
SPP	V-30	6/25/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.75 J	0.79 U	0.18 U	2.6 U		
SPP	V-30	9/15/2008														
SPP	V-30	3/25/2009														
SPP	V-30	6/16/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-30	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-30	6/6/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	0.32 J	1.0 U	0.60 U	3.0 U		
SPP	V-30	6/18/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	1.0 U	2.0 U		
SPP	V-30	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U	1.0 U	2.0 U		
SPP	V-30	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-30	6/10/2015	1.0 U	0.63 J	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.34 J	1.0 U	1.0 U	2.0 U		
SPP	V-30	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.164 J	0.433 U	0.393 U	1.50 U		
SPP	V-30	6/12/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.175 J	0.433 U	0.393 U	1.50 U		
SPP	V-30	6/4/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.226 J	0.433 U	0.393 U	1.05 U		
SPP	V-30	6/17/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.231 J	0.433 U	0.393 U	1.05 U		
SPP	V-30	6/1/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.232 J	0.533 U	0.780 U	1.50 U		
SPP	V-30	6/28/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U		
SPP	V-30	6/24/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	0.580 U		
SPP	V-30	6/14/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-30	6/14/2024	8.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.0 U	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-30A	12/10/1996	5 U		5 U	5 U		5 U	5 U	5 U	2	5 U	5 U	5 U		
SPP	V-30A	7/18/2000														
SPP	V-30A	9/25/2000				0.41 U					0.83 J		0.21 J			
SPP	V-30A	3/26/2001														
SPP	V-30A	9/24/2001														
SPP	V-30A	3/25/2002														
SPP	V-30A	7/29/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	0.88 Q	0.51 U	2.2 Q	0.52 U	0.18 U	1.5 U		
SPP	V-30A	10/15/2002														
SPP	V-30A	3/25/2003														
SPP	V-30A	6/26/2003	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.79 J	0.79 U	0.18 U	2.6 U		
SPP	V-30A	9/23/2003														
SPP	V-30A	3/23/2004														
SPP	V-30A	6/15/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.21 U	0.16 U	1.4	0.28 U	0.18 U	0.59 U		
SPP	V-30A	8/17/2004														
SPP	V-30A	3/29/2005														
SPP	V-30A	6/22/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.76 J	0.79 U	0.18 U	2.6 U		
SPP	V-30A	9/27/2005														
SPP	V-30A	3/27/2006														
SPP	V-30A	6/20/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.54 J	0.79 U	0.18 U	2.6 U		
SPP	V-30A	9/26/2006														
SPP	V-30A	3/28/2007														
SPP	V-30A	6/26/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-30A	9/11/2007														
SPP	V-30A	3/25/2008														
SPP	V-30A	6/25/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	1.4	0.79 U	0.18 U	2.6 U		
SPP	V-30A	9/15/2008														
SPP	V-30A	3/25/2009														
SPP	V-30A	6/16/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.79 J	0.79 U	0.18 U	2.6 U		
SPP	V-30A	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.58 J	0.79 U	0.18 U	2.6 U		
SPP	V-30A	6/6/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.6	0.63 U	1.6	1.0 U	0.60 U	3.0 U		
SPP	V-30A	6/18/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.9	1.0 U	1.3	1.0 U	1.0 U	2.0 U		
SPP	V-30A	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.9	1.0 U	1.6	1.0 U	0.27 J	2.0 U		
SPP	V-30A	6/3/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0 U	2.0 U		
SPP	V-30A	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0	1.0 U	0.95 J	1.0 U	1.0 U	2.0 U		
SPP	V-30A	6/6/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	1.28	0.740 U	0.991	0.433 U	0.393 U	1.50 U		
SPP	V-30A	9/20/2016														
SPP	V-30A	6/12/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.75	0.740 U	1.03	0.433 U	0.393 U	1.50 U		
SPP	V-30A	6/4/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.38	0.740 U	0.913	0.433 U	0.393 U	1.05 U		
SPP	V-30A	6/17/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	1.53	0.740 U	0.800	0.433 U	0.393 U	1.05 U		
SPP	V-30A	6/1/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	1.14	0.393 U	0.497 J	0.533 U	0.780 U	1.50 U		
SPP	V-30A	6/28/2021	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.988	0.393 U	0.641	0.533 U	0.445 J	0.580 U		
SPP	V-30A	6/24/2022	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	1.34	0.393 U	0.530 J	0.533 U	0.780 U	0.580 U		
SPP	V-30A	6/14/2023	5.0 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.4	1.0 U	0.55	1.0 U	1.0 U	1.0 U		
SPP	V-30A	6/14/2024	8.1 U	1.0 U	1.0 U	1.0 U	10 U	0.50 U	1.5	1.0 U	0.50 U	1.0 U	1.0 U	1.0 U		
SPP	V-31	12/10/1996	5 U		5 U	5 U		5 U	1.4	5 U	5 U	5 U	5 U	5 U		
SPP	V-31	4/15/1999				0.41 U					0.49 U		2			
SPP	V-31	6/8/1999				0.41 U					0.49 U		6.6			
SPP	V-31	9/13/1999				1 U					1 U		1			
SPP	V-31	12/6/1999				0.41 U					0.49 U		2.6			
SPP	V-31	9/25/2000				0.41 U					0.49 U		0.83			
SPP	V-31	12/7/2000														
SPP	V-31	6/20/2001				0.41 U					0.49 U		1.9 U			
SPP	V-31	7/29/2002	0.85 U	0.59 U	0.43 U&	0.57 U	2 U	0.47 U	1.1 Q	0.51 U	0.89 U	0.52 U	2.4	1.5 U		
SPP	V-31	6/26/2003	0.48 J	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	1.3 J	0.19 U	0.48 U	0.79 U	4	2.6 U		
SPP	V-31	6/15/2004	0.33 U	0.33 U	0.19 U	0.33 U	0.82 U	0.17 U	0.93	0.16 U	0.18 U	0.28 U	4.4	0.59 U		
SPP	V-31	6/21/2005	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	2.5	2.6 U		
SPP	V-31	6/20/2006	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.94 J	0.19 U	0.48 U	0.79 U	4.5	2.6 U		
SPP	V-31	6/26/2007	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	1.9	2.6 U		
SPP	V-31	6/24/2008	0.43 U	0.74 U	0.86 U	0.45 U	1.7 U	0.67 U	1.5	0.19 U	0.48 U	0.79 U	6.9	2.6 U		
SPP	V-31	6/18/2009	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.18 U	2.6 U		
SPP	V-31	6/15/2010	0.43 U	0.89 U	0.86 U	0.45 U	1.7 U	0.67 U	0.89 U	0.19 U	0.48 U	0.79 U	0.34 J	2.6 U		
SPP	V-31	6/6/2011	1.4 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	0.63 U	1.0 U	1.0 U	0.60 U	3.0 U		
SPP	V-31	6/18/2012	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.44 J	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-31	6/17/2013	1.0 U	1.0 U	1.0 U	1.0 U	0.70 J	1.0 U	0.48 J	1.0 U	1.0 U	1.0 U	0.76 J	2.0 U		
SPP	V-31	6/5/2014	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	0.19 J	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-31	6/10/2015	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U		
SPP	V-31	6/8/2016	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	0.340 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
SPP	V-31	6/14/2017	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.50 U		
SPP	V-31	6/5/2018	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.393 U	1.05 U		
SPP	V-31	6/19/2019	3.57 U	0.580 U	0.390 U	0.663 U	6.07 U	1.37 U	0.507 U	0.740 U	0.510 U	0.433 U	0.243 J	1.05 U		
SPP	V-31	6/3/2020	1.43 U	0.580 U	0.393 U	1.00 U	3.10 U	0.927 U	0.497 U	0.393 U	0.633 U	0.533 U	0.780 U	1.50 U		
SPP	V-31	6/30/2021	1.43 U	0.580 U	0.393 U											