GTE Operations Support Incorporated
One Verizon Way (VC34W414)
Basking Ridge, New Jersey 07920-1097

December 8, 2011

Mr. Thomas Festa
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7252

Re: Groundwater Monitoring Plan
Former Philips Display Components Facility, Seneca Falls, New York

Dear Mr. Festa:

ARCADIS U.S., Inc. (ARCADIS), on behalf of GTE Operations Support Incorporated (GTEOSI), has prepared this Groundwater Monitoring Plan (December 2011), which incorporates NYSDEC-approved modifications to the groundwater sampling locations, analysis, frequency and methodology for the subject site in Seneca Falls, New York.

If you have any questions concerning this matter, please do not hesitate to contact me at (908) 559-3691.

Sincerely,

Pam Cox /MAF

Pam Cox
Manager – Corporate Workplace Safety &
Environmental Compliance

Attachment:
Groundwater Monitoring Plan

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Imagine the result

Groundwater Monitoring Plan

Former Philips Display Components Facility
Seneca Falls, New York

December 2011

Groundwater Monitoring Plan

Former Philips Display Components Facility

Seneca Falls, New York

Prepared for:
GTE Operations Support Incorporated

Prepared by:
ARCADIS U.S., Inc.
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Our Ref.:
04563003.0000

Date:
December 8, 2011

ARCADIS

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List of Acronyms

cis-1,2-DCE	c*is*-1,2-dichlorethene
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PDB	Passive Diffusion Bag
QA/QC	quality assurance/quality control
SOP	Statement of Procedure
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
VOCs	volatile organic compounds

1. Introduction

The former Philips Display Components Facility is an approximately 85-acre property (Site) along the northern side of Van Cleef Lake and the Cayuga and Seneca Canal northeast of the Village of Seneca Falls, New York (Figure 1). The Site buildings cover approximately 13 acres. The Site was last operated as a manufacturing facility in 1986. A groundwater monitoring program has been in place since 1993.

Since 1993 concentrations of trichloroethene (TCE) in groundwater have decreased and concentrations of TCE daughter products have remained stable or are declining. Chlorinated solvents [TCE, *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride (VC)] remain primarily on the south side of Buildings 2, 7, and 11 (Figure 2).

2. Groundwater Monitoring Plan

This Groundwater Monitoring Plan presents the revised groundwater sampling locations, analyses, frequency, and methodology based on the October 2011 New York State Department of Environmental Conservation (NYSDEC)-approved groundwater sampling modifications.

2.1 Sampling Locations and Frequency

Eleven overburden monitoring wells (MW-1 and MW-20 through MW-29), five bedrock wells (MW-BR-01 through MW-BR-05) and one weathered bedrock well (MW-BR-06) comprise the monitoring well network (Figure 2).

Groundwater sampling will be conducted each March at 8 wells and each September at 14 wells. Table 1 provides the wells to be sampled for each sampling event.

Graphs of the groundwater analytical data (where available) are provided in Appendix A.

2.2 Sampling Method and Analysis

Groundwater sampling will be conducted in accordance with the United States Geological Survey “User’s Guide for Polyethylene-Based Passive Diffusion Bag Samplers to Obtain Volatile Organic Compound Concentrations in Wells Part 1: Deployment, Recovery, Data Interpretation, and Quality Control and Assurance.” One passive diffusion bag (PDB) will be installed at the center of each monitoring well screen. Based on the September 2011 PDB sampling results, the PDB at MW-BR-05

will be installed at 37 feet below the top of casing, which is in the intermediate zone of this bedrock well.

The PDBs will remain in the wells for a minimum of two weeks. Upon retrieval, the water from each PDB will be poured into laboratory supplied pre-preserved 40-milliliter vials. The sample bottles will be immediately placed in a cooler held at 4°C. Data to be recorded in the field book and/or field log will include the sampling methods, depth to water, PDB installation depth, and time and date of PDB installation and retrieval.

Quality assurance/quality control (QA/QC) samples will consist of trip blanks, field duplicates, and matrix spike/matrix spike duplicates (MS/MSDs). One trip blank sample (two or three vials per sample) will be provided by the laboratory and carried with every shipment of groundwater samples to the laboratory. One field duplicate and one MS/MSD will be collected during each sampling event.

The groundwater and QA/QC samples will be shipped to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program certified laboratory and analyzed for VOCs by USEPA Method 8260B.

2.3 Water Level Measurements

The depth to water in each monitoring well will be measured semi-annually prior to each groundwater sampling event. The depth to water will be recorded to the nearest one-hundredth of a foot, from the top of the measuring mark on the well. The date, time, well number, and depth to water will be recorded in the field book or field log.

2.4 Monitoring Well Maintenance

All monitoring wells at the site will be inspected semi-annually for inward and outward appearance and downhole information. Repairs to the monitoring wells (i.e. new flush mount curb box and replacement of locks, bolts, and gasket seals) will be conducted as needed.

2.5 Data Validation

The data review process shall include an evaluation of the analysis and specific requirements of the published method in addition to the laboratory Standard Operating Procedure. Data qualification shall be performed following the intent of the United States Environmental Protection Agency (USEPA) Region II validation Statement of Procedure (SOP) HW-6, the USEPA National Functional Guidelines for Organic Data

Review, and the specific requirements of the analytical methodologies in conjunction with the data validator's professional judgment.

The laboratory will provide a data reporting package in accordance with the NYSDEC Analytical Service Protocol Category B deliverable or equivalent requirements. An independent third-party will produce a data validation report based on information from the field team and information supplied from the laboratory on the analysis. In general, the activities involved in validation of the data include the following:

- Reviewing the chain-of-custody forms for any information about sample preservation, holding times, sample integrity (i.e., leakage, external contamination) after sampling; and
- Reviewing the data package from the subcontract laboratory with respect to laboratory quality control, exemption reports, sample duplicates (both analytical and field), and laboratory contamination.

2.6 Reporting

Semi-annual groundwater monitoring reports in letter format will be submitted to NYSDEC, USEPA, the NYSDOH, and the property owner following receipt of the laboratory data and data validation report. Each semi-annual groundwater monitoring report will include a summary of analytical results, a data validation report, a figure showing the monitoring well locations and tables providing depth to water measurements and analytical data from the sampling event.

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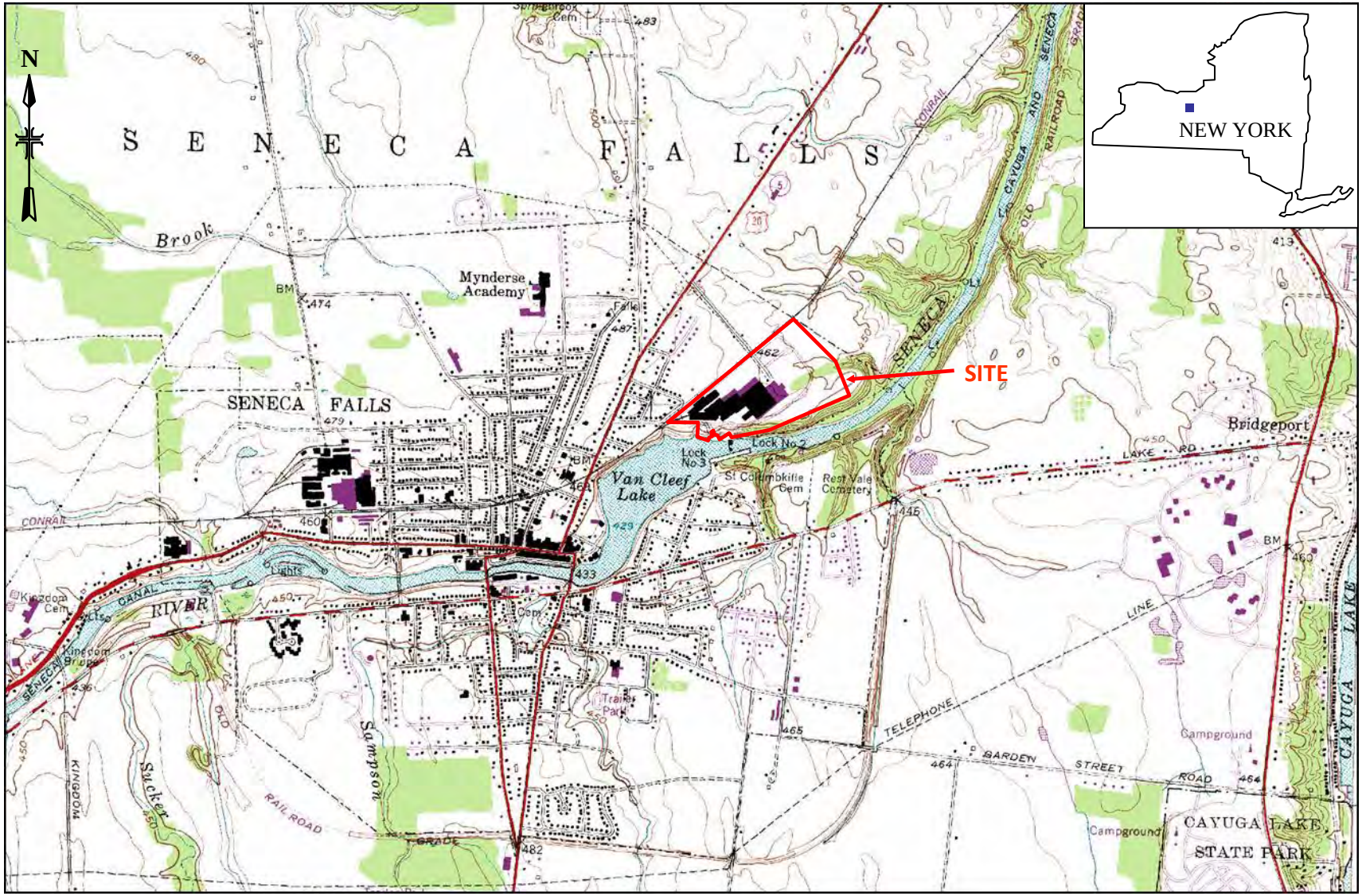
Figures



MAP SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC SERIES, SENECA FALLS QUADRANGLE

APPROXIMATE SCALE IN MILES

0 0.25 0.5 1

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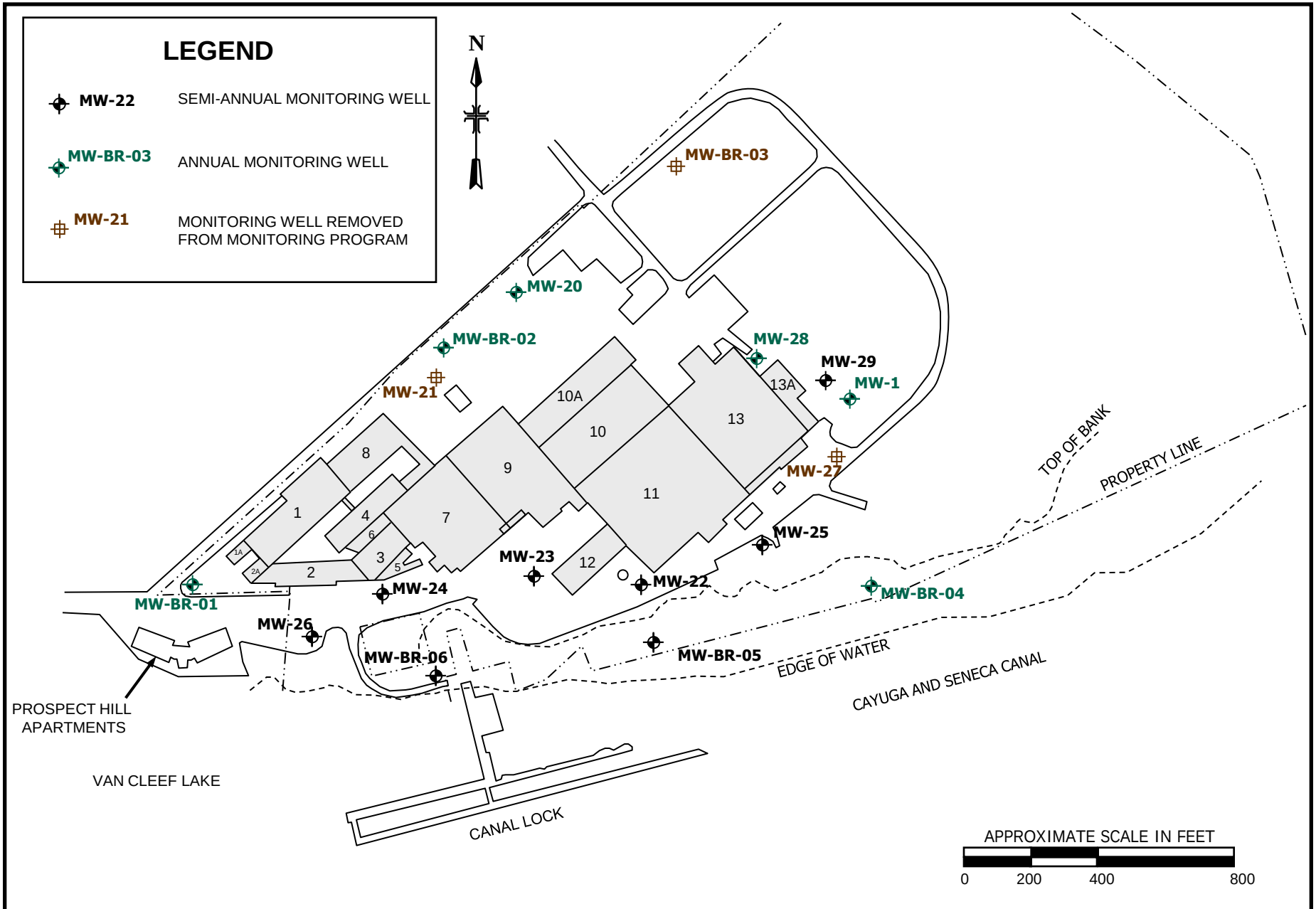
FORMER PHILIPS DISPLAY COMPONENTS FACILITY
SENECA FALLS, NEW YORK

SITE LOCATION

FIGURE 1



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FORMER PHILIPS DISPLAY COMPONENTS FACILITY
SENECA FALLS, NEW YORK

MONITORING WELL LOCATIONS

FIGURE 2

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Tables

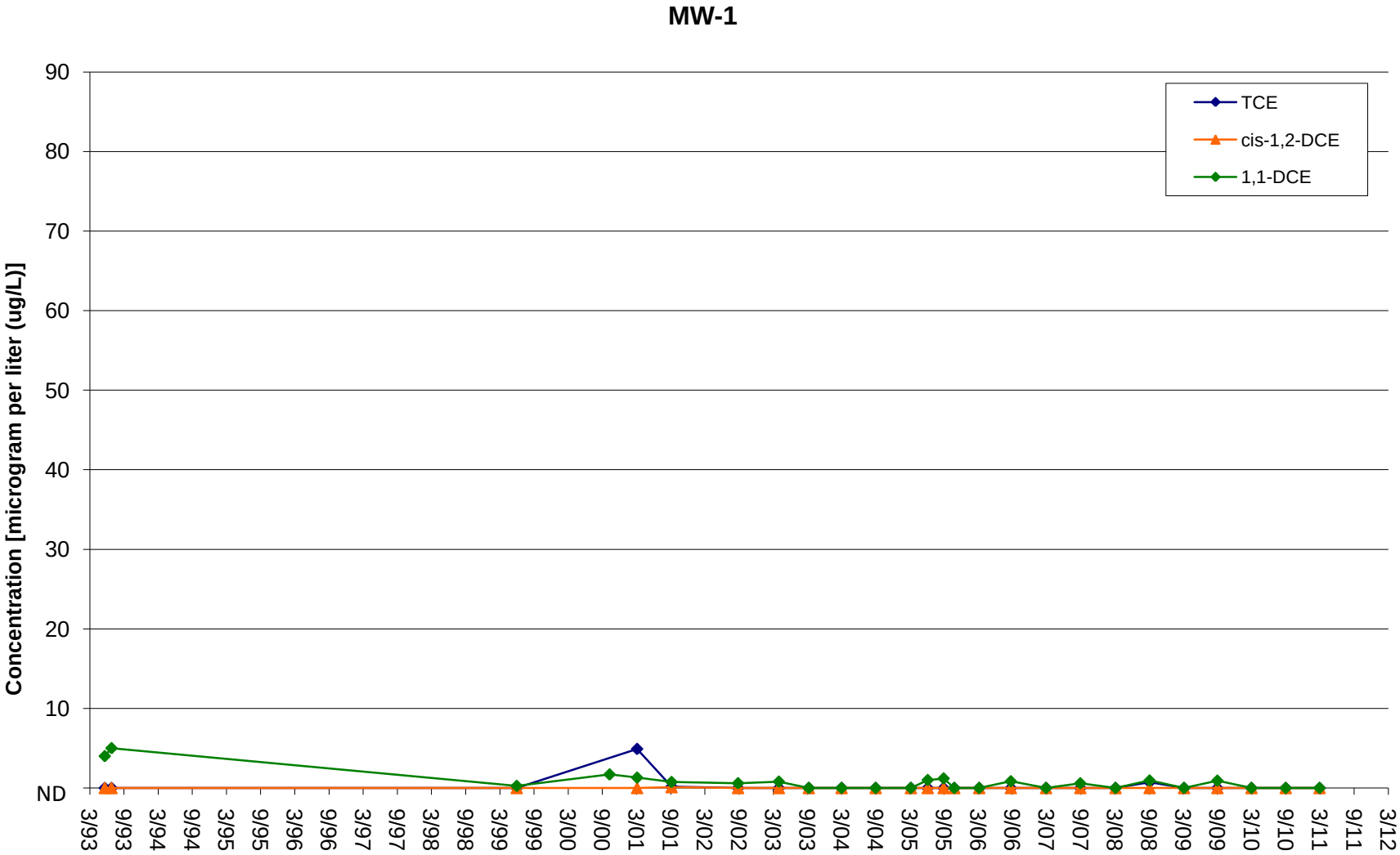
Table 1
Groundwater Sampling Frequency
GTE Operations Support Incorporated
Former Phillips Display Components Facility
Seneca Falls, New York

ID	Sampling Frequency	March Sampling Event		September Sampling Event	
		Gauging	Sampling	Gauging	Sampling
MW-1	Annual	x		x	x
MW-20	Annual	x		x	x
MW-21	NA	x		x	
MW-22	Semi-Annual	x	x	x	x
MW-23	Semi-Annual	x	x	x	x
MW-24	Semi-Annual	x	x	x	x
MW-25	Semi-Annual	x	x	x	x
MW-26	Semi-Annual	x	x	x	x
MW-27	NA	x		x	
MW-28	Annual	x		x	x
MW-29	Semi-Annual	x	x	x	x
MW-BR-01	Annual	x		x	x
MW-BR-02	Annual	x		x	x
MW-BR-03	NA	x		x	
MW-BR-04	Annual	x		x	x
MW-BR-05	Semi-Annual	x	x	x	x
MW-BR-06	Semi-Annual	x	x	x	x
	Number of Samples		8		14

Notes:
MW-21, MW-27, and MW-BR-03 have been excluded from sampling because concentrations of volatile organic compounds in excess of the NYS Class GA Standards were not detected in previous samples from these wells.

Appendix A

Historic Groundwater VOC Concentrations



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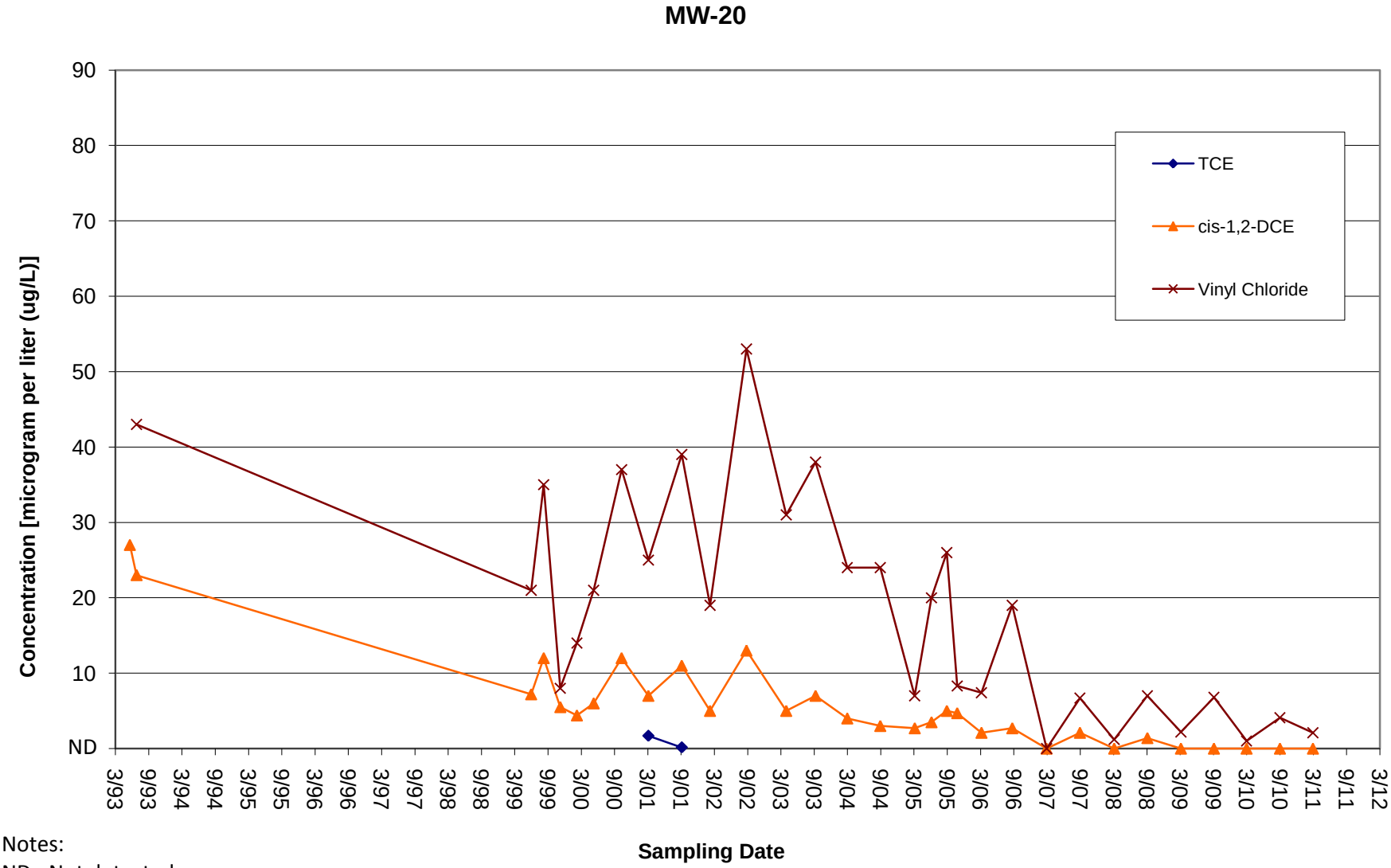
Results less than the reporting limit are estimated.



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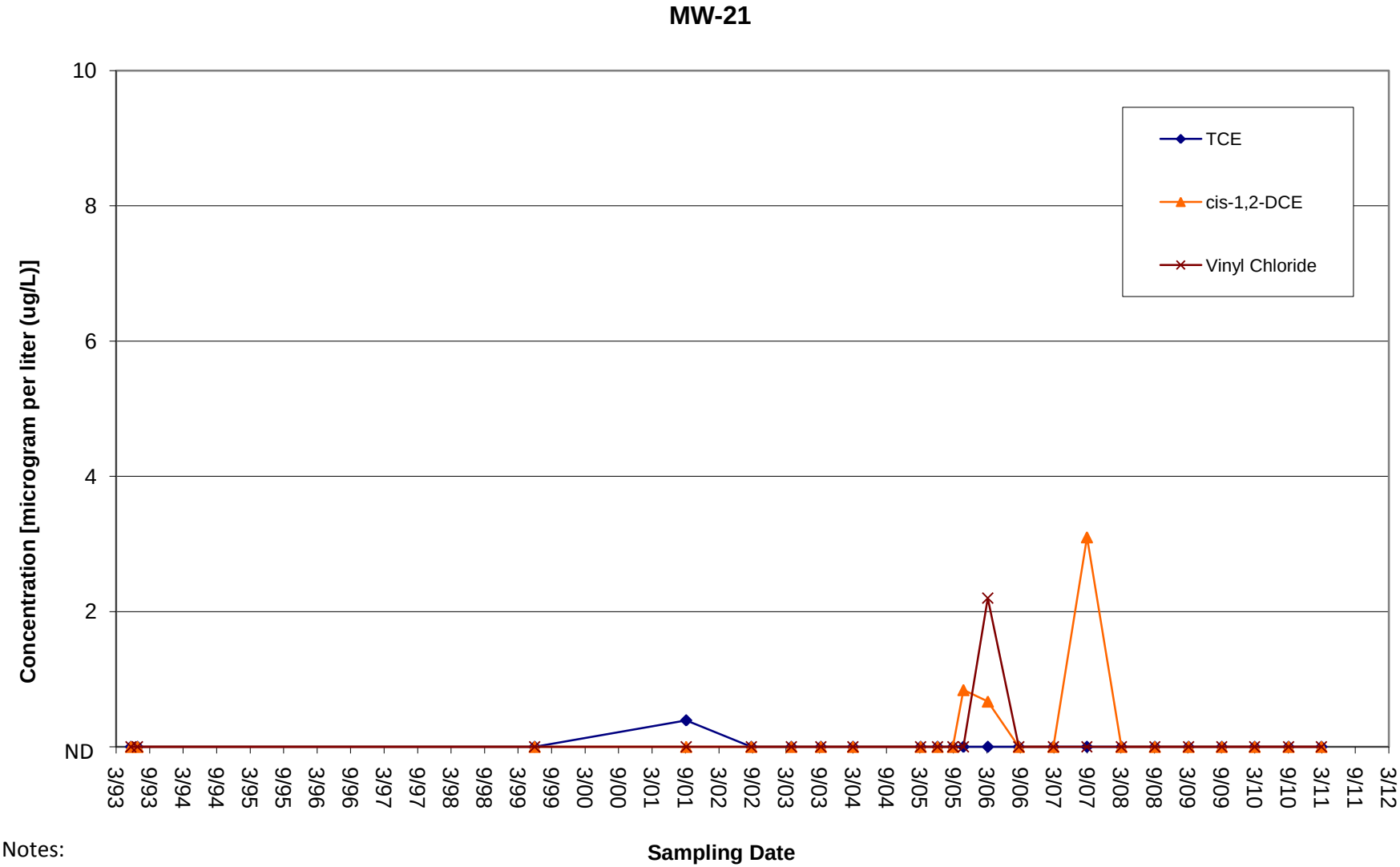

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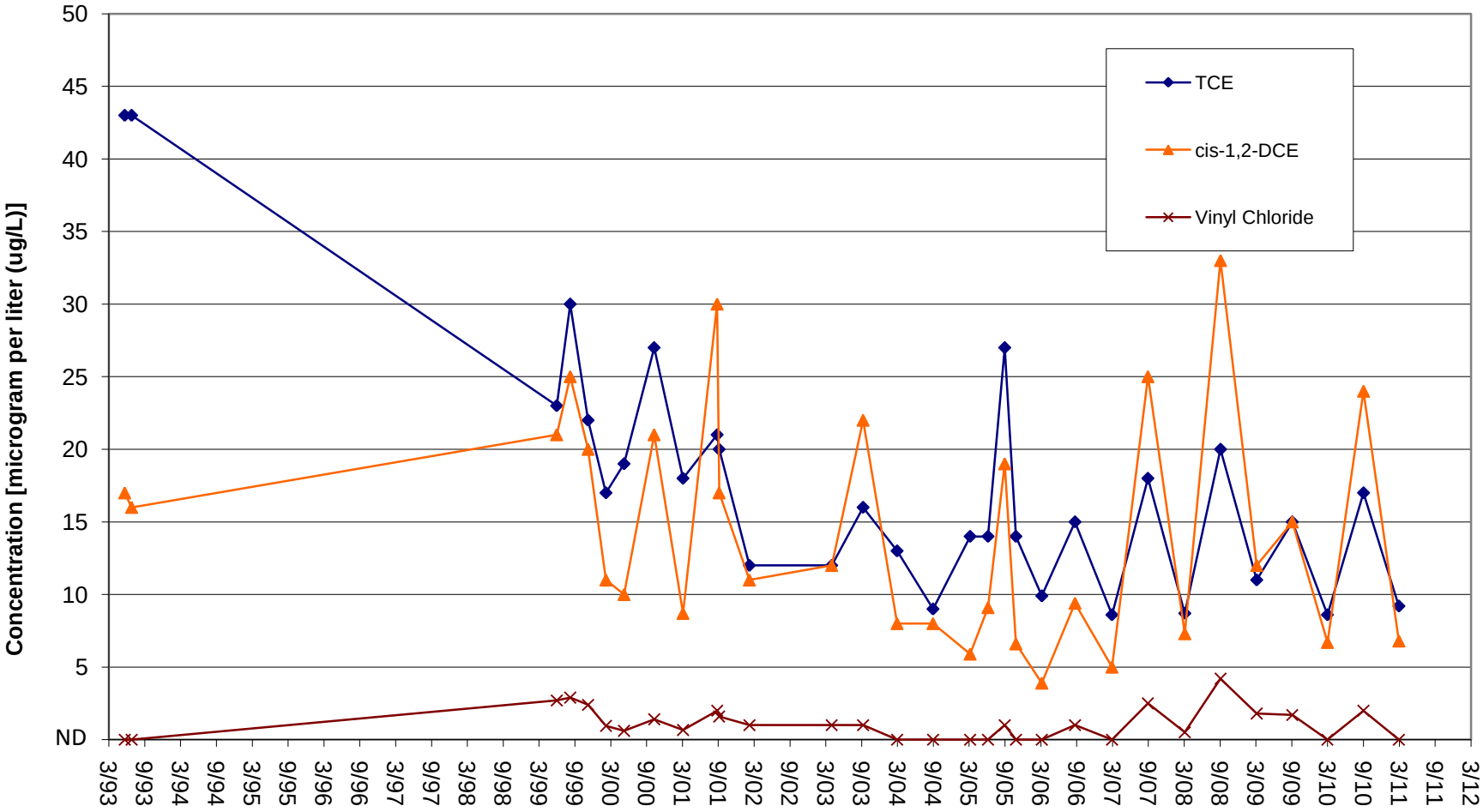
MW-22



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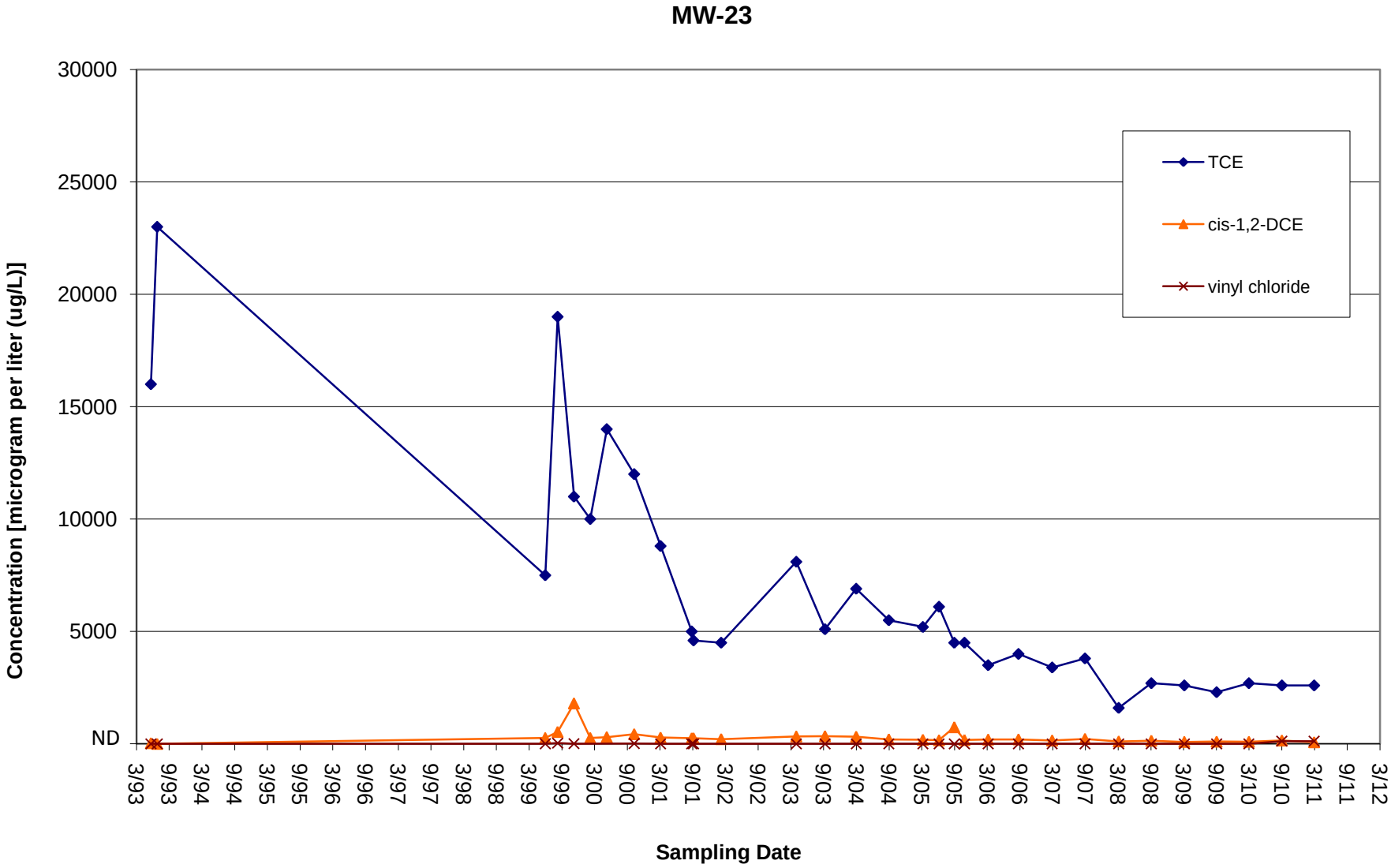
MW-23
30000
25000
20000
15000
10000
5000
ND
Concentration [microgram per liter (ug/L)]
TCE
cis-1,2-DCE
vinyl chloride
3/93
9/93
3/94
9/94
3/95
9/95
3/96
9/96
3/97
9/97
3/98
9/98
3/99
9/99
3/00
9/00
3/01
9/01
3/02
9/02
3/03
9/03
3/04
9/04
3/05
9/05
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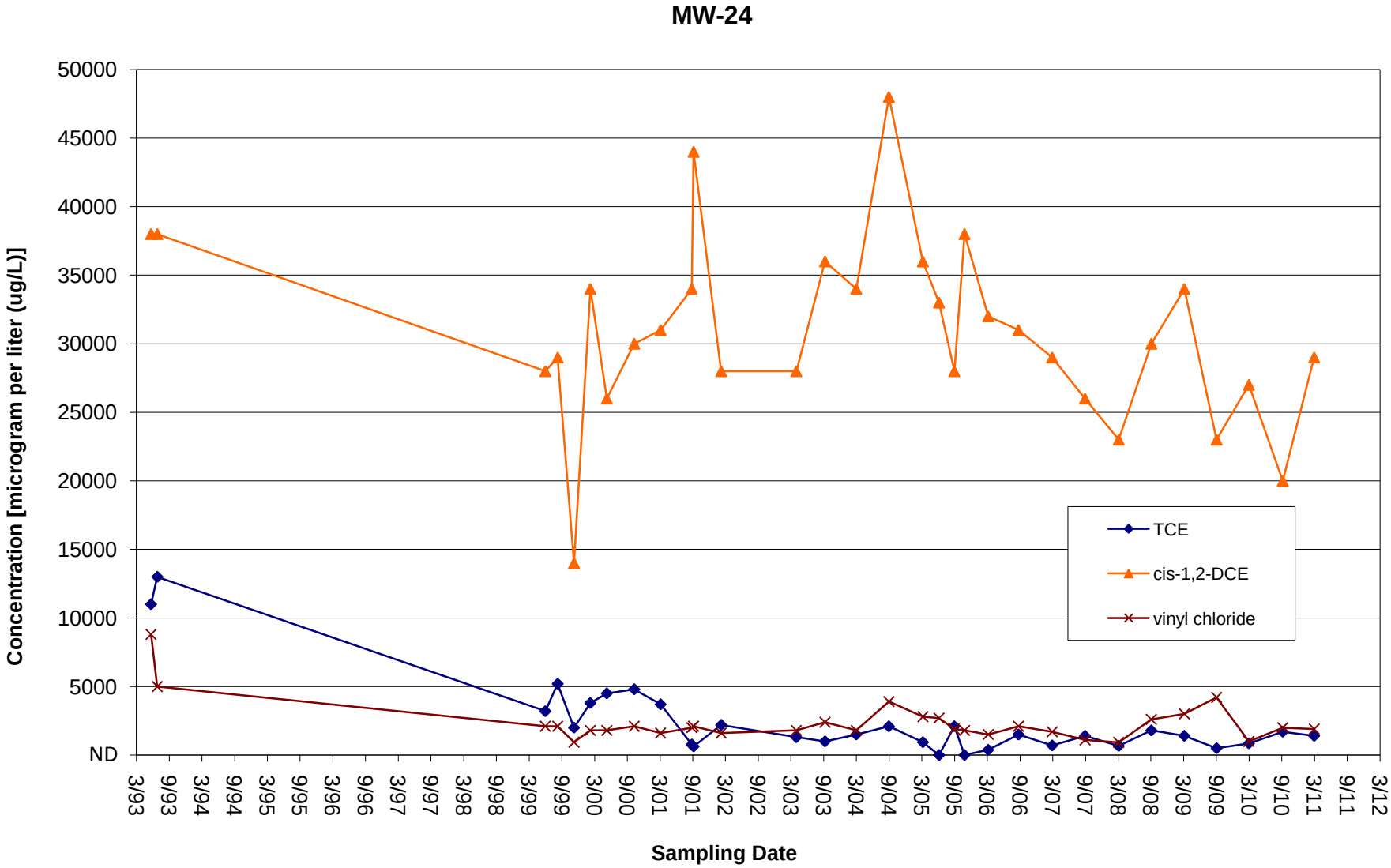
3/08
9/08
3/09
9/09
3/10
9/10
3/11
9/11
3/12
Sampling Date


MW-24
Concentration [microgram per liter (ug/L)]
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
ND
3/93
9/93
3/94
9/94
3/95
9/95
3/96
9/96
3/97
9/97
3/98
9/98
3/99
9/99
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3/05
9/05
3/06
9/06
3/07
9/07
3/08
9/08
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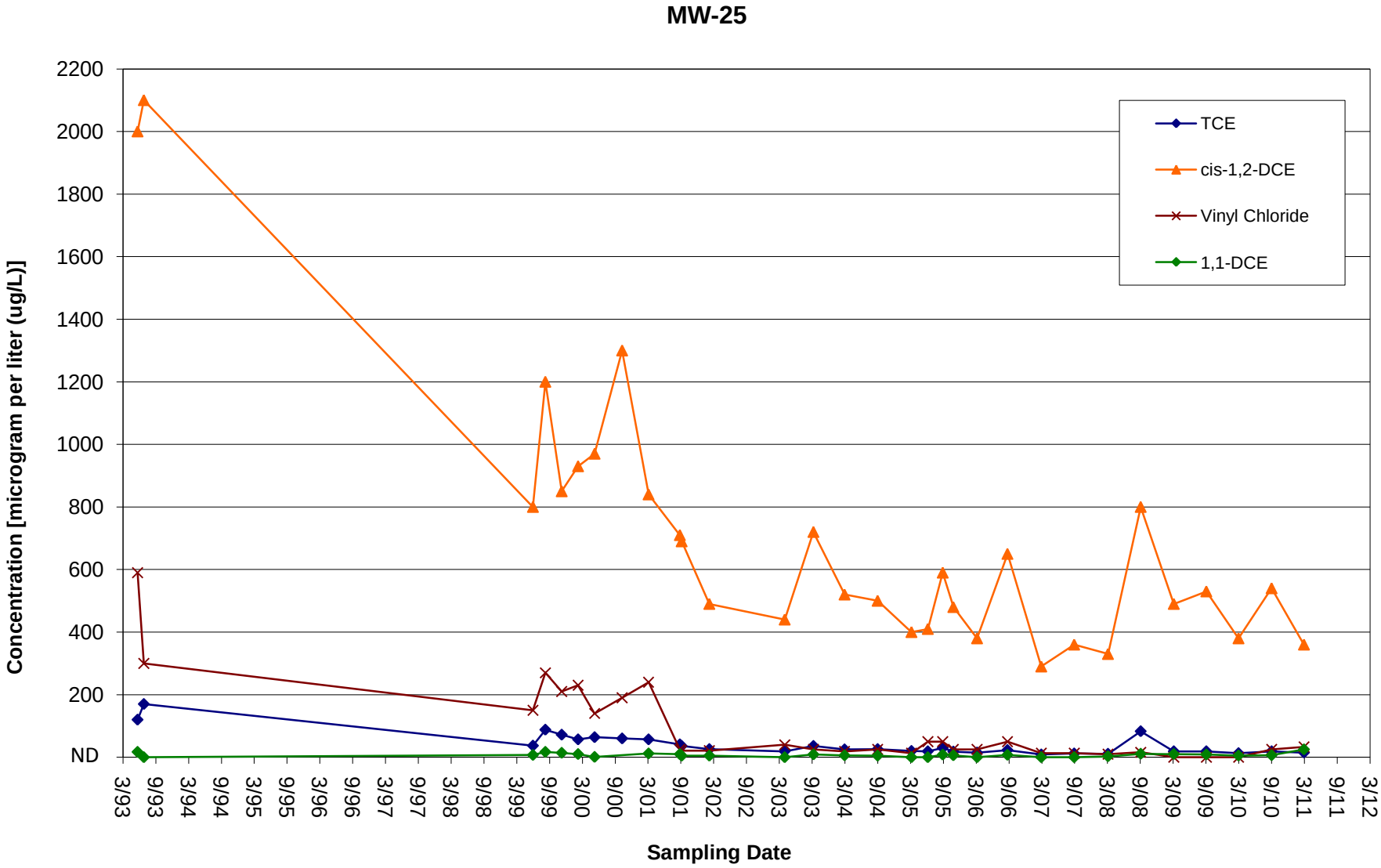
3/11
9/11
3/12
Sampling Date
TCE
cis-1,2-DCE
vinyl chloride


MW-25
Concentration [microgram per liter (ug/L)]
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
ND
TCE
cis-1,2-DCE
Vinyl Chloride
1,1-DCE
3/93
9/93
3/94
9/94
3/95
9/95
3/96
9/96
3/97
9/97
3/98
9/98
3/99
9/99
3/00
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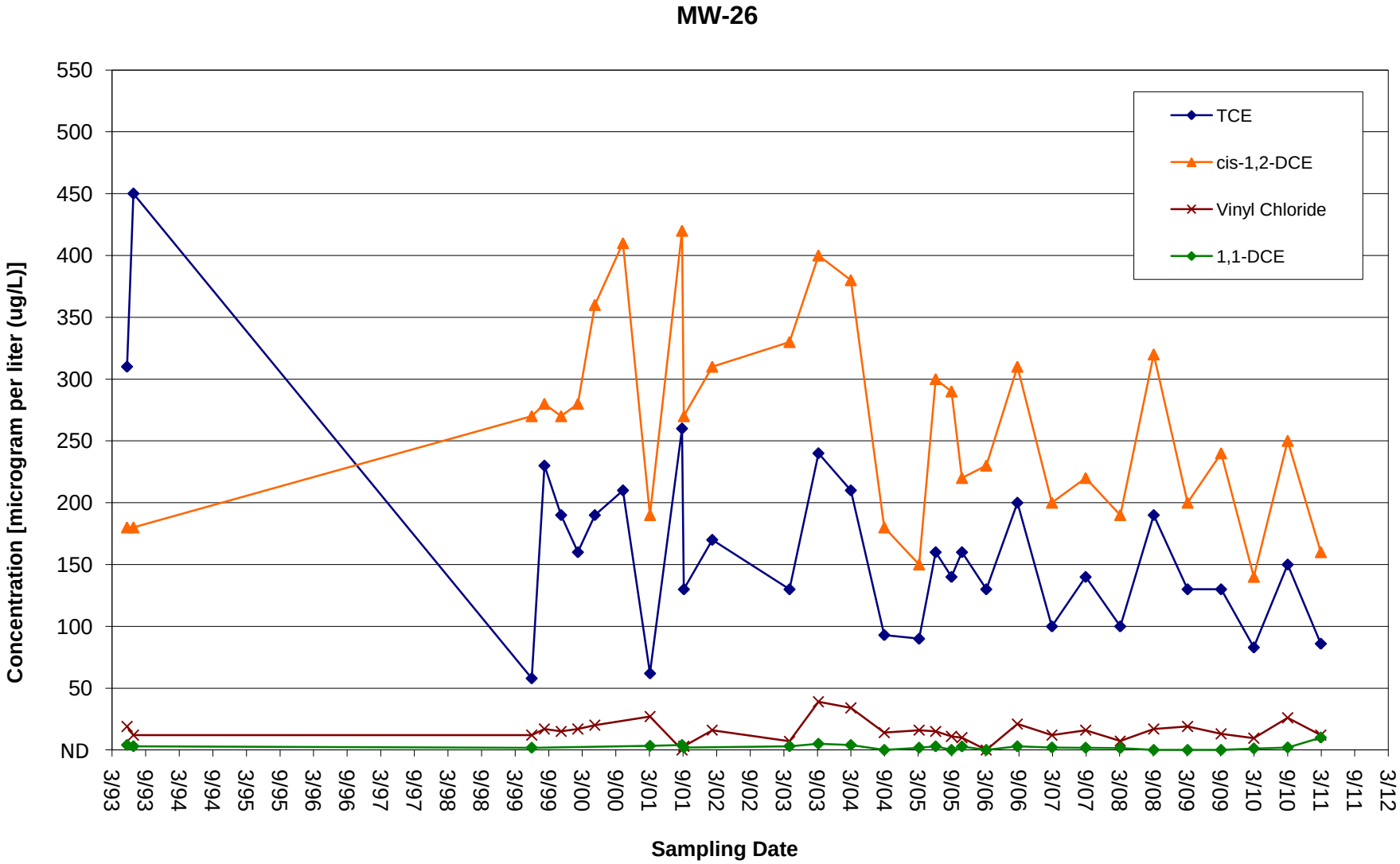
3/10
9/10
3/11
9/11
3/12
Sampling Date


MW-26
Concentration [microgram per liter (ug/L)]
550
500
450
400
350
300
250
200
150
100
50
ND
TCE
cis-1,2-DCE
Vinyl Chloride
1,1-DCE
3/93
9/93
3/94
9/94
3/95
9/95
3/96
9/96
3/97
9/97
3/98
9/98
3/99
9/99
3/00
9/00
3/01
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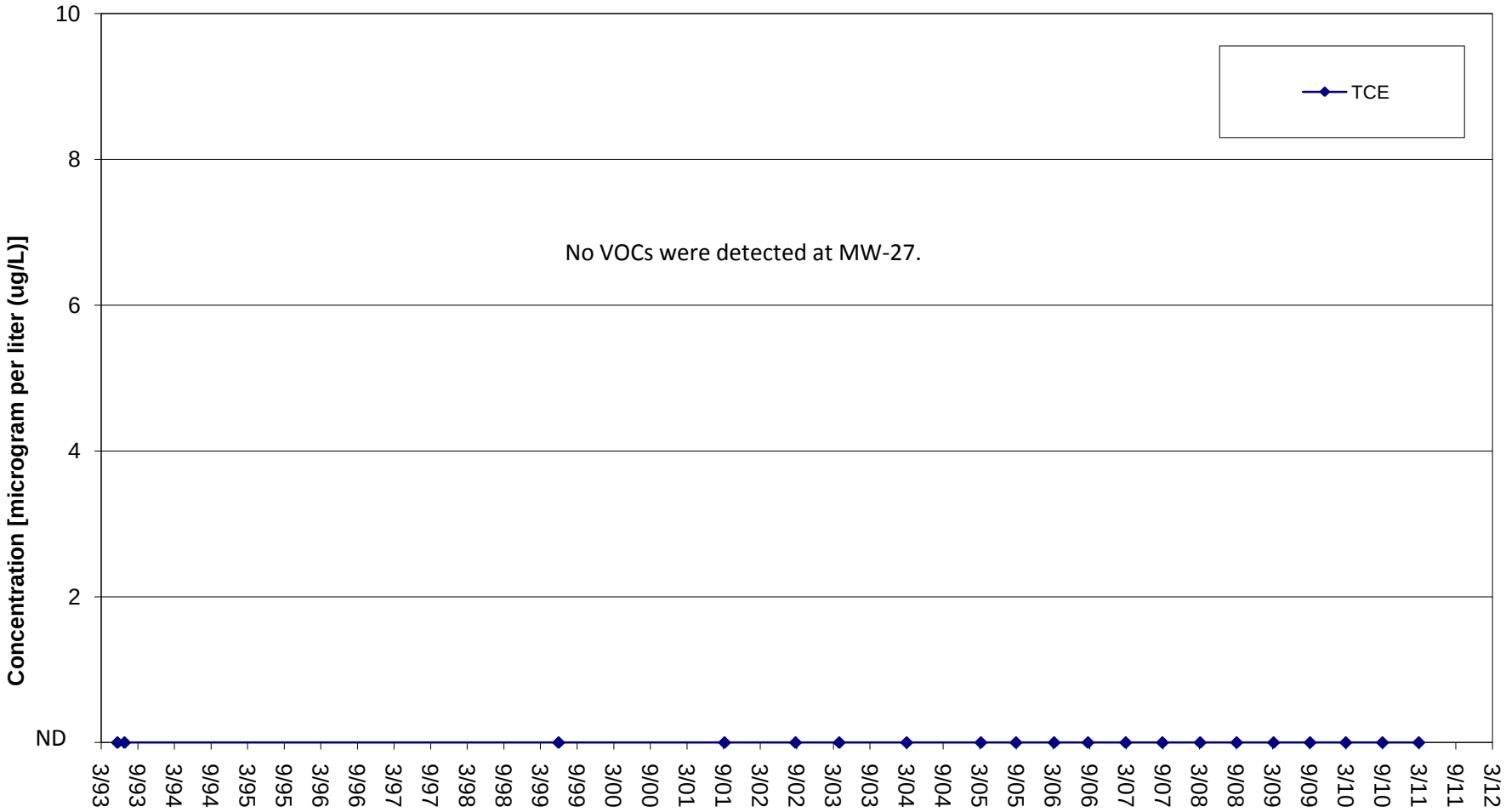
9/11
3/12
Sampling Date

MW-27



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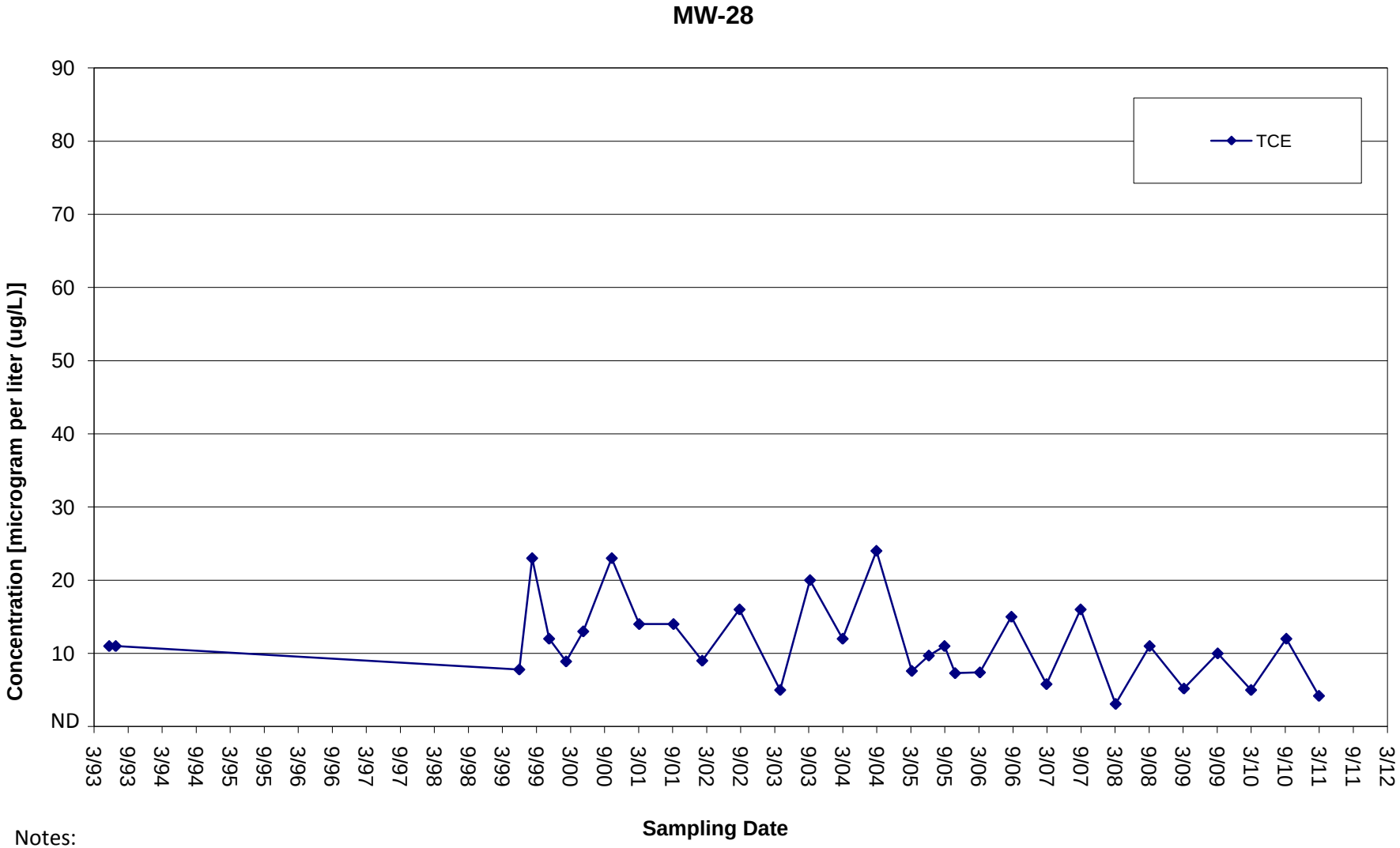

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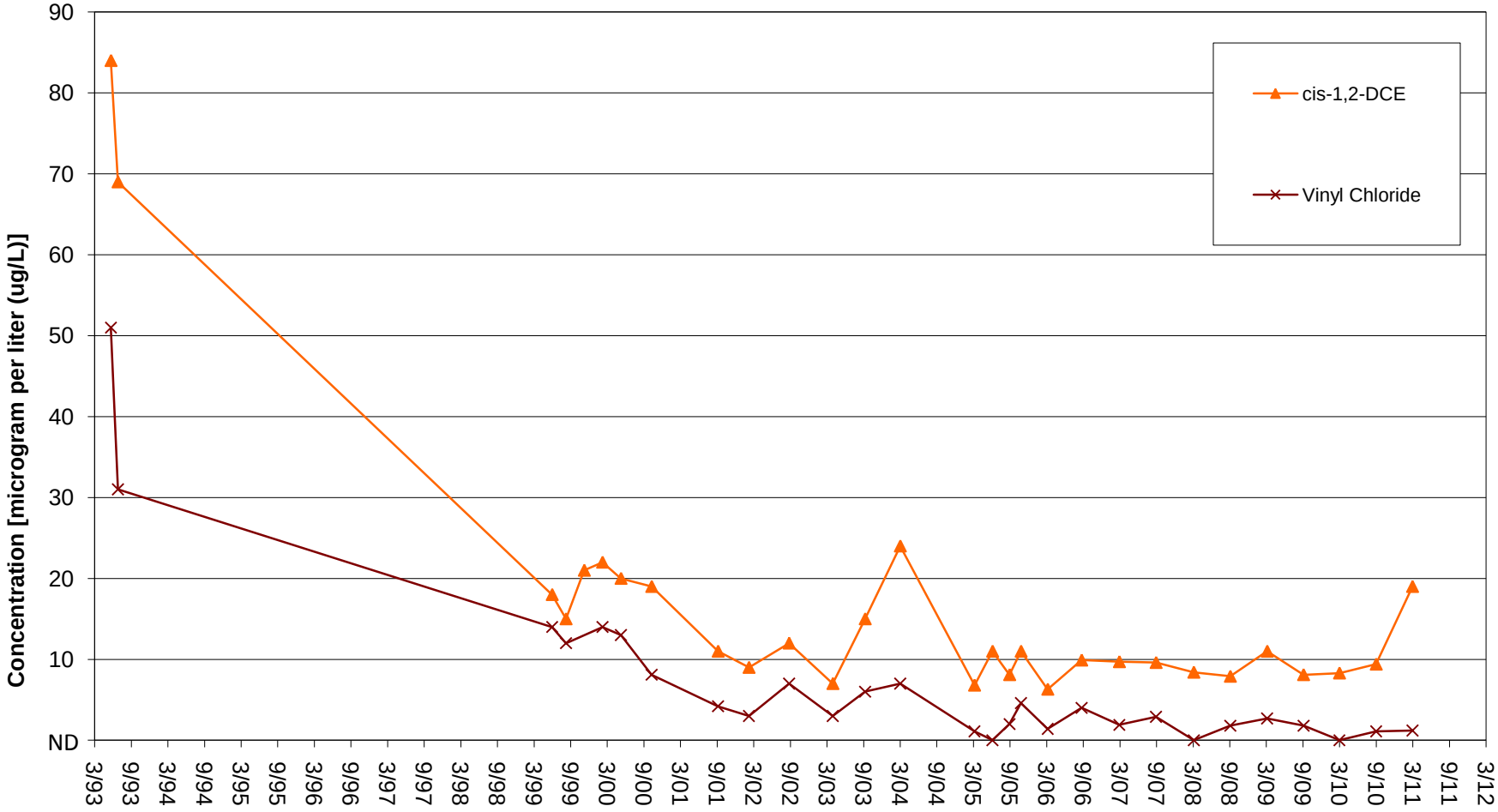
MW-29



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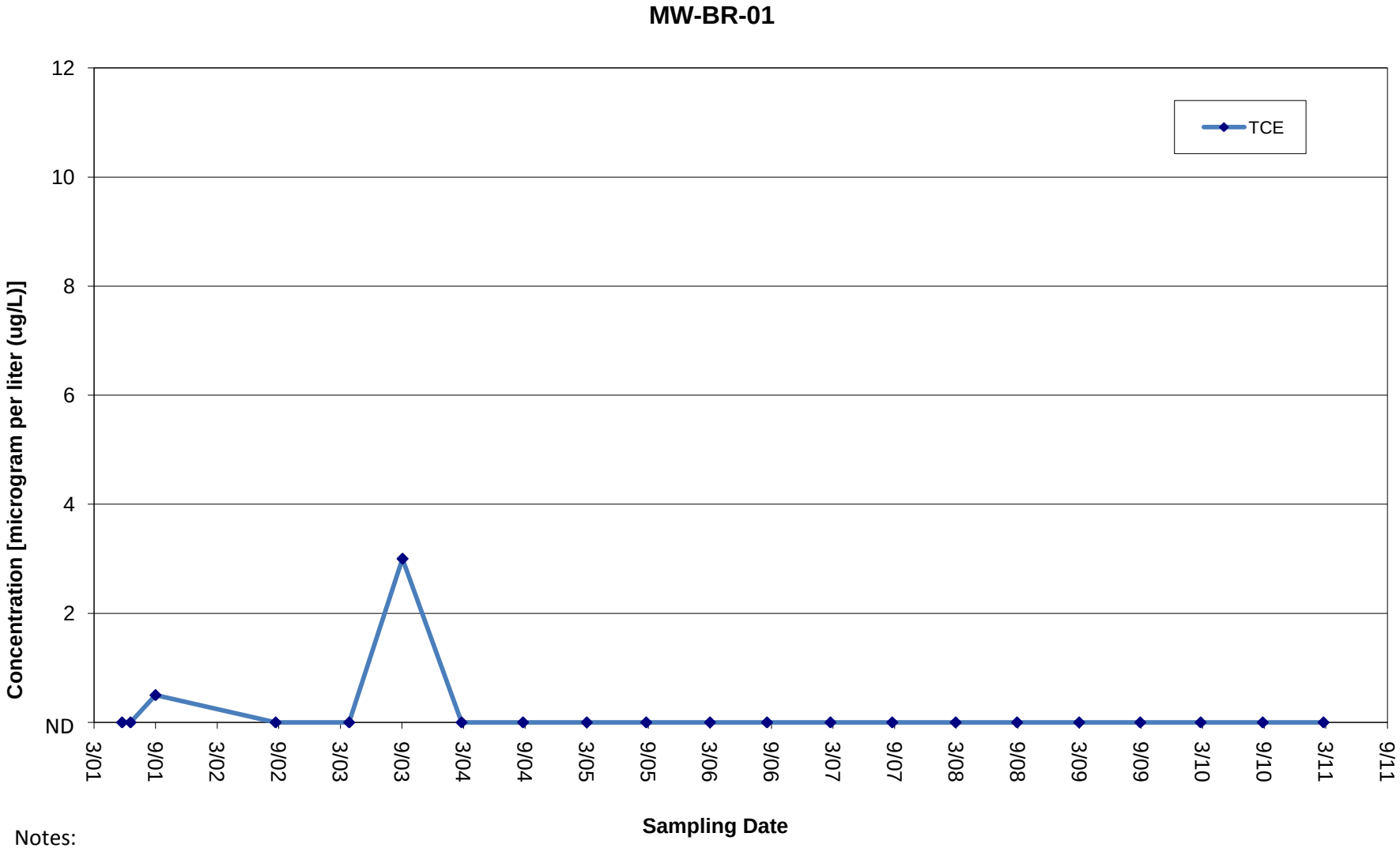

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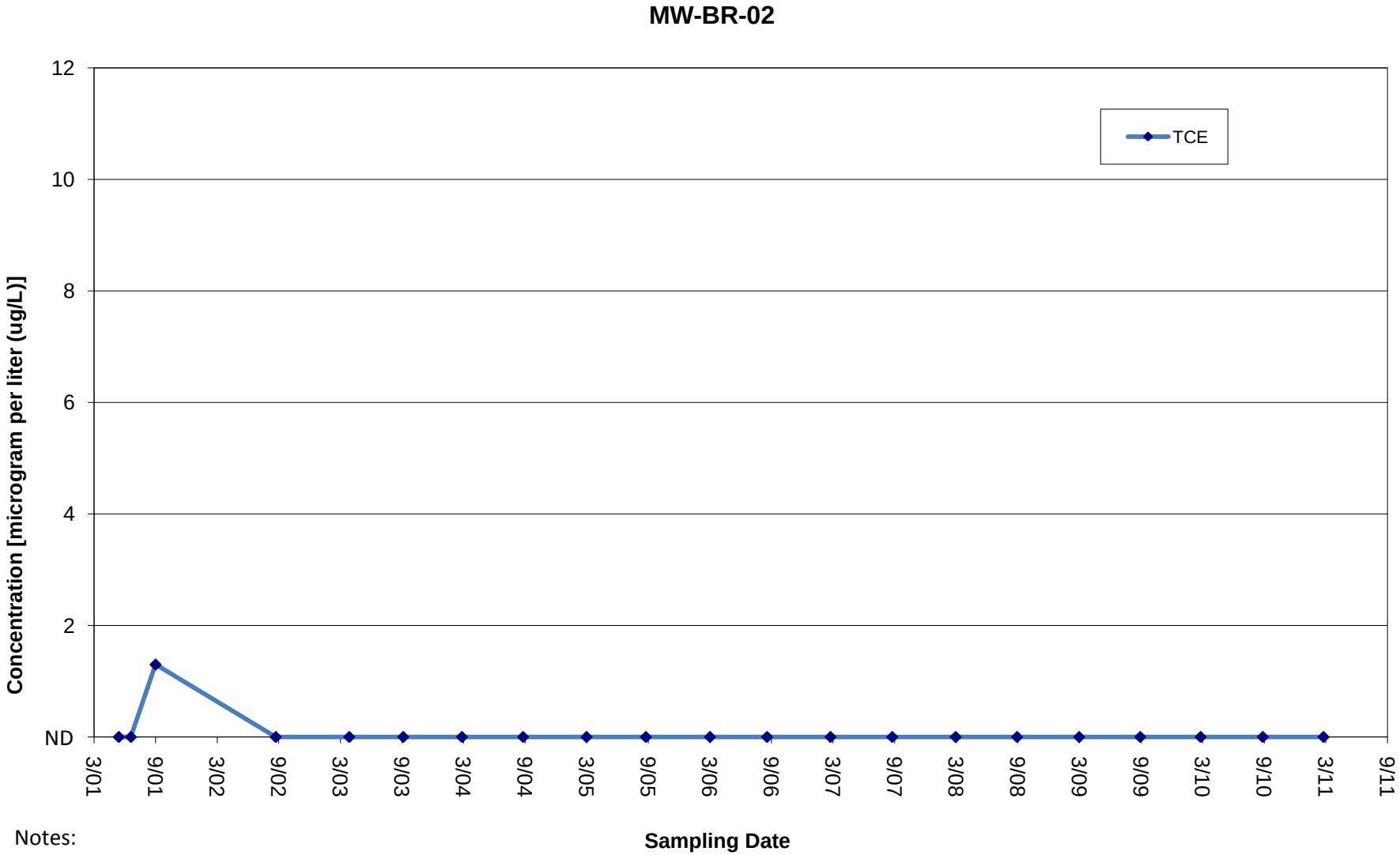

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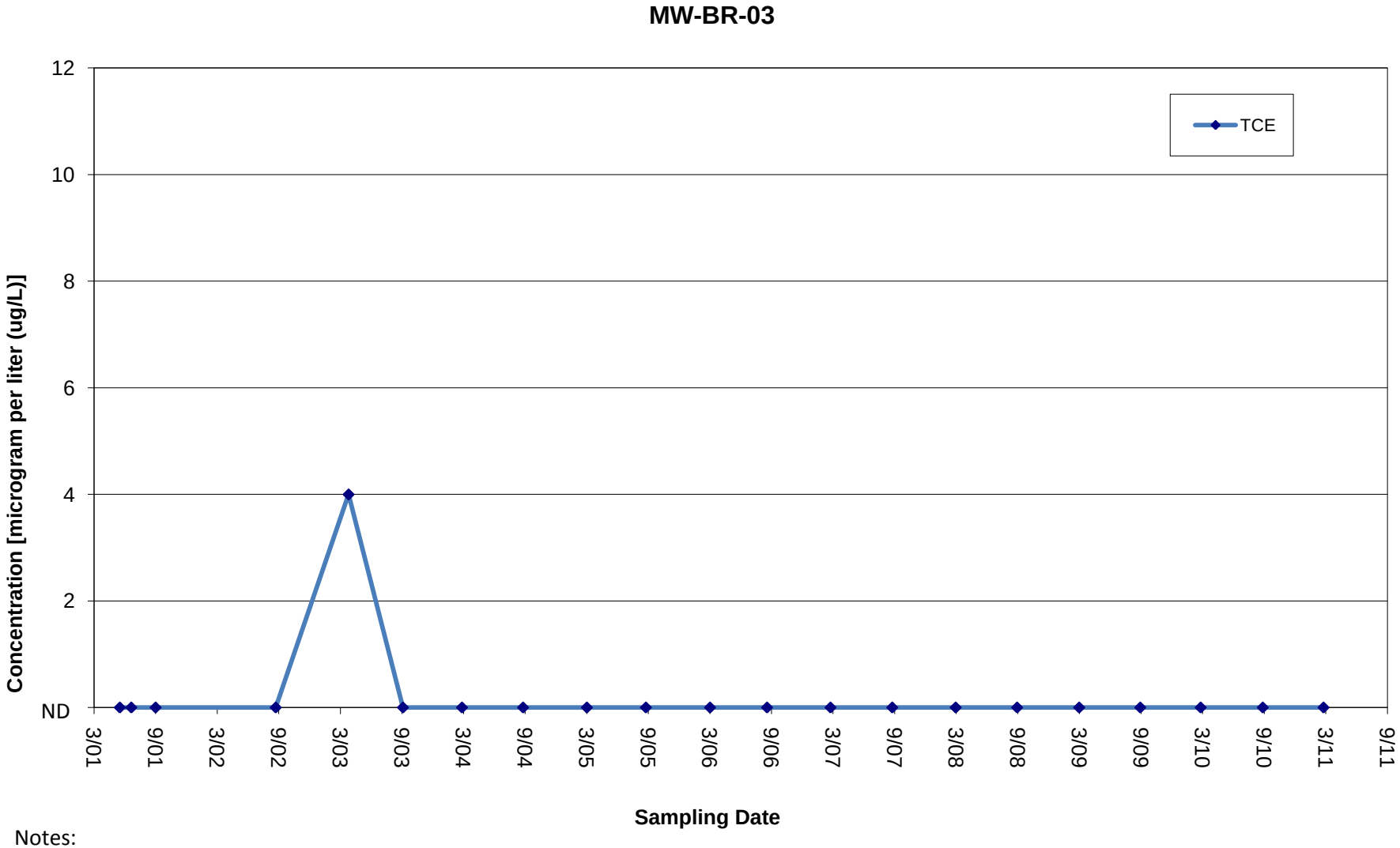

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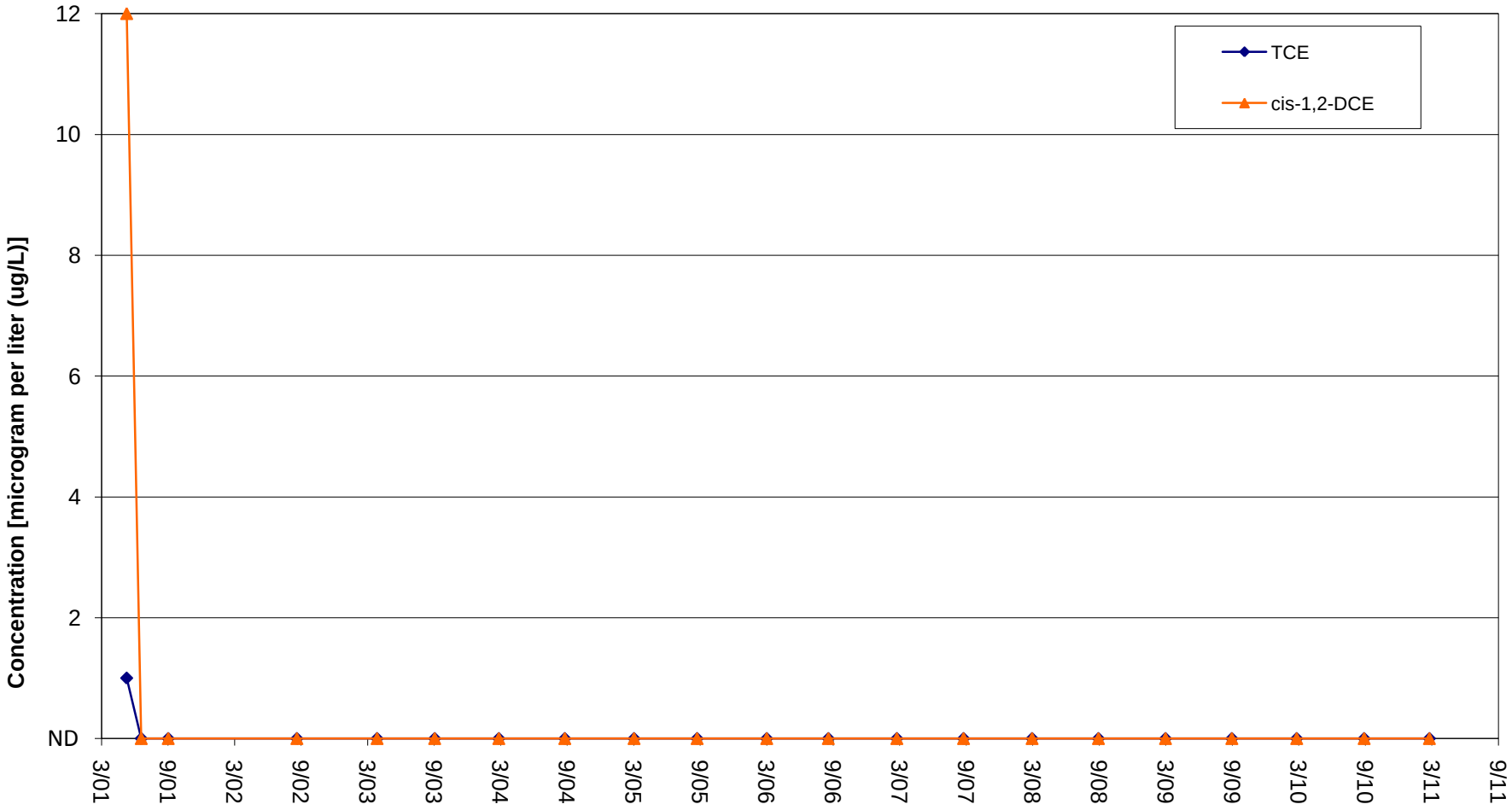
MW-BR-04



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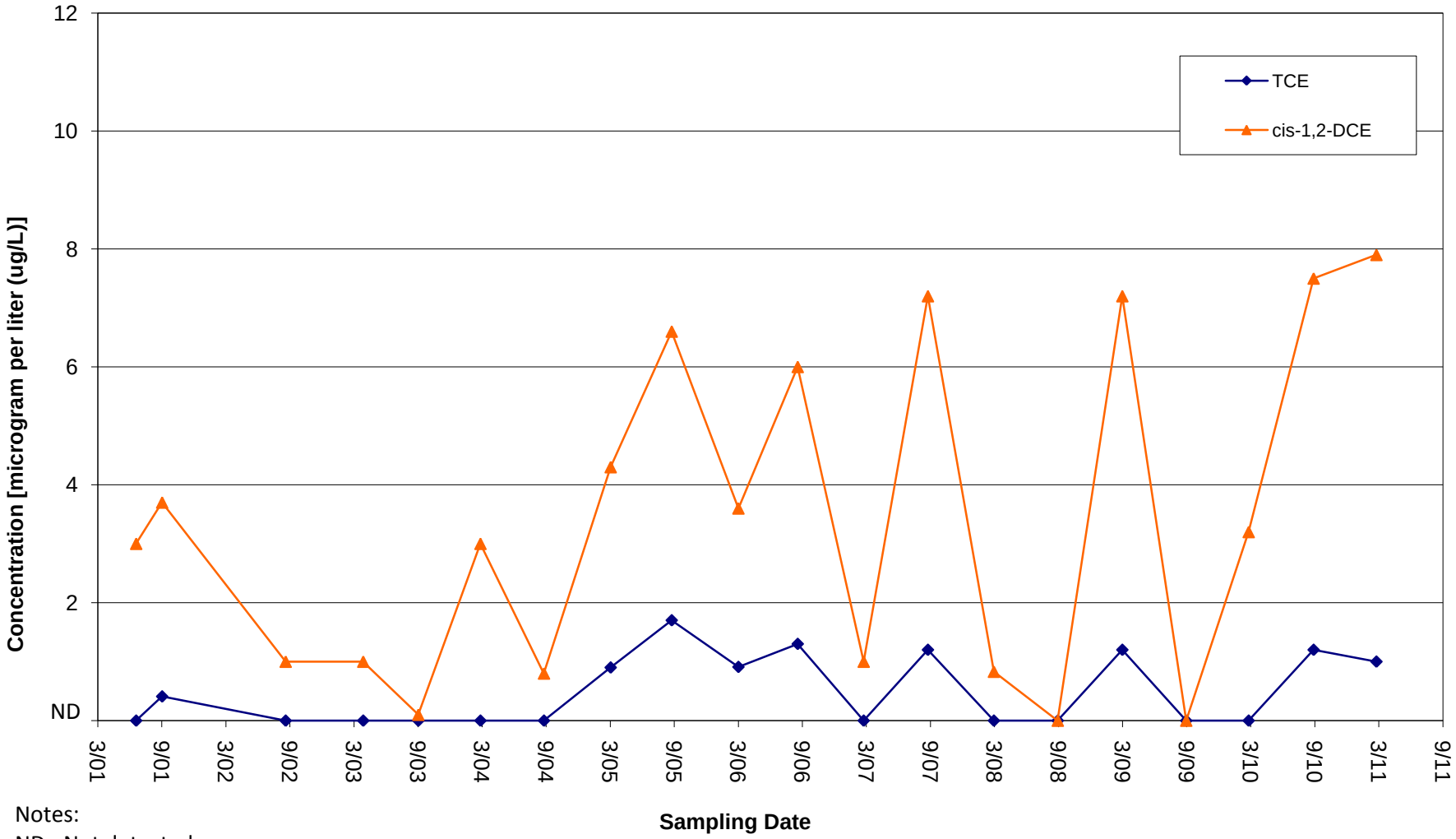
MW-BR-05



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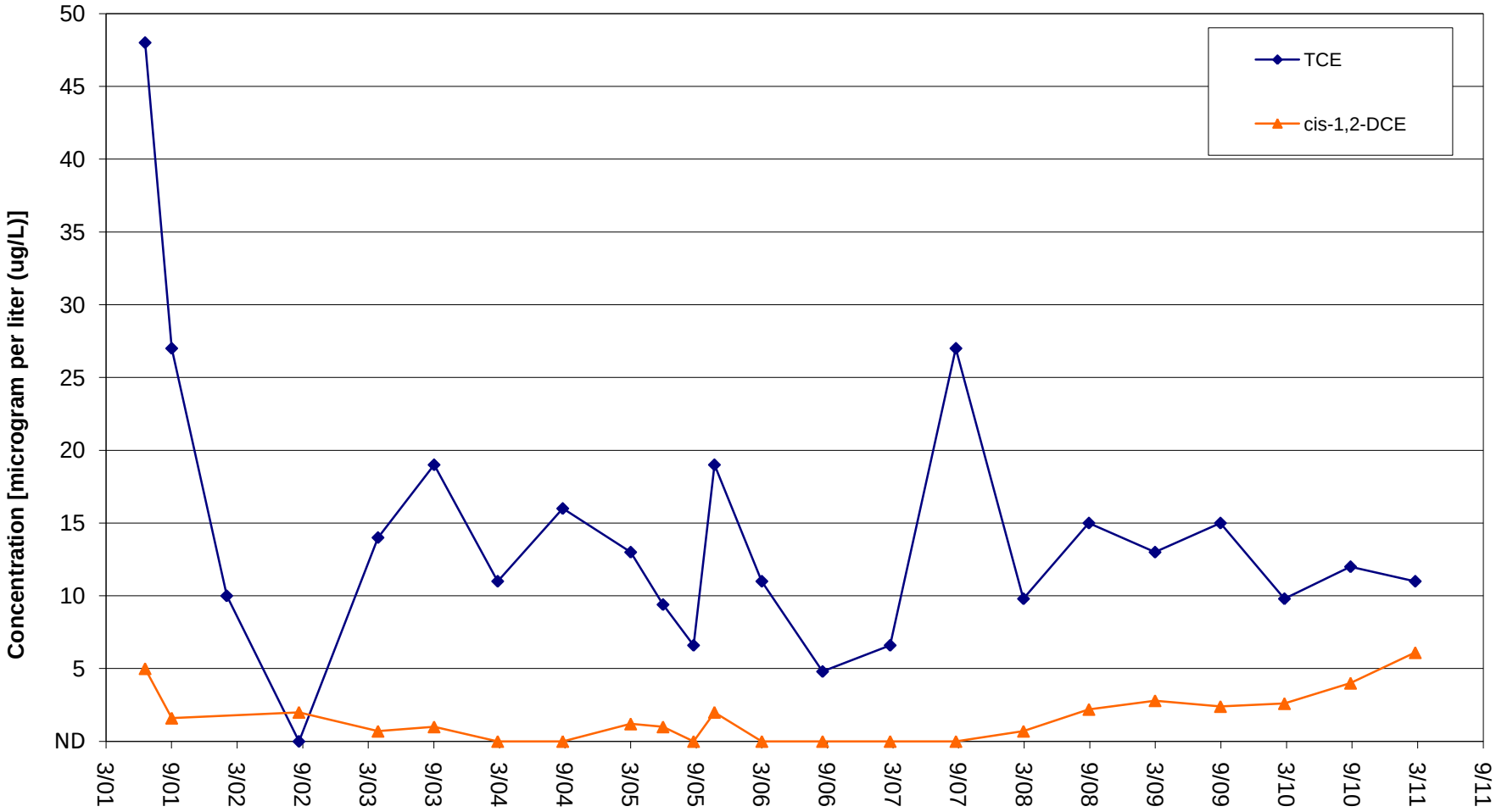
MW-BR-06



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