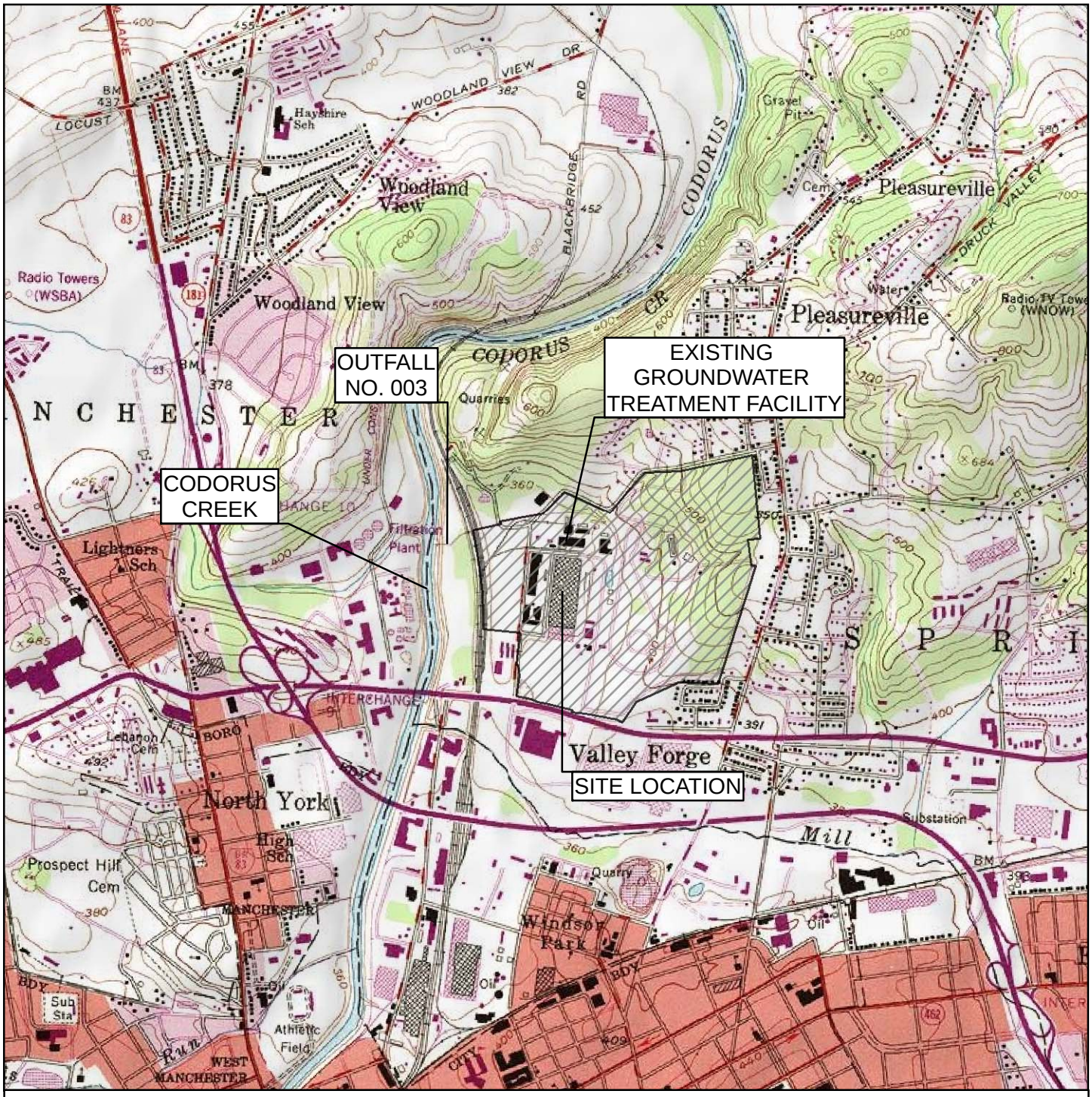
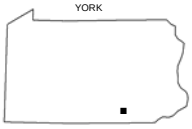


NOTE: Map based on USGS 7.5 minute series York quadrangle.

0 1,000 2,000 4,000 '

1 inch = 2,000 feet

N
W E
S



QUADRANGLE LOCATION

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

SITE LOCATION MAP

drawn AGM	checked EMW	approved SMS	figure no.
date 10/20/08	date 3/11/2010	date 3/11/2010	1-1
job no. 01-1633-00-9806-309		file no. Fig1site-loc.mxd	

initials	date	revision

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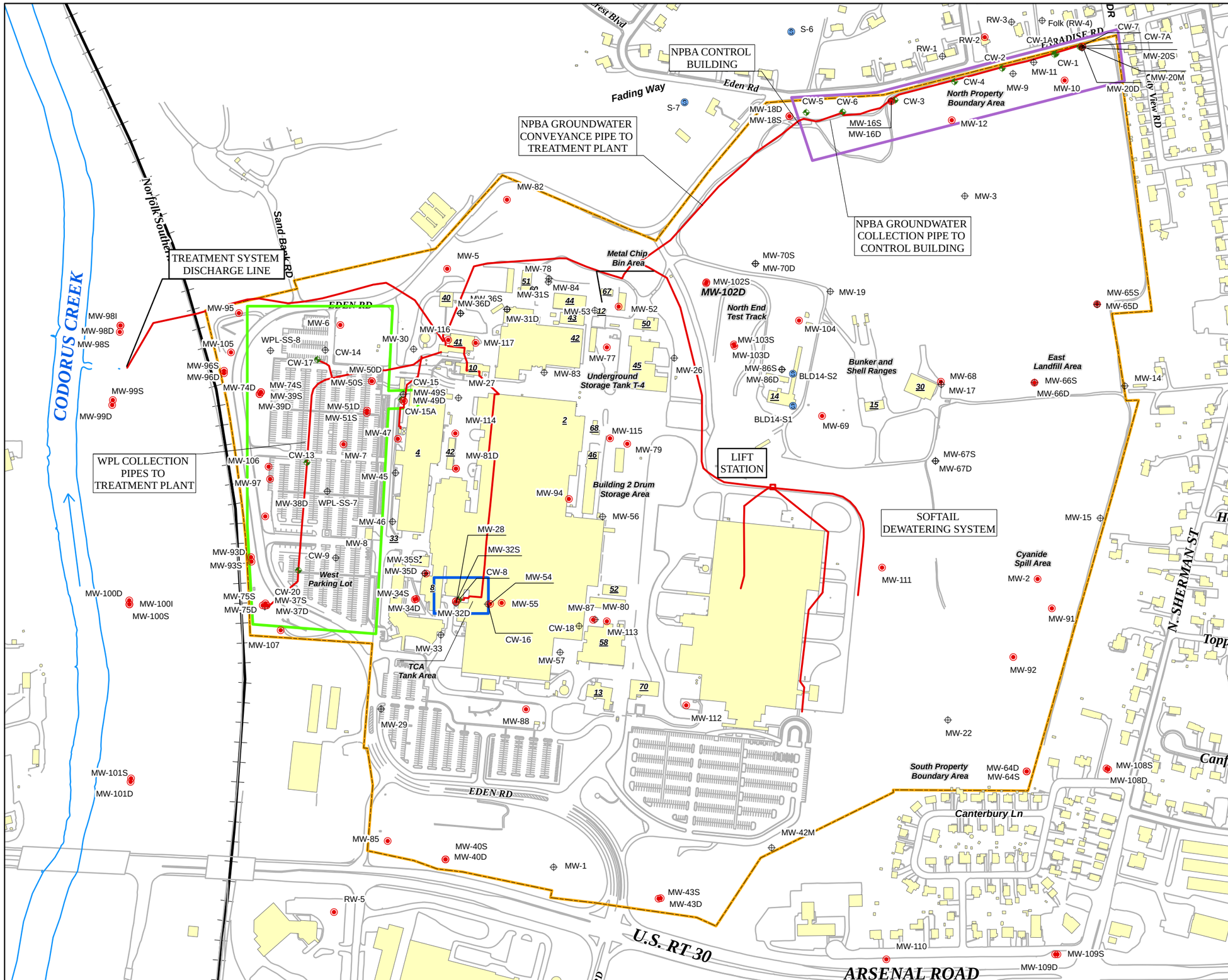

Legend

- Monitoring Well and Designation
- Extraction Well and Designation
- Key Well and Designation
- Spring
- Treatment System Features
- NPBA Area
- TCA Area
- WPL Area
- Codorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary
- Railroad

NOTE:
1. Base data (Buildings, Building Boundaries, Roads and Curbs) from NuTec Survey conducted in 2006.

Harley-Davidson Motor Company Operations, Inc.

1425 Eden Rd York, Pa 17402

GROUNDWATER TREATMENT SYSTEM LOCATION

drawn AGM	checked	approved	figure no. 1-2
date 8/25/09	date	date	
job no. 4501020024		file no. Fig_1-2_Site_Plan_20100208.mxd	

initials	date	revision

SAIC From Science to Solutions

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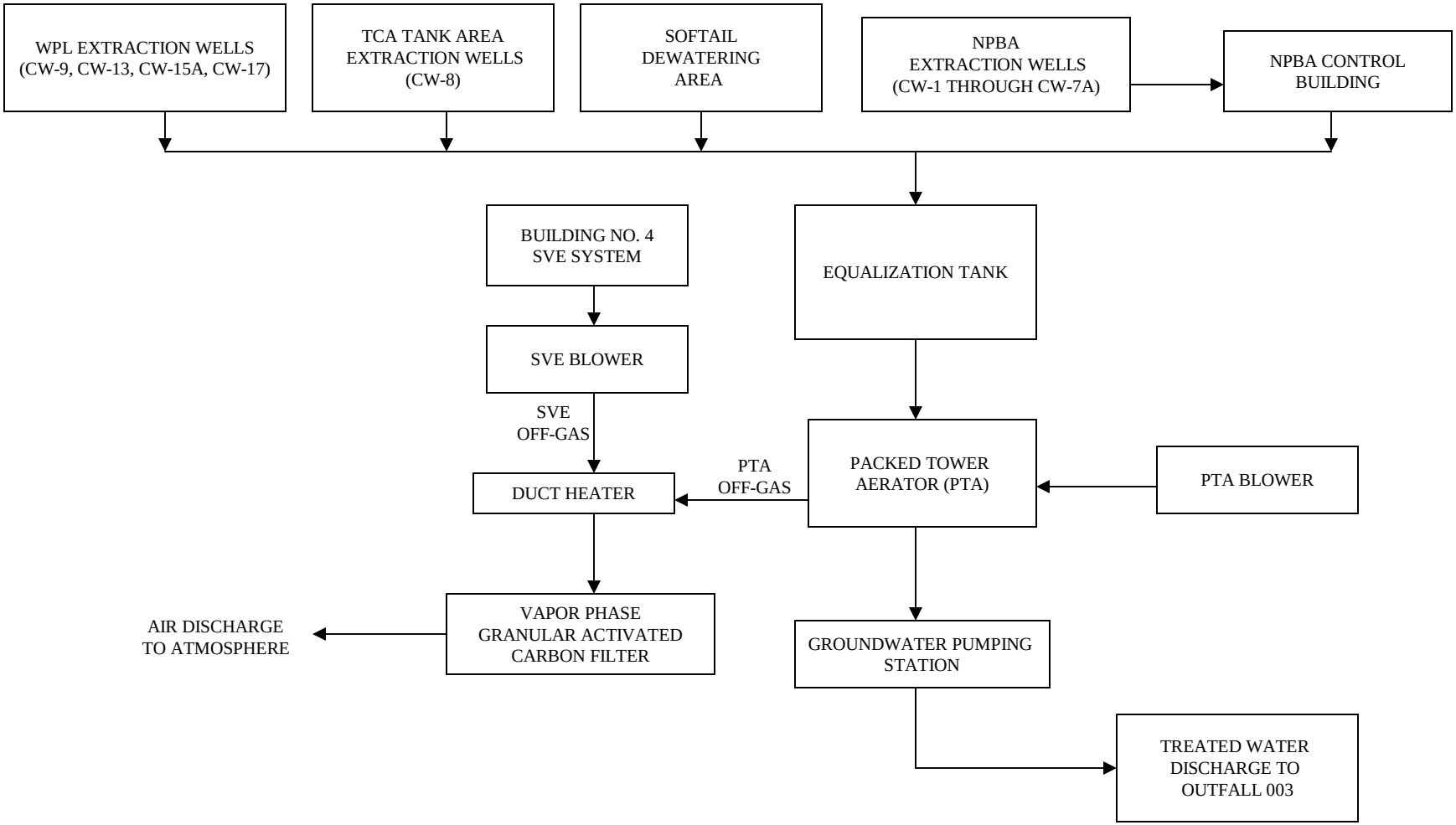
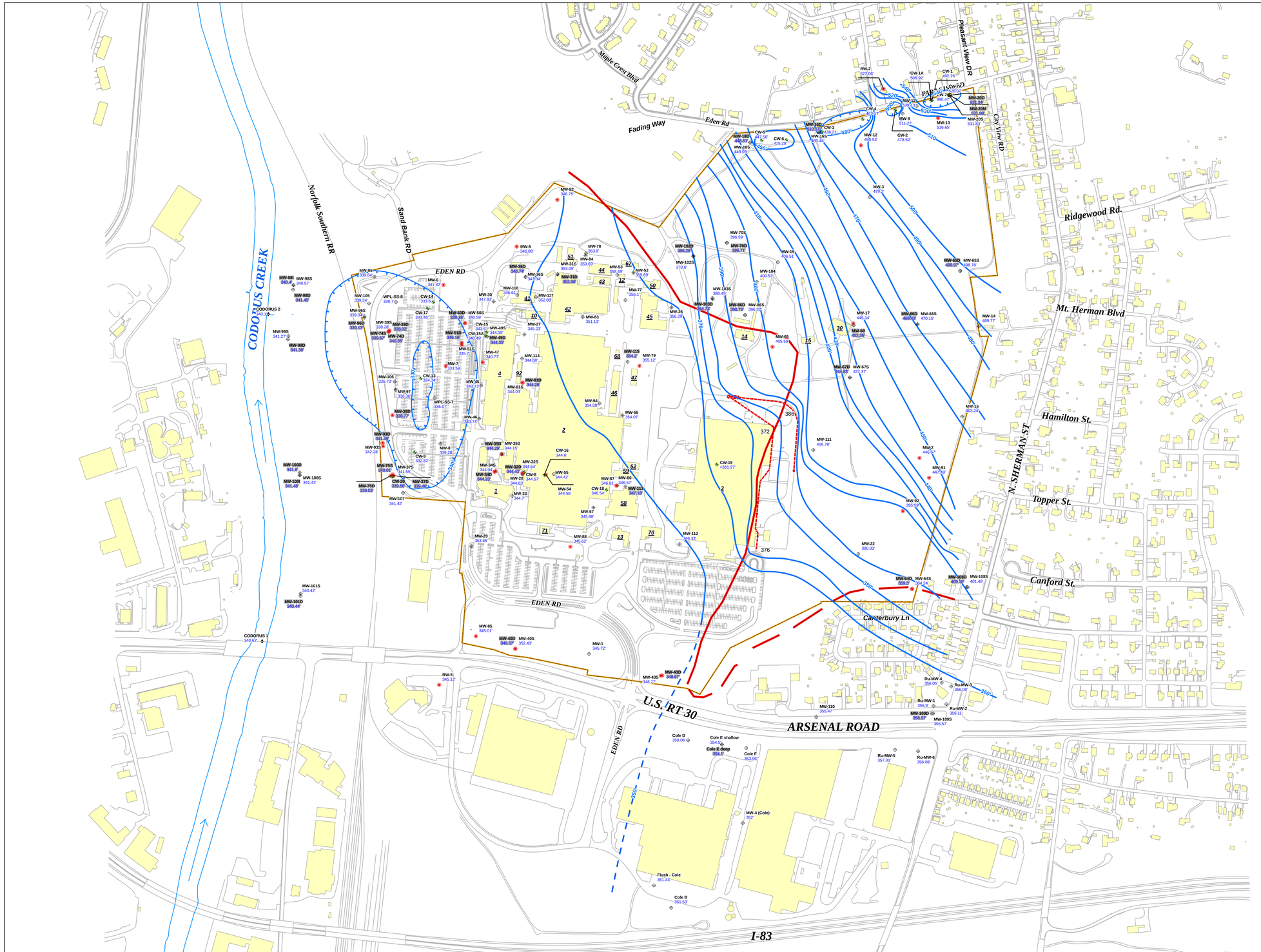
FIGURE 1-3
GROUNDWATER AND SVE TREATMENT SYSTEM FLOW DIAGRAM
Former York Naval Ordnance Plant





Groundwater Withdrawal: June 5, 2009

Well ID	Daily Flow (Gallons)	Average Daily Pumping Rate (GPM)
CW-1	3,334	2.3
CW-1A	293	0.2
CW-2	876	0.6
CW-3	3,995	2.8
CW-4	2,907	2.0
CW-5	3,680	2.6
CW-6	4,481	3.1
CW-7	2,174	1.5
CW-7A	1,664	1.2
CW-8	145,800	101.3
CW-9	100,743	70.0
CW-13	92,450	64.2
CW-14	--	--
CW-15A	4,758	3.3
CW-16	--	--
CW-17	102,741	71.3
CW-18	--	--
CW-19	--	--
Lift Station	14,590	10.1

Legend

- Monitoring Well and Designation
- Key Well and Designation
- Extraction Well and Designation
- Stream Gauge and Designation
- Groundwater Contour (Feet)
- Inferred Groundwater Contour (Feet)
- Groundwater Contour Sink (Feet)
- Bedrock Contact
- Groundwater Interceptor Trenches
- Cordorus Creek
- Roads and Curb Boundary
- Buildings
- Harley Davidson Property Boundary

N

NOTE:

1. *Base data (Buildings, Building Boundaries, Roads and Curbs, and Contour Lines, from NuTec Survey conducted in 2006)*
2. *Gauging data that was used was from the 6/4/09 and 6/5/09 gauging event.*
3. *The shallow groundwater elevation was used when contouring at well pairs (in black). Gray water levels are from deep wells and are presented for comparison only.*

0 300 600 1,200

SCALE IN FEET

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

GROUNDWATER SURFACE CONTOUR MAP JUNE 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 7/28/09	date 3/11/2010	date 3/11/2010	3-1
job no. 4501020024		file no.	

initials	date	revision

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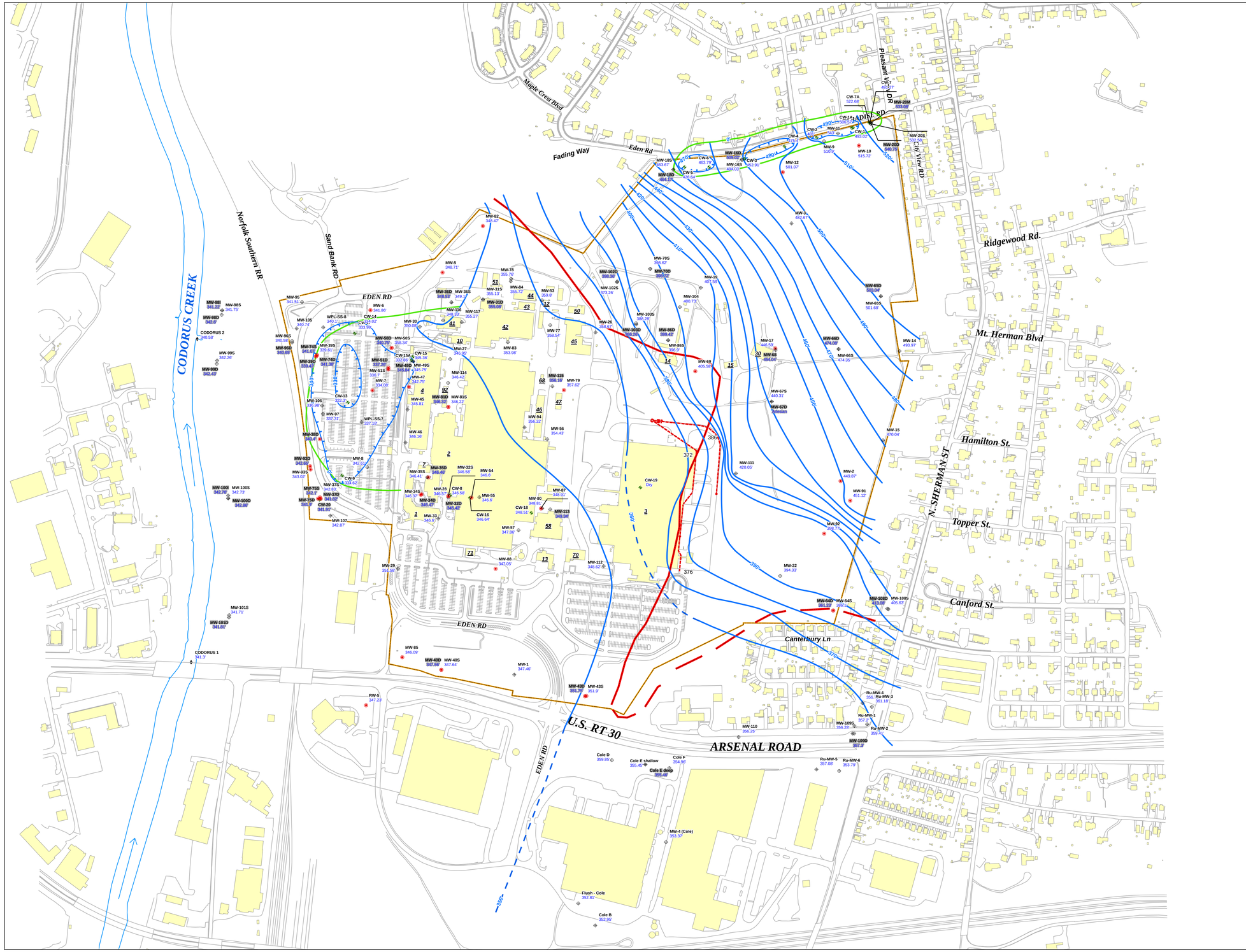


Groundwater Withdrawal: December 15, 2009

Well ID	Daily Flow (Gallons)	Average Daily Pumping Rate (GPM)
CW-1	3,764	2.6
CW-1A	436	0.3
CW-2	958	0.7
CW-3	5,007	3.5
CW-4	3,963	2.8
CW-5	4,975	3.5
CW-6	Off Line	Off Line
CW-7	3,366	2.3
CW-7A	1,926	1.3
CW-8	Off Line	Off Line
CW-9	101,576	70.5
CW-13	107,691	74.8
CW-14	--	--
CW-15A	5,746	4.0
CW-16	--	--
CW-17	106,432	73.9
CW-18	--	--
CW-19	--	--
Lift Station	5,990	4.2

Legend

- Monitoring Well and Designation
- Key Well and Designation
- Extraction Well and Designation
- Stream Gauge and Designation
- Estimated Capture Zone
- Groundwater Contour (Feet)
- Inferred Groundwater Contour (Feet)
- Groundwater Contour Sink (Feet)
- Bedrock Contact
- Groundwater Interceptor Trenches
- Cordorus Creek
- Roads and Curb Boundary
- Buildings
- Harley Davidson Property Boundary

N

NOTE:

1. *Base data (Buildings, Building Boundaries, Roads and Curbs, and Contour Lines, from NuTec Survey conducted in 2006)*
2. *Gauging data that was used was from the 12/15/2009 and 12/16/2009 gauging event.*
3. *The shallow groundwater elevation was used when contouring at well pairs (in black). Gray water levels are from deep wells and are presented for comparison only.*
4. *Well MW-50S elevation was not used in developing the water table contour map. The water table is impacted by storm events.*

0 300 600 1,200

SCALE IN FEET

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

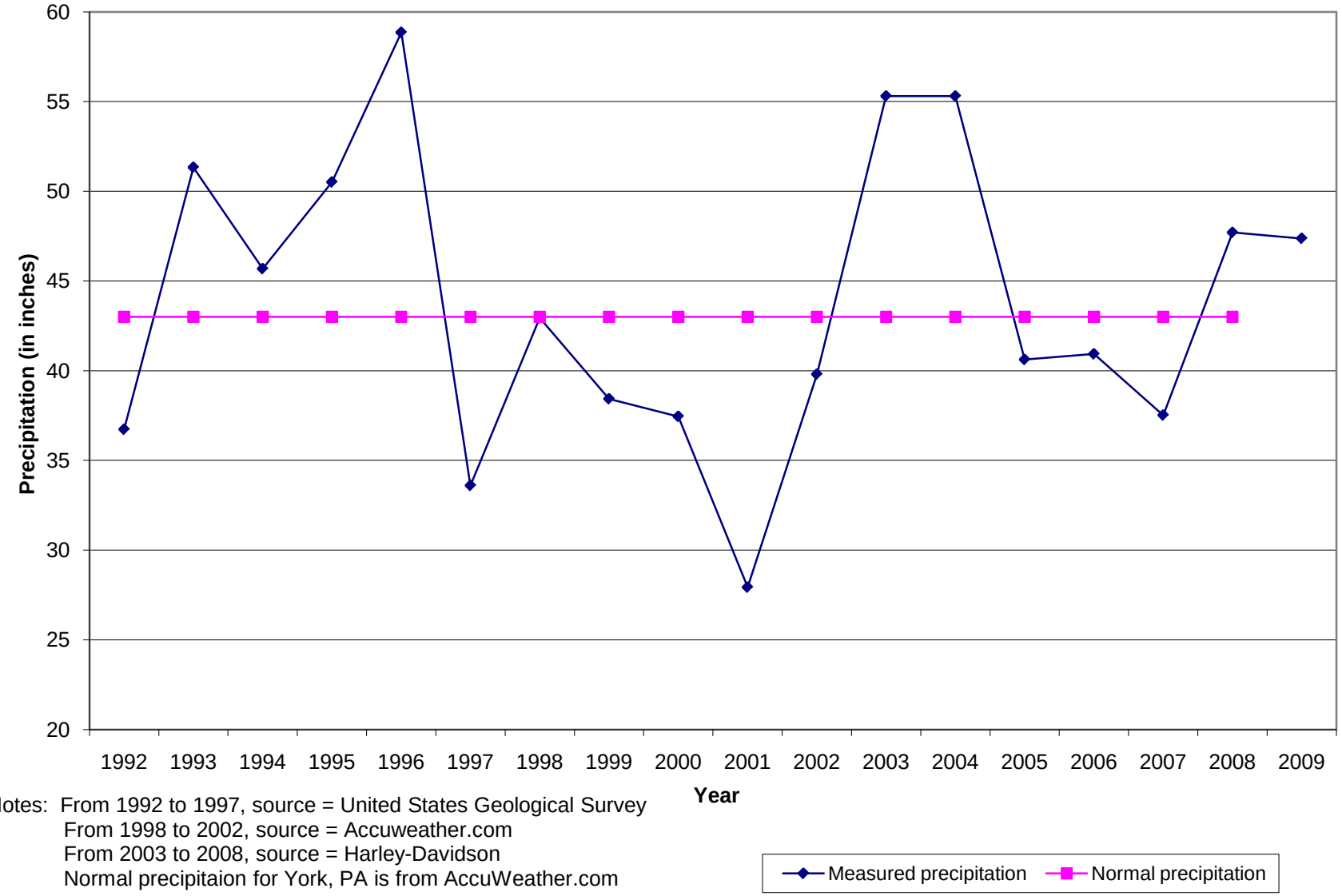
GROUNDWATER SURFACE CONTOUR MAP DECEMBER 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 3/11/2010	date 3/11/2010	date 3/11/2010	3-2
job no. 166345.00.08232.62.6062.00.518		file no.	

initials	date	revision

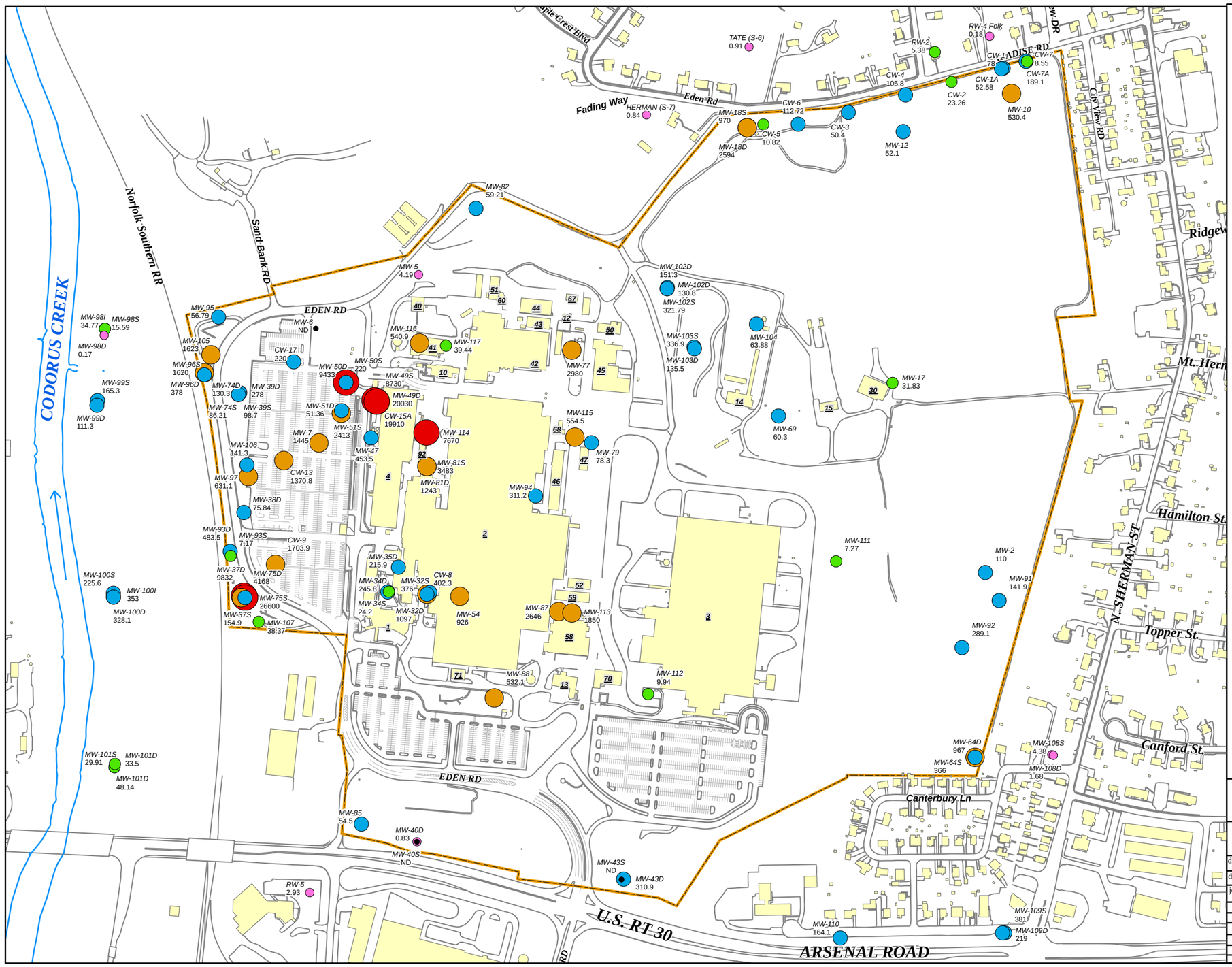
SAIC From Science to Solutions

Figure 3-3
Annual Historical Precipitation Data for York, PA
Former York Naval Ordnanace Plant
1425 Eden Road, York PA 17402



Notes: From 1992 to 1997, source = United States Geological Survey
From 1998 to 2002, source = Accuweather.com
From 2003 to 2008, source = Harley-Davidson
Normal precipitaion for York, PA is from AccuWeather.com

H:\Jobs\Harley\Reporting\Annual O&M Reports\2009\Precip_2009_report.xls



N
W E
S

Total VOCs in µg/l

- ND
- < 5.0
- 5.01 - 50.0
- 50.1 - 500.0
- 500.01 - 5000.
- >5000.01

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. ND = Not detected above laboratory reporting limit.

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Total VOCs - June/July 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 9/3/09	date 3/11/2010	date 3/11/2010	3-4
job no. 4501020024		file no.	

initials	date	revision

SAIC From Science to Solutions

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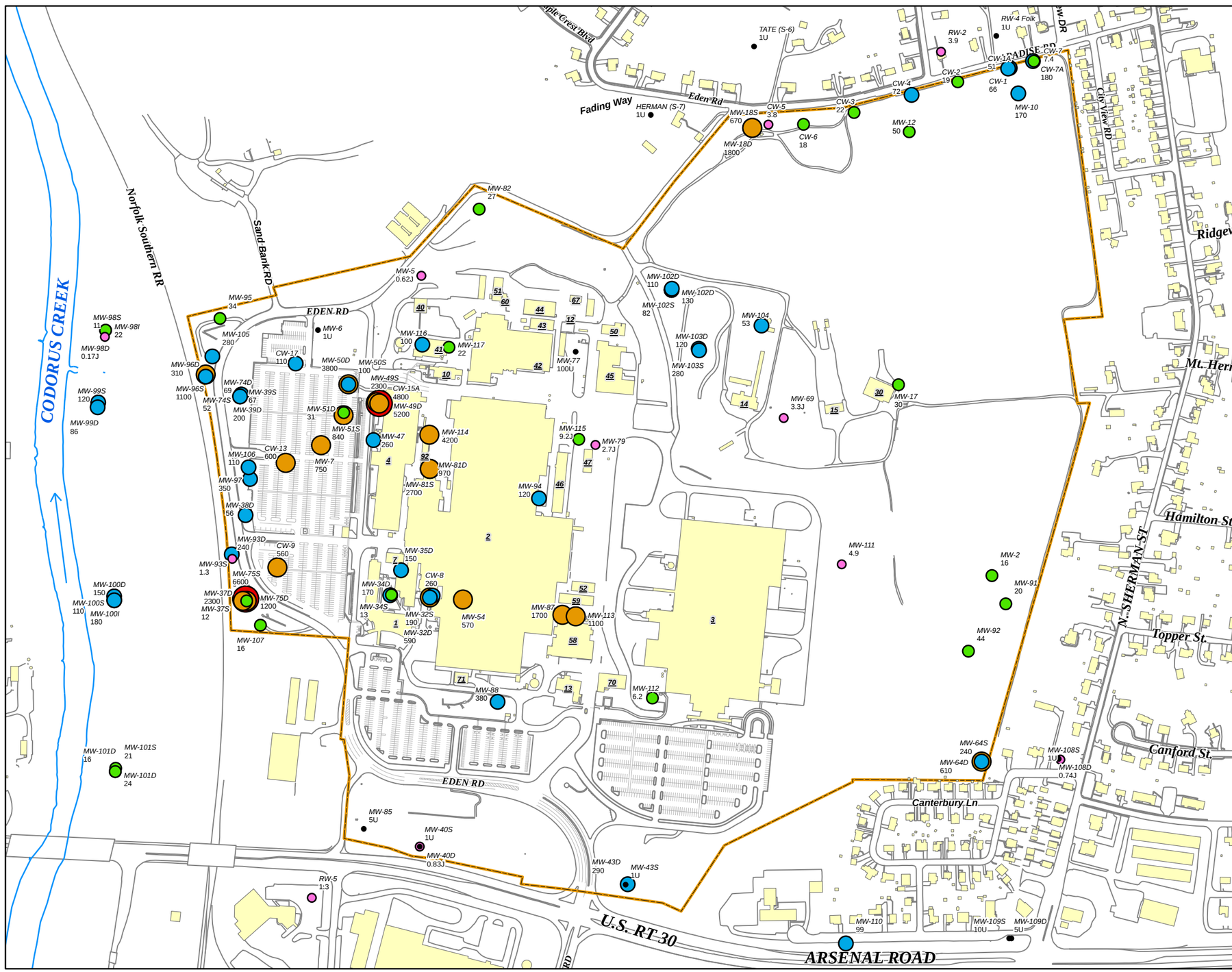

Trichloroethene (TCE) in µg/l

- ND
- <5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *J = Estimated result. Result is less than reporting limit but greater than the detection limit.*

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
TCE - June/July 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 9/3/09	date 3/11/2010	date 3/11/2010	3-5
job no. 4501020024		file no.	

initials	date	revision

SAIC From Science to Solutions

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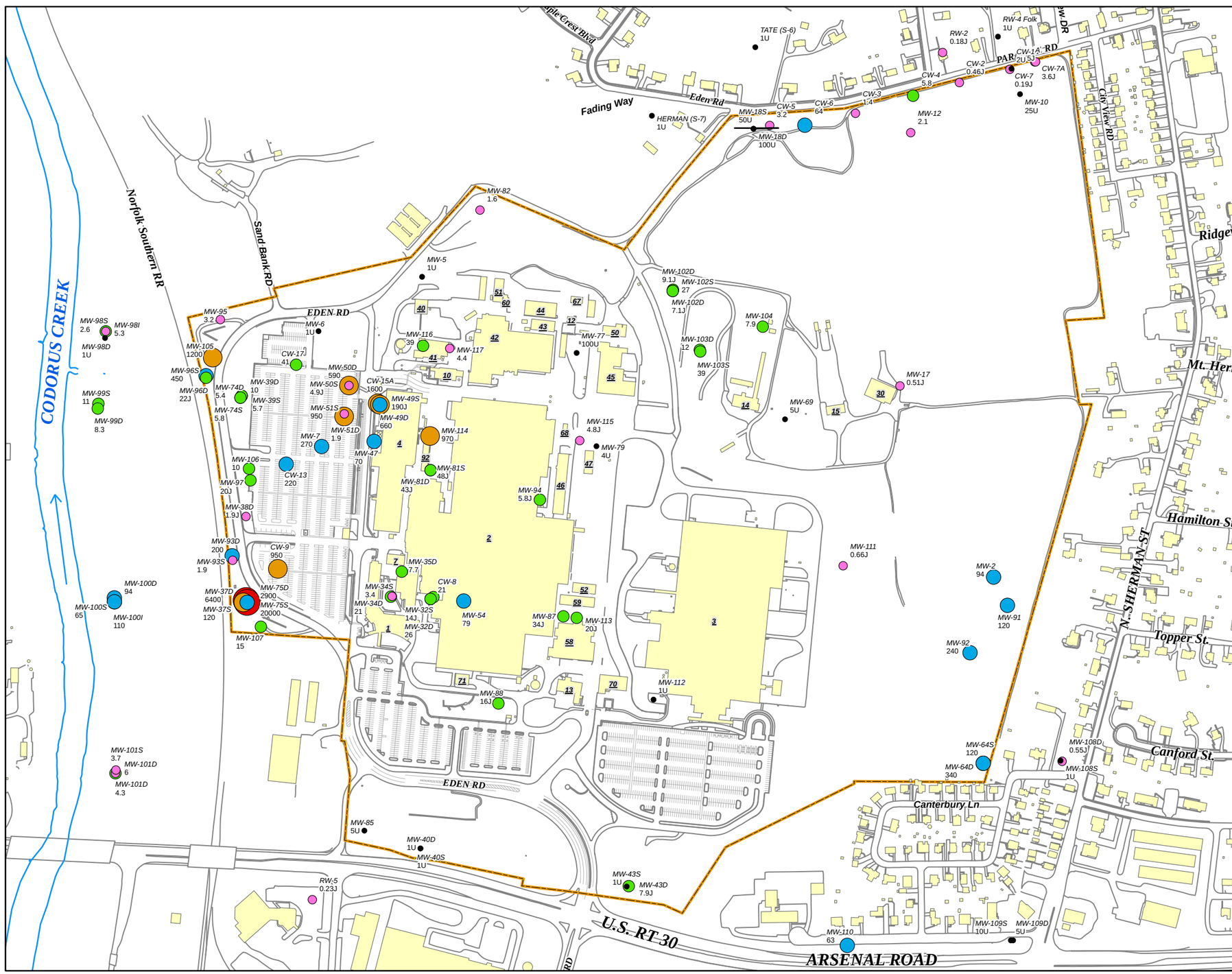

Tetrachloroethene (PCE) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *J = Estimated result. Result is less than reporting limit but greater than the detection limit.*

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
PCE -June/July 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 9/3/09	date 3/12/2010	date 3/12/2010	3-6
job no. 4501020024		file no. Fig_3-6_PCE_20100209.mxd	

initials	date	revision

SAIC From Science to Solutions

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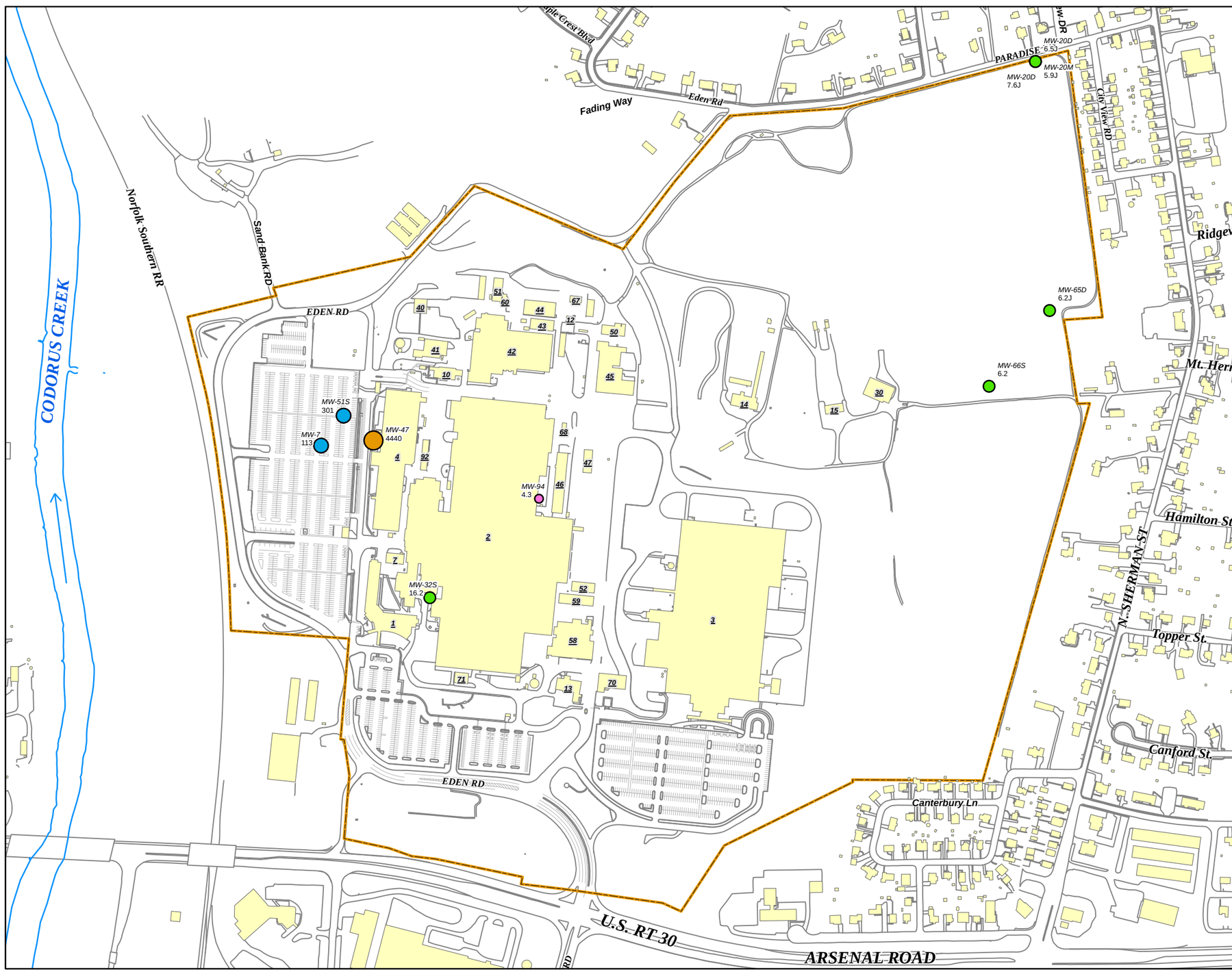

N
W E
S

Total Chromium
(Cr+3 and Cr+6, dissolved) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *B = Estimated result. Result is less than reporting limit but greater than the detection limit.*

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Total Chromium (Cr^{+3} and Cr^{+6}, Dissolved Phase) June/July 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 9/3/09	date 3/11/2010	date 3/11/2010	3-7
job no. 4501020024		file no. Fig_3-7_TotChro_20100209.mxd	

initials	date	revision

SAIC From Science to Solutions

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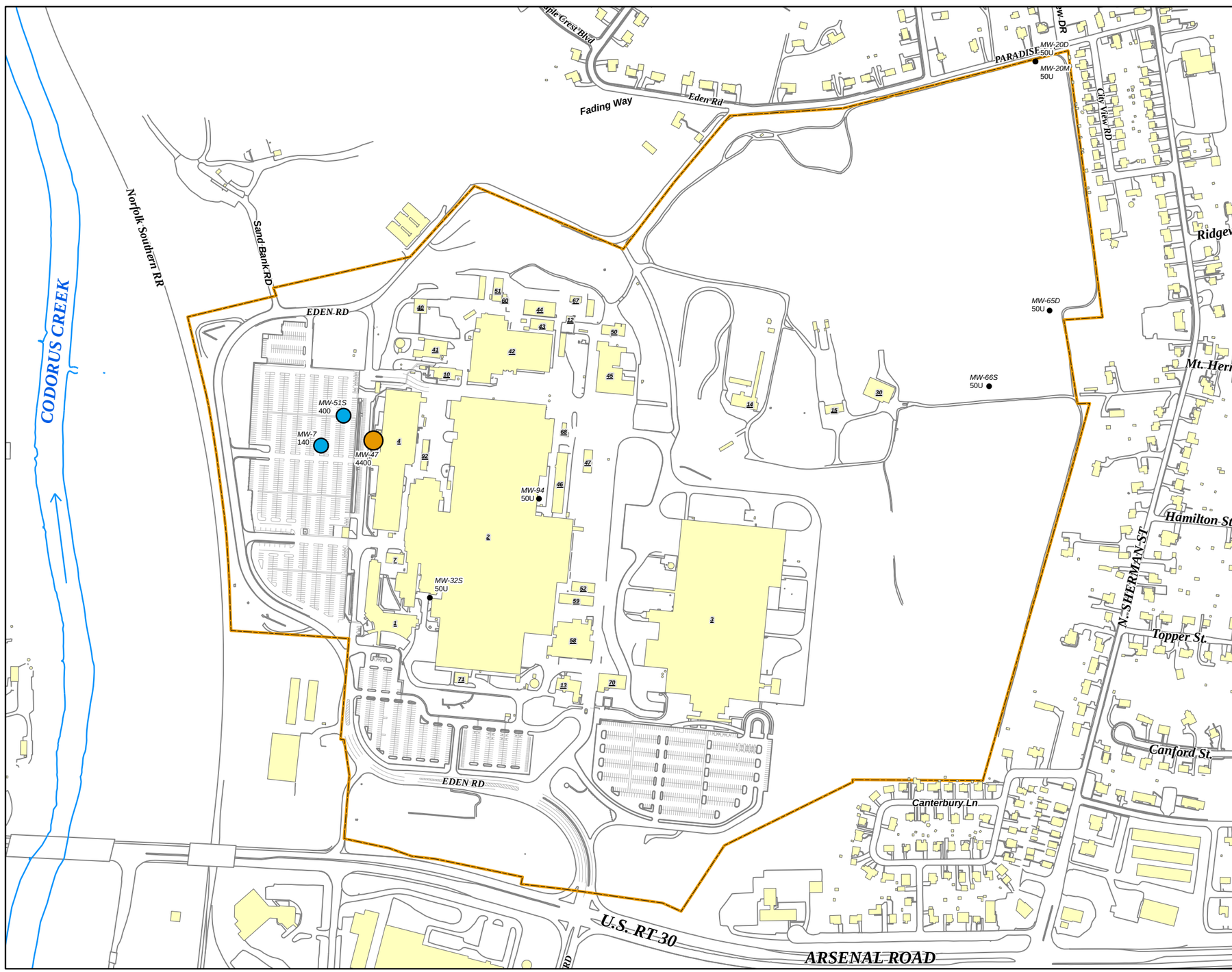

N
W E
S

Dissolved Hexavalent Chromium (Cr+6) in µg/l

- ND
- < 5.0
- 5.1 - 50.0
- 50.1 - 500.0
- 500.1 - 5000.0
- >5000.1

- Cordorus Creek
- Buildings
- Harley Davidson Property Boundary
- Roads and Curb Boundary (2006)
- Parking (2006)

NOTE:
1. *ND = Not detected above laboratory reporting limit.*
2. *U = Not detected above laboratory reporting limit.*
3. *B = Estimated result. Result is less than reporting limit but greater than the detection limit.*

450 225 0 450 Feet

1 inch = 450 feet

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PA 17402

Key Well Chemistry Map
Dissolved Hexavalent Chromium
(Cr+6) in µg/l June/July 2009

drawn AGM	checked EMW	approved SMS	figure no.
date 9/3/09	date 3/11/2010	date 3/11/2010	3-8
job no. 4501020024		file no. Fig_3-8_DisChro_20100209.mxd	

initials	date	revision

SAIC From Science to Solutions

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Figure 4-1
Packed Tower Aerator Influent Chemistry - Total VOC Concentration
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

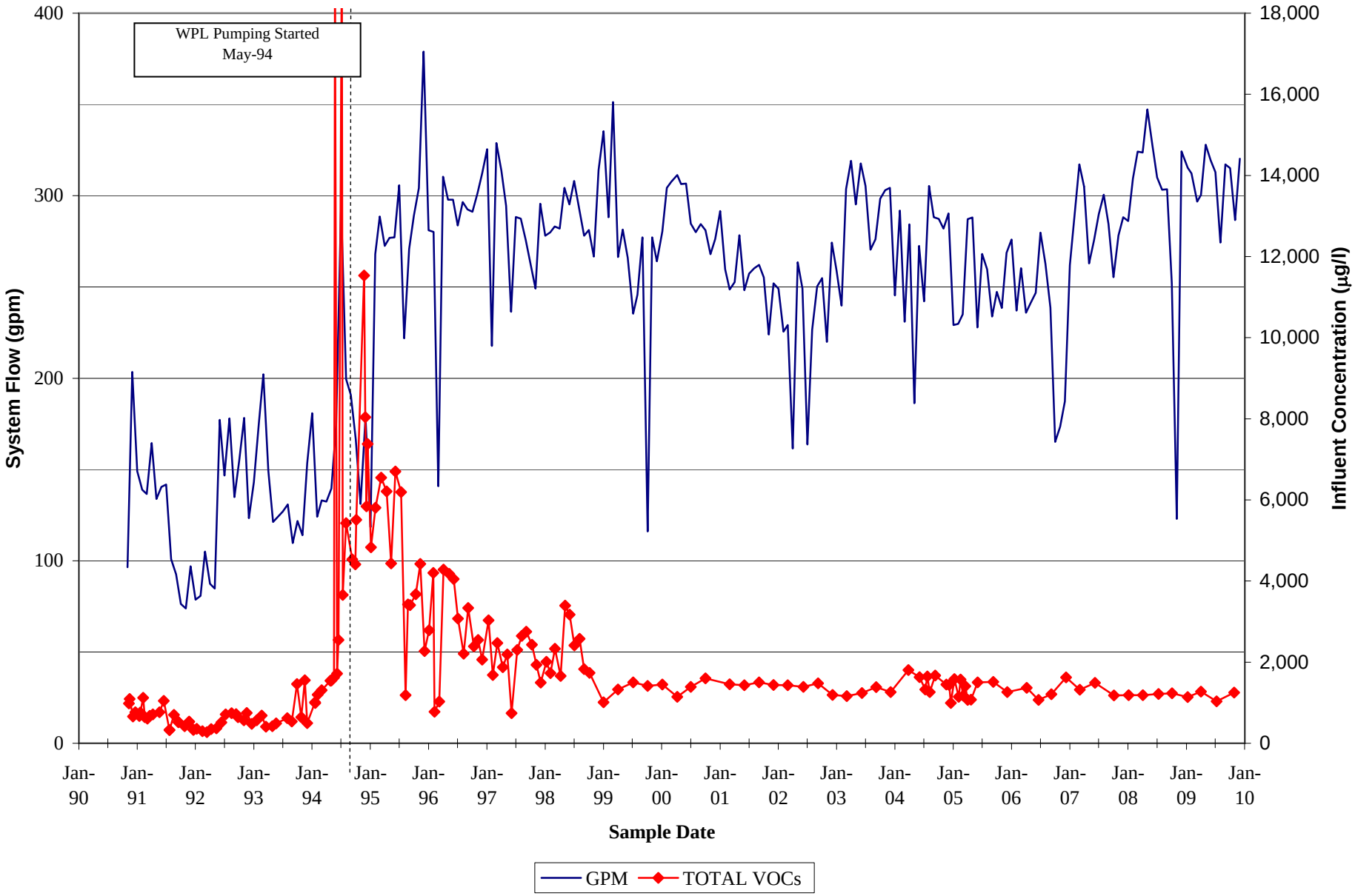

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Figure 4-2
Packed Tower Aerator Influent Chemistry for NPDES Discharge Permit Required Compounds
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

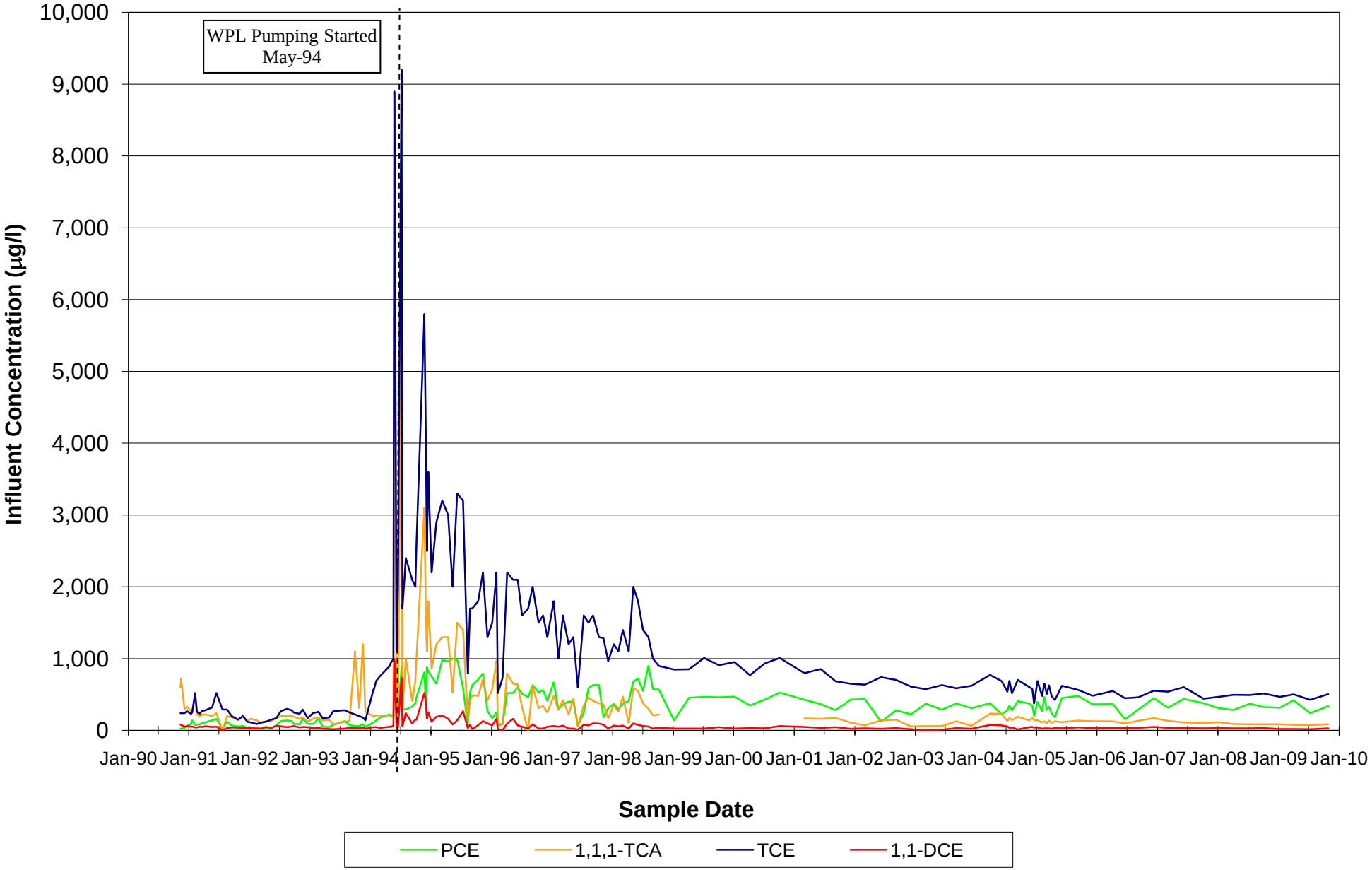

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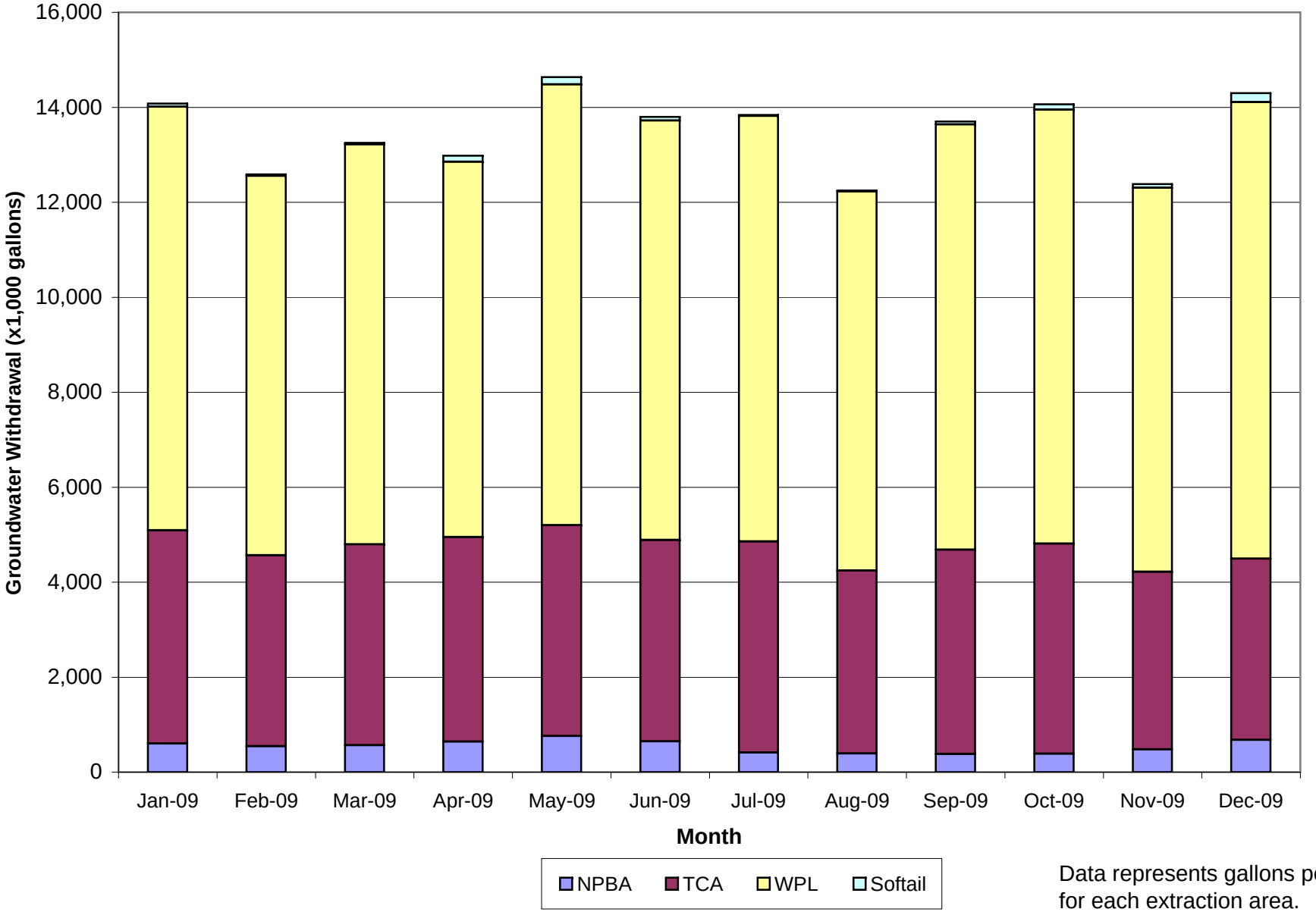
Figure 5-1
2009 Groundwater Withdrawals
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402



Data represents gallons per month for each extraction area.

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Figure 5-2
TCE in NPBA Extraction Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

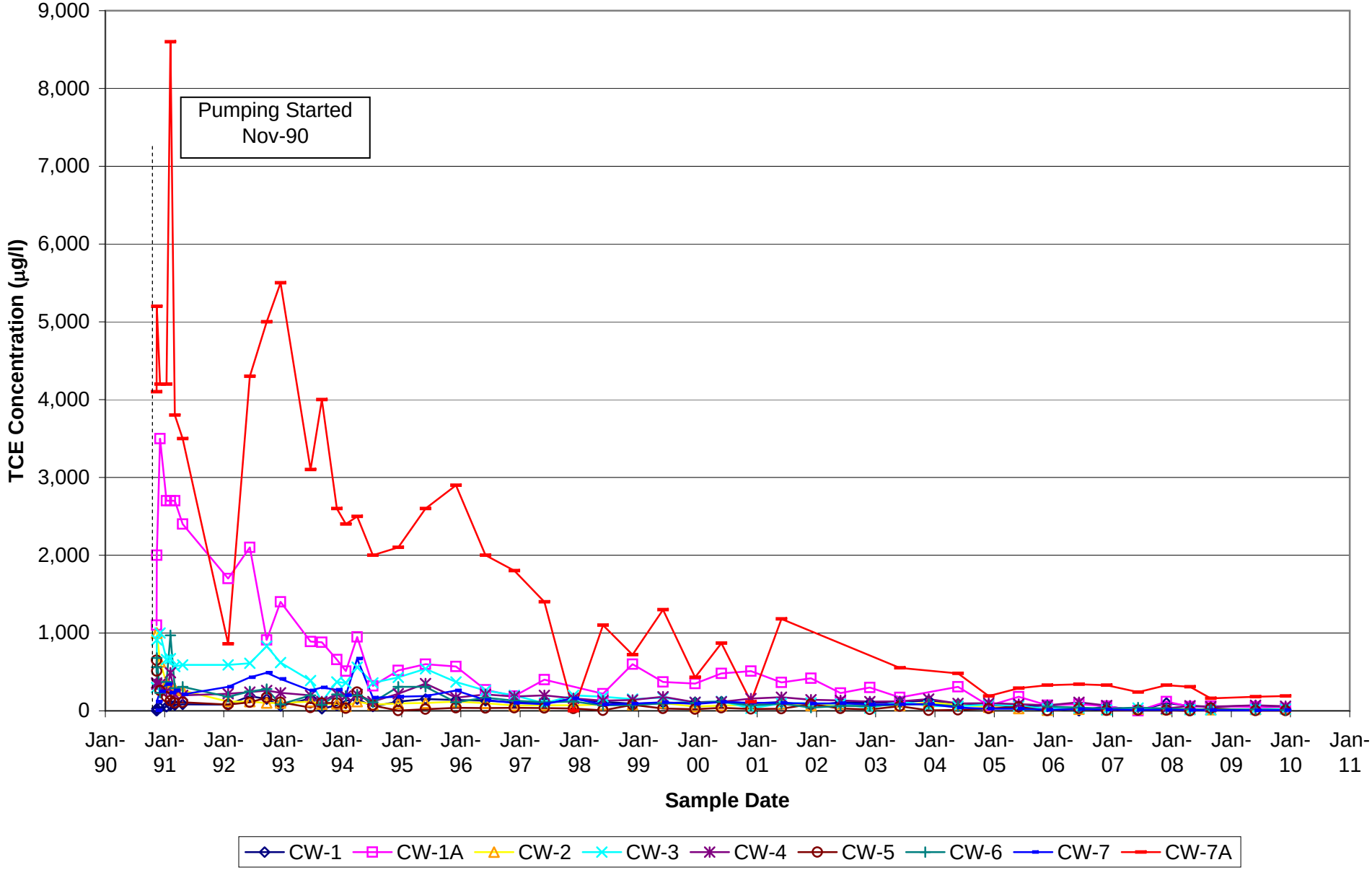

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Figure 5-3
Predominant VOC Concentrations - Extraction Well CW-1
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

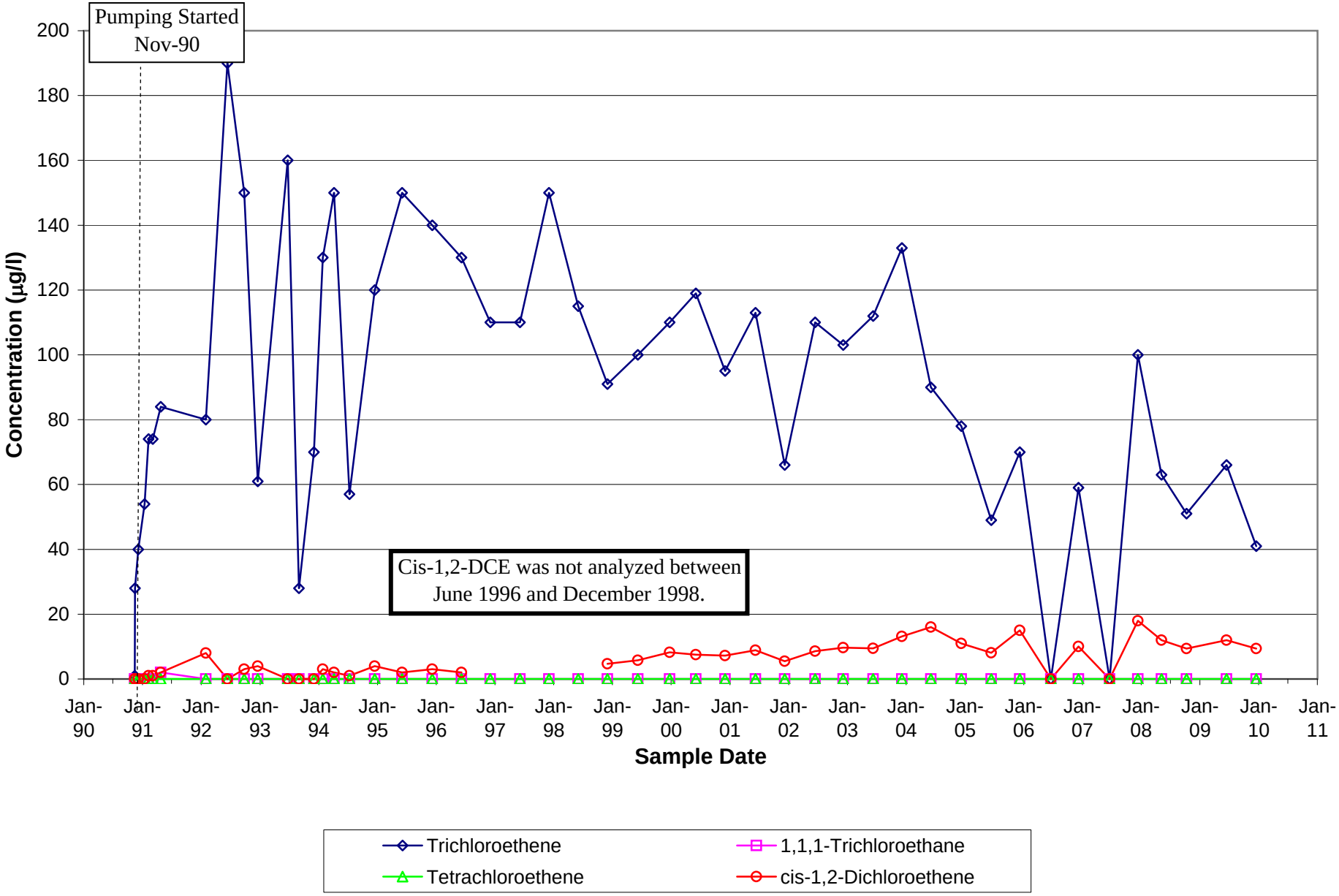

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Figure 5-4
Predominant VOC Concentrations - Extraction Well CW-1A
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

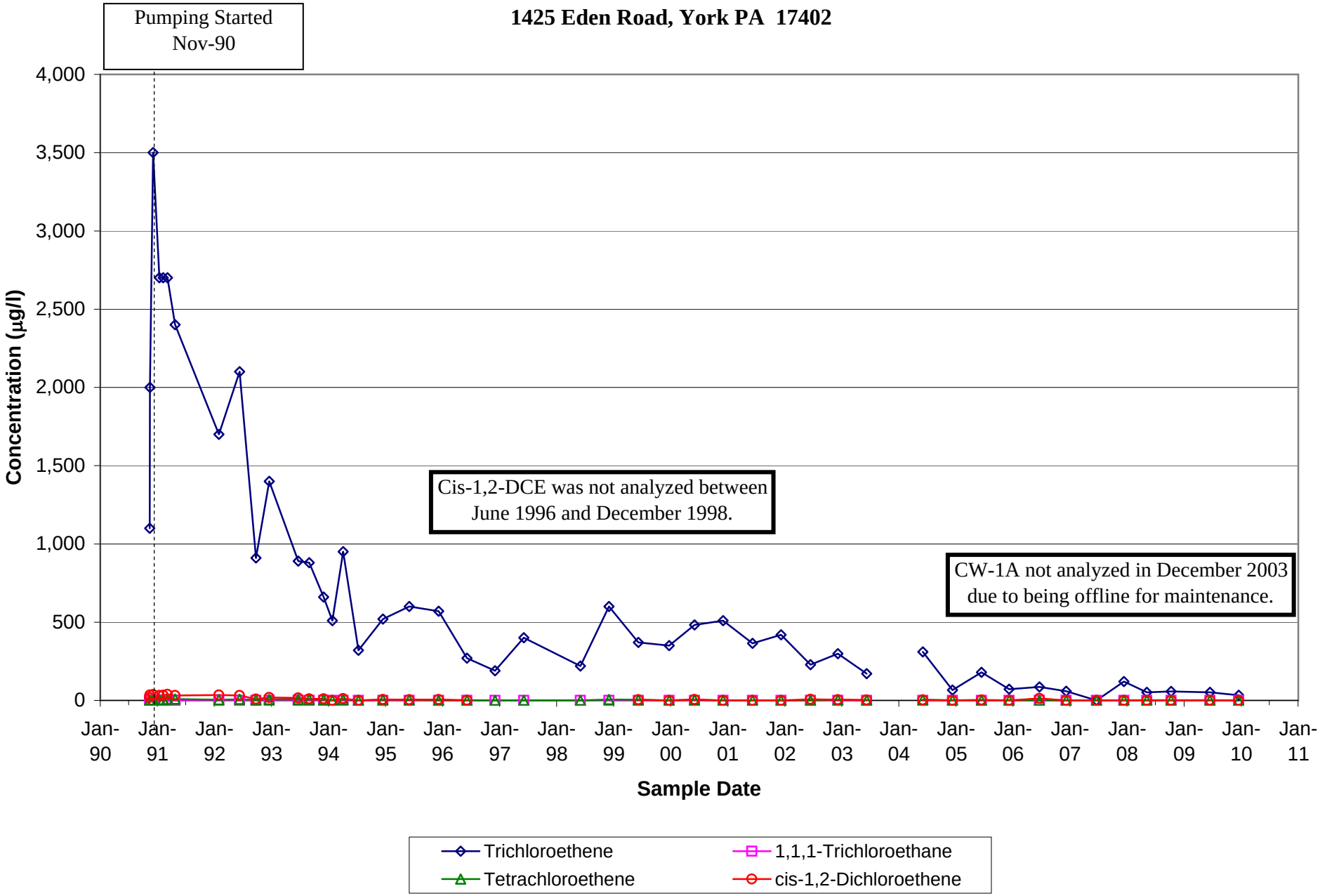

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Figure 5-5
Predominant VOC Concentrations - Extraction Well CW-2
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

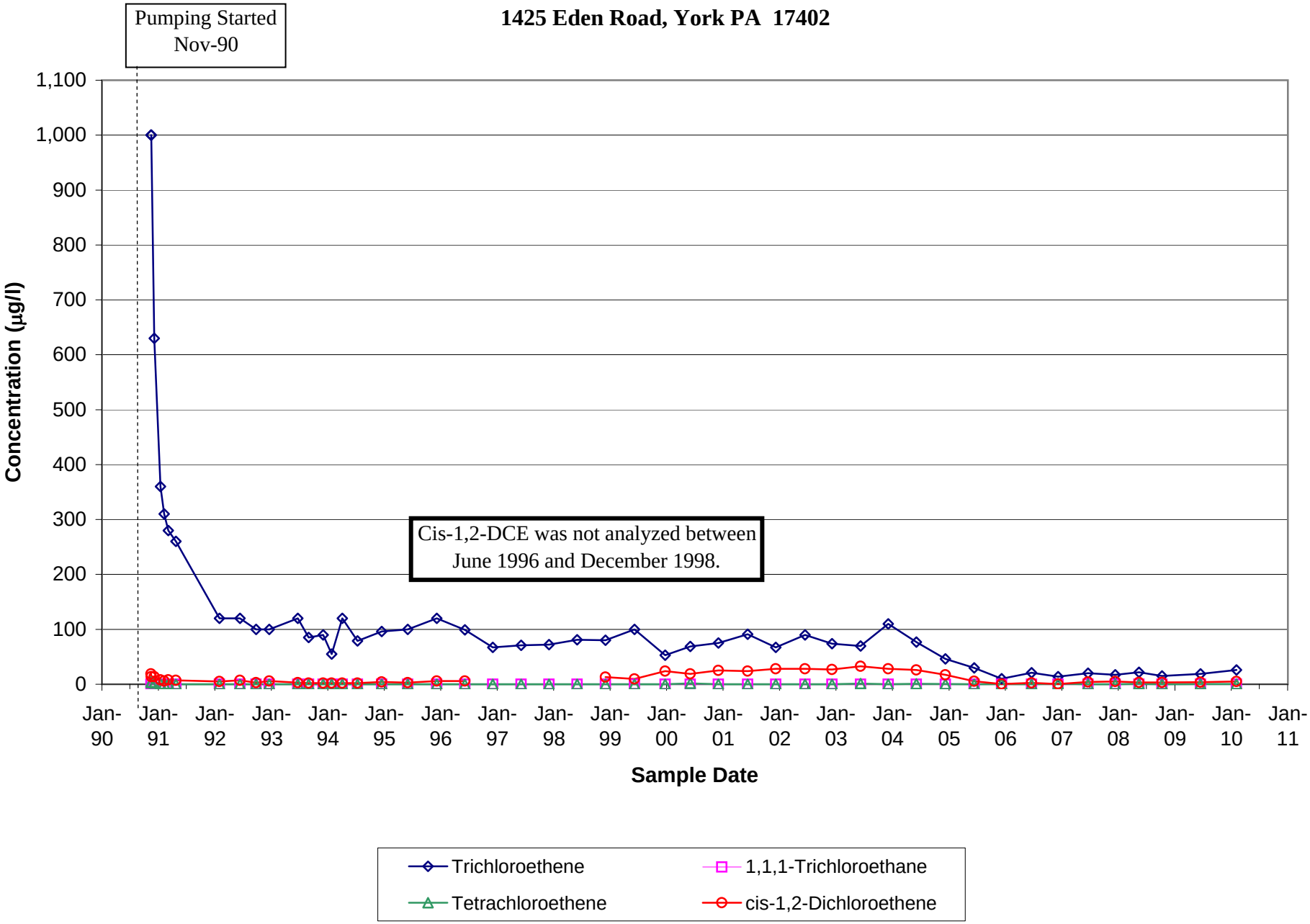

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Figure 5-6
Predominant VOC Concentrations - Extraction Well CW-3
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

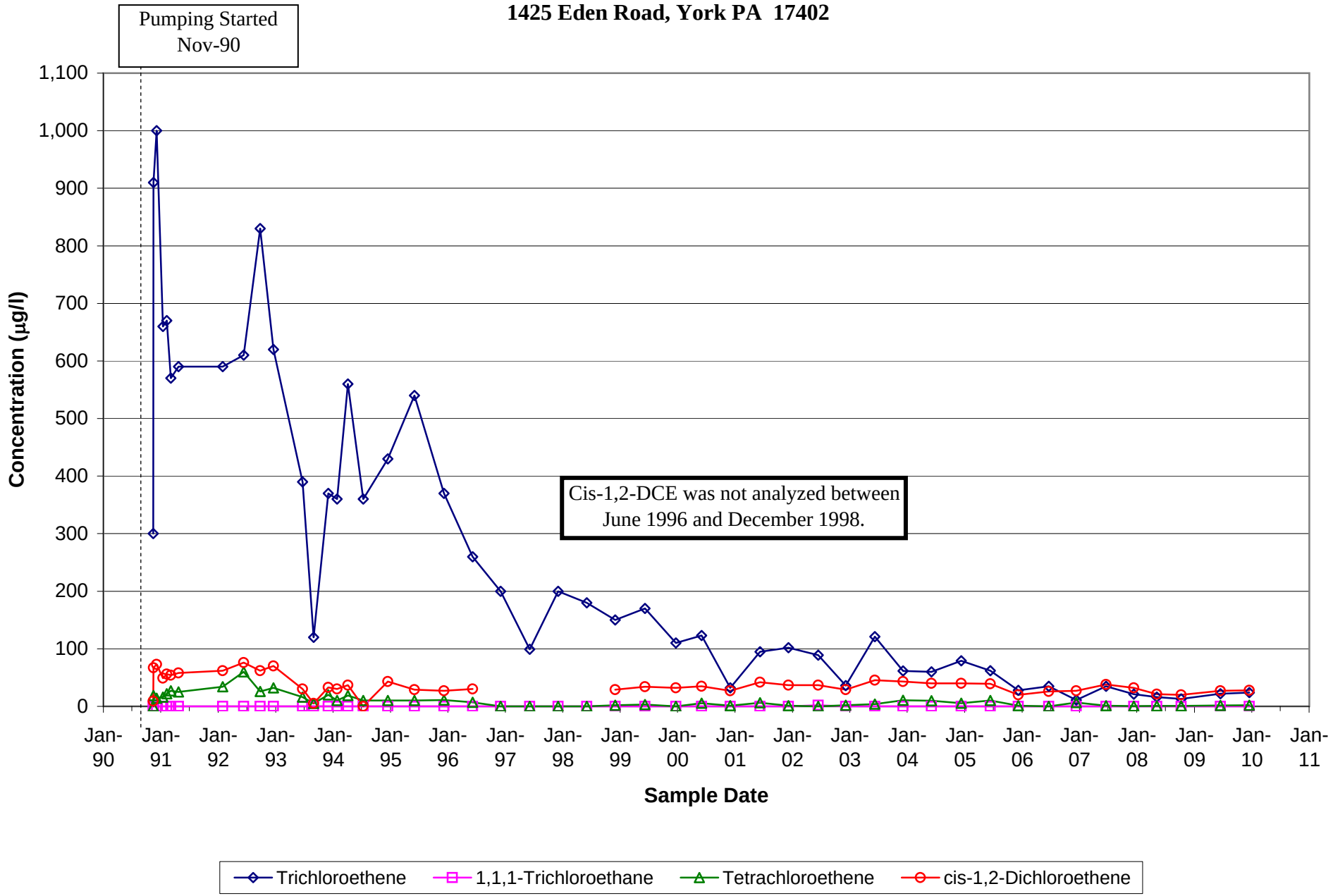

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Figure 5-7
Predominant VOC Concentrations - Extraction Well CW-4
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

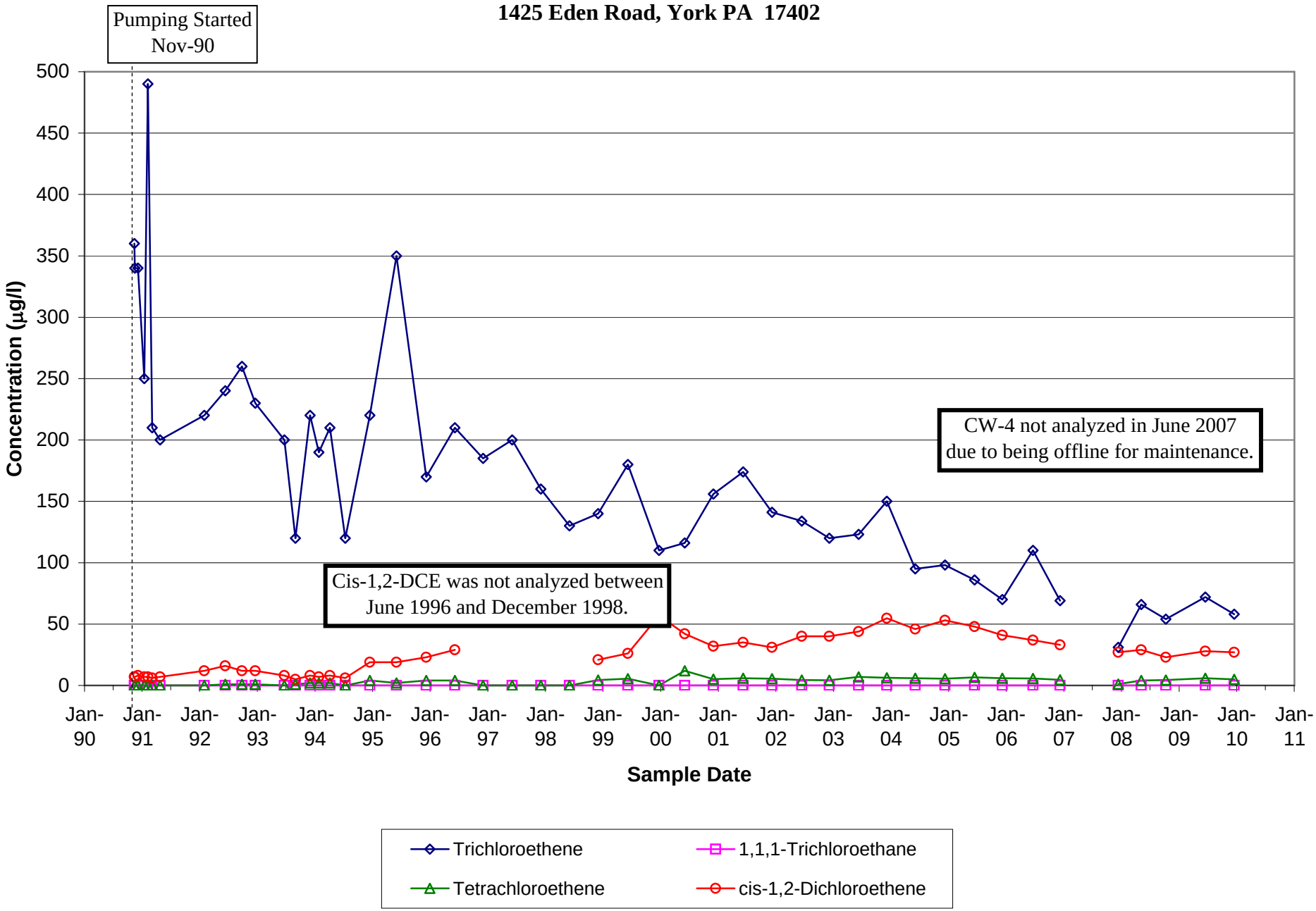

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Figure 5-8
Predominant VOC Concentrations - Extraction Well CW-5
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

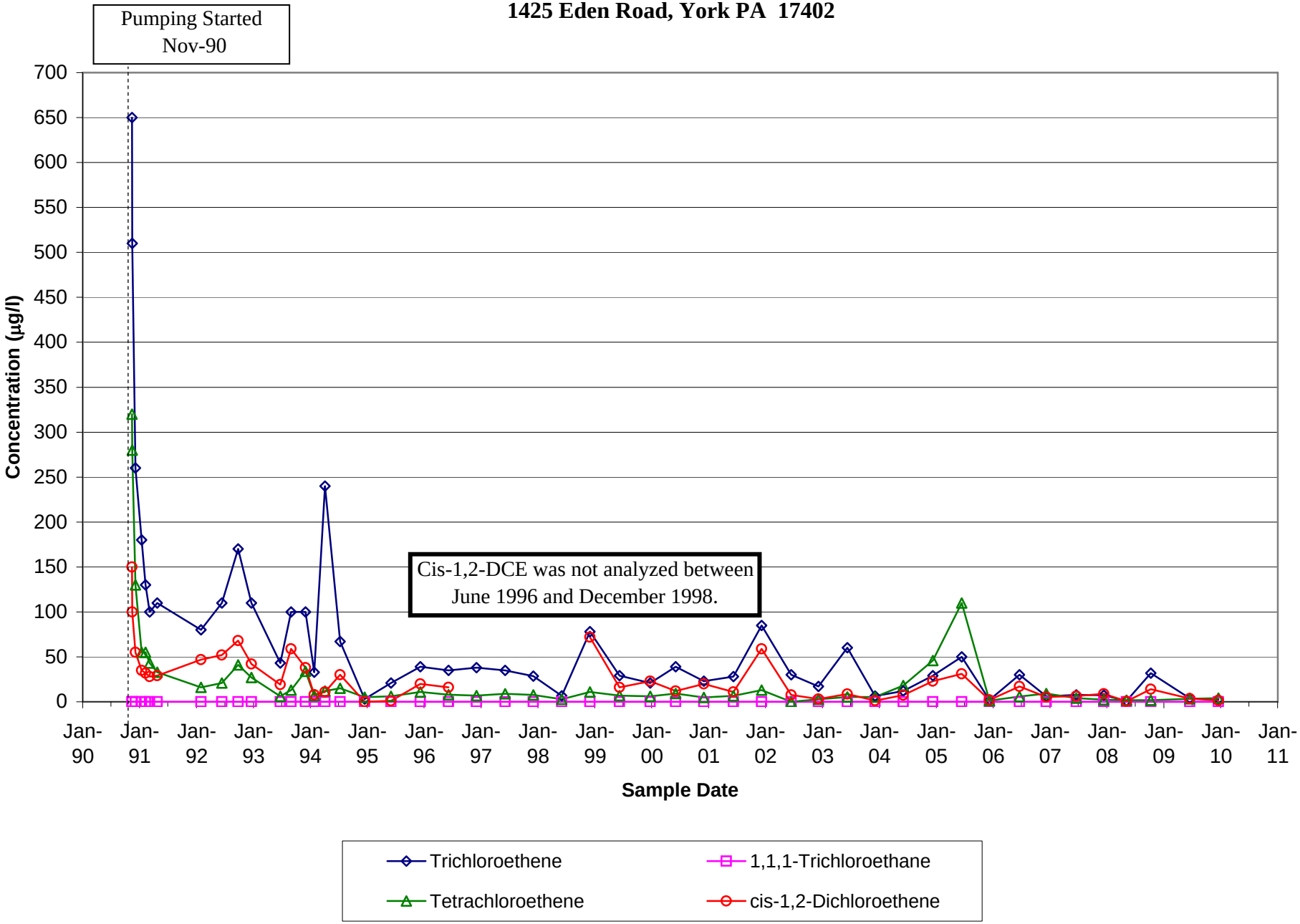

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Figure 5-9
Predominant VOC Concentrations - Extraction Well CW-6
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

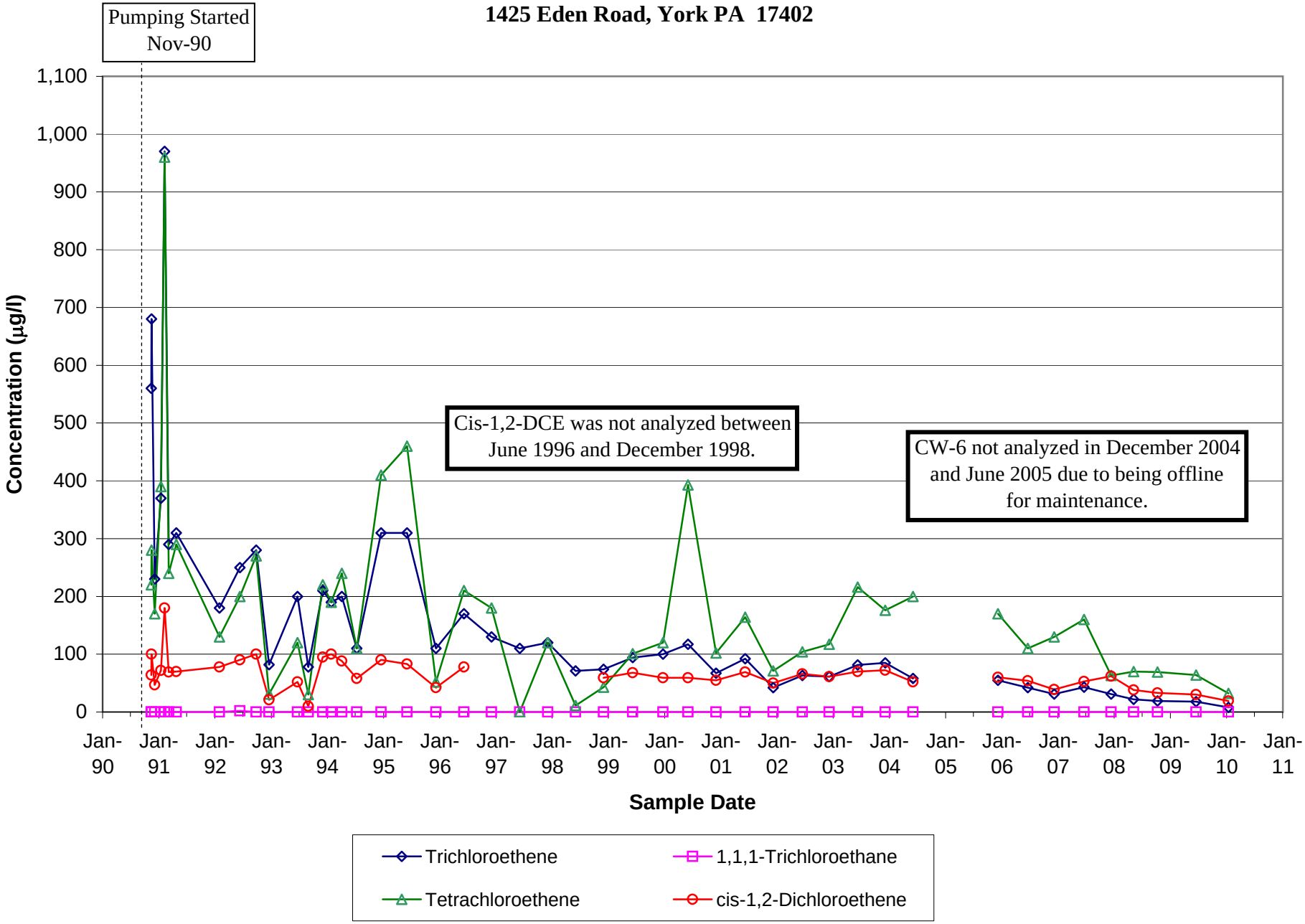

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Figure 5-10
Predominant VOC Concentrations - Extraction Well CW-7
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

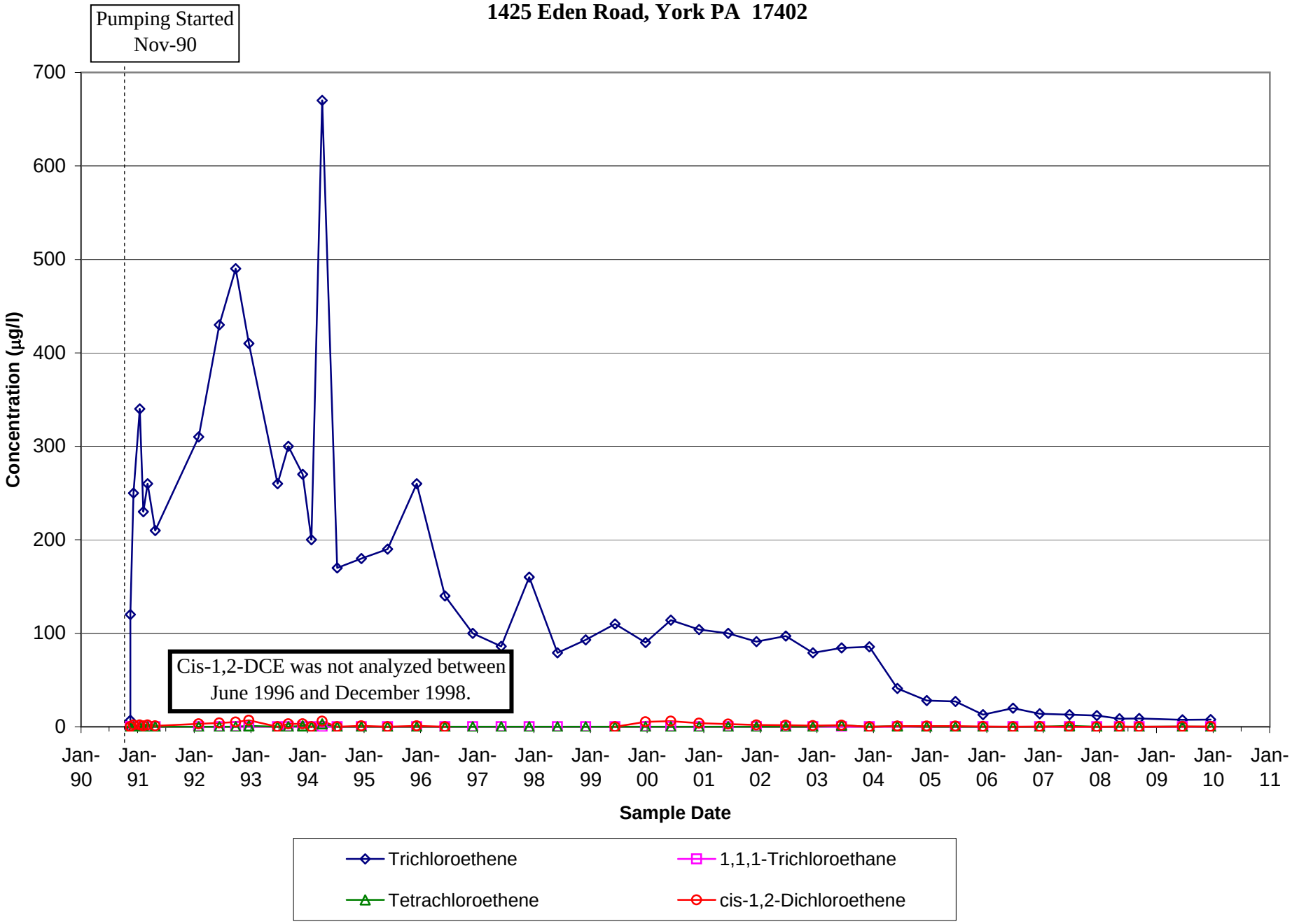

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Figure 5-11
Predominant VOC Concentrations - Extraction Well CW-7A
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

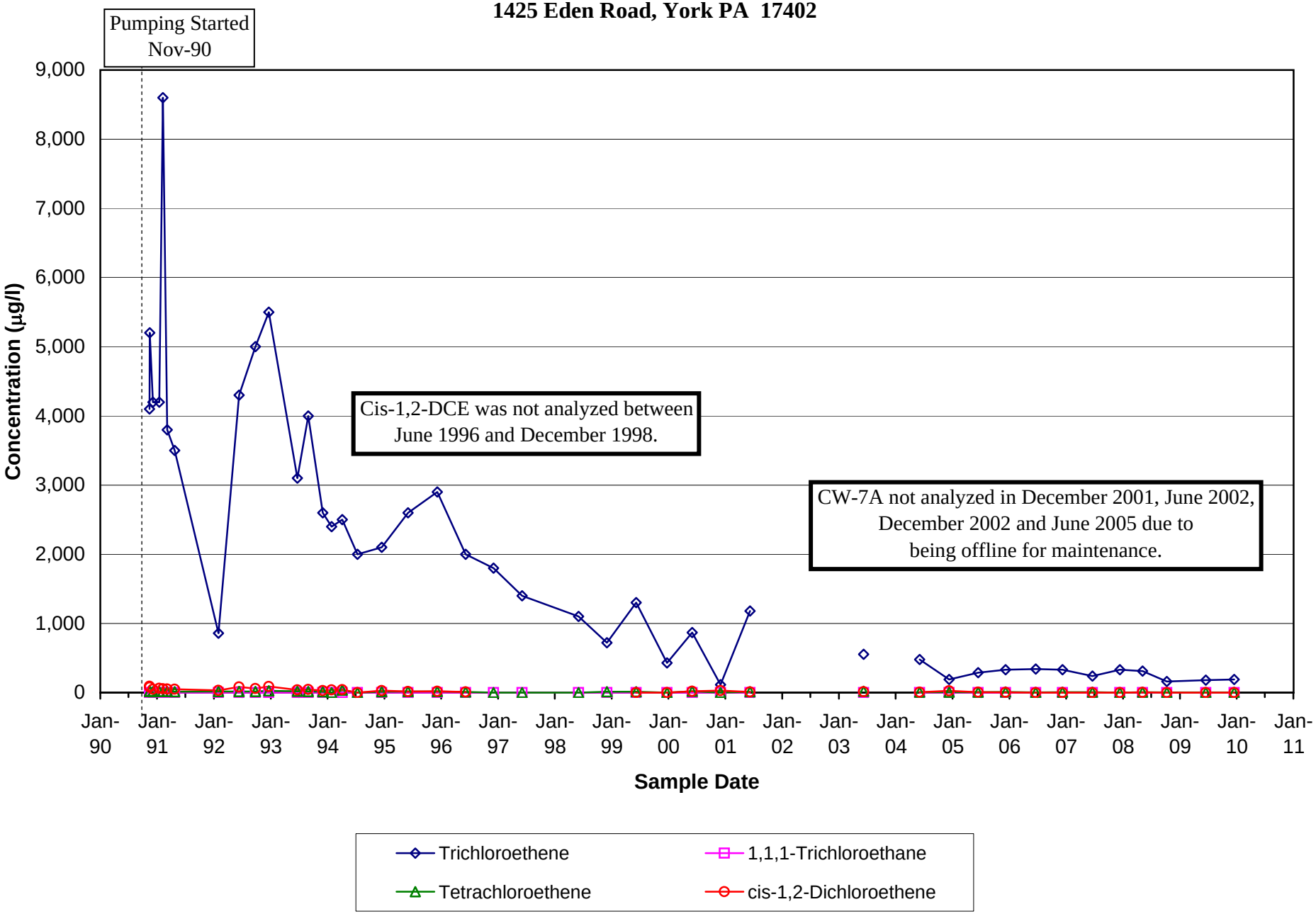

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Figure 5-12
TCE in NPBA Key Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

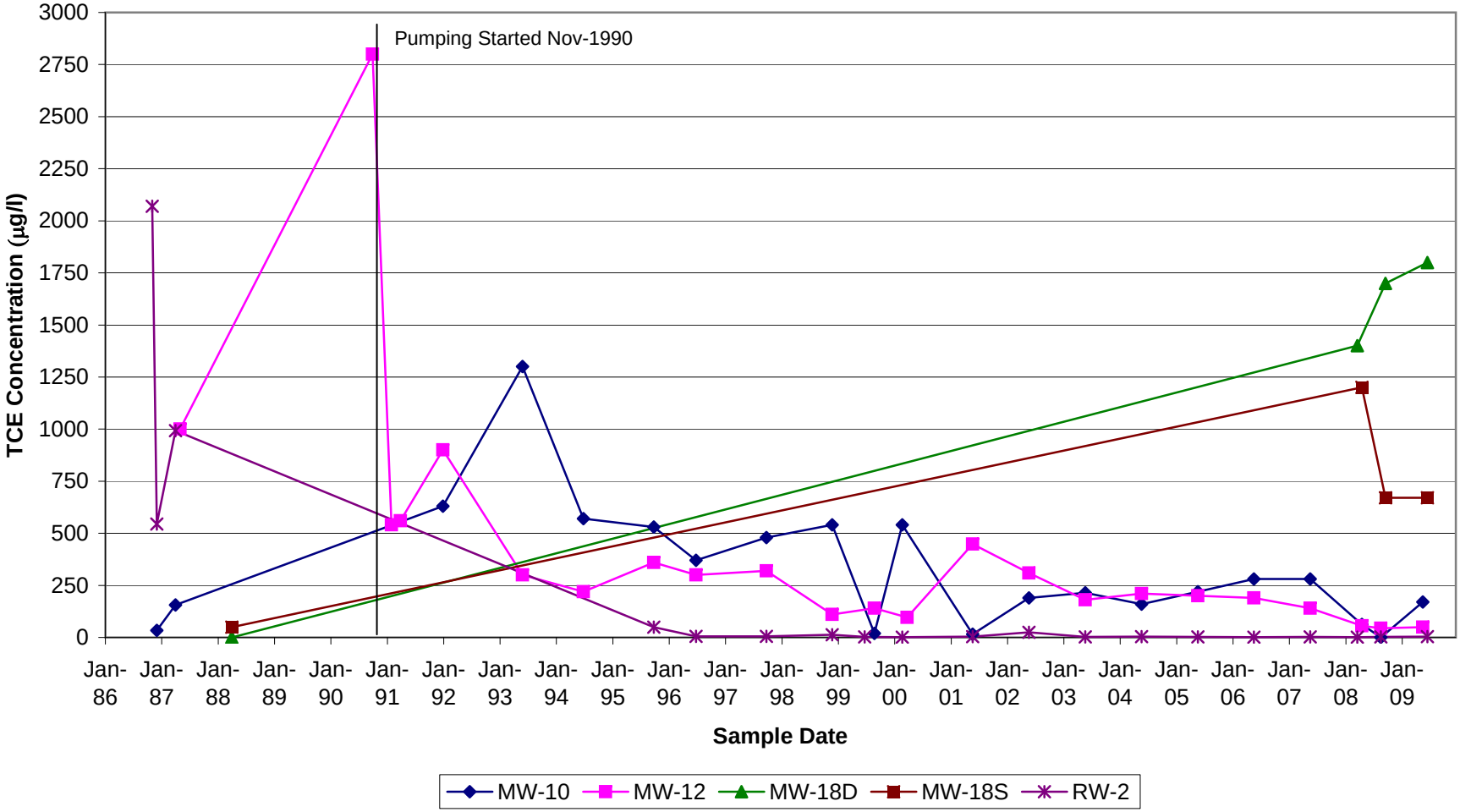

Figure 5-13
TCE in Off-Site Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

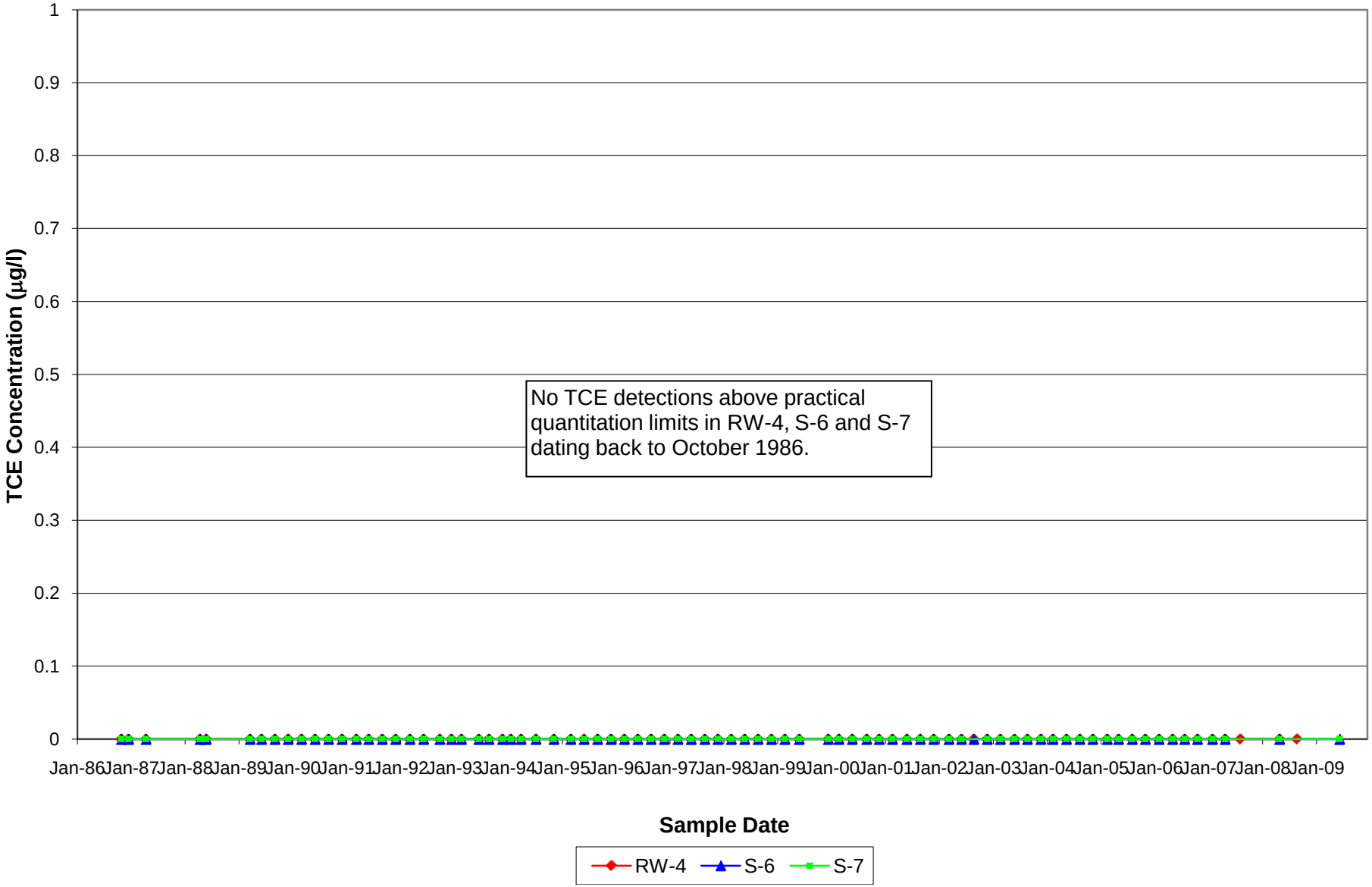

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Figure 6-1
TCA in TCA Tank Area Extraction Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

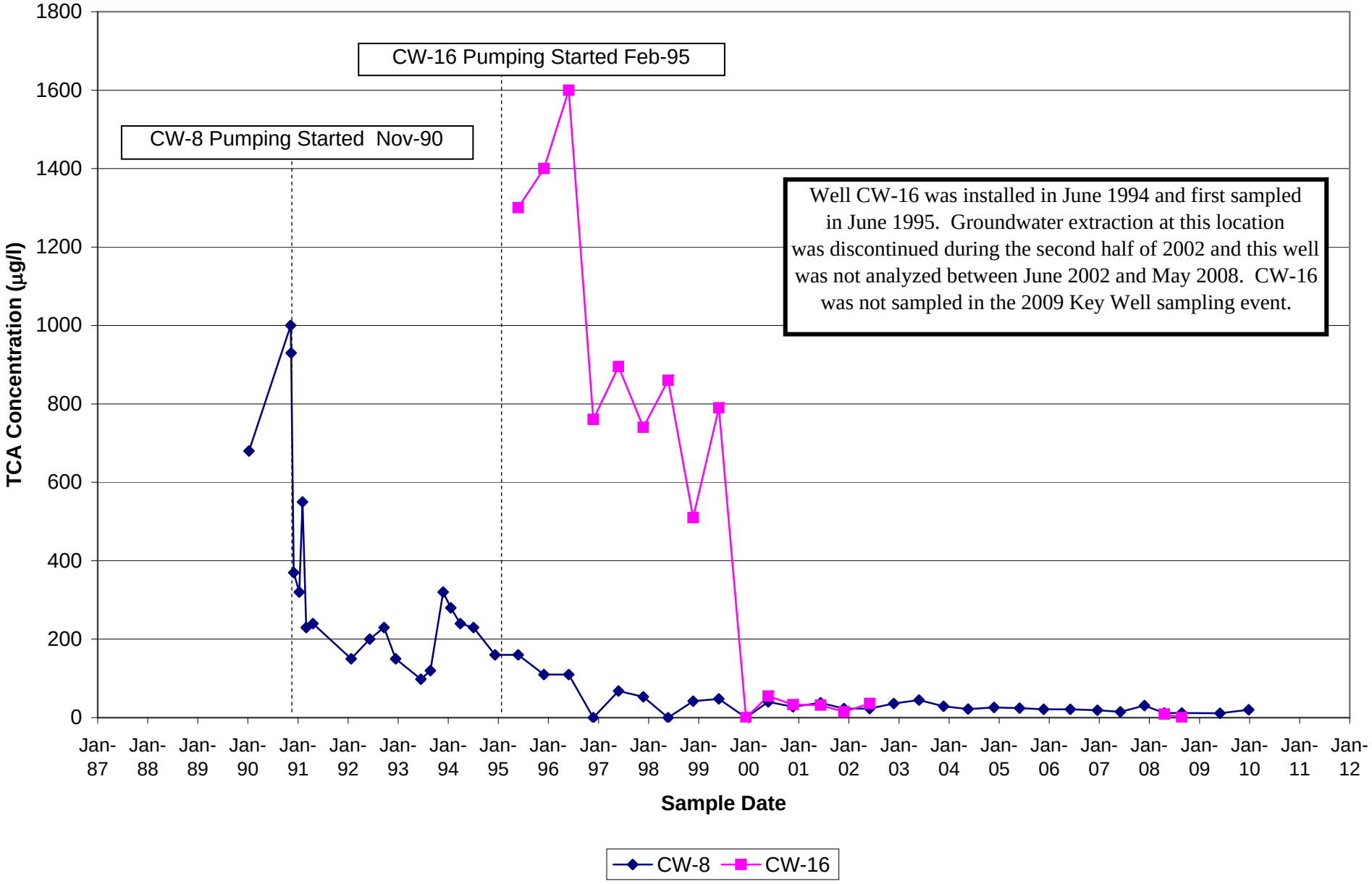

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Figure 6-2
TCA in TCA Tank Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

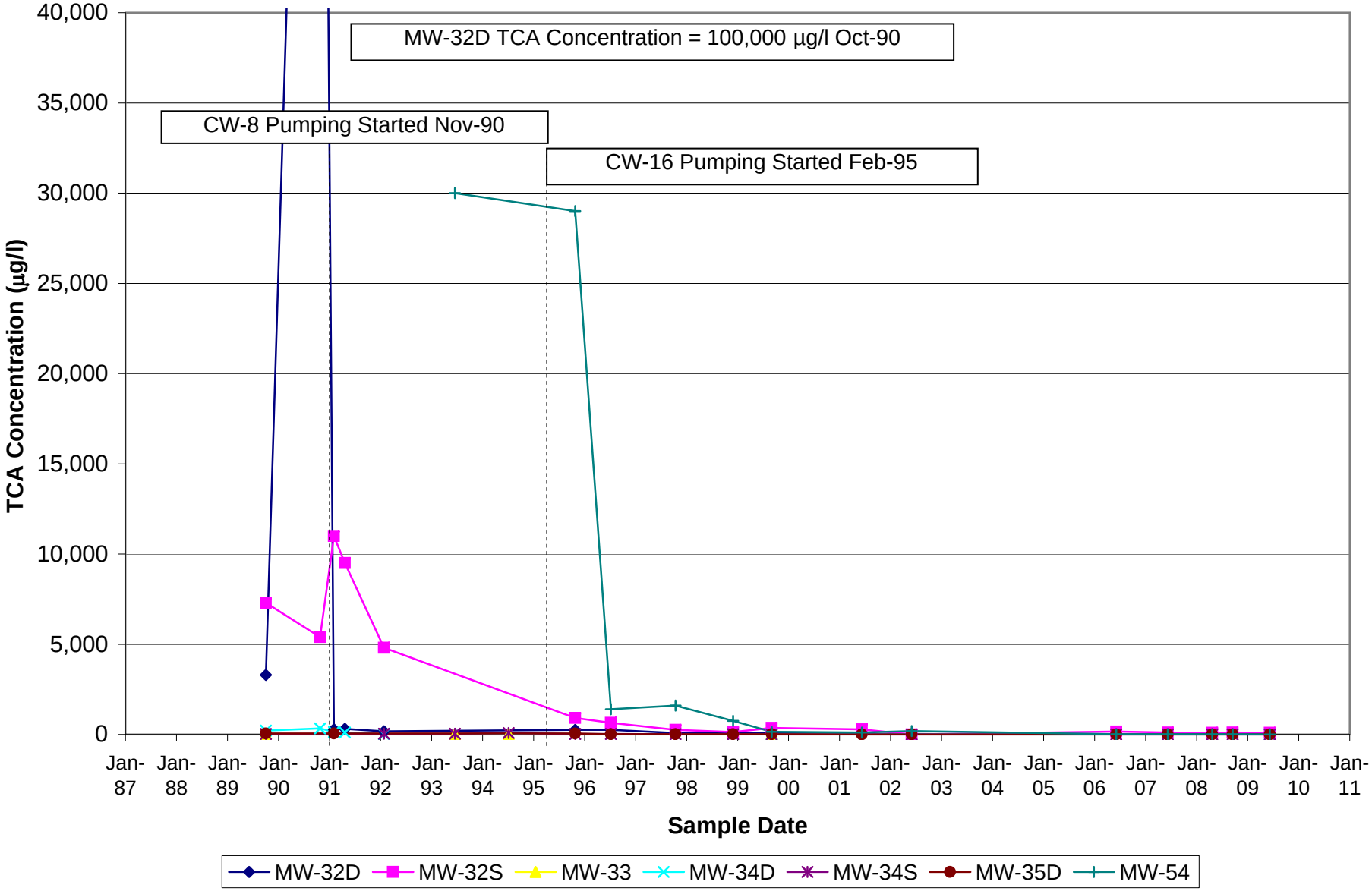

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Figure 6-3
TCE in TCA Tank Area Extraction Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

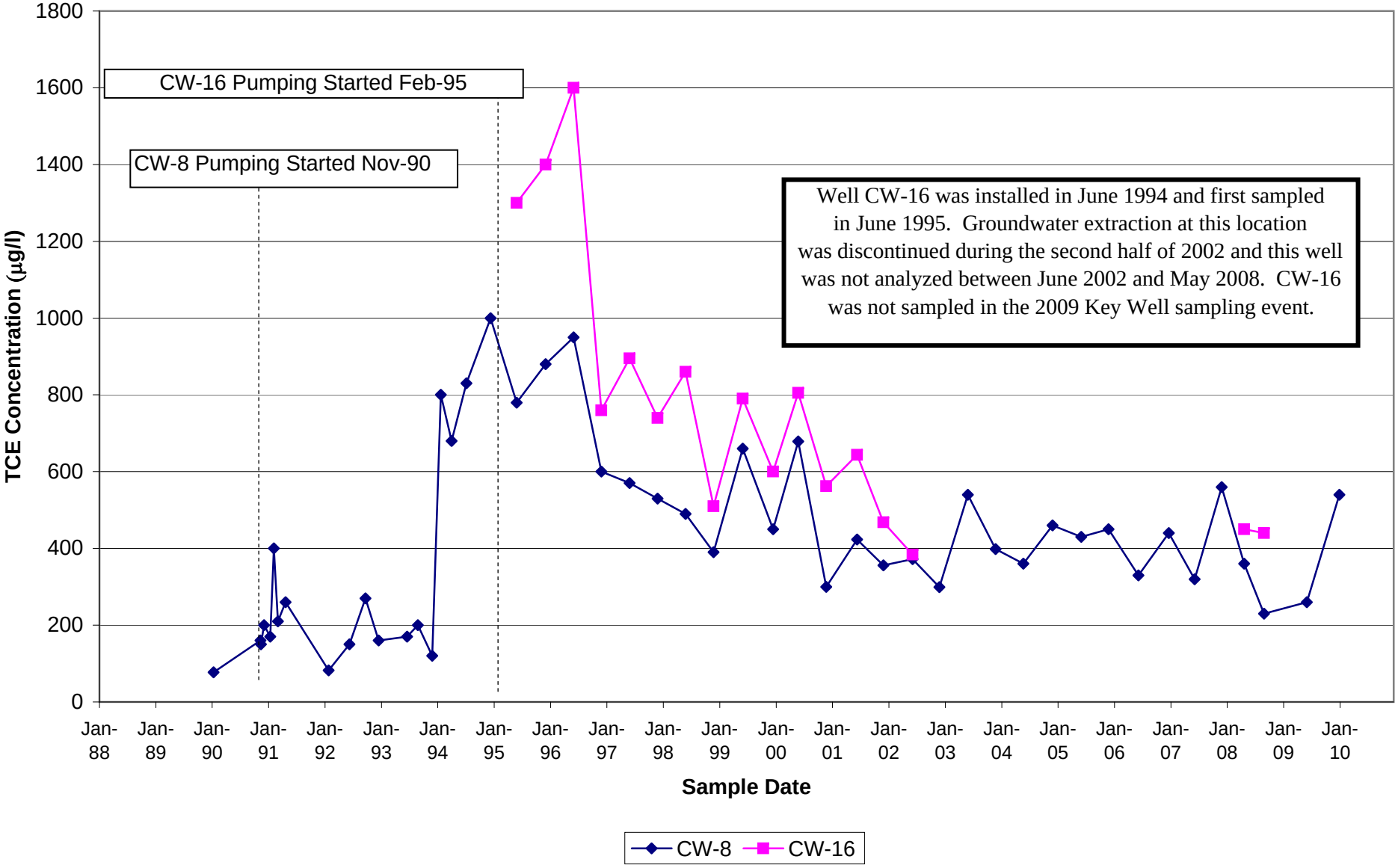

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Figure 6-4
Predominant VOC Concentrations - Extraction Well CW-8
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

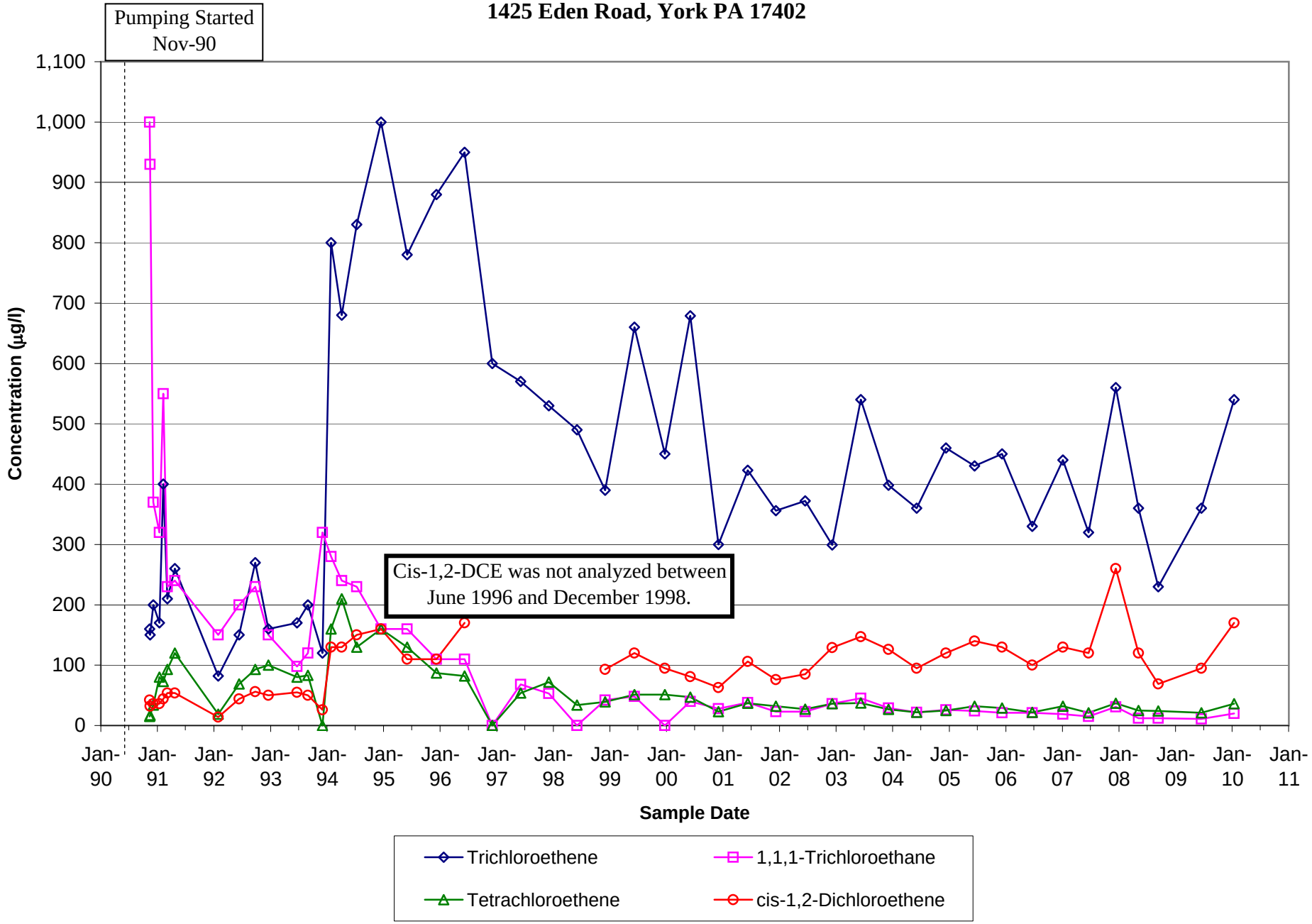

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Figure 6-5
TCE in TCA Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

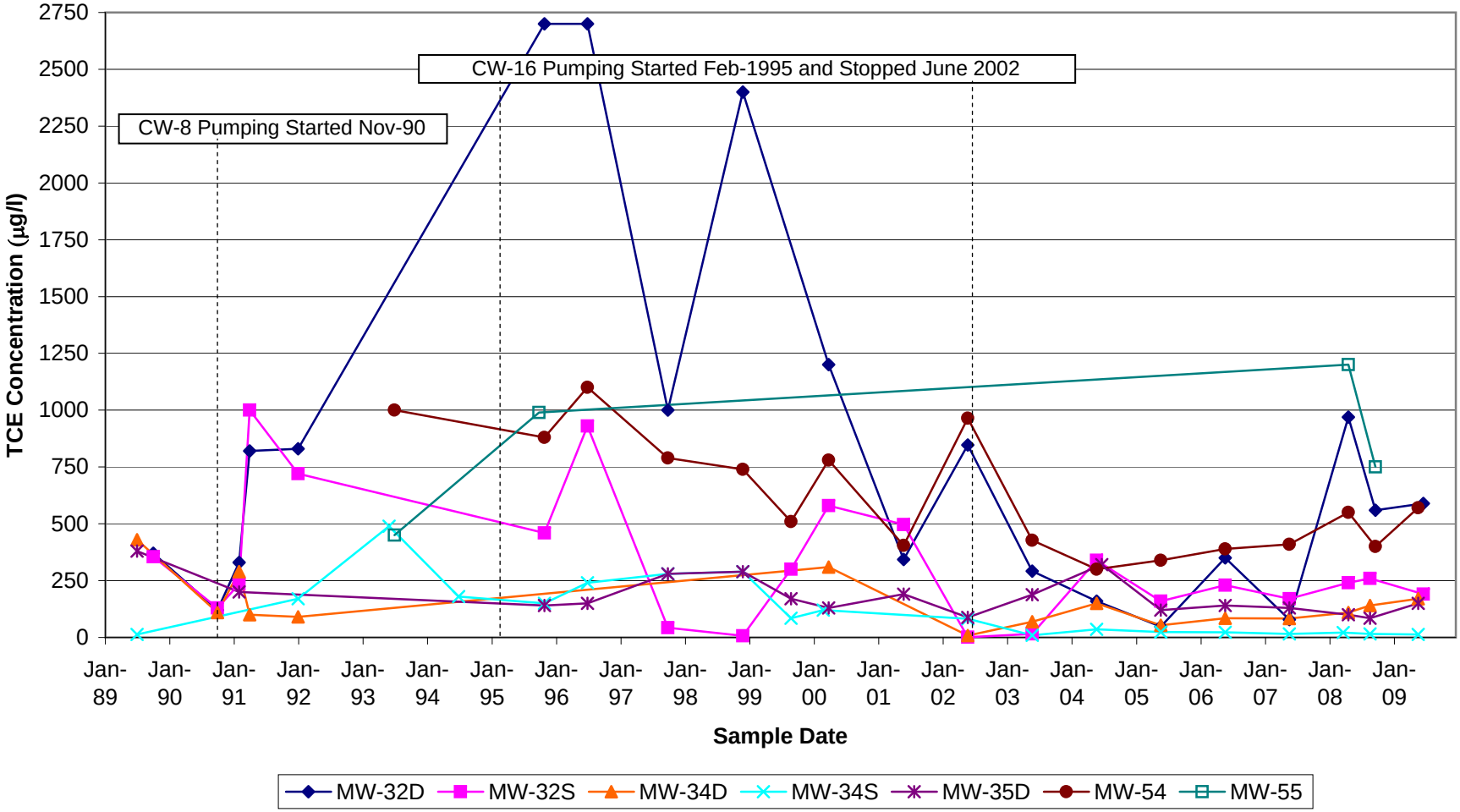

Figure 7-1
TCE in WPL Extraction Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

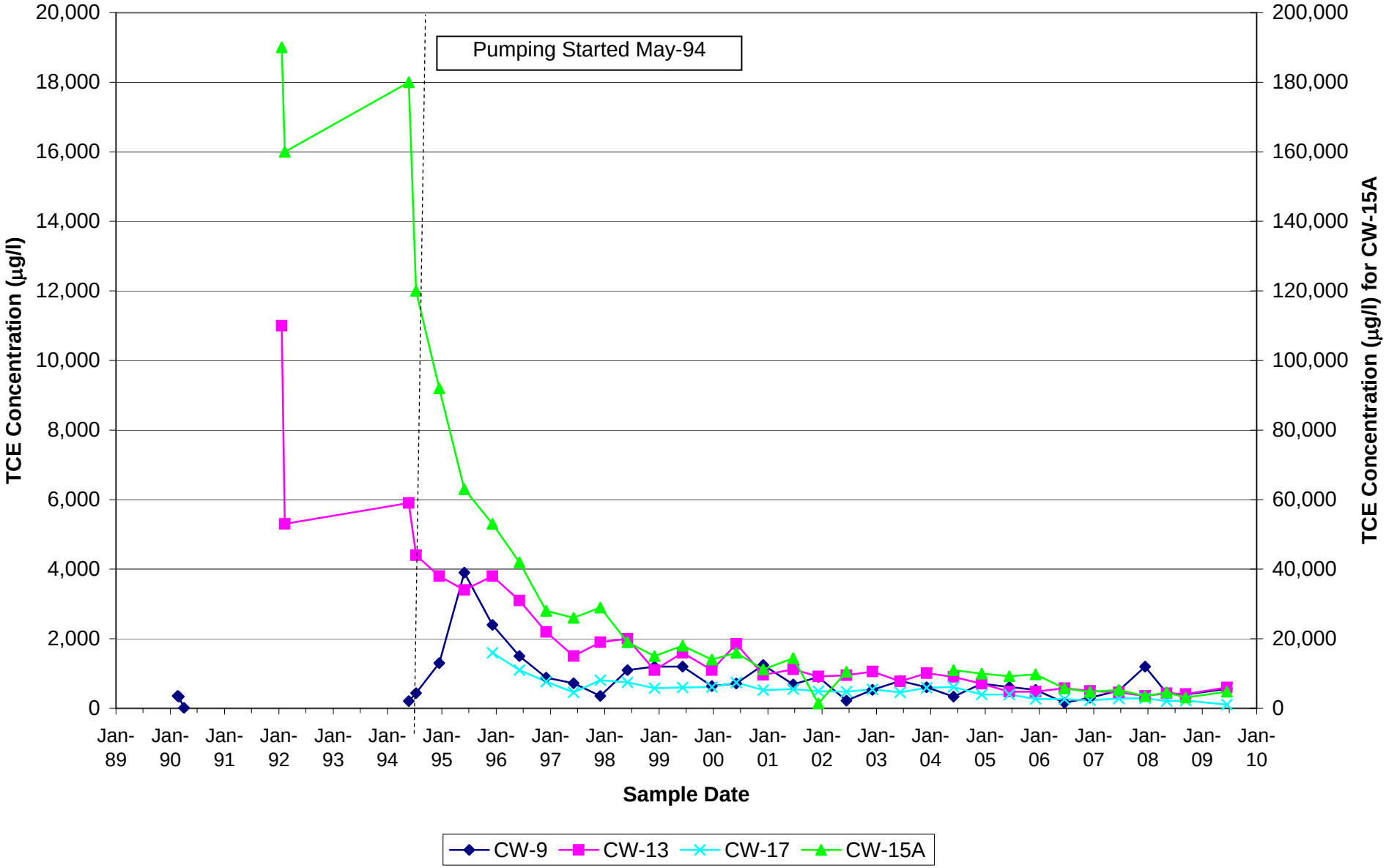

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Figure 7-2
Predominant VOC Concentrations - Extraction Well CW-9
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

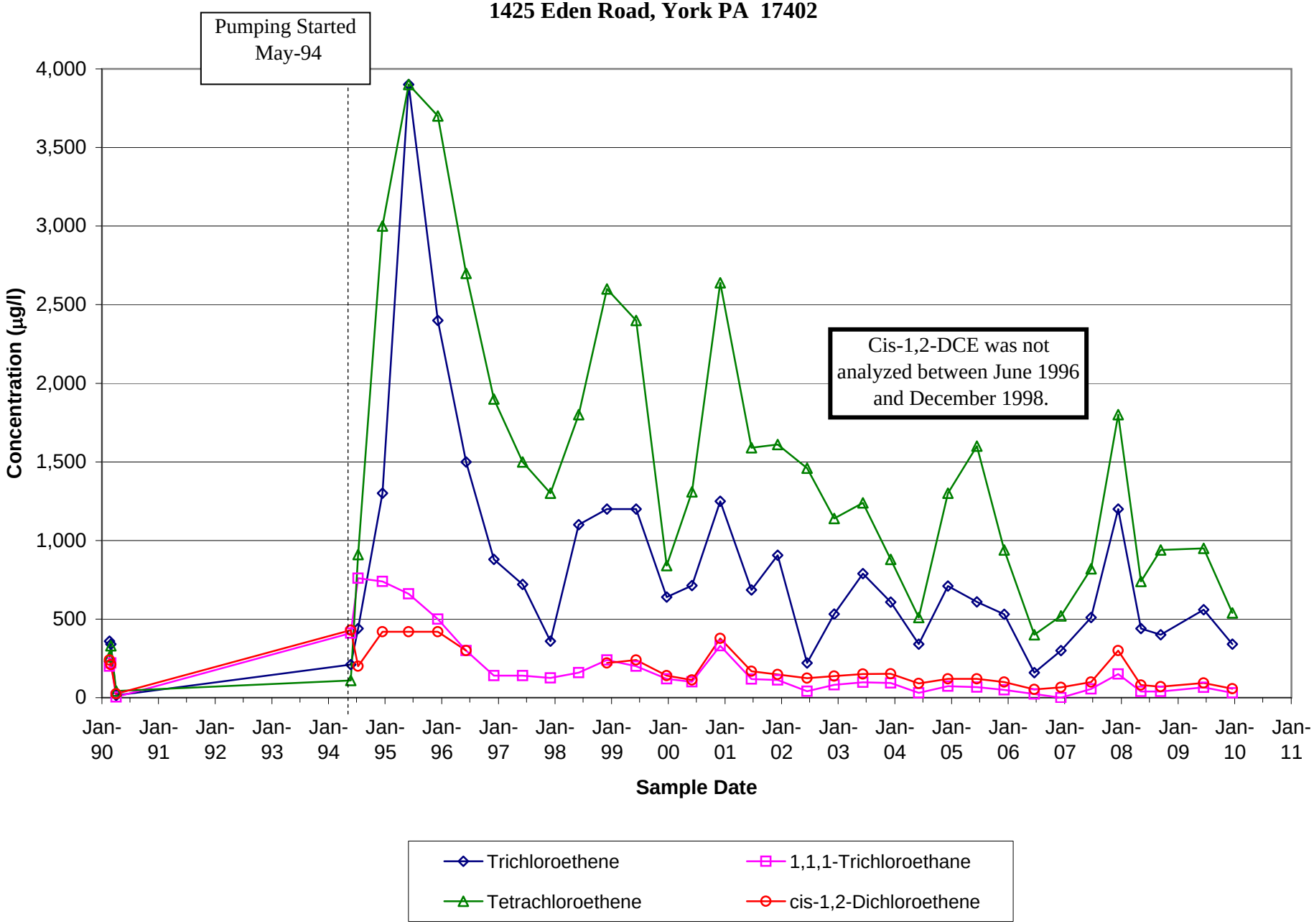

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Figure 7-3
Predominant VOC Concentrations - Extraction Well CW-13
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

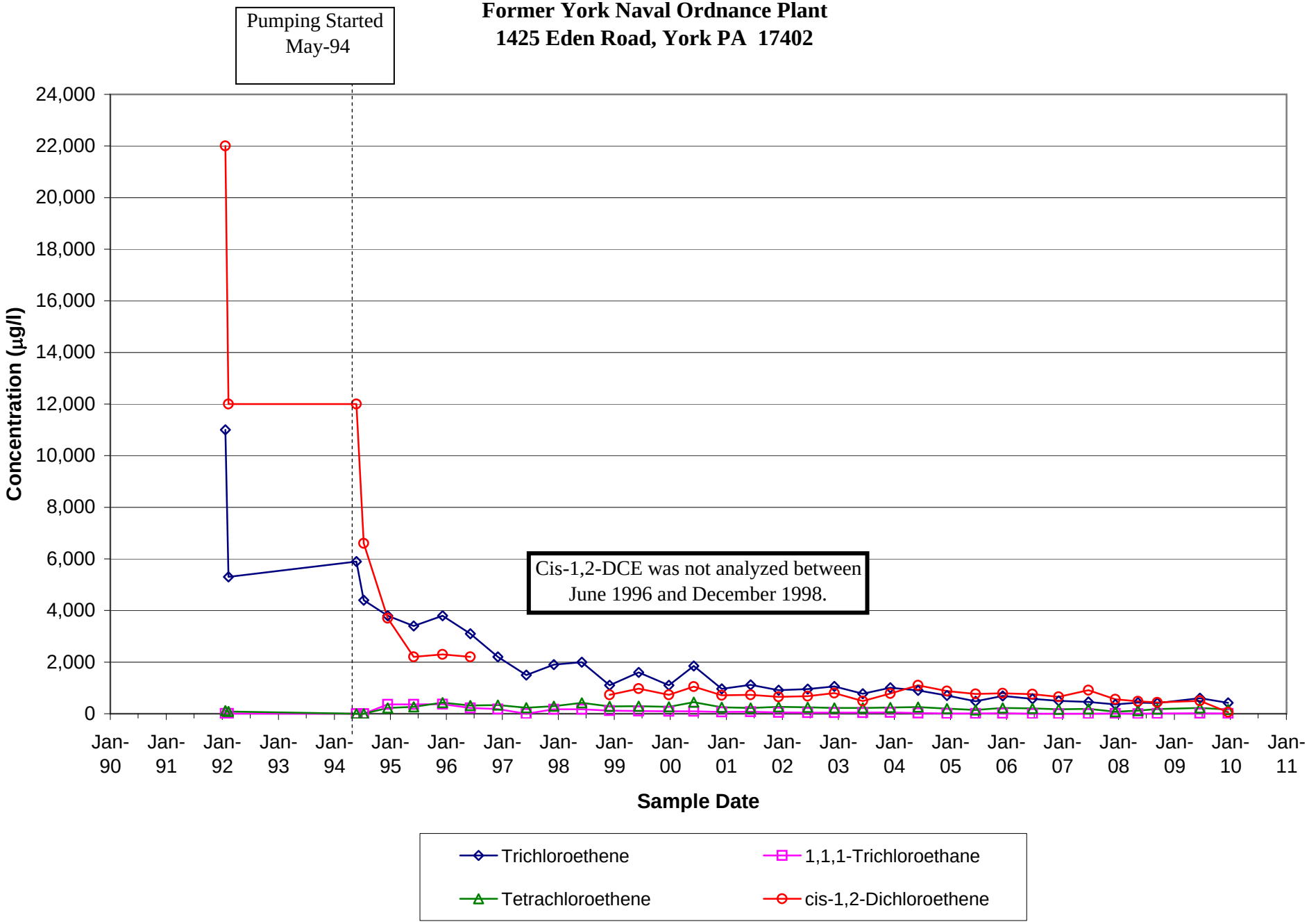

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Figure 7-4
Predominant VOC Concentrations - Extraction Well CW-15A
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

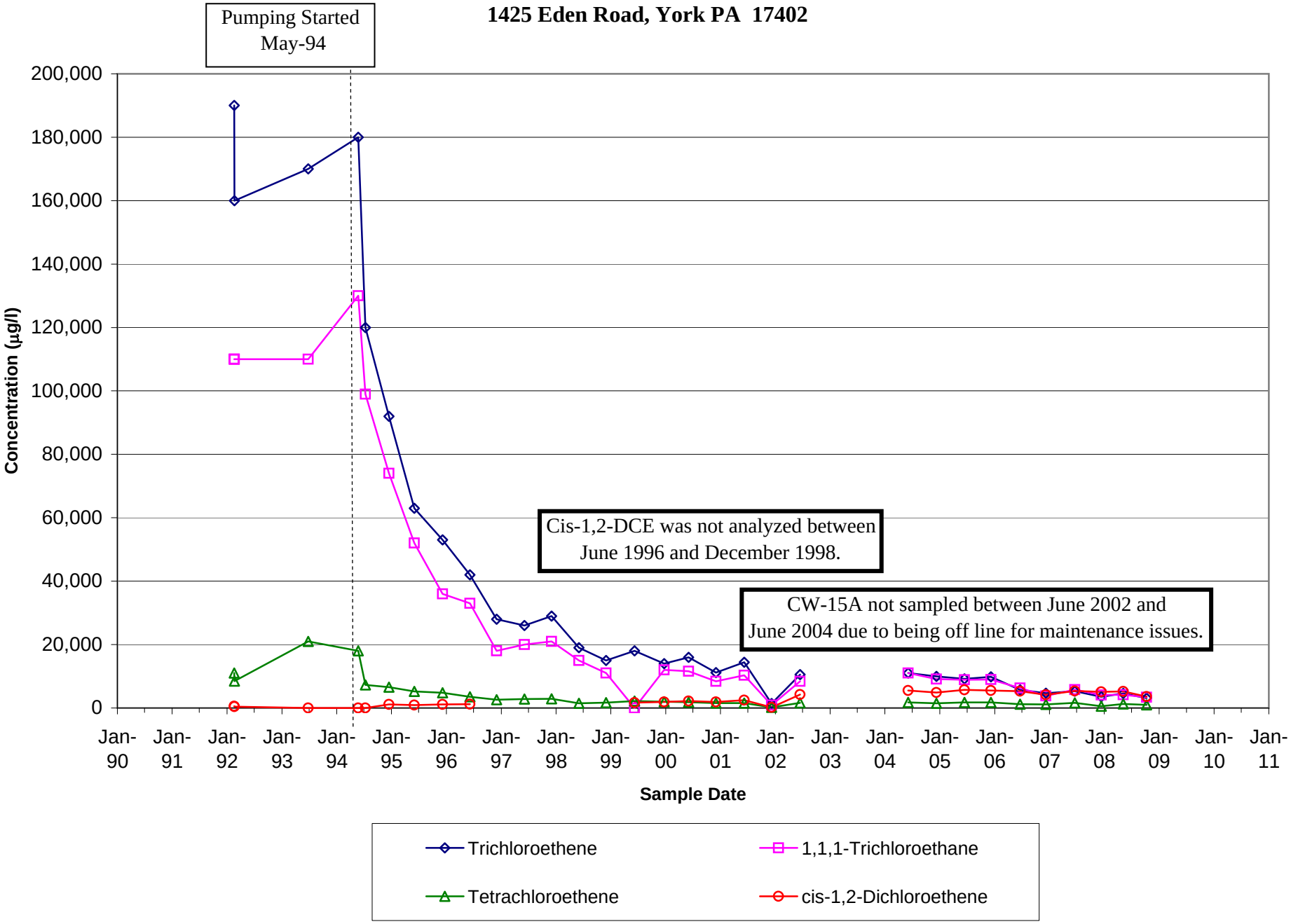

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Figure 7-5

Predominant VOC Concentrations
Extraction Wells CW-14 and CW-17
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

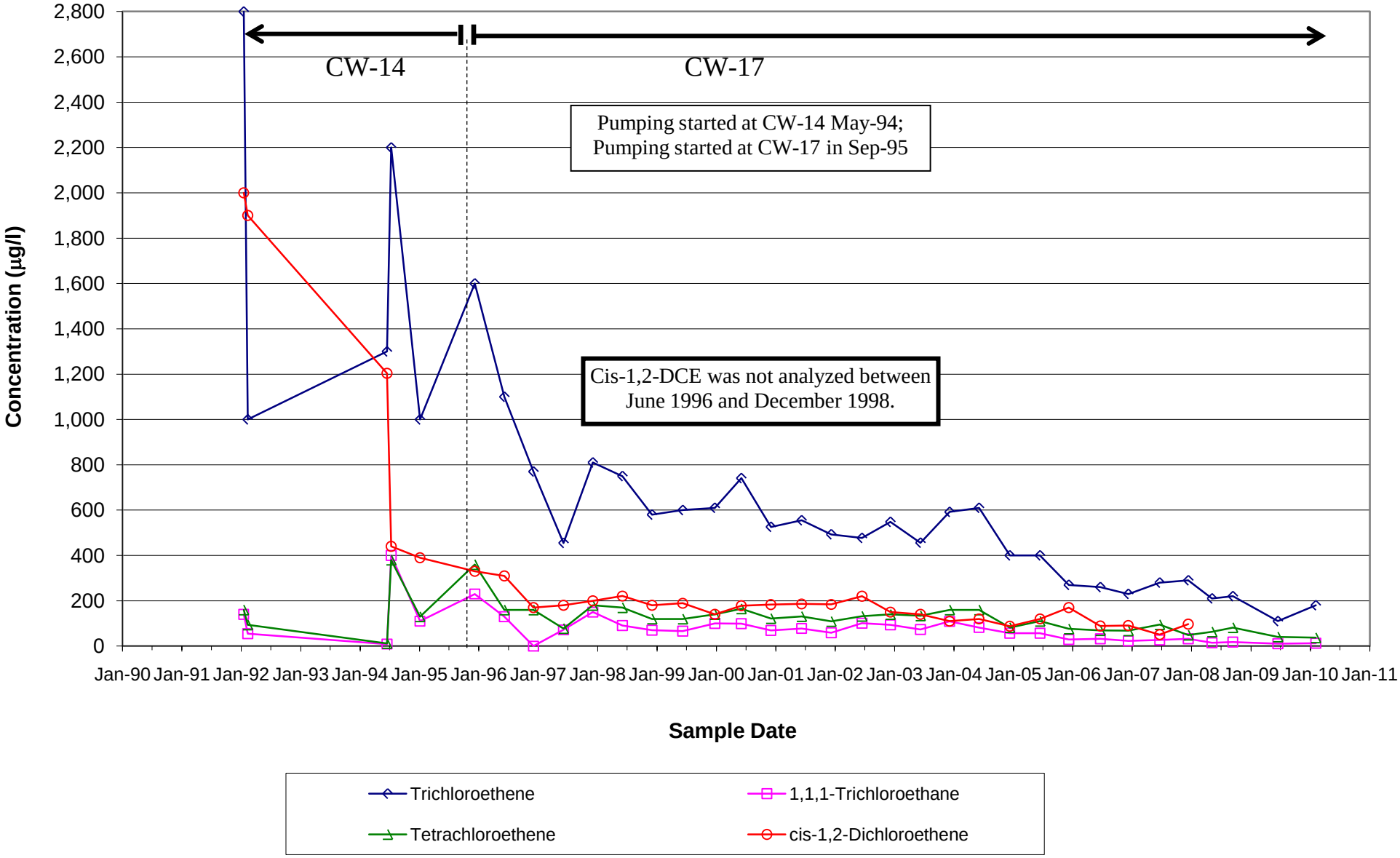

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Figure 7-6
TCE in Northern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

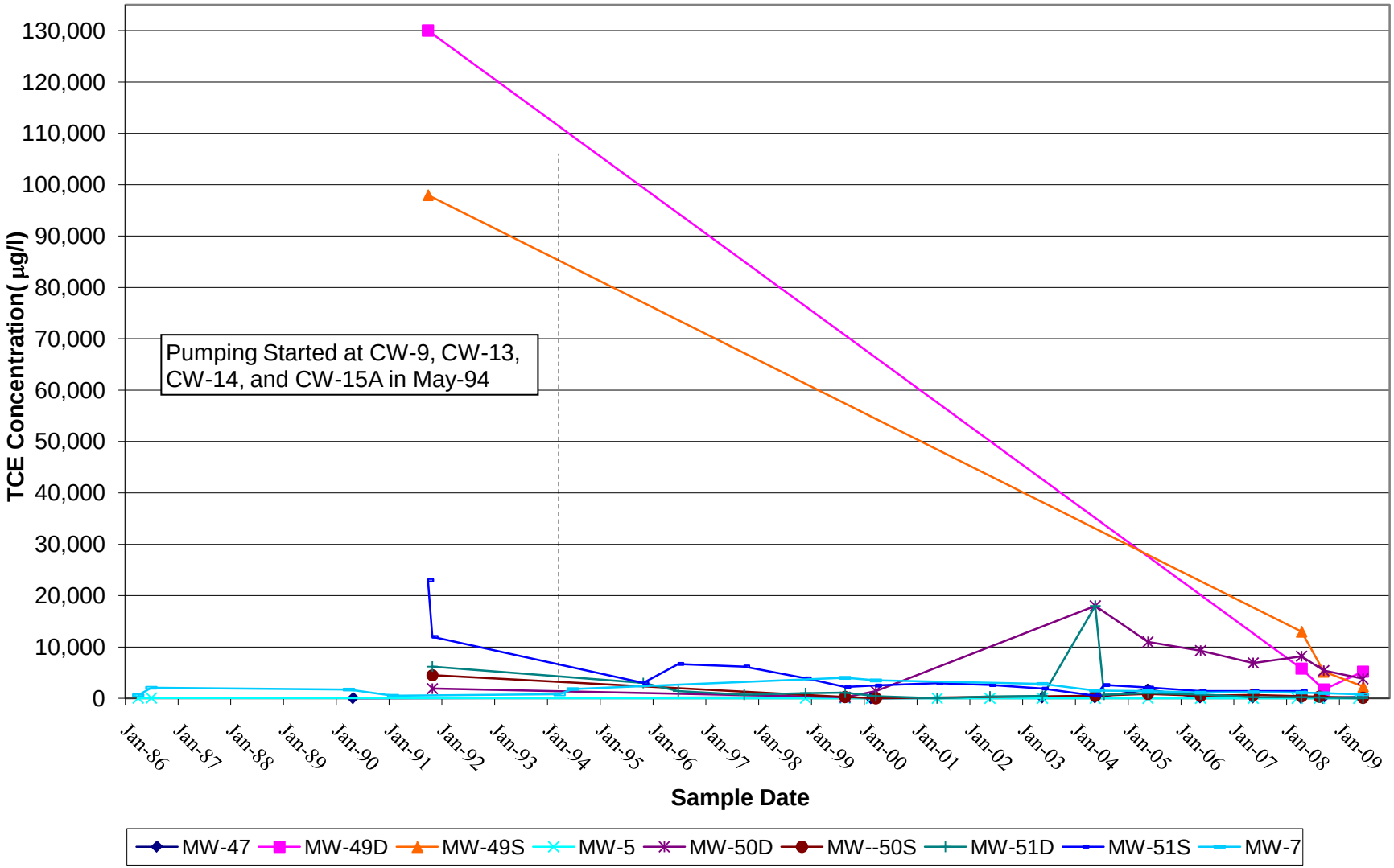


Figure 7-7
TCE in Northern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

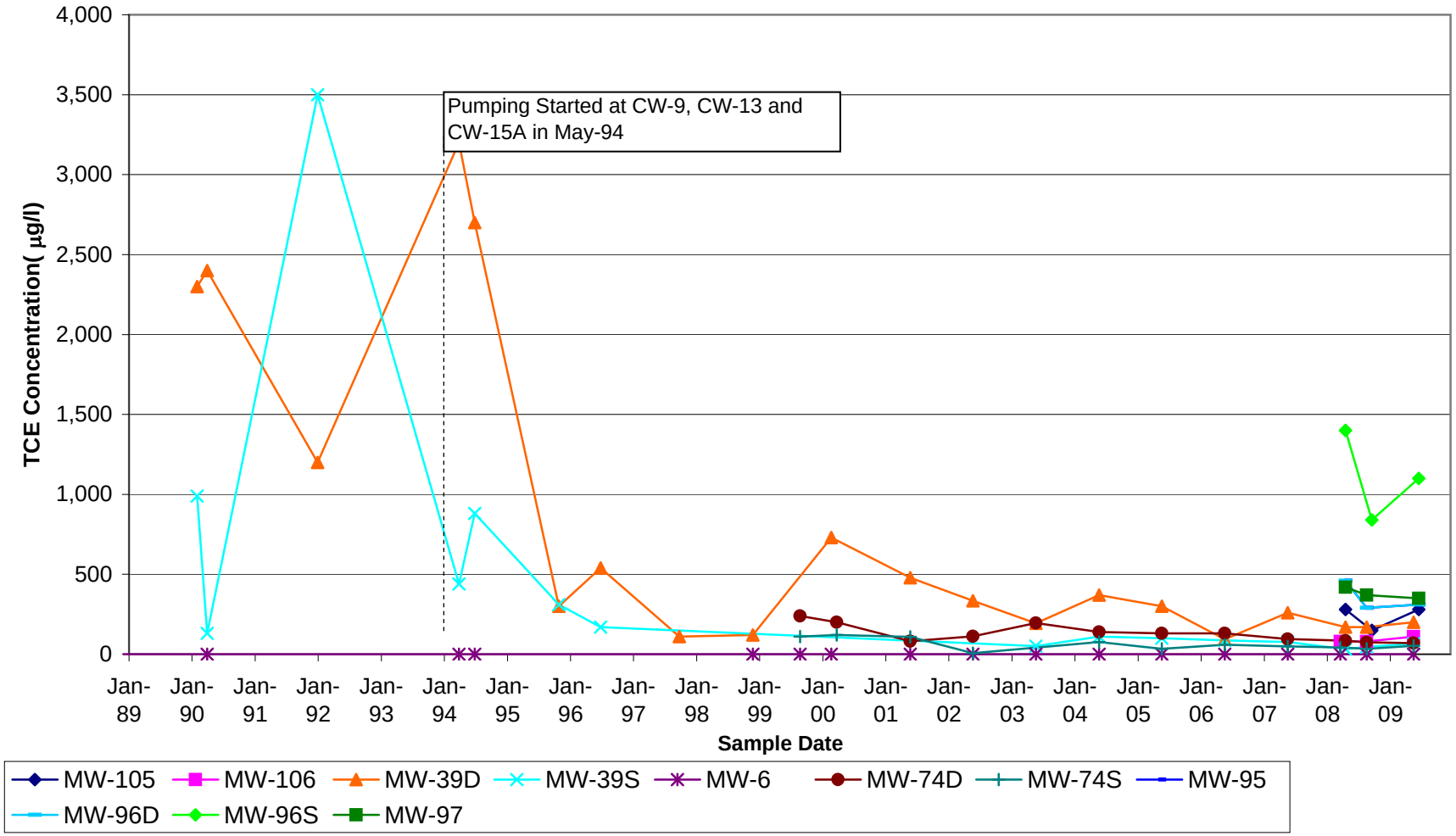


Figure 7-8
TCE in Southern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

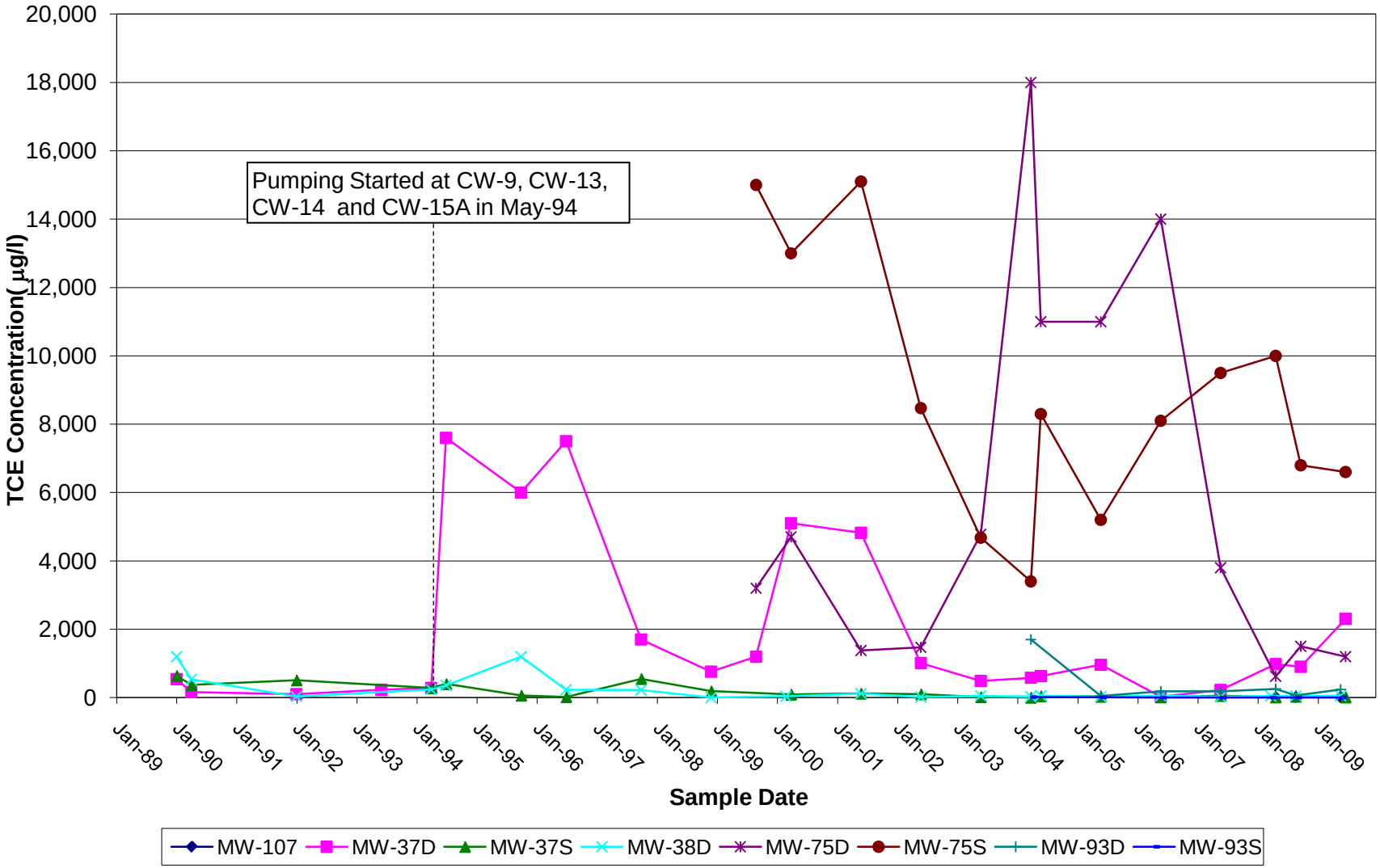


Figure 7-9
PCE in Southern WPL Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

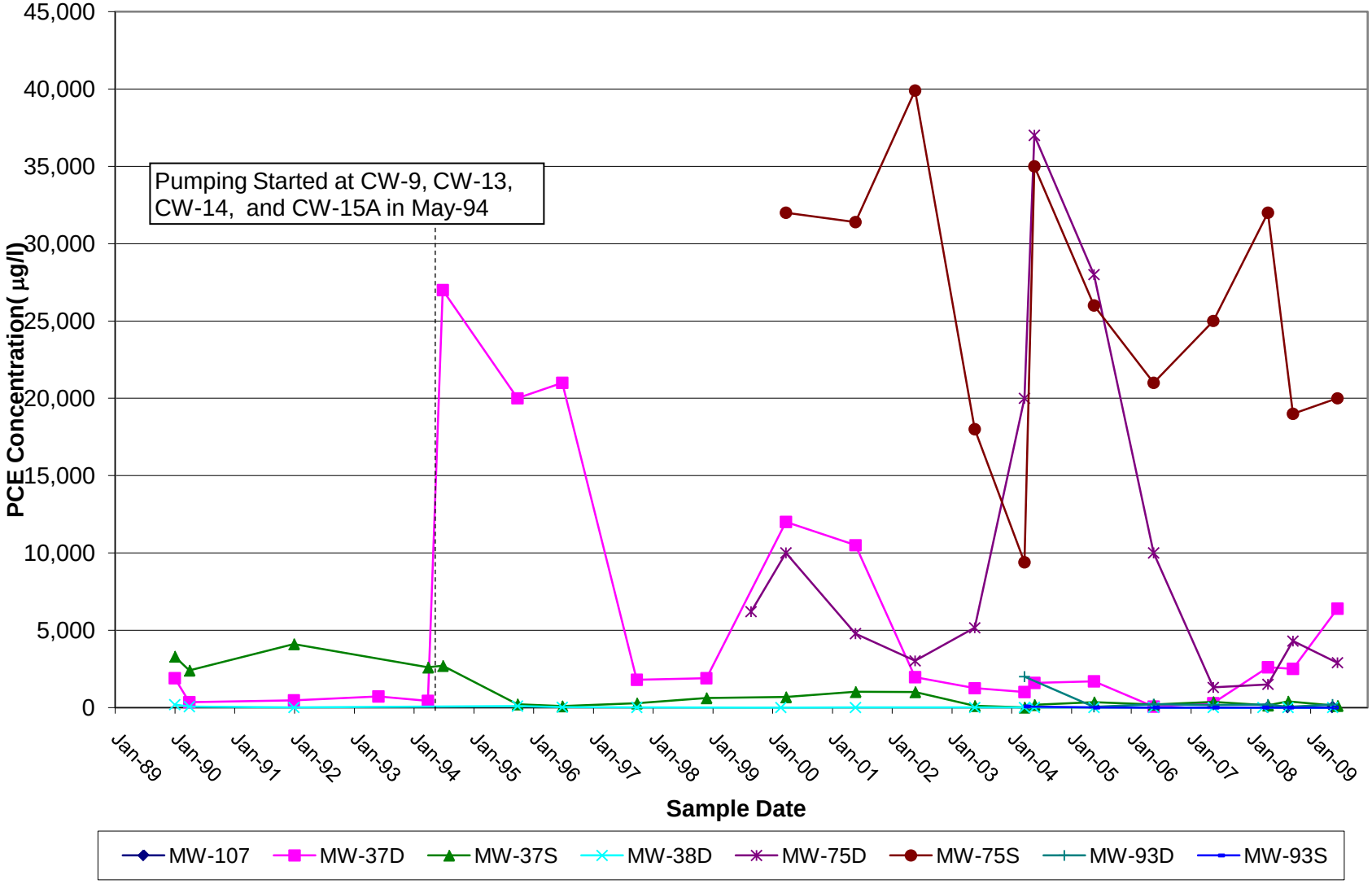


Figure 9-1
TCE in SPBA Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

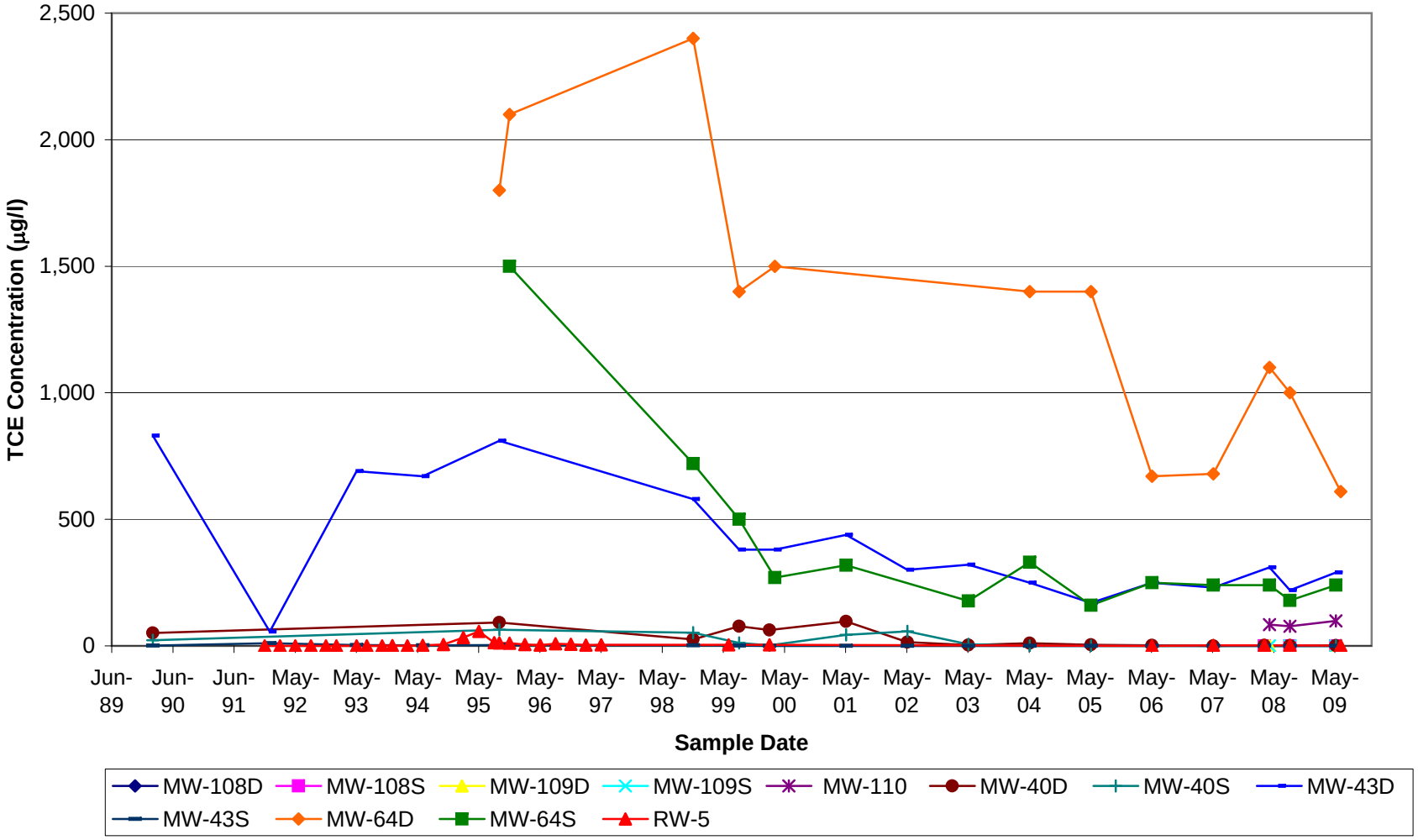


Figure 10-1
PCE in Eastern Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

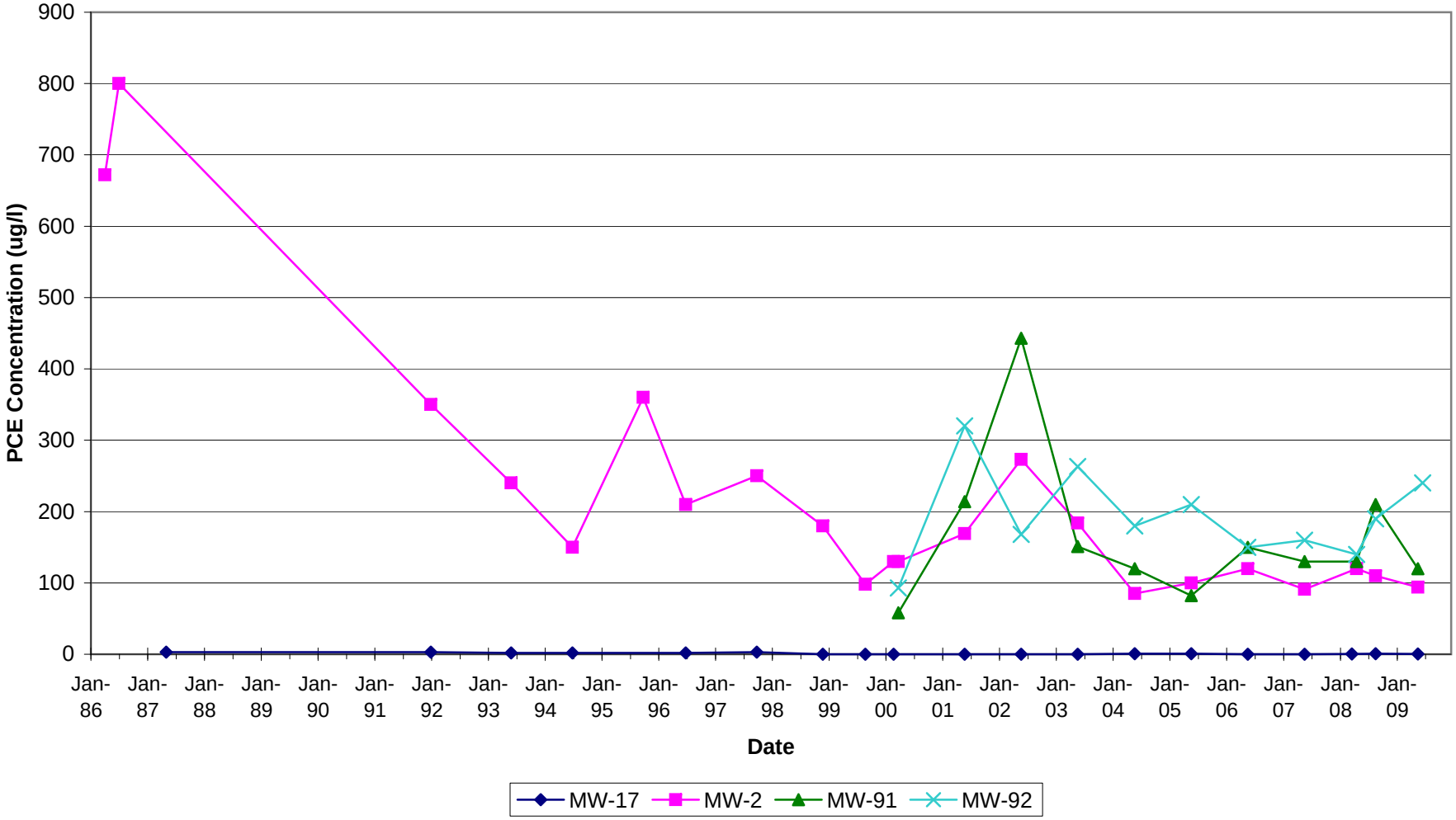


Figure 10-2
TCE in Eastern Area Monitoring Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402

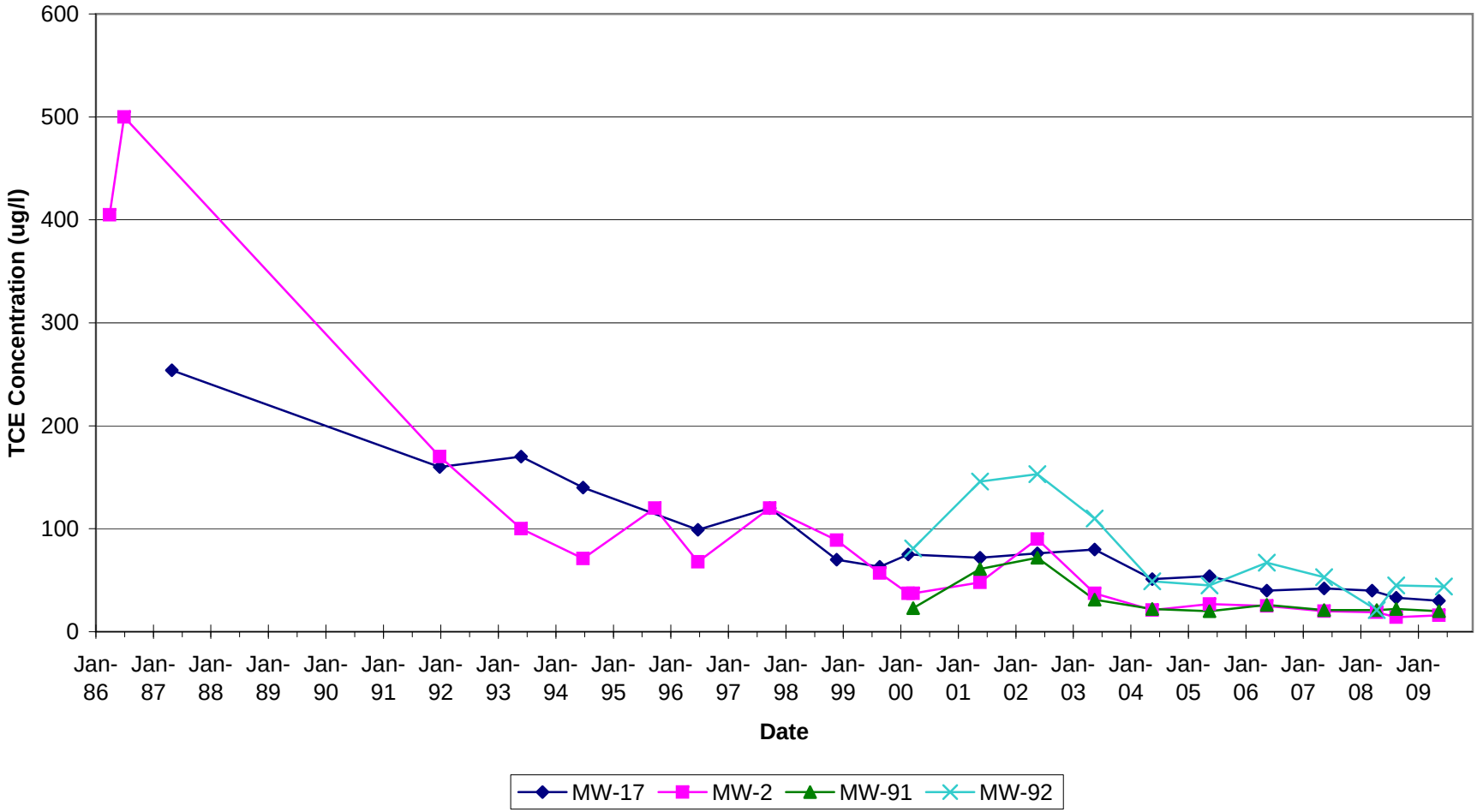
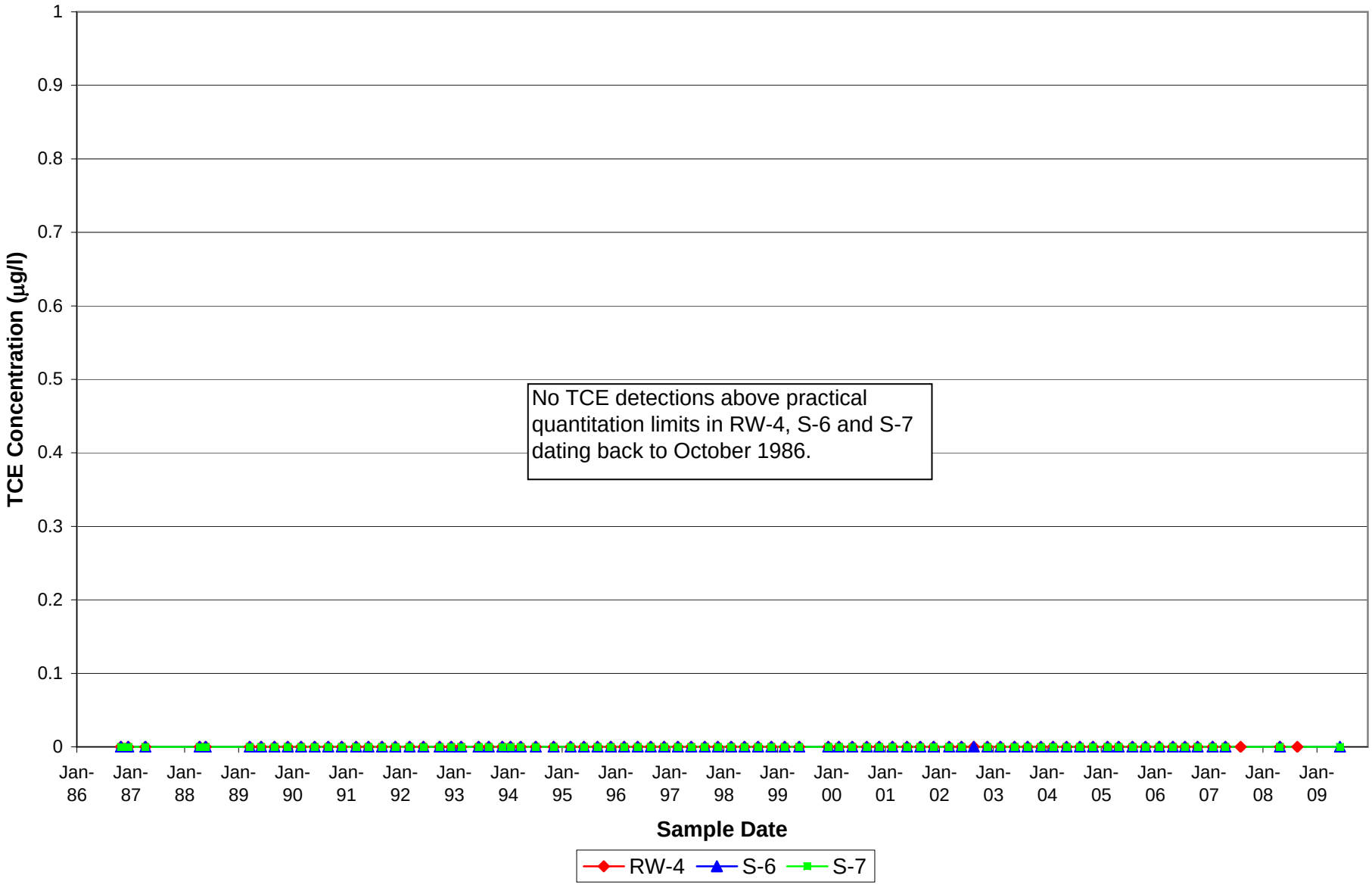


Figure 11-1
TCE in Off-Site Wells
Former York Naval Ordnance Plant
1425 Eden Road, York PA 17402



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