SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
SPRING 2017 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

ARCH CHEMICALS, INC.
(A WHOLLY-OWNED SUBSIDIARY OF LONZA)

AUGUST 2017

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ROCHESTER PLANT SITE
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Prepared by

AMEC Foster Wheeler Environment & Infrastructure, Inc.
Portland, Maine

for

ARCH CHEMICALS, INC.
(A Wholly-Owned Subsidiary of Lonza)

August 2017

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EXECUTIVE SUMMARY

This monitoring report presents the results of an on-going groundwater and surface water monitoring program being conducted by Arch Chemicals at its Rochester, New York, manufacturing facility. Arch Chemicals is a wholly-owned subsidiary of Lonza, a leading supplier to the global life sciences, healthcare and pharmaceutical industries headquartered in Basel, Switzerland.

During this monitoring event conducted in May 2017, samples from a total of 41 groundwater monitoring or pumping wells and four locations associated with the Dolomite Products Quarry seep and outfall were collected by Matrix Environmental Technologies Inc., of Orchard Park, New York, and analyzed by Paradigm Environmental Services, Inc., of Rochester, New York.

As in prior reports, monitoring results were compared with previous average concentrations at each sampling location. Twelve of the 41 wells sampled for chloropyridines had contaminant concentrations that were above their respective 5-year prior averages. Eight of the 35 wells sampled for volatile organic compounds had concentrations above their 5-year prior averages.

Sampling locations associated with the quarry included the main quarry seep (QS-4), the quarry ditch where the quarry dewatering discharge enters the ditch (QD-1), the quarry ditch as it enters the Erie Barge Canal (QO-2), and the surface water in the canal approximately 100-feet downstream of the quarry ditch (QO-2S1). The total concentration of chloropyridines in quarry seep QS-4 was 39 micrograms per liter (µg/L), which is below its prior 5-year average of 99 µg/L. Chloropyridines were not detected in the ditch sample from location QD-1, the ditch outfall sample at location QO-2, or the canal water at sample location QO2-S1.

On-site monitoring wells were checked for the presence of dense non-aqueous phase liquids (DNAPL) and floating (or light) NAPL (LNAPL), using an interface probe. No DNAPL or LNAPL was observed in any of these wells.

During the period December 2016 through May 2017, the on-site groundwater extraction system pumped approximately 7.8 million gallons of groundwater to the on-site treatment system, containing an estimated 2,900 pounds of chloropyridines and 72 pounds of target volatile organic compounds.

The next regular monitoring event will occur in November 2017 and will include groundwater, surface water, and seep sampling.

1.0 INTRODUCTION

In accordance with the Order on Consent executed between Arch Chemicals, Inc., and the New York State Department of Environmental Conservation (NYSDEC), effective August 21, 2003, Arch is conducting a Remedial Action program at its facility on McKee Road in Rochester, New York. As part of this program, Arch conducts twice-yearly monitoring events consisting of sampling and chemical analysis of groundwater and surface water in the vicinity of the Rochester facility.

The Spring 2017 sampling event included the collection and analysis of groundwater, surface water, and seep samples from a total of 45 off-site and on-site locations. Samples were collected from May 5 through 26, 2017, for analysis of selected chloropyridines and volatile organic compounds (VOCs).

This report presents the results of the Spring 2017 monitoring event.

2.0 SAMPLE COLLECTION AND ANALYSIS

2.1 GROUNDWATER

Groundwater samples were collected from off-site wells, on-site wells and piezometers for analysis of selected chloropyridines (2-chloropyridine, 2,6-dichloropyridine, 3-chloropyridine, 4-chloropyridine, pyridine, and p-fluoroaniline) and target compound list (TCL) VOCs. Samples were collected by personnel from Matrix Environmental Technologies Inc., (Matrix) and transported to the analytical laboratories of Paradigm Environmental Services, Inc. (Paradigm) in Rochester, New York for analysis. Table 1 lists the wells that were sampled and the requested analyses. The off-site and on-site locations of these sampling points are shown in Figures 1 and 2, respectively.

Groundwater sampling data sheets are provided in Appendix A.

Groundwater was collected with the low flow/low stress purging technique from most of the wells using bladder or peristaltic pumps. Samples from active pumping wells were collected from the discharge lines.

Groundwater piezometric elevations were measured on May 4, 2017. Piezometric contour maps were constructed for each water-bearing zone (overburden, bedrock, and deep bedrock) and are presented in Figures 3, 4, and 5.

On-site monitoring wells were checked for the presence of non-aqueous phase liquid (NAPL), using an interface probe. No dense NAPL (DNAPL) or floating (light) NAPL (LNAPL) was observed in any of these wells.

2.2 SURFACE WATER

Surface water and quarry seep samples were collected as part of the on-going monitoring program for the Arch Rochester site. The location of the quarry and its outfall in relation to the site is shown on Figure 6. Samples of the main quarry seep (QS-4), the quarry ditch where the quarry dewatering discharge enters the ditch (QD-1), the quarry ditch as it enters

the Erie Barge Canal (QO-2), and the surface water in the canal approximately 100-feet downstream of the quarry ditch (QO-2S1) were collected by Matrix on May 12, 2017. All quarry-related samples were analyzed for the Arch suite of selected chloropyridines. The quarry locations sampled during the Spring 2017 event are shown on Figure 7.

2.3 ANALYTICAL PROCEDURES

The analytical procedures, data review findings, and validated data for this groundwater monitoring event are discussed in the following paragraphs.

Samples were analyzed for the Arch suite of selected chloropyridines and TCL volatile organic compounds (VOCs) by USEPA SW-846 Methods 8270D and 8260C, respectively. The reporting limits for the chloropyridines and VOCs are approximately 10 micrograms per liter (µg/L) and 2 to 20 µg/L, respectively, for undiluted samples.

2.4 QUALITY CONTROL

All laboratory analytical results were reviewed and qualified following U.S. Environmental Protection Agency Contract Laboratory Program (USEPA CLP), "National Functional Guidelines for Superfund Organic Methods Data Review", June 2008, using professional judgment and guidance from USEPA Region II SOPs No. HW-24 Revision 4, October 2014, and No. HW-35 Revision 2, March 2013. Analytical results were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
Surrogate Recoveries
* Blank Contamination
* Duplicates
Laboratory Control Samples
Matrix Spike/Matrix Spike Duplicates
Miscellaneous

* - *all criteria were met for this parameter*

With the qualifications discussed below, results are determined to be usable as reported by the laboratory.

Surrogate Recoveries. Percent recoveries of the VOC surrogates pentafluorobenzene, toluene-d8, and/or 4-bromofluorobenzene in a subset of samples were less than the laboratory statistically derived control limits, indicating potential low biases. Positive and non-detected results in affected samples were qualified estimated (J/UJ): BR105, BR106, MW106, MW114, PZ102, PZ103, and PZ105.

Percent recoveries of the SVOC surrogate 2-fluorobiphenyl in a subset of samples were less than the laboratory statistically derived control limits, indicating potential low biases. In addition, for samples PZ103, BR114, BR122D, and BR123D, percent recoveries of this surrogate were also less than control limits in the associated method blank and laboratory control sample. The samples were not re-extracted because insufficient sample volume remained for samples BR114, BR122D, and BR123D. Percent recoveries of all spiked target analytes in the associated laboratory control sample were within laboratory control

limits. Positive and non-detected results in affected samples were qualified estimated (J/UJ): B15, B16, B7, BR105D, BR112D, BR113D, BR114, BR117D, BR118D, BR122D, BR123D, BR126, PZ101, PZ103, PZ105, QD-1, QO-2, QO-2S1, and QS-4.

Duplicates. Field duplicates were collected for samples PW16 and BR7A. Relative percent differences (RPDs) between sample and field duplicate results for all target analytes in both field duplicate pairs were within the control limit.

Laboratory Control Samples (LCS). The percent recovery for trichloroethene (83) in the laboratory control sample associated with VOC samples PW15 and PZ106 was less than the laboratory control limits of 84-117, indicating a potential low bias. Trichloroethene was not detected in samples PW15 or PZ106, and reporting limits were qualified estimated (UJ).

Percent recoveries of pyridine (0 to 46) in all laboratory control samples associated with the sampling event were below nominal control limits of 50-140, indicating potential low biases for pyridine in all samples. For SDGs 171926 and 171947, pyridine was not recovered in the LCSs. Percent recoveries of 4-fluoroaniline (34) in the LCSs associated with samples of SDG 171977 and SDG 172002 were less than the 50-140 control limits, indicating potential low biases for 4-fluoroaniline in samples of SDGs 171977 and 172002. Nominal control limits were used in the absence of statistically derived laboratory control limits. 4-Fluoroaniline was not detected in the samples of SDGs 171977 and 172002, and reporting limits were qualified estimated (UJ). Pyridine was not detected in samples of SDGs 171926 and 171947, and results were qualified rejected (R). Positive and non-detected results for pyridine in samples of SDGs 171905, 171977, 172002, and 172286 were qualified estimated (J/UJ).

Matrix Spike/Matrix Spike Duplicates (MS/MSD). MS/MSD analyses were specified on the chain of custody forms for samples PW15, BR127, and BR9. The MS/MSD for SVOC sample PW15 was not evaluated due to dilutions of the sample and MS/MSD that were required because of high concentrations of target analytes. All percent recoveries and relative percent differences (RPDs) for the MS/MSD of sample SVOC BR127 were either within laboratory control limits or were not evaluated due to high concentrations of target analytes that were significantly (>4X) greater than the spike concentration.

In the MS/MSD associated with VOC sample PW15, all percent recoveries were within laboratory control limits. RPDs for chloroform (16) and methylene chloride (26) were greater than laboratory control limits. The positive results for chloroform and methylene chloride in sample PW15 were qualified estimated (J).

In the MS/MSD associated with VOC sample BR127, the percent recovery of chloroform (83) was less than laboratory control limits, indicating a potential low bias. The RPD for trichloroethene (15) was greater than laboratory control limit. The positive results for chloroform and trichloroethene in sample BR127 were qualified estimated (J).

In the MS/MSD associated with VOC sample BR9, percent recoveries of vinyl chloride (156, 155) were greater than the laboratory control limits, indicating potential high bias. The positive result for vinyl chloride was qualified estimated (J).

In the MS/MSD associated with SVOC sample BR9, MS/MSD percent recoveries for pyridine (39, 36) were less than the 50-140 nominal control limits indicating potential low bias. Pyridine was not detected in sample BR9 and the reporting limit was qualified estimated (UJ).

Miscellaneous. Samples from a subset of wells were analyzed at dilutions due to high concentrations of volatile organic and/or semi-volatile organic target analytes. Non-detects are reported at elevated reporting limits.

3.0 ANALYTICAL RESULTS

3.1 GROUNDWATER

The validated results from the Spring 2017 groundwater monitoring event are provided in Tables 2 and 3. Table 4 provides a comparison of the Spring 2017 analytical results for selected chloropyridines and VOCs in representative wells to mean concentrations of the prior five years (Spring 2012 through Fall 2016). Long term trends for both selected chloropyridines and VOCs are also presented as time-series plots for representative wells in Appendix B. A summary of the analytical findings is presented below by parameter class.

3.1.1 Chloropyridines

On-Site. Chloropyridines were detected above sample quantitation limits in all 26 of the on-site wells sampled in the Spring 2017 event. Concentrations of chloropyridines (sum of all chloropyridine and pyridine isomer concentrations) ranged from 5 micrograms per liter (µg/L) in well B-15, to 784,000 µg/L in well B-17. Nine of the on-site wells exhibited total chloropyridine concentrations that were above their respective means from monitoring events over the previous five years (see Table 4).

Off-Site. Chloropyridines were detected above sample quantitation limits in ten of the 15 off-site wells that were sampled. Concentrations of total chloropyridines ranged from not detected (in wells BR-113D, BR-114, BR-117D, BR-122D, and MW114) to 46,000 µg/L in well BR-106. Two of the off-site wells contained total chloropyridine concentrations above their respective five-year prior means (see Table 4).

Concentration Contours. Chloropyridine distribution in groundwater is shown as a set of concentration contours on Figure 8. The contours were developed using data from both overburden and bedrock monitoring wells. The chloropyridine plume extent is generally similar to the prior monitoring event in November 2016, with some notable decreases in wells around the perimeter of the plume (i.e., MW-106, BR-105, BR-126, BR-9, and PZ-101). Chloropyridine levels remain high in wells B-17 and BR-8, although BR-8 appears to have reversed its previously-increasing trend in this sampling event. Concentrations are fluctuating in well BR-106, which suggests an influence from the raising and lowering of the water level in the canal. Relatively high concentrations of chloropyridines are noted in wells BR-127, PW-13, PW-15, PW-16, and PW-17, which are all active pumping wells. This indicates these wells are effectively pulling in water from areas of elevated chloropyridines.

3.1.2 Selected VOCs

On-Site. Selected VOCs were detected in 20 of the 26 on-site wells sampled for VOCs in the Spring 2017 event. Total concentrations of selected VOCs (sum of carbon tetrachloride, chlorobenzene, chloroform, methylene chloride, tetrachloroethene, and trichloroethene) ranged from not detected (in wells B-5, B-7, B-15, BR-126, E-3, and MW-127) to 57,000 µg/L

in well PW-15. Six of the on-site wells contained concentrations of total VOCs above their respective five-year prior means (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple on-site wells include toluene (in 11 out of 26 wells), benzene (9 of 26), 1,2-dichlorobenzene (9 of 26), 1,4-dichlorobenzene (9 of 26), carbon disulfide (8 of 26), 1,3-dichlorobenzene (7 of 26), acetone (7 of 26), vinyl chloride (7 of 26), cis-1,2-dichloroethene (6 of 26), 1,2,3-trichlorobenzene (3 of 26), 1,2,4-trichlorobenzene (3 of 26), 1,1,2-trichloro-1,2,2-trifluoroethane (3 of 26), 1,1-dichloroethane (2 of 26), m,p-xylene (2 of 26), and bromoform (2 of 26).

Off-Site. Selected VOCs were detected in six of the nine off-site wells sampled for VOCs during the Spring 2017 event. Total concentrations of selected VOCs ranged from not detected (in wells PZ-101, BR-114, and BR-105D) to 540 µg/L (in well BR-106). Two of these wells were above their 5-year prior means for VOCs (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple off-site wells include benzene (in 7 out of 9 wells), 1,2-dichlorobenzene (4 of 9), 1,3-dichlorobenzene (3 of 9), 1,4-dichlorobenzene (3 of 9), and cis-1,2-dichloroethene (2 of 9).

Concentration Contours. The distribution of selected VOCs in groundwater is shown as a set of concentration contours on Figure 9. These contours were developed using both overburden and bedrock groundwater data, and are dashed where approximated using historical data. The VOC plume extent is generally consistent with previous monitoring events. Notable decreases in VOCs were observed in wells BR-8, BR-127, PW-10, PW-14, PZ-106, and PZ-107, while increases were observed in wells BR-6A, PW-13, and PW-15. VOCs observed in off-site wells primarily consist of chlorobenzenes, which appear to be closely associated with chloropyridines at this site.

3.2 SURFACE WATER

Results from the Spring 2017 canal and quarry monitoring event are presented in Table 5, and are discussed below.

3.2.1 Quarry

One quarry seep sample (QS-4) was collected in the Spring 2017 monitoring event. The sample contained 39 µg/L total chloropyridines, which is below its prior five-year mean of 99 µg/L.

3.2.2 Quarry Discharge Ditch

Two locations within the quarry discharge ditch were sampled and analyzed for chloropyridines: QD-1, at the point where the quarry's dewatering discharge enters the ditch; and QO-2, at the location where the ditch discharges to the canal. Chloropyridine compounds were not detected in either sample.

3.2.3 Barge Canal

One sample was collected from the Erie Barge Canal location (QO-2S1, approximately 100 feet downstream of QO-2). Chloropyridines were not detected in this sample.

4.0 EXTRACTION SYSTEM PERFORMANCE

Table 6 is a summary of the system flow measurements for the on-site extraction wells from December 2016 through May 2017. The total volume pumped during the six-month period was approximately 7.8 million gallons. Overall, the system pumped reliably throughout the period with system flow rates averaging between 22 and 45 gpm on a monthly basis. PW-17 continues to be a poorly performing well due to very low yield. In addition, the performance of well PW-15 is frequently impacted by formation of precipitate and scale within the well, pump, and discharge lines, and requires frequent cleaning and maintenance. Well PW-13 displayed its usual pattern of little or no flow during the winter months (when the canal is drawn down), and resumed pumping in early April 2017. Flow from well BR-127 was curtailed from late February through March 2017 while adjustments were being made to the activated carbon treatment system. The remaining wells (BR-7A, BR-9, and PW-16) pumped consistently through the entire six-month period.

Table 7 provides a calculation of mass removal rates since the previous groundwater monitoring event (i.e., from December 2016 through May 2017). Arch estimates that approximately 72 pounds of target VOCs and 2,900 pounds of chloropyridine compounds were removed by the groundwater extraction system and treated by the plant's activated carbon adsorption units over that time period.

5.0 NEXT MONITORING EVENT

The next regular monitoring event will occur in November 2017 and will include groundwater, surface water, and seep sampling.

Table 8 shows the 2017 monitoring program for the Arch Rochester site.

Figures

Legend

Property Owned by Lonza

Monitoring Well

NOTES

1. Source - Topographic Quadrangle 7.5-Minute Series

N

0 250 500 1,000 Feet

Prepared by JEB | Checked by NMB

BARGE CANAL

I-390

FIRTH RIXSON

ARCH

BUFFALO RD. BUSINESS CENTER

MW-103/BR-103

MW-108/BR-108

PZ-102

BR-111/BR-111D

BR-106/MW-106

PZ-103

MW-16

AID TO HOSPITALS

BR-126

BR-112A/BR-112D

MW-105/BR-105

MW-104/BR-104

BUFFALO ROAD

MW-114/BR-114

12-6

CUMBERLAND FARMS PETROLEUM TERMINAL

OW-105

NESS-W

NESS-E

8-8

7-6

BR-113/BR-113D

LEXINGTON

11-8

GENERAL RAIL SIGNAL CO.

9-6

RW-1

10-6

DOLOMITE PRODUCTS QUARRY

13-4

Morey

OW-102A

OW-103

BR-122D

PFAUDLER

ERIE BARGE CANAL

BR-117/BR-117D

BR-121D (Abandoned)

BR-118/BR-118D

BR-123D

BR-116/BR-116D

I-390

BR-120D (Abandoned)

BR-119D (Abandoned)

LETTINGTON DRIVE

BR-124D

Figure 1
Off-Site Groundwater Monitoring Well Locations

Arch Chemicals
Rochester, NY

amec foster wheeler

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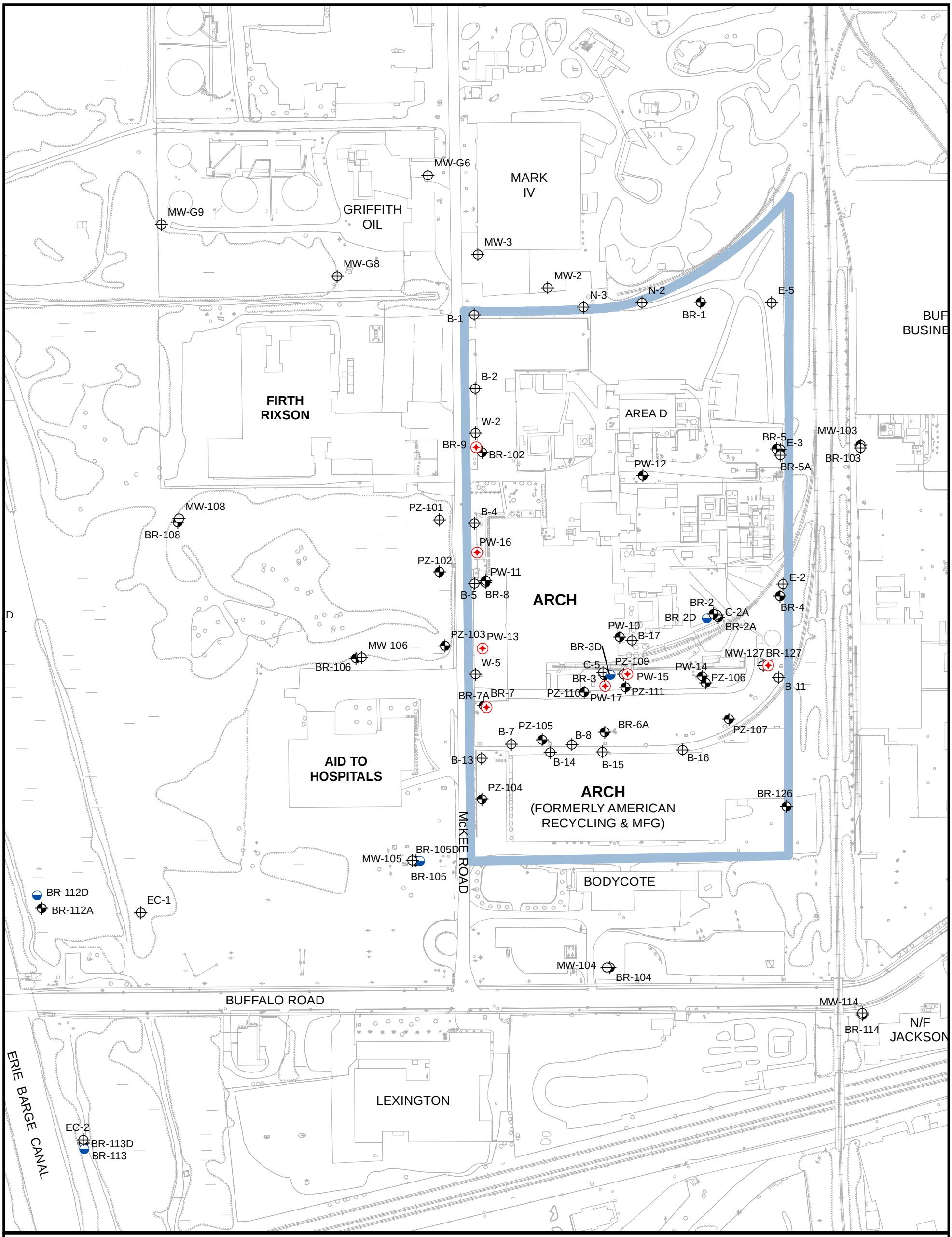

NOTES:

1. Off-Site Well Locations also Included on Figure 1

Legend

- Active Pumping Well
- Overburden Monitoring Well
- Bedrock Monitoring Well
- Deep Bedrock Monitoring Well
- Property Owned by Lonza

N

0 100 200 400 Feet

Prepared/Date: JEB 07/13/16 | Checked/Date: NMB 07/13/16

Figure 2
Onsite Monitoring Well Locations

Arch Chemicals Rochester, NY

amec foster wheeler

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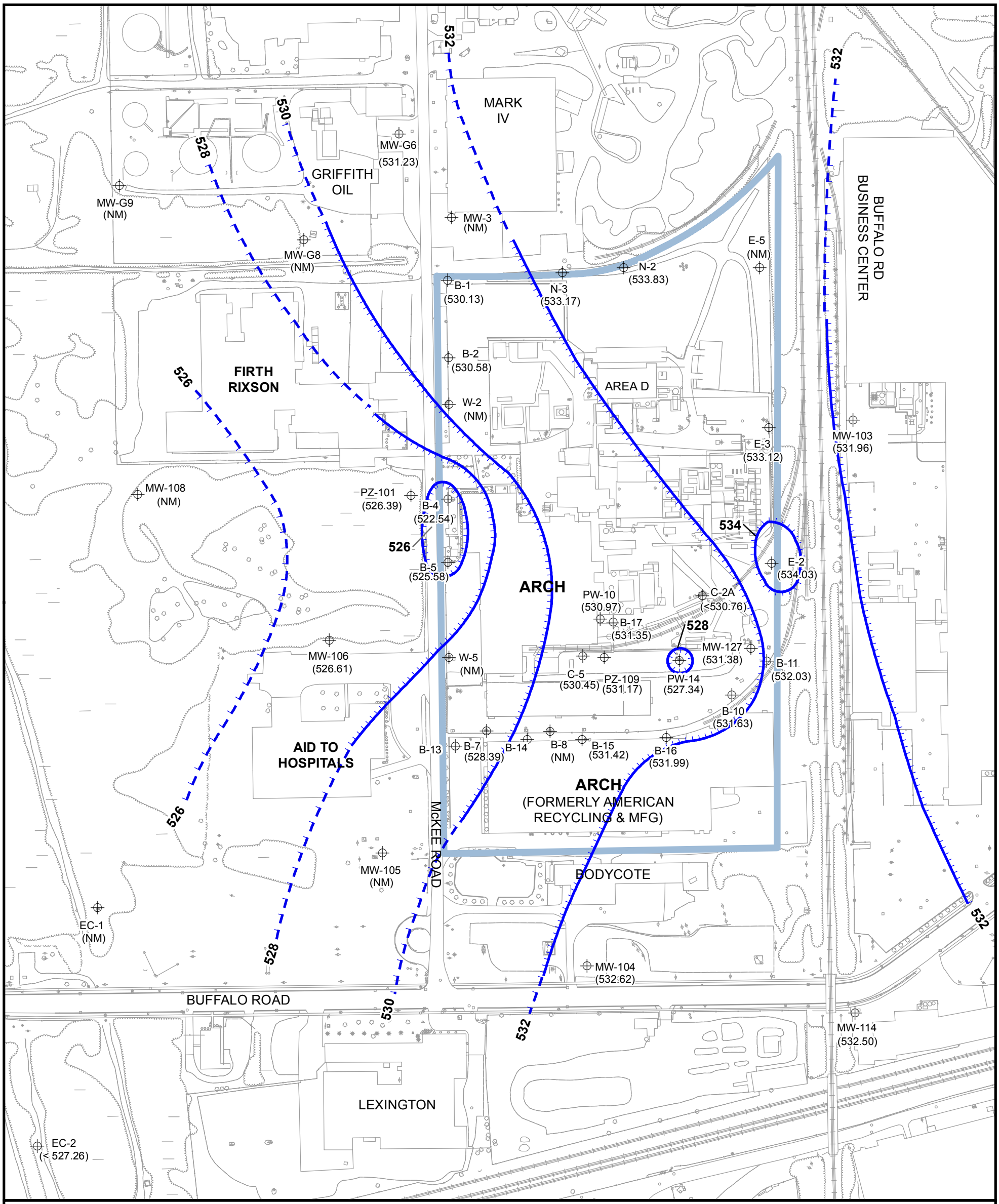

N

Legend

- MW-114 (532.50) — Piezometric Elevation at Well or Piezometer
- Interpreted Groundwater Flow Direction
- **528** — Overburden Piezometric Elevation Contour (MSL)
- Outline of Arch Property Boundary

Figure 3
Spring 2017
Overburden Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

NOTES:

1. Water Levels Measured on May 4, 2017
2. Dashed Contours Reflect Uncertainty

0 100 200 400 Feet

Prepared/Date: JEB 05/05/17	Checked/Date: NMB 05/05/17

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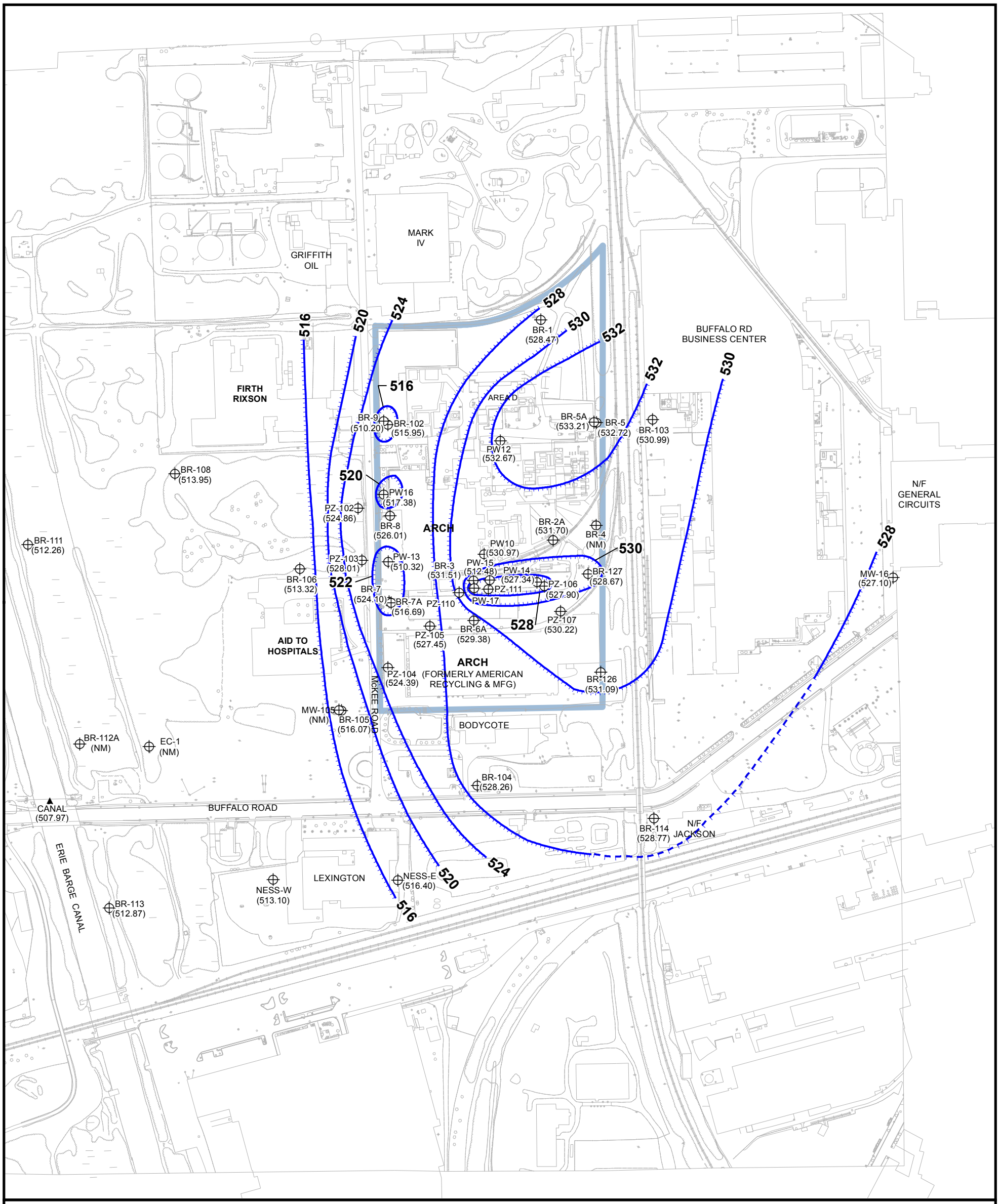
amec foster wheeler



Legend

- BR-114 (528.77) — Piezometric Elevation at Well or Piezometer (Feet MSL)
- ▲ — Piezometric Elevation at Surface Water Measuring Point
- Property Owned by Lonza
- Interpreted Groundwater Flow Direction
- **526** — Bedrock Piezometric Elevation Contour (MSL)

N

NOTES:

1. Water Levels Measured on May 4, 2017
2. Dashed Contours Reflect Uncertainty
3. The measurement in well PZ-103 is considered anomalous and was not used in contouring.

0 150 300 600 Feet

Prepared/Date: JEB 06/27/17 | Checked/Date: NMB 06/27/17

Figure 4
Spring 2017
Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

amec foster wheeler

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Legend

- Bedrock Well ('D' Designates Deep Well)
- 500 — Deep Bedrock Elevation Contour (MSL)
- Interpreted Groundwater Flow Direction
- Property Owned by Lonza
- BR-116D (510.87) — Piezometric Elevation at Deep Bedrock Well

NOTES

1. Water Levels Measured on May 4, 2017
2. Dashed Contours Reflect Uncertainty
3. Wells BR-105D and BR-3D not used in contouring

N

0 250 500 1,000 Feet

Prepared/Date: JEB 05/09/17 | Checked/Date: NMB 05/09/17

ERIE BARGE CANAL

I-390

FIRTH RIXSON

BUFFALO RD. BUSINESS CENTER

ARCH

BR-9

BR-103

BR-108

BR-111D (511.87)

BR-111

AID TO HOSPITALS

BR-106

BR-3D (485.88)

BR-112D (512.17)

BR-112

BR-105

BR-105D (510.52)

BUFFALO ROAD

BR-104

BR-114

CUMBERLAND FARMS PETROLEUM TERMINAL

BR-113

BR-113D (512.14)

LEXINGTON

GENERAL RAIL SIGNAL CO.

DOLOMITE PRODUCTS QUARRY

BR-122D (508.52)

PFAUDLER

BR-117D (501.21)

BR-117

BR-118

BR-118D (502.72)

BR-123D (509.47)

BR-116D (510.87)

BR-116

BR-124D (506.22)

LETTINGTON DRIVE

502 504 506 508 510 512

Figure 5
Spring 2017
Deep Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

amec foster wheeler

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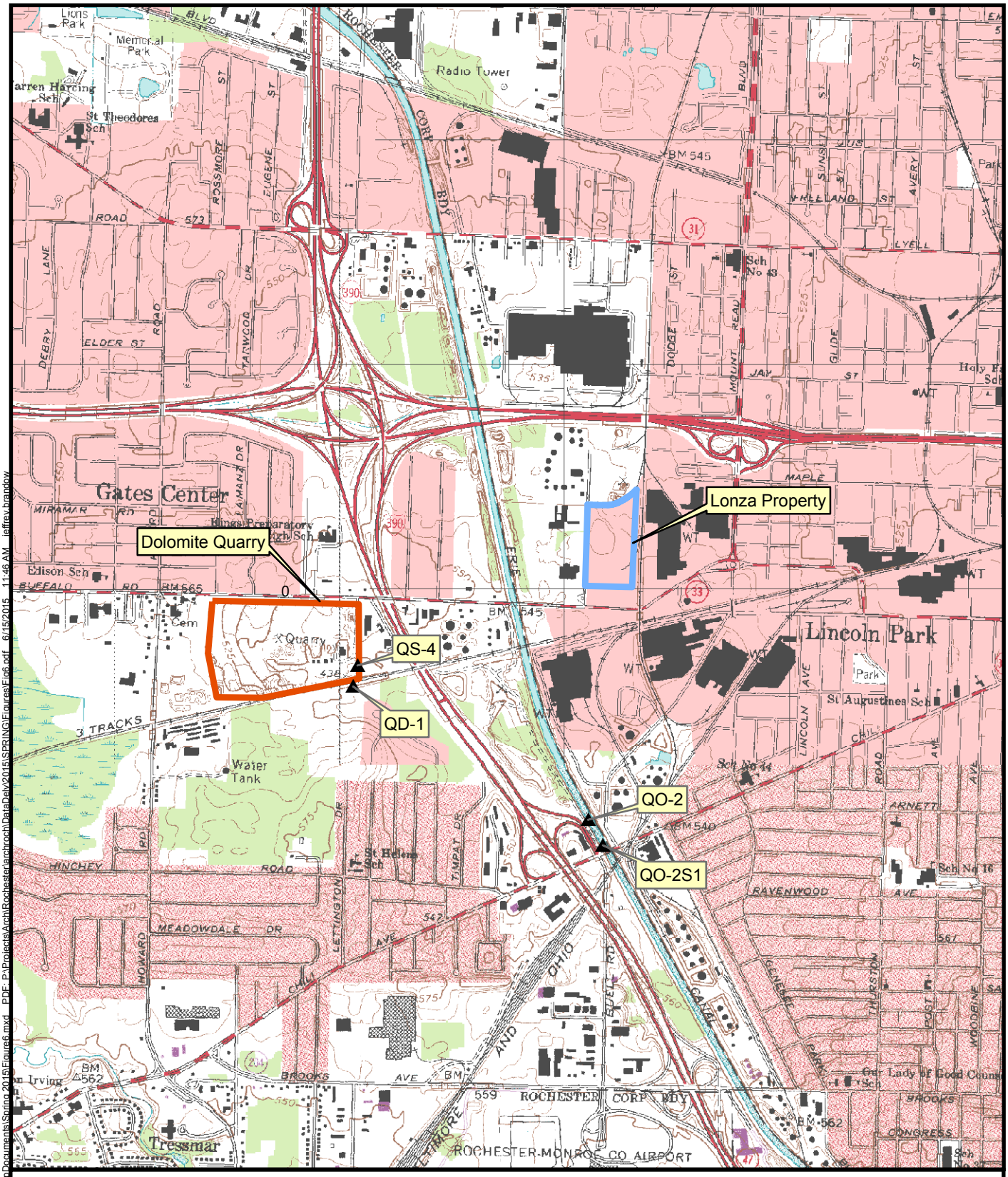

Source:
1:24,000 scale digital topographic map
obtained from New York State GIS
Clearinghouse at: www.nysgis.state.ny.us

Legend

- Lonza Property
- Dolomite Quarry Boundary
- ▲ Surface Water Sample Location

N

0 1,000 2,000 Feet

Prepared by JEB | Checked by NMB

Figure 6
Sample Locations
Erie Barge Canal

Arch Chemicals
Rochester, New York

amec foster wheeler

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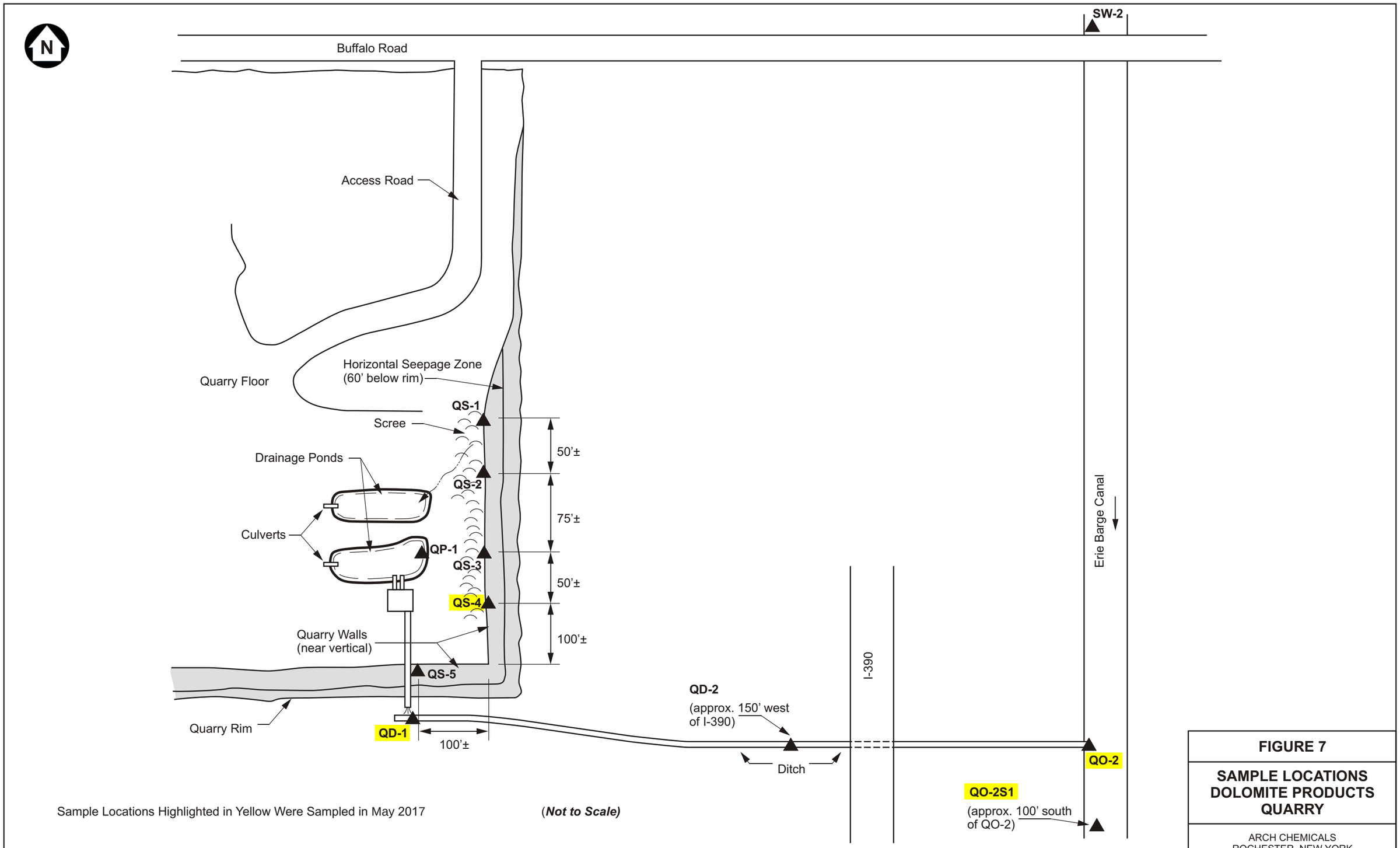
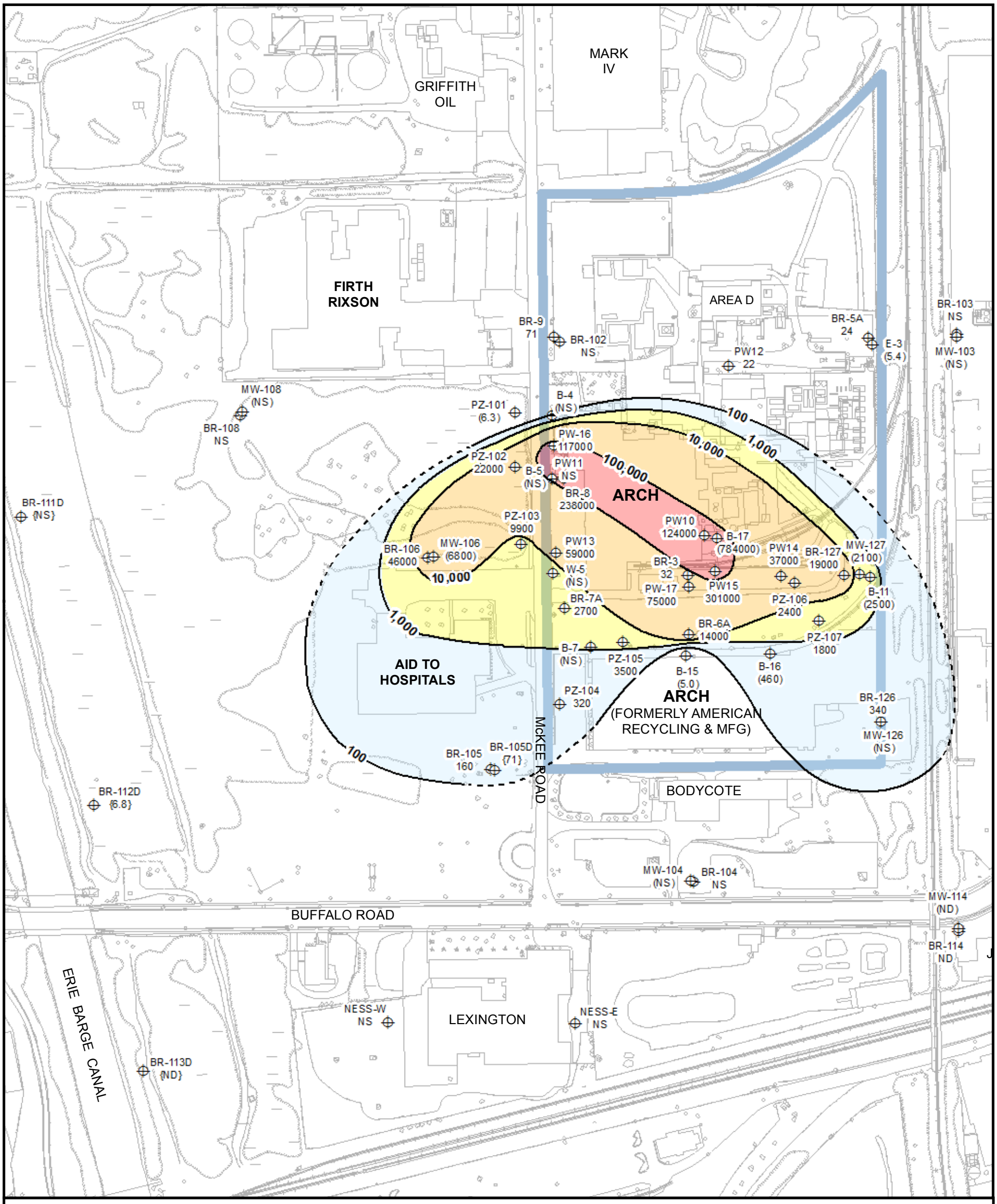


FIGURE 7

SAMPLE LOCATIONS
DOLOMITE PRODUCTS QUARRY

ARCH CHEMICALS
ROCHESTER, NEW YORK

W2004030a.cdr



Legend

- Property Owned by Lonza
- 100 — Chloropyridine Concentration Contour
- MW-106 (6800) — Monitoring Location with Concentration

{1000}	Deep Bedrock Well
(1000)	Overburden Well
1000	Bedrock Well
NS	Not Sampled
ND	Not Detected

0 100 200 Feet

N

Prepared/Date: JEB 07/24/17 | Checked/Date: NMB 07/24/17

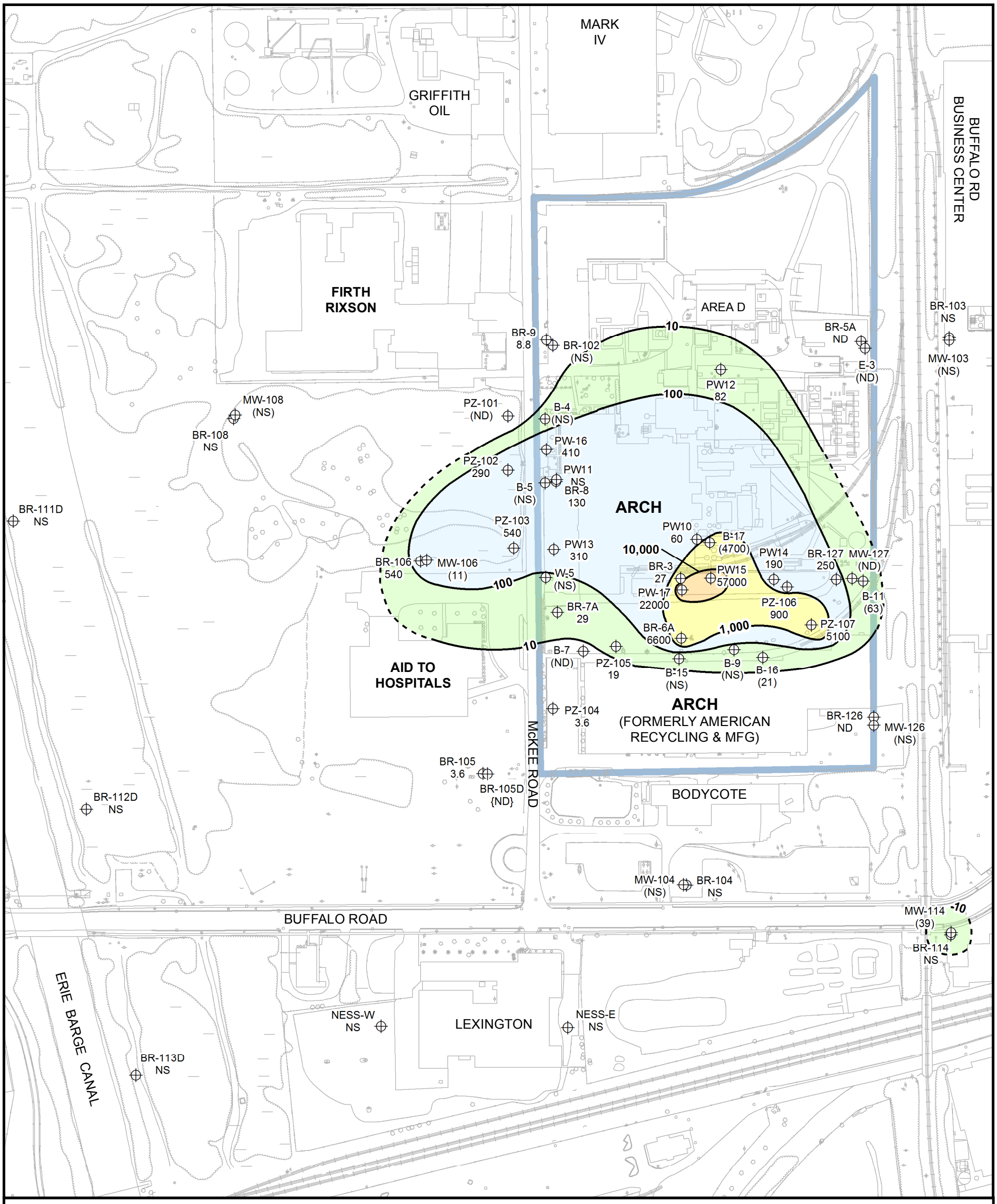
NOTES:

1. Samples Collected May 5-26, 2017.
2. Selected chloropyridines consist of 2,6-dichloropyridine, 2-chloropyridine, 3-chloropyridine, 4-chloropyridine, and P-fluoroaniline.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells.
4. Dashed concentration contours represent inferences from historical analytical results.
5. Concentrations are in µg/L.

Figure 8
Spring 2017
Selected Chloropyridine Concentration Contours

Arch Chemicals
Rochester, NY

amec foster wheeler



Legend

- Monitoring Location with Concentration
- 100 — VOC Concentration Contour
- B-17 (4700) — Property Owned by Lonza
- {1000} Deep Bedrock Well
- (1000) Overburden Well
- 1000 Bedrock Well
- NS Not Sampled
- ND Not Detected

0 100 200 Feet

N

Prepared/Date: JEB 06/08/17 | Checked/Date: NMB 06/08/17

NOTES:

1. Samples collected in May 5-12, 2017.
2. Selected VOCs consist of carbon tetrachloride, methylene chloride chloroform, chlorobenzene, TCE, and PCE.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells.
4. Dashed concentration contours represent inferences from historical analytical results.
5. Concentrations are in µg/L.

Figure 9
Spring 2017
Selected Volatile Organic Compound Concentration Contours

Arch Chemicals
Rochester, NY

amec foster wheeler

Document: P:\Projects\Arch\Rochester\GIS\MapDocuments\Spring 2017\Fig9_VOC_Contours.mxd PDF: P:\Projects\Arch\Rochester\archroch\DataDelv\2017\SPRING\Figures\Fig9_VOCs.pdf 6/8/2017 10:57 AM jeffrey.brandow

Tables

TABLE 1
SPRING 2017 GROUNDWATER SAMPLING AND ANALYTICAL PROGRAM

ARCH CHEMICALS, INC
ROCHESTER, NEW YORK

			ANALYSIS	PYRIDINES	VOCs
SITE / AREA	**WELL / POINT**	**DATE**	**QC TYPE**		
AID TO HOSPITALS	BR-106	5/10/2017	Sample		X
	BR-106	5/26/2017	Sample	X	
	MW-106	5/10/2017	Sample		X
	MW-106	5/26/2017	Sample	X	
	PZ-101	5/9/2017	Sample	X	X
	PZ-102	5/9/2017	Sample	X	X
	PZ-103	5/10/2017	Sample		X
	PZ-103	5/26/2017	Sample	X	
ARCH ROCHESTER	B-11	5/8/2017	Sample	X	X
	B-15	5/9/2017	Sample	X	X
	B-16	5/9/2017	Sample	X	X
	B-17	5/5/2017	Sample	X	X
	B-7	5/9/2017	Sample	X	X
	BR-126	5/9/2017	Sample	X	X
	BR-127	5/8/2017	Sample	X	X
	BR-3	5/8/2017	Sample	X	X
	BR-5A	5/5/2017	Sample	X	X
	BR-6A	5/8/2017	Sample	X	X
	BR-7A	5/12/2017	Duplicate	X	X
	BR-7A	5/12/2017	Sample	X	X
	BR-8	5/9/2017	Sample	X	X
	BR-9	5/10/2017	Sample	X	X
	E-3	5/5/2017	Sample	X	X
	MW-127	5/8/2017	Sample	X	X
	PW10	5/5/2017	Sample	X	X
	PW12	5/5/2017	Sample	X	X
	PW13	5/12/2017	Sample	X	X
	PW14	5/8/2017	Sample	X	X
	PW15	5/5/2017	Sample	X	X
	PW16	5/9/2017	Sample	X	X
	PW16	5/9/2017	Duplicate	X	X
	PW17	5/5/2017	Sample	X	X
	PZ-104	5/10/2017	Sample	X	X
	PZ-105	5/8/2017	Sample	X	X
	PZ-106	5/5/2017	Sample	X	X
	PZ-107	5/8/2017	Sample	X	X
DOLOMITE PRODUCTS, INC.	BR-117D	5/11/2017	Sample	X	
(Samples in canal or property along canal)	BR-118D	5/11/2017	Sample	X	
	QD-1	5/12/2017	Sample	X	
	QO-2	5/12/2017	Sample	X	
	QS-4	5/12/2017	Sample	X	
ERIE BARGE CANAL	BR-112D	5/11/2017	Sample	X	
	BR-113D	5/11/2017	Sample	X	
	BR-122D	5/26/2017	Sample	X	
	BR-123D	5/26/2017	Sample	X	
	QO-2S1	5/12/2017	Sample	X	
JACKSON WELDING	BR-114	5/10/2017	Sample		X
	BR-114	5/26/2017	Sample	X	
	MW-114	5/10/2017	Sample	X	X
RG & E RIGHT OF WAY	BR-105	5/10/2017	Sample	X	X
	BR-105D	5/11/2017	Sample	X	X

TABLE 2
SPRING 2017 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-11	B-15	B-16	B-17	B-7	BR-105	BR-105D	BR-106	BR-112D	BR-113D	BR-114
SAMPLE DATE:	5/8/2017	5/9/2017	5/9/2017	5/5/2017	5/9/2017	5/10/2017	5/11/2017	5/26/2017	5/11/2017	5/11/2017	5/26/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)											
2,6-Dichloropyridine	310	5.03 J	99.6 J	33200 J	8.09 J	34.3	13.8 J	5120 J	10 UJ	10 UJ	10 UJ
2-Chloropyridine	2,100	10 UJ	326 J	713,000	10 UJ	122	25 J	41,000	7 J	10 UJ	10 UJ
3-Chloropyridine	200 U	10 UJ	14.3 J	50000 U	10 UJ	20 U	12.7 J	10000 U	10 UJ	10 UJ	10 UJ
4-Chloropyridine	116 J	10 UJ	22.7 J	50000 U	10 UJ	20 U	19.6 J	10000 U	10 UJ	10 UJ	10 UJ
p-Fluoroaniline	200 U	10 UJ	20 UJ	50000 U	10 UJ	20 UJ	10 UJ	10000 U	10 UJ	10 UJ	10 UJ
Pyridine	R	R	R	37900 J	R	20 UJ	10 UJ	10000 U	10 UJ	10 UJ	10 UJ

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
R = Result rejected during data validation
µg/L = micrograms per Liter

TABLE 2
SPRING 2017 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-117D	BR-118D	BR-122D	BR-123D	BR-126	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-7A
SAMPLE DATE:	5/11/2017	5/11/2017	5/26/2017	5/26/2017	5/9/2017	5/8/2017	5/8/2017	5/5/2017	5/8/2017	5/12/2017	5/12/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)											
2,6-Dichloropyridine	10 UJ	10 UJ	10 UJ	6.99 J	74.7 J	893 J	20 U	18.1	2500	800 U	800 U
2-Chloropyridine	10 UJ	18 J	10 UJ	38 J	266 J	17,700	32	6 J	11,900	2,430	2,720
3-Chloropyridine	10 UJ	10 UJ	10 UJ	10 UJ	80 UJ	1000 U	20 U	10 U	2000 U	800 U	800 U
4-Chloropyridine	10 UJ	10 UJ	10 UJ	10 UJ	80 UJ	777 J	20 U	10 U	2000 U	800 U	800 U
p-Fluoroaniline	10 UJ	10 UJ	10 UJ	10 UJ	80 UJ	1000 U	20 U	10 U	2000 U	800 U	800 U
Pyridine	10 UJ	10 UJ	10 UJ	10 UJ	R	R	R	10 UJ	R	800 U	800 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
R = Result rejected during data validation
µg/L = micrograms per Liter

TABLE 2
SPRING 2017 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-8	BR-9	E-3	MW-106	MW-114	MW-127	PW10	PW12	PW13	PW14	PW15
SAMPLE DATE:	5/9/2017	5/10/2017	5/5/2017	5/26/2017	5/10/2017	5/8/2017	5/5/2017	5/5/2017	5/12/2017	5/8/2017	5/5/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)											
2,6-Dichloropyridine	50000 U	13.8	10 U	716	10 U	114 J	50000 U	9.78 J	5000 U	1110 J	15000 J
2-Chloropyridine	238,000	58	5 J	6,050	10 U	1,850	124,000	12	54,600	31,900	270,000
3-Chloropyridine	50000 U	10 U	10 U	400 U	10 U	200 U	50000 U	10 U	5000 U	1440 J	20000 U
4-Chloropyridine	50000 U	10 U	10 U	400 U	10 U	144 J	50000 U	10 U	3940 J	2280	20000 U
p-Fluoroaniline	50000 U	10 UJ	10 U	400 U	10 UJ	200 U	50000 U	10 U	5000 U	2000 U	20000 U
Pyridine	R	10 UJ	10 UJ	400 U	10 UJ	R	50000 UJ	10 UJ	5000 U	R	15600 J

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
R = Result rejected during data validation
µg/L = micrograms per Liter

TABLE 2
SPRING 2017 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW16	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/9/2017	5/9/2017	5/5/2017	5/9/2017	5/9/2017	5/26/2017	5/10/2017	5/8/2017	5/5/2017	5/8/2017
QC TYPE:	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	4420 J	4860 J	4390	6.27 J	3160	1700 J	73	391 J	1000 U	254
2-Chloropyridine	91,400	100,000	60,800	10 UJ	18,500	8,190 J	250	3,080 J	2,420	1,540
3-Chloropyridine	4280 J	4590 J	2660 J	10 UJ	2000 U	2000 UJ	40 U	200 UJ	1000 U	200 U
4-Chloropyridine	6810 J	7300 J	4230	10 UJ	2000 U	2000 UJ	40 U	200 UJ	1000 U	200 U
p-Fluoroaniline	8000 U	8000 U	4000 U	10 UJ	2000 U	2000 UJ	40 UJ	200 UJ	1000 U	200 U
Pyridine	R	R	2660 J	R	R	2000 UJ	40 UJ	R	1000 UJ	R

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
R = Result rejected during data validation
µg/L = micrograms per Liter

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-11	B-15	B-16	B-17	B-7	BR-105	BR-105D	BR-106	BR-114	BR-126
SAMPLE DATE:	5/8/2017	5/9/2017	5/9/2017	5/5/2017	5/9/2017	5/10/2017	5/11/2017	5/10/2017	5/10/2017	5/9/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
1,1,1-Trichloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,1-Dichloroethene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	86.5 J	5 U	5 UJ	5 U	25 UJ	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	398	5 U	5 UJ	5 U	25 UJ	5 U	5 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	200 U	10 U	10 UJ	10 U	50 UJ	10 U	10 U
1,2-Dibromoethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	40 U	2 U	1.62 J	2 U	162 J	2 U	2 U
1,2-Dichloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	80.2	2 U	2 UJ	2 U	7.43 J	2 U	2 U
1,4-Dichlorobenzene	2 U	2 U	2 U	133	2 U	2 UJ	2 U	13.3 J	2 U	2 U
1,4-Dioxane	20 U	20 U	20 U	400 U	20 U	20 UJ	20 U	100 UJ	20 U	20 U
2-Butanone	10 U	10 U	10 U	200 U	10 U	10 UJ	10 U	50 UJ	10 U	10 U
2-Hexanone	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
Acetic acid, methyl ester	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Acetone	10 U	10 U	6.49 J	200 U	12.3	10 UJ	10 U	50 UJ	10 U	10 U
Benzene	1 U	1 U	1 U	37.6	1 U	0.56 J	5.48	27.6 J	1.47	1 U
Bromochloromethane	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
Bromodichloromethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Bromoform	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
Bromomethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Carbon disulfide	2 U	2 U	2 U	157	2 U	2 UJ	5.64	10 UJ	2 U	2 U
Carbon tetrachloride	12.2	2 U	4.19	903	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Chlorobenzene	1.34 J	2 U	2 U	299	2 U	3.58 J	2 U	536 J	2 U	2 U
Chloroethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Chloroform	49.1	2 U	17.2	1830	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Chloromethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Cis-1,2-Dichloroethene	2 U	2 U	2 U	40 U	2 U	5.44 J	6.87	10 UJ	2 U	2 U
Cis-1,3-Dichloropropene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Cyclohexane	10 U	10 U	10 U	200 U	10 U	10 UJ	5.55 J	50 UJ	10 U	10 U
Dibromochloromethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Dichlorodifluoromethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Ethylbenzene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Isopropylbenzene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Methyl cyclohexane	2 U	2 U	2 U	40 U	2 U	2 UJ	1.54 J	10 UJ	2 U	2 U

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-11	B-15	B-16	B-17	B-7	BR-105	BR-105D	BR-106	BR-114	BR-126
SAMPLE DATE:	5/8/2017	5/9/2017	5/9/2017	5/5/2017	5/9/2017	5/10/2017	5/11/2017	5/10/2017	5/10/2017	5/9/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl Tertbutyl Ether	2 U	2 U	2 U	40 U	2 U	2 UJ	6.4	10 UJ	2 U	2 U
Methylene chloride	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
Styrene	5 U	5 U	5 U	100 U	5 U	5 UJ	5 U	25 UJ	5 U	5 U
Tetrachloroethene	2 U	2 U	2 U	1640	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Toluene	2 U	2 U	2 U	99.8	2 U	2 UJ	2 U	10 UJ	2 U	2 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Trichloroethene	2 U	2 U	2 U	28.5 J	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Trichlorofluoromethane	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Vinyl chloride	2 U	2 U	2 U	40 U	2 U	5.24 J	2 U	10 UJ	2 U	2 U
Xylene, o	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U
Xylenes (m&p)	2 U	2 U	2 U	40 U	2 U	2 UJ	2 U	10 UJ	2 U	2 U

Notes:
U = Compound not detected; value
represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-7A	BR-8	BR-9	E-3	MW-106
SAMPLE DATE:	5/8/2017	5/8/2017	5/5/2017	5/8/2017	5/12/2017	5/12/2017	5/9/2017	5/10/2017	5/5/2017	5/10/2017
QC TYPE:	Sample	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
1,1,1-Trichloroethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	1.39 J	2 U	2 UJ
1,1,2,2-Tetrachloroethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	10 U	2 U	2 U	100 U	3.81	3.88	4 U	47.5	2 U	2 UJ
1,1,2-Trichloroethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
1,1-Dichloroethane	10 U	2 U	2 U	100 U	2.01	2.01	4 U	6.83	2 U	2 UJ
1,1-Dichloroethene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	1.04 J	2 U	2 UJ
1,2,3-Trichlorobenzene	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
1,2,4-Trichlorobenzene	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
1,2-Dibromo-3-chloropropane	50 U	10 U	10 U	500 U	10 U	10 U	20 U	10 U	10 U	10 UJ
1,2-Dibromoethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
1,2-Dichlorobenzene	10 U	2 U	2 U	100 U	11.1	11.6	27.6	3.01	2 U	2 UJ
1,2-Dichloroethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
1,2-Dichloropropane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
1,3-Dichlorobenzene	10 U	2 U	2 U	100 U	2.63	2.78	12.1	2 U	2 U	2 UJ
1,4-Dichlorobenzene	7.92 J	2 U	2 U	100 U	2.54	2.75	25.5	2 U	2 U	2 UJ
1,4-Dioxane	100 U	20 U	20 U	1000 U	20 U	20 U	40 U	20 U	20 U	20 UJ
2-Butanone	50 U	10 U	10 U	500 U	10 U	10 U	20 U	10 U	10 U	10 UJ
2-Hexanone	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
4-Methyl-2-pentanone	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
Acetic acid, methyl ester	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Acetone	50 U	6.86 J	10 U	500 U	10 U	10 U	14.2 J	10 U	10 U	10 UJ
Benzene	3.14 J	1 U	1 U	50 U	4.19	4.4	2.12	84.9	1 U	0.525 J
Bromochloromethane	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
Bromodichloromethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Bromoform	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
Bromomethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Carbon disulfide	19.8	2.35	2 U	100 U	2 U	2 U	2.15 J	2 U	2 U	2 UJ
Carbon tetrachloride	14.6	3.58	2 U	100 U	2.19	2.29	4 U	2 U	2 U	2 UJ
Chlorobenzene	5.39 J	2 U	2 U	100 U	22.6	24	126	7.11	2 U	10.1 J
Chloroethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Chloroform	197 J	23.8	2 U	274	2.17	2.21	4 U	2 U	2 U	2 UJ
Chloromethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Cis-1,2-Dichloroethene	10 U	2 U	2 U	100 U	1.79 J	1.82 J	4 U	113	2 U	2 UJ
Cis-1,3-Dichloropropene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Cyclohexane	50 U	10 U	10 U	500 U	10 U	10 U	20 U	23.6	10 U	10 UJ
Dibromochloromethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Dichlorodifluoromethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Ethylbenzene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	1.28 J	2 U	2 UJ
Isopropylbenzene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	1.07 J	2 U	2 UJ
Methyl cyclohexane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	5.27	2 U	2 UJ

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-7A	BR-8	BR-9	E-3	MW-106
SAMPLE DATE:	5/8/2017	5/8/2017	5/5/2017	5/8/2017	5/12/2017	5/12/2017	5/9/2017	5/10/2017	5/5/2017	5/10/2017
QC TYPE:	Sample	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl Tertbutyl Ether	10 U	2 U	2 U	100 U	1.47 J	1.51 J	4 U	2 U	2 U	2 UJ
Methylene chloride	13.3 J	5 U	5 U	6150	5 U	5 U	10 U	5 U	5 U	5 UJ
Styrene	25 U	5 U	5 U	250 U	5 U	5 U	10 U	5 U	5 U	5 UJ
Tetrachloroethene	9.16 J	3.72	2 U	206	2 U	2 U	4 U	2 U	2 U	2 UJ
Toluene	10 U	3.08	2 U	145	2 U	2 U	4.48	2 U	2 U	2 UJ
trans-1,2-Dichloroethene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
trans-1,3-Dichloropropene	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Trichloroethene	10.8 J	2 U	2 U	100 U	2 U	2 U	4 U	1.7 J	2 U	1.11 J
Trichlorofluoromethane	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Vinyl chloride	10 U	2 U	2 U	83.4 J	4.48	4.64	4 U	119 J	2 U	2 UJ
Xylene, o	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ
Xylenes (m&p)	10 U	2 U	2 U	100 U	2 U	2 U	4 U	2 U	2 U	2 UJ

Notes:
U = Compound not detected; value
represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-114	MW-127	PW10	PW12	PW13	PW14	PW15	PW16	PW16	PW17
SAMPLE DATE:	5/10/2017	5/8/2017	5/5/2017	5/5/2017	5/12/2017	5/8/2017	5/5/2017	5/9/2017	5/9/2017	5/5/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample
VOCs By SW-846 Method 8260C (µg/L)										
1,1,1-Trichloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,1,2,2-Tetrachloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 UJ	2 U	2 U	20 U	9.2	2 U	400 U	10 U	10 U	200 U
1,1,2-Trichloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,1-Dichloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,1-Dichloroethene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,2,3-Trichlorobenzene	5 UJ	5 U	41.1	34.7 J	12.5 U	5 U	1000 U	25 U	25 U	500 U
1,2,4-Trichlorobenzene	5 UJ	5 U	12.2	369	12.5 U	5 U	1000 U	25 U	25 U	500 U
1,2-Dibromo-3-chloropropane	10 UJ	10 U	10 U	100 U	25 U	10 U	2000 U	50 U	50 U	1000 U
1,2-Dibromoethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,2-Dichlorobenzene	2 UJ	2 U	3.68	21	205	1.46 J	400 U	291	316	200 U
1,2-Dichloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,2-Dichloropropane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
1,3-Dichlorobenzene	2 UJ	2 U	1.32 J	64.9	46.2	2 U	400 U	61.8	66.4	200 U
1,4-Dichlorobenzene	2 UJ	2 U	2 U	46.8	67.7	1.32 J	400 U	95.4	102	200 U
1,4-Dioxane	20 UJ	20 U	20 U	200 U	50 U	20 U	4000 U	100 U	100 U	2000 U
2-Butanone	10 UJ	10 U	10 U	100 U	25 U	10 U	2000 U	50 U	50 U	1000 U
2-Hexanone	5 UJ	5 U	5 U	50 U	12.5 U	5 U	1000 U	25 U	25 U	500 U
4-Methyl-2-pentanone	5 UJ	5 U	5 U	50 U	12.5 U	5 U	1000 U	25 U	25 U	500 U
Acetic acid, methyl ester	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Acetone	10 UJ	10 U	31.2	100 U	25 U	17.5	2000 U	50 U	50 U	1000 U
Benzene	1 UJ	1 U	1 U	10 U	35.5	1.27	200 U	8.38	8.57	100 U
Bromochloromethane	5 UJ	5 U	5 U	50 U	12.5 U	5 U	1000 U	25 U	25 U	500 U
Bromodichloromethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Bromoform	5 UJ	5 U	5 U	50 U	12.5 U	5 U	1050	25 U	25 U	500 U
Bromomethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Carbon disulfide	2 UJ	2 U	13.2	20 U	5 U	9.4	6180	10 U	10 U	293
Carbon tetrachloride	2 UJ	2 U	16	20 U	5 U	3.82	28100	10 U	10 U	1450
Chlorobenzene	2 UJ	2 U	1.18 J	61.5	306	2.81	400 U	384	412	200 U
Chloroethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Chloroform	30.4 J	2 U	14.3	20 U	5 U	156	25600 J	10 U	10 U	16100
Chloromethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Cis-1,2-Dichloroethene	2 UJ	2 U	2 U	20 U	35.6	1.58 J	400 U	10 U	10 U	789
Cis-1,3-Dichloropropene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Cyclohexane	10 UJ	10 U	10 U	100 U	25 U	10 U	2000 U	50 U	50 U	1000 U
Dibromochloromethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Dichlorodifluoromethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Ethylbenzene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Isopropylbenzene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Methyl cyclohexane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-114	MW-127	PW10	PW12	PW13	PW14	PW15	PW16	PW16	PW17
SAMPLE DATE:	5/10/2017	5/8/2017	5/5/2017	5/5/2017	5/12/2017	5/8/2017	5/5/2017	5/9/2017	5/9/2017	5/5/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl Tertbutyl Ether	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Methylene chloride	5 UJ	5 U	5 U	50 U	12.5 U	13.2	2410 J	25 U	25 U	3240
Styrene	5 UJ	5 U	5 U	50 U	12.5 U	5 U	1000 U	25 U	25 U	500 U
Tetrachloroethene	2.36 J	2 U	24	20.8	5 U	8.52	1150	10 U	10 U	587
Toluene	2 UJ	2 U	1.53 J	24.1	14.1	3.56	400 U	15.2	15.9	181 J
trans-1,2-Dichloroethene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
trans-1,3-Dichloropropene	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Trichloroethene	6.28 J	2 U	14.3	20 U	5 U	7.92	400 UJ	10 U	10 U	188 J
Trichlorofluoromethane	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Vinyl chloride	2 UJ	2 U	2 U	20 U	34.6	3.45	400 U	10 U	10 U	406
Xylene, o	2 UJ	2 U	2 U	20 U	5 U	2 U	400 U	10 U	10 U	200 U
Xylenes (m&p)	2 UJ	2 U	1.2 J	15.9 J	5 U	2 U	400 U	10 U	10 U	200 U

Notes:
U = Compound not detected; value
represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/9/2017	5/9/2017	5/10/2017	5/10/2017	5/8/2017	5/5/2017	5/8/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)							
1,1,1-Trichloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,1,2,2-Tetrachloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,1,2-Trichloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,1-Dichloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,1-Dichloroethene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,2,3-Trichlorobenzene	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
1,2,4-Trichlorobenzene	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
1,2-Dibromo-3-chloropropane	10 U	20 UJ	50 UJ	10 U	10 UJ	50 U	500 U
1,2-Dibromoethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,2-Dichlorobenzene	2 U	107 J	120 J	2 U	2.14 J	10 U	100 U
1,2-Dichloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,2-Dichloropropane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
1,3-Dichlorobenzene	2 U	16.9 J	16.2 J	2 U	2 UJ	10 U	100 U
1,4-Dichlorobenzene	2 U	15.9 J	21 J	2 U	1.02 J	10 U	100 U
1,4-Dioxane	20 U	40 UJ	100 UJ	20 U	20 UJ	100 U	1000 U
2-Butanone	10 U	20 UJ	50 UJ	10 U	10 UJ	50 U	500 U
2-Hexanone	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
4-Methyl-2-pentanone	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
Acetic acid, methyl ester	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Acetone	10 U	20 UJ	50 UJ	10 U	6.49 J	50 U	500 U
Benzene	1 U	17.1 J	7.35 J	1 U	3.96 J	5 U	50 U
Bromochloromethane	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
Bromodichloromethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Bromoform	5 U	10 UJ	25 UJ	5 U	5 UJ	40.3	250 U
Bromomethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Carbon disulfide	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Carbon tetrachloride	2 U	4 UJ	10 UJ	2 U	2 UJ	108	503
Chlorobenzene	2 U	294 J	271 J	2.4	19.2 J	10 U	100 U
Chloroethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Chloroform	2 U	4 UJ	10 UJ	2 U	2 UJ	761	3300
Chloromethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Cis-1,2-Dichloroethene	2 U	4 UJ	10 UJ	2 U	2 UJ	22.1	100 U
Cis-1,3-Dichloropropene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Cyclohexane	10 U	20 UJ	50 UJ	10 U	10 UJ	50 U	500 U
Dibromochloromethane	2 U	4 UJ	10 UJ	2 U	2 UJ	5.16 J	100 U
Dichlorodifluoromethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Ethylbenzene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Isopropylbenzene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Methyl cyclohexane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U

TABLE 3
SPRING 2017 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/9/2017	5/9/2017	5/10/2017	5/10/2017	5/8/2017	5/5/2017	5/8/2017
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)							
Methyl Tertbutyl Ether	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Methylene chloride	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	1200
Styrene	5 U	10 UJ	25 UJ	5 U	5 UJ	25 U	250 U
Tetrachloroethene	2 U	4 UJ	10 UJ	2 U	2 UJ	29.4	66.2 J
Toluene	2 U	4 UJ	10 UJ	2 U	2 UJ	6.3 J	100 U
trans-1,2-Dichloroethene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
trans-1,3-Dichloropropene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Trichloroethene	2 U	4 UJ	10 UJ	2 U	2 UJ	10 UJ	100 U
Trichlorofluoromethane	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Vinyl chloride	2 U	4 UJ	10 UJ	2 U	2 UJ	14.3	100 U
Xylene, o	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U
Xylenes (m&p)	2 U	4 UJ	10 UJ	2 U	2 UJ	10 U	100 U

Notes:
U = Compound not detected; value
represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter

TABLE 4
COMPARISON OF SPRING 2017
CHLOROPYRIDINES AND VOLATILE ORGANICS CONCENTRATIONS
IN GROUNDWATER TO PREVIOUS RESULTS (ug/L)

ARCH ROCHESTER
SEMI-ANNUAL GROUNDWATER MONITORING REPORT

WELL	SELECTED CHLOROPYRIDINES				SELECTED VOCs			
	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2017 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2017 RESULT
ON-SITE WELLS/LOCATIONS								
B-11	7	4,800	1,600	**2,500**	7	570	12	**63**
B-15	8	13,000	110	5.0	8	1,600	0.11	ND
B-16	10	33,000	760	460	10	4,500	3.6	**21**
B-17	8	28,000,000	300,000	**780,000**	8	350,000	4,100	**4,700**
B-4	3	740	21		3	42	7	
B-5	6	360,000	140,000		8	670	210	
B-7	5	9,100	240	8.1	5	270	22	ND
BR-126	9	12,000	1,400	340	9	240	1.2	ND
BR-127	11	44,000	11,000	**19,000**	11	1,300	150	**250**
BR-3	5	6,500,000	21,000	32	5	930,000	27,000	31
BR-5A	10	1,700	83	24	10	9,400	7.9	ND
BR-6A	11	140,000	19,000	14,000	11	69,000	3,900	**6,600**
BR-7A	10	510,000	8,700	2,400	10	5,600	270	29
BR-8	9	550,000	250,000	240,000	9	7,800	880	130
BR-9	10	1,300	220	71	10	210	12	9
E-3	5	600	19	5.4	5	15,000	0.16	ND
MW-127	11	15,000	1,300	**2,100**	11	7,500	56	ND
PW10	11	500,000	190,000	120,000	11	120,000	1,300	70
PW12	10	15,000	260	22	10	120,000	3,000	82
PW13	10	94,000	14,000	**59,000**	10	1,800	370	310
PW14	11	44,000	4,900	**37,000**	11	160,000	7,600	190
PW15	10	730,000	140,000	**300,000**	10	32,000	9,300	**57,000**
PW16	10	97,000	48,000	**110,000**	10	1,200	630	380
PW17	9	63,000	21,000	**75,000**	9	66,000	34,000	22,000
PZ-104	10	9,100	670	320	10	52	3.6	2.4
PZ-105	10	190,000	4,800	3,500	10	9,900	32	19
PZ-106	11	290,000	12,000	2,400	11	1,400,000	130,000	900
PZ-107	11	31,000	3,800	1,800	11	130,000	12,000	5,100
W-5	2	450,000	ND		2	2,500	9	
OFF-SITE WELLS/LOCATIONS								
BR-103	4	400	2.6		4	46	ND	
BR-104	3	3,100	1.9			11.6		
BR-105	10	24,000	940	160	10	350	9.2	3.6
BR-105D	10	17,000	340	71	10	230	2.4	ND
BR-106	11	34,000	14,000	**46,000**	11	12,000	170	**540**
BR-108	4	1,700	12			2		
BR-112D	5	310	23	7		4.3		
BR-113D	5	490	11	ND		2.8		
BR-114	5	520	8.0	ND	5	12	0.2	ND
BR-116	3	12	ND			86		
BR-116D	3	710	13			130		
BR-117D	5	80	2.8	ND		1.9		
BR-118D	5	330	21	18		6.6		
BR-122D	5	650	28	ND		ND		

TABLE 4
COMPARISON OF SPRING 2017
CHLOROPYRIDINES AND VOLATILE ORGANICS CONCENTRATIONS
IN GROUNDWATER TO PREVIOUS RESULTS (ug/L)

ARCH ROCHESTER
SEMI-ANNUAL GROUNDWATER MONITORING REPORT

WELL	SELECTED CHLOROPYRIDINES				SELECTED VOCs			
	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2017 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2017 RESULT
BR-123D	5	860	40	**45**		7		
MW-103	4	97	ND		4	750	ND	
MW-104	3	180	2.0			5.8		
MW-106	11	130,000	33,000	6,800	11	4,000	400	11
MW-114	5	18	1.4	ND	5	27	16	**39**
MW-16	3	360	12			10		
NESS-E	3	5,000	78			710		
NESS-W	3	6,300	ND			94		
PZ-101	10	27,000	140	6.3	10	620	2.4	ND
PZ-102	11	210,000	57,000	22,000	11	11,000	550	290
PZ-103	10	230,000	70,000	9,900	10	46,000	950	270
QD-1	10	11	2.4	ND		ND		
QO-2	9	380	3.8	ND		ND		
QO-2S1	10	27	ND	ND		ND		
QS-4	10	13,000	99	39		ND		

Note:
1) Number of samples and mean reflect 5-year sampling period from May 2012 through December 2016. Historic maximum based on all available results from March 1990 through December 2016.
2) Chloropyridines represented by: 2-Chloropyridine, 2,6-Dichloropyridine, 3-Chloropyridine, 4-Chloropyridine, p-Fluoroaniline, and Pyridine.
3) Selected VOCs represented by Carbon Tetrachloride, Chlorobenzene, Chloroform, Methylene Chloride, Tetrachloroethene, and Trichloroethene.
4) **Bold and shade** - May 2017 exceeds 5-year mean.
5) ND = Not detected
BLANK = Not sampled

TABLE 5
SPRING 2017 QUARRY SEEP AND OUTFALL WATER SAMPLE RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	QS-4	QO-2	QO-2S1	QD-1
SAMPLE DATE:	5/12/2017	5/12/2017	5/12/2017	5/12/2017
QC TYPE:	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)				
2,6-Dichloropyridine	9.59 J	10 UJ	10 UJ	10 UJ
2-Chloropyridine	29.4 J	10 UJ	10 UJ	10 UJ
3-Chloropyridine	10 UJ	10 UJ	10 UJ	10 UJ
4-Chloropyridine	10 UJ	10 UJ	10 UJ	10 UJ
p-Fluoroaniline	10 UJ	10 UJ	10 UJ	10 UJ
Pyridine	10 UJ	10 UJ	10 UJ	10 UJ

Notes:
U = Compound not detected; value
represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter

TABLE 6
EXTRACTION WELL WEEKLY FLOW MEASUREMENTS - DECEMBER 2016 THROUGH MAY 2017

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

Week Ending	BR-7A [Gal./Wk.]	BR-9 [Gal./Wk.]	PW-13 [Gal./Wk.]	PW-15 [Gal./Wk.]	PW-16 [Gal./Wk.]	PW-17 [Gal./Wk.]	BR-127 [Gal./Wk.]	Total [Gal.]
Dec '16								
12/04/16	24,143	50,285	58,442	3,079	63,993	707	43,885	244,534
12/11/16	68,588	65,844	24,390	119	56,694	652	55,058	271,345
12/18/16	66,334	40,640	14,241	16	39,658	264	50,989	212,142
12/25/16	91,445	32,669	12,274	389	42,208	125	55,110	234,220
								962,241
Jan '17								
01/01/17	114,205	26,035	1	0	51,013	507	53,206	244,967
01/08/17	118,109	27,173	1	7,396	70,774	515	51,654	275,622
01/15/17	101,744	30,920	1,914	12,621	71,422	494	47,871	266,986
01/22/17	86,566	32,537	2,425	11,094	78,604	361	42,873	254,460
01/29/17	82,840	36,028	5,573	11,116	85,053	372	43,521	264,503
							Total [Gal.]	1,306,538
Feb '17								
02/05/17	109,049	27,893	731	6,176	98,947	357	41,283	284,436
02/12/17	113,487	21,364	1	6,011	95,169	324	40,547	276,903
02/19/17	126,356	24,718	2	5,395	108,368	425	13,670	278,934
02/26/17	111,926	22,131	9	710	96,961	378	801	232,916
							Total [Gal.]	1,073,189
Mar '17								
03/05/17	102,806	25,490	1,576	3,713	104,041	403	6,050	244,079
03/12/17	100,082	26,370	3	3,870	108,797	666	0	239,788
03/19/17	71,274	25,493	0	2,382	79,184	384	0	178,717
03/26/17	111,886	28,043	46	0	110,816	634	6,053	257,478
							Total [Gal.]	920,062
Apr '17								
04/02/17	94,934	33,207	12	0	123,282	658	41,020	293,113
04/09/17	96,027	48,241	18,320	1,289	131,899	633	44,812	341,221
04/16/17	89,640	61,037	36,883	1,265	113,053	724	50,266	352,868
04/23/17	98,539	55,137	17,942	7,923	126,479	1,268	45,055	352,343
04/30/17	117,896	65,988	38,268	12,720	123,405	586	45,157	404,020
							Total [Gal.]	1,743,565
May '17								
05/07/17	189,497	72,439	8,928	14,556	116,808	57	44,119	446,404
05/14/17	191,636	76,216	17	14,478	116,888	0	50,718	449,953
05/21/17	197,424	74,375	47	13,168	115,989	0	52,183	453,186
05/28/17	192,811	62,221	28,308	10,339	111,799	0	54,871	460,349
							Total [Gal.]	1,809,892
Total 6 Mo. Removal (Gal.)	2,869,244	1,092,494	270,354	149,825	2,441,304	11,494	980,772	7,815,487

TABLE 7

MASS REMOVAL SUMMARY
PERIOD: DECEMBER 2016 THROUGH MAY 2017

ARCH ROCHESTER
SPRING 2017 GROUNDWATER MONITORING REPORT

Well	Total Vol. Pumped (gallons)	Avg. VOC Conc. (ppm)	Avg. PYR. Conc. (ppm)	VOCs Removed (pounds)	PYR. Removed (pounds)
BR-7A	2,869,000	0.02	2	0.6	42
BR-9	1,092,000	0.009	0.14	0.08	1.3
PW-13	270,000	0.19	31	0.42	69
PW-15	150,000	44.6	347	56	434
PW-16	2,441,000	0.45	107	9.1	2176
PW-17	12,000	21	55.3	2	6
BR-127	981,000	0.54	23.3	4.4	190
Totals:	7,815,000			72	2,918

Notes: VOC and pyridine concentrations used in this table are an average of the analytical results from the Fall 2016 and Spring 2017 sampling events for each well;
Total select VOCs include chlorobenzene, PCE, TCE, methylene chloride, carbon tetrachloride, and chloroform

TABLE 8
2017 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

ARCH ROCHESTER						**2017**					
MONITORING PROGRAM						**SPRING**		**FALL**		**TOTAL**	
	Well	***zone***	***area***	***Frequency/Parameters***	***Purpose***	***Pyridines***	***VOCs***	***Pyridines***	***VOCs***	***Pyridines***	***VOCs***
OFF-SITE	BR-105	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
MONITORING	BR-105D	BR deep	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	MW-106	OB	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-106	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-112D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	BR-113D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	MW-114	OB	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-114	BR	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-117D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-118D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-122D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-123D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	PZ-101	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-102	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-103	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
ON-SITE	PZ-104	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
MONITORING	PZ-105	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-106	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-107	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-126	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-127	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-3	BR	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-8	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-9	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-5A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-6A	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-7A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	B-16	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-17	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	B-7	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	B-11	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-15	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	E-3	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	MW-127	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PW10	OB/BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW12	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW13	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW14	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW15	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW16	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW17	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
QUARRY/CANAL	QS-4	quarry seep	QUARRY	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
MONITORING	QD-1	quarry ditch	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2	quarry outfall	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2S1	canal at outfall	CANAL	semi-annual monitoring, PYR	surface water monitoring	1		1		2	0
TOTAL SAMPLES						45	35	33	29	78	64

Appendix A

Groundwater Field Sampling Data Sheets

FIELD REPORT

REMEDIAL INVESTIGATION SAMPLING
LONZA CHEMICAL
ROCHESTER, NEW YORK

Spring 2017 Event

Matrix Environmental Project #04-029

PREPARED FOR:

Lonza
100 McKee Road
Rochester, NY 14611

PREPARED BY:

MATRIX
ENVIRONMENTAL TECHNOLOGIES INC.
3730 California Road
Orchard Park, New York 14127

Written by: Steven L. Marchetti

Reviewed by: Nicholas Minute

Date: June 27, 2017

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the sampling of the following points:

- 41 groundwater samples
- Two quarry outfall samples
- One quarry seep sample
- One canal at outfall sample

These activities were in support of the Phase II Remediation Investigation being conducted at the Lonza Chemical facility in Rochester, New York. Static water levels in the groundwater wells were recorded on May 4, 2017 by Matrix Environmental Technologies Inc. (METI) field personnel. The samples were collected from May 5 through May 26, 2017. Six wells (MW106, BR106, BR114, BR122D, BR123D, and PZ103) were re-sampled on May 26, 2017, because the original sample containers for semi-volatile organics analysis broke at the laboratory.

2.0 METHODOLOGIES

2.1 Water Level Measurements

Static water levels in all groundwater wells were measured from the top of the well casing/riser with an electronic water level indicator. Well bottoms were sounded with the weighted steel measuring tape. Measurements were recorded to the nearest hundredth of a foot (0.01 feet). The length of the measuring device which contacted the water was cleaned between the wells with a deionized water rinse and paper towel wipe. These data are presented on Sampling Summary Table and Field Observation forms attached.

2.2 Well Purging

Monitoring wells were evacuated prior to sampling employing one of the following methods:

1. Purging three times the standing water volume using precleaned or dedicated 1.25" x 5' stainless steel bailers, 2" x 5' polyvinyl chloride bailers, peristaltic pump or QED low-flow bladder pumps.

2. Evacuated with the low flow/low stress purging technique using either QED low-flow bladder pumps or a variable rate peristaltic pump.

Wells that were purged of three standing volumes were mainly wells located on or very near the Erie Canal and historically purged with this method prior to sampling. The remaining wells were evacuated with a low flow/low stress purging technique. This technique involves the use of a variable flow rate bladder or peristaltic pump. The pumps were employed to purge the monitoring wells at a flow rate such that drawdown

of the water column from static conditions is minimal. Field measurements of pH, specific conductance, temperature, ORP, dissolved oxygen and turbidity are monitored every 3-5 minutes until stabilization of parameters is realized. Once stabilized has occurred, sampling can be conducted. All purges water was collected into 55-gallon drums for disposal at the on-site wastewater treatment facility. Data pertaining to each evacuation are presented on the Sampling Summary Table and Field Observations forms attached.

2.3 Property Utilities

Surface water samples were collected from one location on the Erie Barge Canal, two outfall samples and one seep location. Sample locations were noted on the Field Forms.

3.0 SAMPLING

3.1 Monitoring Wells

All groundwater wells were sampled using precleaned or dedicated 1.25" x 1.25" x 5' stainless steel bailers, peristaltic pumps or bladder (SamplePro) pumps when low flow purging techniques were used. Each bailer was constructed with Teflon, bottom-filling check valve and was assembled without glues or welds. New ¼" poly rope was attached to each bailer. The bailer was slowly lowered into the water column, minimizing agitation and devolatilization. Low density polyethylene (LDPE) tubing was used with both the bladder (QED) and the peristaltic pumps. The bladder pumps were decontaminated between sample locations in accordance with the work plan. Personnel exercised care in all aspects of the sampling to ensure the collection of a representative sample. An additional sample container was collected from each well in order to facilitate the measurement of field analytical parameters. Data pertaining to sampling are presented on the Sampling Summary Table and the Field Observations Forms.

3.2 Canal Sampling

When possible, samples were collected directly from the canal into appropriate sample containers. Otherwise, samples were collected with the use of a unique, laboratory cleaned stainless steel bailer. The bailers were immersed just below the surface and removed. Sample was poured directly into the appropriate container. An additional container was collected to facilitate the measurement of field parameters. Additional data pertaining to these samples is presented in the Sampling Summary Table and Field Observation Forms.

3.3 Seep Sampling

Groundwater samples were collected from seeps at the quarry (QS4) located on Buffalo Road. The samples were collected with the use of a laboratory cleaned stainless steel bucket and was then poured directly into the appropriate containers. An additional container was collected to facilitate the measurement of field parameters. Data pertaining to this sampling is present in the Sampling Summary Table and Field Observation Forms.

4.0 SAMPLE CONTAINERS

Monitoring wells and surface water samples requiring analysis for volatile organic compounds were collected into 40 ml glass vials with Teflon septa. Samples for semi-volatile and pyridine analysis were collected into one liter amber glass bottles with teflo-lined caps. All bottles were purchased new and cleaned (Protocol A, 300 series) from Paradigm Environmental Services. Each container was labeled with the following information:

- Sample Identification (Well/Point I.D.)
- Date
- Project Number
- Sampler's Initials

5.0 FIELD MEASUREMENTS

On-site field measurements were made of each sample's pH, specific conductance and temperature. Measurements were made in accordance with protocols outlined in Methods for Chemical Analysis of Water and Wastes (EPA – 600/4-79-9020). These data were presented on the Sampling Summary Table and Field Observation Forms.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC

6.1 Trip Blanks

Trip blanks were collected with each sample shipment requiring volatile organic compound analysis. Each trip blank consisted of two40 ml glass vials with Teflon septa which were filled with deionized water provided by Paradigm Environmental Services. These blanks were transported to the site, stored with field collected samples and submitted to the Paradigm Environmental Services for analysis.

6.2 Equipment Rinse Blank

Equipment rinse blanks were collected.

7.0 CHAIN OF CUSTODY

Chain of custody was initiated at the time of sample collection and maintained through delivery to Paradigm Environmental Services in Rochester, New York. Copies of these documents are included in the analytical report package.

TABLES

Table 1
Sampling Summary Table
Lonza, Rochester, NY

Sample Location		Zone	Sample Date	Sample Time	Water Level (ft)	Bottom of Well (ft)	pH (STD Units)	Spec. Cond. (mS/cm)	Temp ©	Turb (NTU)	ORP (mv)	DO (ppm)
B-11	On-Site	OB	5/8/2017	11:08	4.17	NM	7.47	1.92	11.80	32.5	40	6.99
B-15	On-Site	OB	5/9/2017	2:48	4.43	NM	7.46	0.45	10.66	3.5	92	6.92
B-16	Off-Site	OB	5/9/2017	2:03	4.68	NM	7.53	0.90	11.11	1.8	83	7.54
B-17	On-Site	OB	5/5/2017	9:30	7.15	NM	9.70	14.40	11.40	5.0	-212	0.00
B-7	On-Site	OB	5/9/2017	11:44	14.32	NM	7.32	0.67	12.76	11.9	14	2.83
BR-105	Off-Site	BR	5/10/2017	11:50	20.22	NM	7.03	2.55	14.17	2.7	-7	0.00
BR-105D	Off-Site	BR deep	5/11/2017	3:23	26.62	NM	6.93	57.20	15.80	4.6	-362	0.00
BR-106	Off-Site	BR	5/10/2017	9:32	21.64	NM	7.17	4.65	13.70	8.1	-138	0.00
BR-112D	Off-Site	BR deep	5/11/2017	2:40	36.04	NM	7.30	2.48	12.15	2.0	-332	0.00
BR-113D	Off-Site	BR deep	5/11/2017	1:05	31.01	NM	7.61	2.88	14.08	2.6	-323	0.00
BR-114	Off-Site	BR	5/10/2017	1:57	10.33	NM	7.28	1.78	14.69	2.8	-78	0.00
BR-117D	Off-Site	BR deep	5/11/2017	10:30	46.44	NM	8.33	0.64	10.43	11.8	-209	0.00
BR-118D	Off-Site	BR deep	5/11/2017	9:25	45.72	NM	7.98	1.13	10.56	8.2	-270	0.00
BR-122D	Off-Site	BR deep	5/11/2017	12:21	44.20	NM	7.27	1.49	13.03	6.4	-137	0.00
BR-123D	Off-Site	BR deep	5/11/2017	11:35	44.44	NM	7.60	2.07	13.12	6.7	-154	0.00
BR-126	Off-Site	BR	5/9/2017	1:11	6.09	NM	7.98	0.69	13.00	3.80	-202	0.00
BR-127	On-Site	BR	5/8/2017	11:45	7.10	NM	7.39	4.95	13.34	0.8	-108	2.66
BR-3	On-Site	BR	5/8/2017	9:34	7.05	NM	10.45	0.40	10.42	21.3	-61	5.55
BR-5A	On-Site	pumping well	5/5/2017	11:28	2.90	NM	8.32	2.26	11.08	2.6	93	11.34
BR-6A	On-Site	BR	5/8/2017	1:45	12.69	NM	8.11	6.48	12.60	37.4	-279	0.00
BR-7A	On-Site	pumping well	5/12/2017	10:15	31.59	NM	7.47	3.07	15.09	4.9	-135	4.27
BR-8	On-Site	BR	5/9/2017	9:05	13.42	NM	8.96	6.57	9.55	24.4	-82	0.00
BR-9	On-Site	pumping well	5/10/2017	3:00	31.60	NM	7.22	2.95	16.29	59.8	-52	0.08
E-3	On-Site	OB	5/5/2017	12:13	3.63	NM	7.78	1.07	11.16	10.7	-159	0.30
MW-106	Off-Site	OB	5/10/2017	10:14	8.84	NM	7.12	1.47	12.59	2.6	-116	0.00
MW-114	Off-Site	OB	5/10/2017	1:17	8.35	NM	7.84	0.72	14.42	3.5	32	7.29
MW-127	On-Site	OB	5/8/2017	10:28	6.00	NM	7.57	6.99	11.41	7.4	-87	0.00
PW-10	On-Site	pumping well	5/5/2017	8:45	8.01	NM	7.28	19.80	12.14	7.1	-56	0.00
PW-12	On-Site	BR	5/5/2017	10:26	4.66	NM	8.93	0.22	11.60	5.2	-86	0.00
PW-13	On-Site	pumping well	5/12/2017	10:00	25.39	NM	7.56	5.36	14.03	19.8	-152	3.89
PW-14	On-Site	pumping well	5/8/2017	8:40	9.13	NM	8.81	7.06	10.40	1.6	-233	0.14
PW-15	On-Site	pumping well	5/5/2017	1:35	26.04	NM	9.15	11.80	11.91	5.5	-151	2.70
PW-16	On-Site	pumping well	5/9/2017	8:20	22.89	NM	7.79	7.00	12.59	44.2	-106	6.41
PW-17	On-Site	pumping well	5/5/2017	1:53	24.07	NM	8.52	7.99	12.91	33.7	-90	1.43
PZ-101	Off-Site	BR	5/9/2017	9:55	16.40	NM	7.12	2.31	10.37	1.1	67	2.43
PZ-102	Off-Site	BR	5/9/2017	10:48	15.53	NM	7.25	4.66	11.15	1.8	-147	0.00
PZ-103	Off-Site	BR	5/10/2017	8:36	11.80	NM	6.89	3.48	11.24	1.4	-62	0.00

Table 1
Sampling Summary Table
Lonza, Rochester, NY

Sample Location		Zone	Sample Date	Sample Time	Water Level (ft)	Bottom of Well (ft)	pH (STD Units)	Spec. Cond. (mS/cm)	Temp ©	Turb (NTU)	ORP (mv)	DO (ppm)
PZ-104	Off-Site	BR	5/10/2017	11:00	11.84	NM	7.17	4.62	16.60	6.4	24	0.00
PZ-105	On-Site	BR	5/8/2017	2:30	11.41	NM	7.54	1.11	12.:12	100+	-40	10.36
PZ-106	On-Site	BR	5/5/2017	2:37	10.92	NM	8.00	2.19	11.11	2.9	-66	0.00
PZ-107	On-Site	BR	5/8/2017	1:54	7.90	NM	7.22	1.54	12.17	0.8	-88	0.00
QD-1	Quarry/Canal	quarry ditch	5/12/2017	8:40	NM	NA	8.82	1.18	12.31	4.0	39	2.06
QO-2	Quarry/Canal	quarry outfall	5/12/2017	10:30	NM	NA	8.43	1.17	13.31	4.1	-82	3.50
QO-2S1	Quarry/Canal	canal at outfall	5/12/2017	10:45	NM	NA	8.64	0.41	13.23	35.5	-20	4.04
QS-4	Quarry/Canal	quarry seep	5/12/2017	9:00	NM	NA	8.55	1.87	11.28	2.8	31	2.97

** Water level at time of sampling

Table 1 a
Sampling Summary Table (Re-sampling event)
Lonza, Rochester, NY

Sample Location		Zone	Sample Date	Sample Time	Water Level (ft)	Bottom of Well (ft)	pH (STD Units)	Spec. Cond. (mS/cm)	Temp ©	Turb (NTU)	ORP (mv)	DO (ppm)
BR-106	Off-Site	BR	5/26/2017	10:15	23.04	NM	7.30	4.57	12.42	136.0	-69	0.00
BR-114	Off-Site	BR	5/26/2017	11:01	11.56	NM	7.56	1.68	14.01	3.7	-64	0.00
BR-122D	Off-Site	BR deep	5/26/2017	12:53	44.39	NM	7.96	1.49	12.53	5.7	-165	5.33
BR-123D	Off-Site	BR deep	5/26/2017	1:45	44.72	NM	8.24	2.00	12.80	5.5	-213	0.00
PZ-103	Off-Site	BR	5/26/2017	8:32	13.55	NM	6.86	3.76	12.89	0.2	-38	0.00
PZ-106	On-Site	BR	5/26/2017	9:18	10.82	NM	7.00	1.70	11.61	78.0	-29	0.00

** Water level at time of sampling

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
B-1	On-Site	OB	5/4/2017	7.62	537.75	530.13	10:57 AM	
B-10	On-Site	OB	5/4/2017	7.17	538.80	531.63	10:34 AM	
B-11	On-Site	OB	5/4/2017	3.97	536.00	532.03	10:31 AM	
B-15	On-Site	OB	5/4/2017	3.87	535.29	531.42	11:23 AM	
B-16	Off-Site	OB	5/4/2017	4.22	536.21	531.99	11:25 AM	
B-17	On-Site	OB	5/4/2017	7.39	538.74	531.35	9:38 AM	
B-2	On-Site	OB	5/4/2017	8.44	539.02	530.58	10:55 AM	
B-4	On-Site	OB	5/4/2017	20.33	542.87	522.54	2:10 AM	
B-5	On-Site	OB	5/4/2017	14.63	540.21	525.58	2:18 AM	
B-7	On-Site	OB	5/4/2017	12.72	541.11	528.39	11:21 AM	
B-8	On-Site	OB	5/4/2017	Dry	538.88	Dry	10:00 AM	
BR-1	On-Site	BR	5/4/2017	8.81	537.28	528.47	9:25 AM	
BR-102	On-Site	BR	5/4/2017	23.44	539.43	515.99	10:51 AM	
BR-103	Off-Site	BR	5/4/2017	2.20	533.19	530.99	1:31 AM	
BR-104	Off-Site	BR	5/4/2017	9.30	537.56	528.26	1:15 AM	
BR-105	Off-Site	BR	5/4/2017	20.83	536.90	516.07	8:24 AM	
BR-105D	Off-Site	BR deep	5/4/2017	25.97	536.49	510.52	8:23 AM	
BR-106	Off-Site	BR	5/4/2017	22.42	535.74	513.32	8:17 AM	
BR-108	Off-Site	BR	5/4/2017	26.63	540.58	513.95	8:10 AM	
BR-111	Off-Site	BR	5/4/2017	28.16	540.42	512.26	8:35 AM	
BR-111D	Off-Site	BR	5/4/2017	28.47	540.34	511.87	8:33 AM	
BR-112D	Off-Site	BR deep	5/4/2017	35.74	547.91	512.17	8:28 AM	
BR-113	Off-Site	BR	5/4/2017	30.15	543.02	512.87	12:05 PM	
BR-113D	Off-Site	BR deep	5/4/2017	30.79	542.93	512.14	12:03 PM	
BR-114	Off-Site	BR	5/4/2017	11.00	539.77	528.77	1:14 AM	
BR-116	Off-Site	BR	5/4/2017	27.18	545.38	518.20	1:38 AM	
BR-116D	Off-Site	BR deep	5/4/2017	34.35	545.22	510.87	1:39 AM	
BR-117	Off-Site	BR	5/4/2017	24.44	547.61	523.17	12:18 PM	
BR-117D	Off-Site	BR deep	5/4/2017	45.95	547.16	501.21	12:20 PM	
BR-118	Off-Site	BR	5/4/2017	22.94	547.79	524.85	12:21 PM	
BR-118D	Off-Site	BR deep	5/4/2017	45.21	547.93	502.72	12:23 PM	
BR-122D	Off-Site	BR deep	5/4/2017	43.82	552.34	508.52	11:50 AM	
BR-123D	Off-Site	BR deep	5/4/2017	44.15	553.62	509.47	11:55 AM	
BR-124D	Off-Site	BR deep	5/4/2017	31.23	537.45	506.22	11:47 AM	
BR-126	Off-Site	BR	5/4/2017	6.81	537.90	531.09	11:28 AM	
BR-127	On-Site	BR	5/4/2017	7.38	536.05	528.67	10:29 AM	
BR-2	On-Site	BR	5/4/2017	8.49	538.97	530.48	9:33 AM	
BR-2A	On-Site	BR	5/4/2017	8.66	540.36	531.70	9:34 AM	
BR-2D	On-Site	BR deep	5/4/2017	10.05	537.26	527.21	9:35 AM	
BR-3	On-Site	BR	5/4/2017	6.64	538.20	531.56	10:00 AM	
BR-3D	On-Site	BR deep	5/4/2017	51.79	537.67	485.88	9:55 AM	
BR-4	On-Site	BR	5/4/2017	NM	539.03	NM		Obstruction at 3.34'
BR-5	On-Site	BR	5/4/2017	3.58	536.30	532.72	9:17 AM	
BR-5A	On-Site	pumping well	5/4/2017	3.14	536.35	533.21	9:15 AM	
BR-6A	On-Site	BR	5/4/2017	11.52	540.90	529.38	10:36 AM	
BR-7	On-Site	BR	5/4/2017	15.00	539.10	524.10	11:17 AM	
BR-7A	On-Site	pumping well	5/4/2017	22.43	539.12	516.69	11:16 AM	
BR-8	On-Site	BR	5/4/2017	13.71	539.72	526.01	2:16 AM	
BR-9	On-Site	pumping well	5/4/2017	31.97	542.17	510.20	10:49 AM	
C-2A	On-Site	OB	5/4/2017	Dry	539.66	Dry		
C-5	On-Site	OB	5/4/2017	9.18	539.63	530.45	9:57 AM	
CANAL	Off-Site	SW	5/4/2017	36.82	544.79	507.97	1:02 AM	
E-2	On-Site	OB	5/4/2017	4.29	538.32	534.03	9:45 AM	
E-3	On-Site	OB	5/4/2017	3.47	536.59	533.12	9:18 AM	
E-5	On-Site	OB	5/4/2017	Dry	539.31	Dry	9:23 AM	
EC-2	Off-Site	BR	5/4/2017	Dry	542.00	Dry	12:08 PM	
MW-103	Off-Site	OB	5/4/2017	1.29	533.25	531.96	1:30 AM	
MW-104	Off-Site	OB	5/4/2017	4.92	537.54	532.62	1:17 AM	
MW-105	Off-Site	OB	5/4/2017	NM	536.91	NM		Could Not Locate Well
MW-106	Off-Site	OB	5/4/2017	8.83	535.44	526.61	8:19 AM	
MW-114	Off-Site	OB	5/4/2017	7.19	539.69	532.50	1:20 AM	
MW-127	On-Site	OB	5/4/2017	5.49	536.87	531.38	10:27 AM	
MW-16	Off-Site	BR	5/4/2017	9.69	536.79	527.10	1:24 AM	
MW-3	Off-Site	OB	5/4/2017	NM	535.89	NM		Inaccessible
MW-G6	Off-Site	OB	5/4/2017	3.42	534.65	531.23	11:05 AM	
MW-G8	Off-Site	OB	5/4/2017	NM	534.25	NM		Inaccessible

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G9	Off-Site	OB	5/4/2017	NM	536.60	NM		Inaccessible
N-2	On-Site	OB	5/4/2017	3.50	537.33	533.83	9:28 AM	
N-3	On-Site	OB	5/4/2017	4.21	537.38	533.17	10:59 AM	
NESS-E	Off-Site	BR deep	5/4/2017	23.91	540.31	516.40	1:11 AM	
NESS-W	Off-Site	BR deep	5/4/2017	29.94	543.04	513.10	1:08 AM	
PW-10	On-Site	pumping well	5/4/2017	7.79	538.76	530.97	9:40 AM	
PW-12	On-Site	BR	5/4/2017	4.82	537.49	532.67	9:10 AM	
PW-13	On-Site	pumping well	5/4/2017	25.81	536.13	510.32	11:15 AM	
PW-14	On-Site	pumping well	5/4/2017	9.69	537.03	527.34	9:52 AM	
PW-15	On-Site	pumping well	5/4/2017	25.84	538.32	512.48	9:57 AM	
PW-16	On-Site	pumping well	5/4/2017	21.94	539.32	517.38	2:13 AM	
PW-17	On-Site	pumping well	5/4/2017	24.74	NA	NA	10:02 AM	
PZ-101	Off-Site	BR	5/4/2017	16.56	542.95	526.39	11:09 AM	
PZ-102	Off-Site	BR	5/4/2017	16.03	540.89	524.86	11:11 AM	
PZ-103	Off-Site	BR	5/4/2017	12.19	540.20	528.01	11:12 AM	
PZ-104	Off-Site	BR	5/4/2017	12.46	536.85	524.39	11:22 AM	
PZ-105	On-Site	BR	5/4/2017	9.48	536.93	527.45	10:40 AM	
PZ-106	On-Site	BR	5/4/2017	9.34	537.24	527.90	9:50 AM	
PZ-107	On-Site	BR	5/4/2017	8.17	538.39	530.22	10:35 AM	
PZ-109	On-Site	BR	5/4/2017	7.42	538.59	531.17	9:59 AM	
PZ-110	On-Site	BR	5/4/2017	10.93	NA	NA	10:10 AM	
PZ-111	On-Site	BR	5/4/2017	NM	NA	NM		Could Not Locate Well
W-5	On-Site	OB	5/4/2017	NM	538.53	NM		Inaccessible

APPENDIX A
FIELD OBSERVATION FORMS

5-4-17

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
B-1	On-Site	OB		7.67			10:57	
B-10	On-Site	OB		7.17			10:34	
B-11	On-Site	OB		3.97			10:31	~~Dry on 4-11~~
B-15	On-Site	OB		3.87			11:23	
B-16	Off-Site	OB		4.23			11:25	
B-17	On-Site	OB		7.39			9:38	
B-2	On-Site	OB		8.44			10:55	
B-4	On-Site	OB		6.33			3:10	
B-5	On-Site	OB		14.63			11:51	2:18
B-7	On-Site	OB		12.72			11:21	
B-8	On-Site	OB		DRY			10:	
BR-1	On-Site	BR		8.81			9:25	
BR-102	On-Site	BR		23.48			10:54	
BR-103	Off-Site	BR		5.39			1:31	
BR-104	Off-Site	BR		9.38			1:15	
BR-105	Off-Site	BR		20.83			8:54	
BR-105D	Off-Site	BR deep		25.97			8:53	
BR-106	Off-Site	BR		22.43			8:17	
BR-108	Off-Site	BR		26.63			8:10	
BR-111	Off-Site	BR		28.16			8:35	
BR-111D	Off-Site	BR		28.47			8:33	
BR-112D	Off-Site	BR deep		35.74			8:28	
BR-113	Off-Site	BR		30.15			12:05	
BR-113D	Off-Site	BR deep		30.79			12:03	
BR-114	Off-Site	BR		11.50			1:14	
BR-116	Off-Site	BR		37.18			1:30	
BR-116D	Off-Site	BR deep		34.34			1:36	
BR-117	Off-Site	BR		34.40			12:18	
BR-117D	Off-Site	BR deep		45.95			12:20	
BR-118	Off-Site	BR		23.94			12:21	
BR-118D	Off-Site	BR deep		45.34			12:23	
BR-122D	Off-Site	BR deep		43.82			11:50	
BR-123D	Off-Site	BR deep		44.15			11:55	
BR-124D	Off-Site	BR deep		31.23			1147	
BR-126	Off-Site	BR		6.81			11:38	~~well under debris~~
BR-127	On-Site	BR		7.38			10:29	
BR-2	On-Site	BR		~~8.49~~	8.49		9:33	
BR-2A	On-Site	BR		8.66			9:39	
BR-2D	On-Site	BR deep		~~8.49~~	10.05		9:35	
BR-3	On-Site	BR		6.64			10:03	debris in well
BR-3D	On-Site	BR deep		5.79			9:55	
BR-4	On-Site	BR	~~NS-1~~	~~DRY~~				3.34 obstruction
BR-5	On-Site	BR	~~3.~~	3.58			9:17	
BR-5A	On-Site	pumping well	~~3.44~~	3.14			9:15	
BR-6A	On-Site	BR		11.52			10:36	
BR-7	On-Site	BR		15.00			11:17	
BR-7A	On-Site	pumping well		22.43			11:16	
BR-8	On-Site	BR		13.71			2:16	
BR-9	On-Site	pumping well		3.97			10:49	
C-2A	On-Site	OB		~~8.49~~	DRY			
C-5	On-Site	OB		9.18			9:57	
CANAL	Off-Site	SW		3.82			1:02	
I-2	On-Site	OB		4.59			9:45	
I-3	On-Site	OB		3.47			9:18	
I-5	On-Site	OB		DRY			4:23	
LC-2	Off-Site	BR		DRY			12:68	
MW-103	Off-Site	OB		1.29			1:30	
MW-104	Off-Site	OB		4.92			1:17	
MW-105	Off-Site	OB		NS-1				can't find
MW-106	Off-Site	OB		8.83		8:19		
MW-114	Off-Site	OB		7.19			1:20	
MW-127	On-Site	OB		5.49			10:37	
MW-16	Off-Site	BR		9.69			1:24	
MW-3	Off-Site	OB		NS-1				

21.94

~~BR-4 2.74~~ 45.95 ~~28.16~~ 27.18

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

5-4-17

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G6	Off-Site	OB		3.42		3.42	11:05	
MW-G8	Off-Site	OB		NS-i				
MW-G9	Off-Site	OB		NS-i				
N-2	On-Site	OB		3.50			9:26	
N-3	On-Site	OB		4.21			10:59	
NESS-E	Off-Site	BR deep		23.91				1:11
NESS-W	Off-Site	BR deep		24.44			9:55	1:08
PW-10	On-Site	pumping well		7.39			9:40	
PW-12	On-Site	BR		4.85			9:10	
PW-13	On-Site	pumping well		25.81			11:15	
PW-14	On-Site	pumping well		9.69			9:52	
PW-15	On-Site	pumping well		25.84			9:57	
PW-16	On-Site	pumping well		21.44			2:13	
PW-17	On-Site	pumping well		24.74			10:02	
PZ-101	Off-Site	BR		16.56			11:09	
PZ-102	Off-Site	BR		16.03			11:11	
PZ-103	Off-Site	BR		13.19			11:12	
PZ-104	Off-Site	BR		13.46			11:32	
PZ-105	On-Site	BR		9.48			10:40	
PZ-106	On-Site	BR		9.34			9:50	
PZ-107	On-Site	BR		8.17			10:35	
PZ-109	On-Site	BR		7.42			9:59	
PZ-110	On-Site	BR		10.93			10:10	
PZ-111	On-Site	BR		NS-i				could not find
W-5	On-Site	OB		NS-i				

FIELD OBSERVATIONS

Facility: Arch Sample Point ID: PW10

Field Personnel: DKT RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-5-17 8:15 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5 8:28 Date/Time Completed: 8:55

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 6"

Initial Water Level (ft): 7.27 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N

Total Volume Purged (gal): 2L Purged to Dryness: Y (N)

Purge Observations: Clear, dark tint, slight odor Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
8:30	7.49	125mL/min		13.39	7.20	21.2mS/cm	8.6	-67	0.49	
8:35	7.71			12.68	7.38	20	8.0	-58	0.00	
8:40	7.88	62.5		12.31	7.32	19.9	7.4	-51	0.00	
8:45	8.01			12.14	7.28	19.8	7.1	-56	0.00	
↓	SAMPLE									

50°F, light Rain

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B-7 B17

Field Personnel: DKTRG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-5-17 9:00

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) ~~Good~~ ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5 9:09

Date/Time Completed: 9:42

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 7.13

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 2L

Purged to Dryness: Y / (N)

Purge Observations: Brownish tint, Pyridine odor

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
9:15	7.16	67.5		11.68	9.09	19.2	4.7	+62	0.58	
9:20	7.15			11.34	9.54	14.3	6.1	+74	0.0	
9:25	7.15			11.36	9.63	14.3	5.3	+91	0.0	
9:30	7.15			11.40	9.70	14.4	5.0	+212	0.0	
→	SAMPLE									

48°F R 9:12

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW12

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-5-17 9:55

Condition of seal: ( ) Good (✓) Cracked ____ %

(✓) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5 10:02

Date/Time Completed: 10:30

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) ____

Initial Water Level (ft): 4.54

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 3L

Purged to Dryness: Y / (N)

Purge Observations: Clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm~~/mL)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
10:06	4.66	250mL/min		11.57	10.06	~~0.267~~ 0.264	7.1	-73	1.04	
10:11	4.66	125		11.51	9.25	0.232	6.1	-61	0.02	
10:16	4.66	125		11.49	9.02	0.224	5.5	-67	0.00	
10:21	4.66	125		11.52	9.07	0.221	5.3	-86	0.00	
10:26	4.66			11.60	8.93	0.217	5.2	-86	0.00	
→ SAMPLE										

48°F, Rain

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR5A

Field Personnel: DK+RC | Sample Matrix: Gw

MONITORING WELL INSPECTION

Date/Time: 5-5-17 11:00 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5-17 11:07 | Date/Time Completed: 11:38

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 2.90 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N

Total Volume Purged (gal): 1.5L | Purged to Dryness: Y / (N)

Purge Observations: Clear, no odor | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
11:13	2.83	250 mL/min		11.20	8.05	2.22	3.6	67	11.66	
11:18	2.87	125		11.10	8.29	2.24	3.0	85	11.36	
11:23	2.88	62.5		11.07	8.32	2.25	2.7	90	11.57	
11:28	2.90			11.08	8.32	2.26	2.6	93	11.34	
→ SAMPLE										

48°F, Rain

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: E-3

Field Personnel: DKT RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 05-05-17 11:42

Condition of seal: ( ) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5 11:46

Date/Time Completed: 12:25

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 3.04

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): ____

Purged to Dryness: Y / N

Purge Observations:

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos~~/cm)	Turb. (NTU)	ORP	DO	Other
11:55	3.49	250		11.25	8.28	1.29	41.4	-199	0.00	
11:58	3.56	125		11.32	7.97	1.12	34.5	-186	0.00	
12:03	3.59	42.5		11.35	7.87	1.08	24	-172	0.00	
12:08	3.61			11.25	7.82	1.06	16.8	-165	0.17	
12:13	3.63	67.5		11.16	7.78	1.07	10.7	-159	0.30	
→	SAMPLE									

489, RAIN

FIELD OBSERVATIONS

Facility: Pw 15 Sample Point ID: Pw 15

SAMPLING INFORMATION

Date/Time 5-5-17 1:30 Water Level at Sampling (ft) 26.04

Method of Sampling Pumping well Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
1:35	11.91	9.15	11.8mS/cm	5.5	-151	2.70	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 48°F, Driving Rain

Sample characteristics: Brown tint, Pyridine odor

Comments and Observations: MS/MSD

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-5-17 by: DK + RC Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW17

SAMPLING INFORMATION

Date/Time 5-5-17 11:45 Water Level at Sampling (ft) 24.07

Method of Sampling Pumping well Dedicated: (Y) N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
1:53	12.91	8.52	7.99 ms/cm	33.7	-90	1.43	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 48°F, RAINING

Sample characteristics: cloudy, cabbage smell

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-5-17 by: DKTRG Company: Matrix

FIELD OBSERVATIONS

Facility: Ponza

Sample Point ID: PZ106

Field Personnel: DK-RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-5-17 2:00PM

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-5 2:17

Date/Time Completed: 2:56

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 9.91

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic/Tubing

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 2.1L

Purged to Dryness: Y / (N)

Purge Observations: Clear,

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
2:17	9.89	250mL/min		11.43	8.65	2.20	4.2	-76	1.33	
2:22	10.30	125		11.20	8.26	2.20	3.7	-60	0.00	
2:27	10.61			11.06	8.09	2.19	3.0	-56	0.00	
2:32	10.84	67.5		11.03	8.03	2.19	2.6	-60	0.00	
2:37	10.92			11.11	8.00	2.19	2.9	-66	0.00	
↳ SAMPLE										

48°F, Rain let up.

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW14

Field Personnel: BKtRG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 8:05

Condition of seal: ( ) Good ( ) Cracked ____ %

( ) None ( ) Buried Duct Tape

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8 8:20

Date/Time Completed: 8:56

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 6.5" steel

Initial Water Level (ft): 8.80

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (✓) N

Total Volume Purged (gal): 1.9L

Purged to Dryness: Y / (✓) N

Purge Observations: light brown tint

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
8:24	8.80	250		10.00	8.18	7.29 mS/cm	1.3	-162	3.04	
8:30	8.88	125		10.29	8.74	7.24	1.3	-211	0.8	
8:35	9.06	62.5		10.29	8.80	7.14	1.5	-227	0.00	
8:40	9.13			10.40	8.81	7.06	1.6	-233	0.14	
→ SAMPLE										

40°F Sun+clouds

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR03

Field Personnel: D/CTR6

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 9:05

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8 9:10

Date/Time Completed: 9:40

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 4" steel

Initial Water Level (ft): 6.09

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 7L

Purged to Dryness: Y (N)

Purge Observations: Cloudy, light brown mSlurry

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
9:14	6.36	125mL/min		10.73	10.14	0.488	28.8	-121	4.57	
9:19	6.52			10.68	10.32	0.429	24.6	-106	4.62	
9:24	6.81	62.5		10.43	10.43	0.410	21.9	-76	5.79	
9:29	6.90			10.38	10.44	0.406	21.2	-69	5.61	
9:34	7.05			10.42	10.45	0.400	21.3	-61	5.55	
↳	SAMPLE									

40°F, Sunx clouds

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW127

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 9:57

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8 10:03

Date/Time Completed: 10:38

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 4.90

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) N

Total Volume Purged (gal): 2.2L

Purged to Dryness: Y / (N)

Purge Observations: Clear.

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/ltr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
10:08	5.43	125 mL/min		11.39	8.83	6.03 mS/cm	9.4	48	4.24	
10:13	5.70	~~67.5~~		11.78	8.07	6.46	9.3	23	2.02	
10:18	5.85			11.39	7.70	6.78	8.1	-46	2.09	
10:23	5.94			11.32	7.65	6.88	8.5	-65	0.37	
10:28	6.00			11.41	7.57	6.99	7.4	-87	0.00	
↳	SAMPLE									

5-8-17 41°F, Cloudy

7.10

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: ~~BR-27~~ B11

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 10:42

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8-17 10:49

Date/Time Completed: 11:25

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches): 2" PVC

Initial Water Level (ft): 3.16'

Elevation G/W MSL: ____

Well Total Depth (ft): 4.20

Method of Well Purge: Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): ____

Purged to Dryness: (Y) / N

Purge Observations: Slight My cloudy

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
10:55 ~~10:58~~	4.09	125mL/min		11.29	8.06	1.77 ms/cm	42.4	-33	4.56	
10:58	4.17	625		11.66	7.53	1.82	40.2	14	4.27	
11:03	4.17			11.93	7.47	1.90	34.8	36	6.79	
11:08	4.17			11.80	7.47	1.92	32.5	40	6.99	
↳ SAMPLE, Going dry										

42° Clouds + Sun

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: BR127

SAMPLING INFORMATION

Date/Time 5-8-17 11:40 Water Level at Sampling (ft) 7.10

Method of Sampling Pumping well Dedicated: (Y) / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
11:45	13.34	7.39	4.95 mS/cm	0.8	100	2.66	

INSTRUMENT CALIBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 43°F, Sun + clouds

Sample characteristics: Clear, slight yellowish tint

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-8-17 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: 5-8-17 Lonza Sample Point ID: PZ107

Field Personnel: DK + DRG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 12:20 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8 12:37 Date/Time Completed: 1:16

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 7.62 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: Y / N

Total Volume Purged (gal): 1.6L Purged to Dryness: Y / (N)

Purge Observations: clear Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(rpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
12:44	8.13	125mL/min		13.15	8.40	1.56mS/cm	5.4	111	0.37	
12:49	7.96	62.5		12.89	7.45	1.54	1.7	-86	0.00	
12:54	7.94			12.70	7.34	1.55	1.1	-87	0.00	
12:59	7.91			12.36	7.24	1.55	1.1	-87	0.00	
1:54	7.90			12.17	7.22	1.54	0.8	-88	0.00	
→ SAMPLE										

43°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR64

Field Personnel: DK + DRG

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-8-17 1:18

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8 13:22

Date/Time Completed: 1:57

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) @ 4"

Initial Water Level (ft): 11.51

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Per

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 2L

Purged to Dryness: Y / N

Purge Observations: Very cloudy, odor

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
1:25	11.81	250 mL/min		12.24	6.90	6.50	24	465	0.27	
1:30	12.02	125		12.58	7.67	6.53	22.3	-233	0.00	
1:35	12.30	62.5		12.64	~~8.07~~ 6.56	6.56	21.1	-269	0.00	
1:40	12.50	~~250~~		12.68	8.08	6.56	20.9	-271	0.00	
1:45	12.69	~~250~~		12.60	8.11	6.48	37.4	-279	0.00	
4	SAMPLE									

43°F, Cloudy

FIELD OBSERVATIONS

Facility: Lomza | Sample Point ID: PZ105

Field Personnel: DK + DRG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-8-17 14:00 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ | % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ | Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-8-17 2:06 | Date/Time Completed: 2:44

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 8.58 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N

Total Volume Purged (gal): 1.8L | Purged to Dryness: Y / (N)

Purge Observations: Very cloudy, Light Brown, full of silt | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
2:10	9.43	250		12.38	8.72	0.681	~~100+~~	-24	6.10	
2:15	10.51	125		12.16	8.07	0.646	100+	-16	5.45	
2:20	10.65	67.5		12.12	7.86	0.712	100+	-11	4.12	
2:25	10.89			12.07	7.78	0.815	100+	-9	10.78	
2:30	11.41			12.12	7.54	0.11	100+	-40	10.36	
→ SAMPLE										

44°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW16

SAMPLING INFORMATION

Date/Time 5-9-17 8:10 Water Level at Sampling (ft) 22.89

Method of Sampling Pumping Well Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
8:20	12.59	7.79	7.00 mS/cm	94.2	-106	6.41	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 39°F cloudy

Sample characteristics: cloudy, particles, slight pyridine odor

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-9-17 by: DKT RG Company: Lonza

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR-8

Field Personnel: DK+RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-17 8:20 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ | % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ | Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9 8:39 | Date/Time Completed: 9:21

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 13.32 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N

Total Volume Purged (gal): 1.6L | Purged to Dryness: (Y) / N

Purge Observations: light brown tint, Pyridine odor | Start ____ | Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm~~/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
8:45	13.40	125 mL/min		9.42	8.47	6.67	39.1	-66	0.21	
8:50	13.42	62.5		9.68	8.89	6.64	36.2	-82	0.00	
8:55	13.42			9.54	8.95	6.61	28.1	-85	0.00	
9:00	13.42			9.54	8.96	6.57	27.7	-83	0.00	
9:05	13.42			9.55	8.96	6.57	24.4	-82	0.00	
↳	SAMPLE									

39°F, cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ101

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-4-17 9:25

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9-17 9:32

Date/Time Completed: 10:10

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 15.64

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.76

Purged to Dryness: Y / (N)

Purge Observations: Clear water

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
9:35	15.99	250mL/min		9.68	8.89	~~3.09~~	8.4	-9	3.04	
9:40	16.23	125		9.99	7.75	2.59	3.6	40	2.50	
9:45	16.29	62.5		9.79	7.27	2.35	1.7	59	2.35	
9:50	16.36			10.49	7.15	2.44	1.3	65	2.43	
9:55	16.40			10.37	7.12	2.31	1.1	67	2.43	
↳	SAMPLE									

40°F, cloudy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: PZ102

Field Personnel: DK+RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-17 10:17 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9-17 10:21 | Date/Time Completed: 11:04

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2"

Initial Water Level (ft): 15.44 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) N

Total Volume Purged (gal): ~~1.6L~~ 1.3L | Purged to Dryness: Y (N)

Purge Observations: Clear, sulfur odor | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
10:28	15.54	250mL/min		11.27	7.32	4.61	1.8	-70	0.00	
10:33	15.52	62.5		11.02	7.25	4.66	1.8	-108	0.00	
10:38	15.53			11.37	7.24	4.66	3.0	-127	0.00	
10:43	15.53			11.10	7.25	4.64	2.0	-141	0.00	
10:48	15.53			11.15	7.25	4.66	1.8	-147	0.00	
→ SAMPLE										

42°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: B7

Field Personnel: DK + RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-17 11:09 | Condition of seal: (O) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: (✓) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ | % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ | Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9-17 11:16 | Date/Time Completed: 11:57

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 11.60 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N

Total Volume Purged (gal): 1.8L | Purged to Dryness: Y / (N)

Purge Observations: Clear | Start ____ Finish ____

PURGE DATA (if applicable)

mS/cm

Time	Water Level	Purge Rate (gpm/~~hr~~)	Cumulative Volume	Temp (C)	pH ~~(SU)~~	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
11:24	12.94	125 mL/min		12.24	8.41	0.707	7.4	36	6.35	
11:29	13.69	625		12.15	7.64	0.683	7.2	5	6.06	
11:34	14.24			12.34	07.45	0.670	9.8	4	5.49	
11:39	14.28			12.53	~~0.689~~ 7.71	0.688	9.5	7	4.27	
11:44	14.32			12.76	~~0.675~~ 7.73	0.672	11.9	14	2.83	
→	SAMPLE									

43°F, Sun+clouds

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: BR126

Field Personnel: DKT RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-17 12:28 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9 12:46 Date/Time Completed: 1:27

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 4" Steel

Initial Water Level (ft): 6.05 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N New tubing

Total Volume Purged (gal): 2L Purged to Dryness: Y / (N)

Purge Observations: Clear, slight tint of yellow then slam Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
12:51	6.12	125mL/min		14.00	7.95	0.678	9.1	-147	0.11	
12:56	6.12			13.75	7.98	0.686	6.4	-181	0.06	
1:01	6.12			13.52	7.99	0.683	4.2	-200	0.00	
1:06	6.11	62.5		13.35	7.99	0.687	3.6	-202	0.00	
1:11	6.09			13.00	7.98	0.693	3.8	-202	0.00	
	SAMPLE									

44° F, Sunny, light breeze

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: B16

Field Personnel: DK + RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-11 1:35 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9 1:39 Date/Time Completed: 5-9 2:16

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 3.70 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N

Total Volume Purged (gal): 2L Purged to Dryness: Y / (N)

Purge Observations: clear, water Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/~~btz~~) ml/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
1:43	4.13	250	5'	11.85	7.64	0.822	~~77~~ 7.1	42	7.09	
1:48	4.39	125		12.01	7.55	0.803	~~283~~ 7.03	61	7.84	
1:53	4.54	62.5		11.55	7.47	0.798	~~183~~ 7.03	75	7.85	
1:58	4.63			11.20	7.49	0.854	~~117~~ 7.12	82	7.62	
2:03	4.68			11.11	7.53	0.904	1.8	83	7.54	
	→ SAMPLE									

45°F, Sunny, light breeze

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B15

Field Personnel: DK + DRG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-9-17 2:20

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-9-17 2:24

Date/Time Completed: 3:00

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 3.35

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.9L

Purged to Dryness: Y / (N)

Purge Observations: clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
2:28	3.83	125mL/min		10.86	7.84	0.449	3.6	77	7.42	
2:33	4.39	~~625~~		10.66	7.56	0.446	2.9	93	7.31	
2:38	4.42	625		10.56	7.49	0.449	3.3	94	7.07	
2:43	4.43			10.69	7.47	0.447	3.0	94	6.98	
2:48	4.43			10.66	7.46	0.449	3.5	92	6.92	
↳	SAMPLE									

45°F, Sunny, light breeze

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ103

Field Personnel: DK+RG

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5/10/17 8:00

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5/10 8:11

Date/Time Completed: 8:50

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 11.33

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1Y3 L

Purged to Dryness: Y / (N)

Purge Observations: Clean Water

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
8:16	11.97	125 mL/min		10.70	7.97	3.49	1.7	-54	1.42	
8:21	11.88	62.5		10.51	7.12	3.52	1.7	-56	0.70	
8:26	11.85	<62.5		10.49	6.95	3.52	1.6	-59	0.32	
8:31	11.81			10.87	6.91	3.50	1.5	~~-61~~	0.00	
8:36	~~11.23~~	11.80		11.24	6.89	3.48	1.4	-62	0.00	
↳	SAMPLE									

45°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR106

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 9:00

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-10 9:06

Date/Time Completed: 9:44

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 6"

Initial Water Level (ft): 21.67

Elevation G/W MSL: Steel

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (✓) / N

Total Volume Purged (gal): 1.9L

Purged to Dryness: Y / (✓) N

Purge Observations: Clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/bte~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
9:12	21.64	125 mL/min		13.05	7.21	4.56	16.1	-81	0.55	
9:17	21.64			12.89	7.17	4.64	13.1	-122	0.00	
9:22	21.64			13.13	7.16	4.65	11.0	-127	0.00	
9:27	21.64			13.38	7.17	4.66	9.6	-134	0.00	
9:32	21.64			13.70	7.17	4.65	8.1	-138	0.00	
↳	SAMPLE									

47°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW106

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 9:48

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-10 9:50

Date/Time Completed: 10:23

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 7.75

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 2.3L

Purged to Dryness: Y (N)

Purge Observations: Clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
9:54	8.69	250mL/min		11.73	7.52	1.47	9.3	-128	0.80	
9:59	8.76			12.15	7.35	1.32	4.3	-121	0.54	
10:04	8.78	125		12.70	7.24	1.41	3.5	-124	0.49	
10:09	8.82			12.75	7.14	1.47	2.6	-118	0.28	
10:14	8.84			12.59	7.12	1.47	2.6	-116	0.00	
↳	SAMPLE									

48°F, Sun + clouds

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ104

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 10:34

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-10-17 10:40

Date/Time Completed: 11:15

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 11.77

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.2 L

Purged to Dryness: Y / (N)

Purge Observations: Clear water

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~mmhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
10:45	12.90	125		16.36	7.00	4.42	7.6	-9	0.55	
10:50	11.85	625		16.09	7.15	4.56	7.2	23	0.00	
10:55	11.83			16.44	7.16	4.60	6.8	32	0.00	
11:00	11.84			16.60	7.17	4.62	6.4	24	0.00	
↳ SAMPLE										

48°F, Sun + clouds

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR 105

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 10:20

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-10-17 11:27

Date/Time Completed: 12:04

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 20.22

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.7L

Purged to Dryness: Y / (N)

Purge Observations: Clear Water

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
11:30	20.22	125		16.68	7.78	2.48	4.6	-10	0.14	
11:35	20.22	62.5		15.14	7.38	2.52	4.5	-8	0.00	
11:40	20.22			14.64	7.18	2.54	3.6	-8	0.00	
11:45	20.22			14.19	7.08	2.55	2.5	-7	0.00	
11:50	20.22			14.17	7.03	2.55	2.7	-7	0.00	
↳SAMPLE										

48°F, Sun, clouds + breeze (cold)

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW14

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 12:45

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-10 12:53

Date/Time Completed: 1:30

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 6.16

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1 Y3 ~~1 Y3~~

Purged to Dryness: Y / (N)

Purge Observations: Clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/inz)~~ mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
12:57	6.69	125		14.07	8.16	0.700	3.7	23	6.01	
1:02	7.35	62.5		13.88	7.99	0.695	3.6	25	5.54	
1:07	8.68	62.5		13.94	7.87	0.704	3.4	28	6.63	
1:12	7.90	62.5		14.19	7.84	0.721	3.9	31	7.08	
1:17	8.35			14.42	7.84	0.716	3.5	32	7.29	
↳	SAMPLE									

48°F, Cloudy

FIELD OBSERVATIONS

Facility: Longa Sample Point ID: BR114

Field Personnel: DK + RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-10-17 1:31 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 1:33 Date/Time Completed: 2:14

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 6" steel

Initial Water Level (ft): 10.40-29 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge ____

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N new tubing

Total Volume Purged (gal): 1.1L Purged to Dryness: Y / (N)

Purge Observations: clear water Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
1:37	10.33	125mL/min		14.86	7.61	1.73	3.8	-68	0.30	
1:42	10.34	62.5		14.34	7.33	1.77	3.3	-72	0.00	
1:47	10.34			14.50	7.28	1.78	3.2	-76	0.00	
1:52	10.34			14.71	7.28	1.78	2.8	-78	0.00	
1:57	10.33	<62.5		14.69	7.28	1.78	2.8	-78	0.00	
→ SAMPLE										

49°F, Sunny + clouds

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR9

SAMPLING INFORMATION

Date/Time 5-10-17 2:55 Water Level at Sampling (ft) 31.60

Method of Sampling Pumping MP II Dedicated: (Y) / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
3:00	16.29	7.22	2.95 ms/cm	59.8	>52	0.08	

INSTRUMENT CALIBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 50°F, Sun, wispy clouds

Sample characteristics: Cloudy, gray, particles, slight SC/Hen odor white

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-10-17 by: NC, DR G + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza 8:35 Sample Point ID: BR 118D

Field Personnel: D/K+RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-11-17 8:30 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-11-17 8:56 Date/Time Completed: 9:37

Surf. Meas. Point: (✓) Pro Casing ( ) Riser Riser Diameter (inches) 4 & 11 SS

Initial Water Level (ft): 45.56 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Bladder

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N new 44" sample tube

Total Volume Purged (gal): 2.2L Purged to Dryness: Y / (N)

Purge Observations: water, clear Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
9:05	45.84	≥50mL/min		10.82	9.25	0.807	16.3	-100	2.06	
9:10	45.80	125		10.59	8.32	1.10	8.3	-199	0.31	
9:15	45.76	62.5		10.65	8.09	1.12	7.9	-232	0.00	
9:20	45.71			10.72	8.00	1.12	7.2	-253	0.14	
9:25	45.72			10.56	7.98	1.13	8.2	-270	0.00	
↳	SAMPLE									

45°F, Cloudy

FIELD OBSERVATIONS

Facility: Loma Sample Point ID: B117D

Field Personnel: DK + RG Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-1-17 9:52 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-1-17 ~~9:52~~ 10:02 Date/Time Completed: 10:39

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 4" Steel

Initial Water Level (ft): 46.40 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Bladder

One (1) Riser Vol (gal): ____ Dedicated: (✓) N New Air + water lines

Total Volume Purged (gal): 2L Purged to Dryness: Y / (✓) N

Purge Observations: Clear Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm) mS/cm	Turb. (NTU)	ORP	DO	Other
10:10	46.42	125 mL/min		12.44	8.45	0.648	14.0	-166	5.55	
10:15	46.44	62.5		10.51	8.38	0.634	13.9	-196	0.00	
10:20	46.44			10.42	8.35	0.637	12.1	-206	0.00	
10:25	46.44			10.41	8.33	0.638	11.9	-209	0.00	
10:30	46.44			10.43	8.33	0.639	11.8	-209	0.00	
↳	SAMPLE									

48°F, Cloudy

5-11-17 BR 123D DTW 44.44

4" Steel Bladder pump, 4" steel

All new tubing.

Start pumping: 11:12

Time	water level	Rate	temp	pH	mS/cm	NTU	ORP	DO
11:15	44.44	250	15.52	7.32	2.06	11.3	-115	2.70
11:20	44.44	125	13.40	7.55	2.06	7.7	-154	0.00
11:25	44.44		12.99	7.58	2.06	7.9	-155	0.00
11:30	44.44		12.97	7.59	2.07	7.1	-154	0.02
11:35	44.44		13.12	7.60	2.07	6.7	-154	0.00

↳ SAMPLE

11:41 Done

3L

¼" sample tube

BR122D DTW: 44.19 5-11-17

start pumping at 12:03 4" Steel 50°F, cloudy

All new tubing, bladder pump

Time	water level	Rate	temp.	pH	mS/cm	NTU	ORP	DO
12:06	44.20	250	16.25	7.60	1.65	10	-105	1.34
12:11	44.20	125	13.02	7.37	1.56	6.8	-123	0.00
12:16	44.20	125	13.01	7.31	1.54	6.7	-130	0.00
12:21	44.20	125	13.03	7.27	1.49	6.4	-137	0.00

SAMPLE

Done at 12:27 2.7L

FIELD OBSERVATIONS

Facility: Conoco

Sample Point ID: BR13D

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-11-17 12:30

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-11 12:42

Date/Time Completed: 1:14

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2 inch

Initial Water Level (ft): 31.03

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Bladder

One (1) Riser Vol (gal): ____

Dedicated: (✓) N

Total Volume Purged (gal): 2.2 L

Purged to Dryness: Y / (✓) N New Sample tubing

Purge Observations: Black tint ~~Tan~~ Clear, sediment, odor

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
12:45	31.09	250 ml/min		15.41	7.50	2.79	7.1	-267	0.82	
12:50	31.08	125		12.49	7.82	2.85	3.6	-390	0.00	
12:55	31.03	62.5		13.61	7.77	2.81	3.2	-308	0.00	
1:00	31.01			13.92	7.66	2.87	2.8	-320	0.00	
1:05	31.01			14.08	7.61	2.88	2.6	-323	0.00	
	→ SAMPLE									

50°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR112D

Field Personnel: DK+DRG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-11-17 1:58 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good ( ) loose ( ) flush mount ( ) Damaged missing lid

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ | % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ | Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-11-17 2:17 | Date/Time Completed: 2:48

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 36.03 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Bladder pump

One (1) Riser Vol (gal): ____ | Dedicated: (Y) N new sample tube

Total Volume Purged (gal): 3L | Purged to Dryness: Y (N)

Purge Observations: Clear Sulfur odor, Blackish | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~ mL/min)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
2:20	36.04	250		14.16	7.83	1.79	9.2	-242	1.66	
2:25	36.06	125		13.34	7.47	1.99	5.1	-305	0.00	
2:30	36.04	62.5		12.78	7.45	2.01	4.1	-323	0.00	
2:35	36.04			11.99	7.38	2.06	2.7	-331	0.00	
2:40	36.04			12.15	7.30	2.08	2.0	-332	0.00	
SAMPLE										

51°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR105D

Field Personnel: DK+RG

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-1-17 2:55

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-1 3:01

Date/Time Completed: 3:38

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 25.93

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: Y / N New Flexi tube

Total Volume Purged (gal): 1.1L

Purged to Dryness: Y / N

Purge Observations: Clear, Sulfur odor

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hrs~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
3:08	26.45	625mL/min		16.05	7.15	55.2	4.5	-336	0.99	
3:13	26.59	<625		15.92	7.00	56.7	4.9	-350	0.00	
3:18	26.61			15.82	6.94	57.1	4.9	-362	0.00	
3:23	26.62			15.80	6.93	57.2	4.6	-362	0.00	
L9	SAMPLE									

53°F Cloudy

FIELD OBSERVATIONS

Facility: Lagg Sample Point ID: QD-1

SAMPLING INFORMATION

Date/Time 5-12-17 8:30 Water Level at Sampling (ft)

Method of Sampling Bucket from waterflow Dedicated: Y / (N)

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
8:40	12.31	8.82	1.18ms/cm	4.10	37	2.06	

INSTRUMENT CALIBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 45°F, cloudy

Sample characteristics: clear water

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QS-4

SAMPLING INFORMATION

Date/Time 5-12-17 8:52 Water Level at Sampling (ft)

Method of Sampling water coming out of walls Dedicated: Y / (N)

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy Direct

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
9:00	11.28	8.55	1.87 ms/cm	2.8	31	2.97	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 48°F, Cloudy

Sample characteristics:

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: DKFORD Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW13

SAMPLING INFORMATION

Date/Time 5-12-17 9:40 Water Level at Sampling (ft) 25.39

Method of Sampling Pumping well Dedicated: (Y) / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
10:00	14.03	7.56	5.36mS/cm	19.8	-152	3.89	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 50°F, Cloudy

Sample characteristics: white ~~Black~~ particles, slight pyridine odor

Comments and Observations: black = cloudy

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: DK + DRG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR7A

SAMPLING INFORMATION

Date/Time 5-12-17 10:07 Water Level at Sampling (ft) 3.59

Method of Sampling Pumping Well Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
10:15	15.09	7.47	3.07 mS/cm	4.9	-135	4.27	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 50°F Cloudy

Sample characteristics: Wet, Red slime ~~in~~ on sides of well

Comments and Observations: Clear

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: DK + DRG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QO-2

SAMPLING INFORMATION

Date/Time 5-12-17 10:25 Water Level at Sampling (ft) —

Method of Sampling Quarry outfall, bucket Dedicated: Y (N)

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
10:30	13.31	8.43	1.17 mS/cm	4.1	-2	3.50	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 52°F, Cloudy

Sample characteristics: clear

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: Matrix Company: OKHRG

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QO-251

SAMPLING INFORMATION

Date/Time 5-12-17 10:38 Water Level at Sampling (ft)

Method of Sampling Bucket from canal Dedicated: Y (N)

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
10:45	13.23	8.64	0.407 mS/cm	35.5	-20	4.04	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: 52°F Cloudy

Sample characteristics: light tan, cloudy

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-12-17 by: DKT DRG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: PZ103

Field Personnel: DK | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-26-17 8:00 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26 8:11 | Date/Time Completed: 8:45

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2 inch PVC

Initial Water Level (ft): 13.02 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N

Total Volume Purged (gal): 1.7L | Purged to Dryness: Y / (N)

Purge Observations: Clear | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm~~/hr) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
8:17	13.55	13.55 250		13.05	7.56	3.72	0.0	-27	0.00	
8:22	13.55	62.5		12.89	6.98	3.75	0.0	-35	0.00	
8:27	13.55			12.87	6.91	3.75	0.0	-36	0.00	
8:32	13.55			12.89	6.86	3.76	0.2	-38	0.00	
& SAMPLE										

55° F. Overcast

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: MW106

Field Personnel: DK+CZ Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-26-17 8:50 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26 8:54 Date/Time Completed: 9:29

Surf. Meas. Point: ( ) Pro Casing (✓) Riser Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 10.04 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N

Total Volume Purged (gal): 2.1L Purged to Dryness: Y / (N)

Purge Observations: Cloudy orange Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
8:57	10.45	250		12.36	7.74	1.68	97.1	-31	0.00	
9:03	10.83	125		11.59	7.12	1.60	120	-18	0.00	
9:08	10.80	62.5		11.58	7.08	1.61	106	-24	0.00	
9:13	10.83			11.59	7.02	1.63	78.7	-27	0.00	
9:18	10.82			11.61	7.00	1.70	78	-29	0.00	
↳	SAMPLE									

55° F Overcast, mist

FIELD OBSERVATIONS

Facility: 5-26-17 DK LCZ Sample Point ID: BR106

Field Personnel: Lonza Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-26-17 9:30 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26 9:40 Date/Time Completed: 10:22

Surf. Meas. Point: (✓) Pro Casing ( ) Riser Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 23.07 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N New flexi tube

Total Volume Purged (gal): 3L Purged to Dryness: Y / (N)

Purge Observations: Cloudy, Clearing some orange scum Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
9:55	23.04	250		12.86	6.98	4.13	165	-31	0.00	
10:00	23.04	125		12.62	7.11	4.45	148	-50	0.00	
10:05	23.04	125		12.58	7.22	4.52	140	-59	0.00	
10:10	23.04			12.48	7.30	4.55	140	-68	0.00	
10:15	23.04			12.42	7.30	4.54	136	-69	0.00	
↳ SAMPLE										

56F, Overcast misting

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR114

Field Personnel: DK + CZ

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-26-17 10:30

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26-17 10:35 Date/Time Completed: 11:11

Surf. Meas. Point: (✓) Pro Casing (✓) Riser Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 11.59 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N

Total Volume Purged (gal): 1.9L Purged to Dryness: Y / (N)

Purge Observations: Clear, no odor Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~ mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
10:41	11.57	125		14.10	8.14	1.63	4.4	-32	0.00	
10:46	11.56	62.5		13.98	7.68	1.67	4.0	-54	0.00	
10:51	11.56			14.00	7.59	1.67	3.7	-60	0.00	
10:56	11.56			14.02	7.56	1.68	4.1	-62	0.00	
11:01	11.56			14.01	7.56	1.68	3.7	-64	0.00	
↳	SAMPLE									

57°F, Cloudy Breezy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR122D

Field Personnel: DK/CZ

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-26-17 11:40

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26 11:23

Date/Time Completed: 12:58

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 4" Steel

Initial Water Level (ft): 44.41

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Bladder pump

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 6L

Purged to Dryness: Y / (N)

Purge Observations: Black/gray cloudy, sulfur odor

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
12:33	44.39	250 mL/min		15.15	8.22	1.48	14.7	-87	10.21	
12:38	44.39			12.67	8.02	1.52	6.7	-121	7.19	
12:43	44.39			12.48	7.91	1.53	6.1	-136	7.34	
12:48	44.39			12.67	7.90	1.53	5.5	-148	7.09	
12:53	44.39	125		12.53	7.96	1.49	5.7	-165	5.33	
↳	SAMPLE									

60°F, cloudy

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR123D

Field Personnel: DK+CZ Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-26-17 1:10 Condition of seal: (~~)Good~~ ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (~~)Good~~

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 5-26-17 1:14 Date/Time Completed: 5-26-17 2:45

Surf. Meas. Point: ( ) Pro Casing (X) Riser Riser Diameter (inches) 4"

Initial Water Level (ft): 44.69 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Bladder

One (1) Riser Vol (gal): ____ Dedicated: (Y) / N

Total Volume Purged (gal): 4.5 L Purged to Dryness: Y / (N)

Purge Observations: Black, cloudy, slight sulfur odor Start ____ Finish ____

PURGE DATA (if applicable)

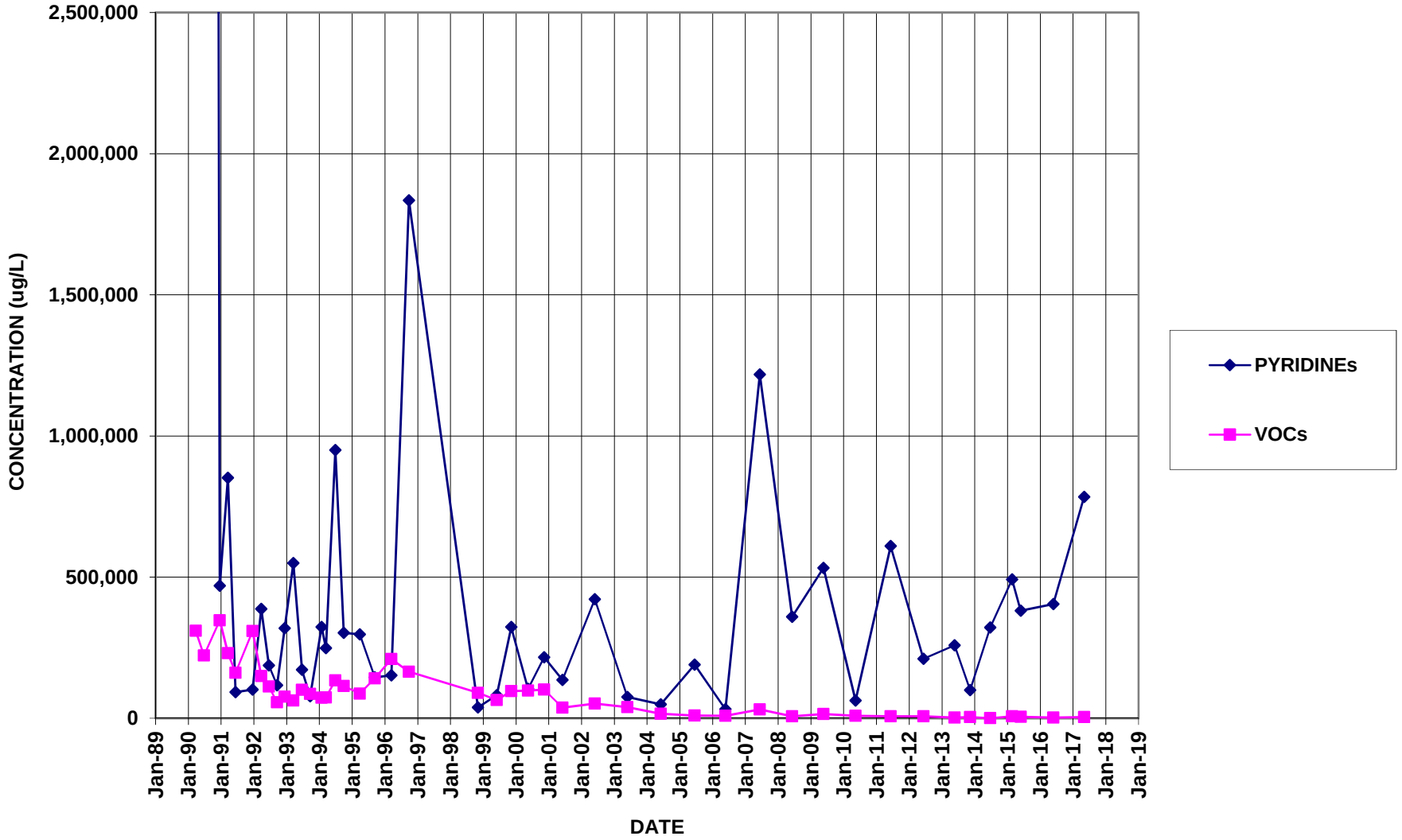
Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
1:25	44.70	250mL/min		15.08	7.84	1.98	4.7	-118	0.45	
1:30	44.70			13.58	8.08	2.00	4.2	-153	0.00	
1:35	44.72	125		12.72	8.16	2.00	4.5	-171	0.00	
1:40	44.73			12.52	8.25	2.00	5.0	-198	0.00	
1:45	44.[illegible]	125		12.80	8.24	2.00	5.5	-213	0.00	
	SAMPLE									

62°F, cloudy

Appendix B

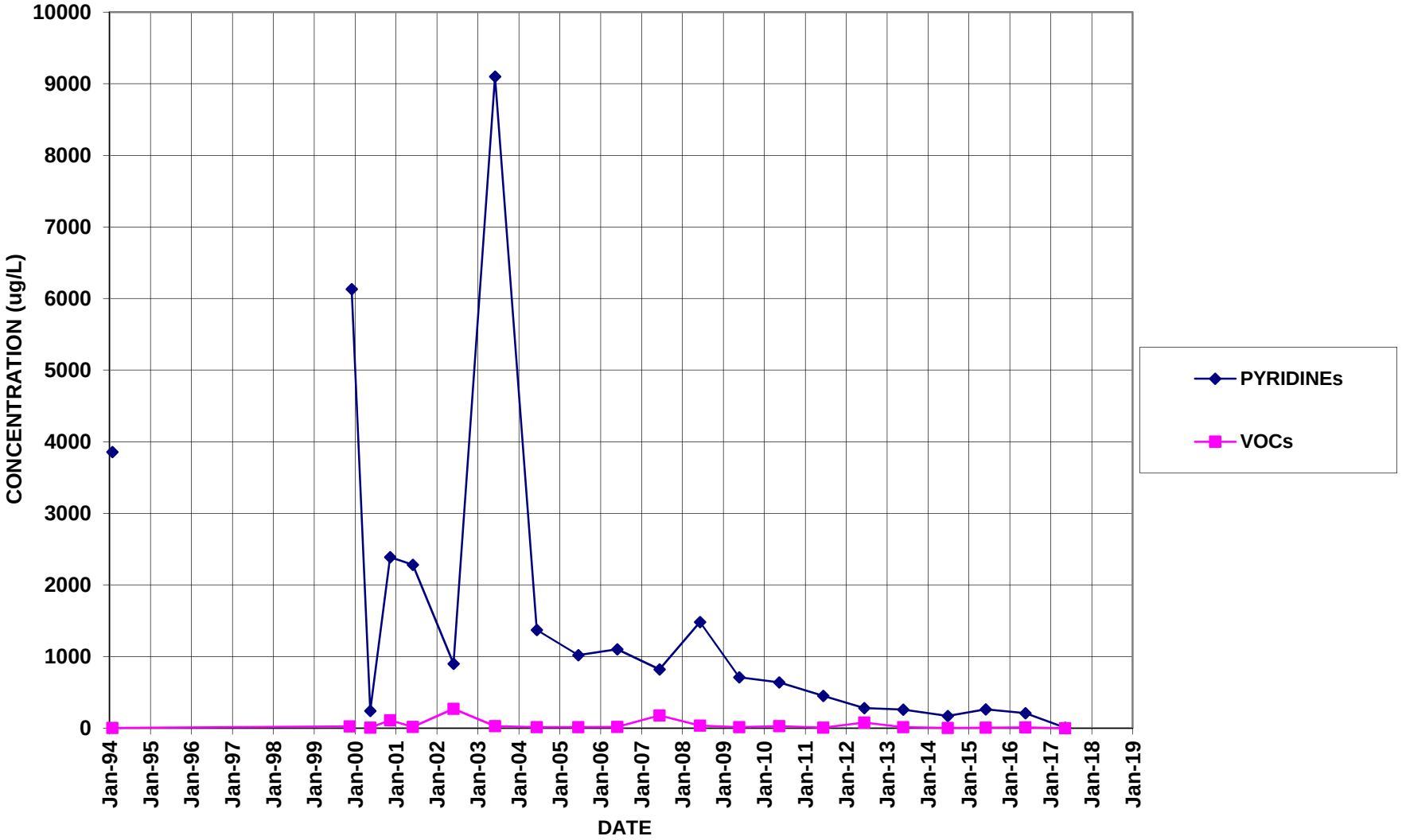
Well Trend Data

B-17

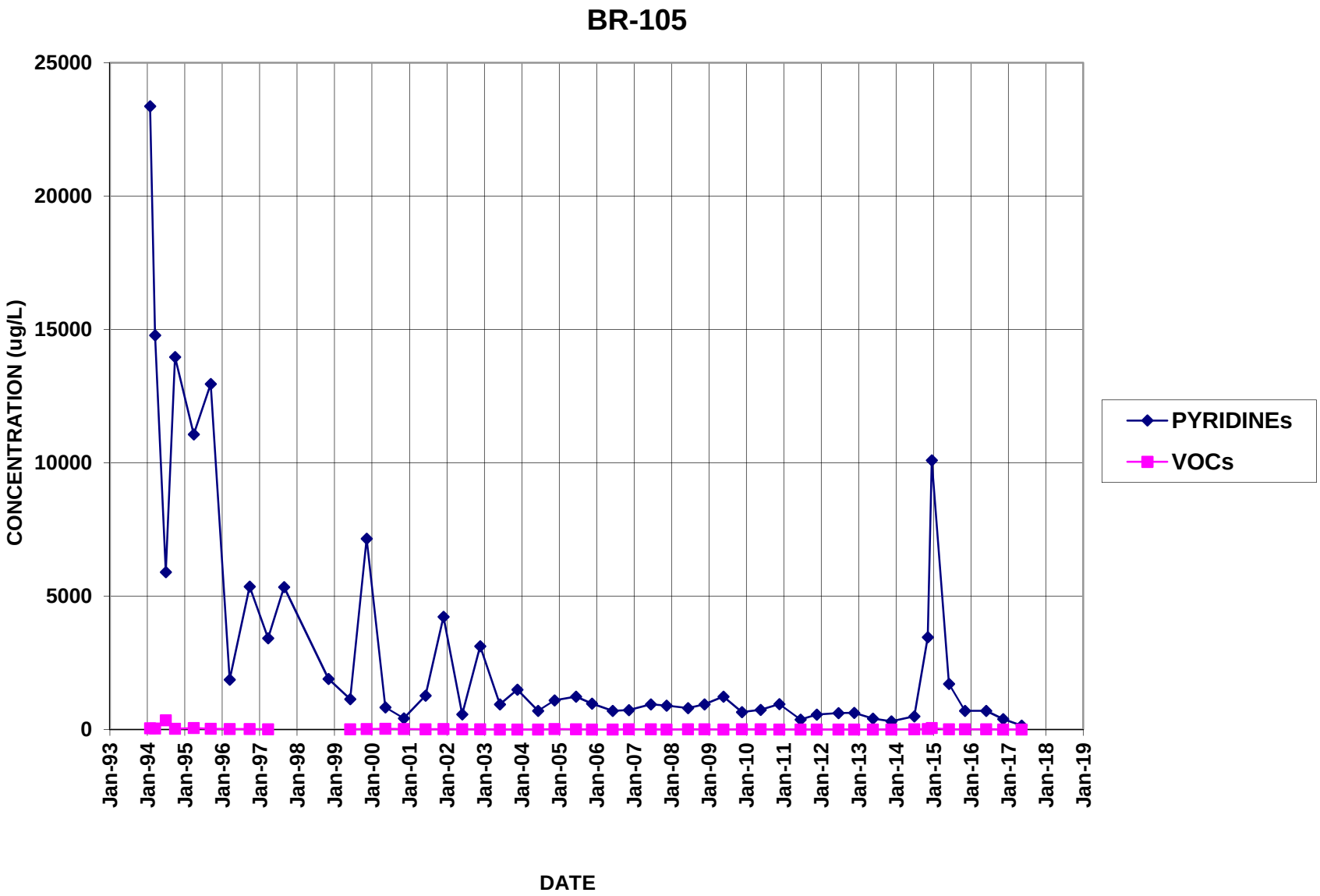


Prepared by: jeb
Reviewed by: nmb

B-7

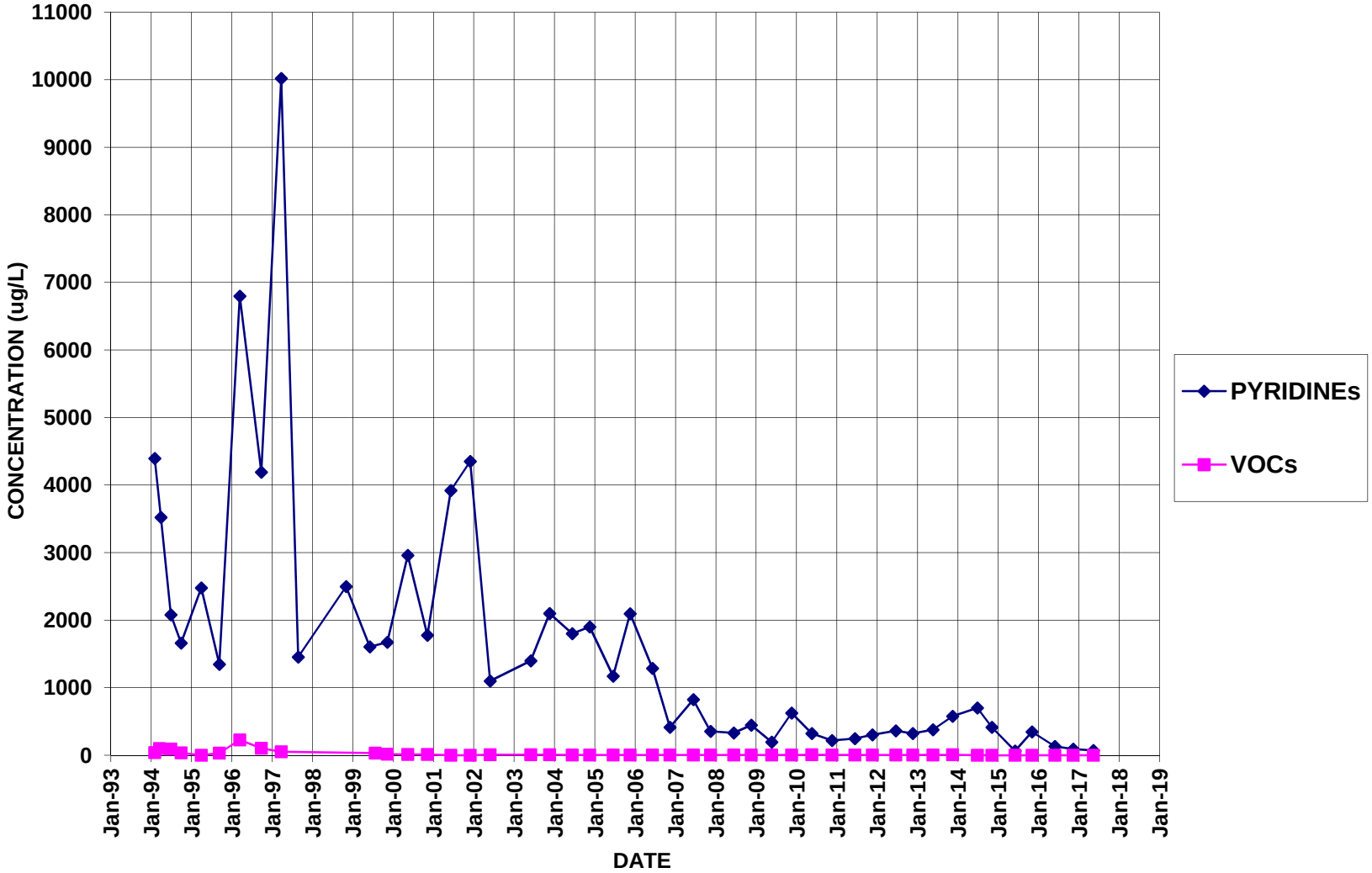


Prepared by: nmb
Reviewed by: jeb



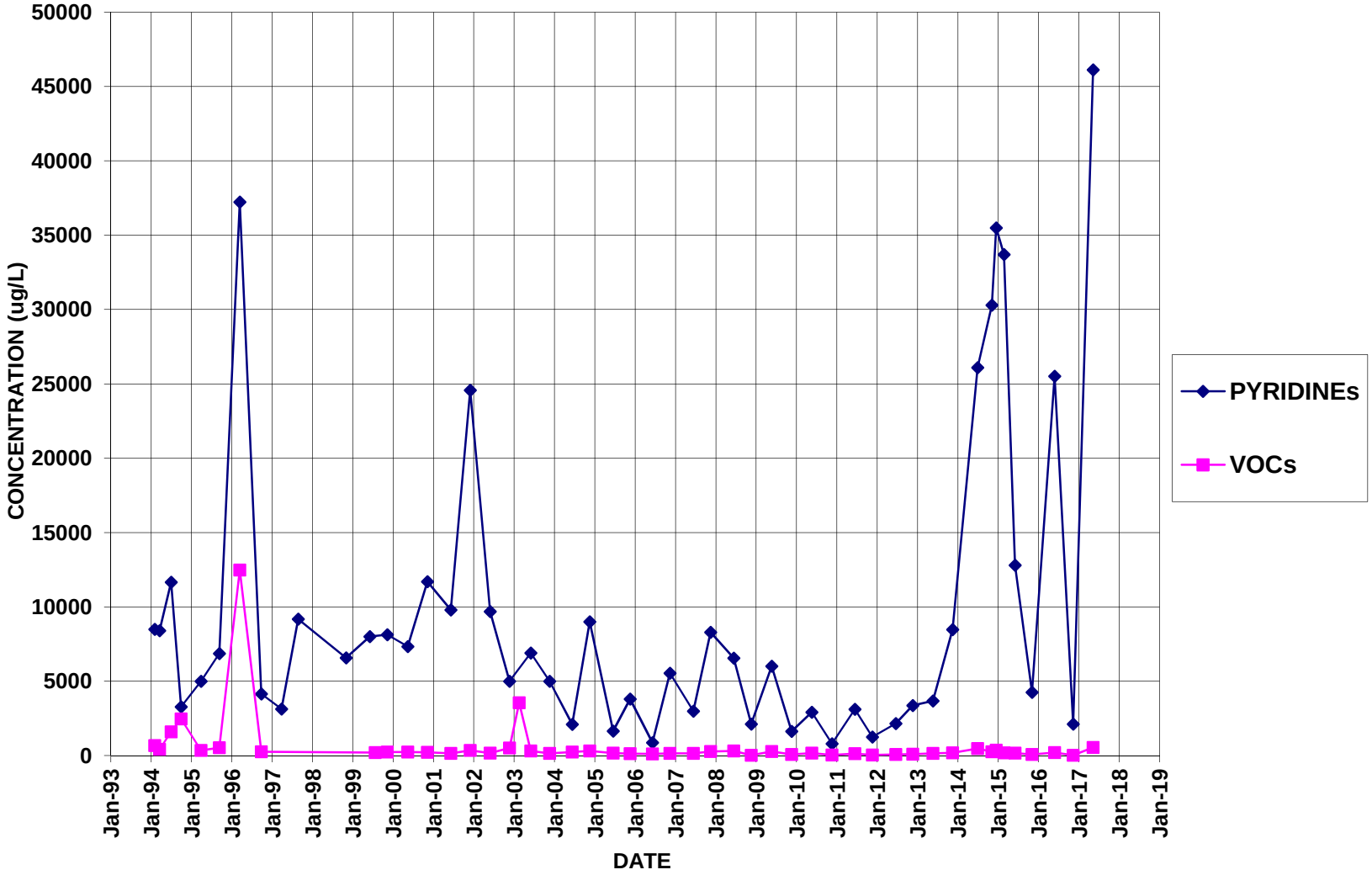
Prepared by: nmb
Reviewed by: jeb

BR-105D



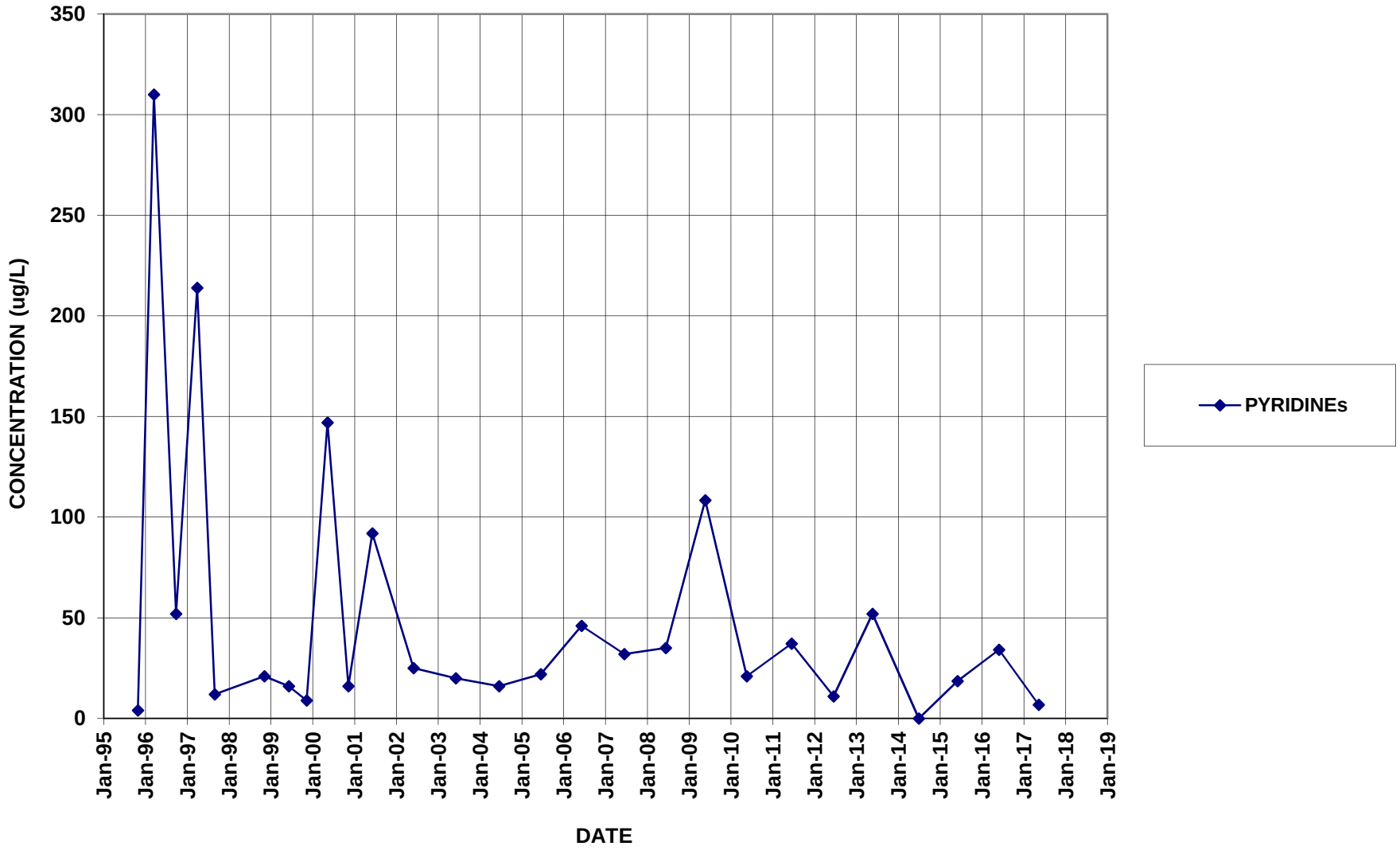
Prepared by: nmb
Reviewed by: jeb

BR-106



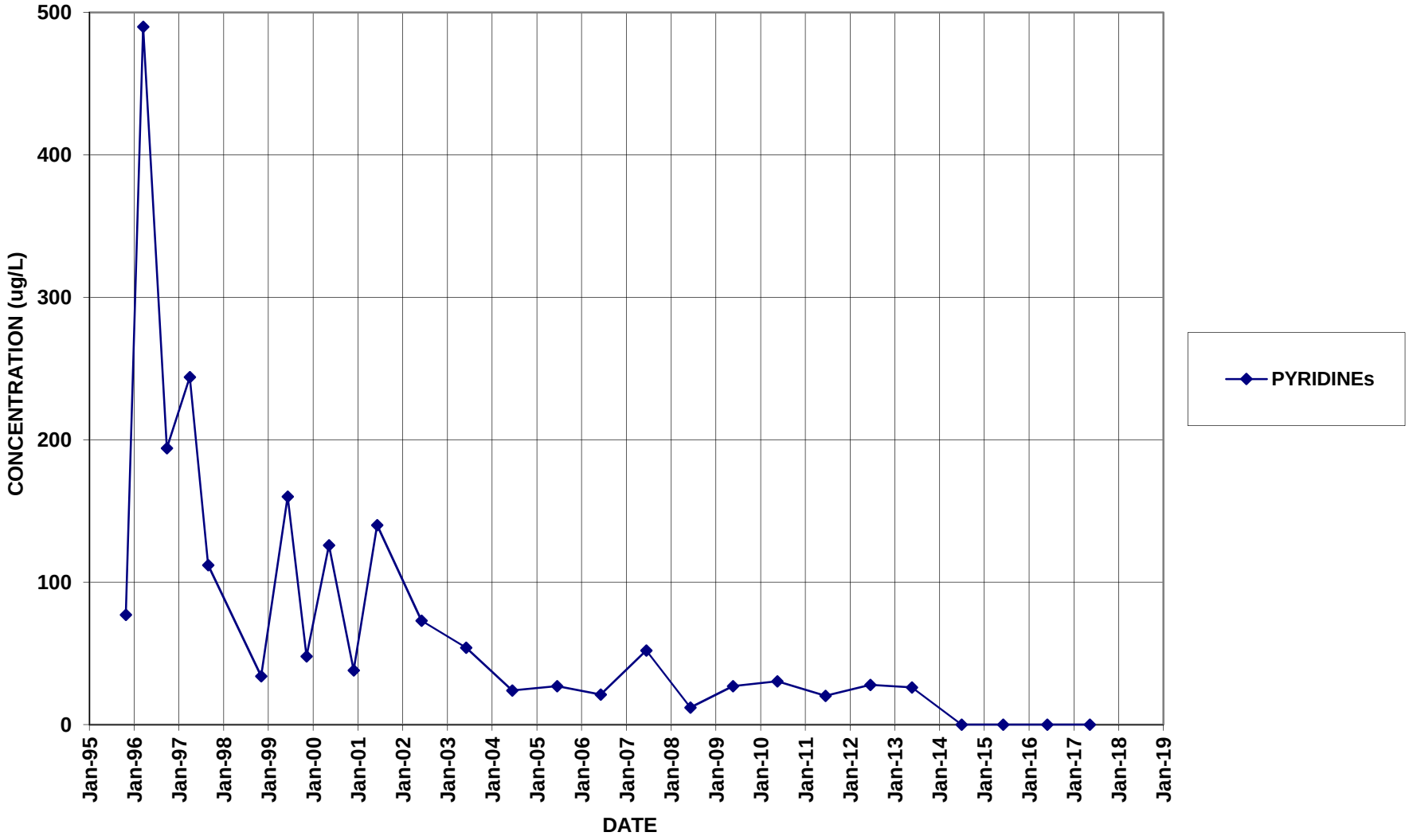
Prepared by: nmb
Reviewed by: jeb

BR-112D



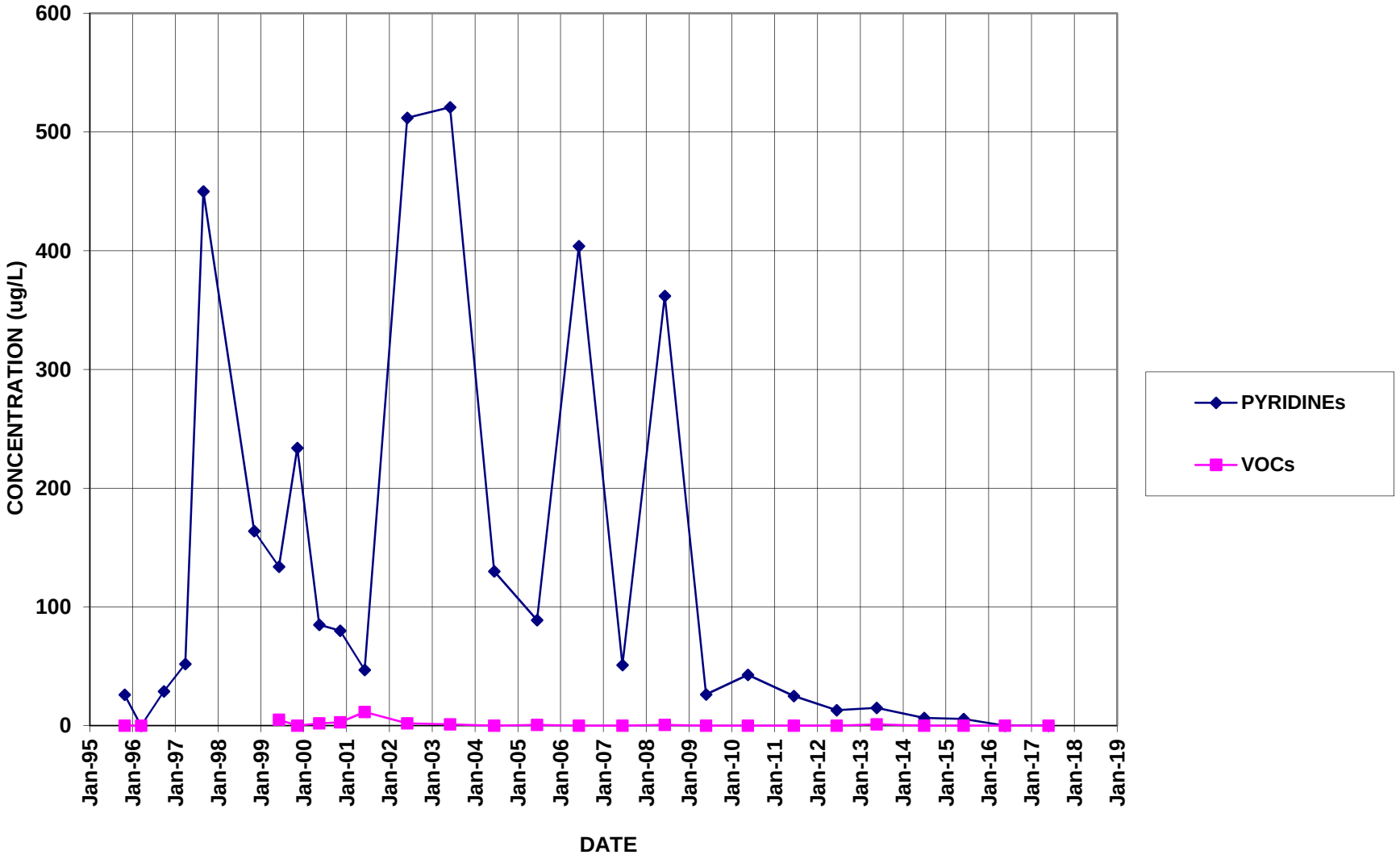
Prepared by: nmb
Reviewed by: jeb

BR-113D



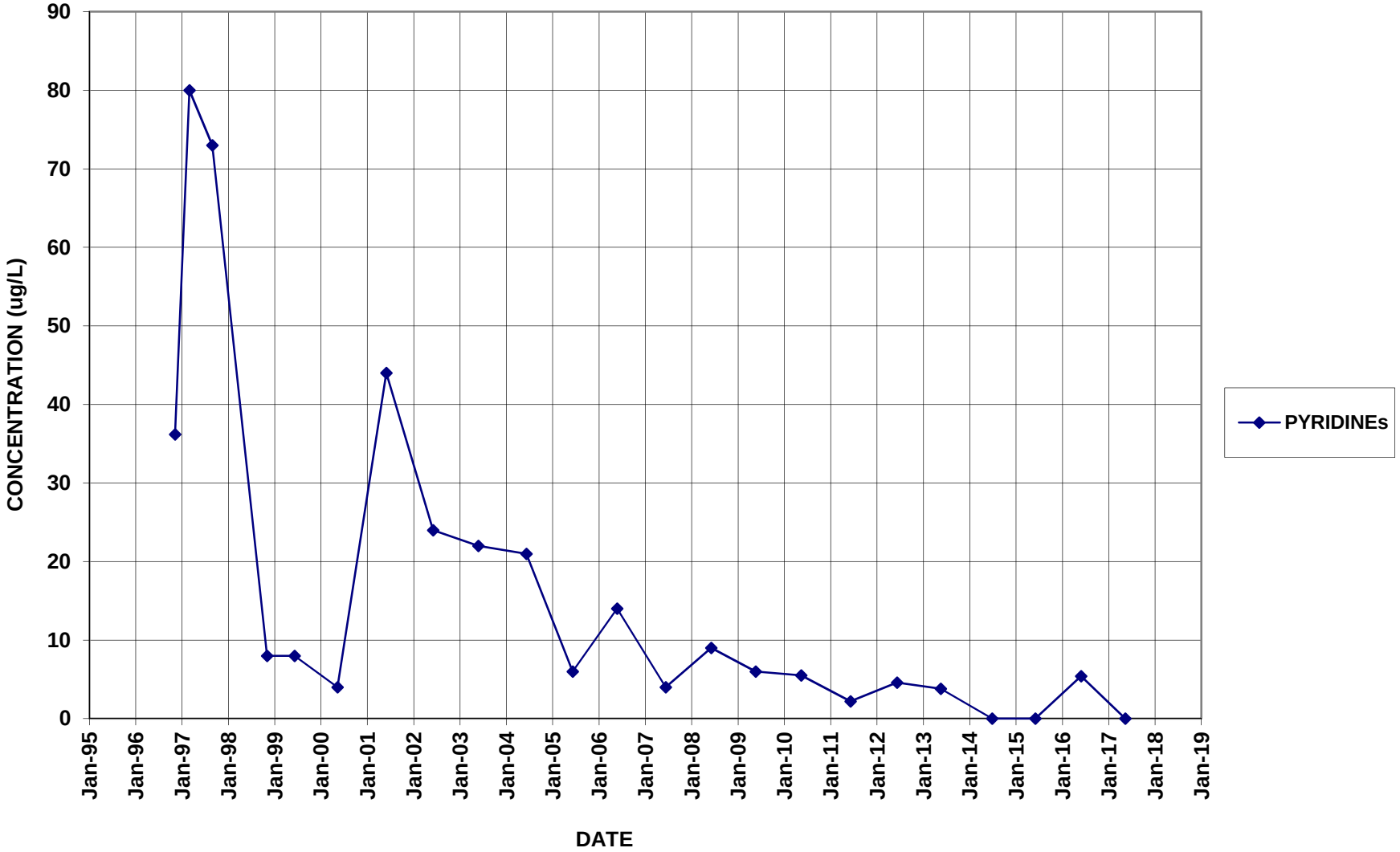
Prepared by: nmb
Reviewed by: jeb

BR-114



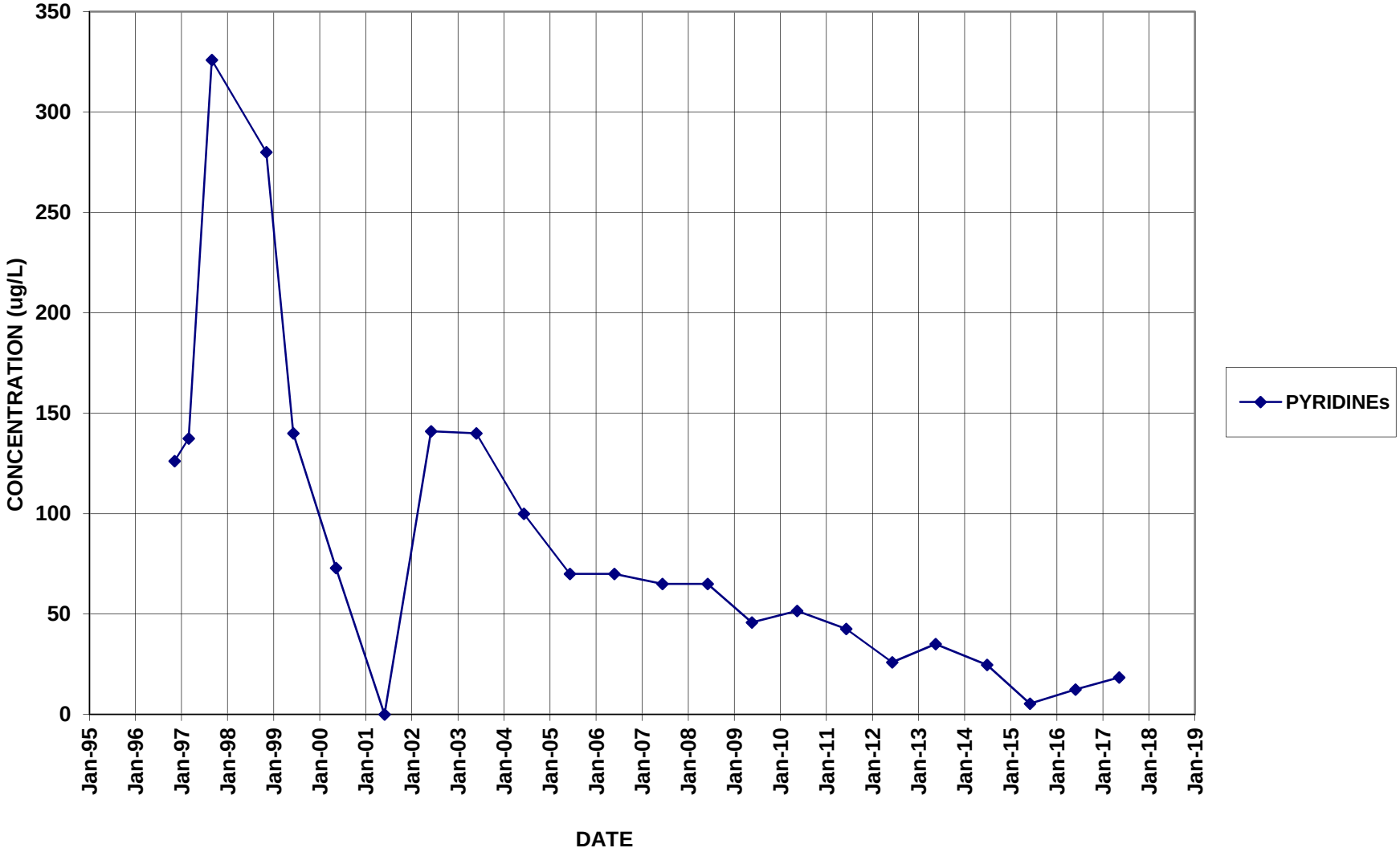
Prepared by: nmb
Reviewed by: jeb

BR-117D



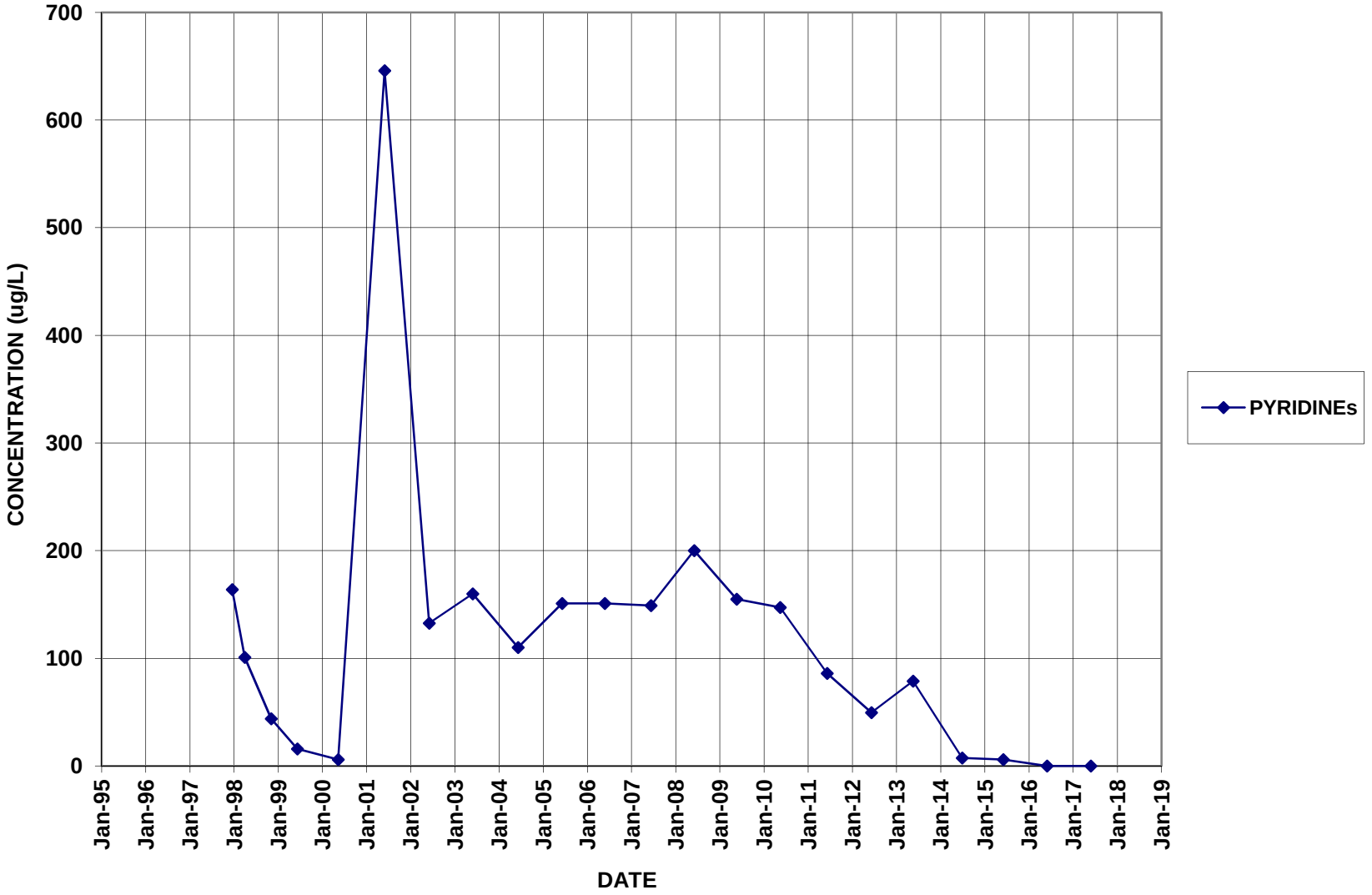
Prepared by: nmb
Reviewed by: jeb

BR-118D



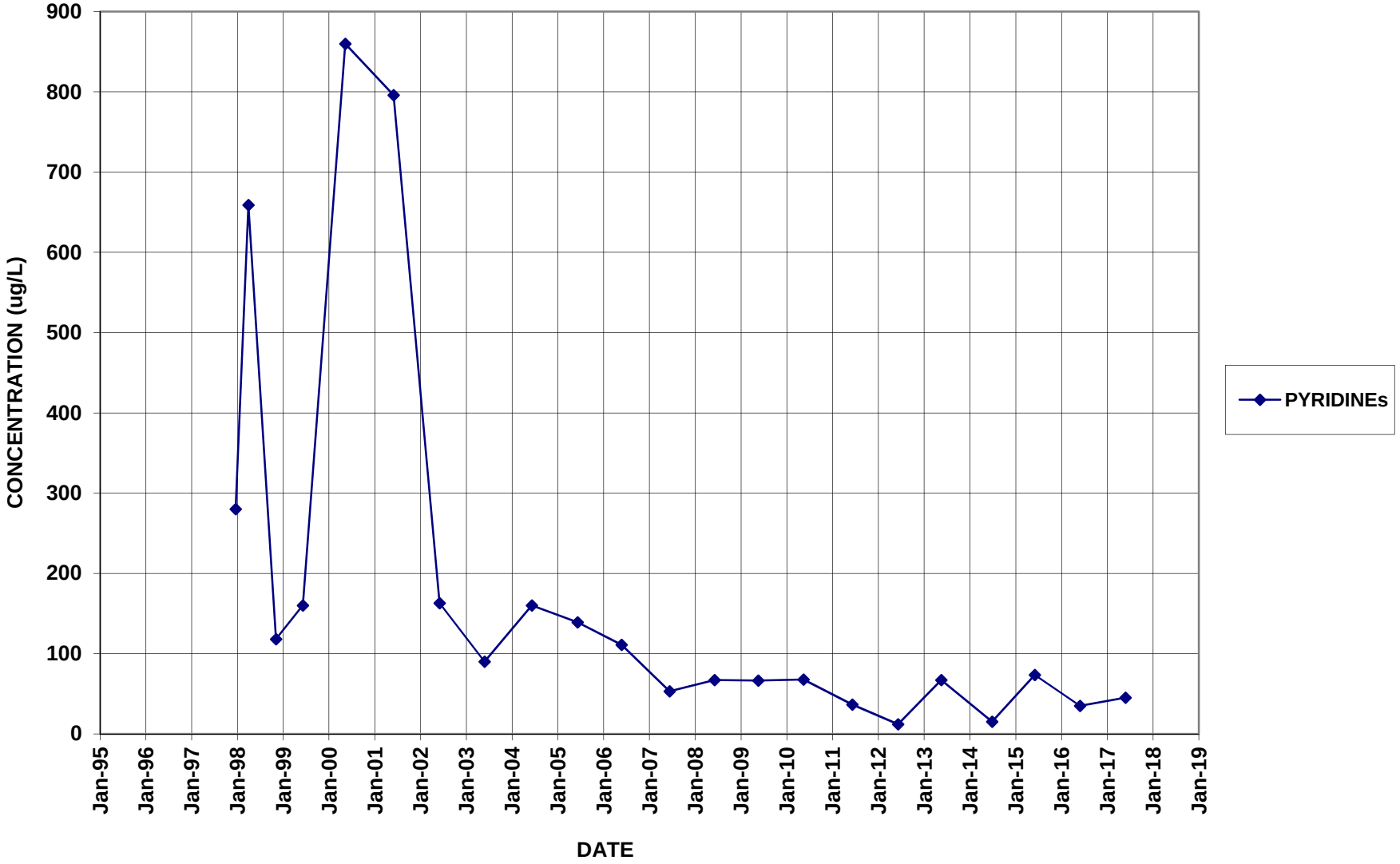
Prepared by: nmb
Reviewed by: jeb

BR-122D



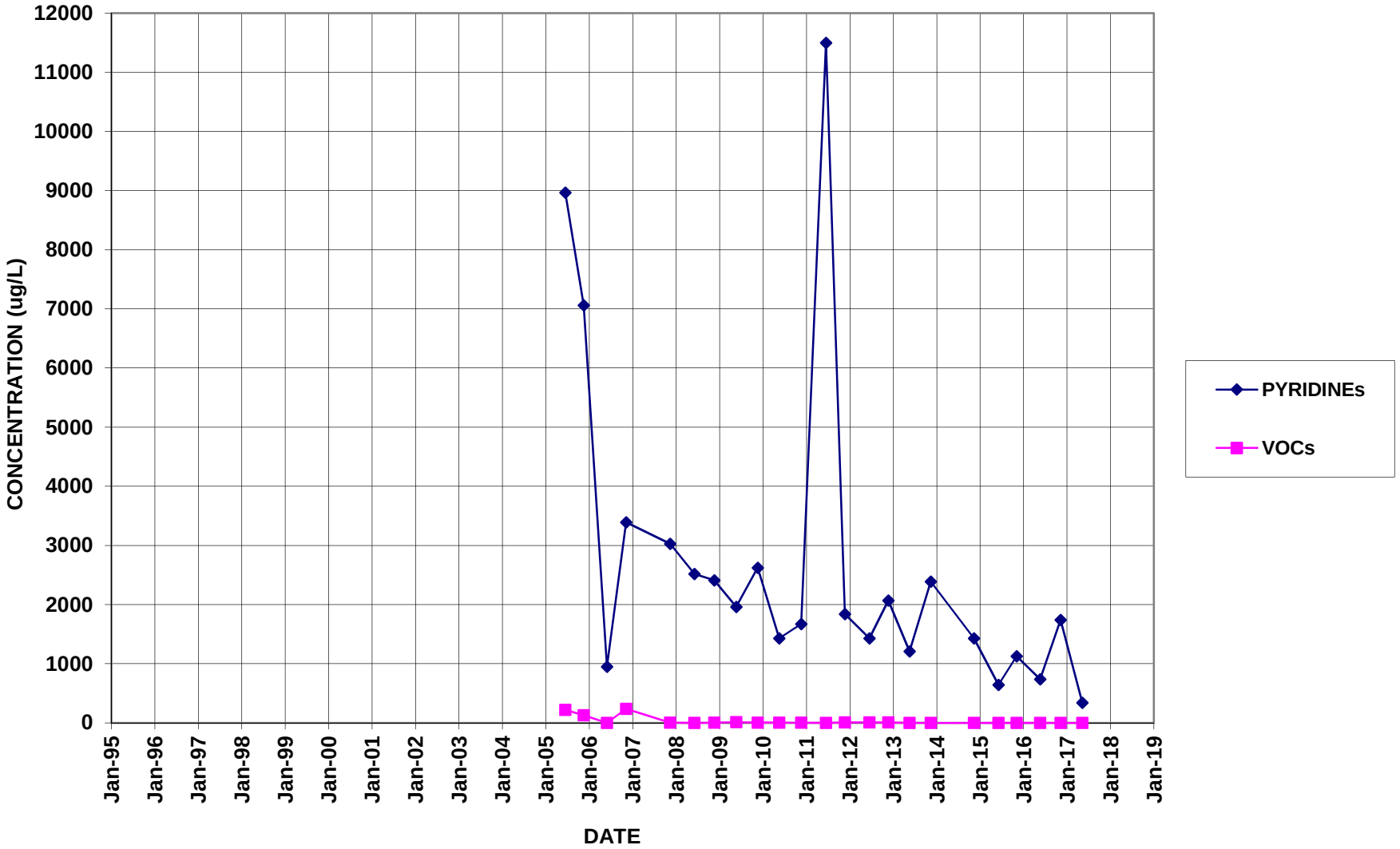
Prepared by: nmb
Reviewed by: jeb

BR-123D



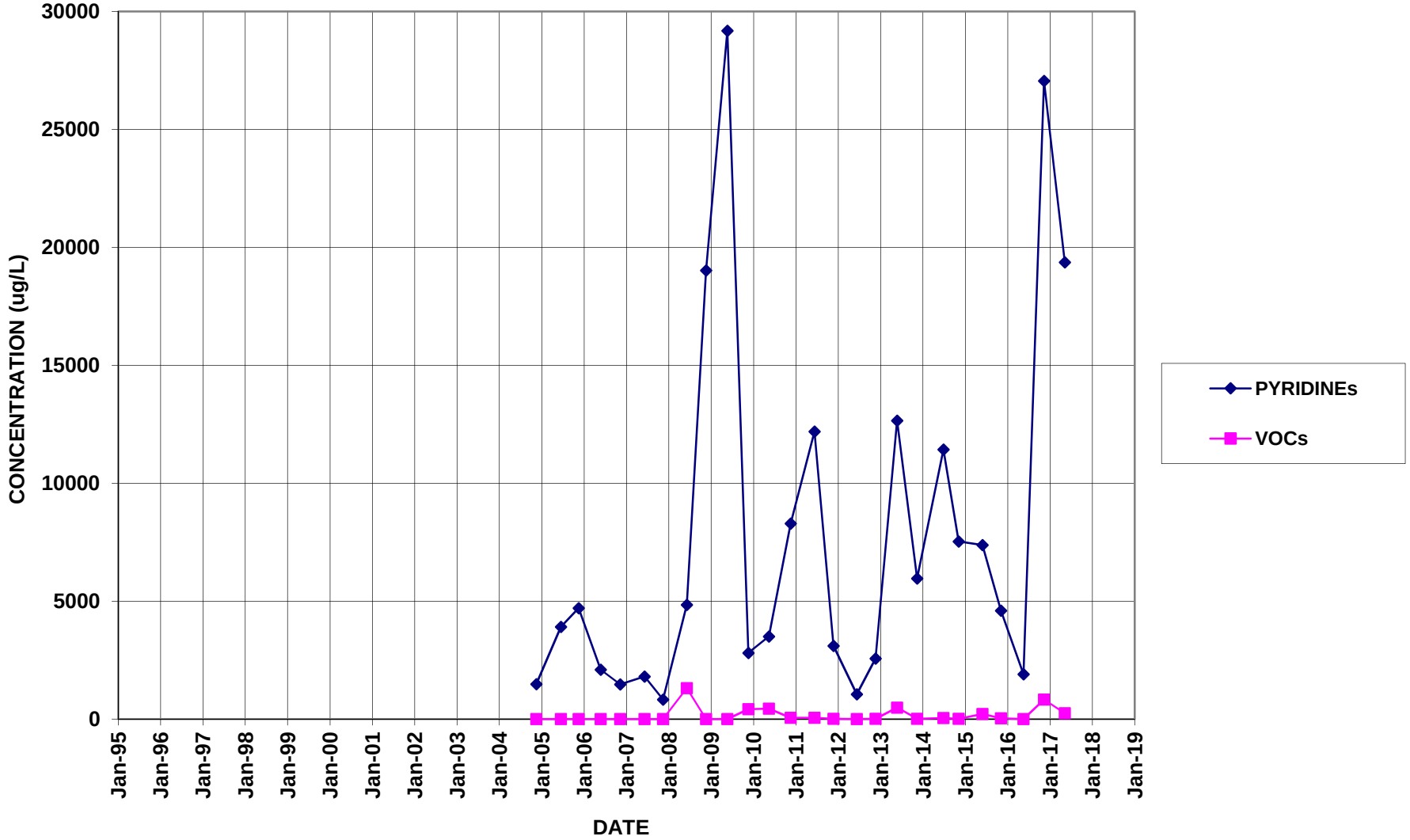
Prepared by: nmb
Reviewed by: jeb

BR-126

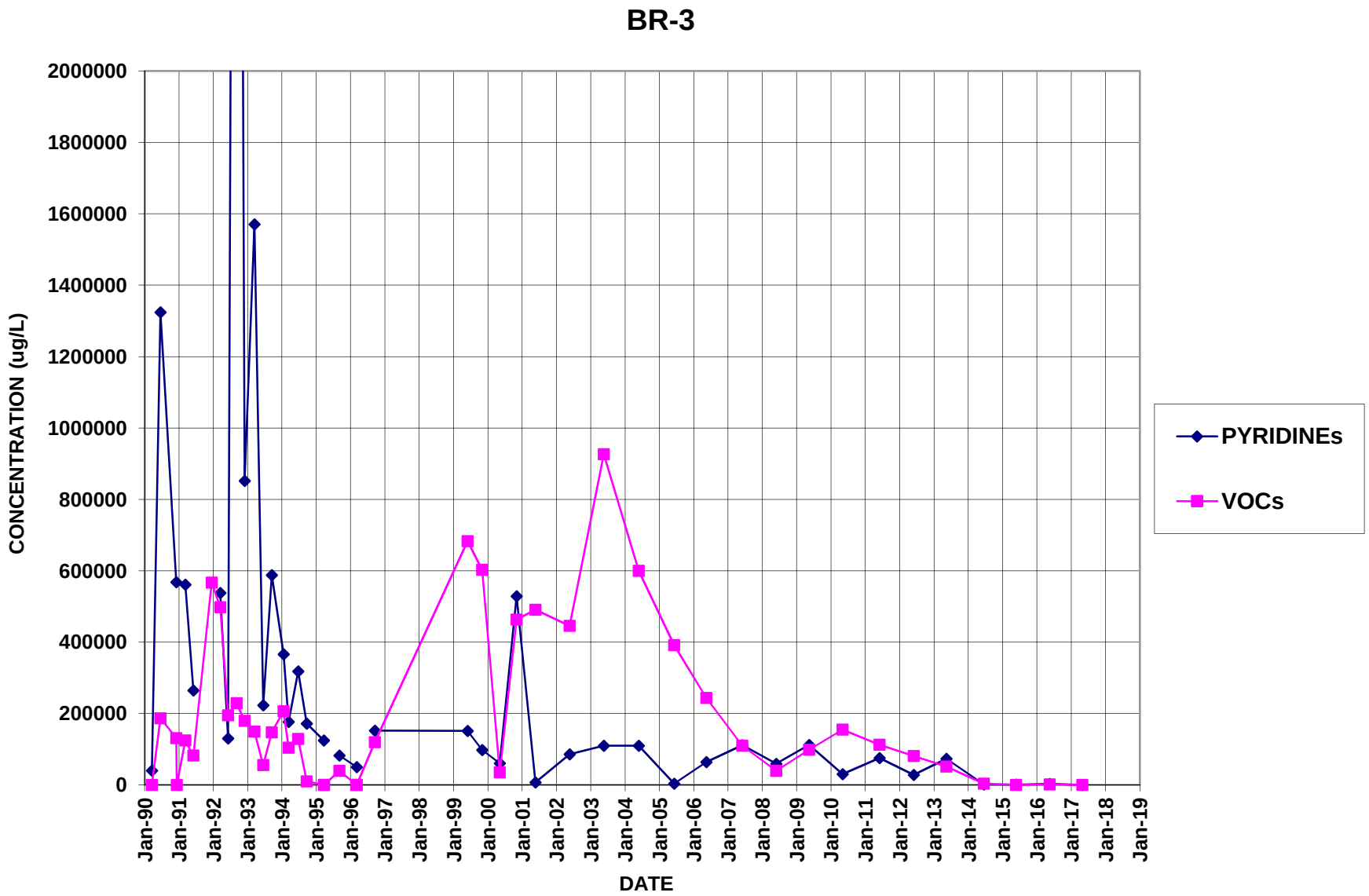


Prepared by: nmb
Reviewed by: jeb

BR-127

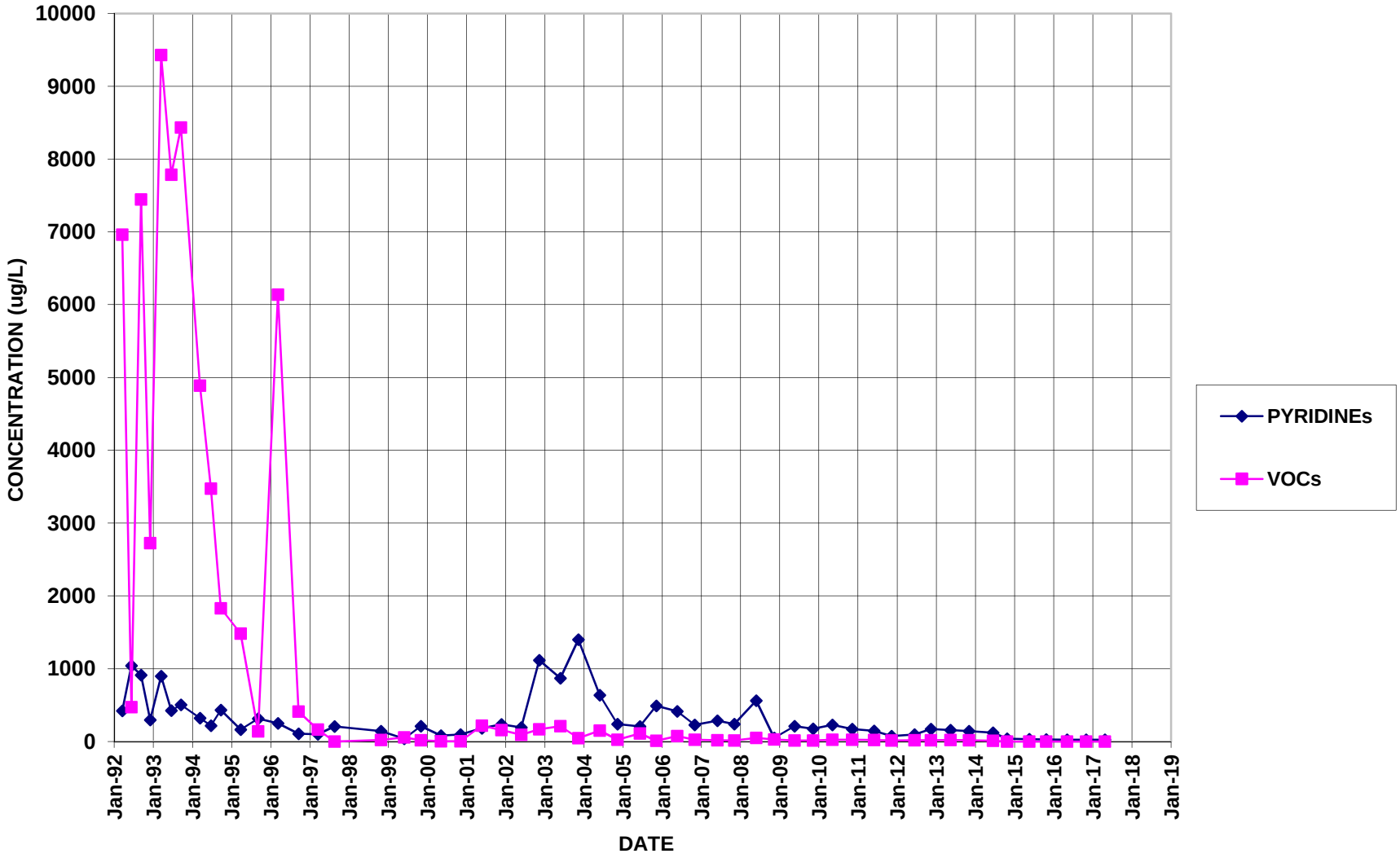


Prepared by: nmb
Reviewed by: jeb



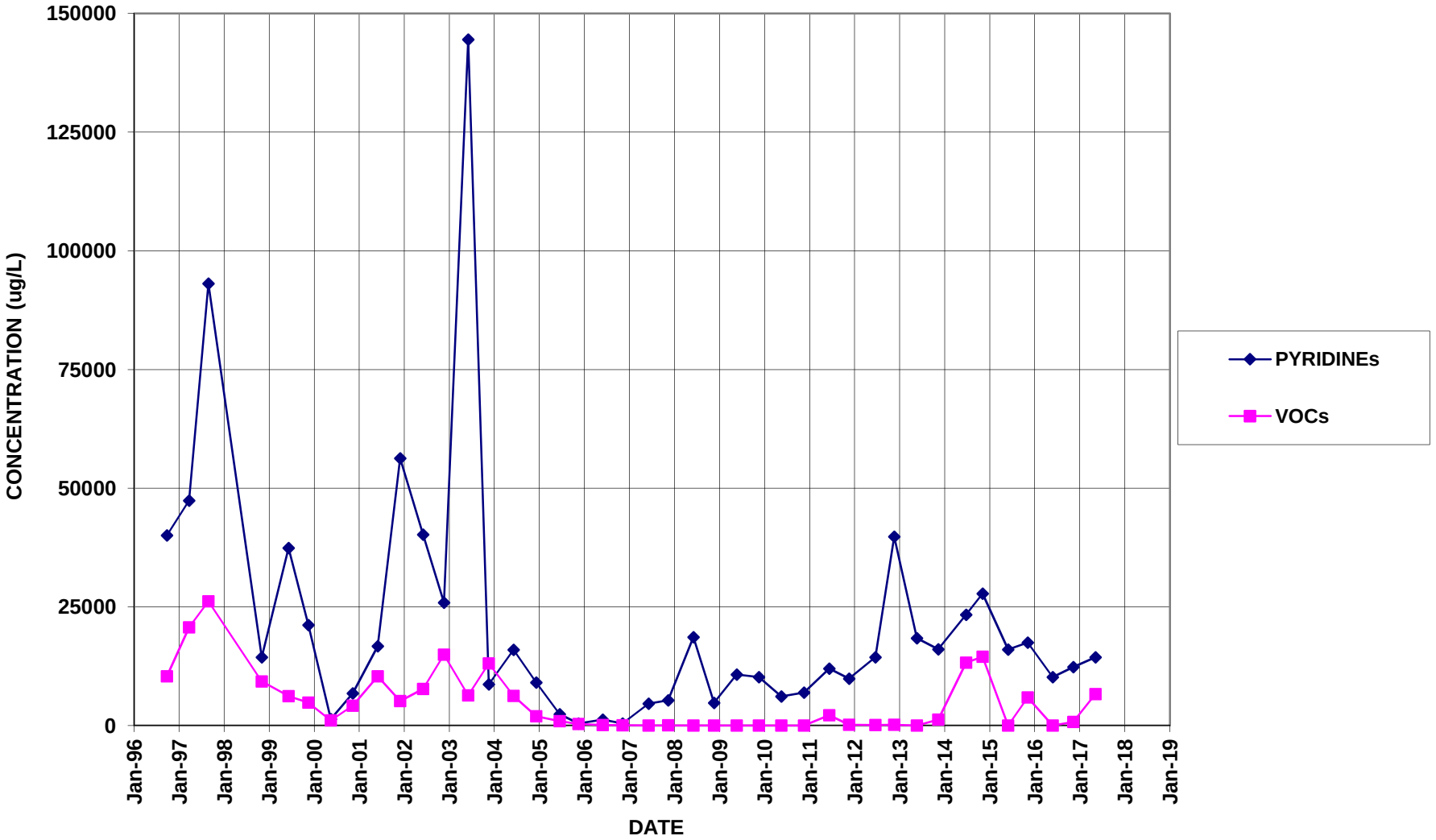
Prepared by: nmb
Reviewed by: jeb

BR-5A



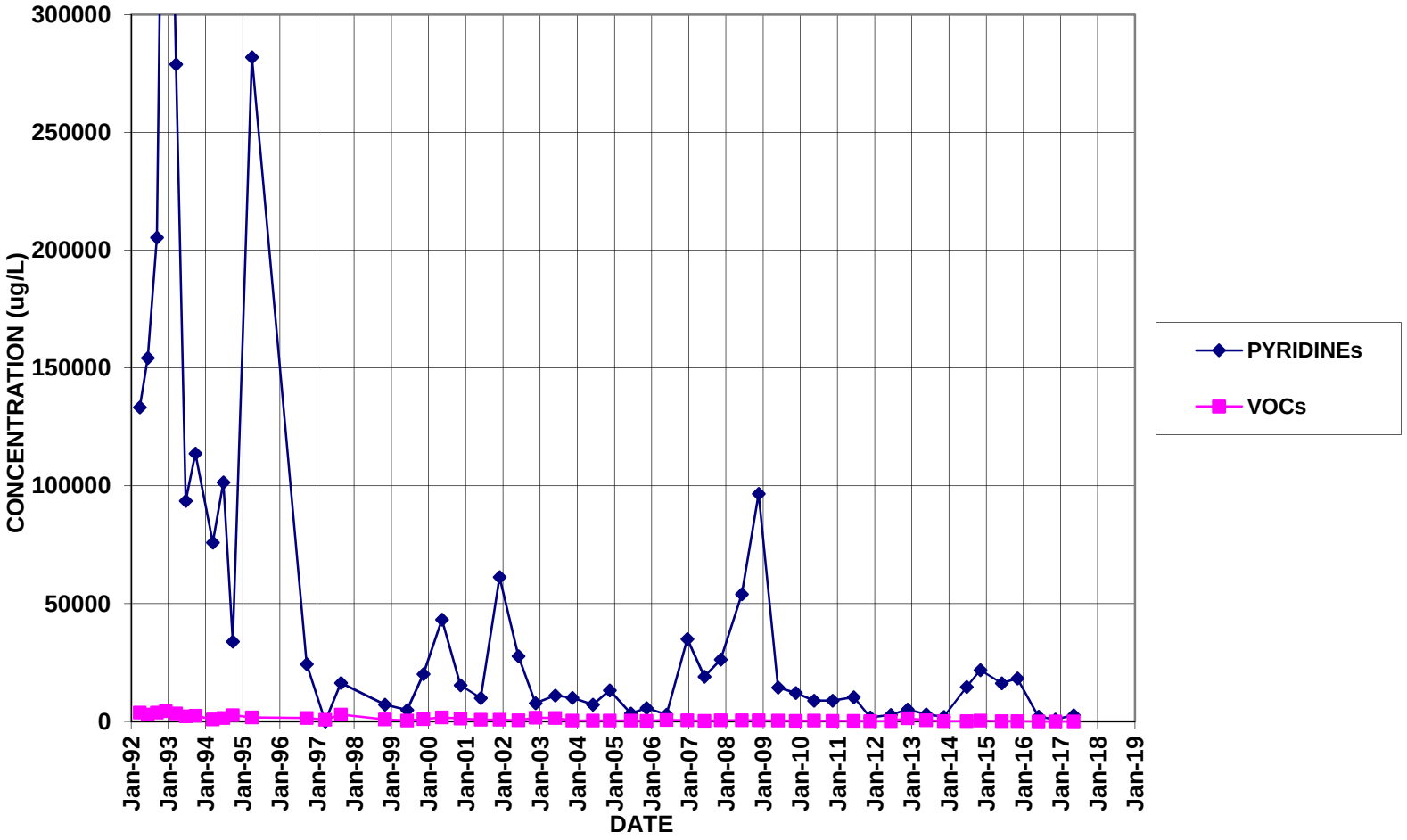
Prepared by: nmb
Reviewed by: jeb

BR-6A



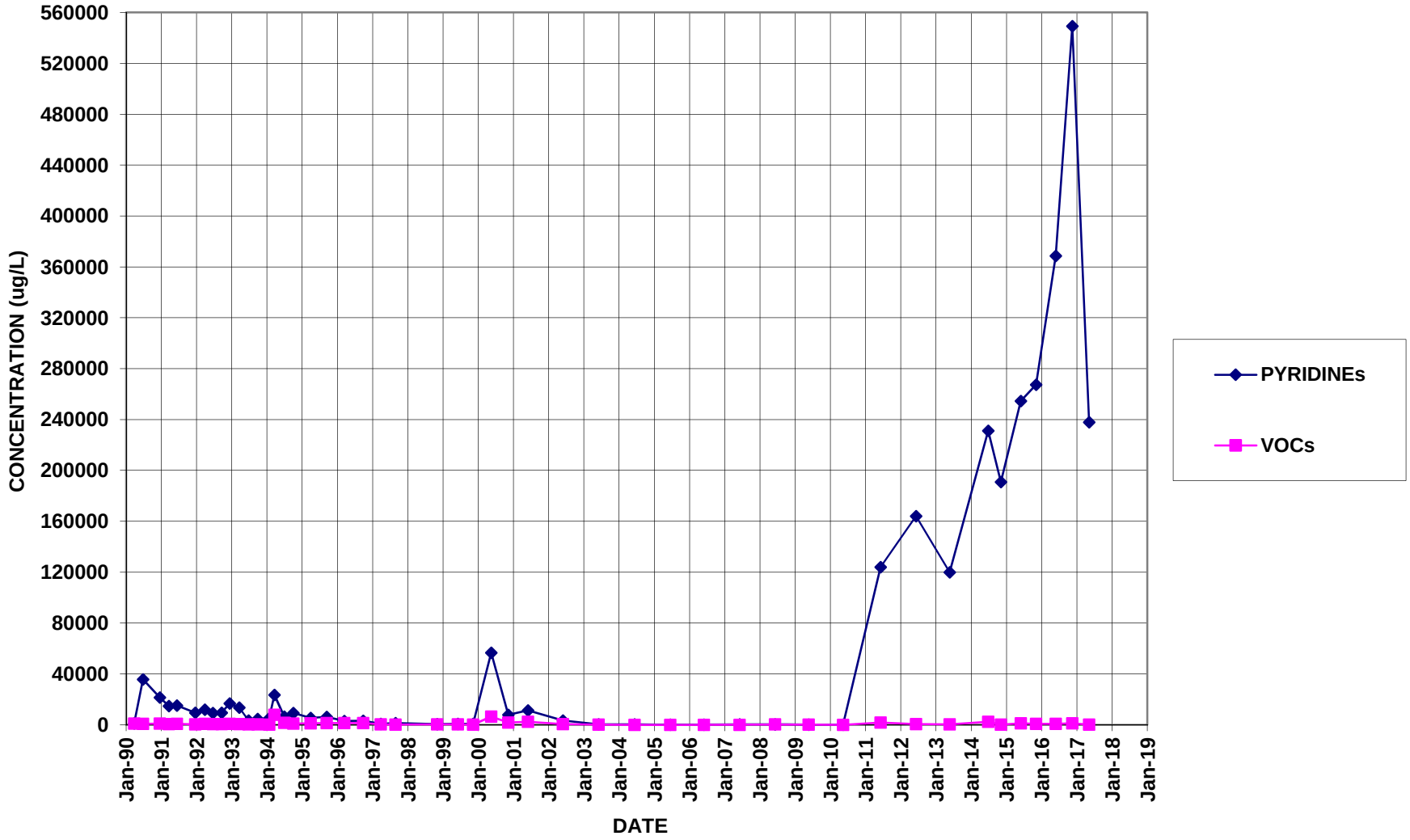
Prepared by: nmb
Reviewed by: jeb

BR-7A



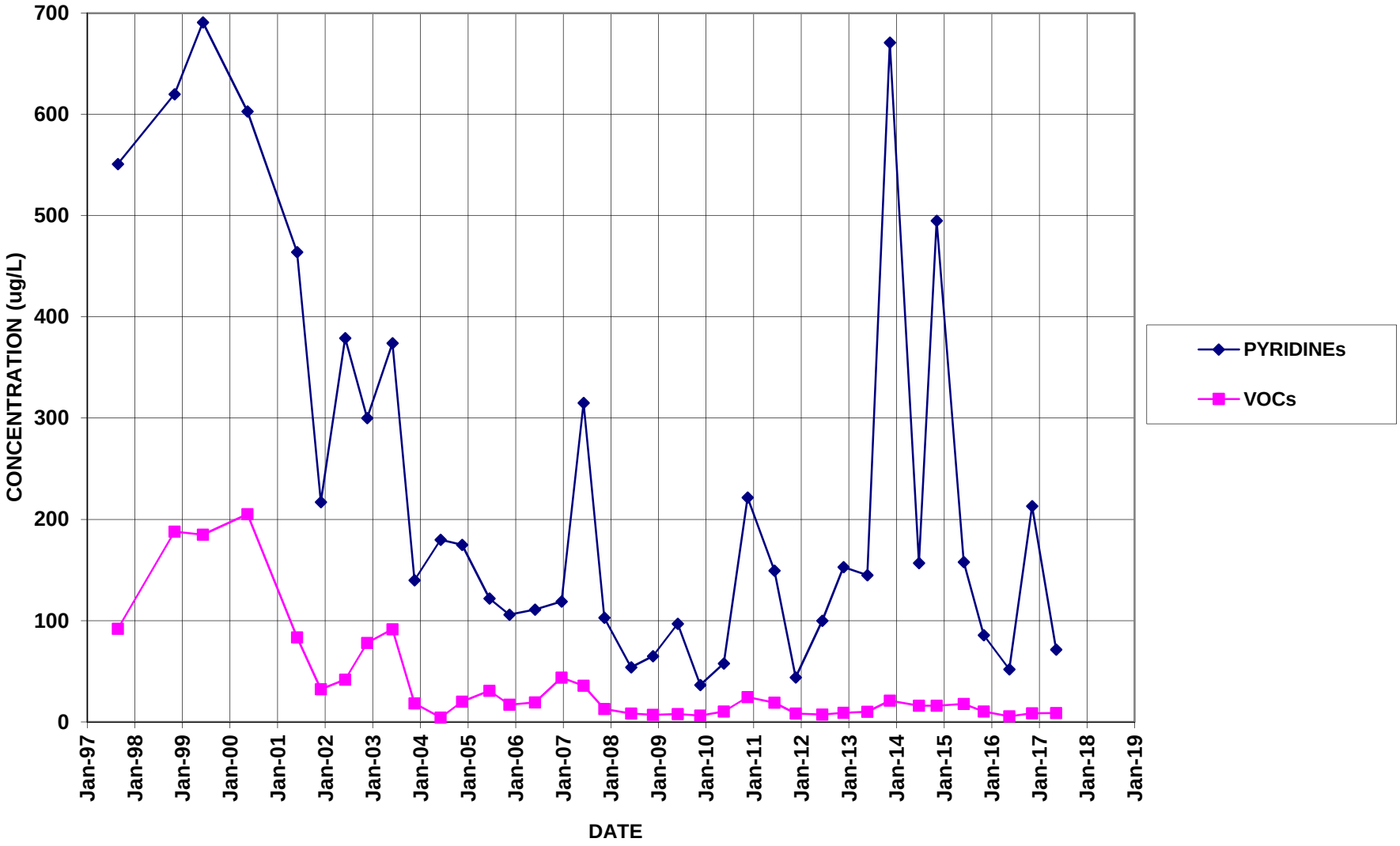
Prepared by: nmb
Reviewed by: jeb

BR-8

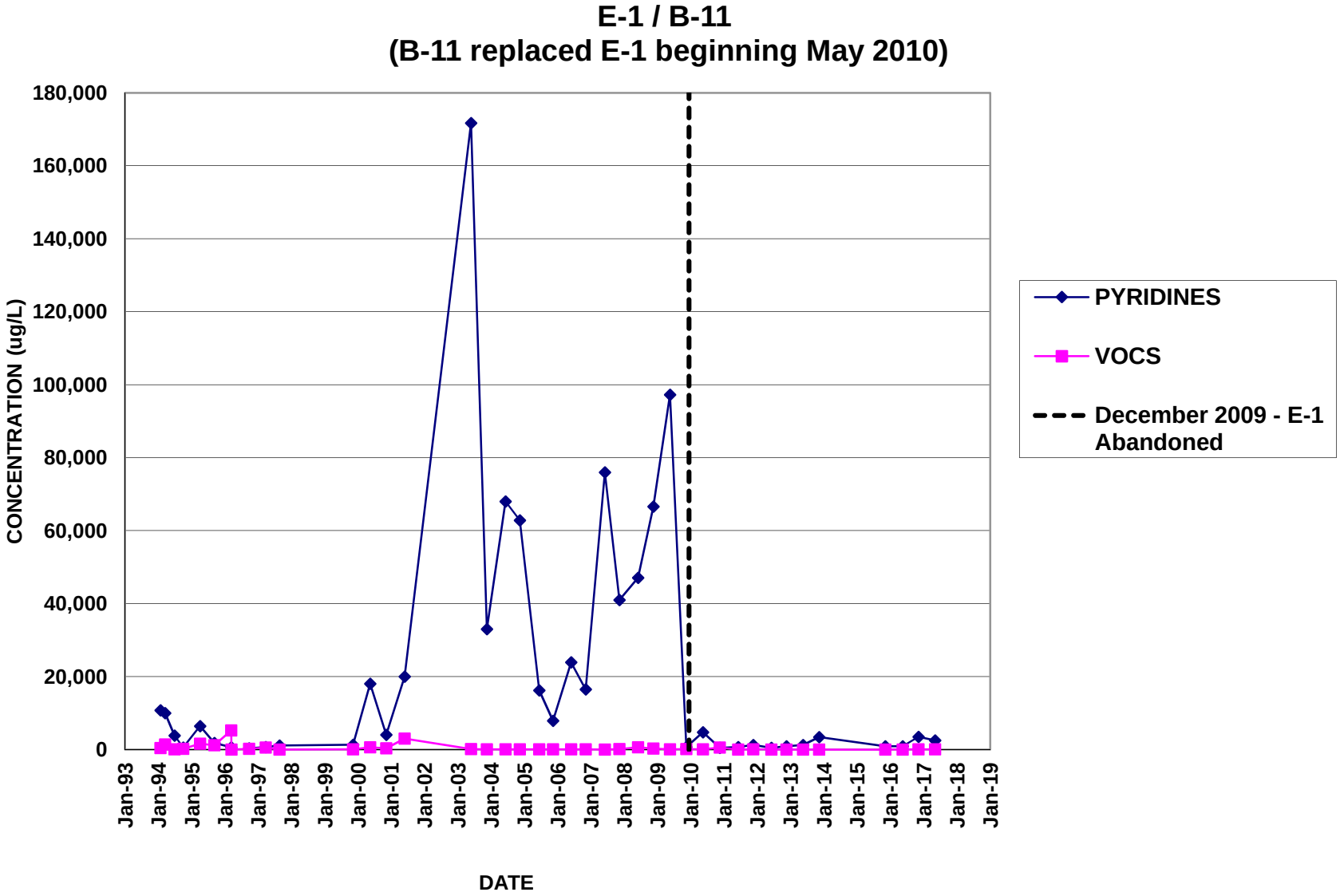


Prepared by: nmb
Reviewed by: jeb

BR-9

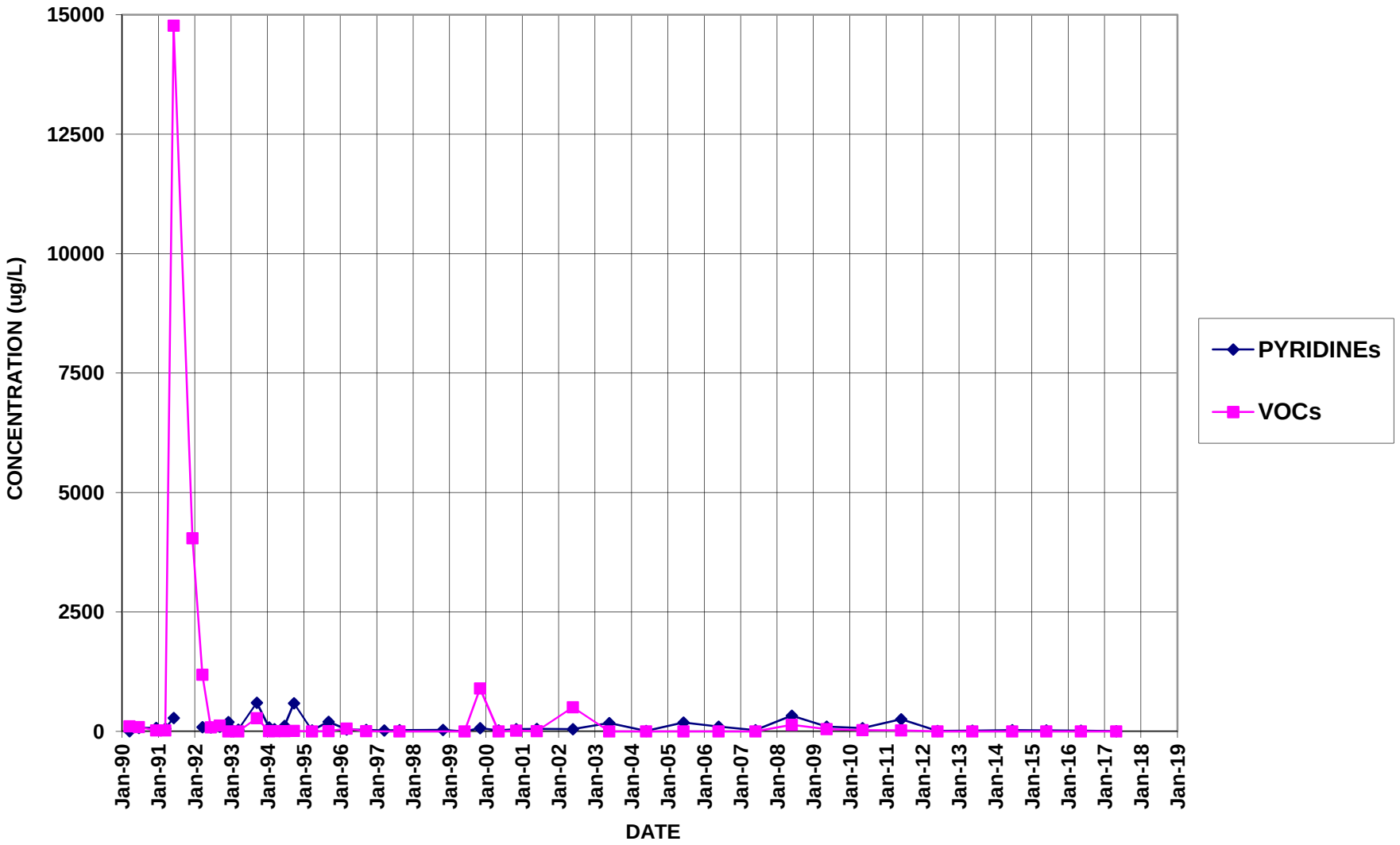


Prepared by: nmb
Reviewed by: jeb



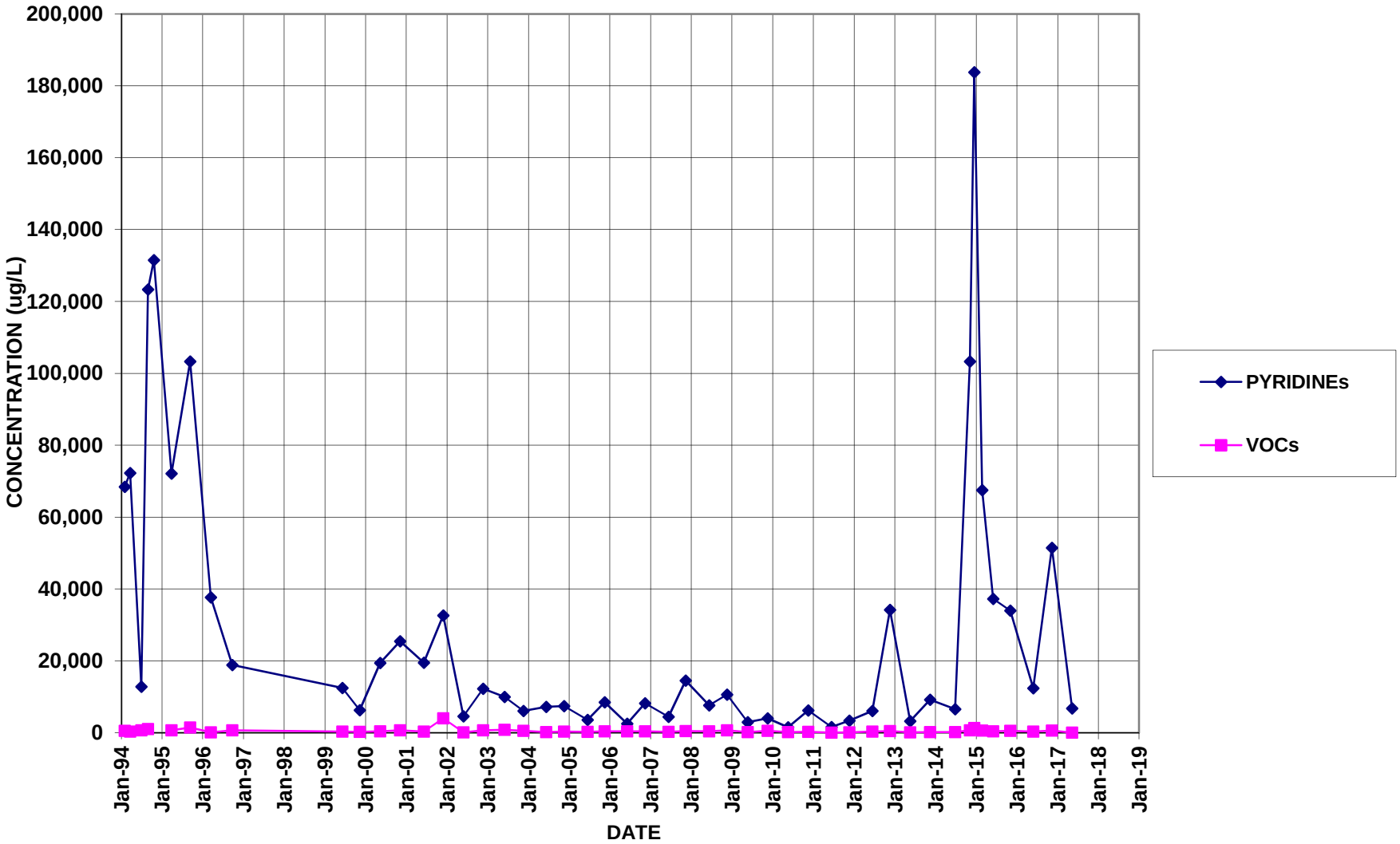
Prepared by: nmb
Reviewed by: jeb

E-3



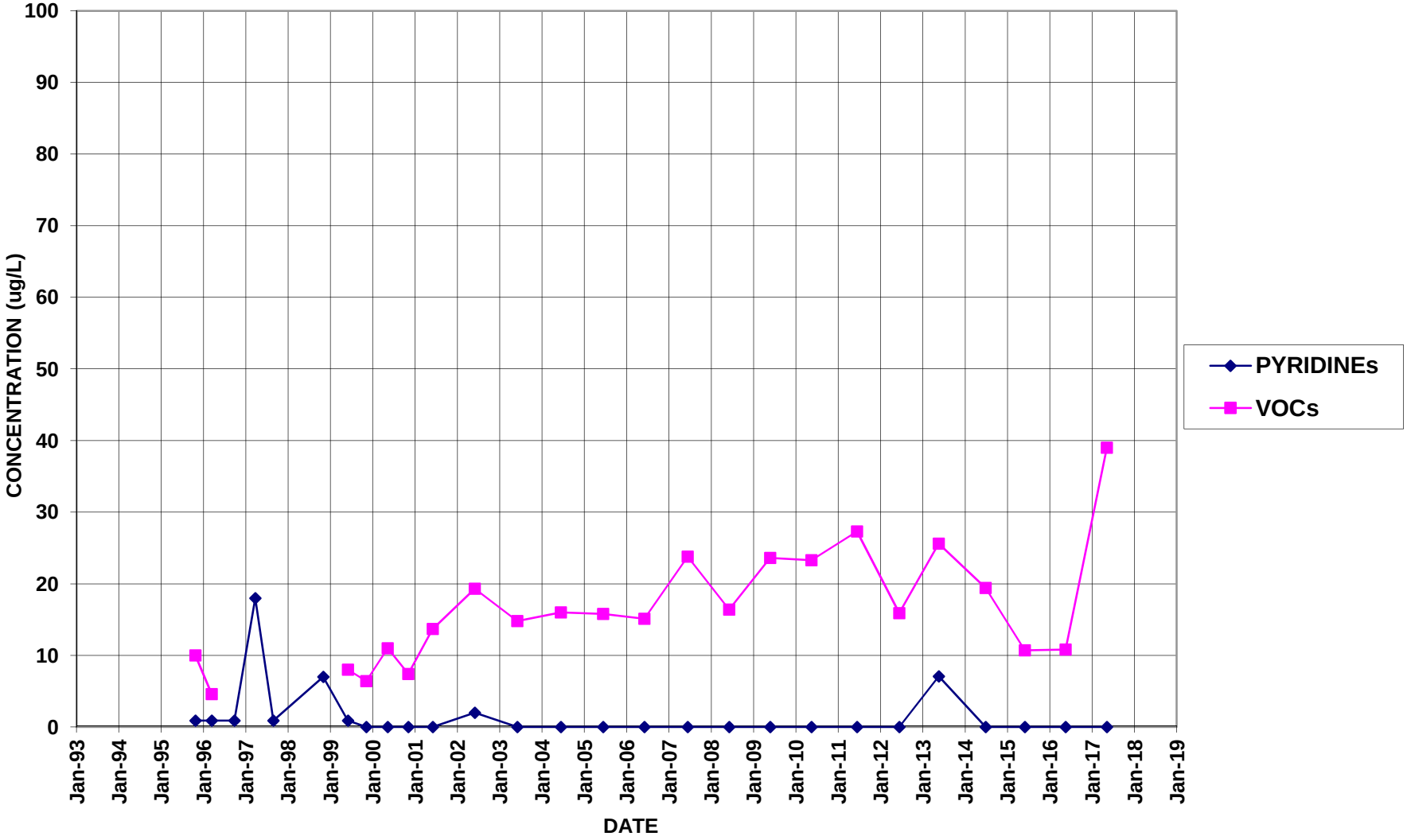
Prepared by: nmb
Reviewed by: jeb

MW-106



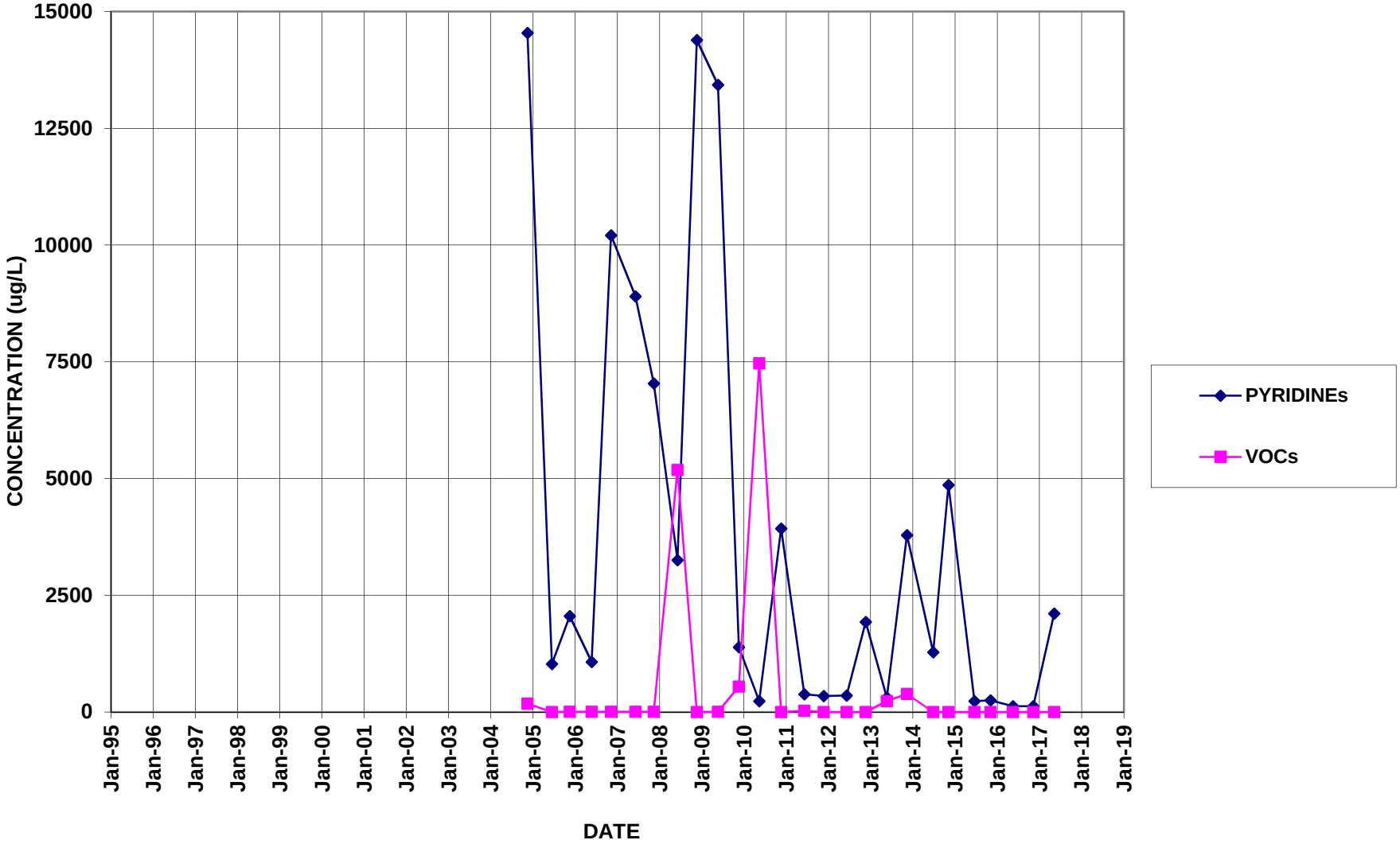
Prepared by: nmb
Reviewed by: jeb

MW-114



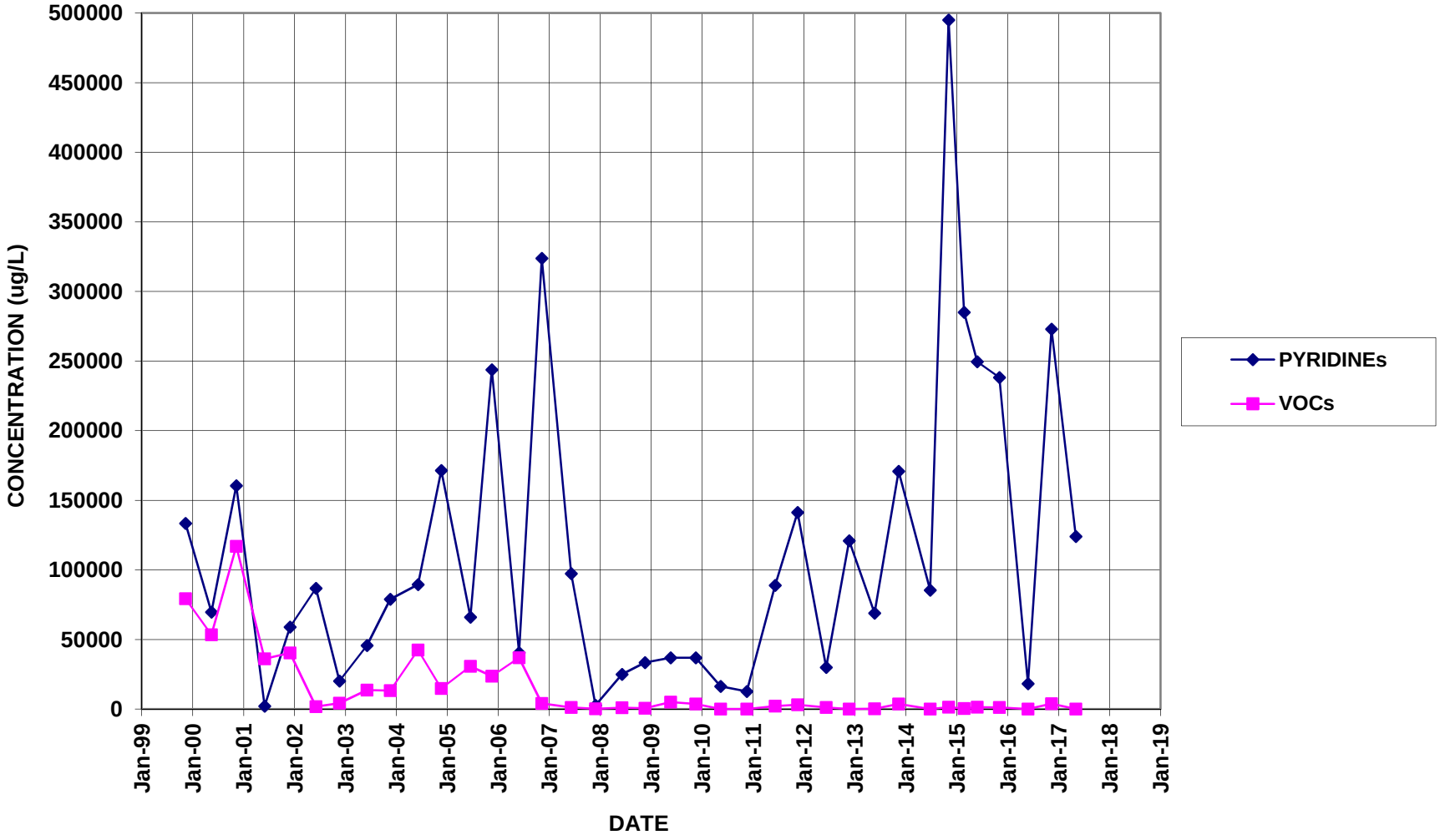
Prepared by: nmb
Reviewed by: jeb

MW-127



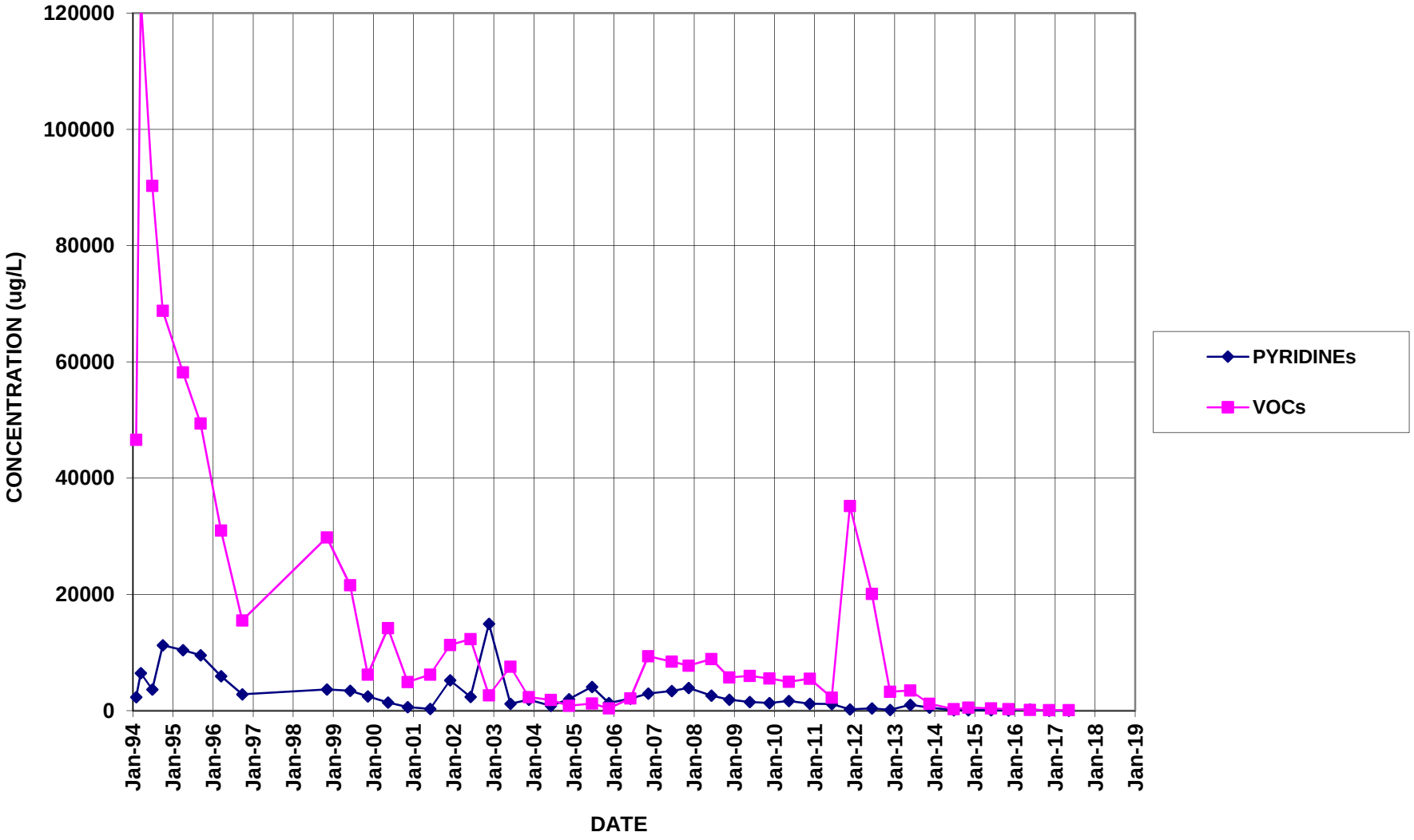
Prepared by: nmb
Reviewed by: jeb

PW10



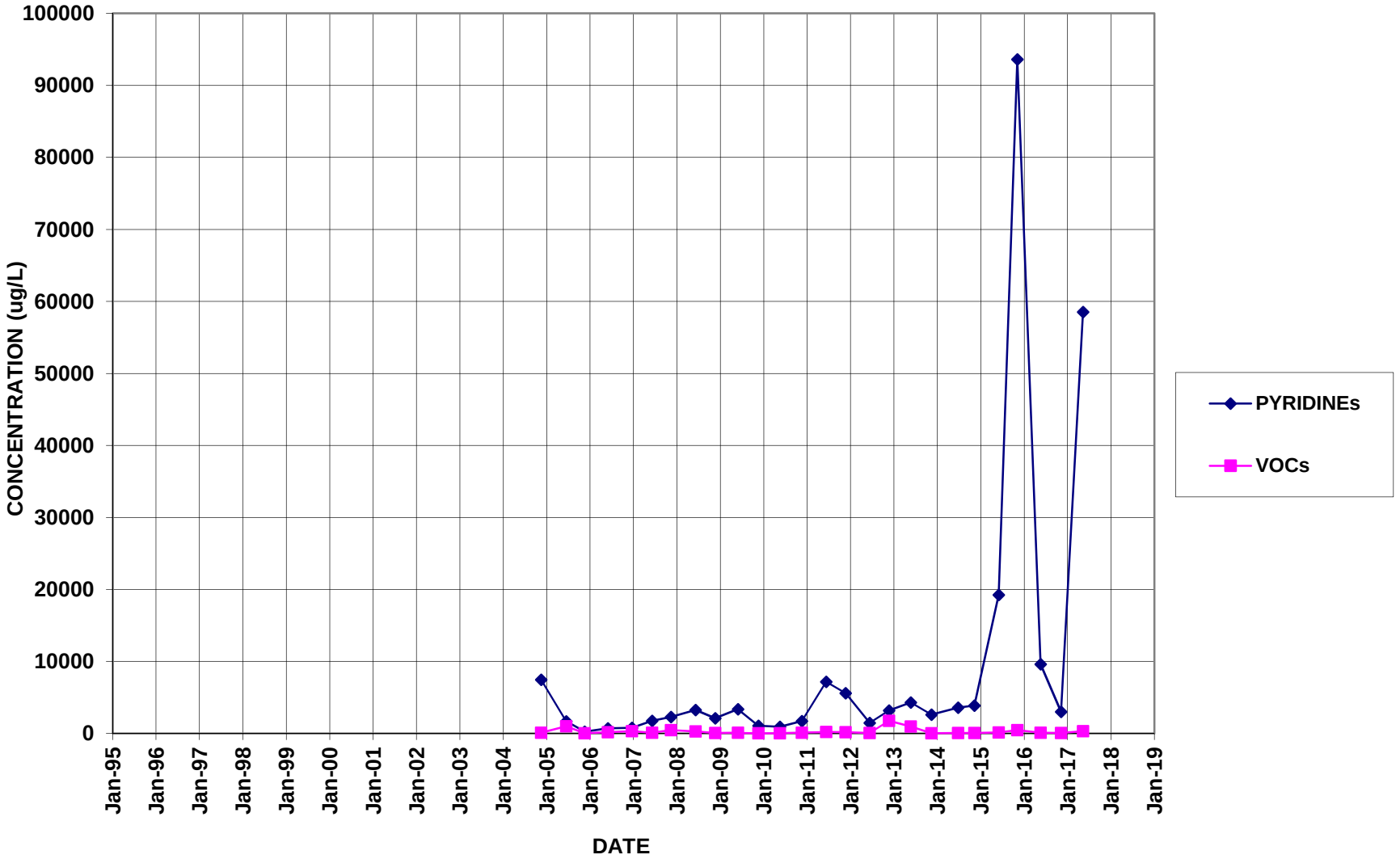
Prepared by: nmb
Reviewed by: jeb

PW12 (Formerly BR-101)



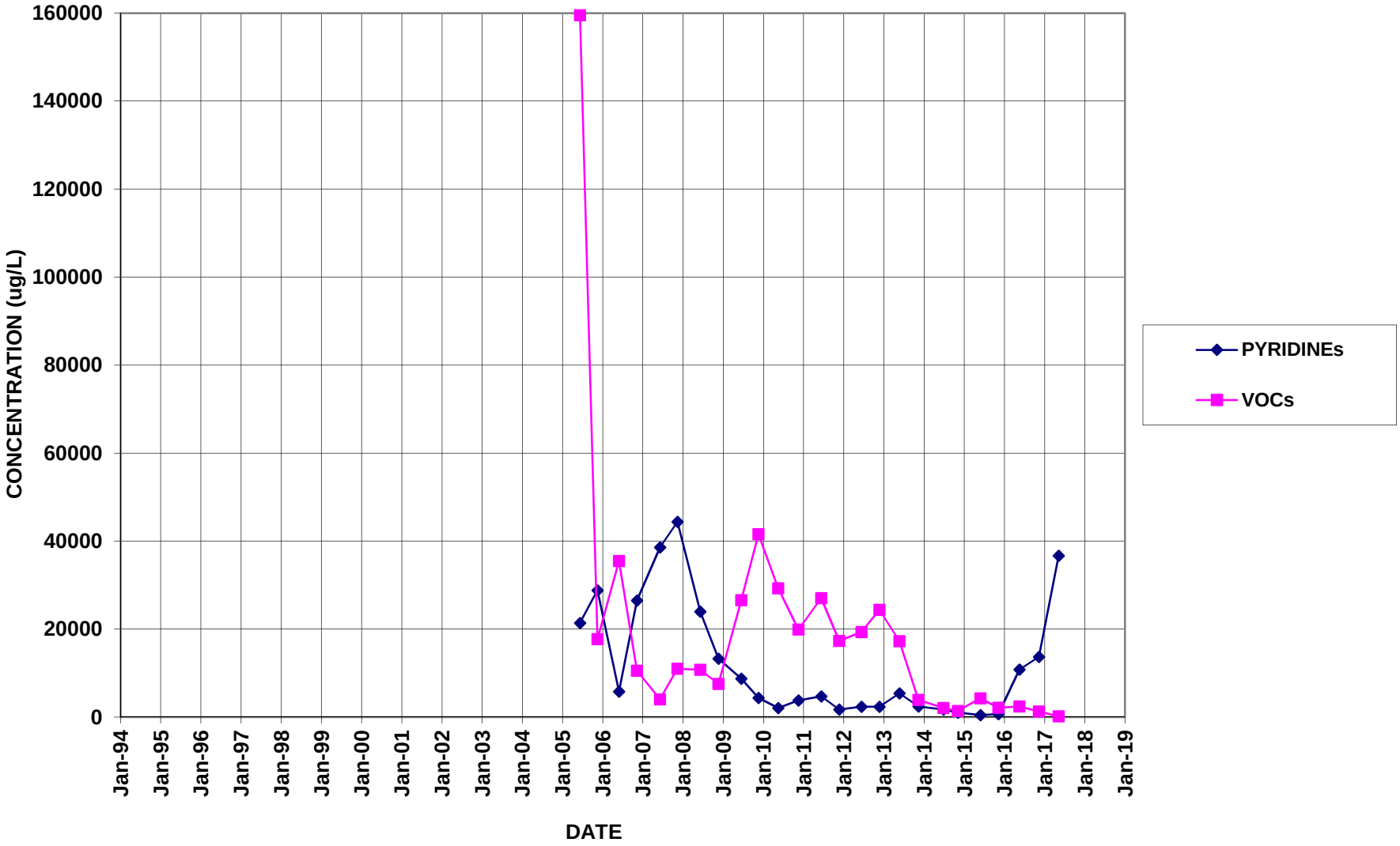
Prepared by: nmb
Reviewed by: jeb

PW13



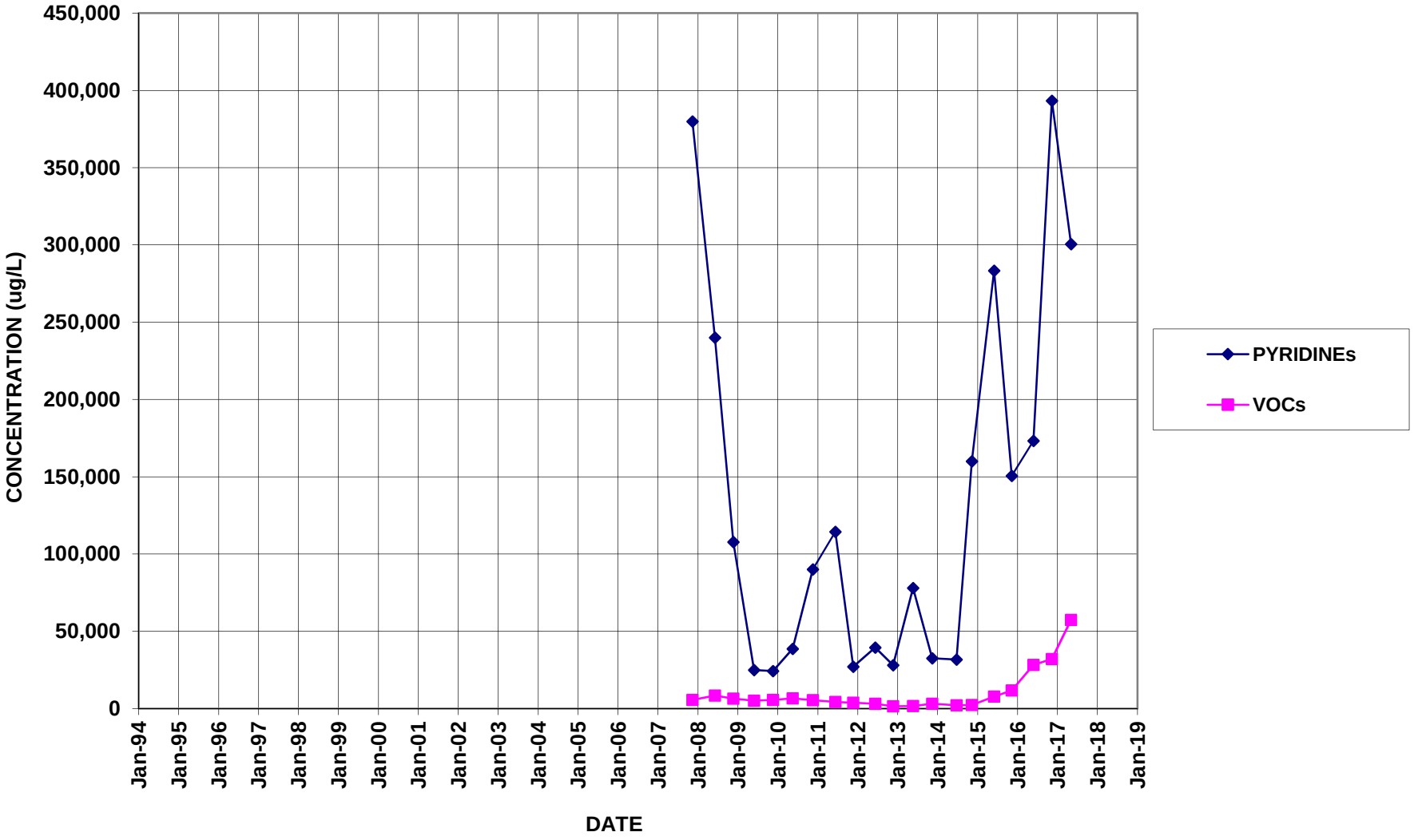
Prepared by: nmb
Reviewed by: jeb

PW14



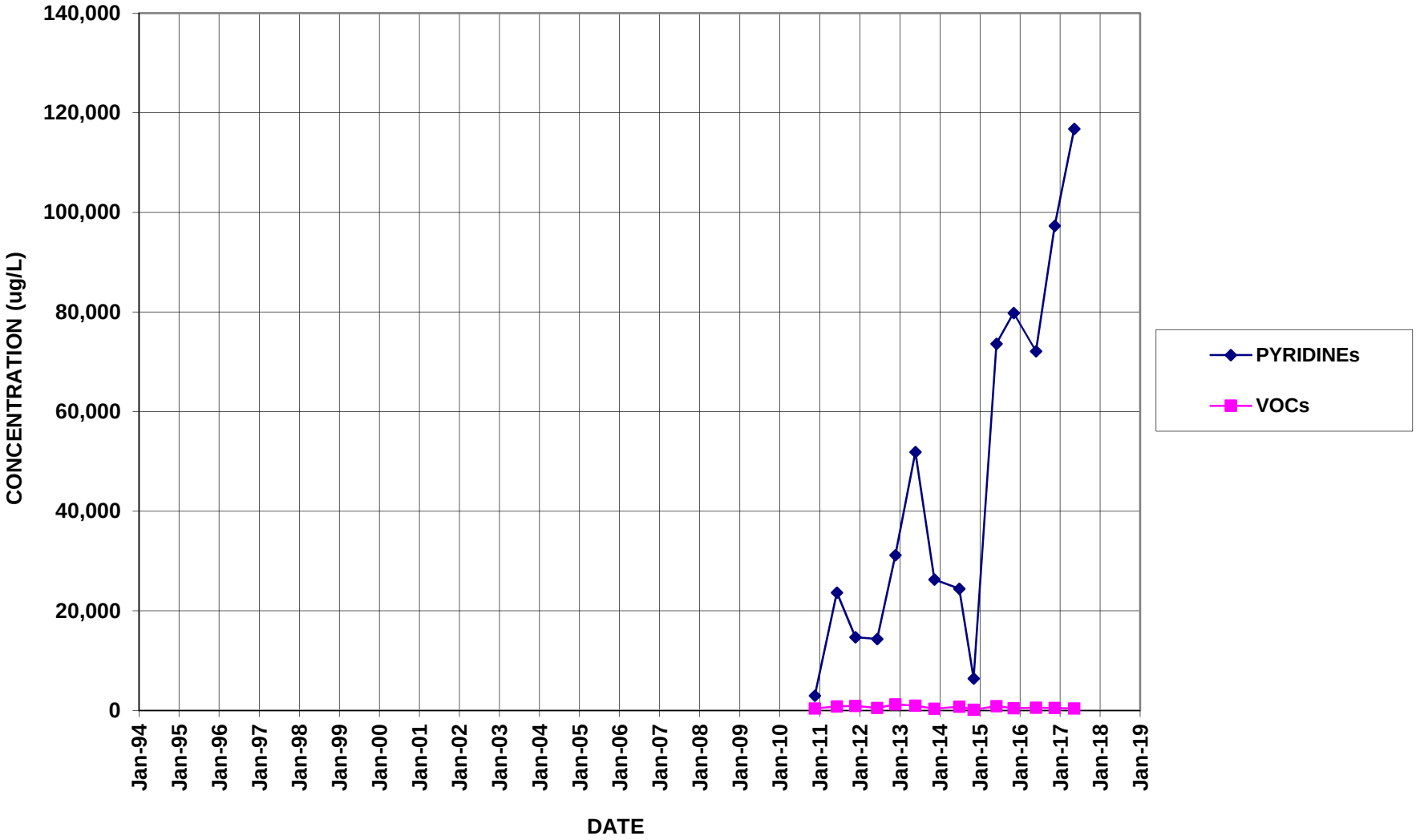
Prepared by: nmb
Reviewed by: jeb

PW15



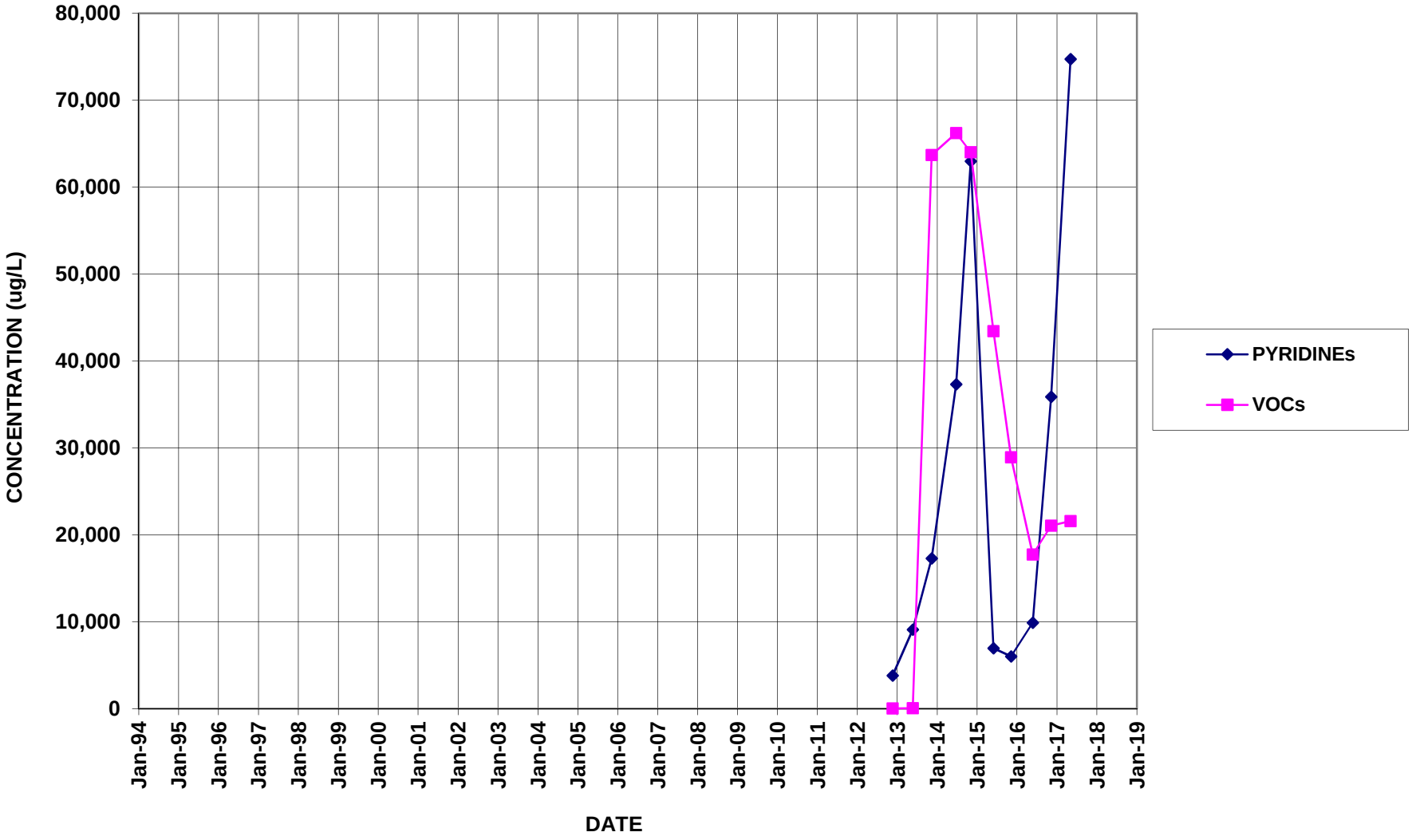
Prepared by: nmb
Reviewed by: jeb

PW16



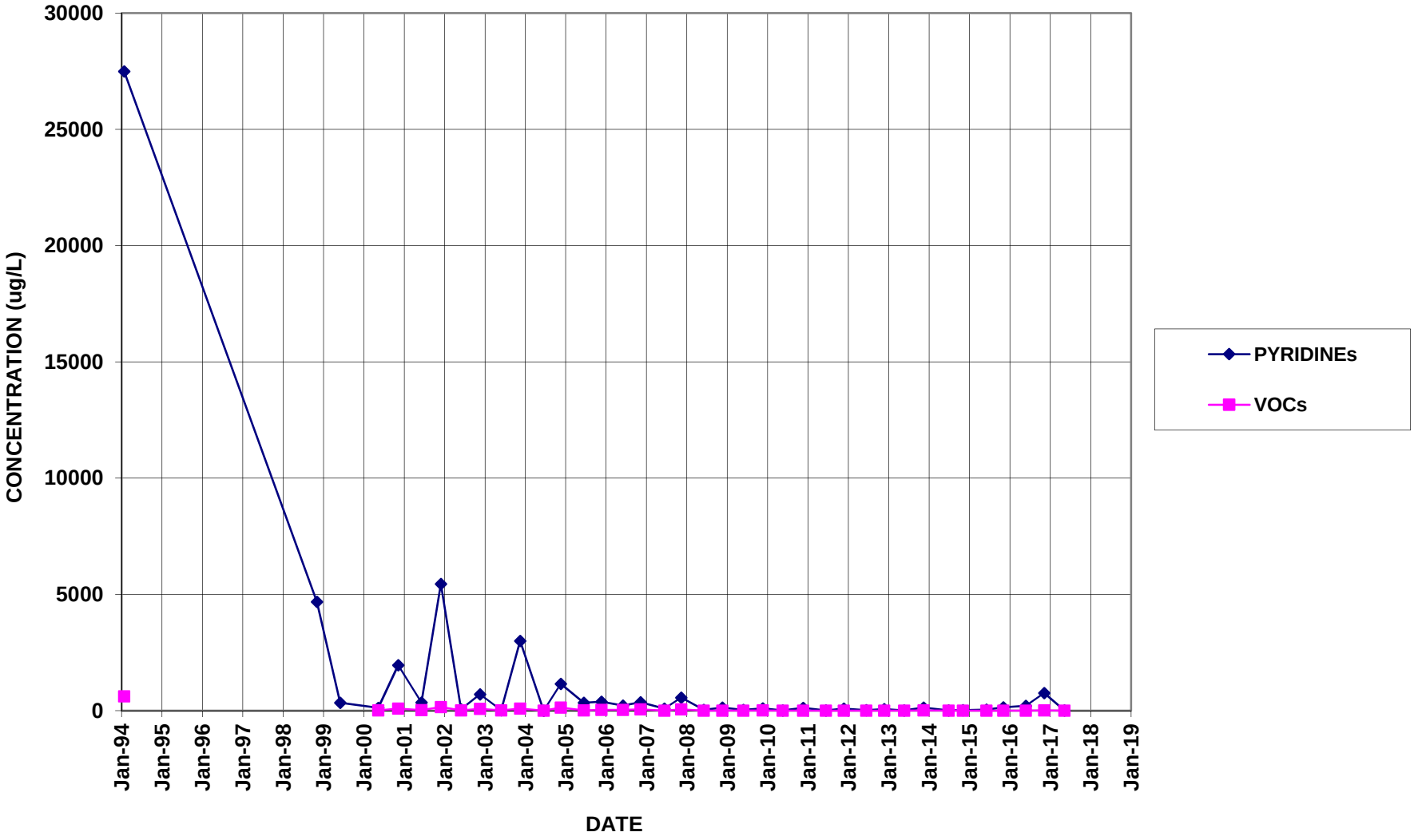
Prepared by: nmb
Reviewed by: jeb

PW17



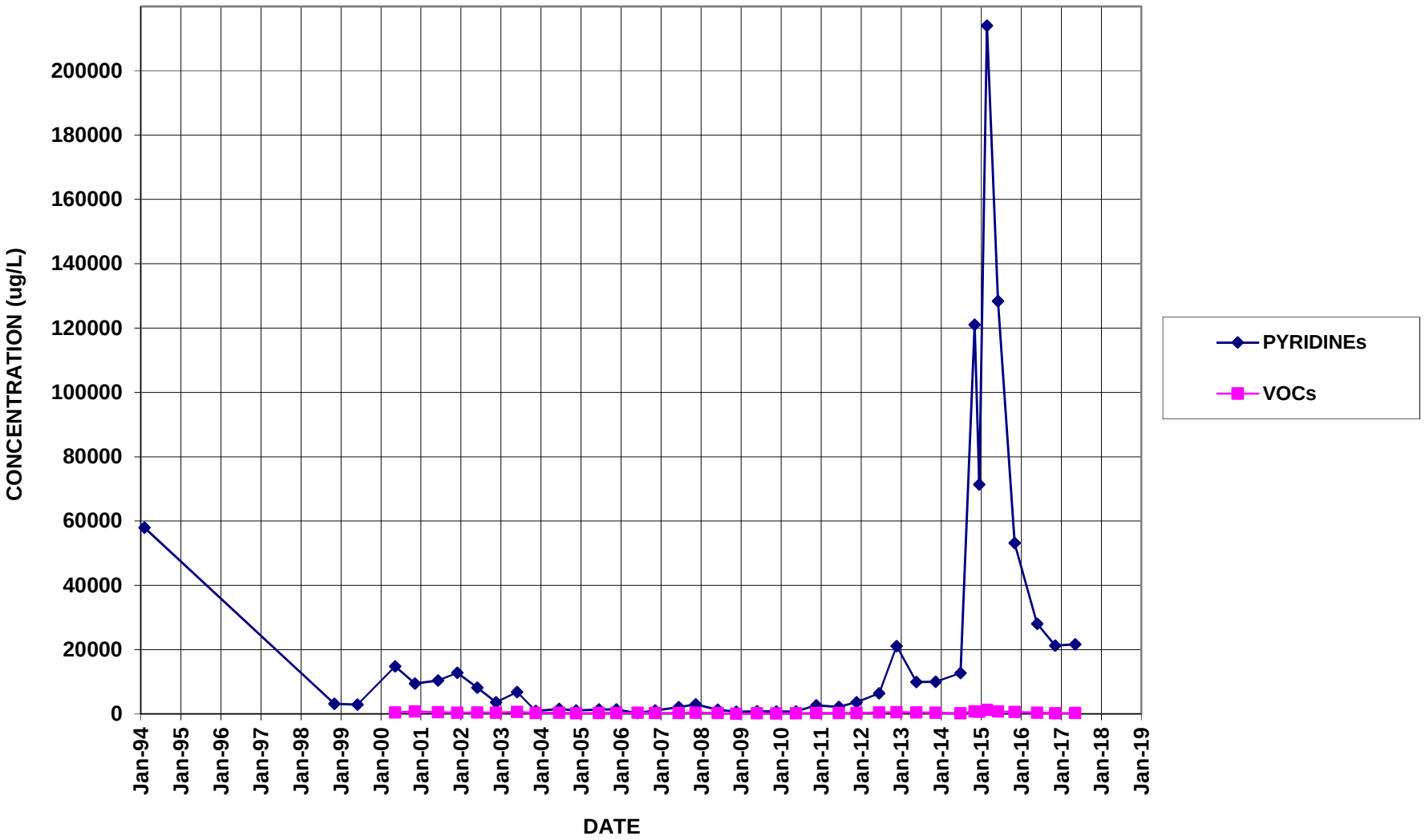
Prepared by: nmb
Reviewed by: jeb

PZ-101



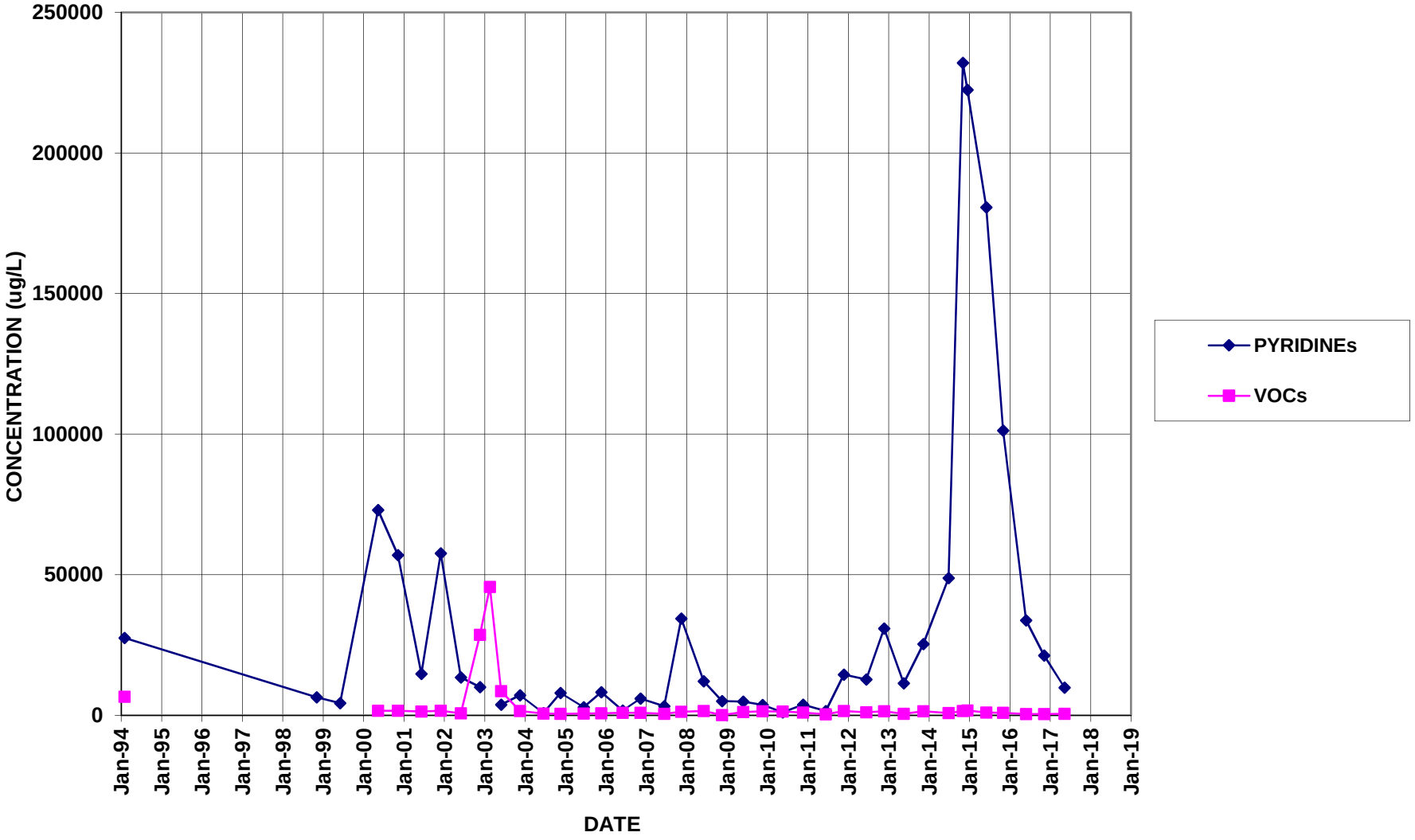
Prepared by: nmb
Reviewed by: jeb

PZ-102



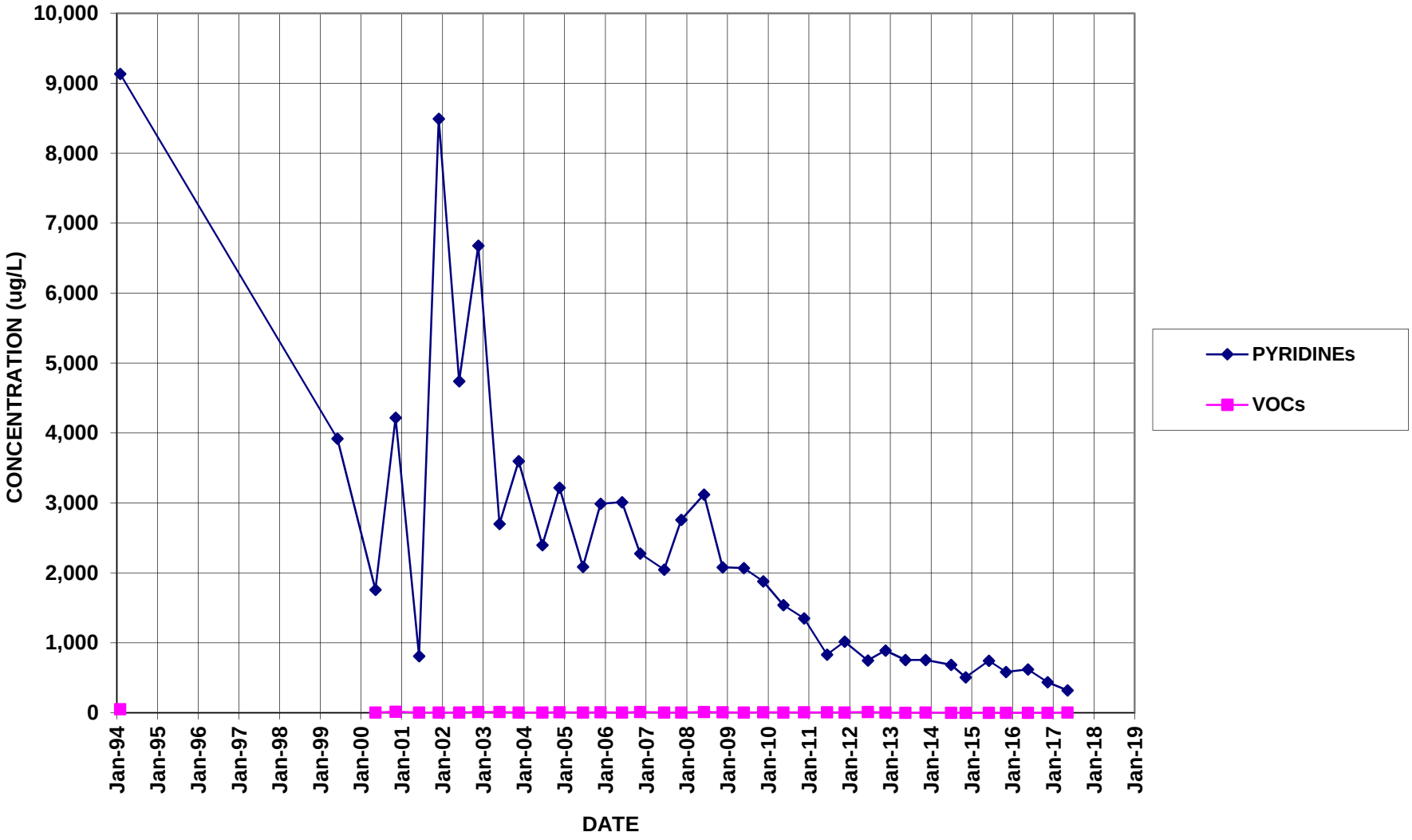
Prepared by: nmb
Reviewed by: jeb

PZ-103



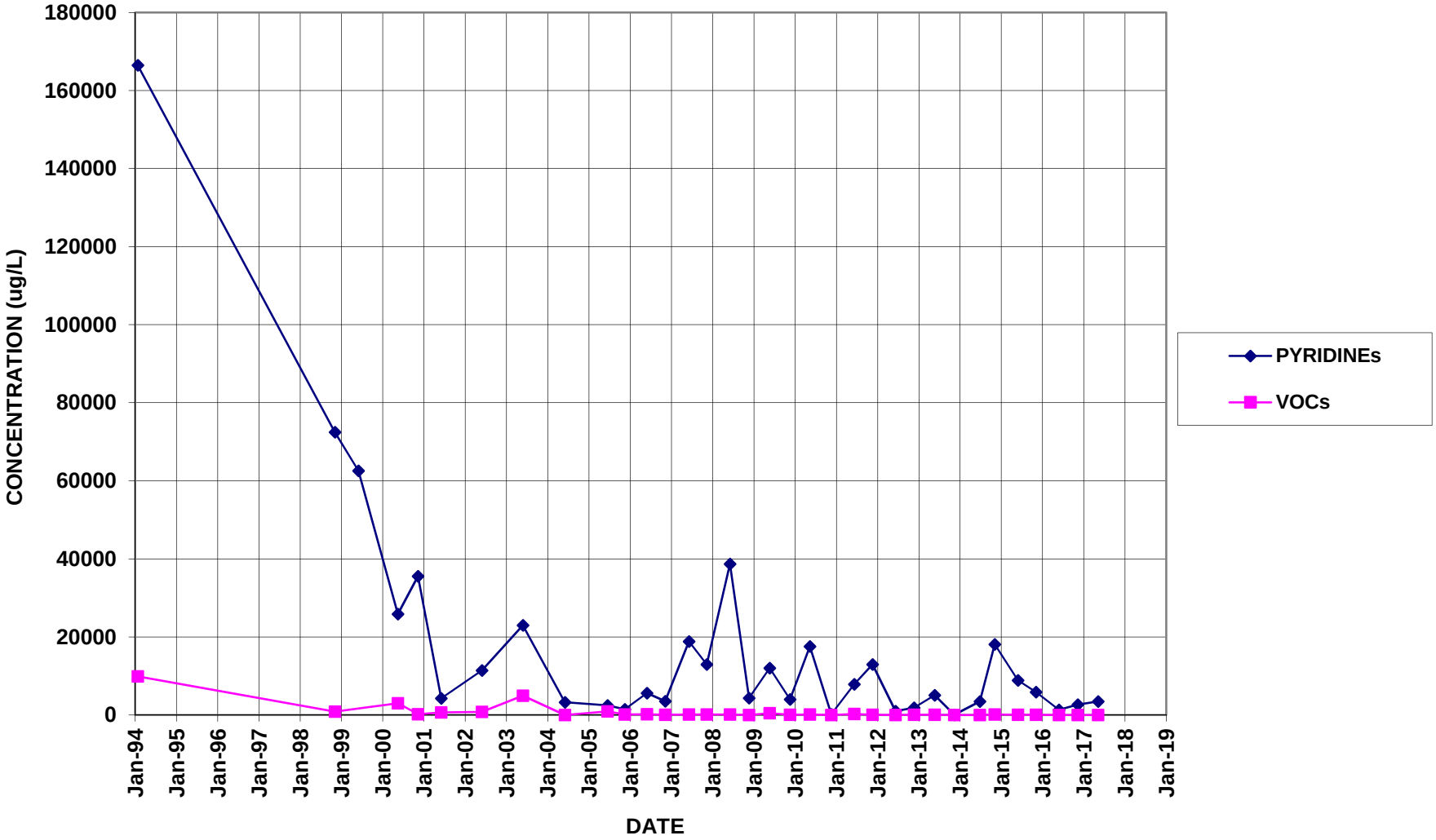
Prepared by: nmb
Reviewed by: jeb

PZ-104



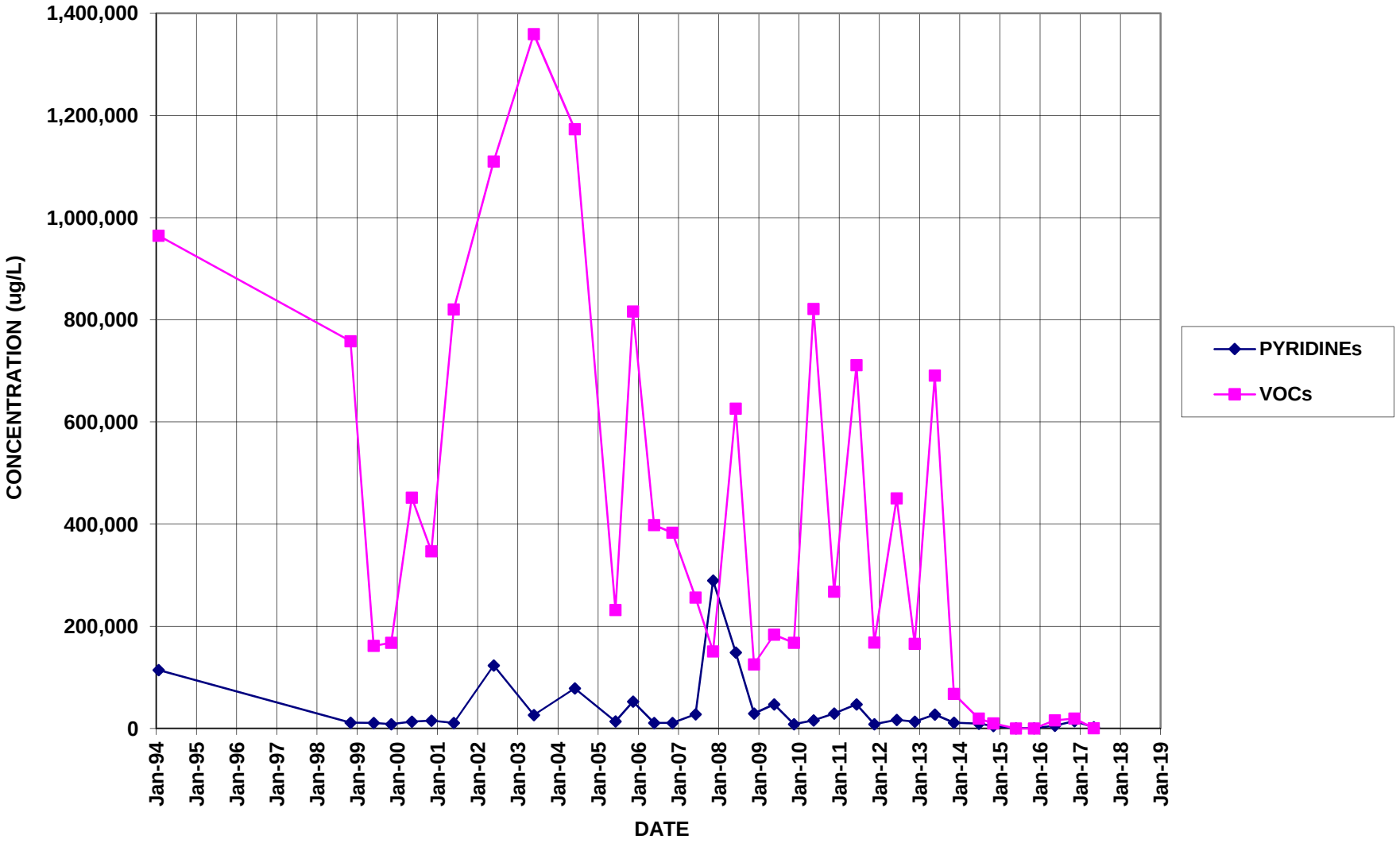
Prepared by: nmb
Reviewed by: jeb

PZ-105



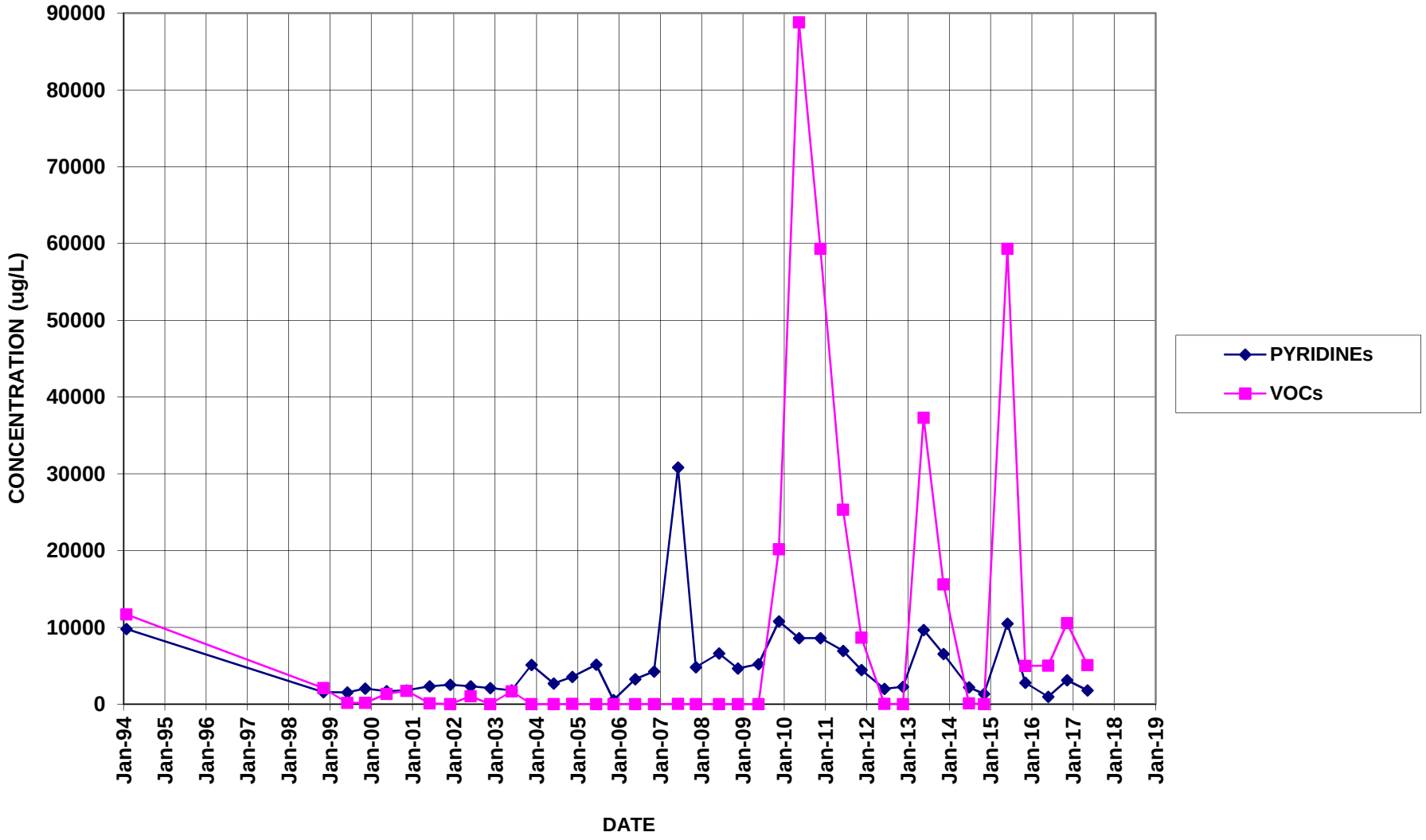
Prepared by: nmb
Reviewed by: jeb

PZ-106

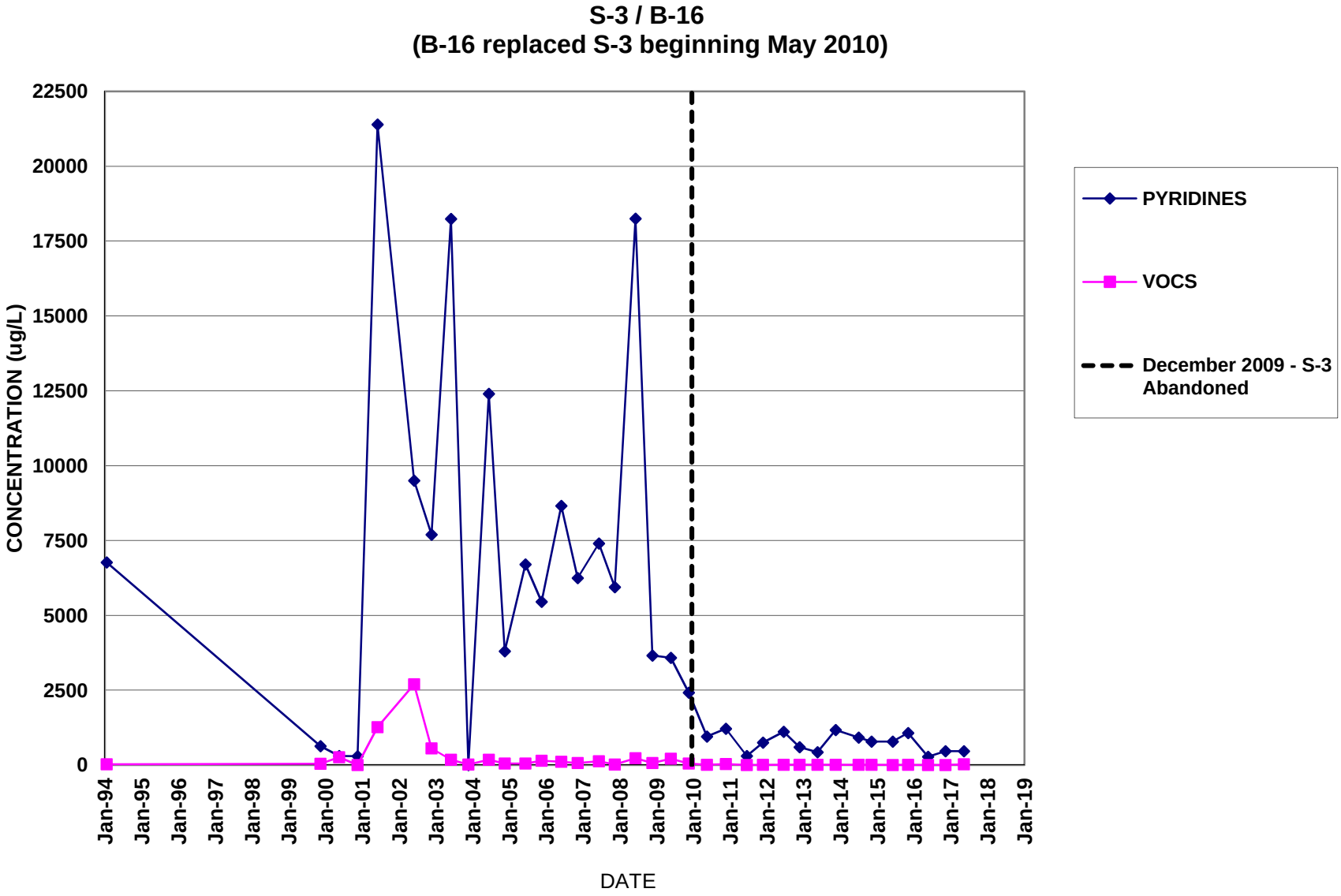


Prepared by: nmb
Reviewed by: jeb

PZ-107

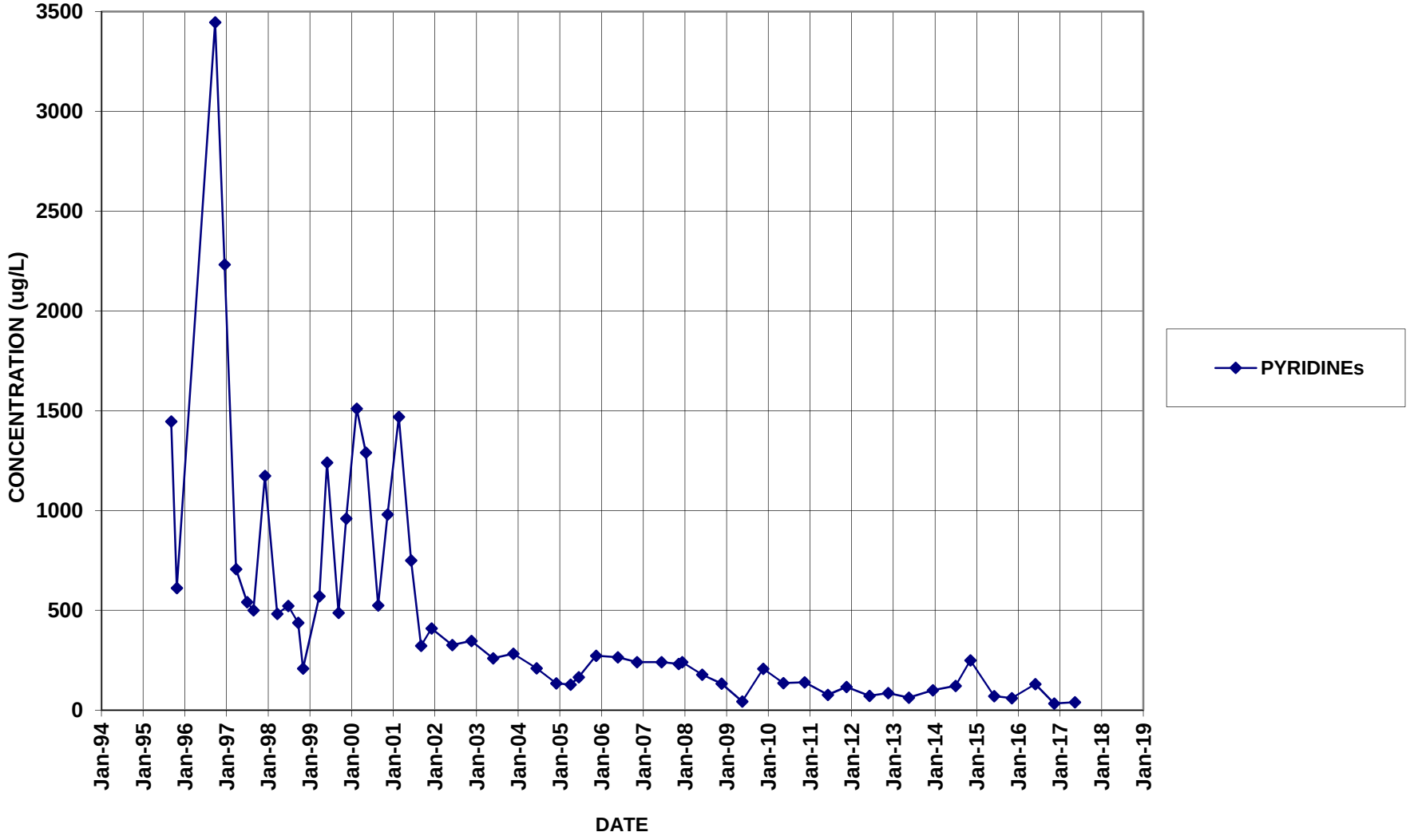


Prepared by: nmb
Reviewed by: jeb



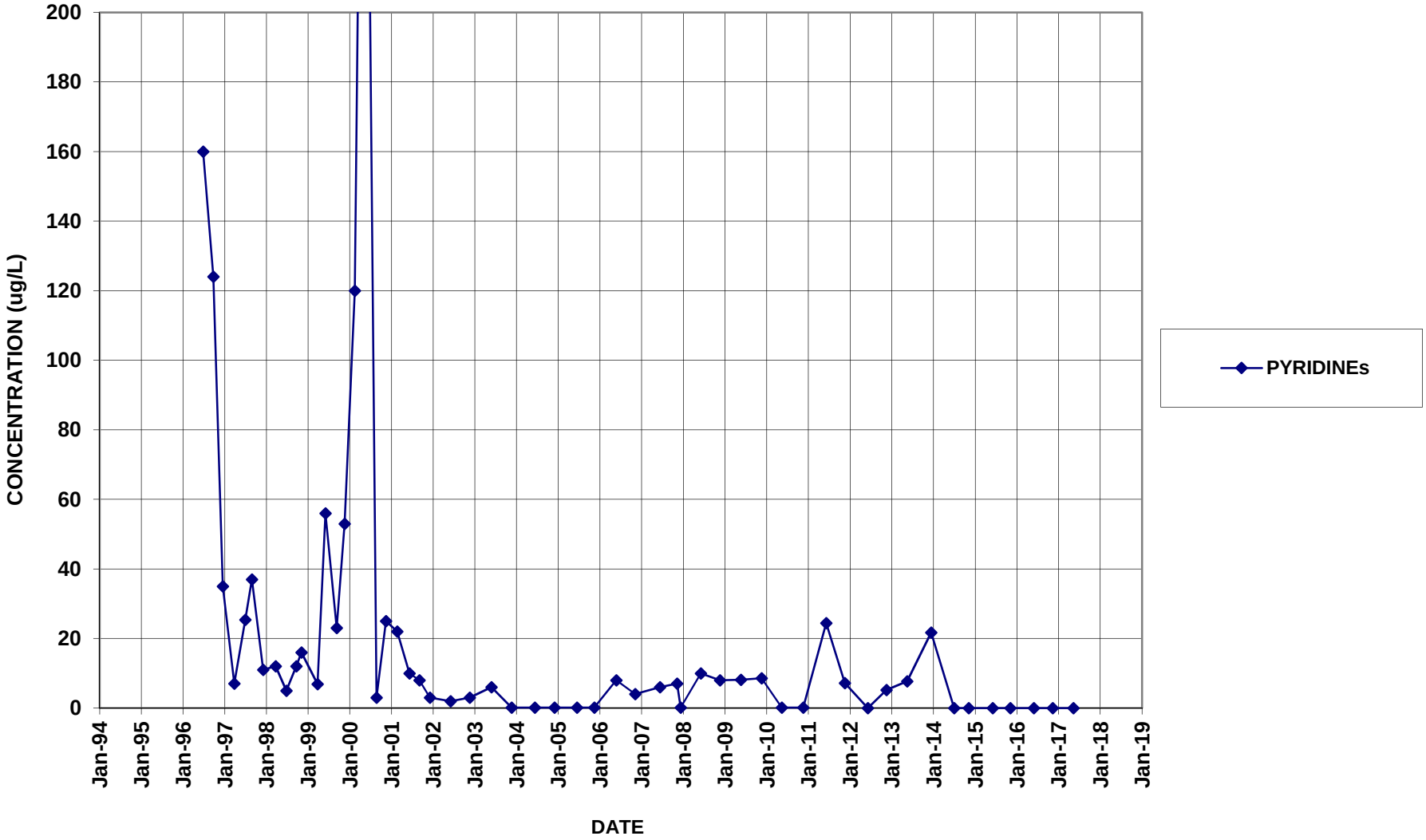
Prepared by: nmb
Reviewed by: jeb

QS-4 (QUARRY SEEP)



Prepared by: nmb
Reviewed by: jeb

QO-2 (QUARRY OUTFALL)



Prepared by: nmb
Reviewed by: jeb