Arch Chemicals, Inc.

Rochester, New York (Site #828018a)

Groundwater Monitoring Report 56
Spring 2016

August 2016

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
SPRING 2016 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

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

AUGUST 2016

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
SPRING 2016 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

Prepared by

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

for

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

August 2016

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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 2016, samples from a total of 42 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. Nine of the 41 wells sampled for chloropyridines had contaminant concentrations that were above their respective 5-year prior averages. Five of the 36 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 130 micrograms per liter (µg/L), which is slightly above its prior 5-year average of 100 µg/L. Chloropyridines were detected in the ditch sample from location QD-1 at a total concentration of 10 µg/L, but were not detected in the ditch outfall sample at location QO-2 or in 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 2015 through May 2016, the on-site groundwater extraction system pumped approximately 7.5 million gallons of groundwater to the on-site treatment system, containing an estimated 2,000 pounds of chloropyridines and 92 pounds of target volatile organic compounds.

The next regular monitoring event will occur in November 2016 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 2016 sampling event included the collection and analysis of groundwater, surface water, and seep samples from a total of 46 off-site and on-site locations. Samples were collected from May 17 through 24, 2016, for analysis of selected chloropyridines and volatile organic compounds (VOCs).

This report presents the results of the Spring 2016 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. Well B-5 was sampled for VOCs, but could not be sampled for chloropyridines because the well did not produce a sufficient quantity of water. 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 16, 2016. 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 24, 2016. All quarry-related samples were analyzed for the Arch suite of selected chloropyridines. The quarry locations sampled during the Spring 2016 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 2-pentafluorobenzene, 1,2-dichloroethane-d4, and/or toluene-d8 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): BR6A and BR106.

Percent recovery of the SVOC surrogate 2-fluorobiphenyl in sample BR6A was less than the laboratory statistically derived control limits, indicating a potential low bias. Positive and non-detected results in sample BR6A were qualified estimated (J/UJ).

Laboratory Control Samples (LCS). Percent recoveries of pyridine (39 to 48) 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. Nominal control limits were used in the absence of statistically derived laboratory control limits. Positive and non-detected results in all samples were qualified estimated (J/UJ).

Matrix Spike/Matrix Spike Duplicates (MS/MSD). In the MS/MSD associated with VOC sample PW16, percent recoveries for chlorobenzene (71, 64) were less than laboratory control limits, indicating potential low biases. In addition, the relative percent difference (RPD) between recoveries for chlorobenzene (11) was greater than the laboratory control limit. The positive result for chlorobenzene in sample PW16 was qualified estimated (J/).

In the MS/MSD associated with VOC sample BR7A, the MSD percent recovery for toluene (83) was less than the laboratory control limits, indicating a potential low bias. Toluene was not detected in sample BR7A, and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with chloropyridines sample BR127, MS/MSD percent recoveries were less than nominal control limits of 50-140 for pyridine (46, 39). Pyridine was not detected in sample BR127, and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with chloropyridines sample PW16, MS/MSD percent recoveries were less than nominal control limits of 50-140 for pyridine (41, 42). Pyridine was not detected in sample PW16, and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with chloropyridines sample BR7A, MS/MSD percent recoveries were less than nominal control limits of 50-140 for pyridine (38, 34). Pyridine was not detected in sample BR7A, 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 semivolatile organic target analytes. Non-detects are reported at elevated reporting limits.

Due to laboratory error, the result for VOC target analyte trans-1,2-dichloroethene was not reported for sample PW10 in the original lab report. The lab was contacted and provided the result in a revised report.

3.0 ANALYTICAL RESULTS

3.1 GROUNDWATER

The validated results from the Spring 2016 groundwater monitoring event are provided in Tables 2 and 3. Table 4 provides a comparison of the Spring 2016 analytical results for selected chloropyridines and VOCs in representative wells to mean concentrations of the prior five years (Spring 2011 through Fall 2015). 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 25 of the on-site wells sampled in the Spring 2016 event. Concentrations of chloropyridines (sum of all chloropyridine and pyridine isomer concentrations) ranged from 14 micrograms per liter (µg/L) in well E-3) to 410,000 µg/L in well B-17. Five 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 11 of the 15 off-site wells that were sampled. Concentrations of total chloropyridines ranged from not detected (in wells BR-113D, BR-114, MW-114, and BR-122D) to 34,000 µg/L in well PZ-103. Four of the off-site wells contained total chloropyridine concentrations above their respective 5-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 2015. Most of the wells that had exhibited a spike in chloropyridine concentrations in 2014 have declined to levels that are more consistent with historical results. The exception is monitoring well BR-8, which has not yet begun to decline. Well BR-8 is within the capture zone of adjacent pumping well PW-16, which also is exhibiting elevated concentrations of chloropyridines.

3.1.2 Selected VOCs.

On-Site. Selected VOCs were detected in 21 of the 27 on-site wells sampled for VOCs in the Spring 2016 event. Total concentrations of selected VOCs (sum of carbon tetrachloride, chlorobenzene, chloroform, methylene chloride, tetrachloroethene, and trichloroethene) ranged from not detected (in wells B-15, B-16, BR-5A, BR-126, E-3, and MW-127) to 28,000 µg/L (in well PW-15). Only one of the on-site wells (pumping well PW-15) contained concentrations of total VOCs above its 5-year prior mean (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple on-site wells include benzene (in 14 out of 27 wells), toluene (11 of 27), 1,2-dichlorobenzene (10 of 27), 1,3-dichlorobenzene (8 of 27), 1,4-dichlorobenzene (8 of 27), vinyl chloride (5 of 27), carbon disulfide (5 of 27), cis-1,2-dichloroethene (4 of 27), acetone (4 of 27), bromoform (4 of 27), 1,2,4-trichlorobenzene (4 of 27), 1,2,3-trichlorobenzene (3 of 27), 1,1-dichloroethane (3 of 27), 1,1,2-trichloro-1,2,2-trifluoroethane (3 of 27), 2-butanone (3 of 27), xylenes (3 of 27), and ethyl benzene (2 of 27).

Off-Site. Selected VOCs were detected in seven of the nine off-site wells sampled for VOCs during the Spring 2016 event. Total concentrations of selected VOCs ranged from not detected (in wells BR-105D and BR-114) to 420 µg/L (in well PZ-103). Four of these wells were slightly 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 8 out of 9 wells), 1,2-dichlorobenzene (5 of 9), 1,4-dichlorobenzene (4 of 9), 1,3-dichlorobenzene (3 of 9), cyclohexane (2 of 9), methyl cyclohexane (2 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. VOCs observed in off-site wells primarily consist of chlorobenzene, which appears to be more closely associated with chloropyridines at this site.

3.2 SURFACE WATER

Results from the Spring 2016 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 2016 monitoring event. The sample contained 130 µg/L total chloropyridines, which is slightly above its prior 5-year mean of 100 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 detected in QD-1 at 10 µg/L, but were not present above detection limits in the sample from QO-2.

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 2015 through May 2016. The total volume pumped during the six-month period was approximately 7.5 million gallons.

Table 7 provides a calculation of mass removal rates since the previous groundwater monitoring event (i.e., from December 2015 through May 2016). Arch estimates that approximately 92 pounds of target VOCs and 2,000 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 2016 and will include groundwater, surface water, and seep sampling.

Table 8 shows the 2016 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

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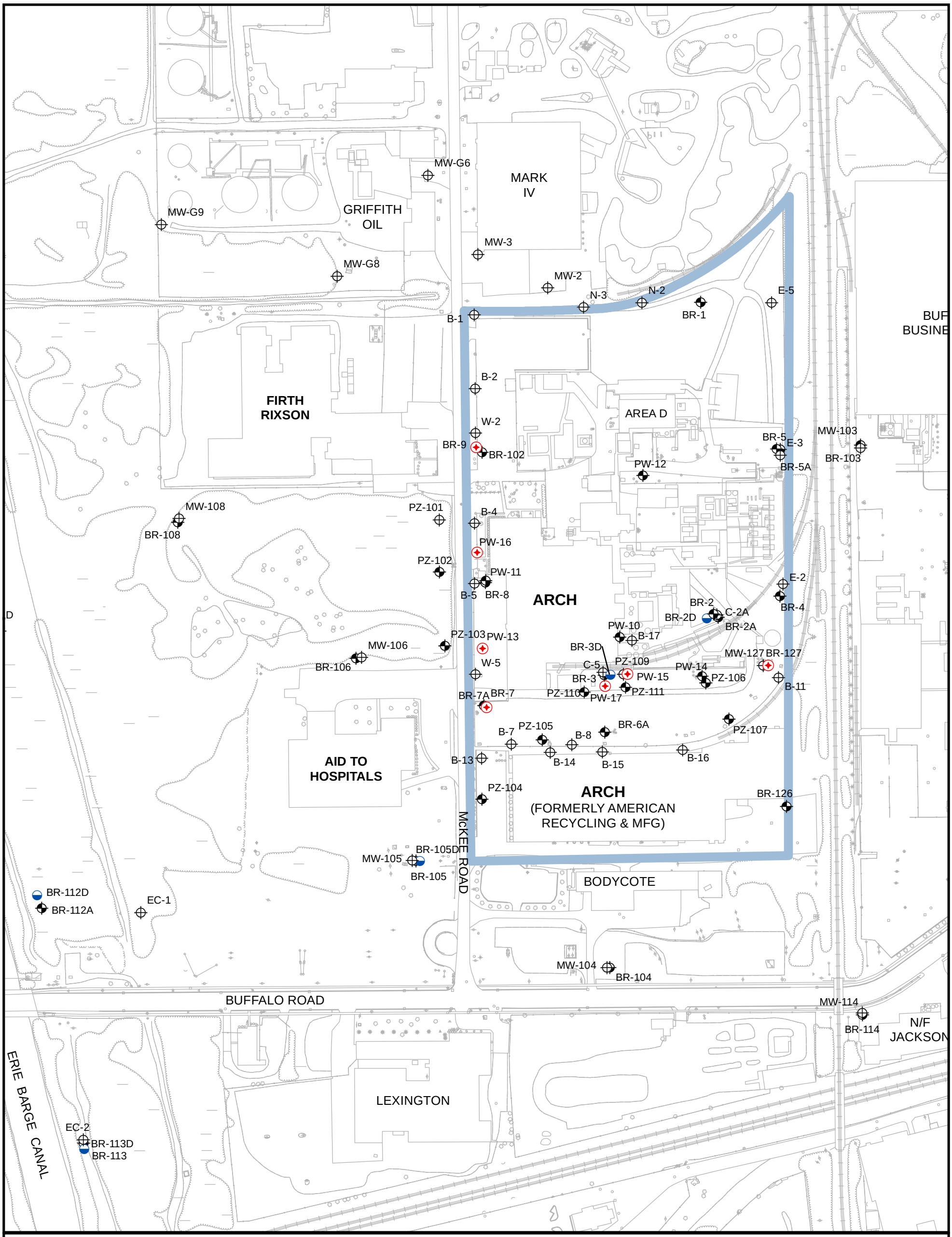

NOTES:

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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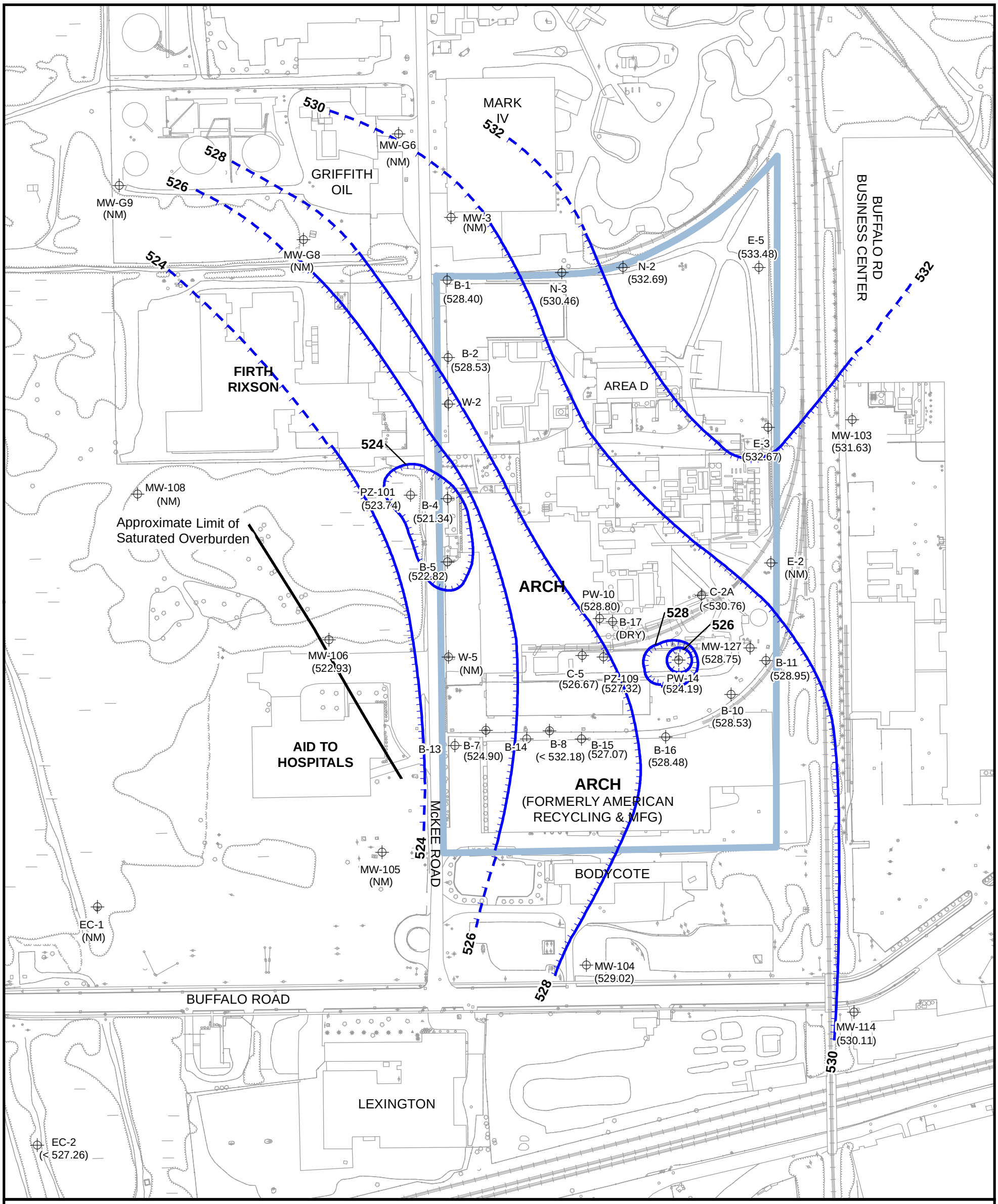

N

Legend

- MW-114 (530.11) — Piezometric Elevation at Well or Piezometer
- Interpreted Groundwater Flow Direction
- **528** — Overburden Piezometric Elevation Contour (MSL)
- Outline of Arch Property Boundary

Figure 3
Spring 2016
Overburden Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

NOTES:

1. Water Levels Measured on May 16, 2016
2. Dashed Contours Reflect Uncertainty

0 100 200 400 Feet

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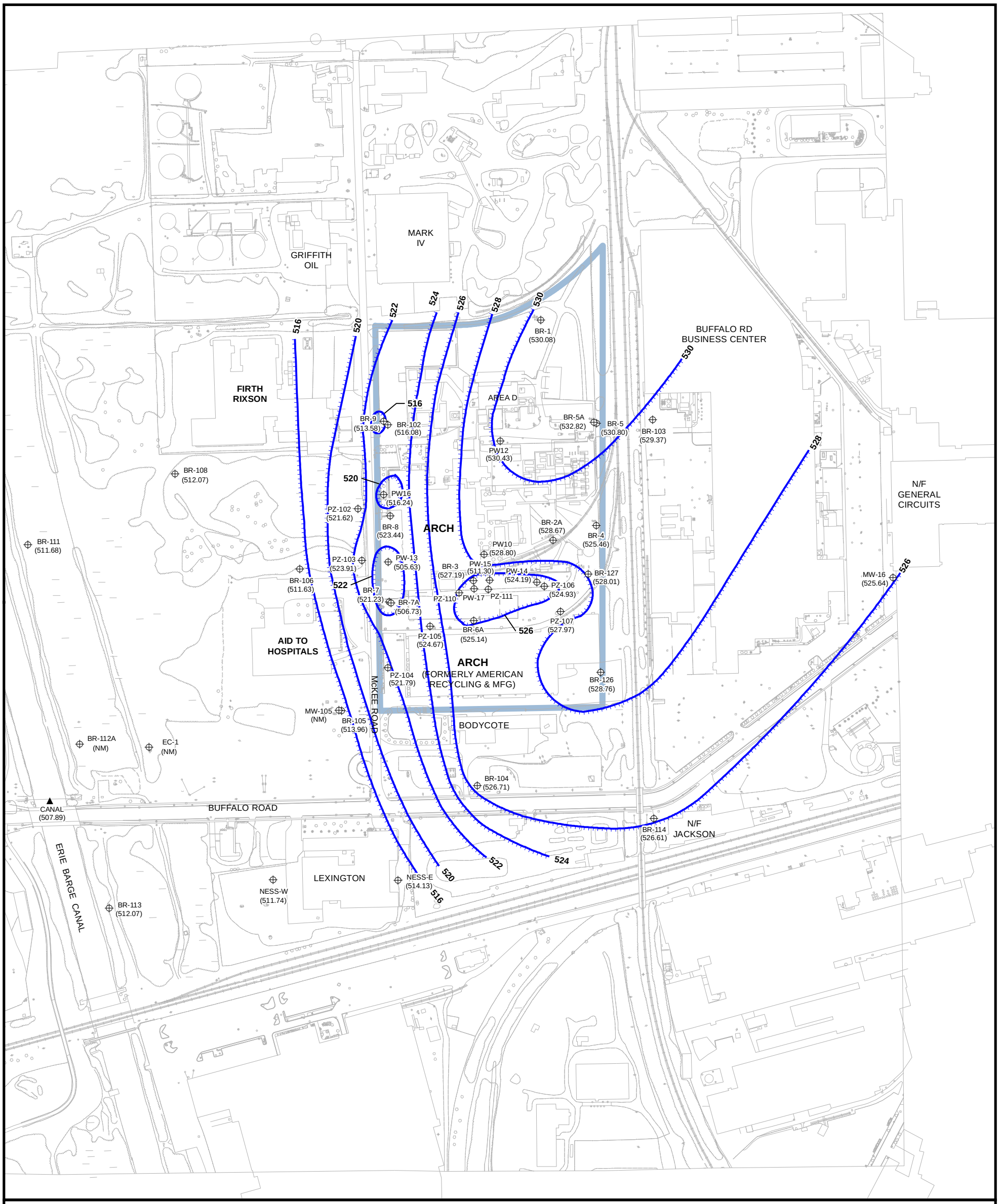

Legend

BR-114 (526.61) — 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 16, 2016

3. The measurement in well BR-4 is considered anomalous and was not used in contouring.

0 150 300 600 Feet

Prepared/Date: JEB 06/29/16 | Checked/Date: NMB 06/29/16

Figure 4
Spring 2016
Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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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 (509.52) — Piezometric Elevation at Deep Bedrock Well

NOTES

1. Water Levels Measured on May 16, 2016
2. Dashed Contours Reflect Uncertainty

N

0 250 500 1,000 Feet

Prepared/Date: JEB 06/29/16 | Checked/Date: NMB 06/29/16

ERIE BARGE CANAL

I-390

FIRTH RIXSON

BUFFALO RD. BUSINESS CENTER

BR-9

ARCH

BR-103

BR-108

BR-111D (511.26)

BR-111

AID TO HOSPITALS

BR-106

BR-3D (485.14)

510

BR-112D (511.60)

BR-112

BR-105

BR-105D (510.08)

BUFFALO ROAD

BR-104

BR-114

508

CUMBERLAND FARMS PETROLEUM TERMINAL

BR-113

BR-113D (511.57)

LEXINGTON

GENERAL RAIL SIGNAL CO.

506

504

502

500

498

DOLOMITE PRODUCTS QUARRY

BR-122D (507.95)

PFAUDLER

BR-117D (498.17)

BR-117

BR-118

BR-118D (499.84)

BR-123D (508.27)

BR-116D (509.52)

BR-116

LETTINGTON DRIVE

BR-124D (505.04)

Figure 5
Spring 2016
Deep Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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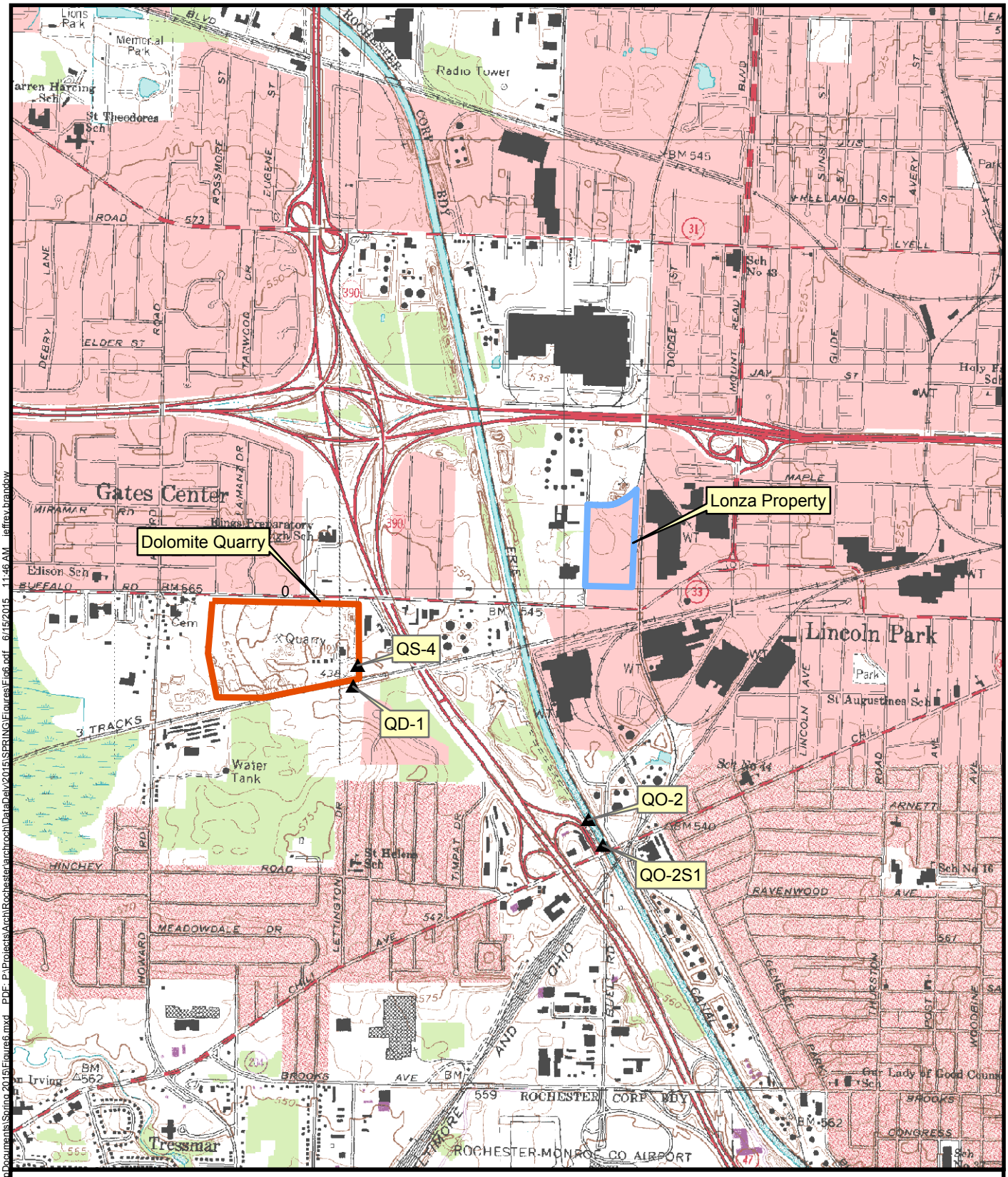

Source:
1:24,000 scale digital topographic map
obtained from New York State GIS
Clearinghouse at: www.nysgis.state.ny.us

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

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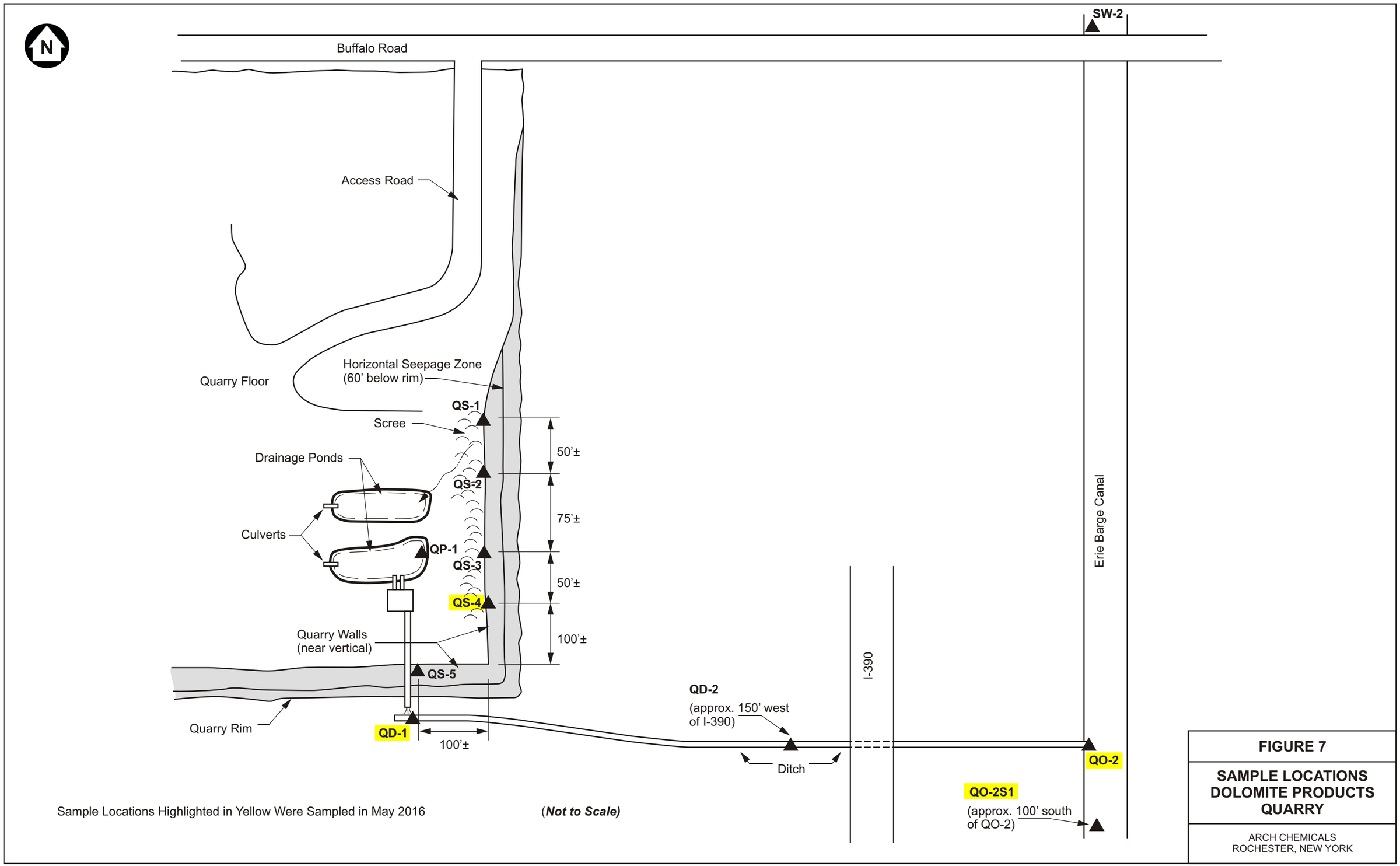
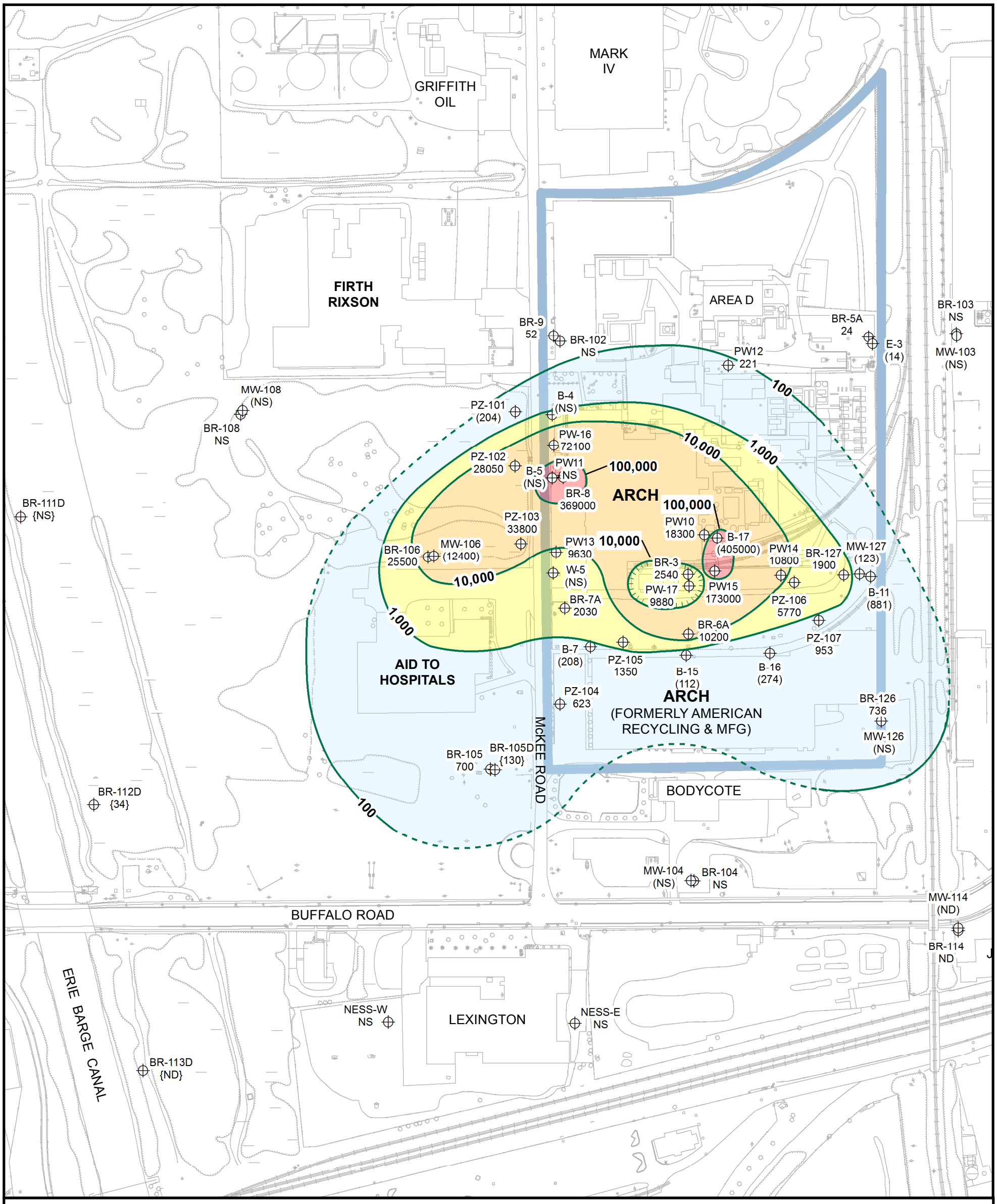


FIGURE 7

SAMPLE LOCATIONS
DOLOMITE PRODUCTS QUARRY

ARCH CHEMICALS
ROCHESTER, NEW YORK

W2004030a.cdr



Legend

- Property Owned by Lonza
- 100 — Chloropyridine Concentration Contour
- BR-105 (700) — 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 07/15/16 | Checked/Date: NMB 07/15/16

NOTES:

1. Samples Collected May 17-24, 2016
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 2016
Selected Chloropyridine Concentration Contours

Arch Chemicals
Rochester, NY

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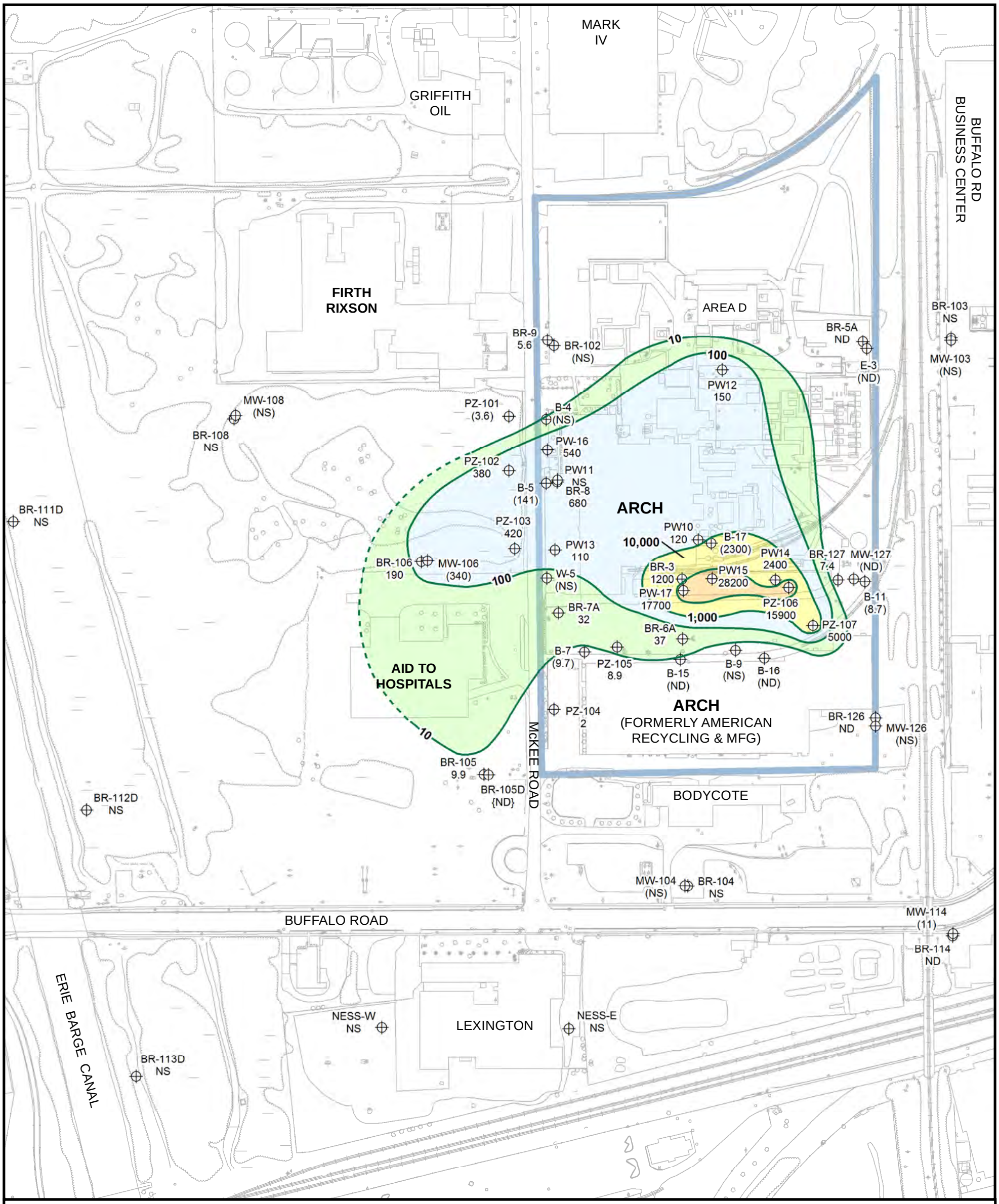

Legend

- Property Owned by Lonza
- **100** — VOC Concentration Contour
- B-17 (2300) — 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

NOTES:

1. Samples Collected in May 17-24, 2016
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 2016
Selected Volatile Organic Compound Concentration Contours

Arch Chemicals
Rochester, NY

Prepared/Date: JEB 07/18/16	Checked/Date: NMB 07/18/16

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Tables

TABLE 1
SPRING 2016 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	5/19/2016	Sample	X	X
	MW-106	5/19/2016	Sample	X	X
	PZ-101	5/19/2016	Sample	X	X
	PZ-102	5/19/2016	Sample	X	X
	PZ-103	5/19/2016	Sample	X	X
ARCH ROCHESTER	B-11	5/17/2016	Sample	X	X
	B-15	5/20/2016	Sample	X	X
	B-16	5/20/2016	Sample	X	X
	B-17	5/18/2016	Sample	X	X
	B-5	5/19/2016	Sample		X
	B-7	5/20/2016	Sample	X	X
	BR-126	5/20/2016	Sample	X	X
	BR-127	5/17/2016	Sample	X	X
	BR-3	5/18/2016	Sample	X	X
	BR-5A	5/17/2016	Sample	X	X
	BR-6A	5/18/2016	Sample	X	X
	BR-7A	5/24/2016	Sample	X	X
	BR-8	5/19/2016	Sample	X	X
	BR-9	5/17/2016	Sample	X	X
	BR-9	5/17/2016	Duplicate	X	X
	E-3	5/17/2016	Sample	X	X
	MW-127	5/17/2016	Sample	X	X
	PW10	5/18/2016	Sample	X	X
	PW12	5/17/2016	Sample	X	X
	PW13	5/20/2016	Sample	X	X
	PW13	5/20/2016	Duplicate	X	X
	PW14	5/17/2016	Sample	X	X
	PW15	5/18/2016	Sample	X	X
	PW16	5/19/2016	Sample	X	X
	PW17	5/18/2016	Sample	X	X
	PZ-104	5/20/2016	Sample	X	X
	PZ-105	5/18/2016	Sample	X	X
	PZ-106	5/17/2016	Sample	X	X
	PZ-107	5/18/2016	Sample	X	X
DOLOMITE PRODUCTS, INC.	BR-117D	5/23/2016	Sample	X	
(Samples in canal or property along canal)	BR-118D	5/23/2016	Sample	X	
	QD-1	5/24/2016	Sample	X	
	QD-2	5/24/2016	Sample	X	
	QS-4	5/24/2016	Sample	X	
ERIE BARGE CANAL	BR-112D	5/23/2016	Sample	X	
	BR-113D	5/23/2016	Sample	X	
	BR-122D	5/23/2016	Sample	X	
	BR-123D	5/23/2016	Sample	X	
	QO-2S1	5/24/2016	Sample	X	
JACKSON WELDING	BR-114	5/20/2016	Sample	X	X
	MW-114	5/20/2016	Sample	X	X
RG & E RIGHT OF WAY	BR-105	5/24/2016	Sample	X	X
	BR-105D	5/23/2016	Sample	X	X

TABLE 2
SPRING 2016 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
SAMPLE DATE:	5/17/2016	5/20/2016	5/20/2016	5/18/2016	5/20/2016	5/24/2016	5/23/2016	5/19/2016	5/23/2016	5/23/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	232	104	191	40000 U	140	160	21.1	2710 J	10 U	10 U
2-Chloropyridine	649	8.16 J	82.6	405000	67.9	540	109	22800	34.1	10 U
3-Chloropyridine	40 U	10 U	10 U	40000 U	10 U	100 U	20 U	4000 U	10 U	10 U
4-Chloropyridine	40 U	10 U	10 U	40000 U	10 U	100 U	20 U	4000 U	10 U	10 U
p-Fluoroaniline	40 U	10 U	10 U	40000 U	10 U	100 U	20 U	4000 U	10 U	10 U
Pyridine	40 UJ	10 UJ	10 UJ	40000 UJ	10 UJ	100 UJ	20 UJ	4000 UJ	10 UJ	10 UJ

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

TABLE 2
SPRING 2016 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-114	BR-117D	BR-118D	BR-122D	BR-123D	BR-126	BR-127	BR-3	BR-5A	BR-6A
SAMPLE DATE:	5/20/2016	5/23/2016	5/23/2016	5/23/2016	5/23/2016	5/20/2016	5/17/2016	5/18/2016	5/17/2016	5/18/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	10 U	10 U	10 U	10 U	10 U	151	321	172 J	24.2	1740 J
2-Chloropyridine	10 U	5.37 J	12.4	10 U	35	685	1580	2370	10 U	8500 J
3-Chloropyridine	10 U	10 U	10 U	10 U	10 U	80 U	200 U	200 U	10 U	1000 UJ
4-Chloropyridine	10 U	10 U	10 U	10 U	10 U	80 U	200 U	200 U	10 U	1000 UJ
p-Fluoroaniline	10 U	10 U	10 U	10 U	10 U	80 U	200 U	200 U	10 U	1000 UJ
Pyridine	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	80 UJ	200 UJ	200 UJ	10 UJ	1000 UJ

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

TABLE 2
SPRING 2016 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-7A	BR-8	BR-9	BR-9	E-3	MW-106	MW-114	MW-127	PW10	PW12
SAMPLE DATE:	5/24/2016	5/19/2016	5/17/2016	5/17/2016	5/17/2016	5/19/2016	5/20/2016	5/17/2016	5/18/2016	5/17/2016
QC TYPE:	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	294 J	33700 J	13.1	13.4	6.51 J	1390	10 U	99.5	5320	40.9
2-Chloropyridine	1740	335000	38.9	39.3	7.59 J	11000	10 U	23.3 J	13000	158
3-Chloropyridine	400 U	50000 U	10 U	10 U	10 U	1000 U	10 U	40 U	1000 U	10 U
4-Chloropyridine	400 U	50000 U	10 U	10 U	10 U	1000 U	10 U	40 U	1000 U	10 U
p-Fluoroaniline	400 U	50000 U	10 U	10 U	10 U	1000 U	10 U	40 U	1000 U	22.4
Pyridine	400 UJ	50000 UJ	10 UJ	10 UJ	10 UJ	1000 UJ	10 UJ	40 UJ	1000 UJ	10 UJ

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

TABLE 2
SPRING 2016 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW13	PW13	PW14	PW15	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104
SAMPLE DATE:	5/20/2016	5/20/2016	5/17/2016	5/18/2016	5/19/2016	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/20/2016
QC TYPE:	Sample	Duplicate	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	577 J	587 J	2000 U	6730 J	10000 U	1020	52	4250	7100	156
2-Chloropyridine	9050	9420	10800	159000	72100	8860	152	23800	26700	467
3-Chloropyridine	1000 U	1000 U	2000 U	10000 U	10000 U	1000 U	10 U	2000 U	2000 U	50 U
4-Chloropyridine	1000 U	1000 U	2000 U	10000 U	10000 U	1000 U	10 U	2000 U	2000 U	50 U
p-Fluoroaniline	1000 U	1000 U	2000 U	10000 U	10000 U	1000 U	10 U	2000 U	2000 U	50 U
Pyridine	1000 UJ	1000 UJ	2000 UJ	7520 J	10000 UJ	1000 UJ	10 UJ	2000 UJ	2000 UJ	50 UJ

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

TABLE 2
SPRING 2016 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/18/2016	5/17/2016	5/18/2016
QC TYPE:	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)			
2,6-Dichloropyridine	225	794	187
2-Chloropyridine	1120	4570	766
3-Chloropyridine	100 U	400 U	100 U
4-Chloropyridine	100 U	400 U	100 U
p-Fluoroaniline	100 U	400 U	100 U
Pyridine	100 UJ	403 J	100 UJ

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

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-11	B-15	B-16	B-17	B-5	B-7	BR-105	BR-105D	BR-106	BR-114
SAMPLE DATE:	5/17/2016	5/20/2016	5/20/2016	5/18/2016	5/19/2016	5/20/2016	5/24/2016	5/23/2016	5/19/2016	5/20/2016
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	40 U	4 U	2 U	2 U	2 UJ	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,1-Dichloroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	1.42 J	2 UJ	2 U
1,1-Dichloroethene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	109	100 U	10 U	5 U	5 U	5 UJ	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	527	100 U	10 U	5 U	5 U	5 UJ	5 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	200 U	200 U	20 U	10 U	10 U	10 UJ	10 U
1,2-Dibromoethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,2-Dichlorobenzene	2 U	2 U	2 U	40 U	68.2	4 U	3.27	2 U	43.9 J	2 U
1,2-Dichloroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,2-Dichloropropane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
1,3-Dichlorobenzene	2 U	2 U	2 U	119	58.3	4 U	2 U	2 U	2.32 J	2 U
1,4-Dichlorobenzene	2 U	2 U	2 U	192	54.4	4 U	2 U	2 U	3.17 J	2 U
1,4-Dioxane	20 U	20 U	20 U	400 U	400 U	40 U	20 U	14.1 J	20 UJ	20 U
2-Butanone	10 U	10 U	10 U	200 U	178 J	56.8	10 U	10 U	10 UJ	10 U
2-Hexanone	5 U	5 U	5 U	100 U	100 U	10 U	5 U	5 U	5 UJ	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	100 U	100 U	10 U	5 U	5 U	5 UJ	5 U
Acetic acid, methyl ester	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Acetone	7.37 J	10 U	10 U	200 U	1750	270	10 U	5.77 J	10 UJ	10 U
Benzene	1 U	1 U	1 U	32.5	20 U	2 U	1.23	5.99	11.4 J	2.16
Bromochloromethane	5 U	5 U	5 U	100 U	100 U	10 U	5 U	5 U	5 UJ	5 U
Bromodichloromethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Bromoform	5 U	5 U	5 U	179	100 U	10 U	5 U	5 U	5 UJ	5 U
Bromomethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Carbon disulfide	2 U	2 U	2 U	125	40 U	4 U	2 U	4.01	2 UJ	2 U
Carbon tetrachloride	2.75	2 U	2 U	257	40 U	4 U	2 U	2 U	2 UJ	2 U
Chlorobenzene	2 U	2 U	2 U	139	141	3.3 J	9.9	2 U	191 J	2 U
Chloroethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Chloroform	5.94	2 U	2 U	800	40 U	4 U	2 U	2 U	2 UJ	2 U
Chloromethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Cis-1,2-Dichloroethene	2 U	2 U	2 U	40 U	40 U	4 U	2.01	7.92	2 UJ	2 U
Cis-1,3-Dichloropropene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Cyclohexane	10 U	10 U	10 U	200 U	200 U	20 U	10 U	6.97 J	10 UJ	5.63 J
Dibromochloromethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Dichlorodifluoromethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Ethylbenzene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Isopropylbenzene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-11	B-15	B-16	B-17	B-5	B-7	BR-105	BR-105D	BR-106	BR-114
SAMPLE DATE:	5/17/2016	5/20/2016	5/20/2016	5/18/2016	5/19/2016	5/20/2016	5/24/2016	5/23/2016	5/19/2016	5/20/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl cyclohexane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	3.7	2 UJ	1.42 J
Methyl Tertbutyl Ether	2 U	2 U	2 U	40 U	40 U	4 U	2 U	10.8	2 UJ	2 U
Methylene chloride	5 U	5 U	5 U	923	100 U	6.38 J	5 U	5 U	5 UJ	5 U
Styrene	5 U	5 U	5 U	100 U	100 U	10 U	5 U	5 U	5 UJ	5 U
Tetrachloroethene	2 U	2 U	2 U	215	40 U	4 U	2 U	2 U	2 UJ	2 U
Toluene	2 U	2 U	2 U	230	238	4 U	2 U	2 U	2 UJ	2 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Trichloroethene	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Trichlorofluoromethane	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Vinyl chloride	2 U	2 U	2 U	40 U	40 U	4 U	2.45	2 U	2 UJ	2 U
Xylene, o	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U
Xylenes (m&p)	2 U	2 U	2 U	40 U	40 U	4 U	2 U	2 U	2 UJ	2 U

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

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-126	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-8	BR-9	BR-9	E-3
SAMPLE DATE:	5/20/2016	5/17/2016	5/18/2016	5/17/2016	5/18/2016	5/24/2016	5/19/2016	5/17/2016	5/17/2016	5/17/2016
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 U	2 U	10 U	2 U	2 UJ	2 U	50 U	1.23 J	1.17 J	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	10 U	2 U	2 U	2 U	50 U	2 U	2 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	2 U	10 U	2 U	2 UJ	7.64	50 U	36.4	36.3	2 U
1,1,2-Trichloroethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
1,1-Dichloroethane	2 U	2 U	10 U	2 U	2 UJ	3.05	50 U	5.86	5.72	2 U
1,1-Dichloroethene	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	1.2 J	1.16 J	2 U
1,2,3-Trichlorobenzene	5 U	5 U	25 U	5 U	5 U	5 U	125 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	25 U	5 U	2.73 J	5 U	125 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	10 U	10 U	50 U	10 U	10 U	10 U	250 U	10 U	10 U	10 U
1,2-Dibromoethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
1,2-Dichlorobenzene	2 U	1.88 J	10 U	2 U	1.84 J	13.7	248	2.62	2.7	2 U
1,2-Dichloroethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	1.55 J	1.5 J	2 U
1,2-Dichloropropane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	10 U	2 U	2 UJ	4.79	215	2 U	2 U	2 U
1,4-Dichlorobenzene	2 U	2 U	10 U	2 U	2 UJ	3.75	240	2 U	2 U	2 U
1,4-Dioxane	20 U	20 U	100 U	20 U	20 UJ	20 U	500 U	20 U	20 U	20 U
2-Butanone	10 U	10 U	50 U	10 U	10 UJ	10 U	250 U	10 U	10 U	10 U
2-Hexanone	5 U	5 U	25 U	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	25 U	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
Acetic acid, methyl ester	2 U	2 U	10 U	2 U	2 U	2 U	50 U	2 U	2 U	2 U
Acetone	10 U	10 U	50 U	10 U	10 UJ	10 U	250 U	10 U	10 U	10 U
Benzene	1.59	1.55	5 U	1 U	4.2 J	6.25	15.4 J	60.5	60.4	1 U
Bromochloromethane	5 U	5 U	25 U	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
Bromodichloromethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Bromoform	5 U	5 U	25 U	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
Bromomethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Carbon disulfide	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Carbon tetrachloride	2 U	1.55 J	10 U	2 U	2 UJ	3.02	50 U	2 U	2 U	2 U
Chlorobenzene	2 U	1.59 J	10 U	2 U	15.7 J	26.7	684	4.19	4.22	2 U
Chloroethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Chloroform	2 U	4.29	513	2 U	12.8 J	1.75 J	50 U	2 U	2 U	2 U
Chloromethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Cis-1,2-Dichloroethene	2 U	2 U	10 U	2 U	2.76 J	3.8	50 U	105	104	2 U
Cis-1,3-Dichloropropene	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Cyclohexane	10 U	10 U	50 U	10 U	10 UJ	10 U	250 U	29.3	30	10 U
Dibromochloromethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Dichlorodifluoromethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Ethylbenzene	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	1.32 J	1.49 J	2 U
Isopropylbenzene	2 U	2 U	10 U	2 U	2 U	2 U	50 U	2.98	3.19	2 U

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-126	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-8	BR-9	BR-9	E-3
SAMPLE DATE:	5/20/2016	5/17/2016	5/18/2016	5/17/2016	5/18/2016	5/24/2016	5/19/2016	5/17/2016	5/17/2016	5/17/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl cyclohexane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	12.2	12	2 U
Methyl Tertbutyl Ether	2 U	2 U	10 U	2 U	2 UJ	2.47	50 U	2 U	2 U	2 U
Methylene chloride	5 U	5 U	670	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
Styrene	5 U	5 U	25 U	5 U	5 UJ	5 U	125 U	5 U	5 U	5 U
Tetrachloroethene	2 U	2 U	32	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Toluene	2 U	2 U	51.2	2 U	53.2 J	2 UJ	46.4 J	1.08 J	1.14 J	2 U
trans-1,2-Dichloroethene	2 U	2 U	10 U	2 U	1.26 J	2 U	50 U	2 U	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Trichloroethene	2 U	2 U	10 U	2 U	8.23 J	2 U	50 U	1.36 J	1.41 J	2 U
Trichlorofluoromethane	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	2 U	2 U	2 U
Vinyl chloride	2 U	2 U	10.8	2 U	42.6 J	8.73	50 U	67.7	68.6	2 U
Xylene, o	2 U	2 U	10 U	2 U	2 U	2 U	50 U	2 U	2 U	2 U
Xylenes (m&p)	2 U	2 U	10 U	2 U	2 UJ	2 U	50 U	1.02 J	1.08 J	2 U

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

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-106	MW-114	MW-127	PW10	PW12	PW13	PW13	PW14	PW15	PW16
SAMPLE DATE:	5/19/2016	5/20/2016	5/17/2016	5/18/2016	5/17/2016	5/20/2016	5/20/2016	5/17/2016	5/18/2016	5/19/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
1,1,1-Trichloroethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,1,2,2-Tetrachloroethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	10 U	2 U	2 U	2 U	20 U	6.52	7.19	200 U	200 U	10 U
1,1,2-Trichloroethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,1-Dichloroethane	10 U	2 U	2 U	2 U	20 U	3.36 J	3.56 J	200 U	200 U	10 U
1,1-Dichloroethene	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,2,3-Trichlorobenzene	25 U	5 U	5 U	15.2	38.4 J	12 U	12 U	500 U	500 U	25 U
1,2,4-Trichlorobenzene	25 U	5 U	5 U	52.3	461	12 U	12 U	500 U	500 U	25 U
1,2-Dibromo-3-chloropropane	50 U	10 U	10 U	10 U	100 U	25 U	25 U	1000 U	1000 U	50 U
1,2-Dibromoethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,2-Dichlorobenzene	106	2 U	2 U	2.62	30	47.1	48	200 U	200 U	364
1,2-Dichloroethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,2-Dichloropropane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
1,3-Dichlorobenzene	10 U	2 U	2 U	2.2	75.4	10.9	11.2	200 U	200 U	79.8
1,4-Dichlorobenzene	7.88 J	2 U	2 U	2.37	55.2	12.7	12.9	200 U	200 U	106
1,4-Dioxane	100 U	20 U	20 U	20 U	200 U	50 U	50 U	2000 U	2000 U	100 U
2-Butanone	50 U	10 U	10 U	10 U	100 U	25 U	25 U	1000 U	1000 U	50 U
2-Hexanone	25 U	5 U	5 U	5 U	50 U	12 U	12 U	500 U	500 U	25 U
4-Methyl-2-pentanone	25 U	5 U	5 U	5 U	50 U	12 U	12 U	500 U	500 U	25 U
Acetic acid, methyl ester	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Acetone	50 U	10 U	10 U	10 U	100 U	25 U	25 U	1000 U	1000 U	50 U
Benzene	18.5	1 U	1 U	0.515 J	5.71 J	13.5	13.8	100 U	52.6 J	12.7
Bromochloromethane	25 U	5 U	5 U	5 U	50 U	12 U	12 U	500 U	500 U	25 U
Bromodichloromethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Bromoform	25 U	5 U	5 U	12.1	50 U	12 U	12 U	500 U	755	25 U
Bromomethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Carbon disulfide	10 U	2 U	2 U	1.85 J	20 U	5 U	5 U	200 U	2730	10 U
Carbon tetrachloride	10 U	2 U	2 U	44.6	20 U	5 U	5 U	200 U	12700	10 U
Chlorobenzene	337	2 U	2 U	2.89	121	109	112	200 U	200 U	542 J
Chloroethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Chloroform	10 U	6.88	2 U	25.9	20 U	5 U	5 U	1800	13500	10 U
Chloromethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Cis-1,2-Dichloroethene	10 U	2 U	2 U	2 U	20 U	8.8	8.8	200 U	200 U	10 U
Cis-1,3-Dichloropropene	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Cyclohexane	50 U	10 U	10 U	10 U	100 U	25 U	25 U	1000 U	1000 U	50 U
Dibromochloromethane	10 U	2 U	2 U	1.4 J	20 U	5 U	5 U	200 U	200 U	10 U
Dichlorodifluoromethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Ethylbenzene	10 U	2 U	2 U	2 U	13.2 J	5 U	5 U	200 U	200 U	10 U
Isopropylbenzene	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-106	MW-114	MW-127	PW10	PW12	PW13	PW13	PW14	PW15	PW16
SAMPLE DATE:	5/19/2016	5/20/2016	5/17/2016	5/18/2016	5/17/2016	5/20/2016	5/20/2016	5/17/2016	5/18/2016	5/19/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Duplicate	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)										
Methyl cyclohexane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Methyl Tertbutyl Ether	10 U	2 U	2 U	2 U	20 U	2.65 J	2.89 J	200 U	200 U	10 U
Methylene chloride	25 U	5 U	5 U	5 U	50 U	12 U	12 U	495 J	1380	25 U
Styrene	25 U	5 U	5 U	5 U	50 U	12 U	12 U	500 U	500 U	25 U
Tetrachloroethene	10 U	1.11 J	2 U	41.2	30.6	5 U	5 U	109 J	627	10 U
Toluene	10 U	2 U	2 U	3.76	78.6	2.95 J	2.78 J	200 U	166 J	5.11 J
trans-1,2-Dichloroethene	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
trans-1,3-Dichloropropene	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Trichloroethene	10 U	2.76	2 U	4.15	20 U	5 U	5 U	200 U	200 U	10 U
Trichlorofluoromethane	10 U	2 U	2 U	2 U	20 U	5 U	5 U	200 U	200 U	10 U
Vinyl chloride	10 U	2 U	2 U	2 U	20 U	21.6	21.8	200 U	200 U	10 U
Xylene, o	10 U	2 U	2 U	1.36 J	31.2	5 U	5 U	200 U	200 U	10 U
Xylenes (m&p)	10 U	2 U	2 U	1.33 J	63.9	5 U	5 U	200 U	200 U	10 U

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

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW17	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/20/2016	5/18/2016	5/17/2016	5/18/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)								
1,1,1-Trichloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,1,2,2-Tetrachloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,1,2-Trichloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,1-Dichloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,1-Dichloroethene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,2,3-Trichlorobenzene	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
1,2,4-Trichlorobenzene	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
1,2-Dibromo-3-chloropropane	1000 U	10 U	200 U	50 U	10 U	10 U	1000 U	250 U
1,2-Dibromoethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,2-Dichlorobenzene	200 U	2 U	136	210	2 U	2 U	200 U	50 U
1,2-Dichloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,2-Dichloropropane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
1,3-Dichlorobenzene	200 U	2 U	28.7 J	62.5	2 U	2 U	200 U	50 U
1,4-Dichlorobenzene	200 U	2 U	26.4 J	45.9	2 U	2 U	200 U	50 U
1,4-Dioxane	2000 U	20 U	400 U	100 U	20 U	20 U	2000 U	500 U
2-Butanone	1000 U	10 U	200 U	50 U	10 U	5.2 J	1000 U	250 U
2-Hexanone	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
4-Methyl-2-pentanone	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
Acetic acid, methyl ester	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Acetone	1000 U	10 U	200 U	50 U	10 U	22.3	1000 U	250 U
Benzene	100 U	1 U	25.2	10.4	1.02	2.76	100 U	25 U
Bromochloromethane	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
Bromodichloromethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Bromoform	304 J	5 U	100 U	25 U	5 U	5 U	500 U	125 U
Bromomethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Carbon disulfide	675	2 U	40 U	10 U	2 U	2 U	1910	50 U
Carbon tetrachloride	4350	2 U	40 U	10 U	2 U	2 U	419	167
Chlorobenzene	200 U	3.61	383	424	1.98 J	8.93	200 U	50 U
Chloroethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Chloroform	10200	2 U	40 U	10 U	2 U	2 U	14300	3380
Chloromethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Cis-1,2-Dichloroethene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Cis-1,3-Dichloropropene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Cyclohexane	1000 U	10 U	200 U	50 U	10 U	10 U	1000 U	250 U
Dibromochloromethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Dichlorodifluoromethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Ethylbenzene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Isopropylbenzene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U

TABLE 3
SPRING 2016 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW17	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/18/2016	5/19/2016	5/19/2016	5/19/2016	5/20/2016	5/18/2016	5/17/2016	5/18/2016
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
VOCs By SW-846 Method 8260C (µg/L)								
Methyl cyclohexane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Methyl Tertbutyl Ether	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Methylene chloride	2590	5 U	100 U	25 U	5 U	5 U	714	1320
Styrene	500 U	5 U	100 U	25 U	5 U	5 U	500 U	125 U
Tetrachloroethene	578	2 U	40 U	10 U	2 U	2 U	475	134
Toluene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
trans-1,2-Dichloroethene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
trans-1,3-Dichloropropene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Trichloroethene	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Trichlorofluoromethane	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Vinyl chloride	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Xylene, o	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U
Xylenes (m&p)	200 U	2 U	40 U	10 U	2 U	2 U	200 U	50 U

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

TABLE 4
COMPARISON OF SPRING 2016
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 2016 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2016 RESULT
ON-SITE WELLS/LOCATIONS								
B-11	8	4,800	1,300	880	8	570	20	8.7
B-15	4	13,000	120	110	4	1,600	0.15	ND
B-16	10	33,000	790	270	10	4,500	4.1	ND
B-17	7	28,000,000	320,000	**410,000**	7	350,000	5,700	2,300
B-4	3	740	21		3	42	7	
B-5	4	360,000	140,000		4	670	220	140
B-7	5	9,100	280	210	5	270	22	10
BR-126	9	12,000	2,600	840	9	240	1.9	ND
BR-127	11	44,000	10,000	1,900	11	1,300	84	7.4
BR-3	5	6,500,000	36,000	2,500	5	930,000	50,000	1,200
BR-5A	10	1,700	100	24	10	9,400	11	ND
BR-6A	11	140,000	19,000	10,000	11	69,000	4,000	37
BR-7A	10	510,000	9,600	2,000	10	5,600	290	31
BR-8	7	230,000	190,000	**370,000**	7	7,800	970	680
BR-9	10	1,300	220	52	10	210	13	6
E-3	5	600	67	14	5	15,000	4.6	ND
MW-127	11	15,000	1,400	120	11	7,500	58	ND
PW10	10	500,000	180,000	18,000	10	120,000	1,400	120
PW12	10	15,000	380	220	10	120,000	6,700	150
PW13	10	7,500	14,000	9,600	10	1,800	390	110
PW14	11	44,000	3,200	**11,000**	11	160,000	11,000	2,400
PW15	10	730,000	95,000	**170,000**	10	12,000	4,100	**28,000**
PW16	9	52,000	35,000	**72,000**	9	1,200	700	540
PW17	5	63,000	20,000	9,900	5	66,000	38,000	18,000
PZ-104	10	9,100	750	620	10	52	4.3	2.0
PZ-105	10	190,000	6,500	1,300	10	9,900	63	8.9
PZ-106	11	290,000	15,000	5,800	11	1,400,000	210,000	16,000
PZ-107	11	31,000	4,400	950	11	130,000	14,000	5,000
W-5	2	450,000	ND		2	2,500	9	
OFF-SITE WELLS/LOCATIONS								
BR-103	5	400	2.1		5	46	ND	
BR-104	5	3,100	2.3			11.6		
BR-105	10	24,000	930	700	10	350	8.7	**9.9**
BR-105D	10	17,000	370	130	10	230	3.2	ND
BR-106	10	34,000	12,000	**26,000**	10	12,000	160	**190**
BR-108	5	1,700	10			2		
BR-112D	5	310	24	**34**		4.3		
BR-113D	5	490	15	ND		2.8		
BR-114	5	520	13	ND	5	12	0.2	ND
BR-116	5	12	ND			86		
BR-116D	5	710	18			130		
BR-117D	5	80	2.1	**5**		1.9		
BR-118D	5	330	27	12		6.6		
BR-122D	5	650	46	ND		ND		

TABLE 4
COMPARISON OF SPRING 2016
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 2016 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2016 RESULT
BR-123D	5	860	41	35		7		
MW-103	5	97	0.22		5	750	ND	
MW-104	5	180	2.4			5.8		
MW-106	10	130,000	28,000	12,000	10	4,000	330	**340**
MW-114	5	18	1	ND	5	27	20	11
MW-16	5	360	11			10		
NESS-E	5	5,000	64			710		
NESS-W	5	6,300	ND			94		
PZ-101	10	27,000	54	**200**	10	620	1.9	**3.6**
PZ-102	10	210,000	53,000	28,000	10	11,000	550	380
PZ-103	10	230,000	66,000	34,000	10	46,000	1,000	420
QD-1	10	11	2.1	**10**		ND		
QO-2	10	380	6.6	ND		ND		
QO-2S1	10	27	1.7	ND		ND		
QS-4	10	13,000	100	**130**		ND		

Note:
1) Number of samples and mean reflect 5-year sampling period from May 2011 through December 2015. Historic maximum based on all available results from March 1990 through December 2015.
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 2016 exceeds 5-year mean.
5) ND = Not detected
BLANK = Not sampled

TABLE 5
SPRING 2016 QUARRY SEEP AND OUTFALL WATER SAMPLE RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	QD-1	QD-2	QO-2S1	QS-4
SAMPLE DATE:	5/24/2016	5/24/2016	5/24/2016	5/24/2016
QC TYPE:	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)				
2,6-Dichloropyridine	5.15 J	10 U	10 U	24.5
2-Chloropyridine	5.2 J	10 U	10 U	106
3-Chloropyridine	10 U	10 U	10 U	10 U
4-Chloropyridine	10 U	10 U	10 U	10 U
p-Fluoroaniline	10 U	10 U	10 U	10 U
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 2015 THROUGH MAY 2016

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 '15								
12/06/15	65,897	39,016	13,114	20,885	114,508	478	67,364	321,262
12/13/15	84,840	47,716	3,235	19,928	64,368	1,928	23,494	245,509
12/20/15	85,440	34,988	3	18,256	54,559	1,639	68,130	263,015
12/27/15	88,535	32,022	3	16,793	52,723	1,577	67,583	259,236
							Total [Gal.]	1,089,022
Jan '16								
01/03/16	116,064	24,266	1	14,298	53,714	1,498	67,697	277,538
01/10/16	118,380	25,146	0	0	53,782	1,341	65,779	264,428
01/17/16	117,341	24,648	4	0	57,954	1,268	64,099	265,314
01/24/16	113,454	23,566	0	0	57,392	1,123	47,557	243,092
01/31/16	109,840	23,299	1	777	59,572	1,363	46,942	241,794
							Total [Gal.]	1,292,166
Feb '16								
02/07/16	116,415	24,301	3,136	10,527	54,851	1,378	48,006	258,614
02/14/16	118,247	29,137	129	28,608	45,615	1,240	52,367	275,343
02/21/16	121,404	32,393	0	24,127	38,159	1,243	53,499	270,825
02/28/16	128,408	36,024	1	25,882	42,372	1,322	52,202	286,211
							Total [Gal.]	1,090,993
Mar '16								
03/06/16	133,308	53,873	0	10,792	7,114	1,581	51,605	258,273
03/13/16	118,931	44,762	8	16,690	51,827	1,552	47,103	280,873
03/20/16	113,667	38,404	5	34,988	67,774	1,272	47,564	303,674
03/27/16	84,622	45,912	1	31,954	69,164	1,509	47,070	280,232
							Total [Gal.]	1,123,052
Apr '16								
04/03/16	114,917	35,083	13	30,343	67,192	1,403	45,365	294,316
04/10/16	62,200	48,211	1	28,935	59,641	1,393	45,332	245,713
04/17/16	111,867	40,058	9	27,318	63,086	1,386	37,512	281,236
04/24/16	142,640	49,492	19,854	26,726	57,338	1,507	30,711	328,268
							Total [Gal.]	1,149,533
May '16								
05/01/16	89,660	71,524	59,960	12,229	56,260	1,837	38,486	329,956
05/08/16	105,265	74,668	75,864	7,866	55,966	1,879	42,383	363,891
05/15/16	100,647	73,231	83,200	22,347	56,238	1,547	20,214	357,424
05/22/16	103,100	75,201	84,407	19,080	50,756	1,566	40,765	374,875
05/29/16	82,566	79,334	85,623	8,382	49,089	1,731	14,193	320,918
							Total [Gal.]	1,747,064
Total 6 Mo. Removal (Gal.)	2,747,655	1,126,275	428,572	457,731	1,461,014	37,561	1,233,022	7,491,830

TABLE 7

MASS REMOVAL SUMMARY
PERIOD: DECEMBER 2015 THROUGH MAY 2016

ARCH ROCHESTER
SPRING 2016 GROUNDWATER MONITORING REPORT

Well	Total Vol. Pumped (gallons)	Avg. VOC Conc. (ppm)	Avg. PYR. Conc. (ppm)	VOCs Removed (pounds)	PYR. Removed (pounds)
BR-7A	2,748,000	0.06	10	1.5	233
BR-9	1,126,000	0.008	0.07	0.07	0.6
PW-13	429,000	0.28	52	1.00	184
PW-15	458,000	20.0	158	76	604
PW-16	1,461,000	0.51	81	6.2	985
PW-17	37,000	23	8.0	7	2
BR-127	1,233,000	0.02	3.3	0.2	33
Totals:	7,492,000			92	2,042

Notes: VOC and pyridine concentrations used in this table are an average of the analytical results from the Fall 2015 and Spring 2016 sampling events for each well;
Total select VOCs include chlorobenzene, PCE, TCE, methylene chloride, carbon tetrachloride, and chloroform

TABLE 8
2016 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

ARCH ROCHESTER						**2016**					
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-5	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	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						46	36	34	30	80	66

Appendix A

Groundwater Field Sampling Data Sheets

FIELD REPORT

REMEDIAL INVESTIGATION SAMPLING
LONZA CHEMICAL
ROCHESTER, NEW YORK

Spring 2016 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: David Kreinheder

Reviewed by: Steven L. Marchetti

Date: July 14, 2016

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the sampling of the following points:

- 42 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 16, 2016 by Matrix Environmental Technologies Inc. (METI) field personnel. The samples were collected from May 17 through May 24, 2016.

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-15	On-Site	OB	5/20/2016	9:59	11.26	NM	7.09	0.78	14.77	7.3	35	3.14
B-16	Off-Site	OB	5/20/2016	10:45	8.48	NM	6.86	3.01	15.11	9.4	-3	0.15
B-17	On-Site	OB	5/18/2016	10:05	10.83	NM	9.67	25.40	13.46	30.5	-228	0.00
B-5	On-Site	OB	5/19/2016	8:58	17.41	NM	Not Enough Water to Run Parameters					
B-7	On-Site	OB	5/20/2016	15:10	19.51	NM	6.91	1.30	20.41	31.2	-57	0.00
BR-105	Off-Site	BR	5/24/2016	9:15	23.19	NM	7.16	3.68	17.65	37.2	-43	0.53
BR-105D	Off-Site	BR deep	5/23/2016	12:55	28.30	NM	6.80	36.30	27.35	0.0	-382	0.00
BR-106	Off-Site	BR	5/19/2016	14:58	23.96	NM	6.94	5.20	22.57	32.4	-126	0.00
BR-112D	Off-Site	BR deep	5/23/2016	15:31	36.32	NM	6.97	2.80	17.13	2.0	-332	0.00
BR-113D	Off-Site	BR deep	5/23/2016	11:30	31.44	NM	7.12	3.55	19.89	0.0	-343	0.00
BR-114	Off-Site	BR	5/20/2016	14:05	13.27	NM	7.13	1.56	18.25	0.0	-136	0.00
BR-117D	Off-Site	BR deep	5/23/2016	9:53	49.14	NM	7.01	3.00	12.95	14.0	-228	0.00
BR-118D	Off-Site	BR deep	5/23/2016	10:30	48.55	NM	9.76	0.83	13.54	11.3	-222	0.00
BR-122D	Off-Site	BR deep	5/23/2016	14:42	45.49	NM	7.11	1.80	19.51	9.8	-243	0.00
BR-123D	Off-Site	BR deep	5/23/2016	14:00	45.79	NM	7.66	2.49	19.19	20.6	-281	0.00
BR-126	Off-Site	BR	5/20/2016	11:30	9.45	NM	7.02	1.11	19.06	1.00	-133	0.00
BR-127	On-Site	BR	5/17/2016	12:50	11.03	NM	7.17	2.42	12.26	0.2	-120	0.64
BR-3	On-Site	BR	5/18/2016	11:55	12.41	NM	7.90	5.88	13.55	21.6	-198	0.00
BR-5A	On-Site	pumping well	5/17/2016	10:18	3.44	NM	7.71	2.24	12.79	18.2	113	10.80
BR-6A	On-Site	BR	5/18/2016	14:45	17.14	NM	7.79	6.27	19.12	33.3	-287	0.00
BR-7A	On-Site	pumping well	5/24/2016	8:30	32.39	NM	7.50	2.69	14.90	341.0	-153	5.21
BR-8	On-Site	BR	5/19/2016	9:46	16.39	NM	8.83	5.80	14.83	18.3	-146	0.00
BR-9	On-Site	pumping well	5/17/2016	8:55	28.54	NM	6.93	2.69	18.42	153.0	-95	1.51
E-3	On-Site	OB	5/17/2016	11:03	5.61	NM	7.78	3.55	13.45	138.0	-249	0.00
MW-106	Off-Site	OB	5/19/2016	14:08	13.15	NM	6.86	2.52	17.74	28.9	-186	0.00
MW-114	Off-Site	OB	5/20/2016	13:30	11.08	NM	7.59	0.54	18.73	0.6	63	0.77
MW-127	On-Site	OB	5/17/2016	13:25	9.33	NM	7.23	4.57	13.10	2.6	26	2.07
PW-10	On-Site	pumping well	5/18/2016	9:22	11.51	NM	7.90	9.74	13.79	7.0	-98	7.53
PW-12	On-Site	BR	5/17/2016	9:42	7.44	NM	8.02	0.67	12.49	28.8	-95	0.00
PW-13	On-Site	pumping well	5/20/2016	11:58	33.62	NM	7.20	3.88	16.42	0.1	-112	3.40
PW-14	On-Site	pumping well	5/17/2016	11:45	13.54	NM	8.74	5.19	12.88	3.9	-178	1.54
PW-15	On-Site	pumping well	5/18/2016	10:58	27.09	NM	9.39	9.32	13.91	22.4	-174	7.85
PW-16	On-Site	pumping well	5/19/2016	8:40	22.65	NM	8.17	8.60	13.07	314.0	-130	7.70
PW-17	On-Site	pumping well	5/18/2016	11:16	30.47	NM	7.43	2.97	14.80	5.4	-173	2.77
PZ-101	Off-Site	BR	5/19/2016	11:00	20.67	NM	6.80	4.47	18.92	0.6	34	0.00
PZ-102	Off-Site	BR	5/19/2016	11:42	19.41	NM	7.27	5.34	17.77	2.9	-265	0.00
PZ-103	Off-Site	BR	5/19/2016	13:16	16.83	NM	7.03	4.14	20.02	0.0	-226	0.00
PZ-104	Off-Site	BR	5/20/2016	9:08	15.12	NM	7.02	3.44	13.16	0.0	-134	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-105	On-Site	BR	5/18/2016	15:38	15.22	NM	7.65	0.78	18.89	558.0	-3	0.34
PZ-106	On-Site	BR	5/17/2016	15:05	14.65	NM	7.51	2.85	16.58	19.4	-150	6.94
PZ-107	On-Site	BR	5/18/2016	13:52	13.25	NM	7.03	0.83	17.08	30.5	-85	0.00
QD-1	Quarry/Canal	quarry ditch	5/24/2016	10:45	NM	NA	8.24	2.10	16.11	51.2	39	6.11
QO-2	Quarry/Canal	quarry outfall	5/24/2016	11:10	NM	NA	8.57	2.12	16.79	39.3	45	5.47
QO-2S1	Quarry/Canal	canal at outfall	5/24/2016	11:35	NM	NA	8.67	65.30	18.38	65.3	64	5.71
QS-4	Quarry/Canal	quarry seep	5/24/2016	10:00	NM	NA	8.32	2.19	15.02	36.4	13	5.64

** 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	5/16/2016	9.35	537.75	528.40	9:10	
B-10	On-Site	OB	5/16/2016	10.27	538.80	528.53	11:00	
B-11	On-Site	OB	5/16/2016	7.05	536.00	528.95	10:56	
B-15	On-Site	OB	5/16/2016	8.22	535.29	527.07	12:40	
B-16	Off-Site	OB	5/16/2016	7.73	536.21	528.48	12:42	
B-17	On-Site	OB	5/16/2016	Dry	538.74	Dry	9:54	
B-2	On-Site	OB	5/16/2016	10.49	539.02	528.53	11:29	
B-4	On-Site	OB	5/16/2016	21.53	542.87	521.34	10:37	
B-5	On-Site	OB	5/16/2016	17.39	540.21	522.82	10:42	
B-7	On-Site	OB	5/16/2016	16.21	541.11	524.90	12:54	
B-8	On-Site	OB	5/16/2016	Dry	538.88	Dry	11:05	
BR-1	On-Site	BR	5/16/2016	7.2	537.28	530.08	9:40	
BR-102	On-Site	BR	5/16/2016	23.35	539.43	516.08	9:26	
BR-103	Off-Site	BR	5/16/2016	3.82	533.19	529.37	13:49	
BR-104	Off-Site	BR	5/16/2016	10.85	537.56	526.71	13:31	
BR-105	Off-Site	BR	5/16/2016	22.94	536.90	513.96	12:34	
BR-105D	Off-Site	BR deep	5/16/2016	26.41	536.49	510.08	12:30	
BR-106	Off-Site	BR	5/16/2016	24.11	535.74	511.63	12:58	
BR-108	Off-Site	BR	5/16/2016	28.51	540.58	512.07	13:05	
BR-111	Off-Site	BR	5/16/2016	28.74	540.42	511.68	14:08	
BR-111D	Off-Site	BR	5/16/2016	29.08	540.34	511.26	14:09	
BR-112D	Off-Site	BR deep	5/16/2016	36.31	547.91	511.60	14:06	
BR-113	Off-Site	BR	5/16/2016	30.95	543.02	512.07	14:46	
BR-113D	Off-Site	BR deep	5/16/2016	31.36	542.93	511.57	14:45	
BR-114	Off-Site	BR	5/16/2016	13.16	539.77	526.61	13:37	
BR-116	Off-Site	BR	5/16/2016	28.66	545.38	516.72	13:56	
BR-116D	Off-Site	BR deep	5/16/2016	35.70	545.22	509.52	13:57	
BR-117	Off-Site	BR	5/16/2016	24.97	547.61	522.64	14:56	
BR-117D	Off-Site	BR deep	5/16/2016	48.99	547.16	498.17	14:54	
BR-118	Off-Site	BR	5/16/2016	30.15	547.79	517.64	14:58	
BR-118D	Off-Site	BR deep	5/16/2016	48.09	547.93	499.84	15:01	
BR-122D	Off-Site	BR deep	5/16/2016	45.39	552.34	506.95	14:18	
BR-123D	Off-Site	BR deep	5/16/2016	45.67	553.62	507.95	14:20	
BR-124D	Off-Site	BR deep	5/16/2016	32.41	537.45	505.04	14:22	
BR-126	Off-Site	BR	5/16/2016	9.14	537.90	528.76	12:45	
BR-127	On-Site	BR	5/16/2016	8.04	536.05	528.01	10:53	
BR-2	On-Site	BR	5/16/2016	11.46	538.97	527.51	10:02	
BR-2A	On-Site	BR	5/16/2016	11.69	540.36	528.67	10:03	
BR-2D	On-Site	BR deep	5/16/2016	12.05	537.26	525.21	10:05	
BR-3	On-Site	BR	5/16/2016	11.01	538.20	527.19	10:25	
BR-3D	On-Site	BR deep	5/16/2016	52.53	537.67	485.14	10:24	
BR-4	On-Site	BR	5/16/2016	13.57	539.03	525.46	10:08	
BR-5	On-Site	BR	5/16/2016	5.50	536.30	530.80	9:34	
BR-5A	On-Site	pumping well	5/16/2016	3.53	536.35	532.82	9:35	
BR-6A	On-Site	BR	5/16/2016	15.76	540.90	525.14	11:03	
BR-7	On-Site	BR	5/16/2016	17.87	539.10	521.23	11:58	
BR-7A	On-Site	pumping well	5/16/2016	32.39	539.12	506.73	11:55	
BR-8	On-Site	BR	5/16/2016	16.28	539.72	523.44	10:40	
BR-9	On-Site	pumping well	5/16/2016	28.59	542.17	513.58	16:00	
C-2A	On-Site	OB	5/16/2016	Dry	539.66	Dry	10:04	
C-5	On-Site	OB	5/16/2016	12.96	539.63	526.67	10:26	
CANAL	Off-Site	SW	5/16/2016	36.90	544.79	507.89	14:29	
E-2	On-Site	OB	5/16/2016	NM	538.32	NM		Could Not Locate Well
E-3	On-Site	OB	5/16/2016	3.92	536.59	532.67	9:33	
E-5	On-Site	OB	5/16/2016	5.83	539.31	533.48	9:38	
EC-2	Off-Site	BR	5/16/2016	Dry	542.00	Dry		
MW-103	Off-Site	OB	5/16/2016	1.62	533.25	531.63	13:48	
MW-104	Off-Site	OB	5/16/2016	8.52	537.54	529.02	13:33	
MW-105	Off-Site	OB	5/16/2016	NM	536.91	NM		Could Not Locate Well
MW-106	Off-Site	OB	5/16/2016	12.51	535.44	522.93	12:56	
MW-114	Off-Site	OB	5/16/2016	9.58	539.69	530.11	13:39	
MW-127	On-Site	OB	5/16/2016	8.12	536.87	528.75	10:55	
MW-16	Off-Site	BR	5/16/2016	11.15	536.79	525.64	13:43	
MW-3	Off-Site	OB	5/16/2016	NM	535.89	NM		Inaccessible
MW-G6	Off-Site	OB	5/16/2016	NM	534.65	NM		Could Not Locate Well

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G8	Off-Site	OB	5/16/2016	NM	534.25	NM		Inaccessible
MW-G9	Off-Site	OB	5/16/2016	NM	536.60	NM		Inaccessible
N-2	On-Site	OB	5/16/2016	4.64	537.33	532.69	9:44	
N-3	On-Site	OB	5/16/2016	6.92	537.38	530.46	9:08	
NESS-E	Off-Site	BR deep	5/16/2016	26.18	540.31	514.13	13:20	
NESS-W	Off-Site	BR deep	5/16/2016	31.30	543.04	511.74	13:16	
PW-10	On-Site	pumping well	5/16/2016	9.96	538.76	528.80	9:50	
PW-12	On-Site	BR	5/16/2016	7.06	537.49	530.43	9:31	
PW-13	On-Site	pumping well	5/16/2016	30.50	536.13	505.63	12:00	
PW-14	On-Site	pumping well	5/16/2016	12.84	537.03	524.19	10:13	
PW-15	On-Site	pumping well	5/16/2016	27.02	538.32	511.30	10:18	
PW-16	On-Site	pumping well	5/16/2016	23.08	539.32	516.24	10:39	
PW-17	On-Site	pumping well	5/16/2016	30.61	NA	NA	10:28	
PZ-101	Off-Site	BR	5/16/2016	19.21	542.95	523.74	11:40	
PZ-102	Off-Site	BR	5/16/2016	19.27	540.89	521.62	11:50	
PZ-103	Off-Site	BR	5/16/2016	16.29	540.20	523.91	11:53	
PZ-104	Off-Site	BR	5/16/2016	15.06	536.85	521.79	12:38	
PZ-105	On-Site	BR	5/16/2016	12.26	536.93	524.67	11:06	
PZ-106	On-Site	BR	5/16/2016	12.31	537.24	524.93	10:11	
PZ-107	On-Site	BR	5/16/2016	10.42	538.39	527.97	10:57	
PZ-109	On-Site	BR	5/16/2016	11.27	538.59	527.32	10:16	
PZ-110	On-Site	BR	5/16/2016	14.86	NA	NA	10:30	
PZ-111	On-Site	BR	5/16/2016	11.70	NA	NA	10:20	
W-5	On-Site	OB	5/16/2016	NM	538.53	NM		Inaccessible

APPENDIX A
FIELD OBSERVATION FORMS

5/6/16

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		9.35	537.75	537.75	9:10	
B-10	On-Site	OB		10.27	538.80	538.80	11:00	
B-11	On-Site	OB		7.05	536.00	< 521.83	10:56	~~Dry Lot 521.83'~~
B-15	On-Site	OB		8.32	535.29	535.29	12:40	
B-16	Off-Site	OB		7.73	536.21	536.21	12:42	
B-17	On-Site	OB		DRY	538.74	538.74	9:34	
B-2	On-Site	OB		10.99	539.02	539.02	11:29	
B-4	On-Site	OB		21.53	542.87	542.87	10:37	
B-5	On-Site	OB		18.39	540.21	540.21	10:42	
B-7	On-Site	OB		16.21	541.11	541.11	12:54	
B-8	On-Site	OB		DRY	538.88	538.88	11:05	
BR-1	On-Site	BR		7.30	537.28	537.28	9:40	
BR-102	On-Site	BR		23.35	539.43	539.43	9:26	
BR-103	Off-Site	BR		3.83	533.19	533.19	13:49	
BR-104	Off-Site	BR		10.85	537.56	537.56	13:34	
BR-105	Off-Site	BR		22.99	536.90	536.90	12:34	
BR-105D	Off-Site	BR deep		26.41	536.49	536.49	12:30	
BR-106	Off-Site	BR	24.11	~~33~~	535.74	535.74	12:50	
BR-108	Off-Site	BR		28.51	540.58	540.58	13:05	
BR-111	Off-Site	BR		28.78	540.42	540.42	14:08	
BR-111D	Off-Site	BR		29.08	540.34	540.34	14:09	
BR-112D	Off-Site	BR deep		36.31	547.91	547.91	14:06	
BR-113	Off-Site	BR		30.95	543.02	543.02	14:46	
BR-113D	Off-Site	BR deep		31.36	542.93	542.93	14:45	
BR-114	Off-Site	BR		13.16	539.77	539.77	13:37	
BR-116	Off-Site	BR		28.66	545.38	545.38	13:56	
BR-116D	Off-Site	BR deep		36.70	545.22	545.22	13:57	
BR-117	Off-Site	BR		24.97	547.61	547.61	14:56	
BR-117D	Off-Site	BR deep		48.99	547.16	547.16	14:54	
BR-118	Off-Site	BR		30.15	547.79	547.79	14:58	
BR-118D	Off-Site	BR deep		48.09	547.93	547.93	15:01	
BR-122D	Off-Site	BR deep		45.39	552.34	552.34	14:18	
BR-123D	Off-Site	BR deep		45.67	553.62	553.62	14:20	
BR-124D	Off-Site	BR deep		32.91	537.45	537.45	14:30	
BR-126	Off-Site	BR		9.14	537.90	537.90	12:45	well under debris
BR-127	On-Site	BR		8.04	534.80	534.80	10:53	
BR-2	On-Site	BR	11.46	13.05	538.97	538.97	10:07	
BR-2A	On-Site	BR		11.69	540.36	540.36	10:03	
BR-2D	On-Site	BR deep	12.05	11.76	537.26	537.26	10:05	
BR-3	On-Site	BR		11.01	538.20	538.20	10:25	debris in well
BR-3D	On-Site	BR deep		52.53	537.67	537.67	10:34	
BR-4	On-Site	BR		13.57	539.03	539.03	10:08	
BR-5	On-Site	BR		5.50	536.30	536.30	9:34	
BR-5A	On-Site	pumping well		3.53	536.35	536.35	9:35	
BR-6A	On-Site	BR		15.76	540.90	540.90	11:03	
BR-7	On-Site	BR		16.87	539.10	539.10	11:58	
BR-7A	On-Site	pumping well		32.39	539.12	539.12	11:55	
BR-8	On-Site	BR		16.21	539.72	539.72	10:40	
BR-9	On-Site	pumping well		20.59	542.17	542.17	16:00	
C-2A	On-Site	OB	DRY	11.69	539.66	539.66	~~12:55~~	10:04
C-5	On-Site	OB		12.90	539.63	539.63	10:21	
CANAL	Off-Site	SW		36.90	544.79	544.79	14:29	
E-2	On-Site	OB			538.32	538.32		Dirt Pile
E-3	On-Site	OB		3.92	536.59	536.59	9:33	
E-5	On-Site	OB		5.83	539.31	539.31	9:38	
EC-2	Off-Site	BR		DRY	542.00	542.00	DRY	
MW-103	Off-Site	OB		8.62	533.25	533.25	13:48	
MW-104	Off-Site	OB		8.52	537.54	537.54	13:33	
MW-105	Off-Site	OB			536.91	536.91		Dirt Pile
MW-106	Off-Site	OB		12.51	535.44	535.44	12:56	
MW-114	Off-Site	OB		9.95	539.69	539.69	13:39	
MW-127	On-Site	OB		8.13	536.87	536.87	10:55	
MW-16	Off-Site	BR		11.15	536.79	536.79	13:43	
MW-3	Off-Site	OB		NS	535.89	535.89		

31.30

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-66	Off-Site	OB		—	534.65	534.65		HAVE 0 WATER Locked Locked
MW-68	Off-Site	OB		—	534.25	534.25	—	
MW-69	Off-Site	OB		—	536.60	536.60	—	
N-2	On-Site	OB		4.64	537.33	537.33	9:44	
N-3	On-Site	OB		6.93	537.38	537.38	9:08	
NESS-E	Off-Site	BR deep		26.68	540.31	540.31	13:30	
NESS-W	Off-Site	BR deep		36.30	543.04	543.04	13:16	
PW-10	On-Site	pumping well		9.96	538.76	538.76	9:30	
PW-12	On-Site	BR		7.06	537.49	537.49	9:31	
PW-13	On-Site	pumping well		30.50	536.13	536.13	12:00	
PW-14	On-Site	pumping well		13.84	537.03	537.03	10:13	
PW-15	On-Site	pumping well		30.47	538.32	538.32	10:10	
PW-16	On-Site	pumping well		23.08	539.32	539.32	10:39	
PW-17	On-Site	pumping well		30.64	NA	#VALUE!	10:28	
PZ-101	Off-Site	BR		19.21	542.95	542.95	11:40	
PZ-102	Off-Site	BR	19.27	18.24	540.89	540.89	11:50	
PZ-103	Off-Site	BR		16.79	540.20	540.20	11:53	
PZ-104	Off-Site	BR		15.06	536.85	536.85	12:38	
PZ-105	On-Site	BR		12.26	536.93	536.93	11:06	
PZ-106	On-Site	BR		12.31	537.24	537.24	10:11	
PZ-107	On-Site	BR	10.42	10.27	538.39	538.39	10:57	
PZ-109	On-Site	BR		11.27	538.59	538.59	10:12	
PZ-110	On-Site	BR		14.86	NA	#VALUE!	10:30	
PZ-111	On-Site	BR		11.70	NA	#VALUE!	10:20	
W-5	On-Site	OB		—	538.53	538.53		Debris in vault

10.27?

5-16-16

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ106

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 14:35

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: 5-17-16 14:41

Date/Time Completed: 5-17-16 15:25

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 12.87

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (✓) N

Total Volume Purged (gal): 2.5L

Purged to Dryness: Y / (✓) N

Purge Observations: light brown, cloudy

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
14:45	13.17	125 mL/min		17.96	7.07	2.49	89.1	-57	12.52	
14:50	14.07	62.5		16.51	7.97	2.15	87.9	-110	9.57	
14:55	14.49			16.36	7.90	2.38	98.2	-128	8.60	
15:00	14.62			16.66	7.67	2.66	16.5	-137	7.71	
15:05	14.65			16.58	7.51	2.85	19.4	-150	6.94	
→ SAMPLE										

59°F Sun + Clouds

FIELD OBSERVATIONS

Facility: Lanza

Sample Point ID: B 11

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 13:48

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: 5-17 13:57

Date/Time Completed: 14:30

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

Riser Diameter (inches) 2 "

Initial Water Level (ft): 7.97

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): 0.85 L

Purged to Dryness: (Y) N

Purge Observations: Cloudy, light brown

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/mtz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
14:00	8.99	250 mL/min		14.95	7.19	2.55	193	66	4.13	
14:05	10.13	125		14.74	6.94	2.47	116	41	0.73	
14:10	10.92	67.5		15.80	6.90	2.44	108	39	0.08	
↳	SAMPLE	: Running	out	of	water.					

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW127

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 12:55

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: 5-17-16 13:03

Date/Time Completed: 13:45

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

Riser Diameter (inches) 2"

Initial Water Level (ft): 8.72

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

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
13:05	8.93	125mL/min		12.74	7.48	4.58	5.1	27	6.19	
13:10	9.07	67.5		12.90	727	4.54	4.9	35	3.50	
13:15	9.18			13.08	7.25	4.58	3.3	24	2.74	
13:20	9.27			13.03	7.24	4.57	2.8	24	2.38	
13:25	9.33			13.10	7.23	4.57	2.6	26	2.07	
↳	SAMPLE									

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR127

SAMPLING INFORMATION

Date/Time 5-17-16 12:30 Water Level at Sampling (ft) 11.03

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

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

Heavy sheen

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
12:50	12.26	7.17	2.42 mS/cm	0.2	-120	0.64	

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: 52°F, Cloudy

Sample characteristics: clear, sheen, oily

Comments and Observations:

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

Date: 5-17-16 by: DK & RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW14

SAMPLING INFORMATION

Date/Time 5-17-16 11:40 Water Level at Sampling (ft) 13.54

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	12.88	8.74	5.19ms/cm	3.9	-178	1.54	

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: Clear, a few particles, yellow tint

Comments and Observations:

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

Date: 5-17-16 by: DKARG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: E3

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 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: 5-17 10:40

Date/Time Completed: 11:13

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

Riser Diameter (inches) 2" Steel

Initial Water Level (ft): 3.97

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): 2.5L

Purged to Dryness: Y / (N)

Purge Observations: Brown, cloudy

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:43	4.56	250mL/min		13.82	7.66	3.16	190	-156	2.89	
10:48	5.61	125		13.53	7.65	3.35	175	-239	0.00	
10:53	5.63	125		13.47	7.69	3.44	161	-248	0.00	
10:58	5.61	67.5		13.45	7.79	3.50	148	-251	0.00	
11:03	5.61			13.45	7.78	3.55	138	-249	0.00	
↳	SAMPLE									

48°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR5A

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 9:57

Condition of seal: ( ) Good ( ) Cracked Hot Box %

(✓) 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: 5-17-16 10:01

Date/Time Completed: 10:28

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): ~~3.59~~ 3.39

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

Start Finish

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:03	3.38	~~250~~ 125		13.28	7.82	2.02	20.2	98	12.23	
10:08	3.44	67.5		12.93	7.72	2.14	18.1	107	11.59	
10:13	3.44			12.87	7.72	2.23	18	110	11.00	
10:18	3.44			12.79	7.71	2.24	18.2	113	10.80	
↳ SAMPLE										

48°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW12

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-17-16 9:05

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

(✓) None ( ) Buried

Prot. Casing/Riser Height: ____

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

New Road Box

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: 5-17-16 9:20

Date/Time Completed: 9:52

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 7.17

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): 3.75L

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 (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:22	7.33	250mL/min		13.84	8.85	0.690	30.7	10	4.94	
9:27	7.44	125		12.96	7.96	0.667	22.3	45	0.85	
9:32	7.44	↓		12.84	7.88	0.666	25.3	39	0.11	
9:37	7.44	↓		12.58	7.96	0.669	30.7	-51	0.00	
9:42	7.44	↓		12.49	8.02	0.672	28.8	-95	0.00	
↳	SAMPLE									

48°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR9

SAMPLING INFORMATION

Date/Time 5-17-16 8:50 Water Level at Sampling (ft) 28.54

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

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:55	18.42	6.93	2.69	153	-95	1.51	

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: 46°F, overcast

Sample characteristics: Orange, cloudy

Comments and Observations:

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

Date: 5-17-16 by: DK+RC Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW10

Field Personnel: DK + RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-18-16 8:35

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) 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: 5-18-16 8:55

Date/Time Completed: 9:31

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 11.02

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)~~: 2L

Purged to Dryness: Y / (N)

Purge Observations: Clear, Brown tint

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:02	11.22	125mL/min		12.49	8.51	11.6	10	-99	12.14	
9:07	11.31	67.5		12.80	8.12	10.4	8.5	-88	8.66	
9:12	11.40			13.44	~~9.27~~ 7.94	9.95	7.4	-83	8.05	
9:17	11.47			13.66	7.90	9.80	7.1	-84	7.81	
9:22	11.51			13.79	7.90	9.74	7.0	-98	7.53	
→ SAMPLE										

45°F, Sun + clouds

FIELD OBSERVATIONS

Facility: Lenzo Sample Point ID: B17

Field Personnel: OKTRG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-18-16 9:35 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: 5-18-16 9:42 Date/Time Completed: 10:15

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

Initial Water Level (ft): 10.80 Elevation G/W MSL: ____

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

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

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

Purge Observations: Clear, Brownish tint, Clouded upon time, Chemical odor Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:45	10.83	250 mL/min		14.27	9.52	25	52.6	-191	5.46	
9:50	10.83	67.5		13.72	9.67	26.1	43	-221	0.00	
9:55	10.83			13.60	9.67	25.8	37.3	-224	0.00	
10:00	10.83			13.50	9.67	25.6	34.1	-226	0.00	
10:05	10.83			13.46	9.67	25.4	30.5	-228	0.00	
↳	SAMPLE									

50°F, Scnt clouds

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: PW15

SAMPLING INFORMATION

Date/Time 5-18-16 Water Level at Sampling (ft) 27.09

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
10:58	13.91	9.39	9.32 mS/cm	22.4	-174	7.85	

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 Sun + clouds

Sample characteristics: Clear, Brown tint, particles

Comments and Observations:

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

Date: 5-18-16 by: DK + RC Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW17

SAMPLING INFORMATION

Date/Time 5-18-16 Water Level at Sampling (ft) 30.47

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 (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:10	14.80	7.43	2.97	5.4	-73	2.77	

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: 54°F, Sun + Clouds, light wind

Sample characteristics: Clear, slight sulfur odor

Comments and Observations:

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

Date: 5-18-16 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR3

Field Personnel: DKtRG Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-18-16 11:20 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: 5-18-16 11:29 Date/Time Completed: 12:05

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

Initial Water Level (ft): 11.05 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)~~: 2.34 Purged to Dryness: Y / (N)

Purge Observations: tan/yellow color & cloudy 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
11:35	11.33	250 mL/min		14.01	7.95	5.87 ~~ms/cm~~	53	-182	2.58	
11:40	11.59	125		13.50	8.00	5.90	35.7	-205	1.18	
11:45	11.81	67.5		13.53	8.00	5.89	26.3	-211	0.31	
11:50	12.23			13.51	7.97	5.89	22	-209	0.00	
11:55	12.41			13.55	7.90	5.88	21.6	-198	0.00	
↳SAMPLE										

54°F, Sunt clouds

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ107

Field Personnel: DK + RG

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5-18-16 13:15

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: 5-8-16 13:27

Date/Time Completed:

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 12.77

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): 2L

Purged to Dryness: Y / (N)

Purge Observations: Cloudy, tan/yellow

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
13:33	13.20	125 mL/min		18.69	7.25	0.931 mS/cm	68.8	-60	2.62	
13:38	13.24	125		19.14	7.10	0.804	51.5	-65	0.00	
13:43	13.26	125		17.94	7.04	0.812	39.6	-82	0.00	
13:48	13.27	67.5		17.39	7.03	0.818	32.6	-87	0.00	
13:53	13.25			17.08	7.03	0.829	30.5	-85	0.00	
→	SAMPLE									

58°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BRGA

Field Personnel: DH+RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-18-16 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: 5-18-16 / 14:12 | Date/Time Completed: 15:00

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

Initial Water Level (ft): 15.79 | 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): 2.1 ~~2~~ L | Purged to Dryness: Y (N)

Purge Observations: Brown, cloudy, slight sulfur odor | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
14:25	16.06	250 mL/min		18.57	7.51	5.71/mS/cm	29.7	-158	2.28	
14:30	16.38	125		17.96	7.71	6.18	33.9	-230	0.21	
14:35	16.61	67.5		18.23	7.77	6.21	32.6	-268	0.00	
14:40	16.96			19.02	7.78	6.28	33.6	-285	0.00	
14:45	17.14			19.12	7.79	6.27	33.3	-287	0.00	
↳	SAMPLE									

58°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: PZ105

Field Personnel: DKT RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-18-16 15:04 | 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: 5-18 15:11 | Date/Time Completed: ____

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

Initial Water Level (ft): 12.23 | 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: Grey, very cloudy | Start ____ Finish ____

PURGE DATA (if applicable)

nSlam

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
15:18	13.15	250mL/min		21.20	7.74	0.758	1,000	-9	2.72	
15:23	13.44	125		20.68	7.69	0.742	722	-2	0.66	
15:28	14.48	67.5		19.47	7.68	0.760	481	-4	0.53	
15:33	15.03			19.14	7.67	0.772	535	-3	0.38	
15:38	15.22			18.89	7.65	0.775	558	-3	0.34	
↳ SAMPLE										

60°F, Sunny, light breeze

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW16

SAMPLING INFORMATION

Date/Time 5-19-16 8:22 Water Level at Sampling (ft) 22.65

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 (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:40	13.07	8.17	8.60	314	-130	7.70	

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: 45°F, cloudy

Sample characteristics: Black, small particles

Comments and Observations:

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

Date: 5-19-16 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: B5

Field Personnel: DK+RG | Sample Matrix: Gw

MONITORING WELL INSPECTION

Date/Time: 5-19-16 8945 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Not enough water to run parameters or collect Amber for SVOC

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: 5-19 8:58 | Date/Time Completed: 10:13

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

Initial Water Level (ft): 17.41 | 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

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR8

Field Personnel: DK+RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 9:18 | 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: 5-19-16 9:23 | Date/Time Completed: 10:04

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

Initial Water Level (ft): 16.29 | 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)~~: 2.25 L | Purged to Dryness: Y / (N)

Purge Observations: Brown, cloudy, tiny particles | 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
9:26	16.36	250 mL/min		13.22	8.78	5.79 mS/cm	39.8	-46	2.32	
9:31	16.39	125		13.34	8.78	5.79	37.9	-81	0.11	
9:36	16.39	125		13.60	8.79	5.78	24.2	-110	0.00	
9:41	16.39	67.5		14.29	8.80	5.75	20.6	-120	0.00	
9:46	16.39			14.83	8.83	5.80	18.3	-146	0.00	
→	SAMPLE									

52°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PZ101

Field Personnel: DK+RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 10:25 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: 5-19 10:30 Date/Time Completed: 11:15

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

Initial Water Level (ft): 19.22 Elevation G/W MSL: ____

Well Total Depth (ft): 20.60 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, slight brown tint 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
10:40	16.62	125 mL/min		19.70	6.96	3.96 mS/cm	10.6	16		
10:45	19.98			19.35	6.88	4.06	9.1	24	1.33	
10:50	20.10	67.5		18.69	6.81	4.46	3.8	25	0.18	
10:55	20.37			18.80	6.81	4.47	1.4	32	0.00	
11:00	20.67			18.92	6.80	4.47	0.6	34	0.00	
→	SAMPLE									

58°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ102

Field Personnel: DKT CG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 10:18

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: 5-19 11:24

Date/Time Completed: 11:50

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

Riser Diameter (inches) 2" pvc

Initial Water Level (ft): 19.26

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

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
11:29	19.44	250mL/min		20.65	7.31	5.12mS/cm	6.3	-170	3.16	
11:32	19.41	125		18.38	7.27	5.14	2.6	-241	0.00	
11:39	19.41	↓		17.36	7.27	5.30	2.6	-254	0.00	
11:42	19.41	↓		17.77	7.27	5.34	2.9	-265	0.00	
→ SAMPLE										

60°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: PZ103

Field Personnel: DK + RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 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: 5-19-16 12:53 | Date/Time Completed: 13:30

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

Initial Water Level (ft): 16.58 | 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): 1.9L | 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)~~	Turb. (NTU)	ORP	DO	Other
12:56	16.99	250ml/min		22.29	7.29	3.85mS/cm	0.0	-146	2.02	
13:01	17.02	125		19.99	7.08	3.99	0.00	-200	0.00	
13:06	17.97	67.5		19.65	7.05	4.20	0.0	-214	0.00	
13:11	16.84			19.96	7.03	4.20	0.0	-221	0.00	
13:16	16.93			20.02	7.03	4.14	0.0	-226	0.00	
↳ SAMPLE										

60°F, Scnt Clouds

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: MW-106

Field Personnel: DKT RG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 13:35 | 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: 5-19-16 13:45 | Date/Time Completed: 14:20

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

Initial Water Level (ft): 12.53 | 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)~~: 2.5L | Purged to Dryness: Y (✓) N

Purge Observations: Cloudy, light brown | 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
13:48	13.11	250 mL/min		17.57	6.97	1.89 mS/cm	145	-174	3.28	
13:53	13.13	125		16.92	6.91	1.98	99.8	-174	0.34	
13:58	13.15	125		17.17	6.88	2.16	49.8	-176	0.00	
14:03	13.15	62.5		18.11	6.87	2.35	36.6	-180	0.00	
14:08	13.15			17.74	6.86	2.52	28.9	-186	0.00	
↳ SAMPLE										

65°F, Sunny

FIELD OBSERVATIONS

Facility: Lot 79 Sample Point ID: BR106

Field Personnel: DKT RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 1422 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: 5-19-16 14:32 Date/Time Completed: 15:31

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

Initial Water Level (ft): 23.97 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): 700ML Purged to Dryness: Y (N)

Purge Observations: Slightly cloudy, some particles Start Finish

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hrs~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
14:43	23.96	67.5		23.44	6.99	4.97	67.5	87	1.87	
14:48	23.96	<67.5		23.41	6.95	4.92	55.8	105	0.49	
14:53	23.96			23.08	6.95	4.96	36.5	-115	0.07	
14:58	23.96			22.54	6.94	5.20	32.4	-126	0.00	
↳	SAMPLE									

67°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ104

Field Personnel: DK & R G

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-20-16 8:35

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: 5-20-16 8:44

Date/Time Completed: 9:23

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 15.04

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)~~: 2.75 L

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)~~	Turb. (NTU)	ORP	DO	Other
8:48	15.15	250mL/min		12.79	7.39	3.40 mS/cm	4.2	-61	6.13	
8:53	15.12	125		12.83	7.07	3.43	0.0	-117	0.26	
8:58	15.12	125		13.06	7.04	3.44	0.0	-126	0.00	
9:03	15.12	125		13.13	7.02	3.45	0.0	-130	0.00	
9:08	15.12	67.5		13.16	7.02	3.44	0.0	-134	0.00	
	↳ SAMPLE									

50F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B15

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-2016 9:28

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: 5-20 9:35

Date/Time Completed: 10:13

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 8.30

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: (Y) N

Total Volume Purged (gal): 2.252

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 ~~(units/cm)~~	Turb. (NTU)	ORP	DO	Other
9:39	9.54	250 mL/min		14.61	7.27	0.836 mS/cm	11.3	20	5.80	
9:44	9.79	125 ~~67.5~~		14.29	7.14	0.791	3.1	53	3.50	
9:49	10.45	67.5		14.56	7.11	0.782	3.5	56	2.63	
9:54	10.91			14.74	7.10	0.781	5.5	49	2.16	
9:59	11.26			14.77	7.09	0.781	7.3	35	3.14	
↳	SAMPLE									

58°F, Sunny

FIELD OBSERVATIONS

Facility: Lompoc Sample Point ID: B16

Field Personnel: PK + DRO Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-19-16 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: 5-19-16 10:22 Date/Time Completed: 10:56

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

Initial Water Level (ft): 8.22 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): 1.75L 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)~~	Turb. (NTU)	ORP	DO	Other
10:25	8.53	125 mL/min		14.95	7.02	2.84 mS/cm	17.2	67	10.31	
10:30	8.48	67.5		14.91	6.88	2.92	13.7	33	1.97	
10:35	8.48	<67.5		14.94	6.87	2.97	12.4	23	1.37	
10:40	8.48			14.98	6.86	3.00	9.6	10	0.65	
10:45	8.48			15.11	6.86	3.01	9.4	-3	0.15	
→ SAMPLE										

59°F, Sunny.

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR126

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-20-16 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: 5-20-16 11:02

Date/Time Completed: 11:42

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

Riser Diameter (inches) 4" Steel

Initial Water Level (ft): 9.27

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: tiny black particles

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/ltz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
11:10	9.39	250 mL/min		19.84	7.15	1.45	25.1	-113	6.66	
11:15	9.44	125		18.66	7.06	1.31	7.2	-125	1.42	
11:20	9.45	67.5		19.55	7.03	1.12	5.2	-131	0.00	
11:25	9.45			19.34	7.02	1.12	2.0	-133	0.00	
11:30	9.45			19.06	7.02	1.11	1.0	-133	0.00	
↳ SAMPLE										

60° F Sunny

FIELD OBSERVATIONS

Facility: Lon29 Sample Point ID: PW13

SAMPLING INFORMATION

Date/Time 5-20-16 1149 Water Level at Sampling (ft) 33.62

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

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:58	16.92	7.20	3.88	0.1	-112	3.40	

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: 65°F Sunny

Sample characteristics: Clear

Comments and Observations:

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

Date: 5-20-16 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: MW114

Field Personnel: DK + RS Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-20-16 13:00 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: 5-20-16 13:08 Date/Time Completed: 13:42

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

Initial Water Level (ft): 9.64 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): 2L Purged to Dryness: Y / (N)

Purge Observations: Clear Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/mtz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
13:10	10.41	250 mL/min		21.46	8.04	0.532	5.6	18	4.85	
13:15	10.62	125		19.33	7.71	0.521	2.0	57	1.98	
13:20	10.83	67.5		18.70	7.60	0.518	1.2	66	1.51	
13:25	10.98			18.71	7.58	0.531	0.1	70	1.15	
13:30	11.08			18.73	7.59	0.541	0.6	63	0.77	
	→ SAMPLE									

68°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR114

Field Personnel: DKT RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-20-16 13:45 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: 5-20-16 13:47 Date/Time Completed: 14:25

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

Initial Water Level (ft): 13.33 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): 2L Purged to Dryness: Y (N)

Purge Observations: clear, slight yellow 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
13:50	13.28	>500 mL/min		18.96	7.26	1.42 ms/cm	9.9	-112	3.48	
13:55	13.27	125		18.06	7.15	1.52	3.0	-29	0.00	
14:00	13.27	62.5		18.15	7.14	1.55	0.7	-133	0.00	
14:05	13.27	62.5		18.25	7.13	1.56	0.0	-136	0.00	
→ SAMPLE										

70°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B7

Field Personnel: DK+RG

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-2016 14:30

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: 5-2016 14:33

Date/Time Completed: 15:20

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

Riser Diameter (inches): 1.5 in PVC

Initial Water Level (ft): 16.23

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 Almost

Purge Observations: Cloudy, Brown

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/btz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
14:50	17.70	250 mL/min		23.80	6.91	0.82 mS/cm	low	79	2.52	
14:55	18.39	125		22.82	6.87	1.35	low	-10	0.17	
15:00	18.83	67.5		21.28	6.86	1.34	99.7	-41	0.00	
15:05	19.33			20.72	6.88	1.33	50.7	-57	0.00	
15:10	19.51			20.41	6.91	1.30	31.2	-57	0.00	
		→	SAMPLE							

72°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR1121

SAMPLING INFORMATION

Date/Time 5-23-16 1459 Water Level at Sampling (ft) 36.32

Method of Sampling Bladder pump Dedicated: (Y) N

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

SAMPLING DATA

1605 Start pump 2" PVC

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other DTW
15:07	22.66	7.13	2.51	11.8	-286	3.29	36.35
15:12	17.77	6.97	2.56	5.7	-333	0.00	36.34
15:17	17.73	6.99	2.56	3.6	-333	0.00	36.35
15:22	17.47	6.95	2.63	4.9	-359	0.00	36.35
1527	17.13	6.97	2.80	2.0	-332	0.82	36.34

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: 75°F, Sunny

Sample characteristics: Clear, some particles (white)

Comments and Observations: 3L purged

SAMPLE at 15:31

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

Date: 5-23-16 by: DK+RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR122D

SAMPLING INFORMATION

Date/Time 5-23-16 Water Level at Sampling (ft) 45.48 C start

Method of Sampling Bladder Pump Dedicated: (Y) / N

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

SAMPLING DATA Bladder Pump start at 14:18

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other DTW
14:22	22.61	7.24	2.00	22.9	-171	4.38	45.49
14:27	19.89	7.16	1.77	13.0	-215	1.76	45.49
14:32	19.47	7.13	1.79	10.6	-224	0.00	45.49
14:37	19.52	7.11	1.80	10.3	-234	0.00	45.49
14:42	19.51	7.11	1.80	9.8	-243	0.00	45.49

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: 74°F, Sunny

Sample characteristics: Cloudy, Black

Comments and Observations: 3L purged

SAMPLED at 14:48

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

Date: 5-23-16 by: DK+RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR123D

Field Personnel: DK + RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-23-16 13:25 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: 5-23 13:35 Date/Time Completed: 14:05

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

Initial Water Level (ft): 45.76 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): 36 Purged to Dryness: (Y) N

Purge Observations: Start Cloudy/black Finish same

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
13:40	45.80	250 mL/min		18.49	7.76	3.15 mS/cm	25.1	-242	2.22	
13:45	45.79	125		18.44	7.60	2.51	23.3	-250	0.00	
13:50	45.79			19.36	7.69	2.50	20.6	-268	0.00	
13:55	45.79			19.22	7.61	2.49	20.3	-271	0.00	
14:00	45.79			19.19	7.66	2.49	20.6	-281	0.00	
↳	SAMPLE									

74°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BRIDD

Field Personnel: DKTRG | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-23-16 12:25 | 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: 5-23-16 12:30 | Date/Time Completed: 13:12

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

Initial Water Level (ft): 26.32 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): 3L | Dedicated: (Y) / N

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

Purge Observations: | Start Clear Finish Clear

Set for odor

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
12:35	27.62	250 mL/min		26.76	7.06	313 mS/cm	0.3	-358	2.34	
12:40	28.51	250		21.43	6.87	35.1	0.0	-372	0.00	
12:45	28.41	~~250~~ 225		22.93	6.85	35.3	0.0	-381	0.00	
12:50	28.26			26.32	6.83	35.6	0.0	-378	0.00	
12:55	28.30			27.35	6.80	36.3	0.0	-382	0.00	
↳	SAMPLE									

FIELD OBSERVATIONS

Facility: Lon 29 | Sample Point ID: BR MW-11(31)

Field Personnel: DK/RE | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-23-16 10:58 | 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: 5-23-16 11:04 | Date/Time Completed: 11:35

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

Initial Water Level (ft): 31.39 | 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): 2.5L | Purged to Dryness: Y / (N)

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

PURGE DATA (if applicable)

mS/cm

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
11:10	31.41	250 mL/min		21.77	7.31	2.26	10.1	-261	3.64	
11:15	31.38	125		17.62	7.17	3.33	0.0	-313	0.26	
11:20	31.39	67.5		19.45	7.14	3.44	0.0	-333	0.00	
11:25	31.39	67.5		21.40	7.12	3.48	0.0	-347	0.00	
11:30	31.44	125		19.89	7.12	3.55	0.0	-343	0.00	
↳ SAMPLE										

68°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR ~~Abbott~~ 18D

Field Personnel: OKtRG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5/23/16 10:01 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: 5-23-16 10:05 Date/Time Completed: 10:35

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

Initial Water Level (ft): 48.23 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): 2.50L Purged to Dryness: Y (N)

Purge Observations: Cloudy 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
10:10	48.61	250mL/min		15.62	8.57	1.141mS/cm	24.4	-22.1	4.56	
10:15	48.82	12.5		12.62	9.79	0.829	21.1	-190	0.65	
10:20	48.65	4.25		13.34	9.78	0.818	15.5	-196	0.00	
10:25	48.57	67.5		13.64	9.78	0.824	12.6	-210	0.00	
10:30	48.55			13.54	9.76	0.829	11.3	-222	0.00	
↳	SAMPLE									

67°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR 117D

Field Personnel: DKT RG Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-23-16 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: 5-23-16 ~~8:50~~ 9:23 Date/Time Completed: 9:58

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

Initial Water Level (ft): 49.12 Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ Dedicated: (X) N New Sample tube

Total Volume Purged (gal): 2.175L 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)~~ mS/cm	Turb. (NTU)	ORP	DO	Other
9:33	49.18	250mL/min		13.00	7.24	2.85	17.9	-185	12.81	
9:38	49.14	125		12.69	7.08	2.83	10.1	-203	12.81	
9:43	49.14	125		12.73	7.03	2.97	9.6	-216	0.00	
9:48	49.14			12.8	7.02	3.00	11.3	-222	0.00	
9:53	49.14			12.95	7.01	3.00	14	-228	0.00	
↳	SAMPLE									

64°F, Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR7A

SAMPLING INFORMATION

Date/Time 5-24-16 8:18 Water Level at Sampling (ft) can't get accurate reading, too much stuff in well, probe gets covered in slime.

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

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy 6" stick

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:30	14.90	7.50	2.69	341	-153	5.21	

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: 60°F, Sunny

Sample characteristics: Very Cloudy, gray

Comments and Observations:

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

Date: 5-24-16 by: PK + RC Company: Matrix

FIELD OBSERVATIONS

Facility: Lonzo

Sample Point ID: BR 105

Field Personnel: DKt

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-24-16 8:44

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: 5-24-16 8:49

Date/Time Completed: 9:33

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 23.19

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: (Y) N

Total Volume Purged (gal): 17.5 L

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~~)	Turb. (NTU)	ORP	DO	Other
8:55	23.19	250 mL/min		15.34	7.31	3.83 mS/cm	39	-80	4.71	
9:00	23.19	~~250~~ 67.5		15.78	7.16	3.82	39.3	-65	0.73	
9:05	23.19	67.5		16.25	7.15	3.83	38.2	-58	0.35	
9:10	23.19			16.49	7.13	3.80	38.0	-54	0.21	
9:15	23.19			17.65	7.16	3.68	~~39.5~~	-43	0.53	
↳	SAMPLE						37.2			

62°F Sunny

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QS-4

SAMPLING INFORMATION

Date/Time 5-24-16 10:00 Water Level at Sampling (ft) ———

Method of Sampling Water coming out of Rock wall Dedicated: (Y) / N

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:00	15.02	8.32	2.19	36.4	13	5.64	

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: 64°F Sunny

Sample characteristics: Clear

Comments and Observations:

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

Date: 5-24-16 by: DK+RG Company: Matrix

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: QD-1

SAMPLING INFORMATION

Date/Time 5-24-16 Water Level at Sampling (ft)

Method of Sampling SS Bailer Dedicated: Y (N)

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:45	16.11	8.24	2.10	57.2	39	6.11	

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: 68°F Sunny

Sample characteristics: clear

Comments and Observations:

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

Date: 5-24-16 by: DK + RG Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QO-2

SAMPLING INFORMATION

Date/Time 5-24-16 11:05 Water Level at Sampling (ft) —

Method of Sampling Bottom fill Dedicated: Y ~~N~~

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11.10	16.79	8.59	2.12	39.3	45	5.47	

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: 70°F, perfect

Sample characteristics: Clear

Comments and Observations:

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

Date: 5-24-16 by: DK + RG Company: 5-24-16

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QO-251

SAMPLING INFORMATION

Date/Time 5-24-16 11:30 Water Level at Sampling (ft)

Method of Sampling 55 bailer into Cont Dedicated: Y ~~N~~

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:35	18.38	8.67	0.629	65.3	64	5.71	

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: 72°F, Perfect

Sample characteristics: Cloudy, orange/tan particles

Comments and Observations:

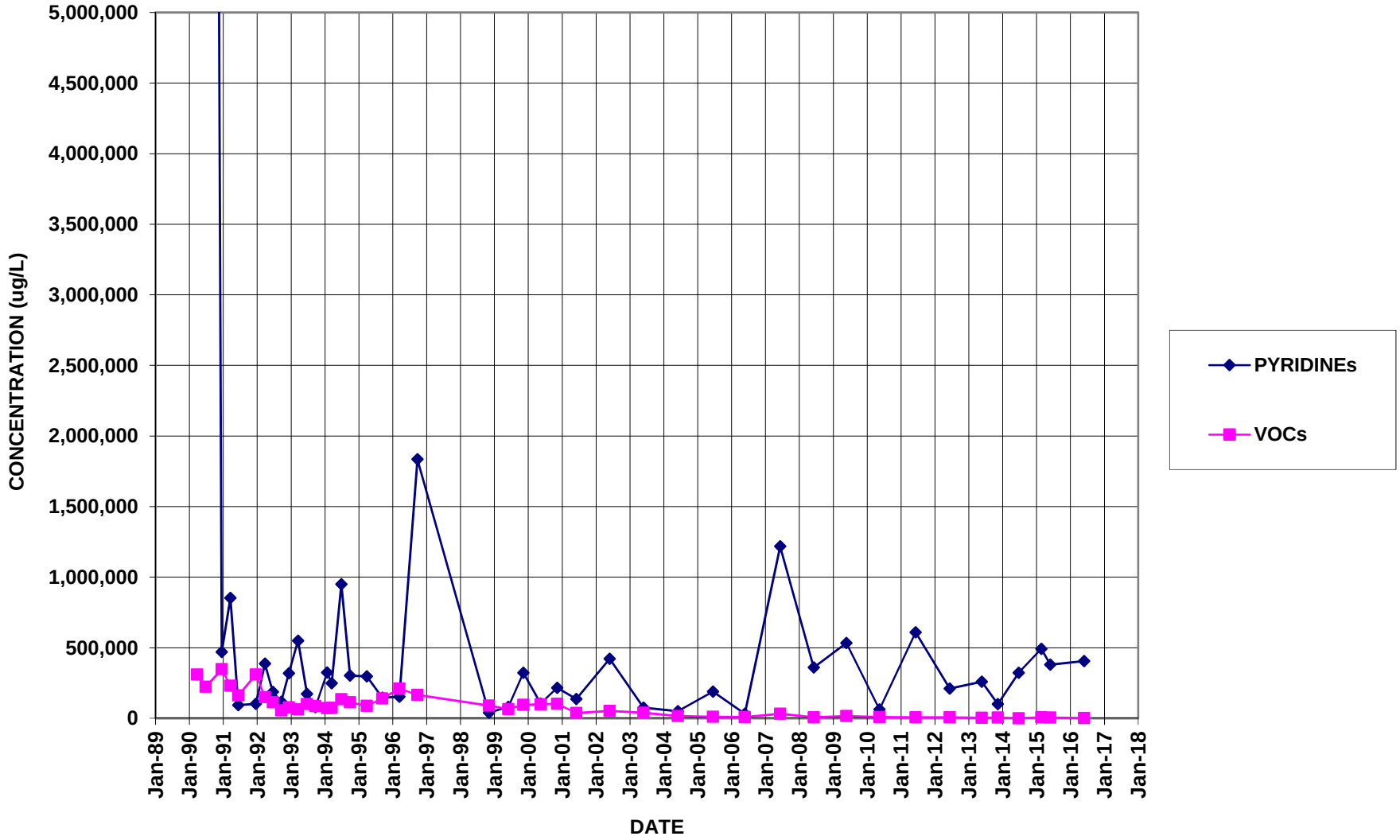
I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 5-24-16 by: JK Company: Matrix

Appendix B

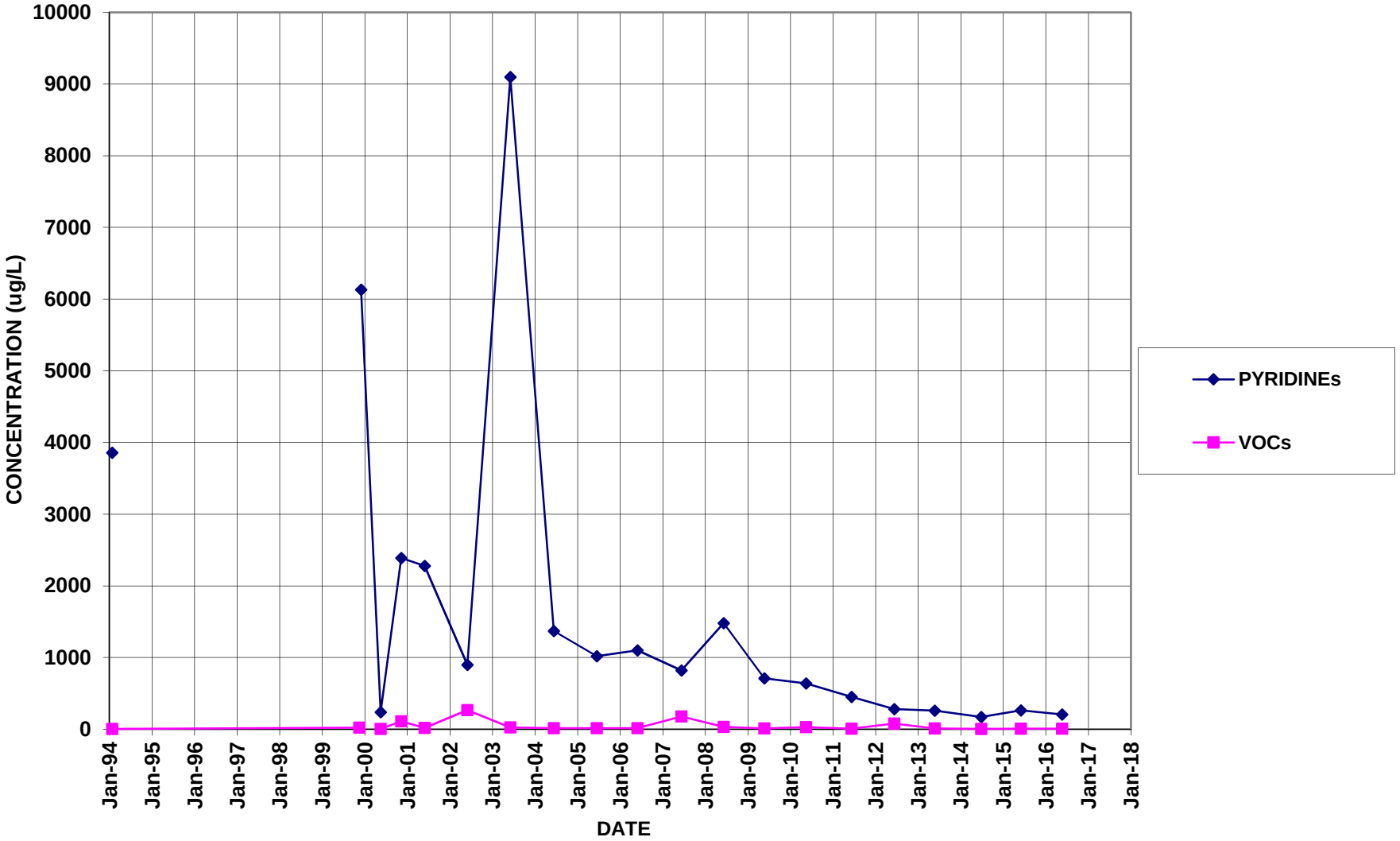
Well Trend Data

B-17

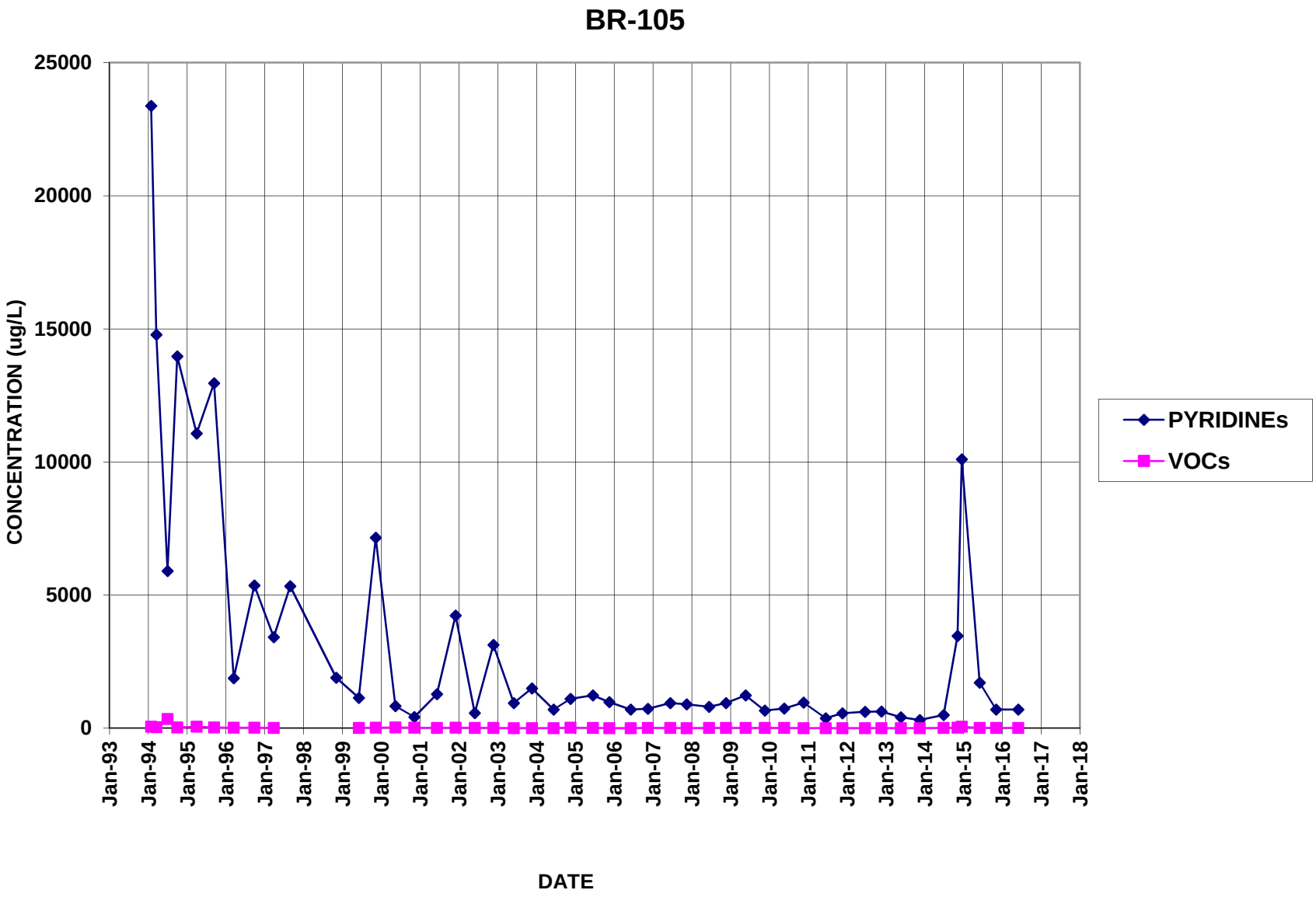


Prepared by: jeb
Reviewed by: nmb

B-7

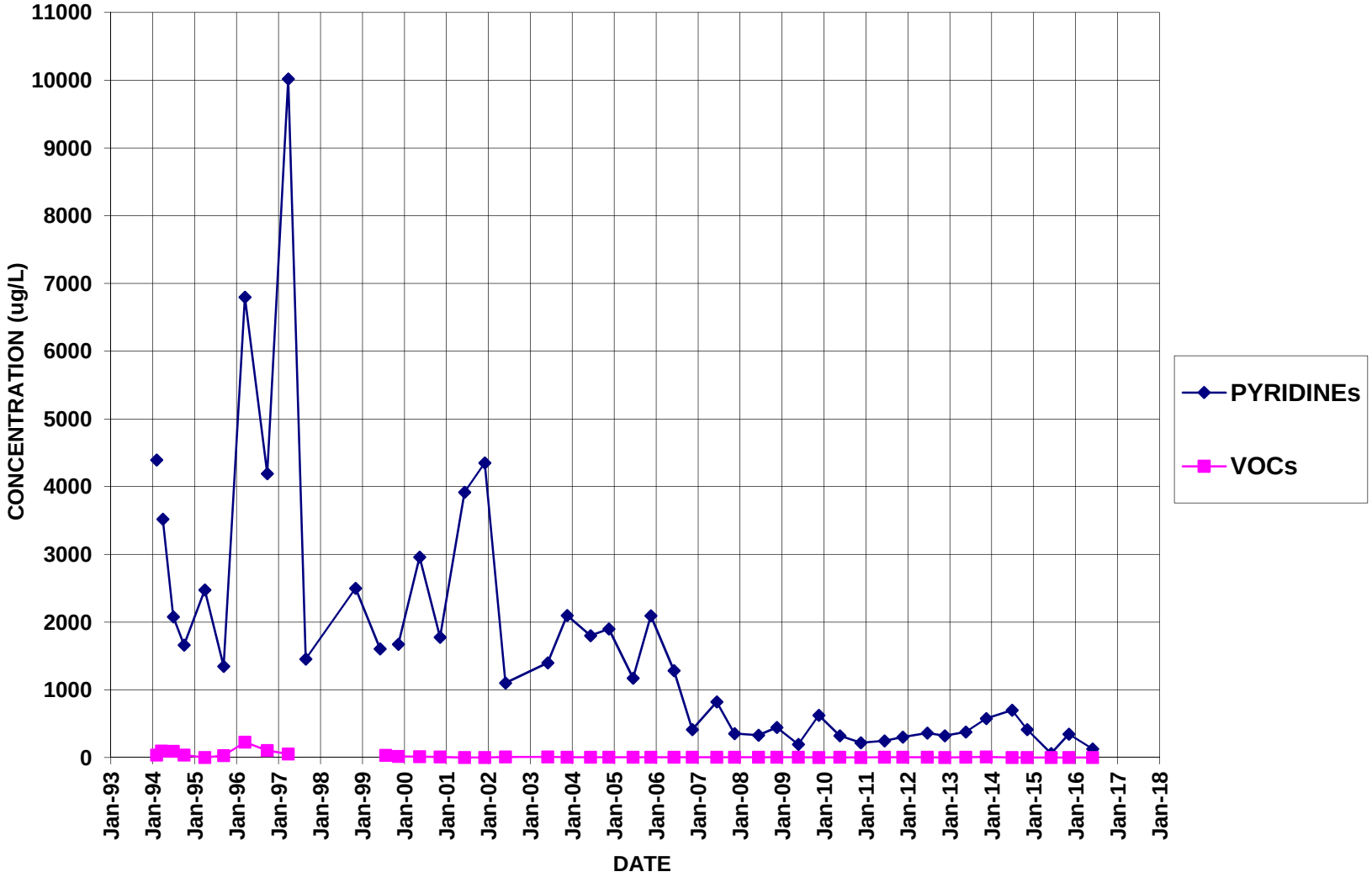


Prepared by: nmb
Reviewed by: jeb



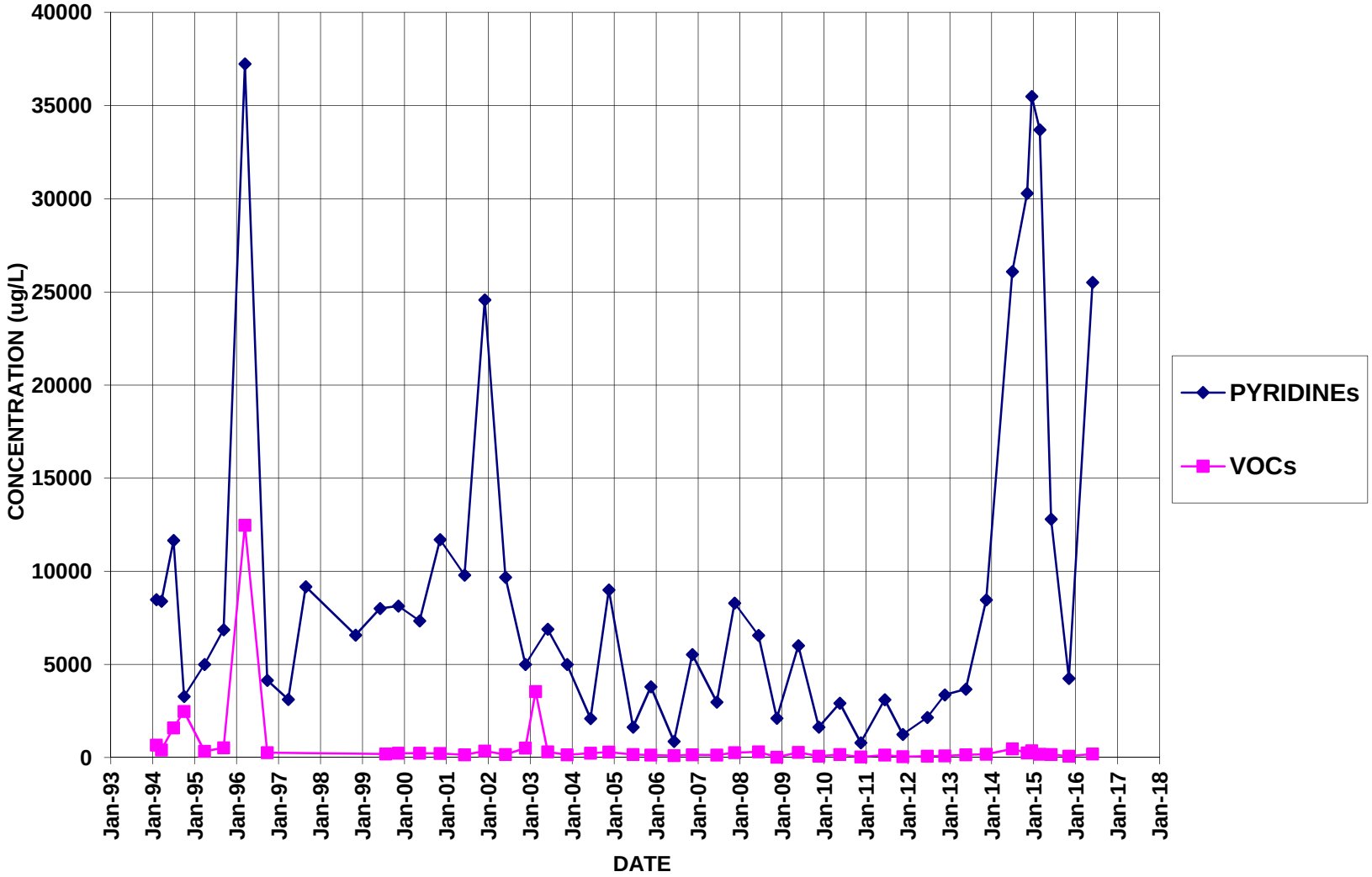
Prepared by: nmb
Reviewed by: jeb

BR-105D



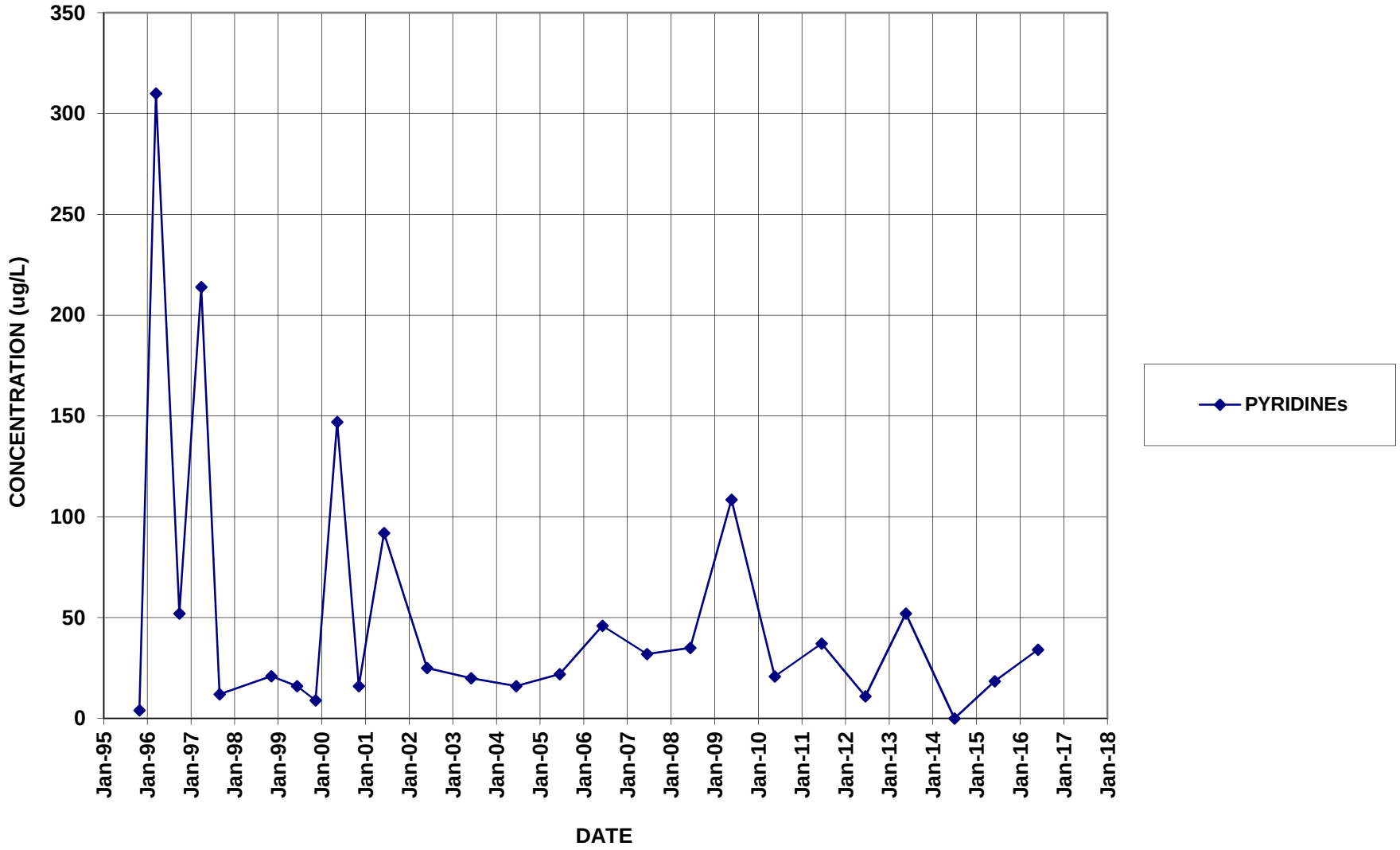
Prepared by: nmb
Reviewed by: jeb

BR-106



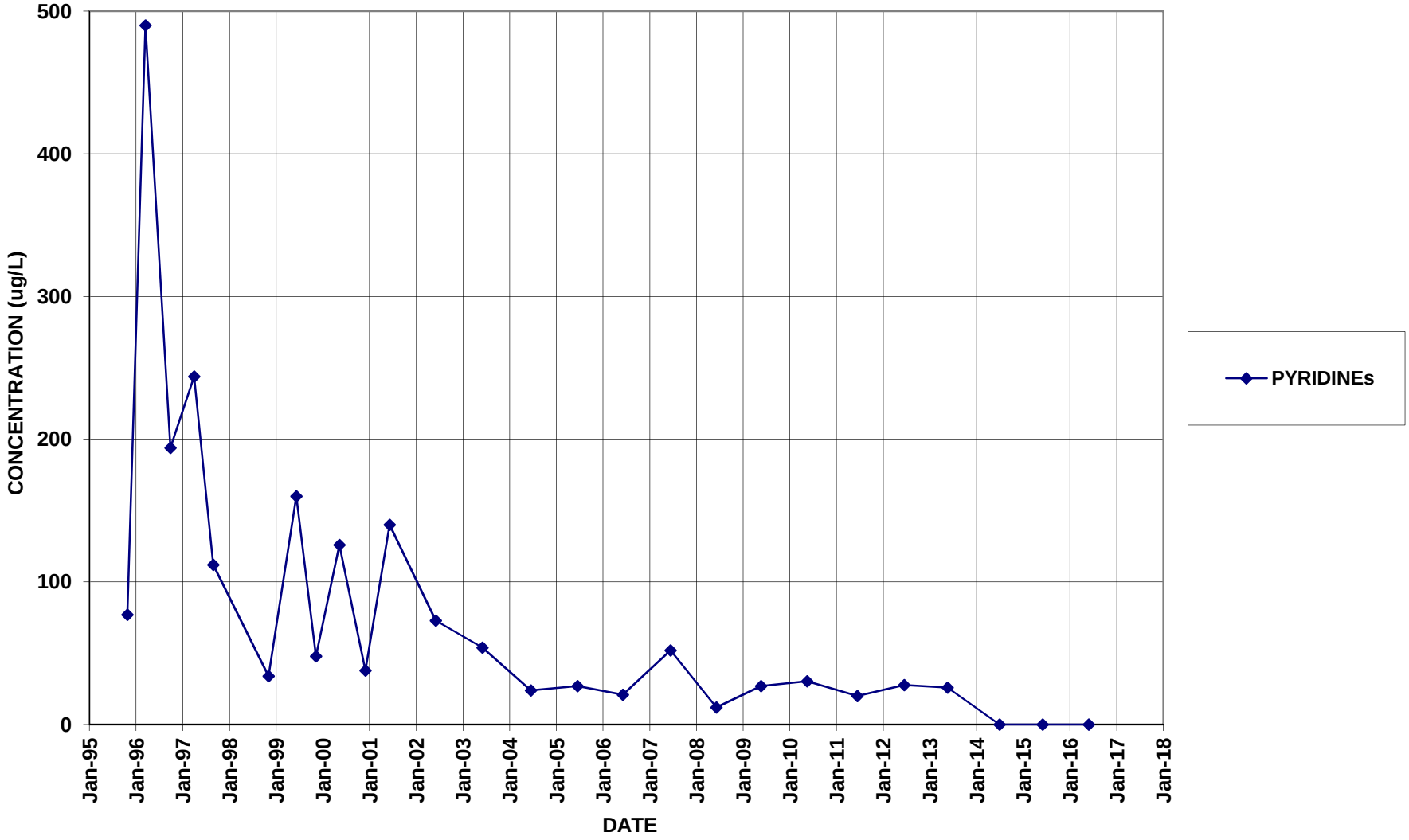
Prepared by: nmb
Reviewed by: jeb

BR-112D



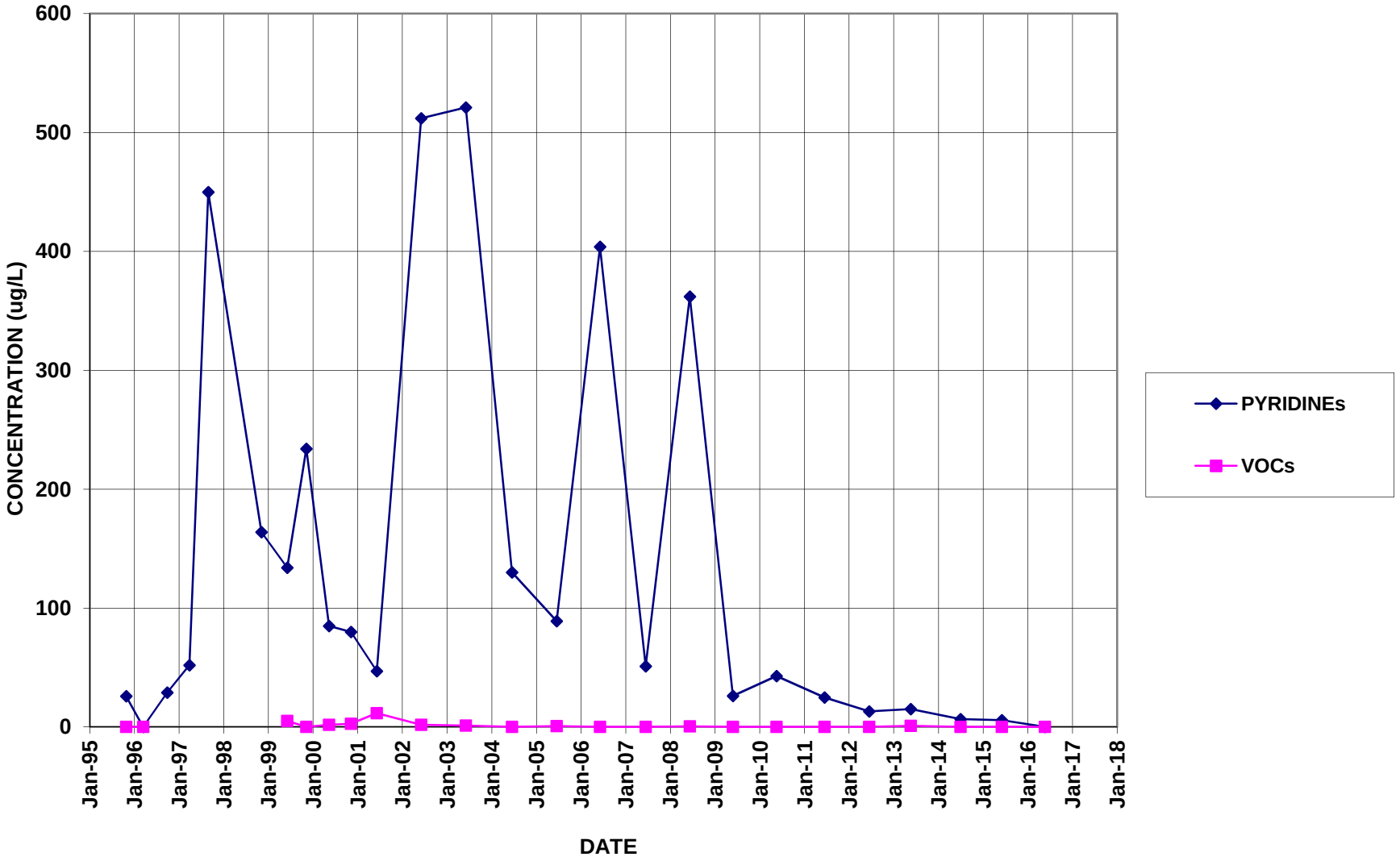
Prepared by: nmb
Reviewed by: jeb

BR-113D



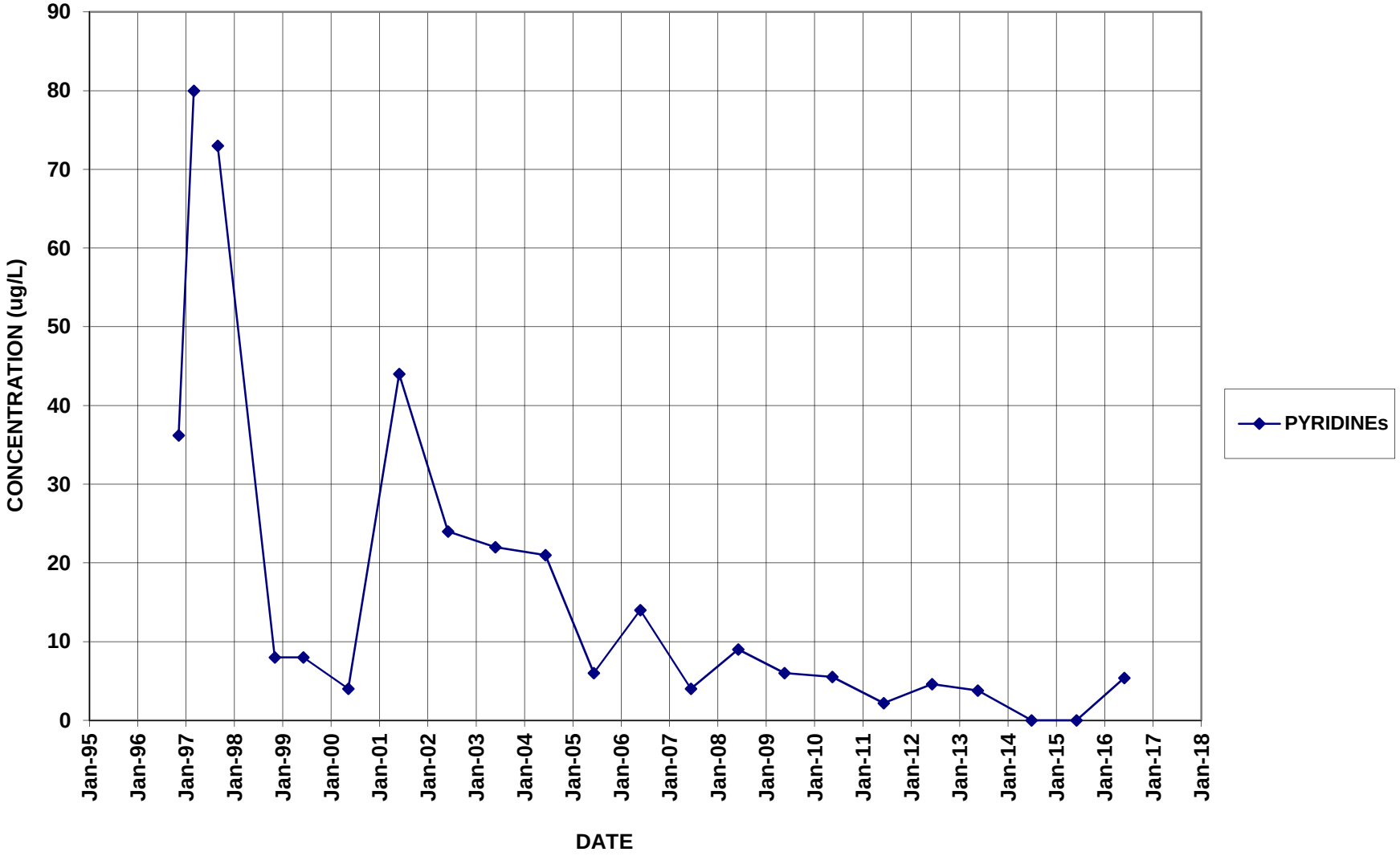
Prepared by: nmb
Reviewed by: jeb

BR-114



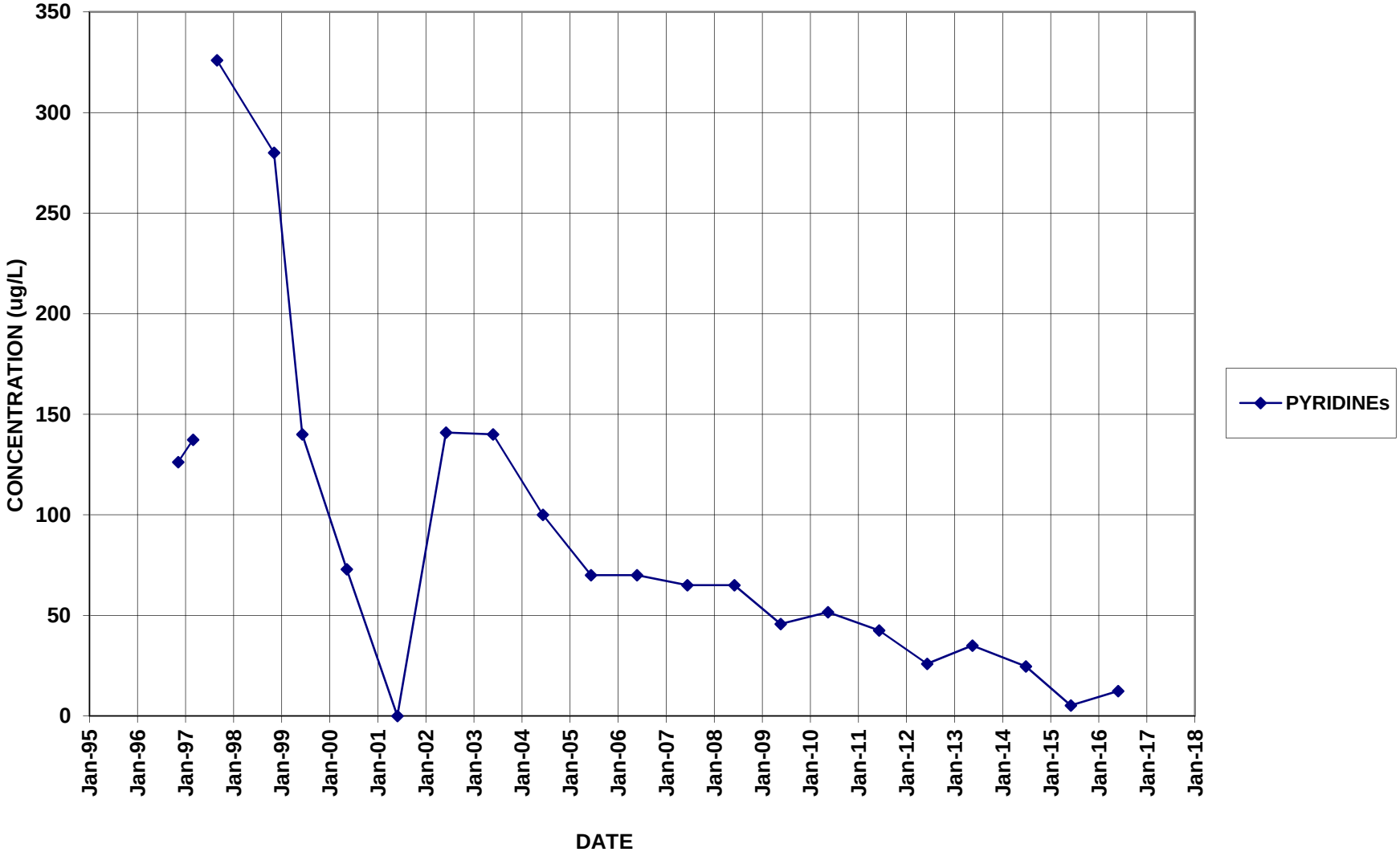
Prepared by: nmb
Reviewed by: jeb

BR-117D



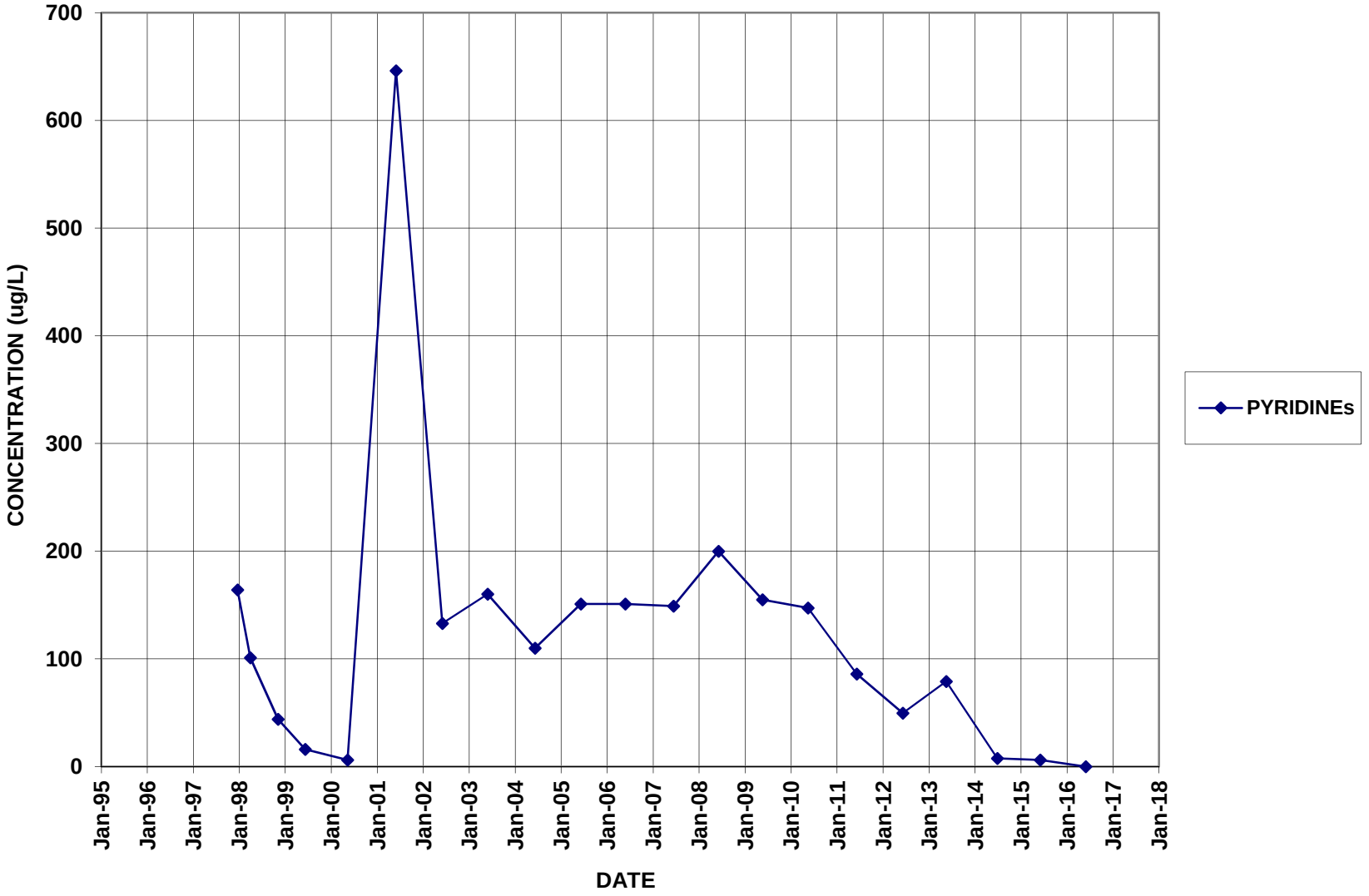
Prepared by: nmb
Reviewed by: jeb

BR-118D



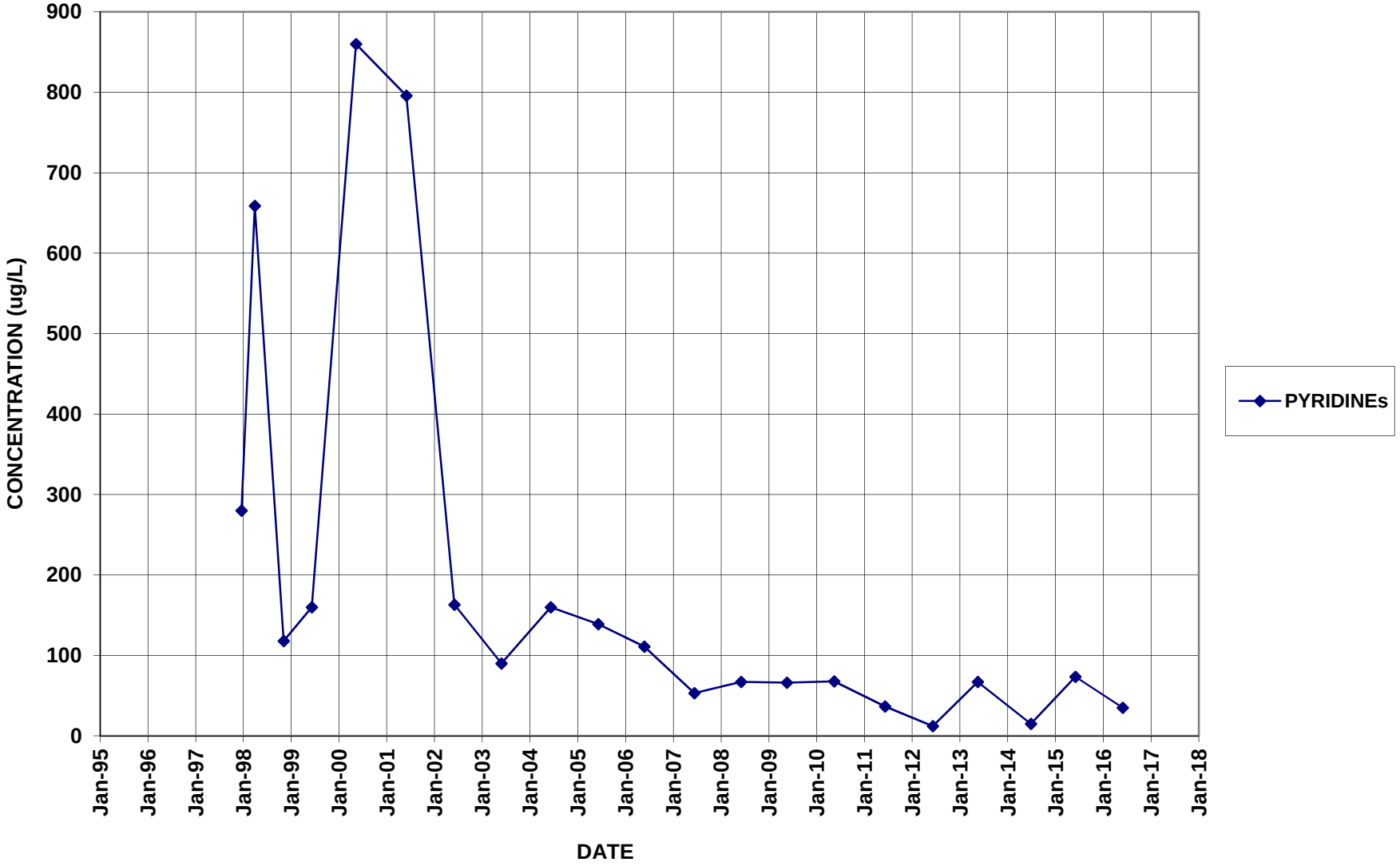
Prepared by: nmb
Reviewed by: jeb

BR-122D



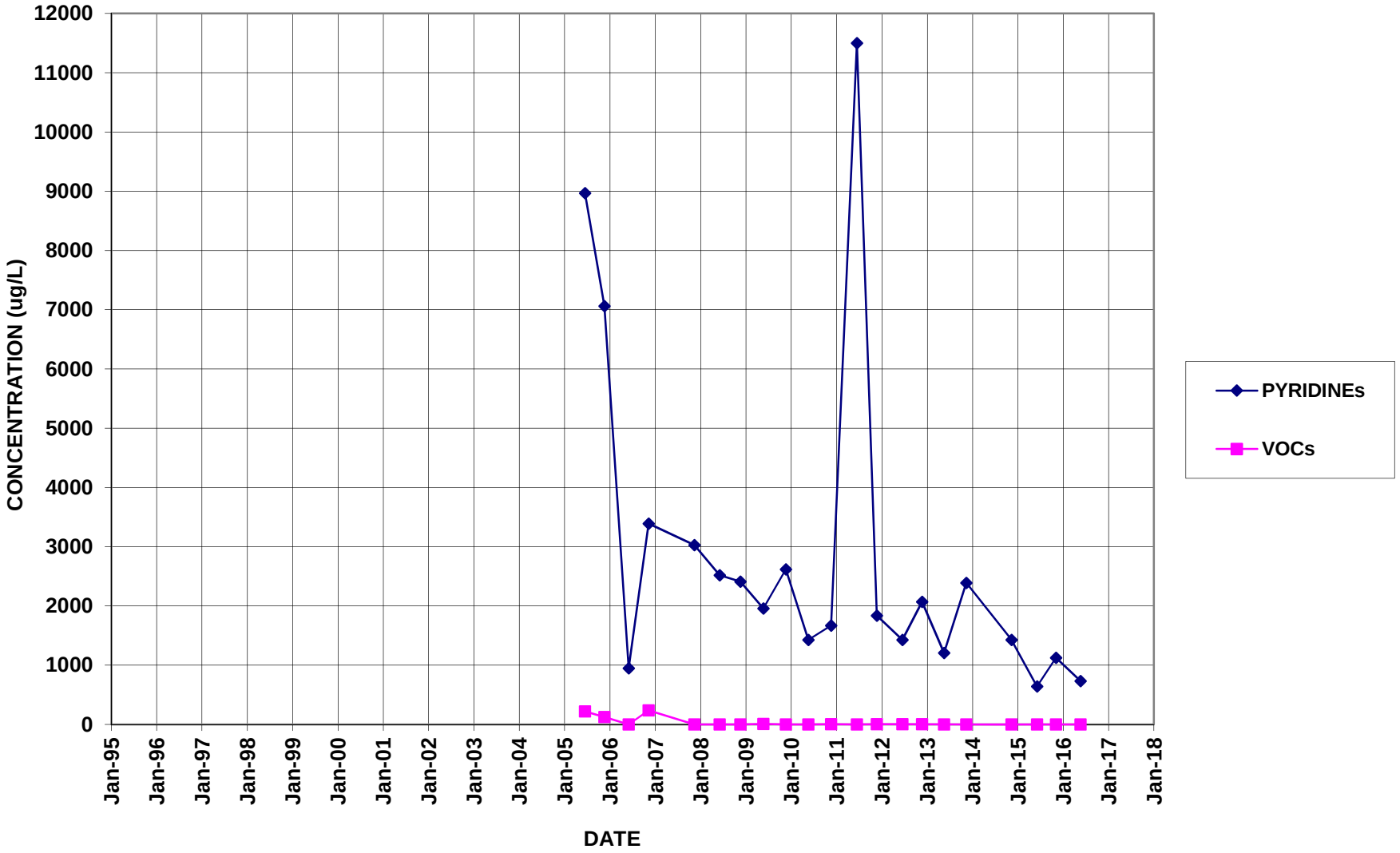
Prepared by: nmb
Reviewed by: jeb

BR-123D



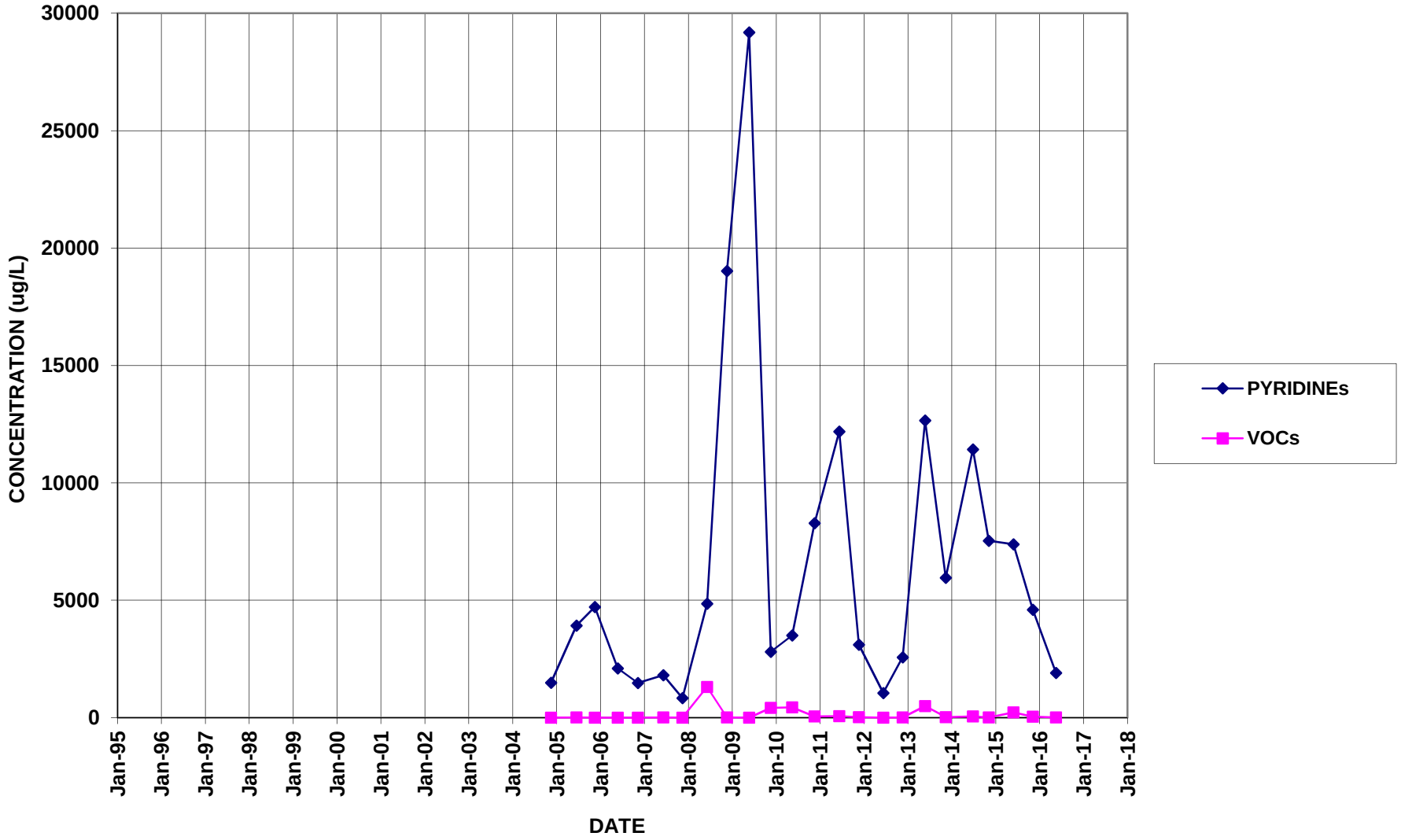
Prepared by: nmb
Reviewed by: jeb

BR-126

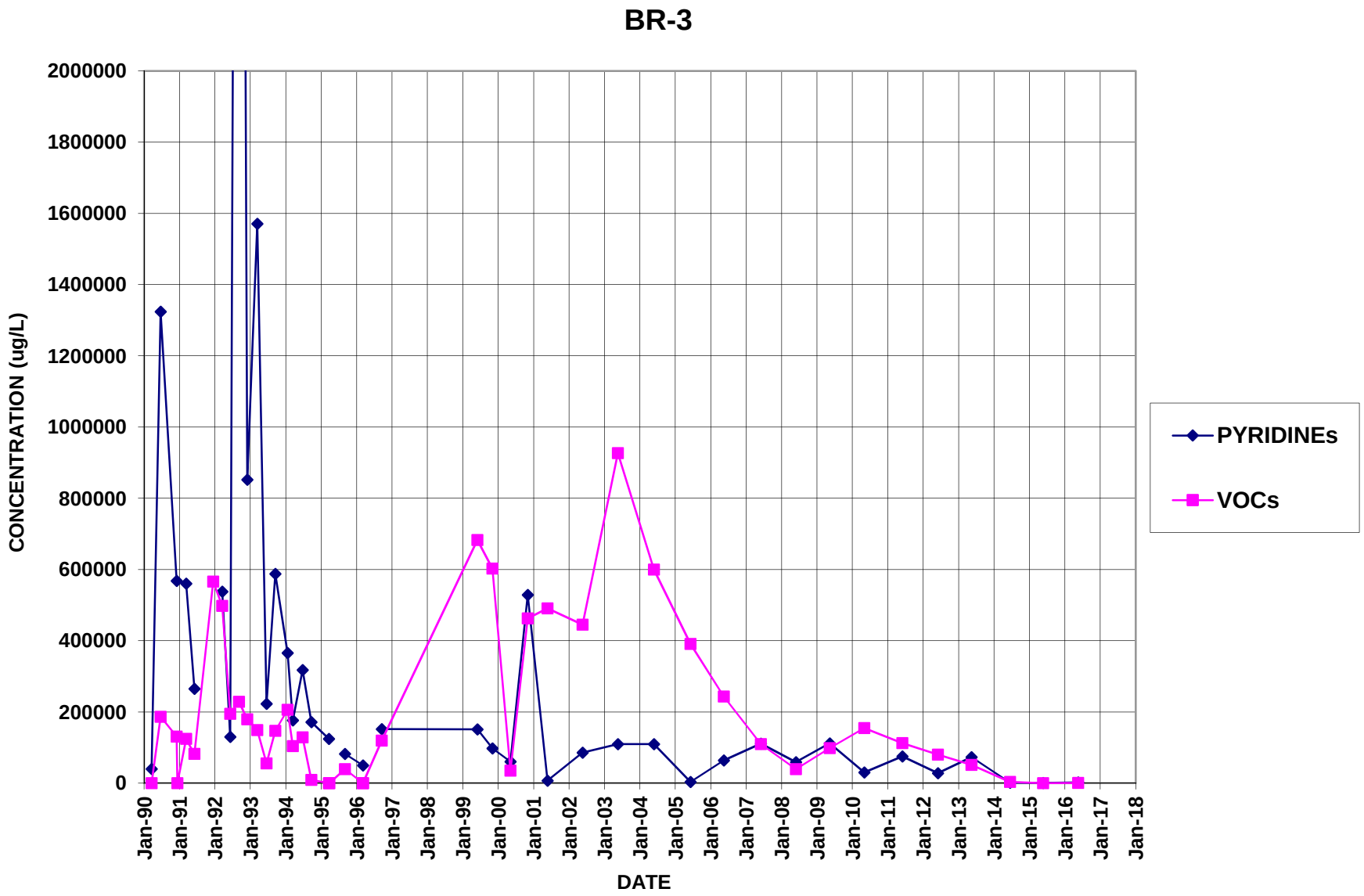


Prepared by: nmb
Reviewed by: jeb

BR-127

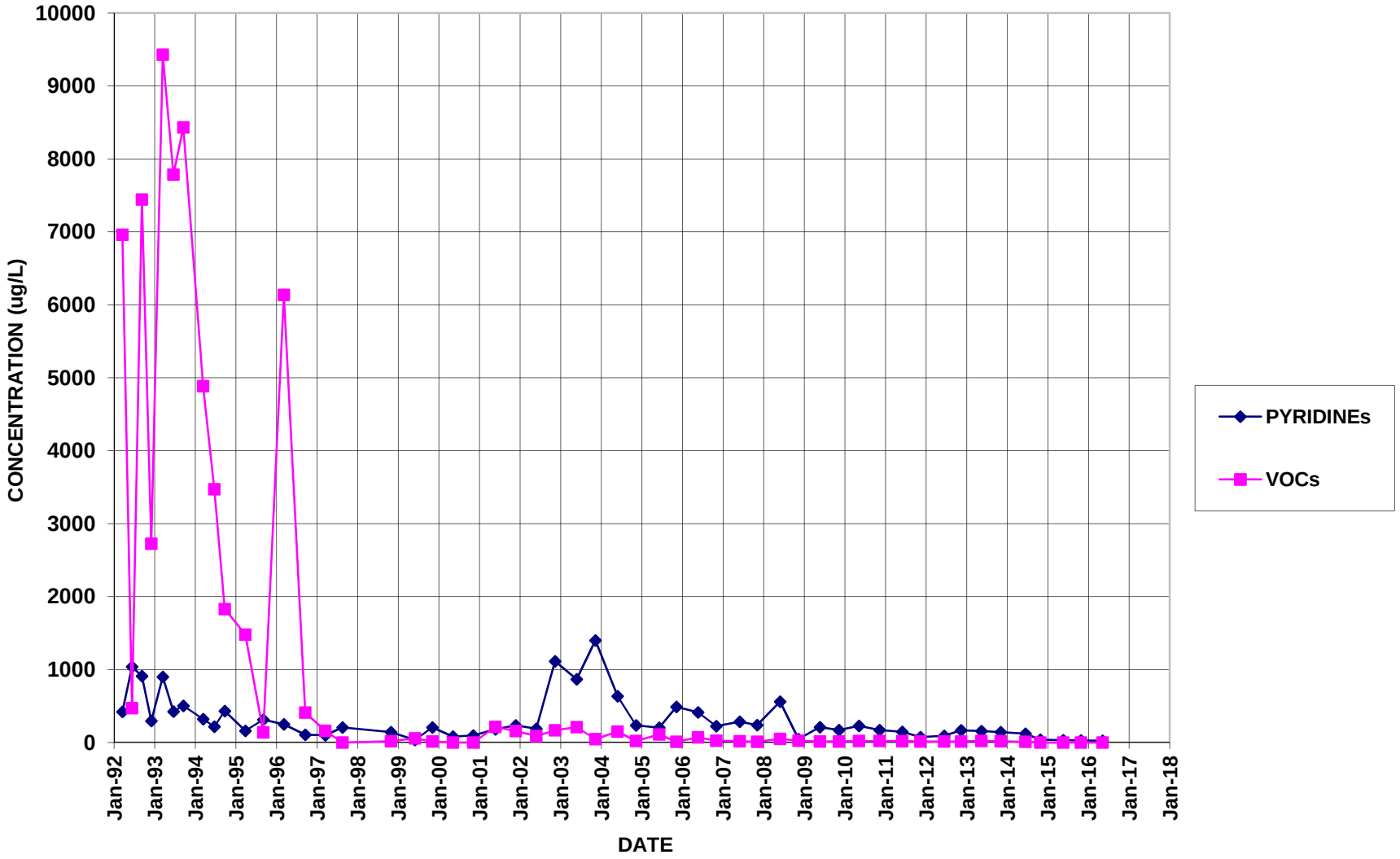


Prepared by: nmb
Reviewed by: jeb



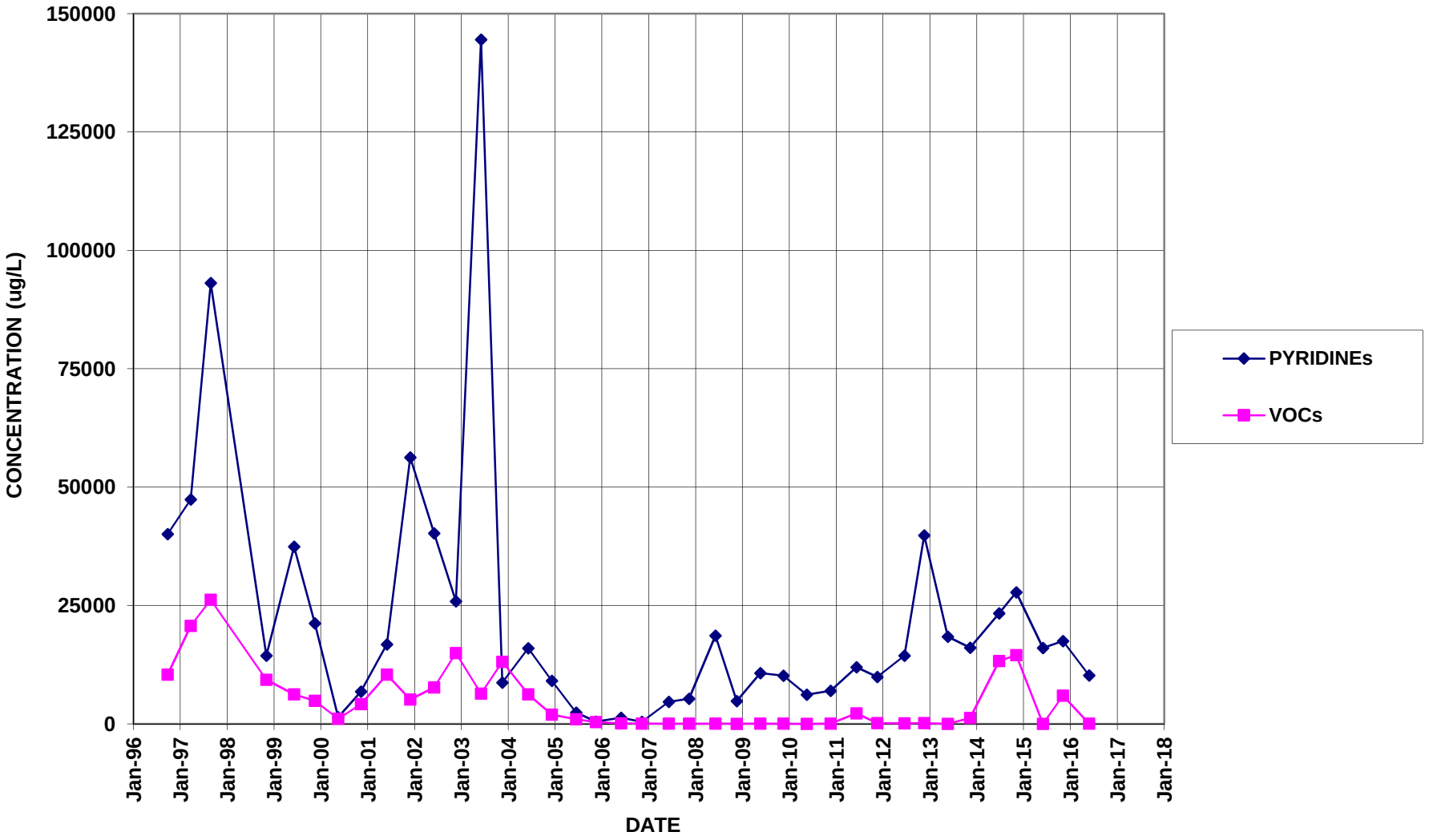
Prepared by: nmb
Reviewed by: jeb

BR-5A



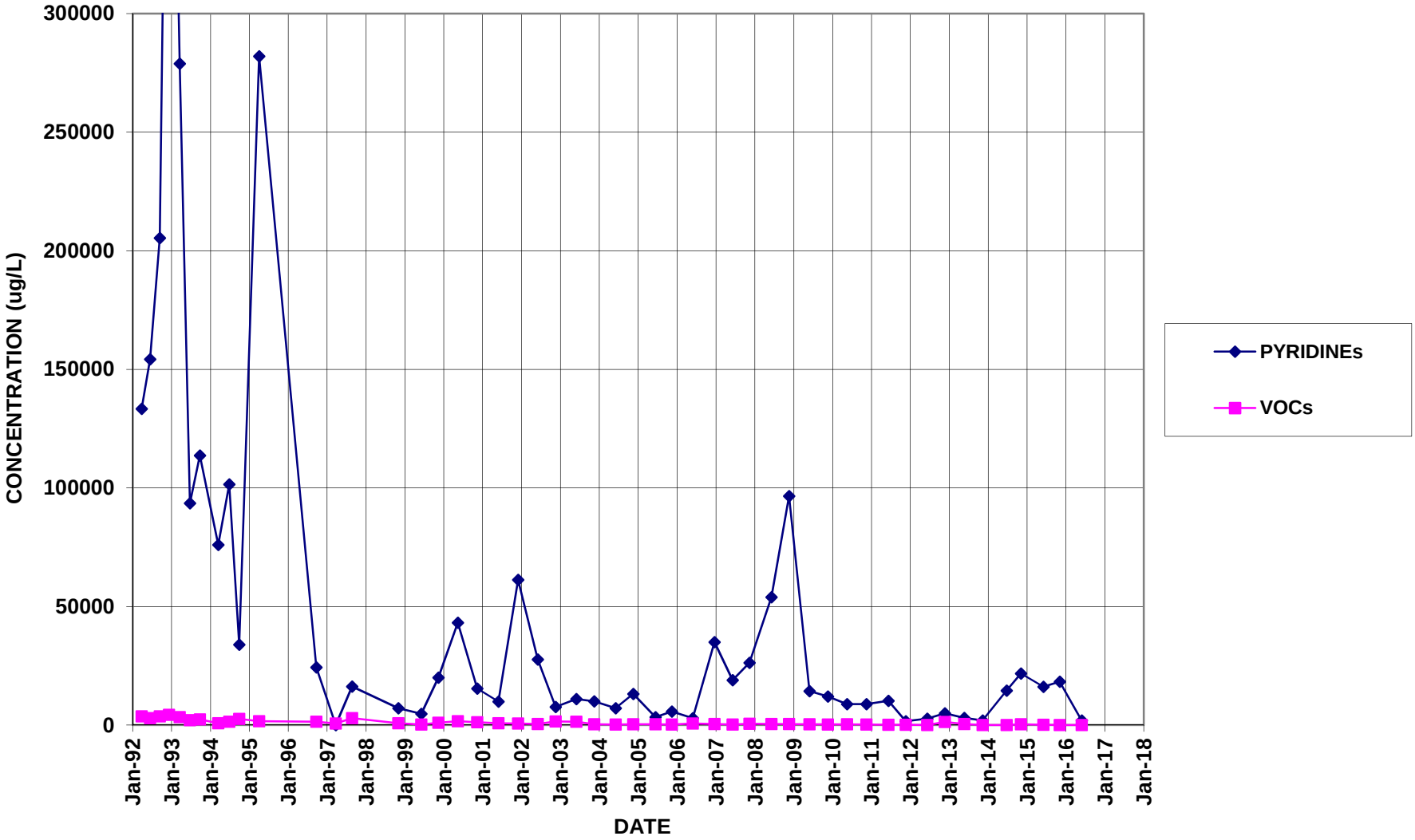
Prepared by: nmb
Reviewed by: jeb

BR-6A



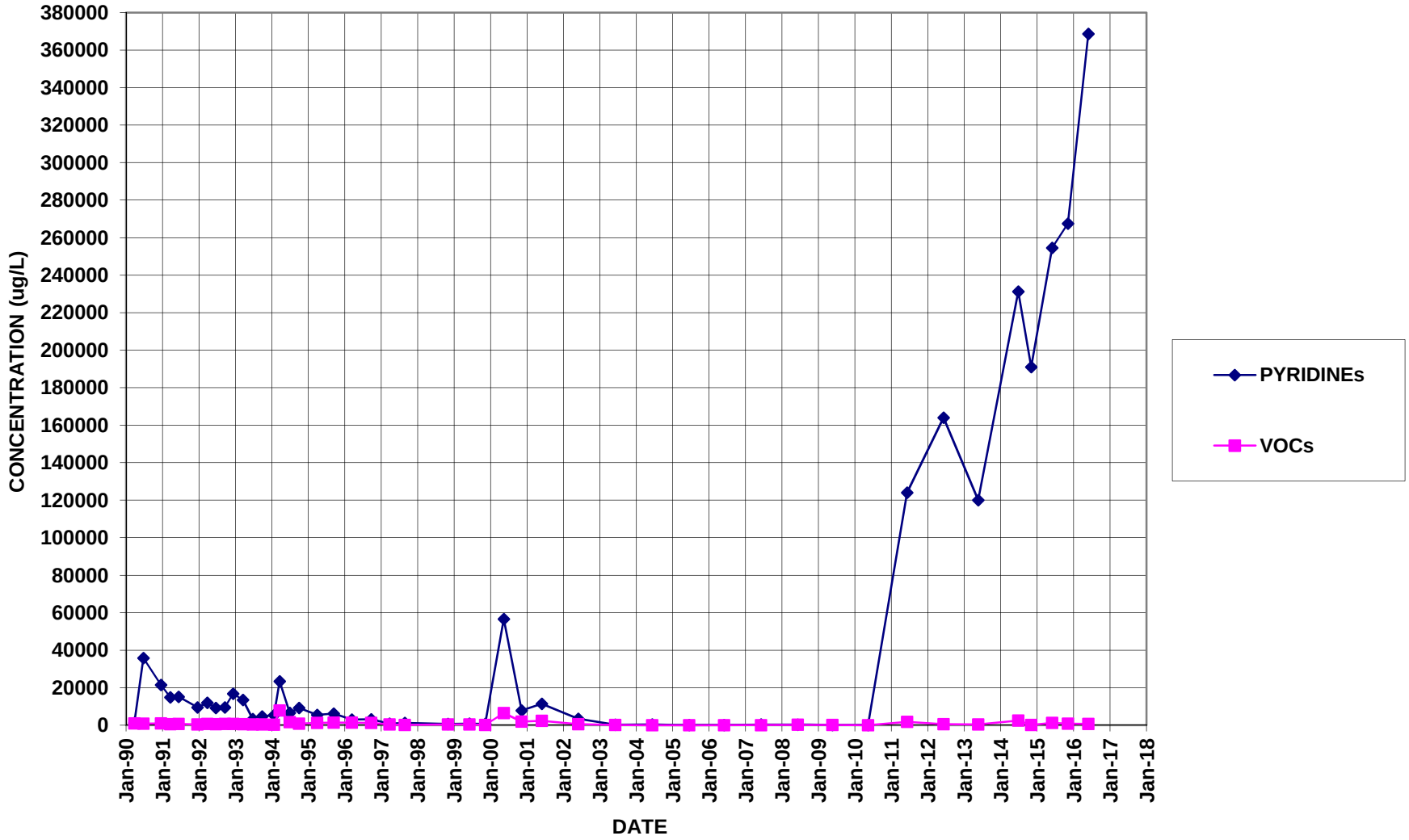
Prepared by: nmb
Reviewed by: jeb

BR-7A



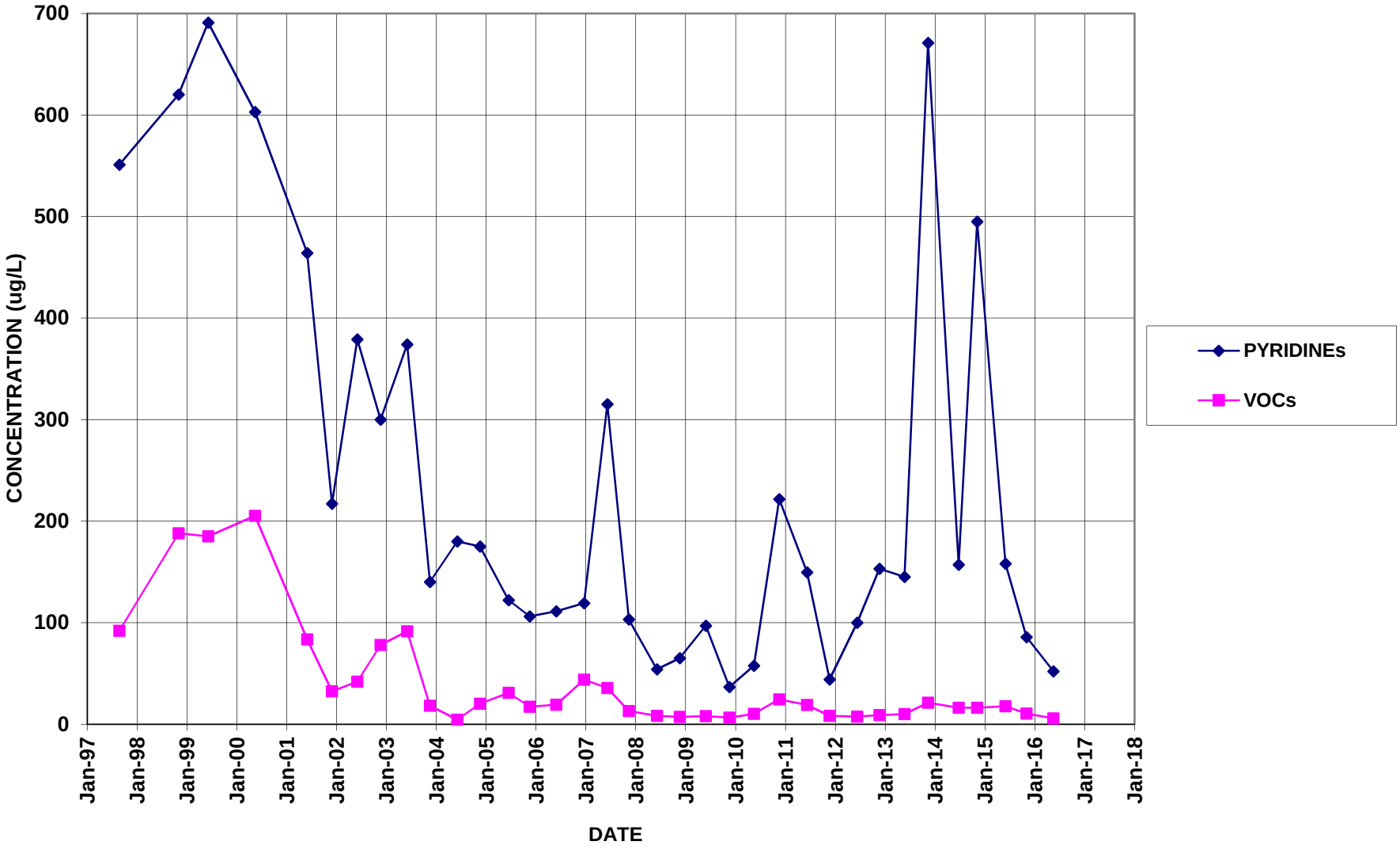
Prepared by: nmb
Reviewed by: jeb

BR-8

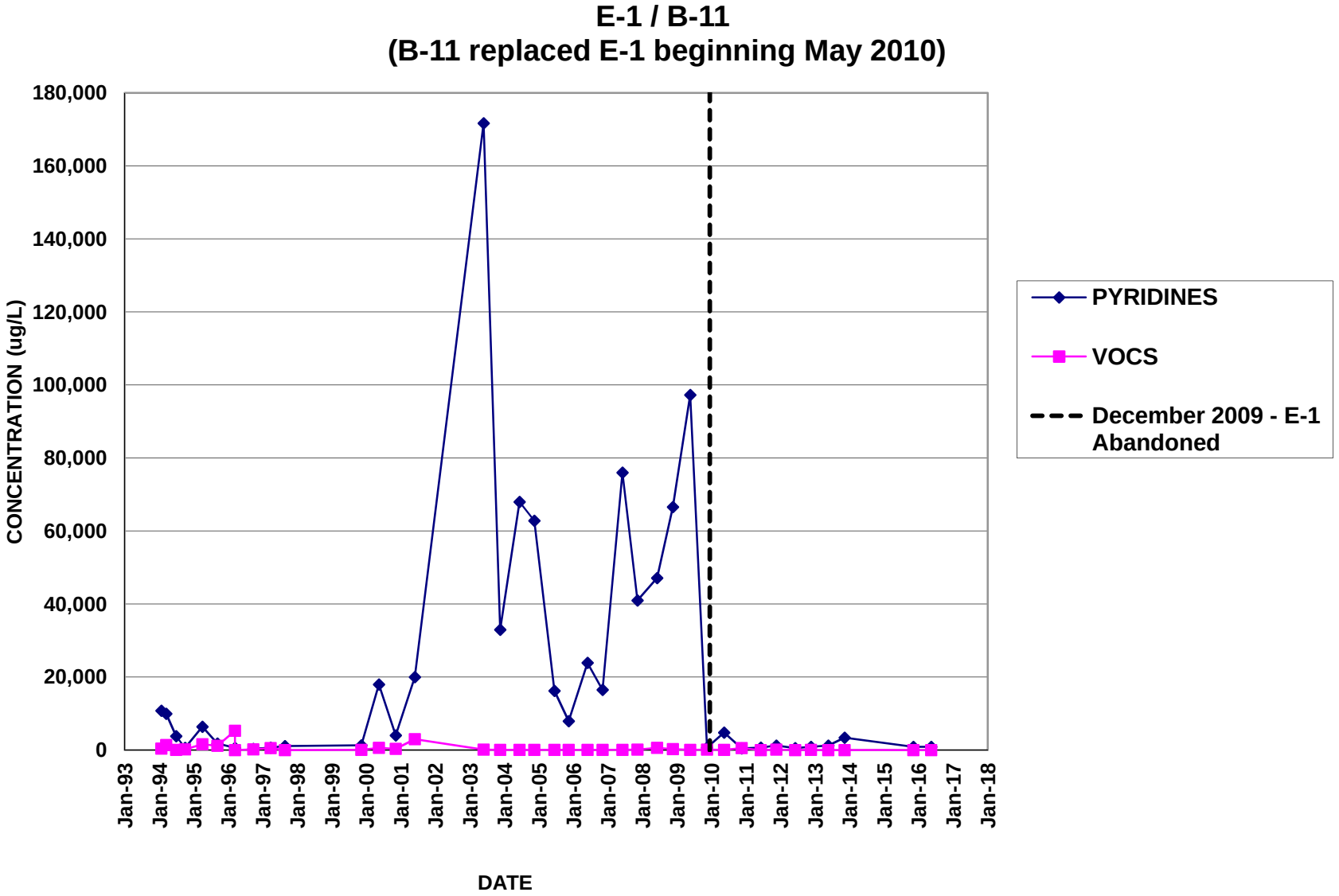


Prepared by: nmb
Reviewed by: jeb

BR-9

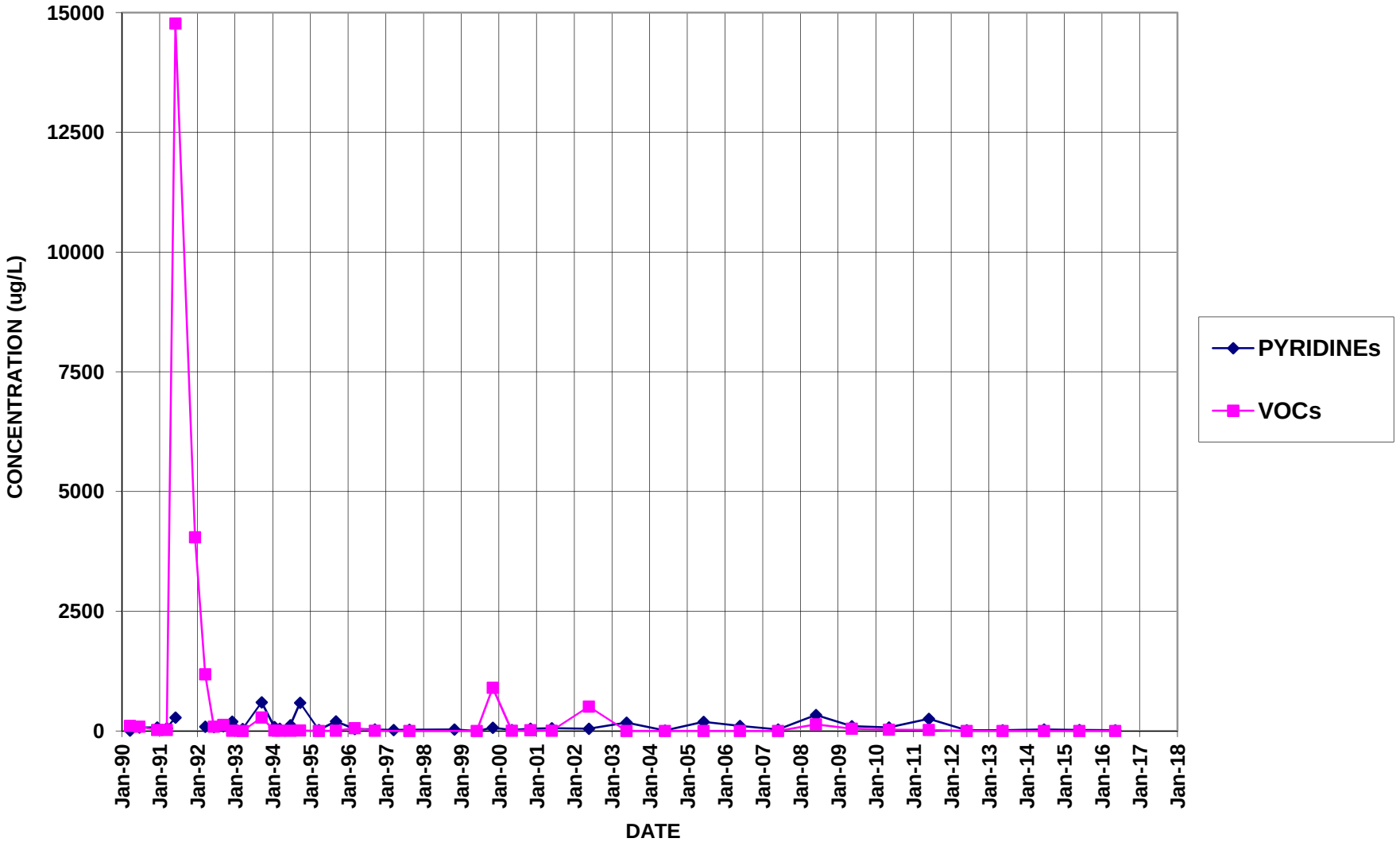


Prepared by: nmb
Reviewed by: jeb



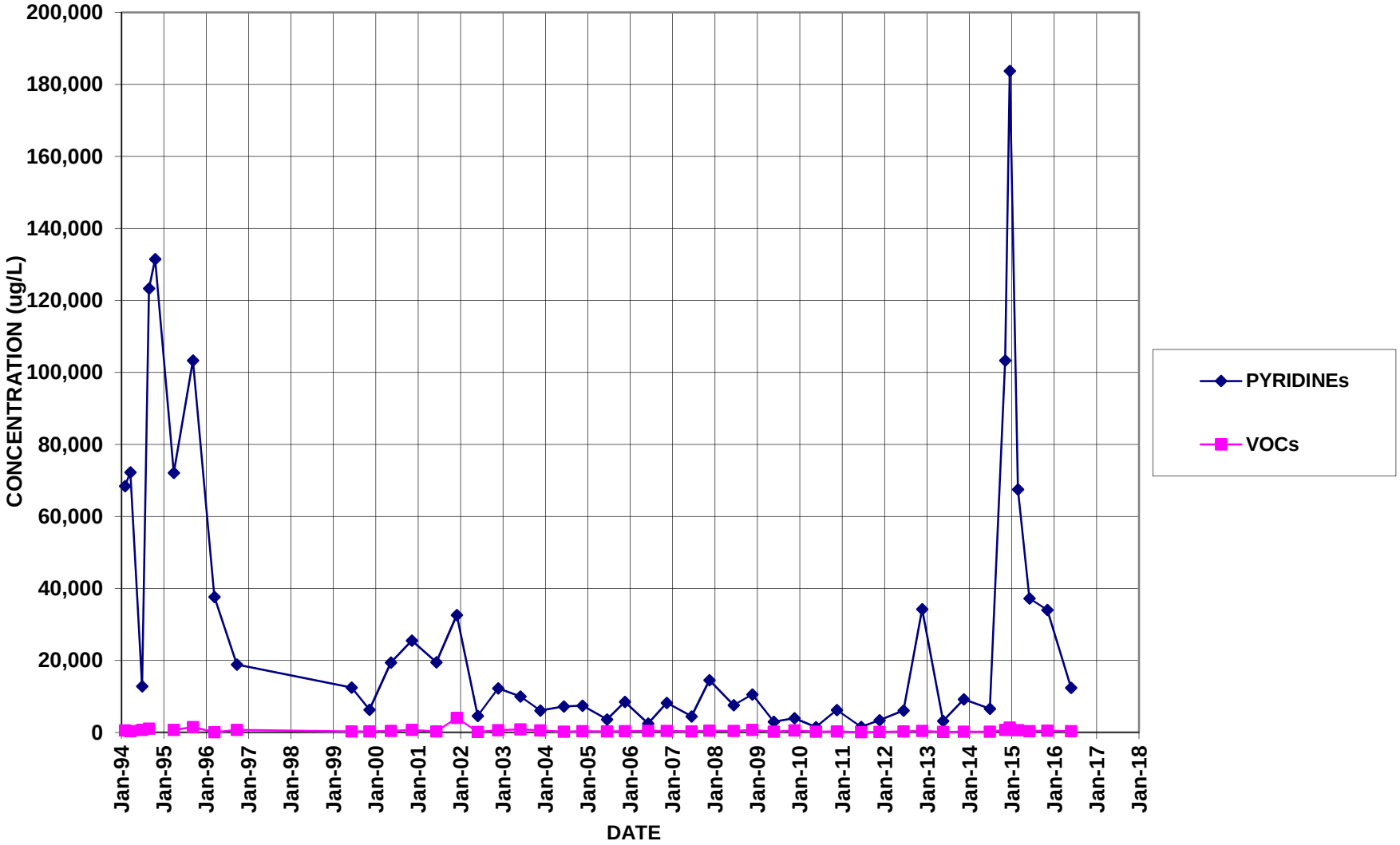
Prepared by: nmb
Reviewed by: jeb

E-3



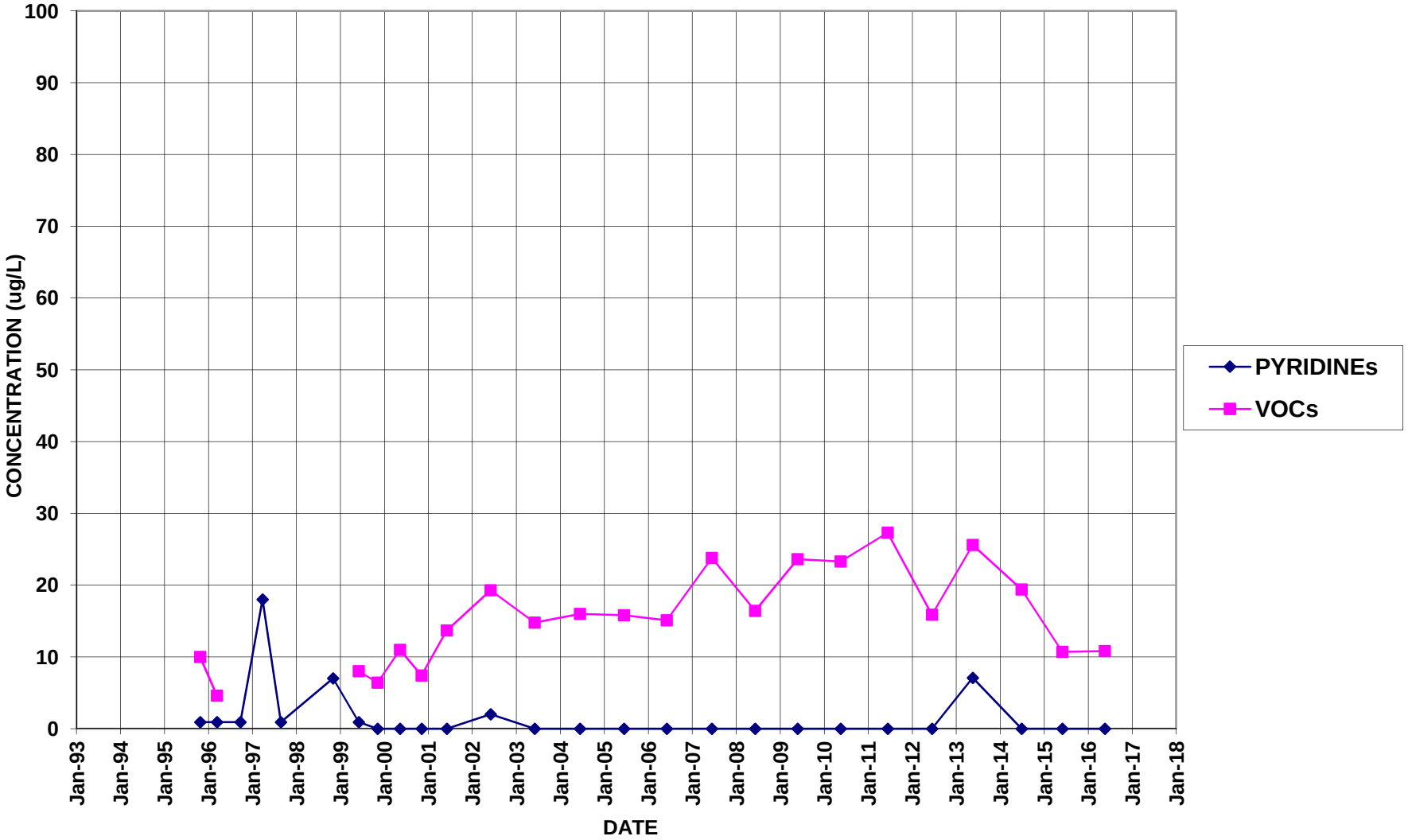
Prepared by: nmb
Reviewed by: jeb

MW-106



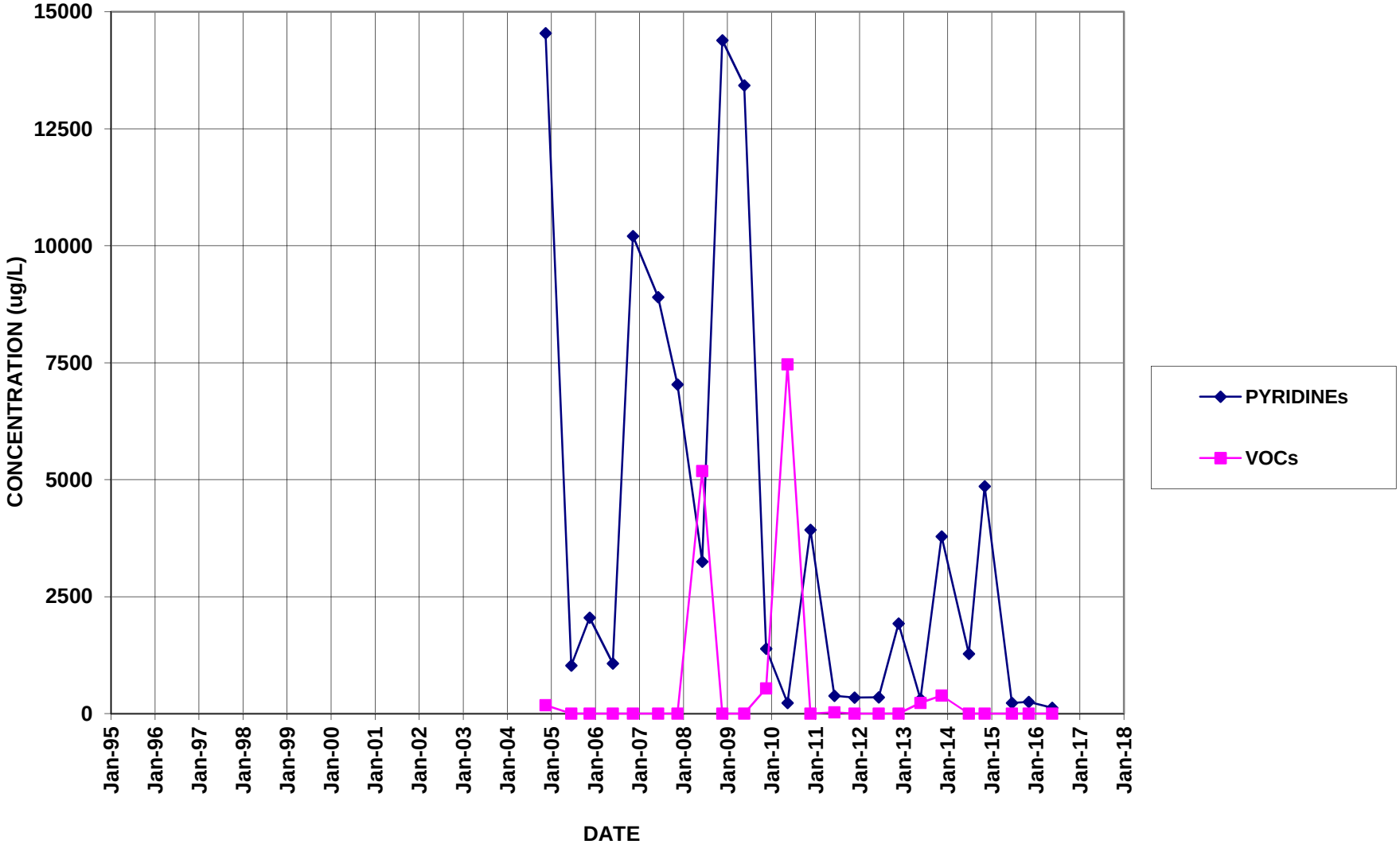
Prepared by: nmb
Reviewed by: jeb

MW-114



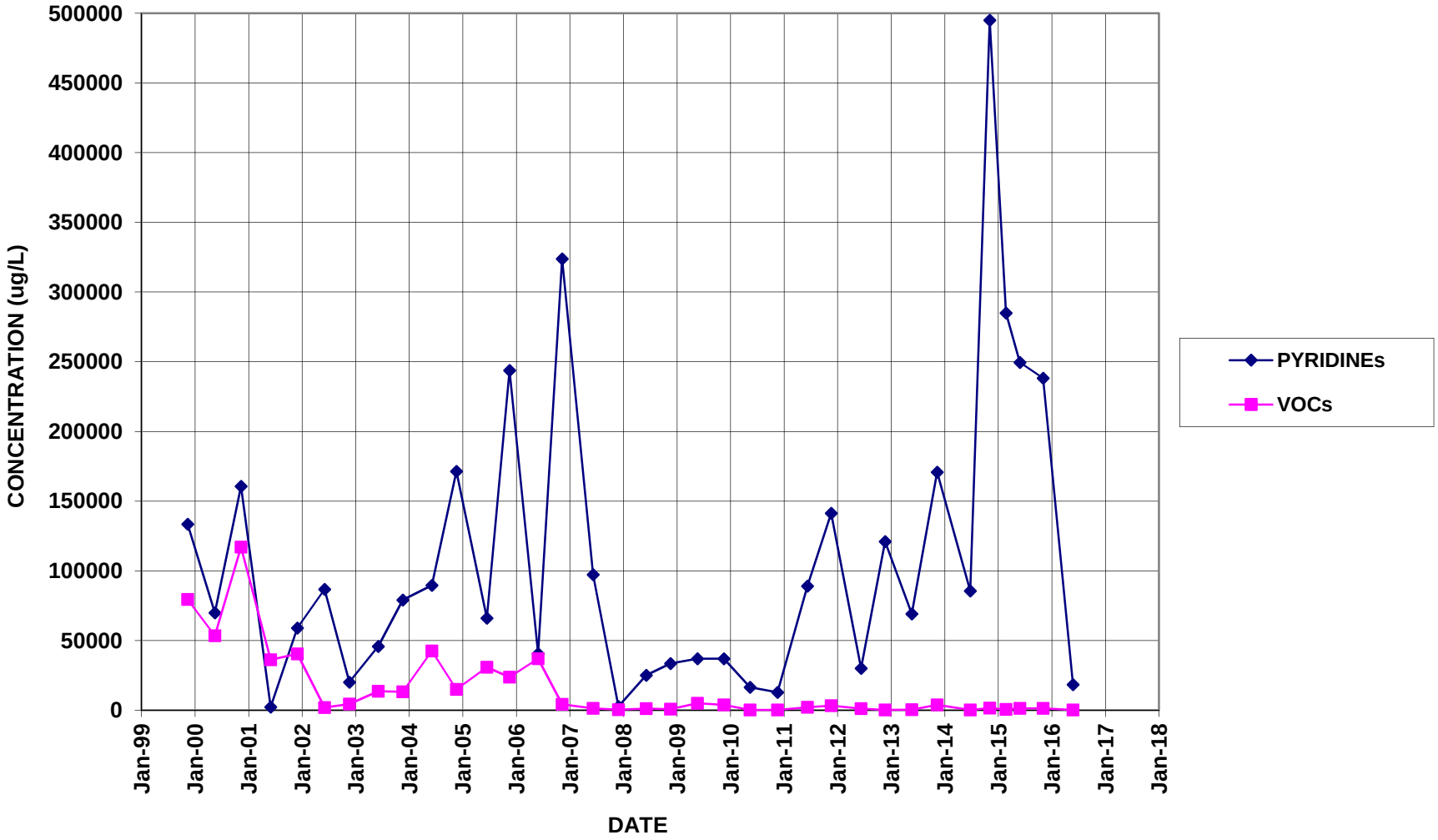
Prepared by: nmb
Reviewed by: jeb

MW-127



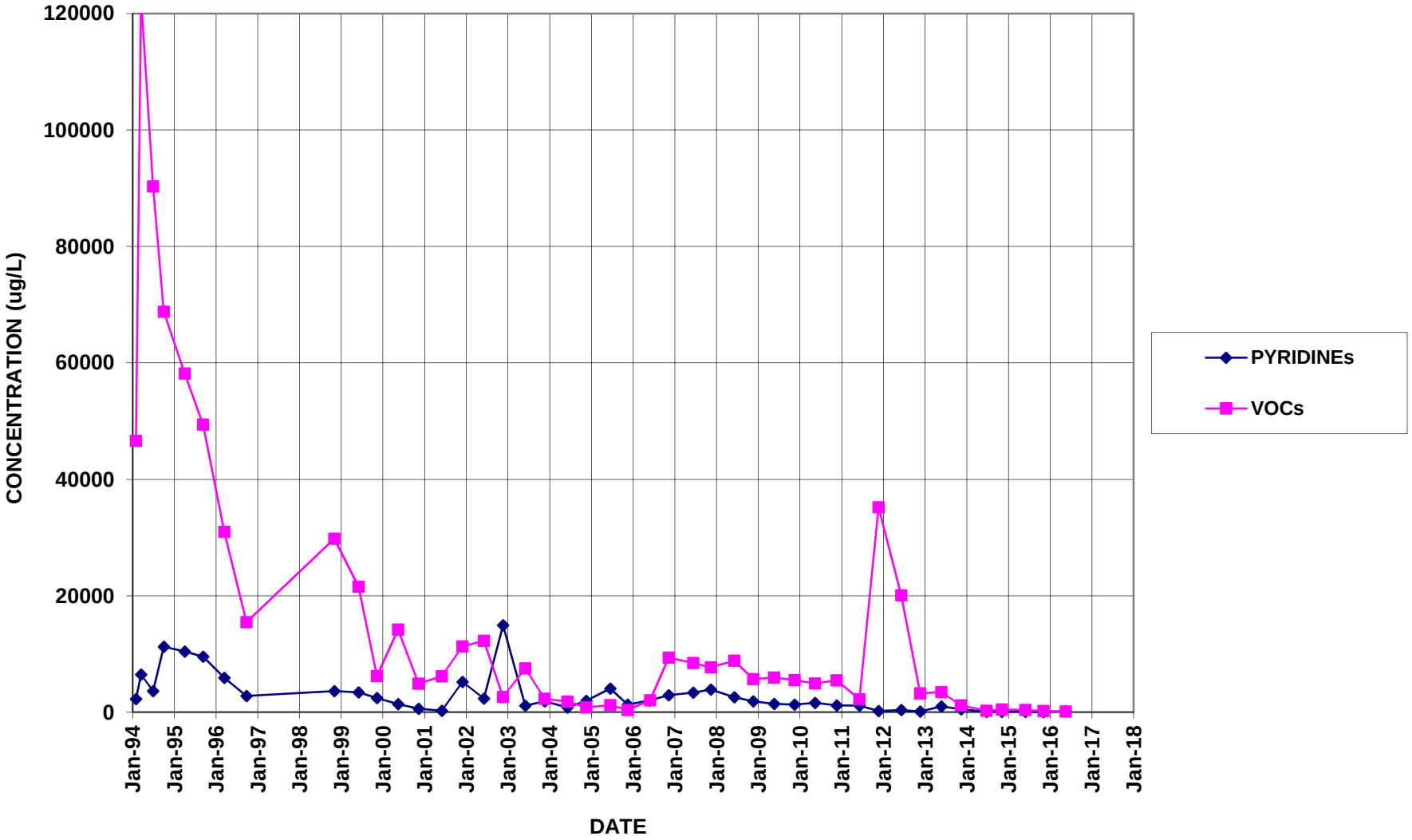
Prepared by: nmb
Reviewed by: jeb

PW10



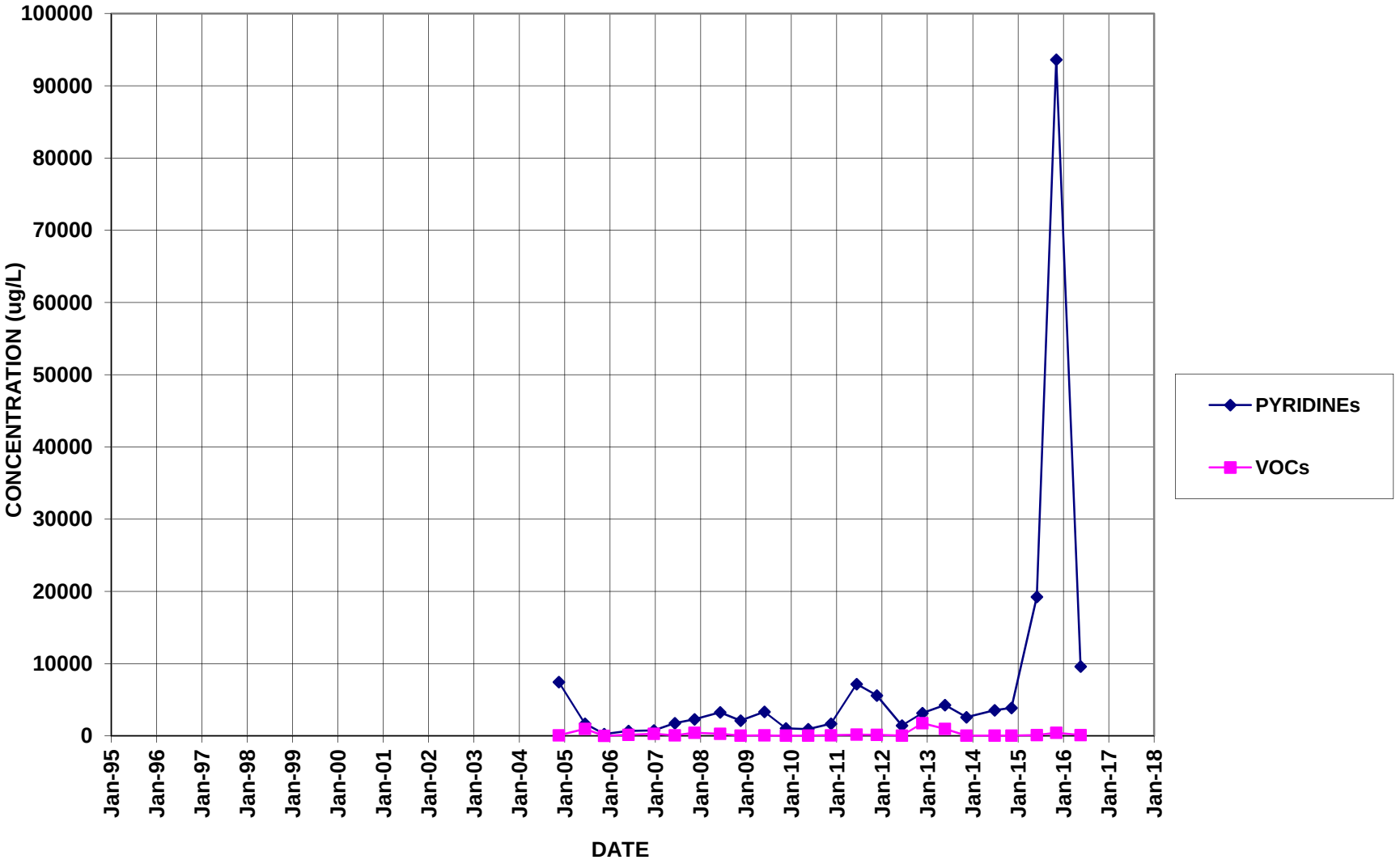
Prepared by: nmb
Reviewed by: jeb

PW12 (Formerly BR-101)



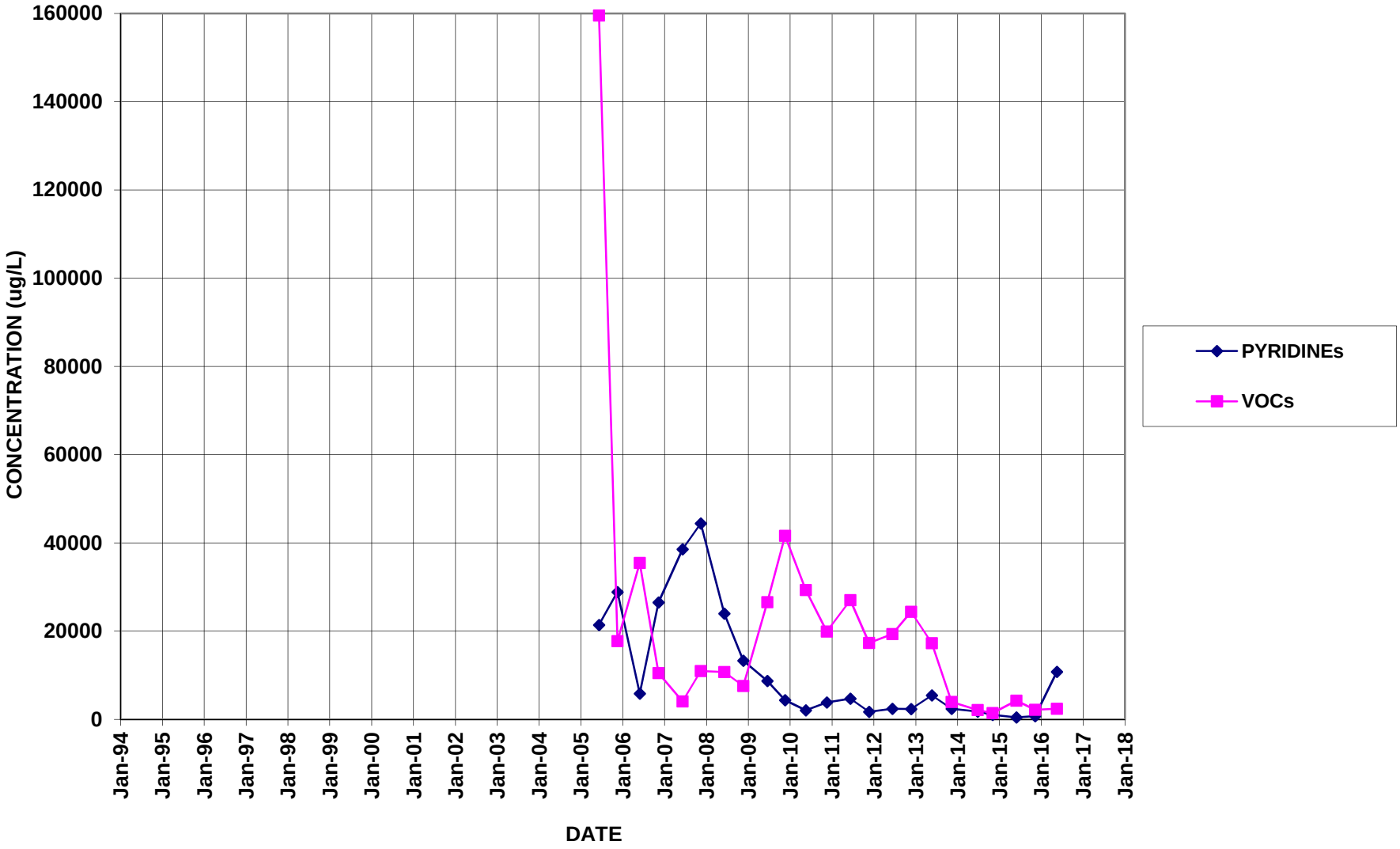
Prepared by: nmb
Reviewed by: jeb

PW13



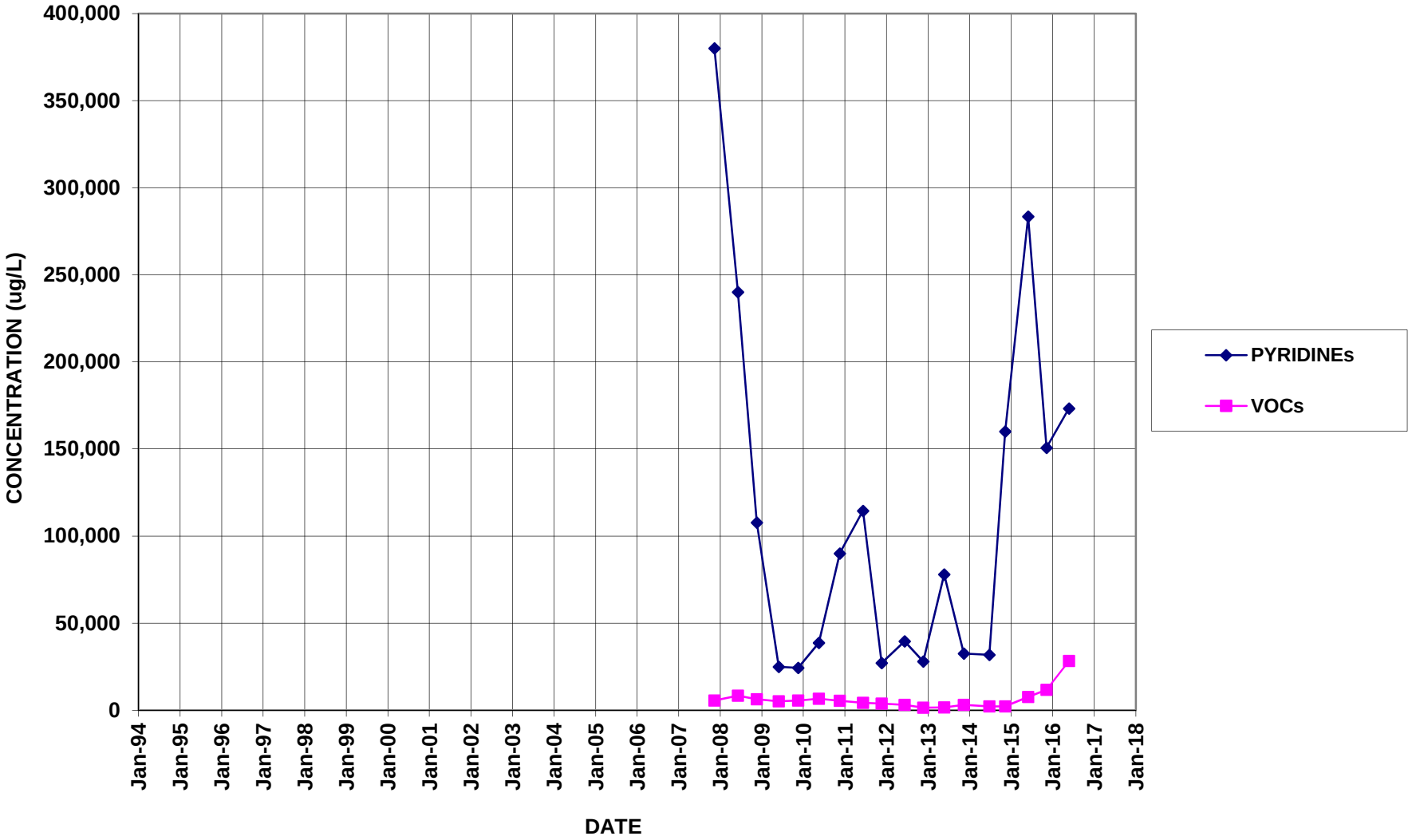
Prepared by: nmb
Reviewed by: jeb

PW14



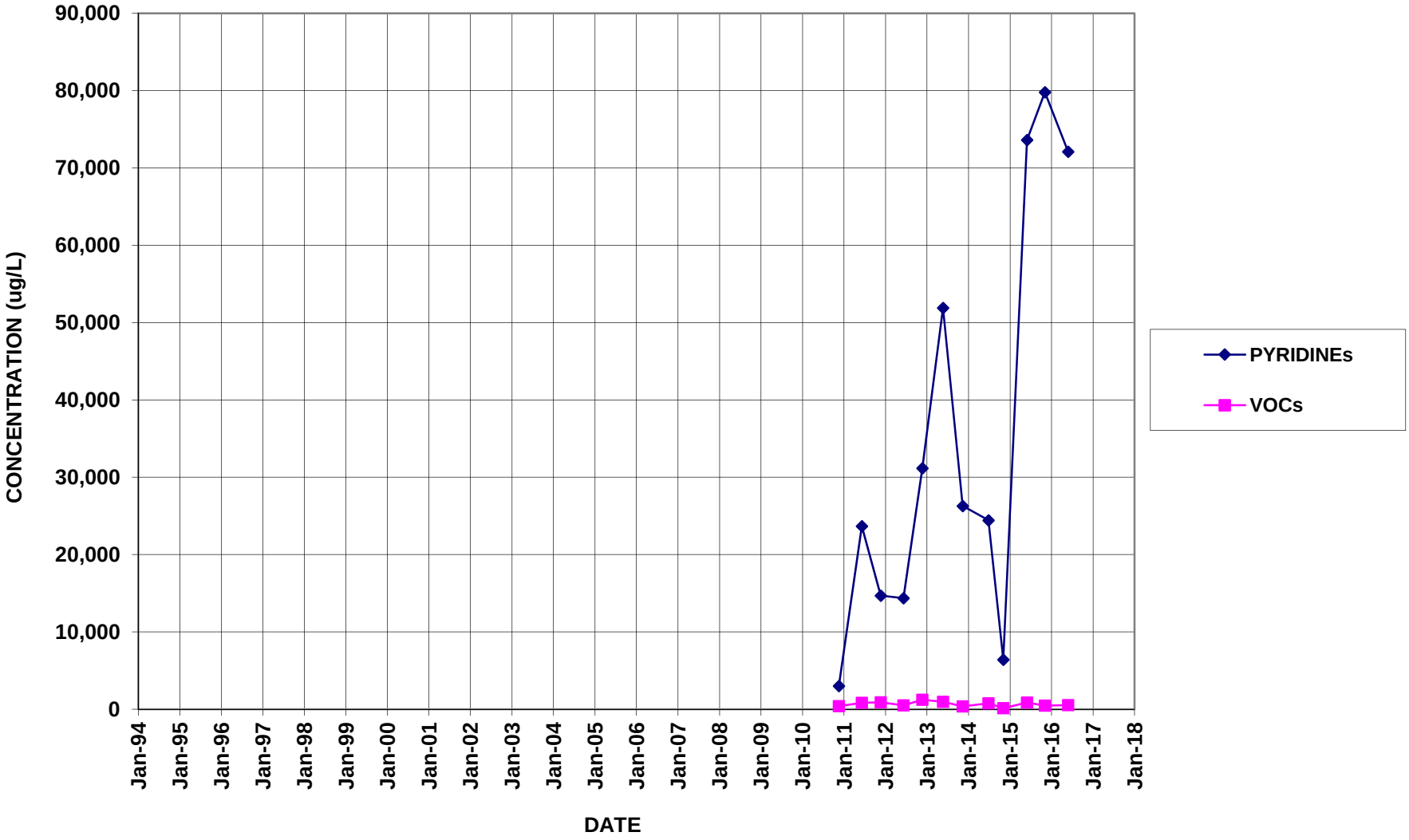
Prepared by: nmb
Reviewed by: jeb

PW15



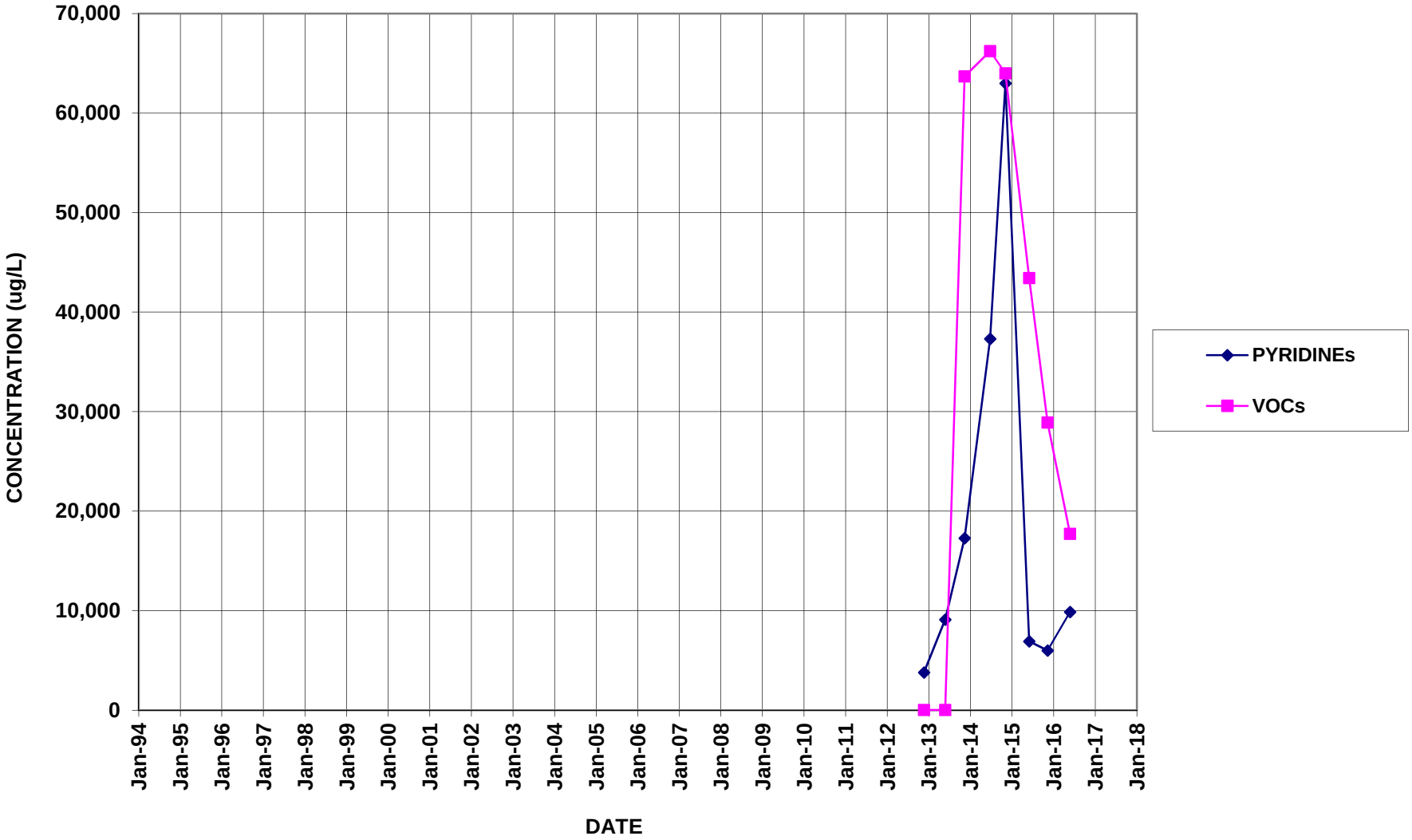
Prepared by: nmb
Reviewed by: jeb

PW16



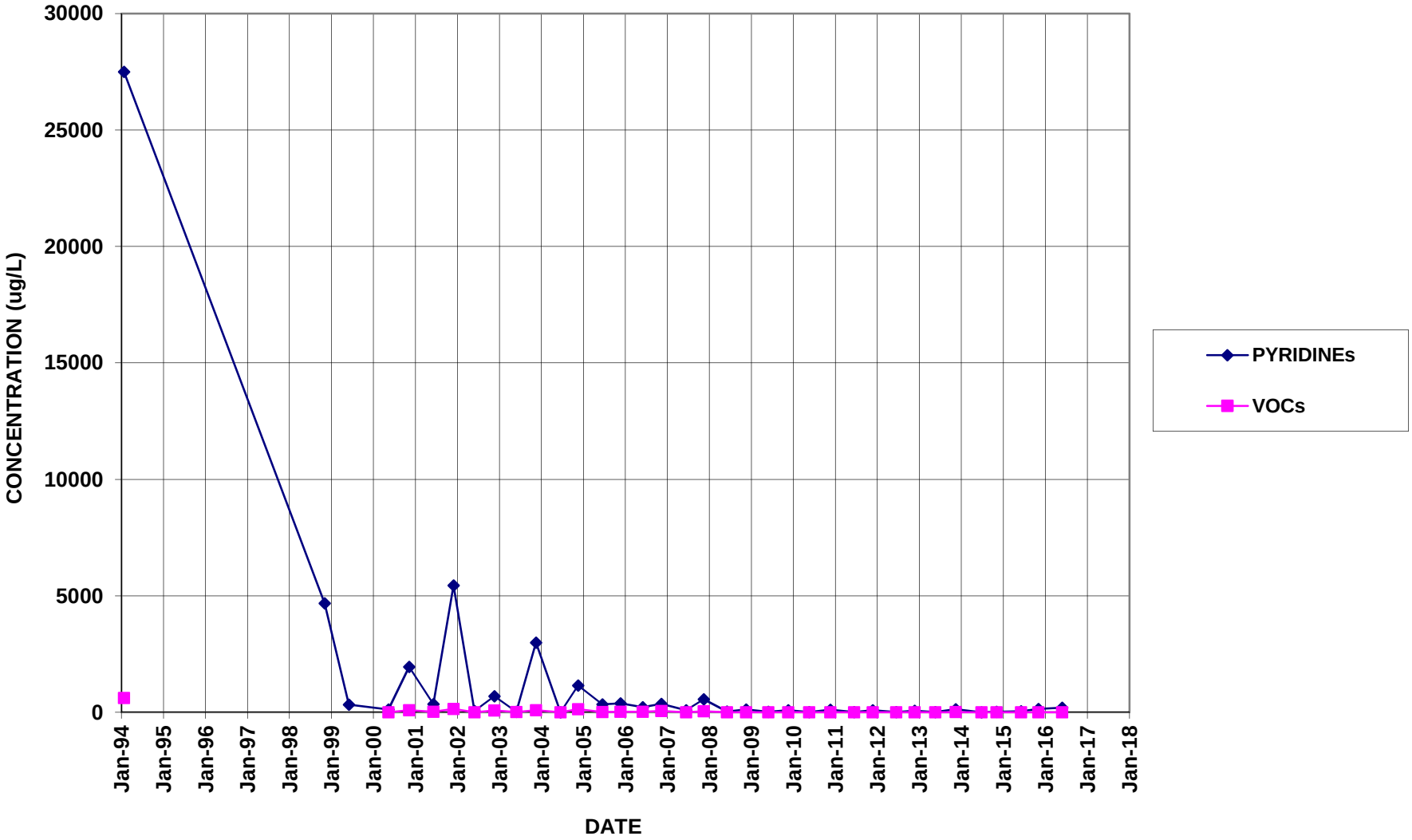
Prepared by: nmb
Reviewed by: jeb

PW17



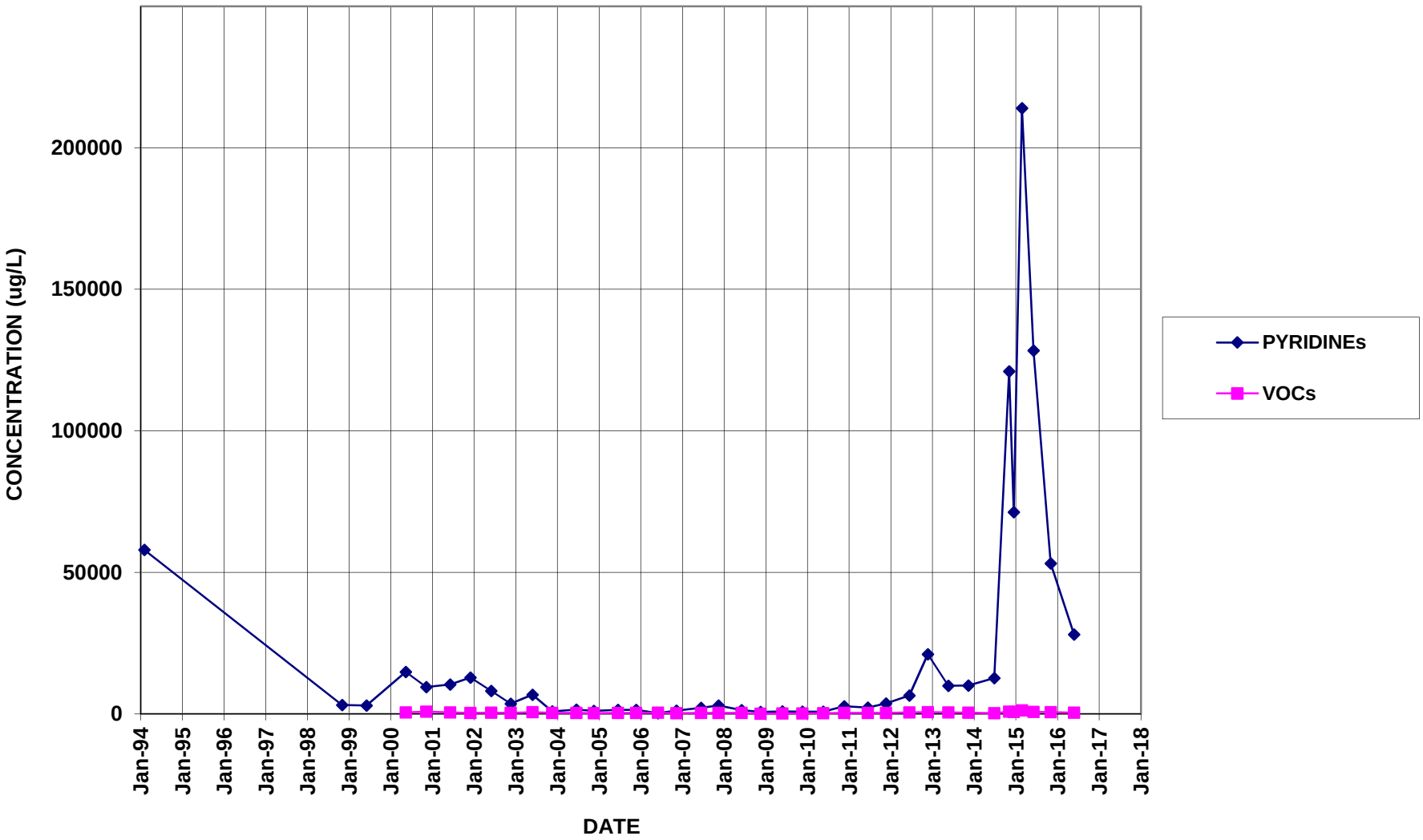
Prepared by: nmb
Reviewed by: jeb

PZ-101



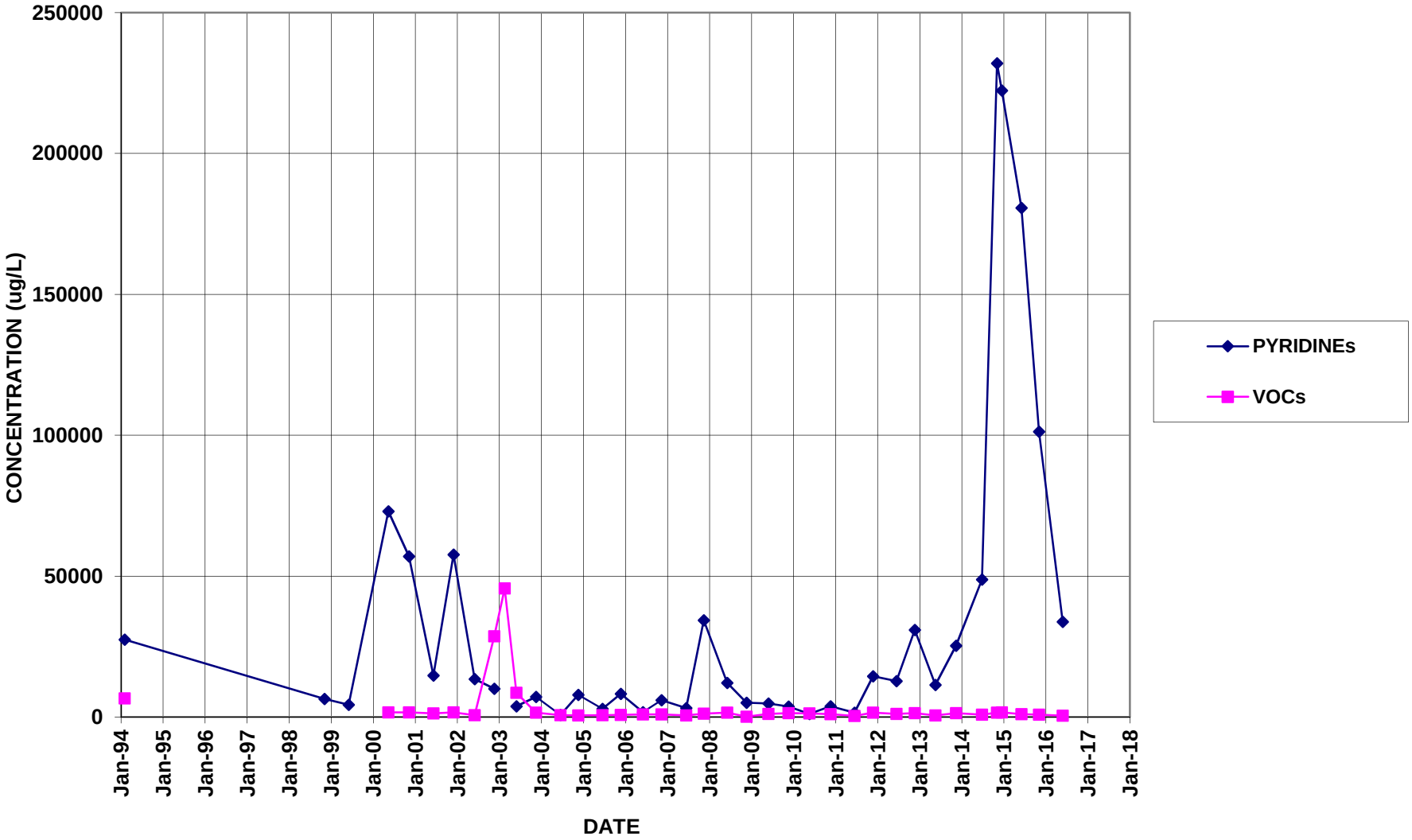
Prepared by: nmb
Reviewed by: jeb

PZ-102



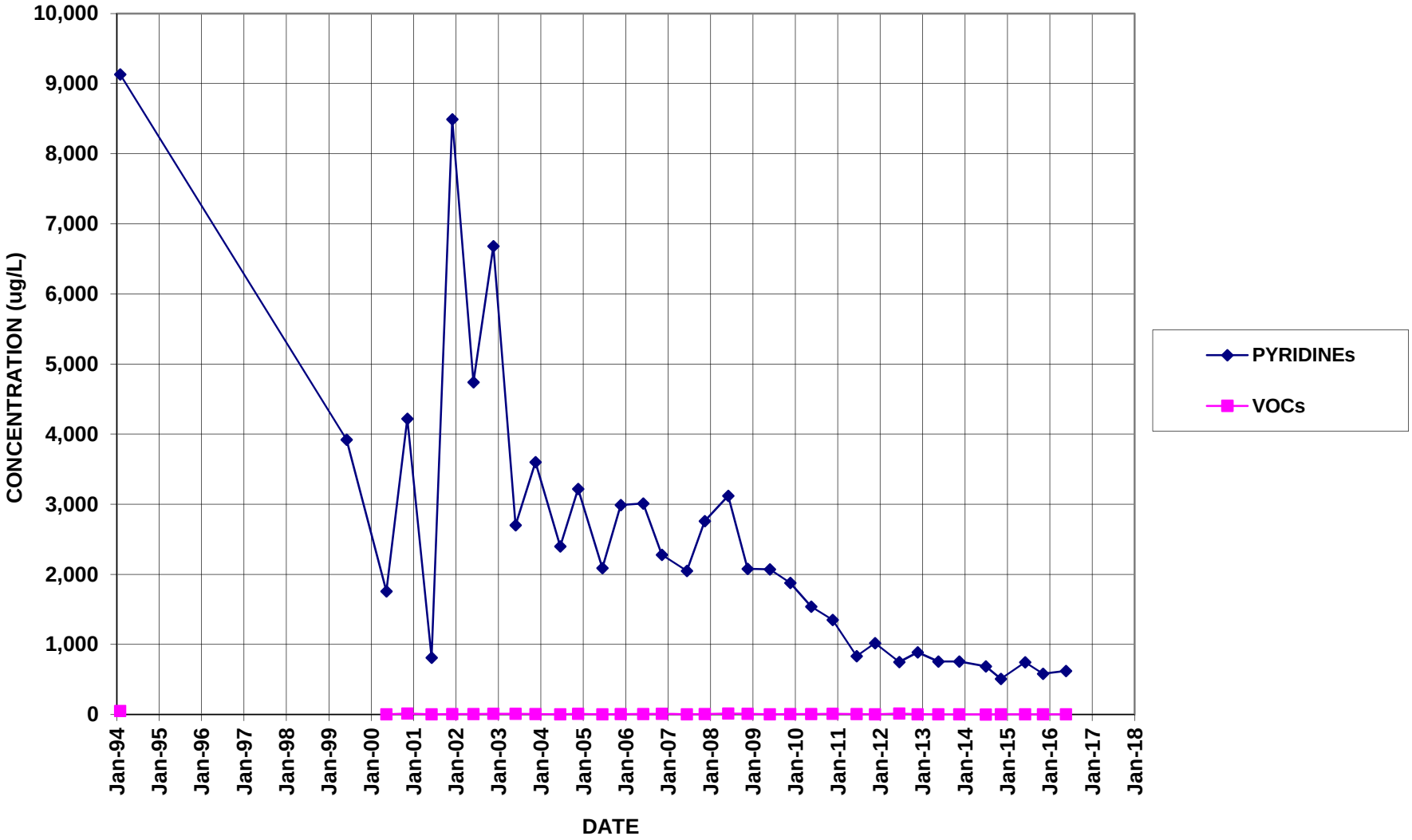
Prepared by: nmb
Reviewed by: jeb

PZ-103



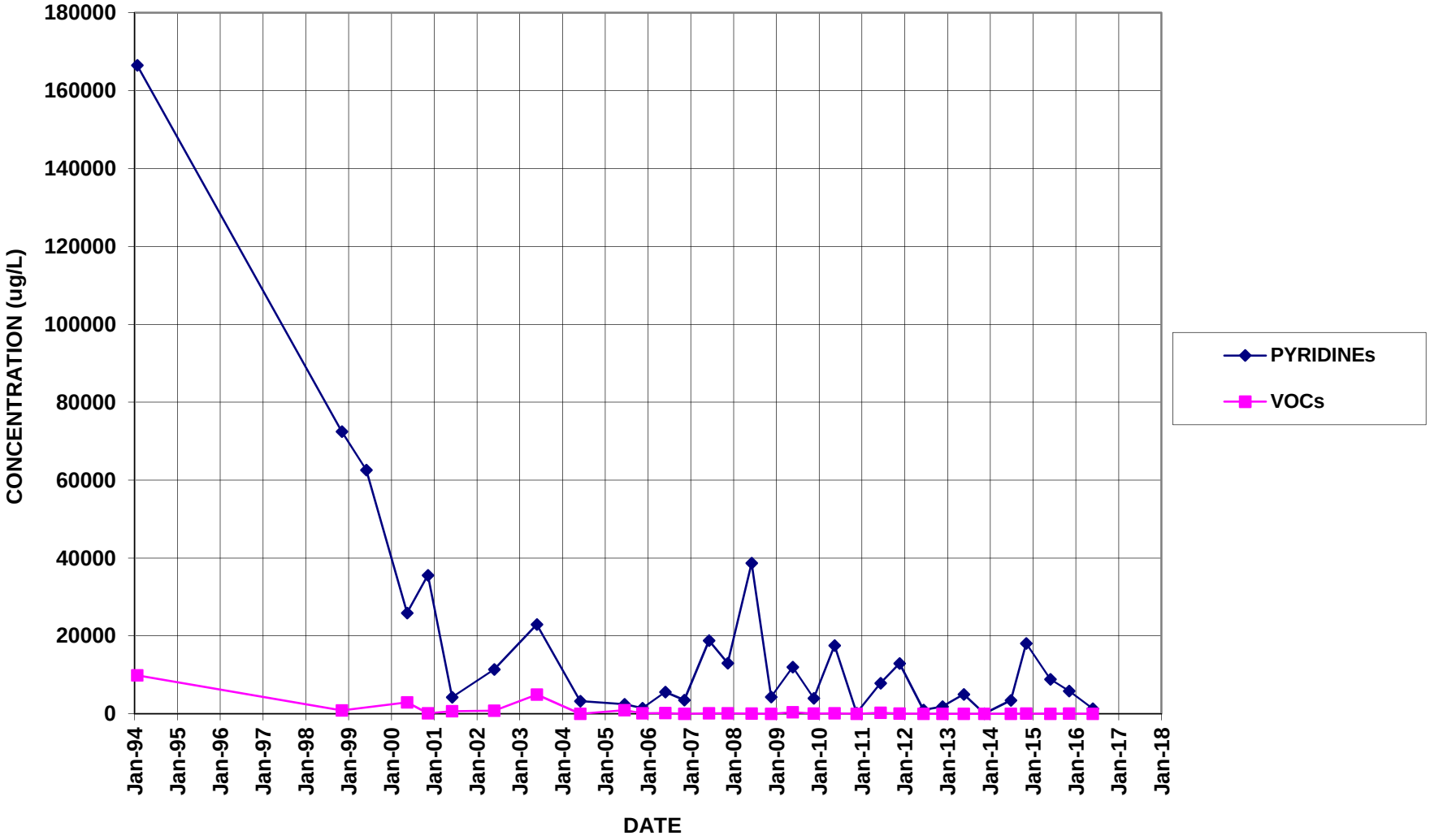
Prepared by: nmb
Reviewed by: jeb

PZ-104



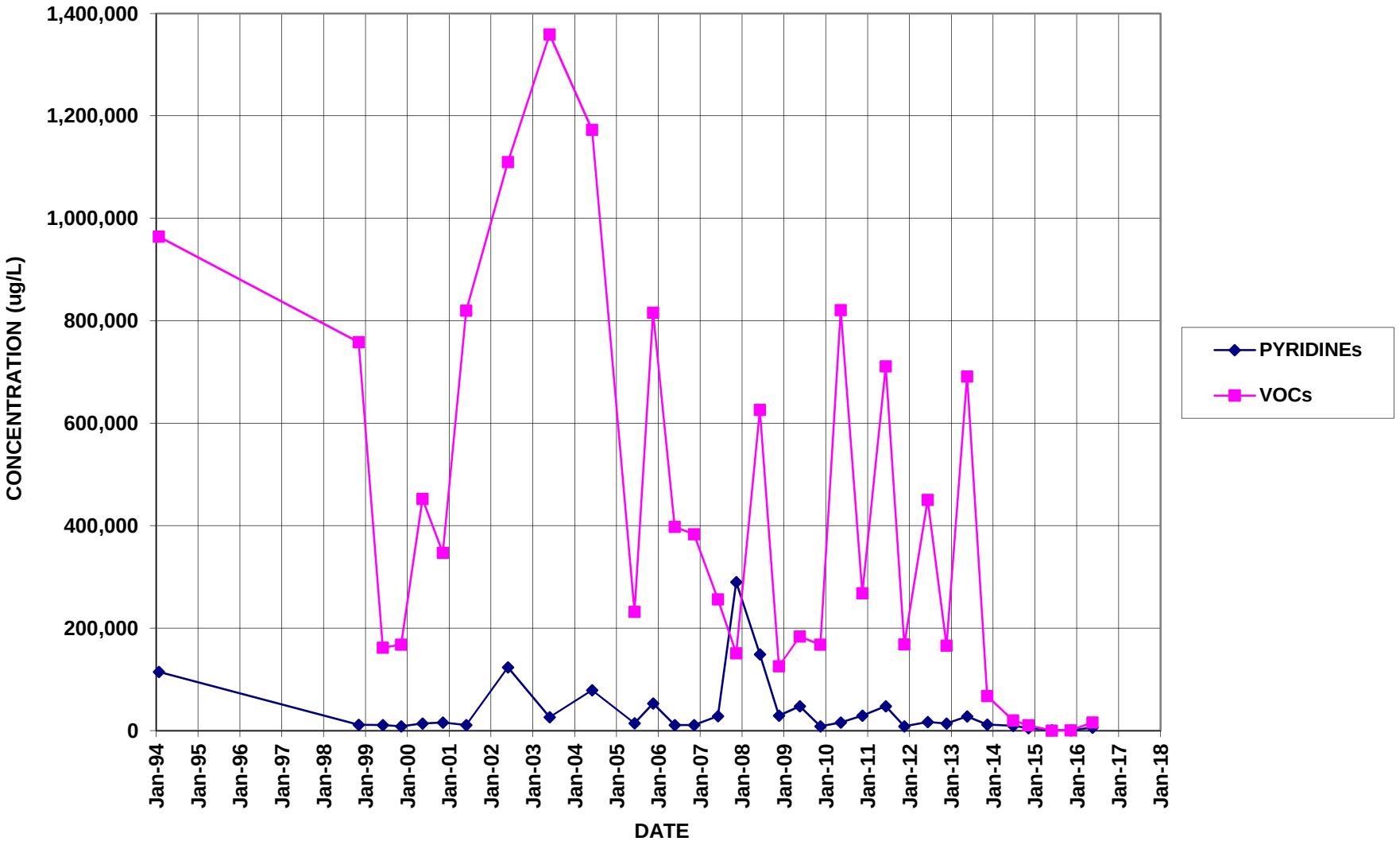
Prepared by: nmb
Reviewed by: jeb

PZ-105



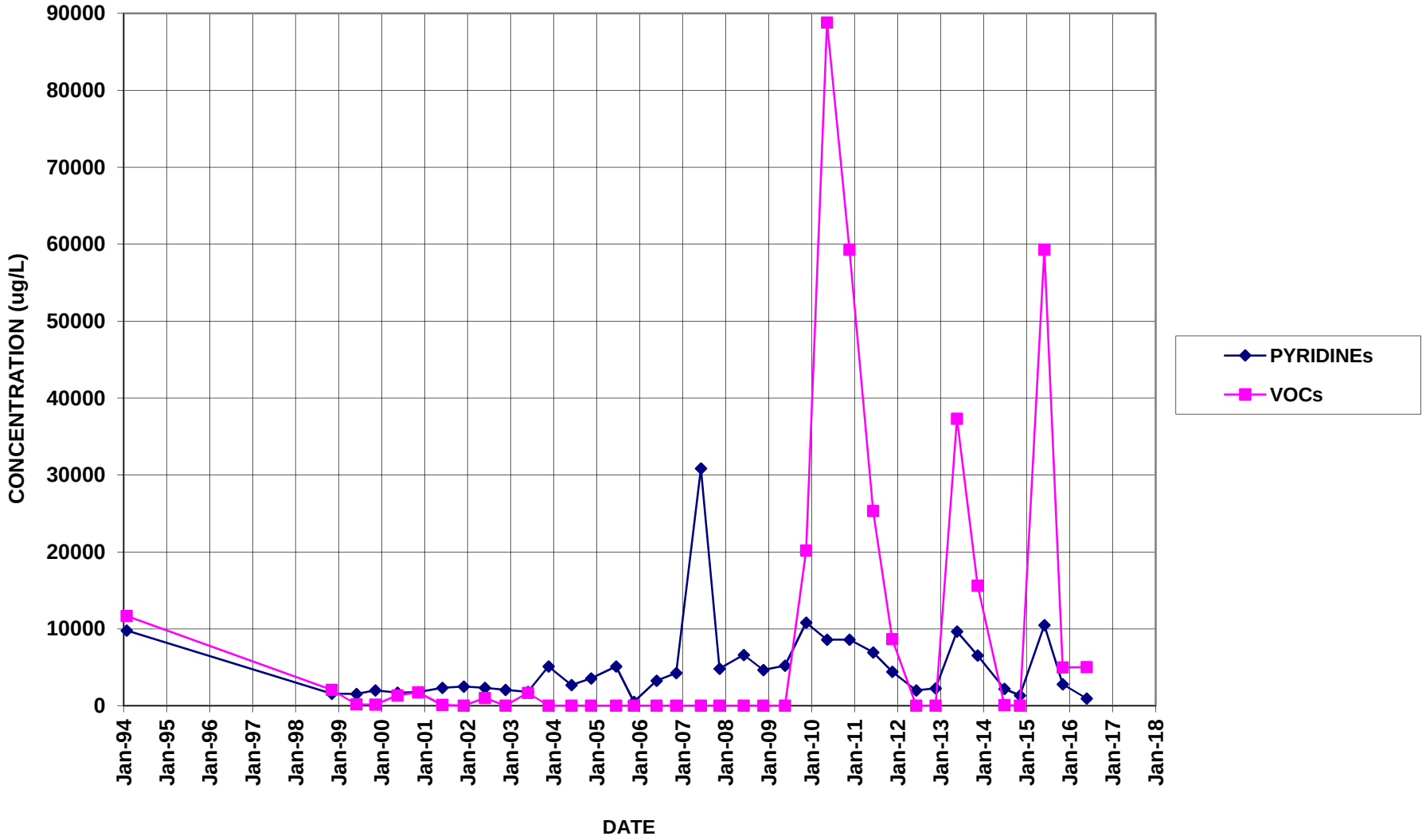
Prepared by: nmb
Reviewed by: jeb

PZ-106

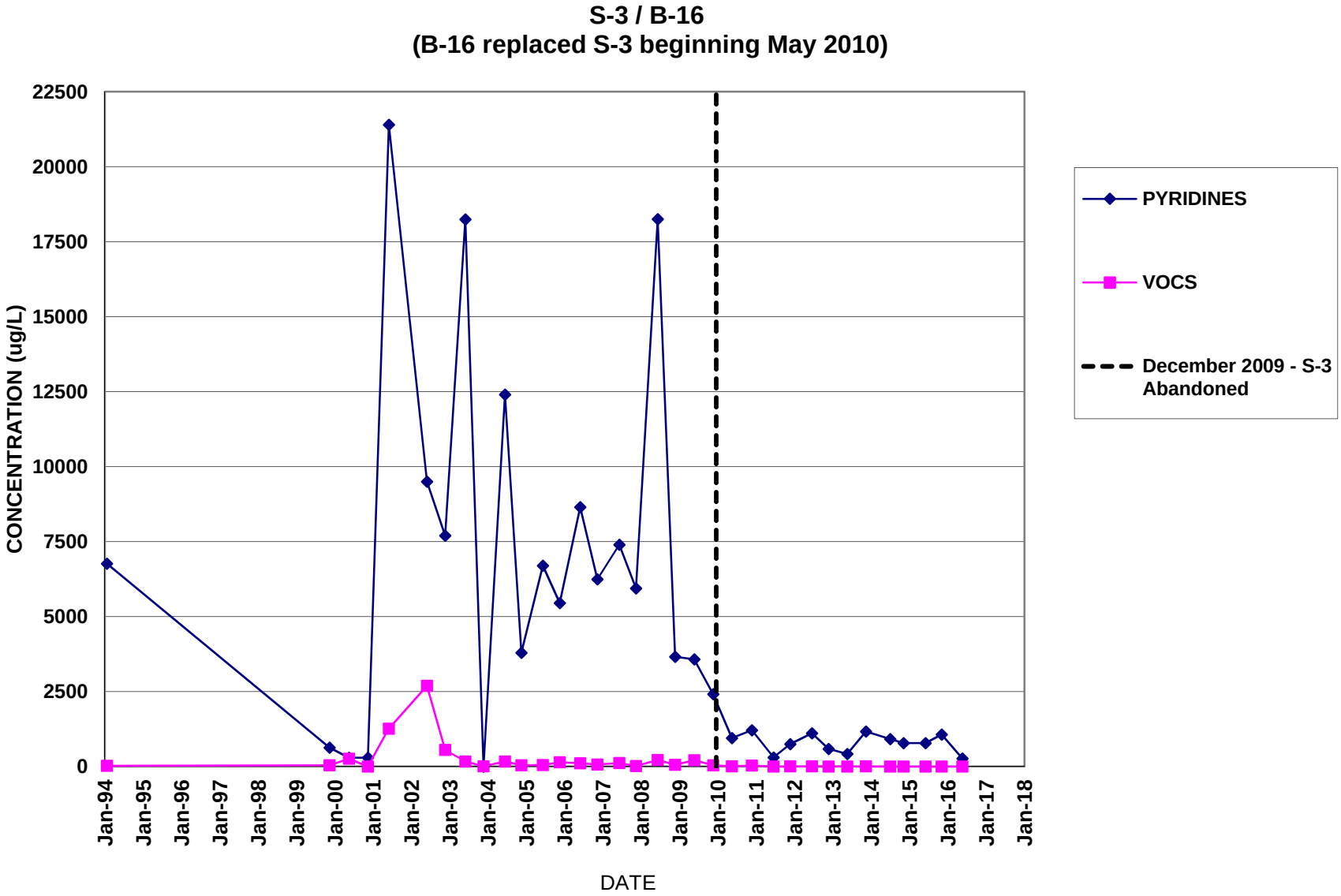


Prepared by: nmb
Reviewed by: jeb

PZ-107

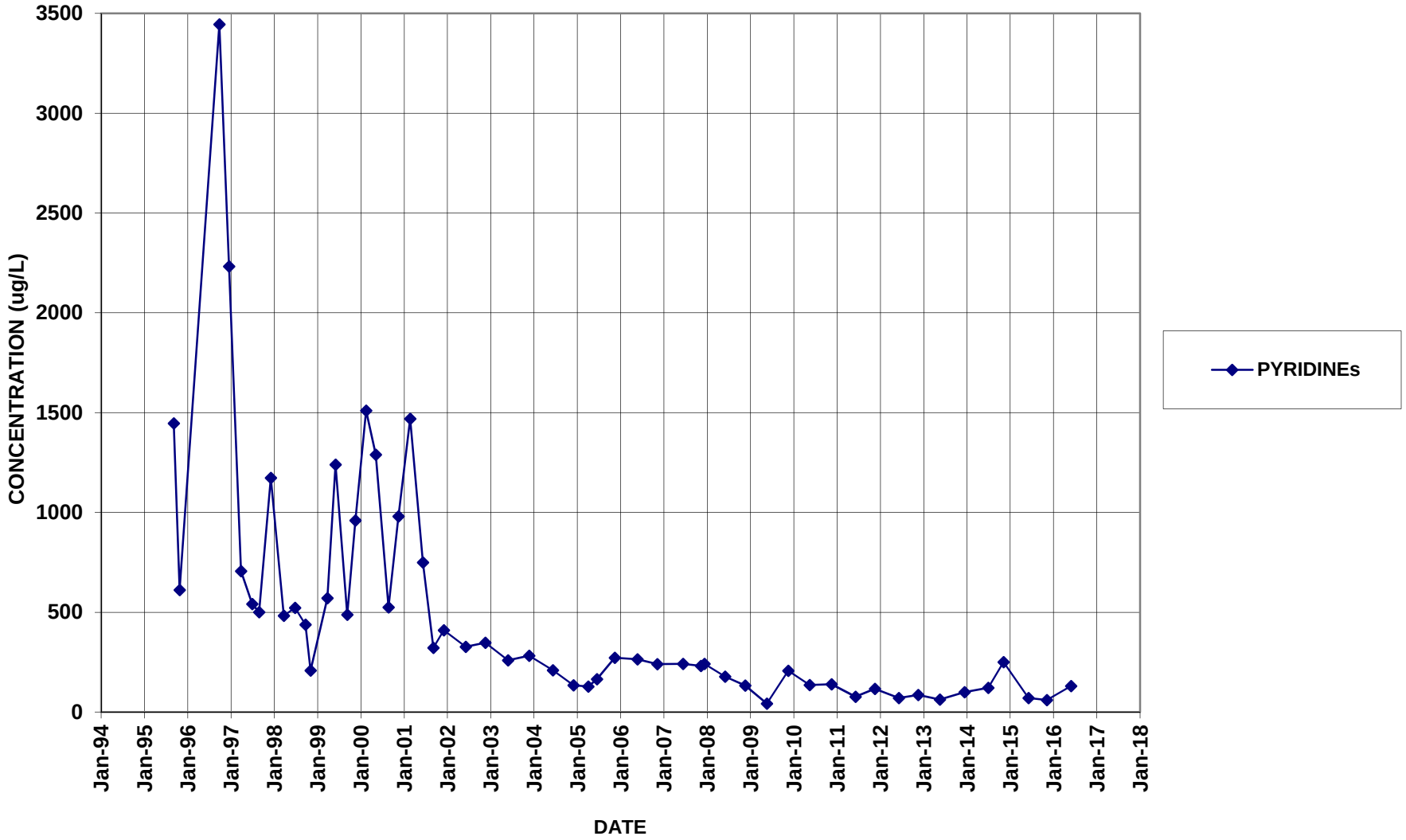


Prepared by: nmb
Reviewed by: jeb



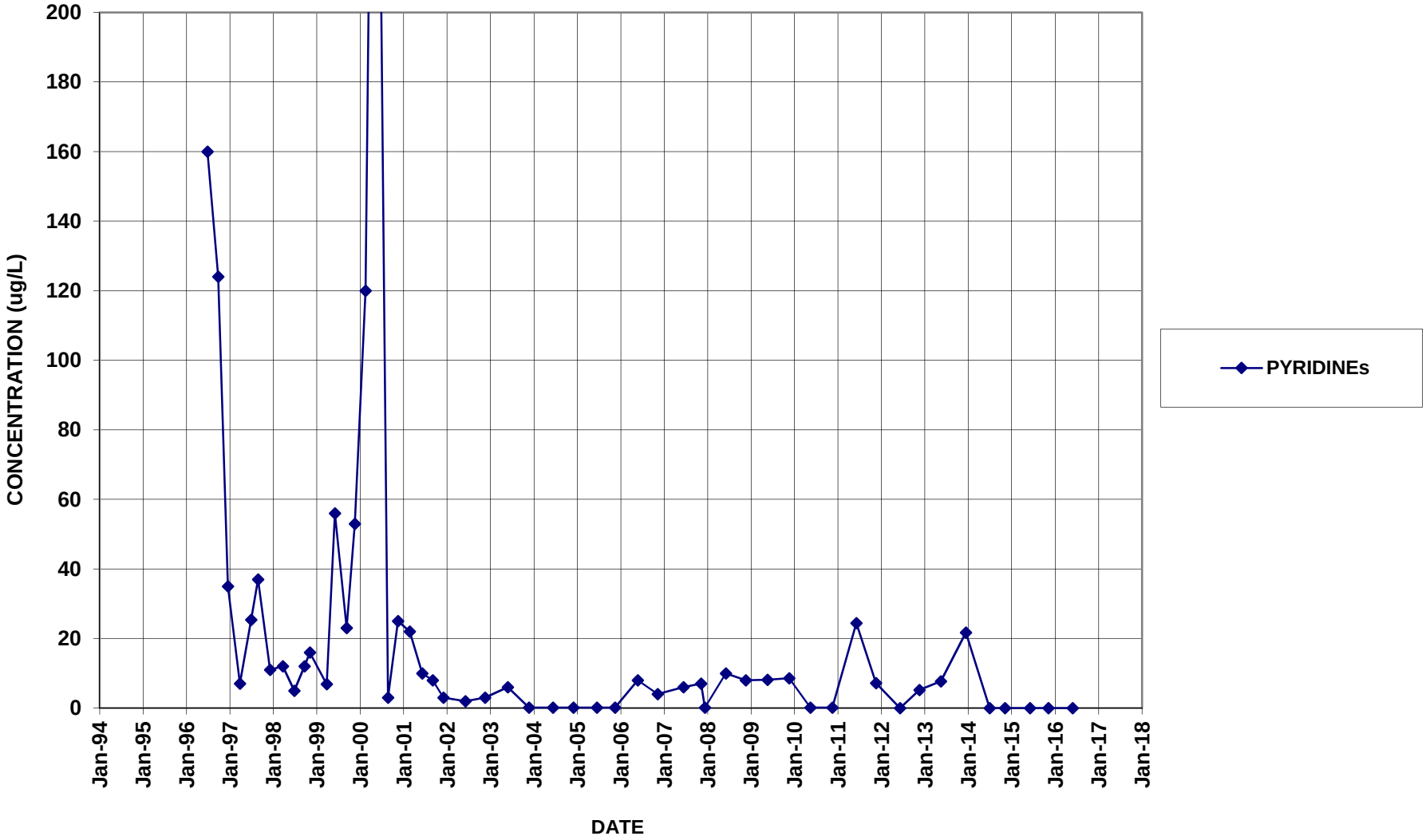
Prepared by: nmb
Reviewed by: jeb

QS-4 (QUARRY SEEP)



Prepared by: nmb
Reviewed by: jeb

QO-2 (QUARRY OUTFALL)



Prepared by: nmb
Reviewed by: jeb