Arch Chemicals, Inc.

Rochester, New York (Site #828018a)

Groundwater Monitoring Report 64
Spring 2020

October 2020

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
SPRING 2020 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

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

October 2020

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
SPRING 2020 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

Prepared by

MACTEC Engineering & Geology, Inc.
Portland, Maine

for

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

October 2020

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

EXECUTIVE SUMMARY

This monitoring report presents the results of an ongoing 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 and June 2020, samples from a total of 40 groundwater monitoring or pumping wells and three 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. Eight of the 40 wells sampled for chloropyridines had contaminant concentrations that were above their respective 5-year prior averages. Eight of the 34 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 quarry ditch had no flow at the time of sampling and, therefore, no sample was collected at QD-1 for the Spring 2020 sampling event. The total concentration of chloropyridines in quarry seep QS-4 was 62 micrograms per liter (µg/L), which is consistent with its prior 5-year average of 62 µg/L. Chloropyridines were not detected in the ditch outfall sample at location QO-2 or the canal water at sample location QO-2S1.

On-site monitoring wells were not checked for the presence of floating (or light) non-aqueous phase liquids (LNAPL) for the Spring 2020 sampling event. Historically, LNAPL has not been observed in any of these wells.

During the period December 2019 through May 2020, the on-site groundwater extraction system pumped approximately 4.8 million gallons of groundwater to the on-site treatment system, containing an estimated 3,000 pounds of chloropyridines and 30 pounds of target volatile organic compounds.

The next regular monitoring event will occur in November 2020 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 2020 sampling event included the collection and analysis of groundwater, surface water, and seep samples from a total of 43 off-site and on-site locations. Samples were collected from May 12 through June 2, 2020, for analysis of selected chloropyridines and volatile organic compounds (VOCs).

This report presents the results of the Spring 2020 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, and the sampling locations are shown on Figures 1 and 2.

The Matrix Field Report, which includes groundwater sampling data sheets, is provided in Appendix A.

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

Groundwater piezometric elevations were measured on May 21, 2020. Piezometric contours were constructed for each water-bearing zone (overburden, bedrock, and deep bedrock) and are presented on Figures 3, 4, and 5, respectively.

On-site monitoring wells were not checked for the presence of LNAPL for the Spring 2020 event. Historically, LNAPL has not been observed in any of these wells.

2.2 SURFACE WATER

Surface water and quarry seep samples were collected as part of the ongoing 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 outfall 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 June 2, 2020. There was no flow at the quarry ditch location where the quarry dewatering discharge enters the ditch (QD-1) and, therefore, no sample was collected at QD-1 for the Spring 2020 sampling event. All quarry-related samples were analyzed for the Arch suite of selected chloropyridines. The quarry locations sampled during the Spring 2020 event are shown on Figure 7.

2.3 ANALYTICAL PROCEDURES

Samples were analyzed for the Arch suite of selected chloropyridines and TCL 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

Laboratory analytical results were reviewed and qualified following USEPA "National Functional Guidelines for Organic Superfund Methods Data Review", January 2017, using professional judgment and guidance from USEPA Region II SOPs No. HW-24 Revision 4, October 2014, and No. HW-22 Revision 5, December 2010. Analytical results were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
  Surrogate Recoveries
* Blank Contamination
* Duplicates
  Laboratory Control Samples (LCS)
  Matrix Spike/Matrix Spike Duplicates (MS/MSD)
  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 one or more VOC surrogates in a subset of samples were less than the laboratory statistically derived control limits, indicating potential low biases. Positive and non-detected results in the following affected samples were qualified estimated with potential low bias (J-/UJ): B-17, BR-106, BR-127, BR-6A, BR-7A, BR-8, MW-106, PW13, PZ-102, PZ-103, and PZ-105.

Percent recoveries of one or more VOC surrogates in a subset of samples were greater than the laboratory statistically derived control limits, indicating potential high biases. Positive results in the following affected samples were qualified estimated with potential high bias (J+): BR-105D, BR-114, MW-114, and PZ-101.

Percent recoveries of the SVOC surrogate in a subset of samples were less than the laboratory statistically derived control limits, indicating potential low biases. Positive and non-detected results in the following affected samples were qualified estimated with potential low bias (J-/UJ): BR117D, B-7, and PZ-14.

Duplicates. No field duplicates were collected for the Spring 2020 sampling event. Precision was evaluated using MS/MSDs.

LCS. Percent recoveries of VOCs acetone (53 to 63) and 2-hexanone (62 to 65) in the LCSs associated with a subset of samples were less than the nominal control limits of 70-130, indicating potential low biases. Nominal control limits were used in the absence of statistically derived laboratory control limits. Positive and non-detect results for acetone and 2-hexanone in a subset of samples were qualified estimated with potential low bias (J-/UJ).

Percent recoveries of pyridine (48) and p-fluoroaniline (44 to 46) in LCSs associated with a subset of samples were below nominal control limits of 50-140, indicating potential low biases for pyridine and p-fluoroaniline in associated samples. Nominal control limits were used in the absence of statistically derived laboratory control limits. p-Fluoroaniline was not detected in any samples and reporting limits in affected samples were qualified estimated (UJ). Positive and non-detect results for pyridine in a subset of samples were qualified estimated with potential low bias (J-/UJ).

MS/MSD. MS/MSD analyses were specified on the chain of custody forms for samples BR7A, PW13, and PW15 for chloropyridines and VOCs. In the MS/MSD associated with SVOC sample BR7A, percent recoveries of 2,6-dichloropyridine (44), p-fluoroaniline (38, 42), and pyridine (48, 48) were less than the 50-140 nominal control limits, indicating potential low bias. p-Fluoroaniline and pyridine were not detected in sample BR7A and reporting limits were qualified estimated (UJ). The detection of 2,6-dichloropyridine in sample BR7A was qualified estimated with potential low bias (J-).

In the MS/MSD associated with VOC sample BR7A, percent recoveries of acetone (57, 59) were less than the 70-130 nominal control limits, indicating potential low bias. Acetone was not detected in sample BR7A and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with SVOC sample PW13, percent recoveries of p-fluoroaniline (47, 47) were less than the 50-140 nominal control limits, indicating potential low bias. p-Fluoroaniline was not detected in sample PW13 and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with VOC sample PW13, percent recoveries for acetone (47, 49) and methylene chloride (66, 64) were less than the 70-130 nominal control limits, indicating potential low bias. Acetone and methylene chloride were not detected in sample PW13, and reporting limits were qualified estimated (UJ).

In the MS/MSD associated with VOC sample PW15, percent recoveries for acetone (63, 68) and chloroform (59, 65) were less than the 70-130 nominal control limits for acetone and less than laboratory control limits for chloroform. Acetone was not detected in sample PW15 and the reporting limit was qualified estimated (UJ). The detection of chloroform in sample PW15 was qualified estimated with potential low bias (J-).

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

3.0 ANALYTICAL RESULTS

3.1 GROUNDWATER

The validated results from the Spring 2020 groundwater monitoring event are provided in Tables 2 and 3. Table 4 provides a comparison of the Spring 2020 analytical results for selected chloropyridines and VOCs in representative wells to mean concentrations of the prior five years (Spring 2015 through Fall 2019). Concentration 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 24 of 25 of the on-site wells sampled in the Spring 2020 event. Concentrations of chloropyridines (sum of all chloropyridine and pyridine isomer concentrations) ranged from not detected (in well PW12) to 580,000 µg/L in well BR-8. 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 15 of the off-site wells that were sampled. Concentrations of total chloropyridines ranged from not detected (in BR-113D, BR-114, MW-114, and PZ-101) to 70,000 µg/L in well PZ-102. Three of the off-site wells contained total chloropyridine concentrations above their respective five-year prior means (see Table 4).

Concentration Contours. Chloropyridine distribution in groundwater is shown as a set of concentration contours on Figure 8. The contours were developed using data from both overburden and bedrock monitoring wells. The chloropyridine plume distribution is generally similar to the prior monitoring event in November 2019 with decreases in six of the seven extraction wells. A notable increase was observed for off-site well PZ-102 to the immediate west of the Site., Lower levels were measured for wells PZ-104 and PZ-105 to the south, and PZ-106, PZ-107, PW14, and BR-6A to the south and east. Chloropyridine levels were highest in on-site well BR-8 (580,000 µg/L).

3.1.2 SELECTED VOCS

On-Site. Selected VOCs were detected in 21 of the 25 on-site wells sampled for VOCs in the Spring 2020 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, BR-126, BR-5A, and E-3) to 14,000 µg/L in PW15. Seven of the on-site wells contained total concentrations of selected VOCs above their respective five-year prior means (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple on-site wells include:

- toluene (in 11 out of 25)
- 1,2-dichlorobenzene (9 of 25)
- carbon disulfide (13 of 25)
- vinyl chloride (7 of 25)
- benzene (12 of 25)
- 1,4-dichlorobenzene (11 of 25)
- 1,3-dichlorobenzene (7 of 25)
- cis-1,2-dichloroethene (4 of 25)

1,2,3-trichlorobenzene (2 of 25)
1,2,4-trichlorobenzene (3 of 25)
bromoform (3 of 25)
1,1-dichloroethane (2 of 25)

Off-Site. Selected VOCs were detected in six of the nine off-site wells sampled for VOCs during the Spring 2020 event. Total concentrations of selected VOCs ranged from not detected (in well BR-105D, BR-114, and PZ-101) to 480 µg/L (in well BR-106). One well (BR-106) contained a total concentration of selected VOCs above its 5-year prior means for VOCs (see Table 4).

In addition to the selected VOCs, other notable constituents detected in off-site wells include:

benzene (in 7 out of 9 wells)
1,2-dichlorobenzene (5 of 9)
1,3-dichlorobenzene (3 of 9)
1,4-dichlorobenzene (3 of 9)
carbon disulfide (6 of 9)
toluene (3 of 9), and
cis-1,2-dichloroethene (2 of 9).

Concentration Contours. The distribution of selected VOCs in groundwater is shown as a set of concentration contours on Figure 9. These contours were developed using both overburden and bedrock groundwater data and are dashed where approximated using historical data. The VOC plume extent is generally consistent with previous monitoring events, with higher VOC concentrations representing the core of the plume at extraction wells PW15 and PW17 and monitoring well PZ-106. Notable decreases were observed in on-site extraction well BR-127 and monitoring well PZ-107, both located along the east side of Site. VOCs observed in off-site wells primarily consist of chlorobenzenes.

3.2 SURFACE WATER AND GROUNDWATER SEEP

Results from the Spring 2020 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 2020 monitoring event. The sample contained 62 µg/L total chloropyridines, which is consistent with its prior five-year mean of 62 µg/L.

3.2.2 QUARRY DISCHARGE DITCH

One location within the quarry discharge ditch was sampled and analyzed for chloropyridines: QO-2, the location where the ditch discharges to the canal. Chloropyridine compounds were not detected in sample 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 presents a summary of the system flow measurements for the on-site extraction wells from December 2019 through May 2020. The total volume pumped during the six-month period was approximately 4.8 million gallons. Overall, the system pumped reliably throughout the period with system flow rates averaging between 15 and 22 gpm on a monthly basis. PW17 continues to be a poorly performing well due to very low yield. Flow for well PW13 dropped significantly at the end of November 2019, which is consistent with its usual pattern of low flow during the late fall and winter months (when the nearby canal is drawn down). Flow for well PW13 increased at the end of May 2020 and continued into June, consistent with past performance of increasing flow rate at this time of the year. A continued drop in average flow from BR-7A was measured (~ 6.4 gpm vs average of 7.3 gpm in 2019 and 11.3 gpm in 2018). This lower flow may have resulted in plume redistribution and higher concentrations in other wells over the period. As noted in Section 5.0, well BR-7A was redeveloped in June 2020. Well BR-127 was off-line for maintenance in early March for pump replacement. The remaining wells (BR-9, PW15 and PW16) pumped at relatively consistent rates through the six-month period.

Table 7 provides a calculation of mass removal rates since the previous groundwater monitoring event (i.e., from December 2019 through May 2020). Arch estimates that approximately 30 pounds of target VOCs and 3,000 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 OPTIMIZATION OF MONITORING NETWORK

Overburden monitoring well B-11 was decommissioned on May 28, 2020. MW-127, another overburden monitoring well located nearby, tracks closely with B-11 and will be used to monitor the plume perimeter along the southeast area of the facility. Well BR-3, which was not sampled in Spring 2019 due to debris in the well, was located, uncovered, and sampled during the Spring 2020 field event. Extraction well pumps were inspected and cleaned for locations BR-9, BR-7A, PW13, PW15, PW16, and PW17. Well BR-7A was redeveloped in June 2020 based on data showing lower well yield over time.

6.0 NEXT MONITORING EVENT

The next regular monitoring event will occur in November 2020 and will include groundwater, surface water, and seep sampling.

Table 8 shows the 2020 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 Feet

MACTEC

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I-390

ERIE BARGE CANAL

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

BR-113/BR-113D

8-8

7-6

LEXINGTON

11-8

GENERAL RAIL SIGNAL CO.

9-6

10-6

RW-1

HOWARD ROAD

DOLOMITE PRODUCTS QUARRY

13-4

Morey

OW-102A

OW-103

BR-122D

PFAUDLER

BR-117/BR-117D

BR-121D (Abandoned)

BR-118/BR-118D

BR-123D

BR-116/BR-116D

I-390

ERIE BARGE CANAL

BR-120D (Abandoned)

BR-119D (Abandoned)

LETTINGTON DRIVE

BR-124D

Figure 1
Spring 2020
Off-Site Groundwater
Monitoring Well Locations

Arch Chemicals
Rochester, NY

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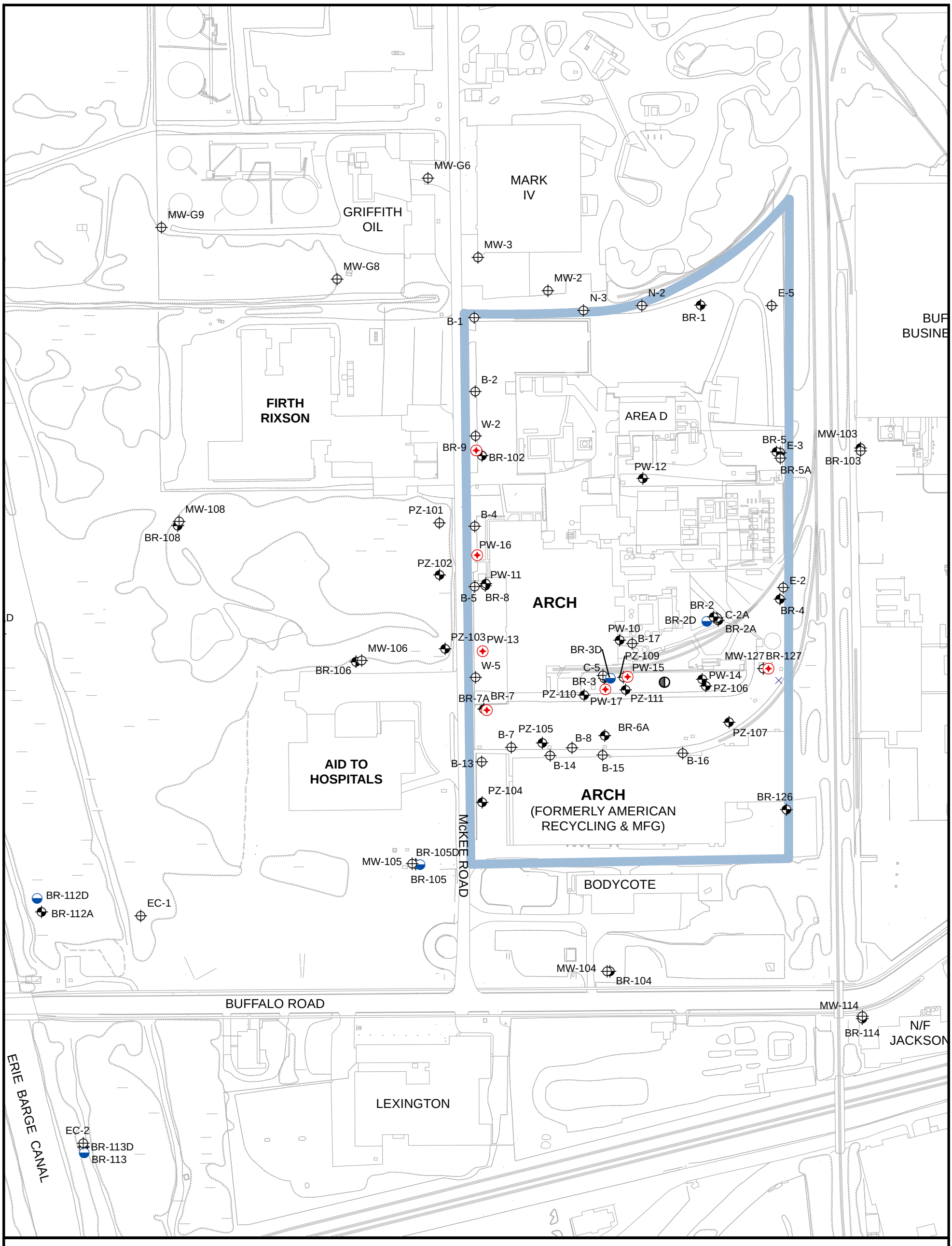

Figure 2
Spring 2020
Onsite Monitoring Well Locations

Arch Chemicals
Rochester, NY

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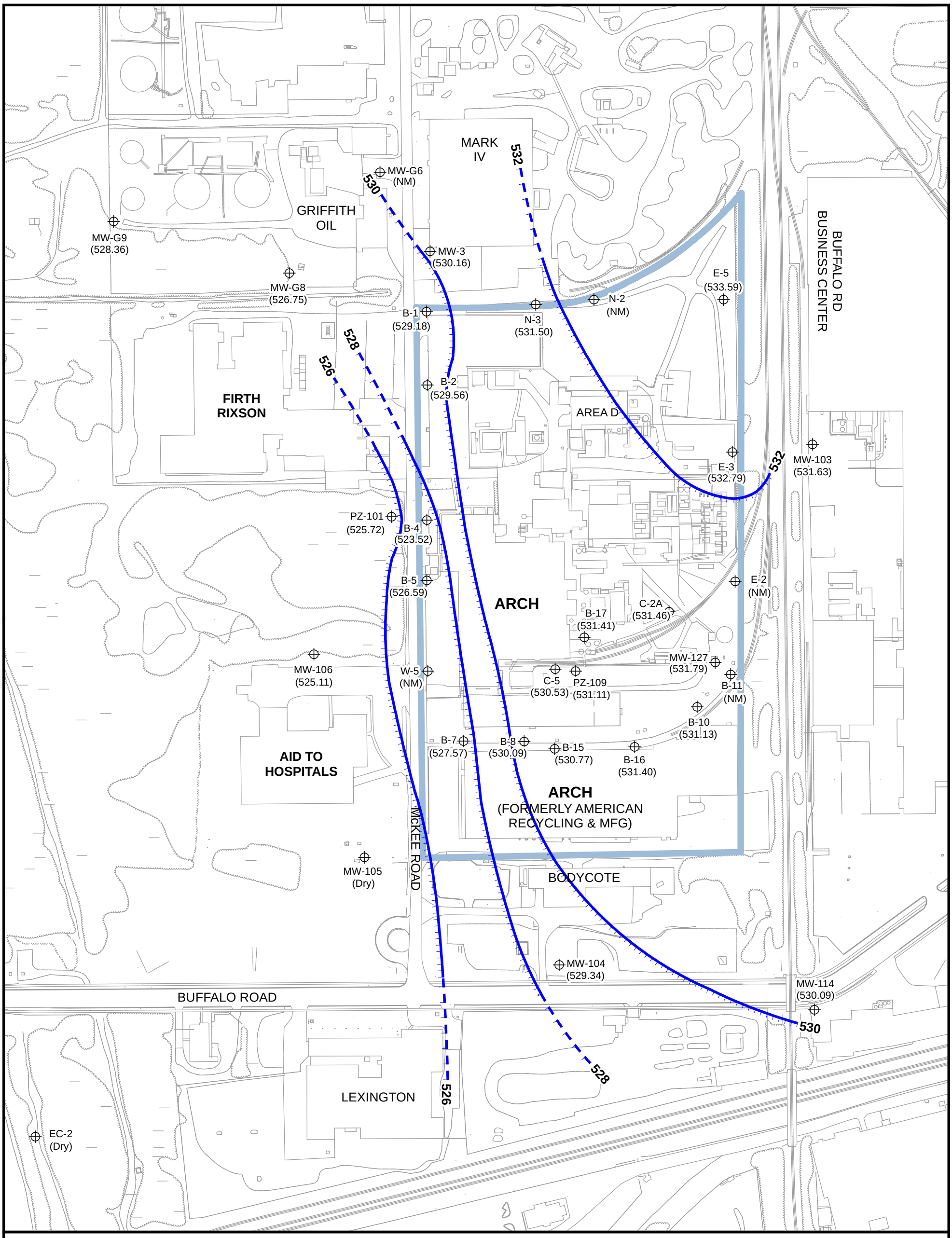

NOTES:
1. Water Levels Measured on May 21, 2020
2. Dashed Contours Reflect Uncertainty
3. NM = Not Measured

Legend

PZ-101 (525.72) — Piezometric Elevation (Feet MSL) at Well or Piezometer

Property Owned by Lonza

Interpreted Groundwater Flow Direction

528 — Overburden Piezometric Elevation Contour (Feet MSL)

0 100 200 Feet

N

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Figure 3
Spring 2020
Overburden Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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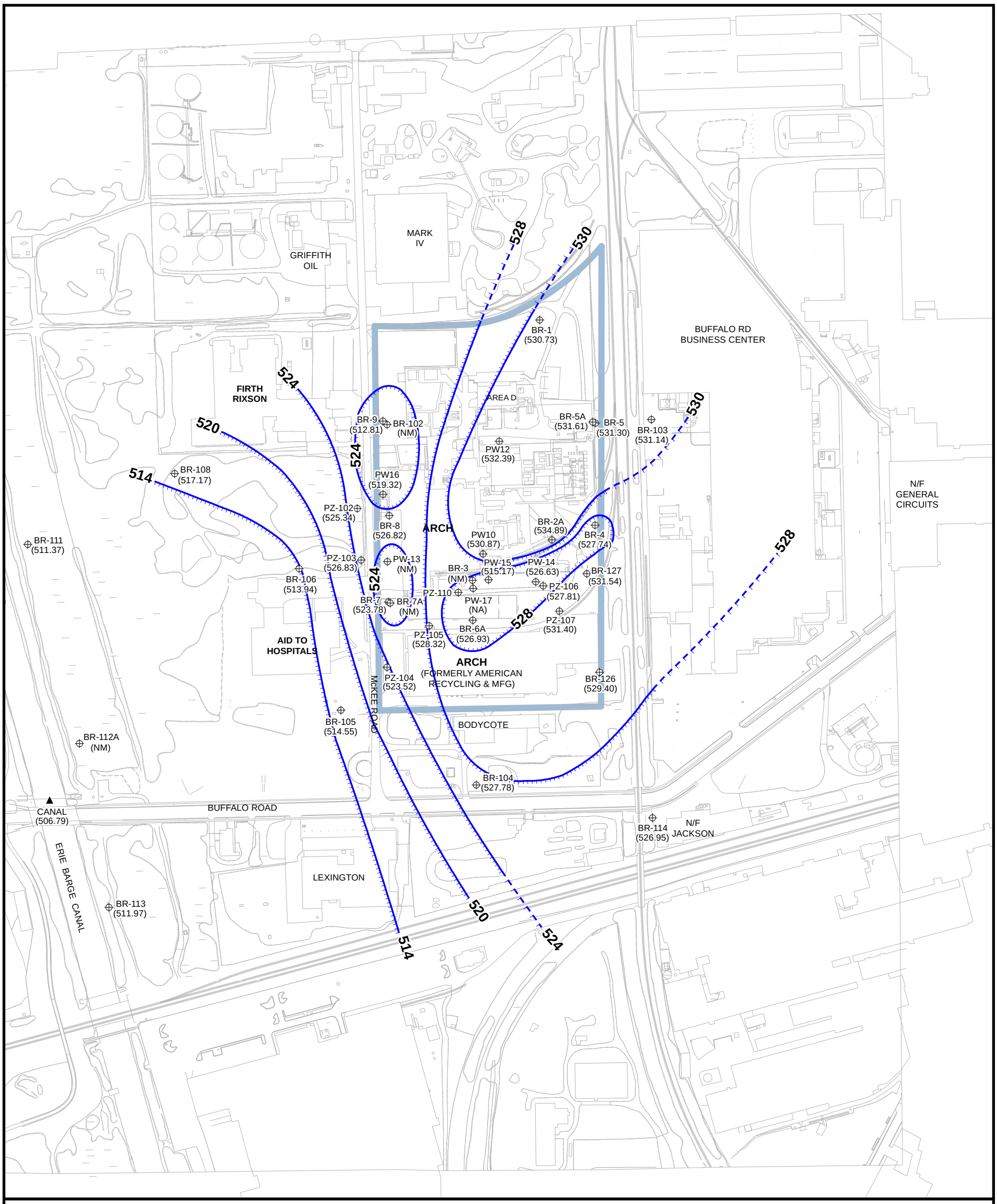

Legend

- BR-114 (526.95) — Piezometric Elevation (Feet MSL) at Well or Piezometer
- ▲ — Piezometric Elevation at Surface Water Measuring Point
- Interpreted Groundwater Flow Direction
- **516** — Bedrock Piezometric Elevation Contour (Feet MSL)
- Property Owned by Lonza

0 150 300 Feet

N

NOTES:

1. Water Levels Measured on May 21, 2020
2. Dashed Contours Reflect Uncertainty

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Figure 4
Spring 2020
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 (509.77) — Piezometric Elevation (Feet MSL) at Deep Bedrock Well

NOTES:

1. Water Levels Measured on May 21, 2020
2. Dashed Contours Reflect Uncertainty
3. Wells BR-105D, BR2D, BR-3D and BR-123D not used in contouring

0 250 500 Feet

N

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I-390

ERIE BARGE CANAL

FIRTH RIXSON

BUFFALO RD. BUSINESS CENTER

ARCH

BR-2D (533.46)

BR-3D (489.78)

AID TO HOSPITALS

BR-105D (510.38)

BR-112D (511.21)

BUFFALO ROAD

CUMBERLAND FARMS PETROLEUM TERMINAL

NESS-W (512.04)

NESS-E (514.92)

LEXINGTON

BR-113D (511.33)

GENERAL RAIL SIGNAL CO.

DOLOMITE PRODUCTS QUARRY

BR-117D (499.48)

BR-118D (501.21)

BR-122D (507.19)

PFAUDLER

BR-123D (520.62)

BR-116D (509.77)

BR-124D (512.06)

LETTINGTON DRIVE

500 501 502 503 504 505 506 508 510

Figure 5
Spring 2020
Deep Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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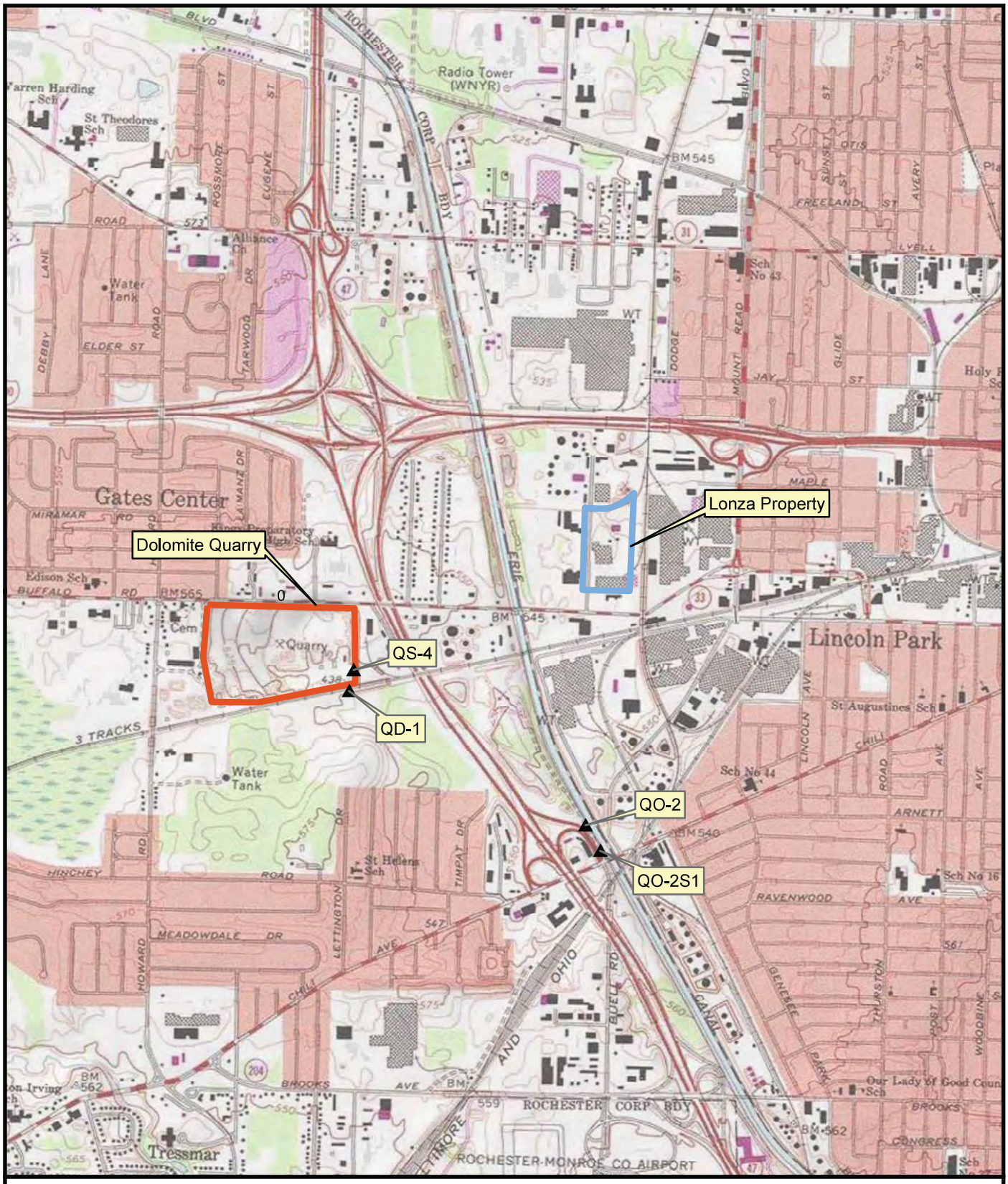

Topographi map: Copyright:© 2013 National Geographic Society, i-cubed

0 1,000 2,000 Feet

N

Legend

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

Figure 6
Spring 2020
Sample Locations
Erie Barge Canal

Arch Chemicals
Rochester, NY

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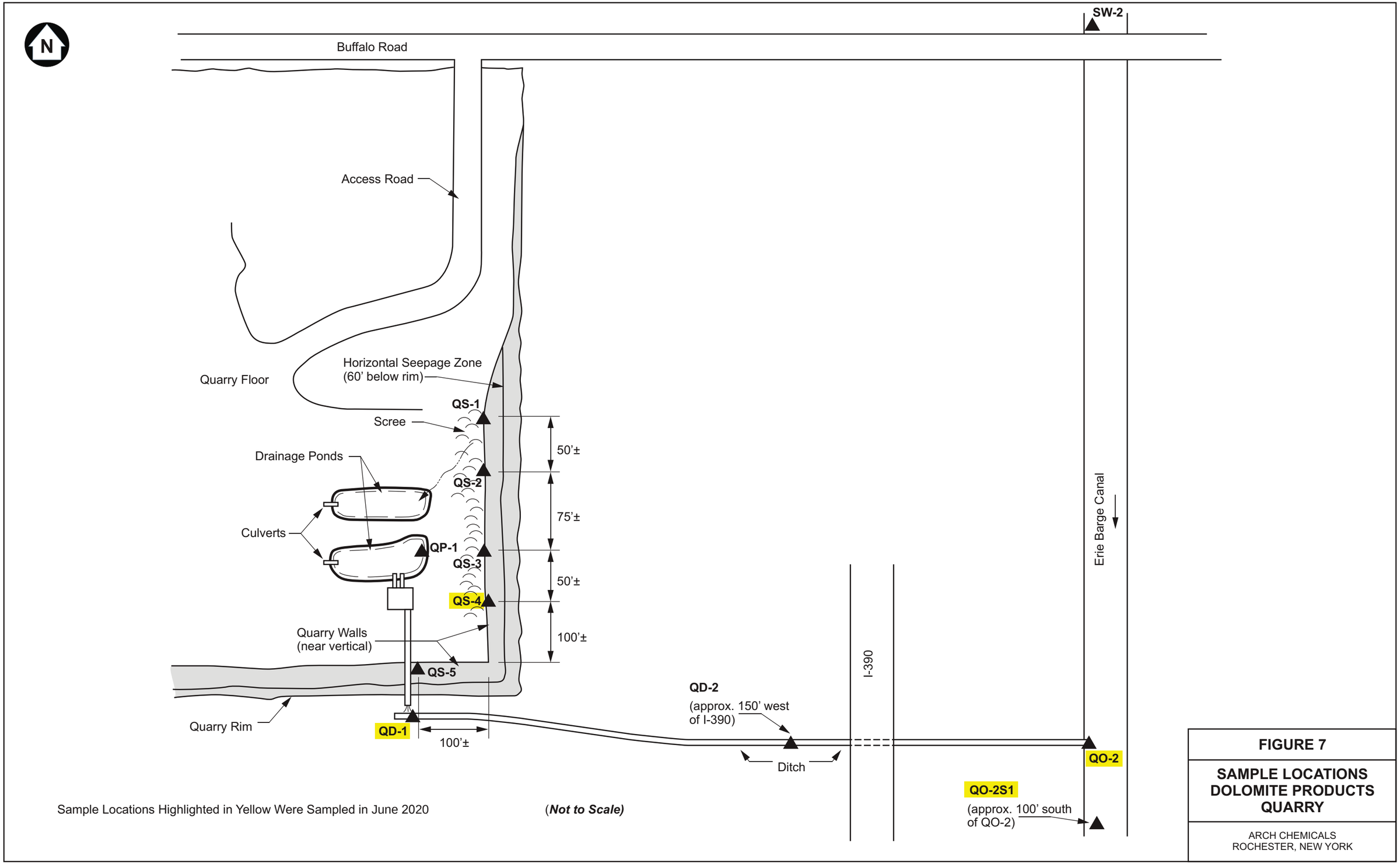


Sample Locations Highlighted in Yellow Were Sampled in June 2020

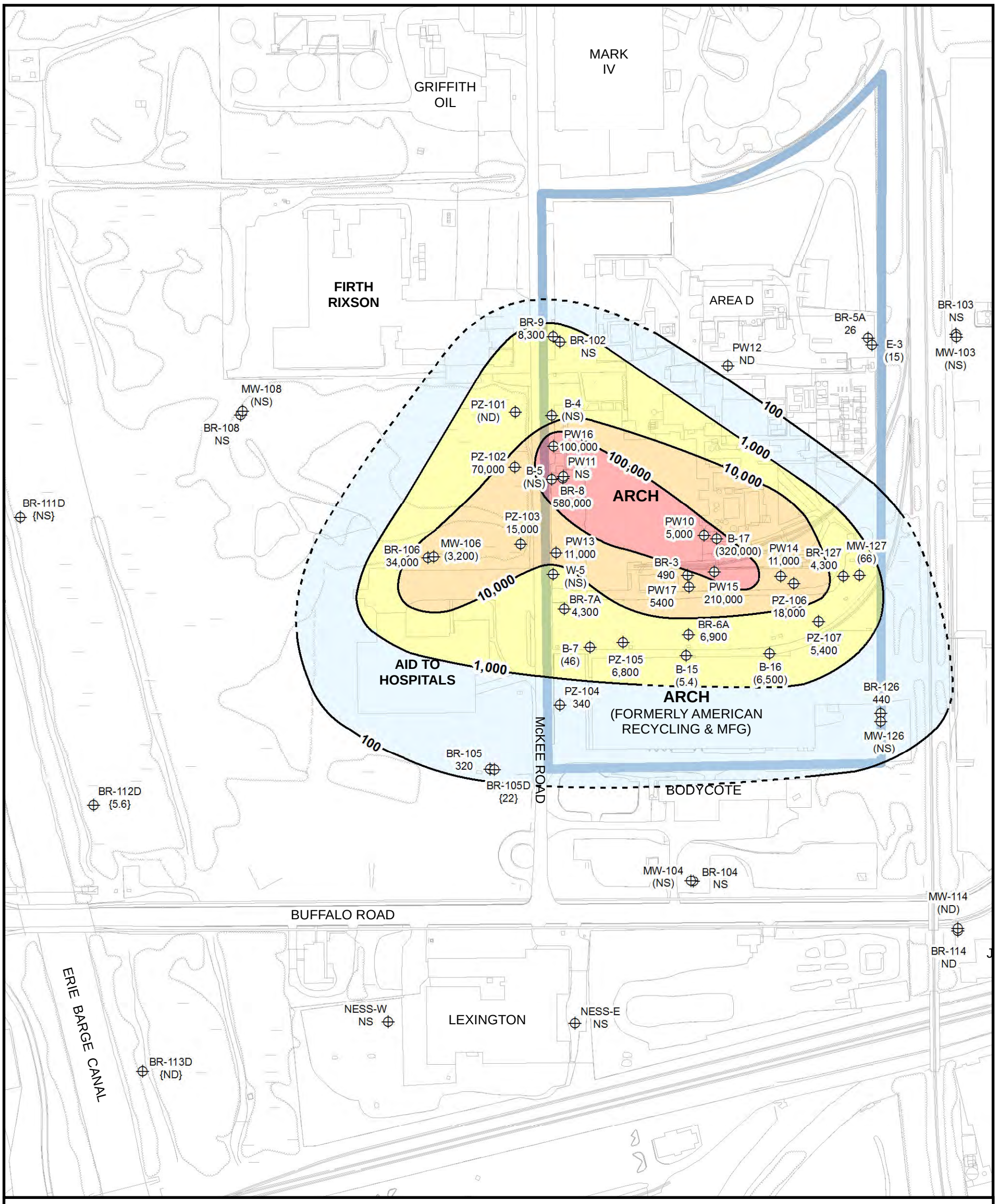
(***Not to Scale)***

FIGURE 7

SAMPLE LOCATIONS
DOLOMITE PRODUCTS
QUARRY

ARCH CHEMICALS
ROCHESTER, NEW YORK

W2004030a.cdr



Legend

- Property Owned by Lonza
- **100** — Chloropyridine Concentration Contour
- MW-106 (28000) — 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

MACTEC

NOTES:

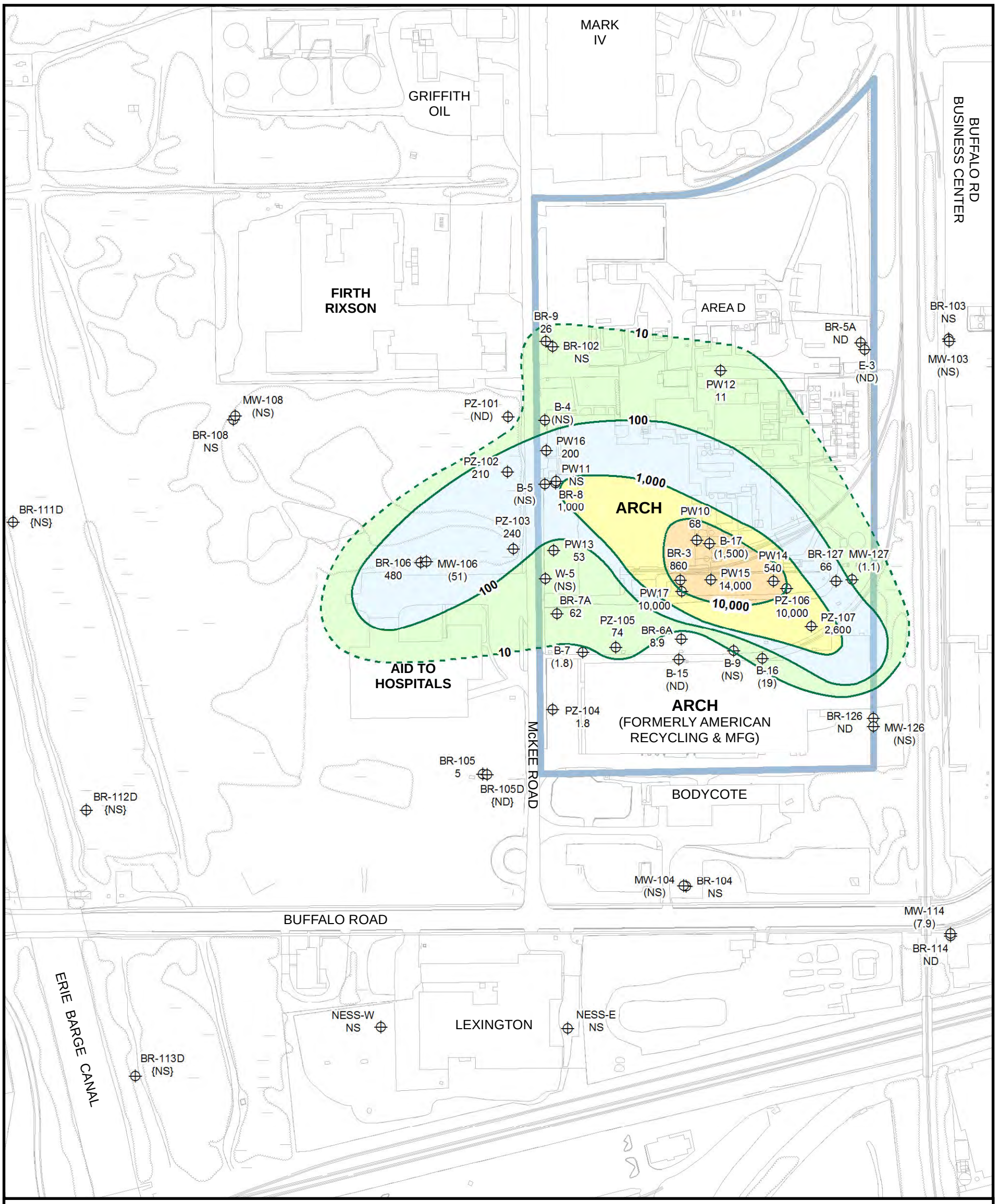
1. Samples Collected May/June 2020
2. Selected chloropyridines consist of 2,6-dichloropyridine, 2-chloropyridine, 3-chloropyridine, 4-chloropyridine, and P-fluoroaniline.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells.
4. Dashed concentration contours represent inferences from historical analytical results.
5. Concentrations are in µg/L.

Prepared/Date: BRP 09-02-20	Checked/Date: NMB 09-02-20

Figure 8
Spring 2020
Selected Chloropyridine Concentration Contours

Arch Chemicals
Rochester, NY

Document: P:\Projects\Arch\Rochester\GIS\MapDocuments\Spring 2020\ChloroPyridine_Contours_Fig8_Spring2020.mxd PDF: P:\Projects\Arch\Arch Roch 2020 GW Monitoring-3617207503\4.0_Deliverables\4.1_Reports\Spring 2020\Figures\Figure_8_ChloroPyridines.pdf 09-02-2020 4:18 PM brian.peters



Legend

- Property Owned by Lonza
- **100** VOC Concentration Contour
- BR-127 550 — 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

MACTEC

NOTES:

1. Samples Collected May/June 2020
2. Original Select VOCs consist of Carbon tetrachloride, Methylene chloride Chloroform, TCE, PCE, and Chlorobenzene.
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

Prepared/Date: BRP 09-02-20	Checked/Date: NMB 09-02-20

Figure 9
Spring 2020
Selected Volatile Organic Compound Concentration Contours

Arch Chemicals
Rochester, NY

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Tables

TABLE 1
SPRING 2020 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	5/27/2020	Sample	X	X
	MW-106	5/27/2020	Sample	X	X
	PZ-101	5/26/2020	Sample	X	X
	PZ-102	5/26/2020	Sample	X	X
	PZ-103	5/26/2020	Sample	X	X
ARCH ROCHESTER	B-15	5/22/2020	Sample	X	X
	B-16	5/22/2020	Sample	X	X
	B-17	6/1/2020	Sample	X	X
	B-7	5/28/2020	Sample	X	X
	BR-126	5/22/2020	Sample	X	X
	BR-127	6/1/2020	Sample	X	X
	BR-3	5/28/2020	Sample	X	X
	BR-5A	6/1/2020	Sample	X	X
	BR-6A	5/22/2020	Sample	X	X
	BR-7A	5/26/2020	Sample	X	X
	BR-8	6/2/2020	Sample	X	X
	BR-9	6/1/2020	Sample	X	X
	E-3	6/1/2020	Sample	X	X
	MW-127	5/28/2020	Sample	X	X
	PW10	6/1/2020	Sample	X	X
	PW12	6/1/2020	Sample	X	X
	PW13	6/2/2020	Sample	X	X
	PW14	5/28/2020	Sample	X	X
	PW15	5/28/2020	Sample	X	X
	PW16	6/2/2020	Sample	X	X
	PW17	5/28/2020	Sample	X	X
	PZ-104	5/22/2020	Sample	X	X
	PZ-105	5/22/2020	Sample	X	X
	PZ-106	5/28/2020	Sample	X	X
	PZ-107	5/22/2020	Sample	X	X
ERIE BARGE CANAL	BR-112D	5/27/2020	Sample	X	
(Samples in canal or property along canal)	BR-113D	5/27/2020	Sample	X	
	QO-2	6/2/2020	Sample	X	
	QO-2S1	6/2/2020	Sample	X	
DOLOMITE PRODUCTS, INC.	BR-117D	5/27/2020	Sample	X	
(Samples at or near Dolomite Quarry)	BR-118D	5/27/2020	Sample	X	
	QS-4	6/2/2020	Sample	X	
N/F Jackson Welding and Gas Products	BR-114	5/26/2020	Sample	X	X
	MW-114	5/26/2020	Sample	X	X
OU-1 (west side of Erie Canal)	BR-122D	5/27/2020	Sample	X	
	BR-123D	5/27/2020	Sample	X	
RG & E RIGHT OF WAY	BR-105	5/26/2020	Sample	X	X
	BR-105D	5/26/2020	Sample	X	X

N/F = now or formerly

TABLE 2
SPRING 2020 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15		B-16		B-17		B-7		BR-105		BR-105D		BR-106		BR-112D		BR-113D		BR-114	
SAMPLE DATE:	5/22/2020		5/22/2020		6/1/2020		5/28/2020		5/26/2020		5/26/2020		5/27/2020		5/27/2020		5/27/2020		5/26/2020	
QC TYPE:	FS		FS		FS		FS		FS		FS		FS		FS		FS		FS	
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)																				
2,6-Dichloropyridine	5.4	J	340	J	12,300	J	29.7	J-	54.5		7	J	2,370		9.65	U	9.62	U	9.69	U
2-Chloropyridine	9.69	U	6,120		278,000		16	J-	270		8.59	J	28,900		5.61	J	9.62	U	9.69	U
3-Chloropyridine	9.69	U	500	U	20,000	U	9.69	UJ	19.3	U	6.75	J	1,440	J	9.65	U	9.62	U	9.69	U
4-Chloropyridine	9.69	U	500	U	20,000	U	9.69	UJ	19.3	UJ	9.53	U	2,000	UJ	9.65	UJ	9.62	UJ	9.69	UJ
p-Fluoroaniline	9.69	U	500	U	20,000	U	9.69	UJ	19.3	U	9.53	U	2,000	U	9.65	U	9.62	U	9.69	U
Pyridine	9.69	U	500	U	28,600		9.69	UJ	19.3	UJ	9.53	U	1,380	J-	9.65	UJ	9.62	UJ	9.69	UJ

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
J- = Estimated with a potential low bias
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 2
SPRING 2020 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-117D		BR-118D		BR-122D		BR-123D		BR-126		BR-127		BR-3		BR-5A		BR-6A		BR-7A	
SAMPLE DATE:	5/27/2020		5/27/2020		5/27/2020		5/27/2020		5/22/2020		6/1/2020		5/28/2020		6/1/2020		5/22/2020		5/26/2020	
QC TYPE:	FS		FS		FS		FS		FS		FS		FS		FS		FS		FS	
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)																				
2,6-Dichloropyridine	9.72	UJ	9.74	U	9.58	U	9.66	U	110		2,000	U	52.8		15.3		1,210	J	414	J-
2-Chloropyridine	9.33	J-	5.48	J	8.29	J	27.5		334		4,250		402		10.9		5,720		3,920	
3-Chloropyridine	9.72	UJ	9.74	U	9.58	U	9.66	U	80	U	2,000	U	31.4		9.8	U	2,000	U	500	U
4-Chloropyridine	9.72	UJ	9.74	UJ	9.58	UJ	9.66	UJ	80	U	2,000	U	24.2	UJ	9.8	U	2,000	U	500	UJ
p-Fluoroaniline	9.72	UJ	9.74	U	9.58	U	9.66	U	80	U	2,000	U	24.2	U	9.8	U	2,000	U	500	U
Pyridine	9.72	UJ	9.74	UJ	9.58	UJ	9.66	UJ	80	U	2,000	U	24.2	U	9.8	U	2,000	U	500	UJ

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
J- = Estimated with a potential low bias
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 2
SPRING 2020 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-8		BR-9		E-3		MW-106		MW-114		MW-127		PW10		PW12		PW13		PW14	
SAMPLE DATE:	6/2/2020		6/1/2020		6/1/2020		5/27/2020		5/26/2020		5/28/2020		6/1/2020		6/1/2020		6/2/2020		5/28/2020	
QC TYPE:	FS		FS		FS		FS		FS		FS		FS		FS		FS		FS	
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)																				
2,6-Dichloropyridine	50,000	U	352	J	9.69	U	331	J	9.62	U	40.8		1,280		9.78	U	2,000	U	2,000	UJ
2-Chloropyridine	493,000		7,930		14.5		2,830		9.62	U	24.7		3,230		9.78	U	11,300		10,800	J-
3-Chloropyridine	50,000	U	500	U	9.69	U	500	U	9.62	U	10	U	306		9.78	U	2,000	U	2,000	UJ
4-Chloropyridine	50,000	U	500	U	9.69	U	500	UJ	9.62	UJ	10	UJ	200	U	9.78	U	2,000	UJ	2,000	UJ
p-Fluoroaniline	50,000	U	500	U	9.69	U	500	U	9.62	U	10	U	200	U	9.78	U	2,000	U	2,000	UJ
Pyridine	88,000		500	U	9.69	U	500	UJ	9.62	UJ	10	U	171	J	9.78	U	2,000	U	2,000	UJ

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

J- = Estimated with a potential low bias

µg/L = micrograms per Liter

FS = Field sample

FD = Field duplicate

TABLE 2
SPRING 2020 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW15		PW16		PW17		PZ-101		PZ-102		PZ-103		PZ-104		PZ-105		PZ-106		PZ-107	
SAMPLE DATE:	5/28/2020		6/2/2020		5/28/2020		5/26/2020		5/26/2020		5/26/2020		5/22/2020		5/22/2020		5/28/2020		5/22/2020	
QC TYPE:	FS		FS		FS		FS		FS		FS		FS		FS		FS		FS	
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)																				
2,6-Dichloropyridine	7,410	J	10,000	U	2,000	U	9.58	U	4,000	U	1,110		63.4	J	917	J	5,000	U	1,000	U
2-Chloropyridine	190,000		100,000		5,420		9.58	U	52,800		11,900		279		5,920		17,600		5,390	
3-Chloropyridine	10,000	U	10,000	U	2,000	U	9.58	U	6,610		673	J	100	U	1,000	U	5,000	U	1,000	U
4-Chloropyridine	10,000	UJ	10,000	U	2,000	UJ	9.58	U	4,000	U	800	U	100	U	1,000	U	5,000	UJ	1,000	U
p-Fluoroaniline	10,000	U	10,000	U	2,000	U	9.58	U	4,000	U	800	U	100	U	1,000	U	5,000	U	1,000	U
Pyridine	15,300		10,000	U	2,000	U	9.58	U	11,000		1,290		100	U	1,000	U	5,000	U	1,000	U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
J- = Estimated with a potential low bias
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15	B-16	B-17	B-7	BR-105	BR-105D	BR-106	BR-114	BR-126
SAMPLE DATE:	5/22/2020	5/22/2020	6/1/2020	5/28/2020	5/26/2020	5/26/2020	5/27/2020	5/26/2020	5/22/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,1,2-Trichloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,1-Dichloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,1-Dichloroethene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,2,3-Trichlorobenzene	5 U	5 U	59.5 J-	5 U	5 U	5 U	12.5 UJ	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	255 J-	5 U	5 U	5 U	12.5 UJ	5 U	5 U
1,2-Dibromo-3-chloropropane	10 U	10 U	100 UJ	10 U	10 U	10 U	25 UJ	10 U	10 U
1,2-Dibromoethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,2-Dichlorobenzene	2 U	1.5 J	20 UJ	2 U	1.57 J	2 U	219 J-	2 U	2 U
1,2-Dichloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,2-Dichloropropane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
1,3-Dichlorobenzene	2 U	2 U	37.2 J-	2 U	2 U	2 U	18.7 J-	2 U	2 U
1,4-Dichlorobenzene	2 U	2.08	64.1 J-	2 U	2 U	2 U	23.6 J-	2 U	2 U
1,4-Dioxane	20 U	20 U	200 UJ	20 U	20 U	20 U	50 UJ	20 U	20 U
2-Butanone	10 U	10 U	100 UJ	10 U	10 U	10 U	25 UJ	10 U	10 U
2-Hexanone	5 U	5 U	50 UJ	5 U	5 U	5 U	12.5 UJ	5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	50 UJ	5 U	5 U	5 U	12.5 UJ	5 U	5 U
Acetone	10 U	10 U	100 UJ	10 U	10 UJ	10 UJ	25 UJ	10 UJ	10 U
Benzene	1 U	1.08	16.4 J-	1 U	0.695 J	5.64 J+	15.5 J-	1.1 J+	0.998 J
Bromochloromethane	5 U	5 U	50 UJ	5 U	5 U	5 U	12.5 UJ	5 U	5 U
Bromodichloromethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Bromoform	5 U	5 U	118 J-	5 U	5 U	5 U	12.5 UJ	5 U	5 U
Bromomethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Carbon disulfide	2 U	2 U	57.4 J-	2 U	2 U	3.07 J+	4.79 J-	1.07 J+	2 U
Carbon tetrachloride	2 U	1.74 J	297 J-	2 U	2 U	2 U	5 UJ	2 U	2 U
Chlorobenzene	2 U	4.32	124 J-	1.76 J	5.04	2 U	483 J-	2 U	2 U
Chloroethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15	B-16	B-17	B-7	BR-105	BR-105D	BR-106	BR-114	BR-126
SAMPLE DATE:	5/22/2020	5/22/2020	6/1/2020	5/28/2020	5/26/2020	5/26/2020	5/27/2020	5/26/2020	5/22/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chloroform	2 U	13.3	653 J-	2 U	2 U	2 U	5 UJ	2 U	2 U
Chloromethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
cis-1,2-Dichloroethene	2 U	1.04 J	20 UJ	2 U	3.07	5.22 J+	5 UJ	2 U	2 U
cis-1,3-Dichloropropene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Cyclohexane	10 U	10 U	100 UJ	10 U	10 U	12 J+	25 UJ	10 U	10 U
Dibromochloromethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Dichlorodifluoromethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Ethylbenzene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Isopropylbenzene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Methyl cyclohexane	2 U	2 U	20 UJ	2 U	2 U	7.05 J+	5 UJ	2 U	2 U
Methyl Tertbutyl Ether	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Methylene chloride	5 U	5 U	50 UJ	5 U	5 U	5 U	12.5 UJ	5 U	5 U
Styrene	5 U	5 U	50 UJ	5 U	5 U	5 U	12.5 UJ	5 U	5 U
Tetrachloroethene	2 U	2 U	455 J-	2 U	2 U	2 U	5 UJ	2 U	2 U
Toluene	2 U	2 U	79.4 J-	2 U	2 U	2 U	3.27 J-	2 U	2 U
trans-1,2-Dichloroethene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Trichloroethene	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Trichlorofluoromethane	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Vinyl chloride	2 U	1.07 J	20 UJ	2 U	4.8	2 U	5 UJ	2 U	2 U
Xylene, o	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U
Xylenes (m&p)	2 U	2 U	20 UJ	2 U	2 U	2 U	5 UJ	2 U	2 U

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-8	BR-9	E-3	MW-106
SAMPLE DATE:	6/1/2020	5/28/2020	6/1/2020	5/22/2020	5/26/2020	6/2/2020	6/1/2020	6/1/2020	5/27/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2.05	2 U	2 UJ
1,1,2,2-Tetrachloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	77.5	2 U	2 UJ
1,1,2-Trichloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
1,1-Dichloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	10.7	2 U	2 UJ
1,1-Dichloroethene	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2.06	2 U	2 UJ
1,2,3-Trichlorobenzene	5 UJ	25 U	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	5 UJ
1,2,4-Trichlorobenzene	5 UJ	25 U	5 U	2.52 J-	5 UJ	50 UJ	5 U	5 U	5 UJ
1,2-Dibromo-3-chloropropane	10 UJ	50 U	10 U	10 UJ	10 UJ	100 UJ	10 U	10 U	10 UJ
1,2-Dibromoethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
1,2-Dichlorobenzene	2 UJ	10 U	2 U	1.11 J-	29.7 J-	330 J-	24.1	2 U	12.9 J-
1,2-Dichloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
1,2-Dichloropropane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
1,3-Dichlorobenzene	4.21 J-	10 U	2 U	2 UJ	12.8 J-	127 J-	4.48	2 U	2 UJ
1,4-Dichlorobenzene	6.98 J-	10 U	2 U	2 UJ	6.5 J-	79.3 J-	2.94	2 U	2 UJ
1,4-Dioxane	20 UJ	100 U	20 U	20 UJ	20 UJ	200 UJ	20 U	20 U	20 UJ
2-Butanone	10 UJ	50 U	10 U	10 UJ	10 UJ	100 UJ	10 U	10 U	10 UJ
2-Hexanone	5 UJ	25 U	5 UJ	5 UJ	5 UJ	50 UJ	5 U	5 UJ	5 UJ
4-Methyl-2-pentanone	5 UJ	25 U	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	5 UJ
Acetone	10 UJ	50 U	10 UJ	9.92 J-	10 UJ	100 UJ	10 U	10 UJ	10 UJ
Benzene	0.815 J-	5 U	1 U	1.07 J-	1.64 J-	22 J-	16.2	1 U	2.22 J-
Bromochloromethane	5 UJ	25 U	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	5 UJ
Bromodichloromethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Bromoform	5 UJ	25 U	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	5 UJ
Bromomethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Carbon disulfide	3.02 J-	6.37 J	2 U	2 UJ	5.53 J-	11.4 J-	1.06 J	2 U	2 UJ
Carbon tetrachloride	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Chlorobenzene	2.27 J-	10 U	2 U	7.89 J-	61.6 J-	1,030 J-	23.8	2 U	47.2 J-
Chloroethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-127	BR-3	BR-5A	BR-6A	BR-7A	BR-8	BR-9	E-3	MW-106
SAMPLE DATE:	6/1/2020	5/28/2020	6/1/2020	5/22/2020	5/26/2020	6/2/2020	6/1/2020	6/1/2020	5/27/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chloroform	57.2 J-	715	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Chloromethane	2 UJ	20.1	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
cis-1,2-Dichloroethene	1.64 J-	10 U	2 U	2 UJ	2 UJ	20 UJ	156	2 U	2 UJ
cis-1,3-Dichloropropene	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Cyclohexane	10 UJ	50 U	10 U	10 UJ	10 UJ	100 UJ	10.1	10 U	10 UJ
Dibromochloromethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Dichlorodifluoromethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Ethylbenzene	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	1.86 J	2 U	2 UJ
Isopropylbenzene	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	1.08 J	2 U	2 UJ
Methyl cyclohexane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	3.29	2 U	2 UJ
Methyl Tertbutyl Ether	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Methylene chloride	5 UJ	116	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	3.96 J-
Styrene	5 UJ	25 U	5 U	5 UJ	5 UJ	50 UJ	5 U	5 U	5 UJ
Tetrachloroethene	2.88 J-	30.1	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Toluene	1.6 J-	19.3	2 U	25.2 J-	2 UJ	90.3 J-	1.25 J	2 U	2 UJ
trans-1,2-Dichloroethene	2 UJ	10 U	2 U	2.41 J-	2 UJ	20 UJ	2 U	2 U	2 UJ
trans-1,3-Dichloropropene	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Trichloroethene	3.73 J-	10 U	2 U	1.04 J-	2 UJ	20 UJ	2.14	2 U	2 UJ
Trichlorofluoromethane	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Vinyl chloride	3.29 J-	10.6	2 U	33.2 J-	2 UJ	20 UJ	151	2 U	2 UJ
Xylene, o	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ
Xylenes (m&p)	2 UJ	10 U	2 U	2 UJ	2 UJ	20 UJ	2 U	2 U	2 UJ

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-114	MW-127	PW10	PW12	PW13	PW14	PW15	PW16	PW17
SAMPLE DATE:	5/26/2020	5/28/2020	6/1/2020	6/1/2020	6/2/2020	5/28/2020	5/28/2020	6/2/2020	5/28/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	1.57 J-	20 U	100 U	10 U	100 U
1,1-Dichloroethene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,2,3-Trichlorobenzene	5 U	5 U	10.3	5 U	5 UJ	50 U	250 U	25 U	250 U
1,2,4-Trichlorobenzene	5 U	5 U	30.1	5 U	5 UJ	50 U	250 U	25 U	250 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	10 UJ	100 U	500 U	50 U	500 U
1,2-Dibromoethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,2-Dichlorobenzene	2 U	2 U	1.73 J	2 U	37.5 J-	20 U	100 U	244	100 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
1,3-Dichlorobenzene	2 U	2 U	2 U	2 U	7.68 J-	20 U	100 U	54.8	100 U
1,4-Dichlorobenzene	2 U	2 U	2 U	2 U	6.82 J-	20 U	62.9 J	44	100 U
1,4-Dioxane	20 U	20 U	20 U	20 U	20 UJ	200 U	1,000 U	100 U	1,000 U
2-Butanone	10 U	10 U	10 U	10 U	10 UJ	100 U	500 U	50 U	500 U
2-Hexanone	5 U	5 U	5 UJ	5 UJ	5 UJ	50 U	250 U	25 U	250 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 UJ	50 U	250 U	25 U	250 U
Acetone	10 UJ	10 U	10 UJ	10 UJ	10 UJ	100 U	500 UJ	50 UJ	500 U
Benzene	1 U	1 U	1 U	1 U	3.48 J-	10 U	47 J	6.02	50 U
Bromochloromethane	5 U	5 U	5 U	5 U	5 UJ	50 U	250 U	25 U	250 U
Bromodichloromethane	2 U	2 U	2 U	6.79	2 UJ	20 U	100 U	10 U	100 U
Bromoform	5 U	5 U	4.32 J	5 U	5 UJ	50 U	339	25 U	250 U
Bromomethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Carbon disulfide	1.11 J+	2 U	2.37	2 U	1.38 J-	31.6	1,120	6.94 J	5,150
Carbon tetrachloride	2 U	2 U	20.7	2 U	2 UJ	20 U	5,120	10 U	931
Chlorobenzene	2 U	2 U	2 U	2 U	51.3 J-	20 U	78.6 J	204	100 U
Chloroethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	MW-114	MW-127	PW10	PW12	PW13	PW14	PW15	PW16	PW17
SAMPLE DATE:	5/26/2020	5/28/2020	6/1/2020	6/1/2020	6/2/2020	5/28/2020	5/28/2020	6/2/2020	5/28/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chloroform	5.59 J+	1.12 J	23.8	11.1	1.38 J-	492	7,100 J-	10 U	5,890
Chloromethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
cis-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	71 J
cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Cyclohexane	10 U	10 U	10 U	10 U	10 UJ	100 U	500 U	50 U	500 U
Dibromochloromethane	2 U	2 U	2 U	3.09	2 UJ	20 U	100 U	10 U	100 U
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Ethylbenzene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Isopropylbenzene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Methyl cyclohexane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Methyl Tertbutyl Ether	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Methylene chloride	5 U	5 U	5 U	5 U	5 UJ	50 U	730	25 U	1410
Styrene	5 U	5 U	5 U	5 U	5 UJ	50 U	250 U	25 U	250 U
Tetrachloroethene	2 U	2 U	16.7	2 U	2 UJ	35.3	525	10 U	1,980
Toluene	2 U	2 U	1.11 J	2 U	1.11 J-	10.2 J	72.6 J	24.9	100 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Trichloroethene	2.28 J+	2 U	7.2	2 U	2 UJ	15.4 J	66.9 J	10 U	100 U
Trichlorofluoromethane	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Vinyl chloride	2 U	2 U	2 U	2 U	1.8 J-	20 U	100 U	10 U	150
Xylene, o	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U
Xylenes (m&p)	2 U	2 U	2 U	2 U	2 UJ	20 U	100 U	10 U	100 U

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/26/2020	5/26/2020	5/26/2020	5/22/2020	5/22/2020	5/28/2020	5/22/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)							
1,1,1-Trichloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,1,2,2-Tetrachloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,1,2-Trichloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,1-Dichloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,1-Dichloroethene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,2,3-Trichlorobenzene	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
1,2,4-Trichlorobenzene	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
1,2-Dibromo-3-chloropropane	10 U	10 UJ	25 UJ	10 U	10 UJ	500 U	200 U
1,2-Dibromoethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,2-Dichlorobenzene	2 U	56.5 J-	131 J-	2 U	3.96 J-	100 U	40 U
1,2-Dichloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,2-Dichloropropane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
1,3-Dichlorobenzene	2 U	6.79 J-	33 J-	2 U	2 UJ	100 U	40 U
1,4-Dichlorobenzene	2 U	5.54 J-	29.2 J-	1.02 J	1.48 J-	100 U	40 U
1,4-Dioxane	20 U	20 UJ	50 UJ	20 U	20 UJ	1,000 U	400 U
2-Butanone	10 U	10 UJ	25 UJ	10 U	10 UJ	500 U	200 U
2-Hexanone	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 UJ	100 U
4-Methyl-2-pentanone	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
Acetone	7.7 J	10 UJ	25 UJ	10 U	10 UJ	500 UJ	200 UJ
Benzene	1 U	8.19 J-	6.02 J-	1 U	4.89 J-	50 U	20 U
Bromochloromethane	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
Bromodichloromethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Bromoform	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
Bromomethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Carbon disulfide	2 U	15.4 J-	4.15 J-	2 U	2 UJ	892	40 U
Carbon tetrachloride	2 U	2 UJ	5 UJ	2 U	2 UJ	90 J	284
Chlorobenzene	2 U	197 J-	236 J-	1.79 J	73.8 J-	100 U	40 U
Chloroethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U

TABLE 3
SPRING 2020 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	5/26/2020	5/26/2020	5/26/2020	5/22/2020	5/22/2020	5/28/2020	5/22/2020
QC TYPE:	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)							
Chloroform	2 U	14.2 J-	5 UJ	2 U	2 UJ	8,190	1,910
Chloromethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
cis-1,2-Dichloroethene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
cis-1,3-Dichloropropene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Cyclohexane	10 U	10 UJ	25 UJ	10 U	10 UJ	500 U	200 U
Dibromochloromethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Dichlorodifluoromethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Ethylbenzene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Isopropylbenzene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Methyl cyclohexane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Methyl Tertbutyl Ether	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Methylene chloride	5 U	5 UJ	12.5 UJ	5 U	5 UJ	1,370	342
Styrene	5 U	5 UJ	12.5 UJ	5 U	5 UJ	250 U	100 U
Tetrachloroethene	2 U	2 UJ	5 UJ	2 U	2 UJ	611	81.9
Toluene	2 U	9.79 J-	2.62 J-	2 U	2 UJ	100 U	40 U
trans-1,2-Dichloroethene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
trans-1,3-Dichloropropene	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Trichloroethene	2 U	2 UJ	5 UJ	2 U	2 UJ	99.2 J	40 U
Trichlorofluoromethane	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Vinyl chloride	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Xylene, o	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U
Xylenes (m&p)	2 U	2 UJ	5 UJ	2 U	2 UJ	100 U	40 U

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

J- = Estimated with a potential low bias

J+ = Estimated with a potential high bias

µg/L = micrograms per Liter

FS = Field sample

FD = Field duplicate

TABLE 4
COMPARISON OF SPRING 2020
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 2020 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2020 RESULT
ON-SITE WELLS/LOCATIONS								
B-15	10	13,000	55	5.4	10	1,600	ND	ND
B-16	10	33,000	1100	**6,500**	10	4,500	6.1	**19**
B-17	5	28,000,000	670,000	320,000	5	350,000	6,900	1,500
B-7	5	9,100	120	46	5	270	4.1	1.8
BR-126	10	12,000	880	440	10	240	ND	ND
BR-127	10	44,000	18,000	4,300	10	1,300	310	66
BR-3	4	6,500,000	960	490	4	930,000	350	**860**
BR-5A	10	1,700	33	26	10	9,400	ND	ND
BR-6A	10	140,000	13,000	6,900	10	69,000	1,500	8.9
BR-7A	10	510,000	6,800	4,300	10	5,600	50	**62**
BR-8	10	730,000	380,000	**580,000**	10	7,800	740	**1,000**
BR-9	10	2,400	1,000	**8,300**	10	210	13	**26**
E-3	5	600	12	**15**	5	15,000	ND	ND
MW-127	10	15,000	910	66	10	7,500	0.14	**1.1**
PW10	10	500,000	91,000	5,000	10	120,000	690	68
PW12	10	15,000	61	ND	10	120,000	120	11
PW13	10	94,000	26,000	11,000	10	1,800	150	53
PW14	10	99,000	29,000	11,000	10	160,000	1,600	540
PW15	10	620,000	330,000	210,000	10	57,000	23,000	14,000
PW16	10	180,000	100,000	100,000	10	1,200	440	200
PW17	10	75,000	21,000	5,400	10	66,000	17,000	10,000
PZ-104	10	9,100	550	340	10	52	2.4	1.8
PZ-105	10	190,000	4,700	**6,800**	10	9,900	27	**74**
PZ-106	10	290,000	26,000	18,000	10	1,400,000	14,000	10,000
PZ-107	10	31,000	10,000	5,400	10	160,000	40,000	2,600
OFF-SITE WELLS/LOCATIONS								
BR-105	10	24,000	580	320	10	350	6.6	5.0
BR-105D	10	17,000	130	22	10	230	0.19	ND
BR-106	10	46,000	18,000	**34,000**	10	12,000	210	**480**
BR-112D	5	310	14	6		4.3		
BR-113D	5	490	1.3	ND		2.8		
BR-114	5	520	1.1	ND	5	12	ND	ND
BR-117D	5	80	1.1	**9**		1.9		
BR-118D	5	330	11	6		6.6		
BR-122D	5	650	1.2	**8.3**		ND		

TABLE 4
COMPARISON OF SPRING 2020
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 2020 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	MAY 2020 RESULT
BR-123D	5	860	47	28		7		
MW-106	10	130,000	25,000	3,200	10	4,000	330	51
MW-114	5	18	ND	ND	5	27	18	7.9
PZ-101	10	27,000	130	ND	10	620	1.3	ND
PZ-102	10	210,000	30,000	**70,000**	10	11,000	300	210
PZ-103	10	230,000	44,000	15,000	10	46,000	430	240
QO-2	9	380	ND	ND		ND		
QO-2S1	10	27	ND	ND		ND		
QS-4	10	13,000	62	62		ND		

Note:
1) Number of samples and mean reflect 5-year sampling period from May 2015 through November 2019. Historic maximum based on all available results from March 1990 through November 2019.
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 2020 exceeds 5-year mean.
5) ND = Not detected
BLANK = Not sampled

SPRING 2020 QUARRY SEEP AND OUTFALL WATER SAMPLE RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	QO-2	QO-2S1	QS-4
SAMPLE DATE:	06/02/20	06/02/20	06/02/20
QC TYPE:	FS	FS	FS
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)			
2,6-Dichloropyridine	9.64 U	9.61 U	12.2
2-Chloropyridine	9.64 U	9.61 U	49.4
3-Chloropyridine	9.64 U	9.61 U	9.88 U
4-Chloropyridine	9.64 U	9.61 U	9.88 U
p-Fluoroaniline	9.64 U	9.61 U	9.88 U
Pyridine	9.64 U	9.61 U	9.88 U

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 2019 THROUGH MAY 2020

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.]
12/08/19	67,116	48,609	10,235	15,496	41,374	831	7	183,668
12/15/19	79,608	46,027	9,726	17,125	53,102	833	25,454	231,875
12/22/19	91,241	33,919	9,421	17,032	62,726	774	29,754	244,867
12/29/19	89,715	32,475	9,762	16,522	62,146	850	25,302	236,772
01/05/20	89,893	8,982	10,732	15,452	44,342	941	24,442	194,784
01/12/20	51,420	21,641	14,114	13,819	34,696	1,036	23,844	160,570
01/19/20	102,589	26,202	9,915	14,995	35,118	1,203	24,146	214,168
01/26/20	101,342	27,843	10,161	15,876	37,648	1,266	23,582	217,718
02/02/20	103,382	22,823	11,115	15,656	33,490	1,210	8,817	196,493
02/09/20	104,513	7,546	12,729	14,507	28,856	1,196	2,850	172,197
02/16/20	99,352	27,439	10,051	13,557	41,458	1,003	91	192,951
02/23/20	94,624	26,301	9,876	12,616	48,780	1,114	16	193,327
03/01/20	97,303	25,921	10,490	12,551	53,180	1,140	1	200,586
03/08/20	70,749	27,546	11,606	12,323	59,722	1,259	34,466	217,671
03/15/20	51,369	25,537	11,296	10,827	56,010	1,353	33,464	189,856
03/22/20	51,988	25,629	11,065	11,057	56,136	1,353	22,318	179,546
03/29/20	49,610	25,337	10,516	11,034	48,864	1,355	14,488	161,204
04/05/20	57,602	24,260	10,978	11,486	51,594	1,275	14,059	171,254
04/12/20	69,110	26,473	14,083	13,251	43,386	1,261	2,096	169,660
04/19/20	31,753	18,727	12,740	9,972	44,098	956	15,738	133,984
04/26/20	29,868	28,502	13,470	10,980	55,116	1,157	23,415	162,508
05/03/20	28,928	28,642	13,884	11,008	55,018	1,101	33,839	172,420
05/10/20	27,087	27,176	14,355	10,983	53,218	1,225	24,080	158,124
05/17/20	25,277	26,247	14,086	10,774	52,312	1,229	1,175	131,100
05/24/20	13,570	24,475	16,012	10,774	51,762	1,612	386	118,591
05/31/20	6,251	50,706	39,629	10,769	49,518	1,590	6,768	165,231
Total 6 Mo. 26 Weeks	1,685,260	714,985	332,047	340,442	1,253,670	30,123	414,598	**4,771,125**

TABLE 7

MASS REMOVAL SUMMARY
PERIOD: DECEMBER 2019 THROUGH MAY 2020

ARCH ROCHESTER
SPRING 2020 GROUNDWATER MONITORING REPORT

Well	Total Vol. Pumped (gallons)[2]	Avg[1.] VOC Conc. (ppm)	Avg[1.] PYR Conc. (ppm)	VOCs Removed (pounds)	PYR. Removed (pounds)
BR-7A	1,685,260	0.058	11	0.81	150
BR-9	714,985	0.030	7.3	0.18	43
PW-13	332,047	0.056	21	0.15	57
PW-15	340,442	9	415	24	1200
PW-16	1,253,670	0.23	140	2.4	1500
PW-17	30,123	5.7	9	1.4	2.2
BR-127	414,598	0.16	16	0.56	54
Totals:	4,771,125			30	3000

Notes: 1) VOC and pyridine concentrations used in this table are an average of the analytical results from the Fall 2019 and Spring 2020 sampling events for each well;
Total select VOCs include chlorobenzene, PCE, TCE, methylene chloride, carbon tetrachloride, and chloroform
2) Flows measured for period of 26 weeks (181 days).
3) Estimates for VOCs and PYR removed listed at 2 significant figures.

TABLE 8
2020 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

ARCH ROCHESTER						**2020**					
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-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						44	34	32	28	76	62

Appendix A

Matrix Environmental Field Report

FIELD REPORT

REMEDIAL INVESTIGATION SAMPLING
LONZA CHEMICAL
ROCHESTER, NEW YORK

Spring 2020 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: Nickolas S. Ander

Reviewed by: Steven L. Marchetti

Date: June 4, 2020

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the sampling of the following points:

- 40 groundwater samples
- One quarry outfall sample
- 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 21, 2020 by Matrix Environmental Technologies Inc. (METI) field personnel. The samples were collected from May 22 through June 2, 2020.

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 purged water was collected 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, one outfall sample 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 (Sample Pro) 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 one 40 ml glass vial 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.

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	5/22/2020	11:21	5.35	NM	7.14	0.60	14.30	3.3	10.7	3.44
B-16	Off-Site	OB	5/22/2020	12:05	6.04	NM	6.99	2.35	13.90	9.1	-25	0.36
B-17	On-Site	OB	6/1/2020	11:10	7.27	NM	9.82	12.96	15.50	2.5	-215	0.35
B-7	On-Site	OB	5/28/2020	13:42	17.30	NM	6.75	2.95	17.80	24.9	-39	0.62
BR-105	Off-Site	BR	5/26/2020	10:05	22.41	NM	6.96	2.92	17.70	5.9	-260	0.22
BR-105D	Off-Site	BR deep	5/26/2020	9:28	27.59	NM	6.56	48.89	16.10	32.0	-363	4.30
BR-106	Off-Site	BR	5/27/2020	7:57	22.85	NM	6.81	4.59	16.00	647.0	-328	0.26
BR-112D	Off-Site	BR deep	5/27/2020	8:29	36.82	NM	6.94	4.53	13.00	485.0	-297	1.38
BR-113D	Off-Site	BR deep	5/27/2020	9:25	31.76	NM	7.01	3.85	13.30	3.5	-320	0.31
BR-114	Off-Site	BR	5/26/2020	11:26	12.85	NM	6.95	2.32	20.10	25.5	-174.9	0.26
BR-117D	Off-Site	BR deep	5/27/2020	12:17	47.94	NM	7.27	3.02	19.60	33.1	-244	0.26
BR-118D	Off-Site	BR deep	5/27/2020	12:45	48.96	NM	10.02	0.69	12.80	63.8	-171	3.09
BR-122D	Off-Site	BR deep	5/27/2020	13:23	45.47	NM	10.70	4.67	16.30	12.6	-292	0.28
BR-123D	Off-Site	BR deep	5/27/2020	14:08	45.66	NM	7.90	2.09	14.90	13.5	-260	0.37
BR-126	Off-Site	BR	5/22/2020	12:49	8.64	NM	6.91	1.21	15.70	30.8	-107	0.32
BR-127	On-Site	BR	6/1/2020	14:00	5.00	NM	9.28	3.56	13.50	361.0	-2.2	3.20
BR-3	On-Site	BR	5/28/2020	11:47	7.50	NM	10.39	0.07	18.50	199.0	-184	0.45
BR-5A	On-Site	pumping well	6/1/2020	11:47	4.86	NM	7.31	3.67	14.90	96.5	-94	0.45
BR-6A	On-Site	BR	5/22/2020	9:48	15.22	NM	8.02	5.19	16.00	59.0	-331	0.23
BR-7A	On-Site	pumping well	5/26/2020	12:35	NM	NM	7.22	5.16	24.10	66.3	-209.9	2.56
BR-8	On-Site	BR	6/2/2020	9:16	13.00	NM	9.13	12.77	14.70	6.0	-333	0.31
BR-9	On-Site	pumping well	6/1/2020	14:15	34.63	NM	7.11	4.02	14.70	16.7	-182	2.63
E-3	On-Site	OB	6/1/2020	12:15	4.36	NM	7.41	3.28	17.70	148.0	-189	0.31
MW-106	Off-Site	OB	2/27/2020	6:50	11.20	NM	6.82	1.91	16.80	436.0	-195	0.58
MW-114	Off-Site	OB	5/26/2020	10:52	11.05	NM	7.46	0.86	19.40	15.4	-114.6	1.07
MW-127	On-Site	OB	5/28/2020	8:35	6.11	NM	7.38	4.14	16.70	28.0	-0.8	0.70
PW-10	On-Site	pumping well	6/1/2020	10:36	8.43	NM	8.28	25.68	15.50	22.9	-156	0.39
PW-12	On-Site	BR	6/1/2020	13:37	4.69	NM	7.87	0.33	17.00	5.7	650	9.19
PW-13	On-Site	pumping well	6/2/2020	9:40	27.14	NM	6.90	3.32	15.20	11.4	-220	1.73
PW-14	On-Site	pumping well	5/28/2020	9:27	10.88	NM	10.67	8.17	16.60	87.8	-307	0.26
PW-15	On-Site	pumping well	5/28/2020	12:00	23.00	NM	9.46	10.03	14.60	8.4	-183	3.56
PW-16	On-Site	pumping well	6/2/2020	8:47	20.39	NM	7.71	8.42	12.70	84.9	-248	2.39
PW-17	On-Site	pumping well	5/28/2020	11:10	29.58	NM	6.89	4.63	15.90	45.9	-166	2.42
PZ-101	Off-Site	BR	5/26/2020	7:25	18.45	NM	6.91	3.82	18.10	0.2	52.5	4.53
PZ-102	Off-Site	BR	5/26/2020	8:10	17.15	NM	7.23	7.46	19.10	0.4	-315	0.22
PZ-103	Off-Site	BR	5/26/2020	8:43	15.56	NM	7.21	3.62	21.10	3.3	-338	0.23
PZ-104	Off-Site	BR	5/22/2020	13:37	13.45	NM	6.95	3.50	16.90	6.2	-99	0.38
PZ-105	On-Site	BR	5/22/2020	8:55	12.84	NM	7.22	5.62	15.60	175.0	-306	0.41

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-106	On-Site	BR	5/28/2020	10:09	13.31	NM	9.95	5.50	14.80	55.9	-271	0.28
PZ-107	On-Site	BR	5/22/2020	10:20	8.67	NM	7.04	2.81	14.10	8.0	-135	0.35
QD-1	Quarry/Canal	quarry ditch	6/2/2020	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
QO-2	Quarry/Canal	quarry outfall	6/2/2020	11:18	NM	NA	8.19	2.37	13.20	21.5	-6.7	8.12
QO-2S1	Quarry/Canal	canal at outfall	6/2/2020	11:28	NM	NA	8.42	0.61	19.50	5.3	24.1	9.57
QS-4	Quarry/Canal	quarry seep	6/2/2020	10:01	NM	NA	8.07	2.94	11.60	-0.3	-95	9.37

** Water level at time of sampling
NM = Not Measured
NA = Not Accessible

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	5/21/2020	8.57	537.75	529.18	-	
B-10	On-Site	OB	5/21/2020	7.67	538.80	531.13	-	
B-11	On-Site	OB	5/21/2020	NM	536.00	NM	-	Due For Closure
B-15	On-Site	OB	5/21/2020	4.52	535.29	530.77	-	
B-16	Off-Site	OB	5/21/2020	4.81	536.21	531.40	-	
B-17	On-Site	OB	5/21/2020	7.33	538.74	531.41	-	
B-2	On-Site	OB	5/21/2020	9.46	539.02	529.56	-	
B-4	On-Site	OB	5/21/2020	19.35	542.87	523.52	-	
B-5	On-Site	OB	5/21/2020	13.62	540.21	526.59	-	
B-7	On-Site	OB	5/21/2020	13.54	541.11	527.57	-	
B-8	On-Site	OB	5/21/2020	8.79	538.88	530.09	-	
BR-1	On-Site	BR	5/21/2020	6.55	537.28	530.73	-	
BR-102	On-Site	BR	5/21/2020	NM	539.43	NM	-	Broken
BR-103	Off-Site	BR	5/21/2020	2.05	533.19	531.14	-	
BR-104	Off-Site	BR	5/21/2020	9.78	537.56	527.78	-	
BR-105	Off-Site	BR	5/21/2020	22.35	536.90	514.55	-	
BR-105D	Off-Site	BR deep	5/21/2020	26.11	536.49	510.38	-	
BR-106	Off-Site	BR	5/21/2020	21.80	535.74	513.94	-	
BR-108	Off-Site	BR	5/21/2020	23.41	540.58	517.17	-	
BR-111	Off-Site	BR	5/21/2020	29.05	540.42	511.37	-	
BR-111D	Off-Site	BR	5/21/2020	29.05	540.34	511.29	-	
BR-112D	Off-Site	BR deep	5/21/2020	36.70	547.91	511.21	-	
BR-113	Off-Site	BR	5/21/2020	31.05	543.02	511.97	-	
BR-113D	Off-Site	BR deep	5/21/2020	31.60	542.93	511.33	-	
BR-114	Off-Site	BR	5/21/2020	12.82	539.77	526.95	-	
BR-116	Off-Site	BR	5/21/2020	27.61	545.38	517.77	-	
BR-116D	Off-Site	BR deep	5/21/2020	35.45	545.22	509.77	-	
BR-117	Off-Site	BR	5/21/2020	35.25	547.61	512.36	-	
BR-117D	Off-Site	BR deep	5/21/2020	47.68	547.16	499.48	-	
BR-118	Off-Site	BR	5/21/2020	23.15	547.79	524.64	-	
BR-118D	Off-Site	BR deep	5/21/2020	46.72	547.93	501.21	-	
BR-122D	Off-Site	BR deep	5/21/2020	45.15	552.34	507.19	-	
BR-123D	Off-Site	BR deep	5/21/2020	33.00	553.62	520.62	-	
BR-124D	Off-Site	BR deep	5/21/2020	45.39	537.45	492.06	-	
BR-126	Off-Site	BR	5/21/2020	8.50	537.90	529.40	-	
BR-127	On-Site	BR	5/21/2020	4.51	536.05	531.54	-	
BR-2	On-Site	BR	5/21/2020	8.23	538.97	530.74	-	
BR-2A	On-Site	BR	5/21/2020	5.47	540.36	534.89	-	Bent
BR-2D	On-Site	BR deep	5/21/2020	3.80	537.26	533.46	-	
BR-3	On-Site	BR	5/21/2020	NM	538.20	NM	-	Lost
BR-3D	On-Site	BR deep	5/21/2020	47.89	537.67	489.78	-	
BR-4	On-Site	BR	5/21/2020	11.29	539.03	527.74	-	
BR-5	On-Site	BR	5/21/2020	5.00	536.30	531.30	-	
BR-5A	On-Site	pumping well	5/21/2020	4.74	536.35	531.61	-	
BR-6A	On-Site	BR	5/21/2020	13.97	540.90	526.93	-	
BR-7	On-Site	BR	5/21/2020	15.32	539.10	523.78	-	
BR-7A	On-Site	pumping well	5/21/2020	NM	539.12	NM	-	Pump in the way- blocking access
BR-8	On-Site	BR	5/21/2020	12.90	539.72	526.82	-	
BR-9	On-Site	pumping well	5/21/2020	29.36	542.17	512.81	-	
C-2A	On-Site	OB	5/21/2020	8.20	539.66	531.46	-	
C-5	On-Site	OB	5/21/2020	9.10	539.63	530.53	-	
CANAL	Off-Site	SW	5/21/2020	38.00	544.79	506.79	-	
E-2	On-Site	OB	5/21/2020	NM	538.32	NM	-	Lost
E-3	On-Site	OB	5/21/2020	3.80	536.59	532.79	-	
E-5	On-Site	OB	5/21/2020	5.72	539.31	533.59	-	
EC-2	Off-Site	BR	5/21/2020	Dry	542.00	Dry	-	Dry at 12.70ft
MW-103	Off-Site	OB	5/21/2020	1.62	533.25	531.63	-	
MW-104	Off-Site	OB	5/21/2020	8.20	537.54	529.34	-	
MW-105	Off-Site	OB	5/21/2020	Dry	536.91	Dry	-	Dry at 15.81ft
MW-106	Off-Site	OB	5/21/2020	10.33	535.44	525.11	-	
MW-114	Off-Site	OB	5/21/2020	9.60	539.69	530.09	-	
MW-127	On-Site	OB	5/21/2020	5.08	536.87	531.79	-	
MW-16	Off-Site	BR	5/21/2020	10.81	536.79	525.98	-	
MW-3	Off-Site	OB	5/21/2020	5.73	535.89	530.16	-	Top Broken- No plug
MW-G6	Off-Site	OB	5/21/2020	NM	534.65	NM	-	Destroyed- repaved
MW-G8	Off-Site	OB	5/21/2020	7.50	534.25	526.75	-	

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G9	Off-Site	OB	5/21/2020	8.24	536.60	528.36	-	
N-2	On-Site	OB	5/21/2020	NM	537.33	NM	-	Damaged
N-3	On-Site	OB	5/21/2020	5.88	537.38	531.50	-	
NESS-E	Off-Site	BR deep	5/21/2020	25.39	540.31	514.92	-	
NESS-W	Off-Site	BR deep	5/21/2020	31.00	543.04	512.04	-	
PW-10	On-Site	pumping well	5/21/2020	7.89	538.76	530.87	-	
PW-12	On-Site	BR	5/21/2020	5.10	537.49	532.39	-	
PW-13	On-Site	pumping well	5/21/2020	NM	536.13	NM	-	Debris covering well
PW-14	On-Site	pumping well	5/21/2020	10.40	537.03	526.63	-	
PW-15	On-Site	pumping well	5/21/2020	23.15	538.32	515.17	-	
PW-16	On-Site	pumping well	5/21/2020	20.00	539.32	519.32	-	
PW-17	On-Site	pumping well	5/21/2020	29.39	NA	NA	-	
PZ-101	Off-Site	BR	5/21/2020	17.23	542.95	525.72	-	
PZ-102	Off-Site	BR	5/21/2020	15.55	540.89	525.34	-	
PZ-103	Off-Site	BR	5/21/2020	13.37	540.20	526.83	-	
PZ-104	Off-Site	BR	5/21/2020	13.33	536.85	523.52	-	
PZ-105	On-Site	BR	5/21/2020	8.61	536.93	528.32	-	Well underwater.
PZ-106	On-Site	BR	5/21/2020	9.43	537.24	527.81	-	
PZ-107	On-Site	BR	5/21/2020	6.99	538.39	531.40	-	
PZ-109	On-Site	BR	5/21/2020	7.48	538.59	531.11	-	
PZ-110	On-Site	BR	5/21/2020	12.59	NA	NA	-	
PZ-111	On-Site	BR	5/21/2020	NM	NA	NM	-	Could Not Locate Well
W-5	On-Site	OB	5/21/2020	NM	538.53	NM	-	Debris in well

NM = Not Measured
NA = Not Applicable

APPENDIX A

FIELD OBSERVATION FORMS

5/21/2020

8.65
PZ 13.33

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		8.57				
B-10	On-Site	OB		9.67				
B-11	On-Site	OB		Dry	for clashes			Dry (at 14.17')
B-15	On-Site	OB		4.52				
B-16	Off-Site	OB		4.81				
B-17	On-Site	OB		7.33				
B-2	On-Site	OB		9.46				
B-4	On-Site	OB		19.35				
B-5	On-Site	OB		13.62				
B-7	On-Site	OB		13.54				
B-8	On-Site	OB		8.79				
BR-1	On-Site	BR		6.55				
BR-102	On-Site	BR	Backed					
BR-103	Off-Site	BR		2.05				
BR-104	Off-Site	BR		9.78				
BR-105	Off-Site	BR		22.35				
BR-105D	Off-Site	BR deep		26.11				
BR-106	Off-Site	BR		21.80				
BR-108	Off-Site	BR		23.41				
BR-111	Off-Site	BR		39.05				
BR-111D	Off-Site	BR		39.05				
BR-112D	Off-Site	BR deep		36.70				
BR-113	Off-Site	BR		31.05				
BR-113D	Off-Site	BR deep		31.60				
BR-114	Off-Site	BR		12.82				
BR-116	Off-Site	BR		27.61				
BR-116D	Off-Site	BR deep		33.45				
BR-117	Off-Site	BR		35.25				
BR-117D	Off-Site	BR deep		47.68				
BR-118	Off-Site	BR		23.13				
BR-118D	Off-Site	BR deep		46.72				
BR-122D	Off-Site	BR deep		43.13				
BR-123D	Off-Site	BR deep		[illegible]	33.09			
BR-124D	Off-Site	BR deep		03.35				
BR-126	Off-Site	BR		8.50				well under debris
BR-127	On-Site	BR		4.51				
BR-2	On-Site	BR		8.23				
BR-2A	On-Site	BR		5.47	Bent			
BR-2D	On-Site	BR deep		3.80				
BR-3	On-Site	BR						debris in well
BR-3D	On-Site	BR deep		47.89				
BR-4	On-Site	BR		11.29				
BR-5	On-Site	BR		5.00				
BR-5A	On-Site	pumping well		4.74				
BR-6A	On-Site	BR		13.97				
BR-7	On-Site	BR		15.32				
BR-7A	On-Site	pumping well		Probe in way				
BR-8	On-Site	BR		12.90				
BR-9	On-Site	pumping well		29.36				29.36
C-2A	On-Site	OB		8.20				
C-3	On-Site	OB		9.10				
CANAL	Off-Site	SW		38.00				
E-2	On-Site	OB	missing					
E-3	On-Site	OB		3.80				
E-5	On-Site	OB		5.72				
EC-2	Off-Site	BR						
MW-103	Off-Site	OB		1.62				
MW-104	Off-Site	OB		8.20				
MW-105	Off-Site	OB		15.81	Dry			
MW-106	Off-Site	OB		10.33				
MW-114	Off-Site	OB		9.60				
MW-127	On-Site	OB	5.08	[illegible]				
MW-16	Off-Site	BR		10.81				
MW-3	Off-Site	OB		5.73	Top Bottom off			No Plug

5/21/2020

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G6	Off-Site	OB		Destroyed				repaved
MW-G8	Off-Site	OB		7.50				
MW-G9	Off-Site	OB		8.24				
N-2	On-Site	OB	Damaged					
N-3	On-Site	OB		5.88				
NESS-E	Off-Site	BR deep		25.39				
NESS-W	Off-Site	BR deep		31.00				
PW-10	On-Site	pumping well		7.89				
PW-12	On-Site	BR		5.10				
PW-13	On-Site	pumping well		Debris over well				
PW-14	On-Site	pumping well		10.40				
PW-15	On-Site	pumping well		23.15				
PW-16	On-Site	pumping well		20.00				
PW-17	On-Site	pumping well		29.39				
PZ-101	Off-Site	BR		17.23				
PZ-102	Off-Site	BR		15.55				
PZ-103	Off-Site	BR		13.37				
PZ-104	Off-Site	BR		[redacted]	13.33			
PZ-105	On-Site	BR	-	8.67				
PZ-106	On-Site	BR		9.43				
PZ-107	On-Site	BR		6.99				
PZ-109	On-Site	BR		7.48				
PZ-110	On-Site	BR		12.59				
PZ-111	On-Site	BR	missing					
W-5	On-Site	OB		Damaged well				

1

FIELD OBSERVATIONS

Facility: ARB

Sample Point ID: PZ 104

Field Personnel: [redacted] B, Nick A

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5/22/20 1:10

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

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

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

PURGE INFORMATION

Date/Time Initiated: 5/22/20 1:10

Date/Time Completed: ____

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

Riser Diameter (inches) ____

Initial Water Level (ft): 13.250

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): ½ gallon

Purged to Dryness: Y / (N)

Purge Observations:

Start 1:10 Finish 1:45

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg.	Other
1:15	13.45			17.1	6.97	3.495	24	-1.5	.92	
1:20	13.48			17.2	6.99	3.504	12.4	-17	.56	
1:26	13.45			17.7	6.97	3.482	8.62	-73.6	.45	
1:31	13.45			17.3	6.96	3.499	6.48	-88	.41	
1:37	13.45			16.9	6.95	3.495	6.24	-99	.38	Sample

FIELD OBSERVATIONS

Facility: Arch

Field Personnel: [illegible] B, Nick A

Sample Point ID: BR-126

Sample Matrix: Gel

MONITORING WELL INSPECTION

Date/Time: 5/22/2020

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: 5/22/2020

Date/Time Completed: 5/22/2020

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

Riser Diameter (inches) 4"

Initial Water Level (ft): 8.24

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y (N)

Total Volume Purged (gal): 3/4 gal

Purged to Dryness: Y (N)

Purge Observations:

Start 12:20 Finish 12:50

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
12:25	8.63			15.2	6.94	1.241	5.75	-88.4	.67	
12:31	8.64			16.0	6.93	1.221	10.73	-97.7	.46	
12:38	8.64			15.9	6.92	1.214	11.43	-102.6	.38	
12:43	8.64			15.8	6.91	1.218	22.77	-105.4	.34	
12:49	8.64			15.7	6.91	1.213	30.81	-107.1	.32	Sample

FIELD OBSERVATIONS

Facility: Rich

Sample Point ID: B-16

Field Personnel: Pat B, Nick R

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 5/22/2020

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: 11:36 5-22-2020

Date/Time Completed: 5/22/2020

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

Riser Diameter (inches) 2"

Initial Water Level (ft): 4.68

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: Y / N

Total Volume Purged (gal): _____

Purged to Dryness: Y / N

Purge Observations: Sunny 70°

Start 11:36 Finish 12:10

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
11:~~46~~	~~4.68~~ 5.81			13.9	6.97	2.263	1.50	17.1	.88	
11:47	5.89			14.4	6.99	2.263	2.39	10.8	.59	
11:53	6.04			13.9	7.00	2.281	4.13	-2.2	.47	
12:00	6.04			14	7.00	2.301	7.07	-11.7	.40	
12:05	6.04			13.9	6.99	2.347	9.11	-25	.36	Sample

FIELD OBSERVATIONS

Facility: Arch — Sample Point ID: B-15

Field Personnel: [illegible] B, Vicks — Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: [illegible] — 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: 11:00 5/22/2020 — Date/Time Completed: ____

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

Initial Water Level (ft): 4.71 — Elevation G/W MSL: ____

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

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

Total Volume Purged (gal): 3/4 gallon — Purged to Dryness: Y / N

Purge Observations: Sunny 70° — Start 11:00 Finish 11:30

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
11:00	4.71			15.9	7.24	.646	6.32	11	5.50	
11:05	5.05			14.8	7.23	.599	2.77	4.0	4.85	
11:11	5.14			14.5	7.20	.599	3.70	9.1	4.50	
11:16	5.25			14.5	7.16	.600	3.06	10.7	3.92	
11:21	5.35		8202	14.3	7.14	.603	3.34	10.7	3.44	Sample

FIELD OBSERVATIONS

Facility: Arch — Sample Point ID: PZ 107

Field Personnel: [illegible], Dicks — Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 10:00 5/22/2020 — 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: 5/22/2020 10:05 — Date/Time Completed: 5/22/2020

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

Initial Water Level (ft): 6.50 — Elevation G/W MSL: ____

Well Total Depth (ft): ____ — Method of Well Purge gw0 - pump

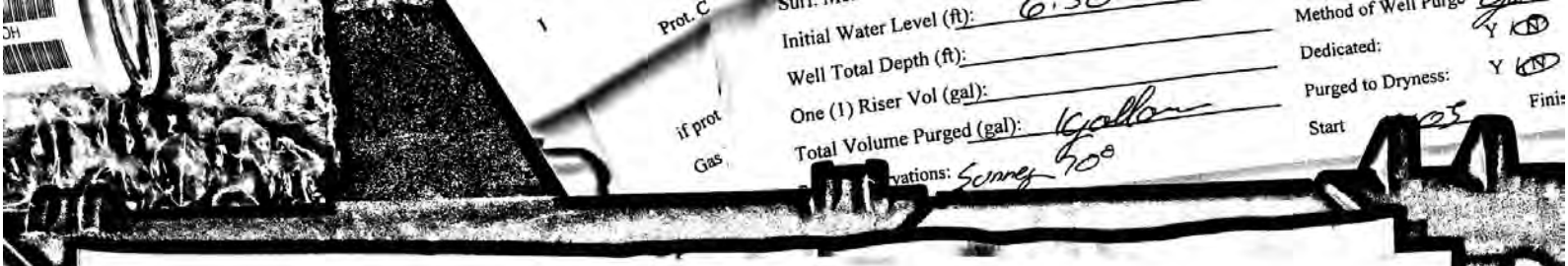
One (1) Riser Vol (gal): ____ — Dedicated: Y (N)

Total Volume Purged (gal): 1 gallon — Purged to Dryness: Y (N)

Purge Observations: Sunny 50° — Start 10:05 Finish 10:30

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
10:05	7.70			14	7.06	2.811	2.30	-118	.90	
10:10	8.29			14.1	7.04	2.806	3.20	-130	.48	
10:15	8.55			14.2	7.03	2.800	4.58	-132	.39	
10:20	8.67			14.1	7.04	2.807	803	-135	.35	Sample 10:30



FIELD OBSERVATIONS

Facility: ARh
Sample Point ID: BRGA
Field Personnel:
Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 5/22/2020 9:15
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: 9:15 5/22/2020
Date/Time Completed: 5/22/2020 10:00
Surf. Meas. Point: ( ) Pro Casing ( ) Riser
Riser Diameter (inches)
Initial Water Level (ft): 13.90
Elevation G/W MSL:
Well Total Depth (ft):
Method of Well Purge gw pump
One (1) Riser Vol (gal): 1gall
Dedicated: Y N
Total Volume Purged (gal): 1gall
Purged to Dryness: Y N
Purge Observations: Sonny 70°
Start 9:20 Finish 10:00

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
9:25	13.83			17.7	7.36	3.244	110	-135	1.21	
9:30	14.13			16.4	7.92	5.184	61	-307	.38	
9:35	14.44			16.3	7.95	5.190	61	-317	.29	
9:42	14.92			16.4	7.99	5.187	67	-326	.24	
9:48	15.22			16.0	8.02	5.187	59	-331	.23	Sample

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: PZ-105

Field Personnel: Bob B, Nick A

Sample Matrix: Gw

MONITORING WELL INSPECTION

Date/Time: 5/22/2020

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: 8:30 5/22/2020

Date/Time Completed: 5/22/2020 900

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

Riser Diameter (inches) 2

Initial Water Level (ft): 8.36

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge GW Pump

One (1) Riser Vol (gal): ____

Dedicated: Y (N)

Total Volume Purged (gal): 3/4 gall

Purged to Dryness: Y (N)

Purge Observations: Sunny & 68°F

Start 8:35 Finish 900

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mL	Other
8:35	8.36			15	7.20	5.574	445	-208	1.83	
842	10.68		400z	15.2	7.21	5.612	289	-253	.55	
8:50	11.96		600z	15.4	7.22	5.610	265	-291	.50	
8:55	12.84		820z	15.6	7.22	5.622	175	-306	.41	Sample

FIELD OBSERVATIONS

Facility: Arch Sample Point ID: BR - 7A

SAMPLING INFORMATION

Date/Time 5/26/2020 12:30pm Water Level at Sampling (ft) pumping well

Method of Sampling grab 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
12:35	24.1	7.22	5.164	66.31	-209.9	2.56	

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: Sunny - 83°F

Sample characteristics: GW

Comments and Observations: strong odor, light gray

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

Date: 5/26/2020 by: Nick Ander Company: Matrix biotech

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR 114

Field Personnel: Pat B, Nick A

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: _____

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

( ) None ( ) Buried

Prot. Casing/Riser Height: _____

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

( ) loose ( ) flush mount

( ) Damaged _____

if prot casing; depth to riser below: _____

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

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

PURGE INFORMATION

Date/Time Initiated: 5/26/2020 11:05

Date/Time Completed: 5/26/2020 11:40

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

Riser Diameter (inches) _____

Initial Water Level (ft): 12.79

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: Y (N)

Total Volume Purged (gal): 1/2 gal

Purged to Dryness: Y / (N)

Purge Observations:

Start 11:05 Finish 11:40

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
11:08	12.85			20.4	6.95	2.310	48.54	-141.8	.83	
11:13	12.85			19.9	6.95	2.309	27.62	-163.6	.36	
11:18	12.85			19.5	6.95	2.313	18.75	-169.6	.30	
11:26	12.85		6302	20.1	6.95	2.318	25.54	-174.9	.26	Sample

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: MW ~~109~~ 114

Field Personnel: Bt B, Nick A

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: _____

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

( ) None ( ) Buried

Prot. Casing/Riser Height: _____

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

( ) loose ( ) flush mount

( ) Damaged _____

if prot casing; depth to riser below: _____

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

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

PURGE INFORMATION

Date/Time Initiated: 5/26/20 10:30

Date/Time Completed: 5/26/2020 11:00

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

Riser Diameter (inches) _____

Initial Water Level (ft): 9.74

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: Y (N)

Total Volume Purged (gal): 1/2 gallon

Purged to Dryness: Y (N)

Purge Observations:

Start 10:30 Finish 11:00

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
10:30	10.43			20.7	7.61	.610	37.05	-122.3	1.52	
10:37	10.66			20.5	7.48	.655	26.31	-116.2	1.83	
10:42	10.75			22.2	7.44	.730	23.02	-120.5	1.26	
10:47	10.96			19.7	7.44	.844	21.33	-116.3	1.21	
10:52	11.05		64 oz	19.4	7.46	.856	15.36	-114.6	1.07	Sample

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR105

Field Personnel: [illegible], Nick A

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 9/26/20

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: 9/26/20

Date/Time Completed: 10:15

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

Riser Diameter (inches) _____

Initial Water Level (ft): 22.41

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: Y / (N)

Total Volume Purged (gal): 3½ Gall

Purged to Dryness: Y / (N)

Purge Observations:

Start 9:45 Finish 10:15

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
9:45	22.40			15.5	7.26	4.410	.38	-281	.212	
9:50	22.40			17.2	6.99	3.031	1.85	-263	.26	
9:55	22.41			17.3	6.97	2.964	3.07	-259	.23	
10:00	22.41			17.5	6.97	2.933	4.15	-259	.23	
10:05	2241			17.7	6.96	2.916	5.91	-260	.22	

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR105D

Field Personnel: Bob B Nick A

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 5/26/20

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: 5/26/20

Date/Time Completed: 5/26/20

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

Riser Diameter (inches) _____

Initial Water Level (ft): 26.15

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: Y (N)

Total Volume Purged (gal): 1 gallon

Purged to Dryness: Y (N)

Purge Observations:

Start 9:05 Finish 9:40

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
9:05	26.15			17.4	6.49	49.115	83	-335	.46	
9:10	26.82			15.8	6.54	49.177	61	-353	.38	
9:17	27.32			15.9	6.55	49.309	10.6	-361	4.3	
9:23	27.47			16.0	6.55	49.315	5211	-362	4.4	
9:28	27.59			16.1	6.56	48.891	3196	-363	4.3	

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: PZ 103

Field Personnel: BDS Nick Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 5/26/20 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: 5/26/20 Date/Time Completed: 5/26/20

Surf. Meas. Point: ( ) Pro Casing ( ) Riser Riser Diameter (inches) _____

Initial Water Level (ft): ~~13~~ 13.57 Elevation G/W MSL: _____

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

One (1) Riser Vol (gal): _____ Dedicated: Y (N)

Total Volume Purged (gal): ½ gal Purged to Dryness: Y (N)

Purge Observations: Start 8:35 Finish 8:55

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
8:30	14.86			20.5	7.24	3.623	-0.26	-328.6	.35	
8:35	15.13			21.4	7.21	3.615	-0.49	-328.6	.26	
8:40	15.30			21.0	7.21	3.624	-.76	-334	.23	
8:45	15.56			21.1	7.21	3.617	5.50	-338	.23	

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: PZ 101

Field Personnel: [illegible], Nick

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 710 5/26/20

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: 5/26/20

Date/Time Completed: 5/26/20

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

Riser Diameter (inches) ____

Initial Water Level (ft): ____

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 QT

Purged to Dryness: Y / N

Purge Observations:

Start 7:10 Finish ~~7:20~~ 7:45

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
710	17.85			19.9	6.88	3.972	.23	65.3	5.97	
7:15	17.98			17.9	6.90	3.903	.57	51.4	4.77	
7:20	18.18			18.2	6.91	3.884	.88	52.6	4.61	
7:25	18.45			18.1	6.91	3820	.20	52.5	4.53	

FIELD OBSERVATIONS

Facility: Arch | Sample Point ID: PZ102

Field Personnel: Rob B, Nick R | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 8/26/2020 | 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: 7:50 | Date/Time Completed: ____

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

Initial Water Level (ft): 16.21 | Elevation G/W MSL: ____

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

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

Total Volume Purged (gal): 3¼ gal | Purged to Dryness: Y (N)

Purge Observations: | Start 7:50 Finish 8:20

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
7:50	16.45			20.1	7.14	6.906	.22	-258	.99	
8:00	17.00			19.6	7.15	6.877	.72	-287	.32	
8:05	17.06			18.9	7.17	6.988	.09	-271	.27	
8:10	17.15			19.1	7.23	~~7.250~~	.42	-315	.22	Sample
						7.457				

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR 106

Field Personnel: BT B

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 5/27/20

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: 5/27/20

Date/Time Completed: 5/27/20

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

Riser Diameter (inches) ____

Initial Water Level (ft): 22.75

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): 3¼ gall

Purged to Dryness: Y / (N)

Purge Observations:

Start 735 Finish 800

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
7:35	22.82			14.8	6.82	4.536	2307	-255	1.04	
7:40	22.85			16.0	6.81	4.573	1095	-314	0.39	
7:52	22.85			15.9	6.81	4.594	710	-327	0.29	
7:57	22.85			16.0	6.81	4.594	647	-328	0.26	
Sampled										

Begin Sampled at 7:57

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: MW 106

Field Personnel: [illegible]

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 5/27/2020

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: 6:30 5/27/20

Date/Time Completed:

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

Riser Diameter (inches)

Initial Water Level (ft): 10.42

Elevation G/W MSL:

Well Total Depth (ft):

Method of Well Purge

One (1) Riser Vol (gal):

Dedicated: Y / (N)

Total Volume Purged (gal): 3½ gall

Purged to Dryness: Y / (N)

Purge Observations:

Start 6:30 Finish 7:00

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
6:35	10.98			17.9	6.94	2021	200	-133	3.81 ~~33.1~~	
6:40	11.15			16.2	6.84	1.874	57	-171	1.17	
6:45	11.18			16.7	6.82	1.875	41.8	-192	.60	
6:50	11.20			16.8	6.82	1.906	436	-195	.58	Sampled

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR123D

Field Personnel: SUM/NA/PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-27-20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (X) 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: 5-27-20 1:44

Date/Time Completed: 5-27-20 - [illegible]

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

Riser Diameter (inches) ____

Initial Water Level (ft): 45.67

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2 sgl

Purged to Dryness: Y / N

Purge Observations:

Start 1:48 Finish 2:12

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
1:48	45.66			16.9	7.91	2.166	25.56	-190	1.71	
1:53	45.66			17.1	7.82	2.093	19.01	-216	0.61	
1:58	45.66			15.0	7.86	2.094	16.10	-241	0.56	
2:03	45.66			14.9	7.84	2.092	14.08	-255	0.42	
2:08	45.66			14.9	7.90	2.091	13.49	-260	0.37	

SG. Start at 2:08

FIELD OBSERVATIONS

Facility: ARCH

Sample Point ID: BR122D

Field Personnel: SM/PB/NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-27-20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (X) 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: 5-27-20

Date/Time Completed: 5-27-20

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

Riser Diameter (inches) ____

Initial Water Level (ft): 45.44

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2

Purged to Dryness: Y / N

Purge Observations:

Start 1:08 Finish 1:30

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO mg	Other
1:08	45.46			19.4	6.93	3.743	17.70	-244	1.18	
1:13	45.46			16.9	6.89	4.469	11.83	-283	.40	
1:18	[illegible]	45.47		16.5	10.6	4.666	12.43	-292	0.31	
1:23	45.47			16.3	10.7	4.671	12.61	-292	0.28	

Sampled at 1:23

FIELD OBSERVATIONS

Facility: ARCh

Sample Point ID: BR118D

Field Personnel: Sim / NA / PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-27-20

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: 5-27-20 - 12:30

Date/Time Completed: 5-27-20 12:48

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

Riser Diameter (inches) ____

Initial Water Level (ft): 47.04

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2

Purged to Dryness: Y / N

Purge Observations:

Start 12:30 Finish 12:48

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
12:30	47.04			13.3	10.06	0.756	66.8	-198	2.93	
12:35	48.98			12.9	10.01	0.716	64.1	-165	3.15	
12:40	48.97			12.9	10.02	0.694	64.0	-168	3.10	
12:45	48.96			12.8	10.02	0.691	63.8	-171	3.09	

Sample J at 1245

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR117D

Field Personnel: Slm/NA/PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-27-20

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: 5-27-20 10:06

Date/Time Completed: 5-27-20

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

Riser Diameter (inches) ____

Initial Water Level (ft): 47.91

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge: Bladder Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N Pump failed & was replaced by Pine

Total Volume Purged (gal): 1/2

Purged to Dryness: Y / N

Purge Observations:

Start 10:06 Finish 12:25

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
11:57	47.91			23.6	7.38	3.449	61.29	-233	1.61	
12:02	47.93			20.9	7.29	2.992	49.29	-275	0.38	
12:07	47.94			19.8	7.29	2.990	31.08	-246	0.30	
12:12	47.94			19.7	7.27	3.062	33.06	-248	0.27	
12:17	47.94			19.6	7.27	3.019	33.07	-244	0.26	

Begin sampling at 12:17

FIELD OBSERVATIONS

Facility: Arch Chemical Sample Point ID: BR113D

Field Personnel: SW / PB Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-27-20 - 9:05 AM. Condition of seal: (X) Good ( ) Cracked %

( ) None ( ) Buried

Prot. Casing/Riser Height: Condition of Prot. Casing/Riser: (X) unlocked (X) 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: 5-27-20 - 9:06 AM. Date/Time Completed: 5-27-20 -

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

Initial Water Level (ft): 31.74 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): 1/2 Purged to Dryness: Y (N)

Purge Observations: Start 9:10 Finish 9:36

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
9:10	31.79			16.8	7.01	3.865	12.53	-305	0.68	
9:15	31.76			14.2	7.01	3.846	6.52	-316	0.39	
9:20	31.76			13.4	7.01	3.844	3.48	-319	0.32	
9:25	31.76			13.3	7.01	3.846	3.47	-320	0.31	

Began sampling at 9:26 A.M.

FIELD OBSERVATIONS

Facility: Arch Chemical Sample Point ID: BR 112 D

SAMPLING INFORMATION

Date/Time 5-27-20 Water Level at Sampling (ft) 36.82

Method of Sampling Bailer - well damaged. 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
8:29	13	6.94	4.526	485	-297	1.38	

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: Sunny 88°F

Sample characteristics:

Comments and Observations: well damaged and could not Pump with Bladder Pump Had to collect Sample with bailer.

* well damaged near top. Can Cut off & Put new PVC but will need to Replace Pro top casing at same time.

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: PW15

SAMPLING INFORMATION

Date/Time 5-28-20 Water Level at Sampling (ft) 23.0

Method of Sampling Pumping well / valve 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
12:00	14.6	9.46	10.031	8.42	-183.1	3.56	

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: Hot !!!

Sample characteristics: brown tinge

Comments and Observations:

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

Date: 5/28/ by: Nick Ander Company: Matrixbiotech

FIELD OBSERVATIONS

Facility: ARCy

Sample Point ID: BR-3

Field Personnel: SM / NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-28-20

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

( ) None (X) Buried - Uncovered

Prot. Casing/Riser Height: ____

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

( ) loose (X) 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: 5-28-20

Date/Time Completed: 5-28-20

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

Riser Diameter (inches) ____

Initial Water Level (ft): 6.00

Elevation G/W MSL: ____

Well Total Depth (ft): ~~16.84~~ 16.40

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2 gal

Purged to Dryness: Y / N

Purge Observations:

Start 11:32 Finish 11:54

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
11:32	6.00			19.9	10.32	8.149	257	-146	2.90	
11:37	6.88			18.2	10.37	8.084	266	-169	~~0.00~~ 0.98	
11:42	7.15			18.3	10.39	8.075	203	-178	0.57	
11:47	7.50			18.5	10.39	0072	199	-184	0.95	

Began at 11:47

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: PW-17

Field Personnel: Pat

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-28-20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (X) 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: 11:10 5/28/2020

Date/Time Completed: ____

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

Riser Diameter (inches) ____

Initial Water Level (ft): 29.58

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Baler / Pump well

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 (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:10	29.58			15.9	6.89	4.629	45.88	-166	2.42	

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: PZ106

Field Personnel: NA / SLM

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-28-20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose ( ) flush mount

(X) Damaged Lid Cracked

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: 5-28-20 9:41

Date/Time Completed: 5-28-20

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

Riser Diameter (inches) 2"

Initial Water Level (ft): 9.53

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 80 oz.

Purged to Dryness: Y / N

Purge Observations:

Start 9:44 Finish 10:15

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
9:44	9.23			17.1	9.66	6.106	18.37	-205	1.36	
9:54	11.13		15.7 →		9.96	5.642	17.91	-253	0.42	
9:59	11.76			15.6	9.96	5.557	18.57	-260	0.35	
10:04	12.52			15.4	9.95	5.521	24.01	-268	0.30	
10:09	13.31			14.8	9.95	5.498	55.85	-271	0.28	

Begin Sample at 10:09

FIELD OBSERVATIONS

Facility: Arch — Sample Point ID: PW 14

Field Personnel: Sim / NA — Sample Matrix: Water

MONITORING WELL INSPECTION

Date/Time: 5-28-20 9:01 — Condition of seal: (X) Good ( ) Cracked ____ %

( ) None ( ) Buried

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

Casing/Riser: ( ) loose ( ) flush mount

( ) Damaged No Top - Duct tape

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: 5-28-20 9:05 — Date/Time Completed: 5-28-20 - 9:37

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

Initial Water Level (ft): 10.54 — Elevation G/W MSL: ____

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

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

Total Volume Purged (gal): 1/2 gal — Purged to Dryness: Y / N

Purge Observations: — Start 9:06 Finish 9:37

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
9:06	10.60			18.3	10.63	8.217	6.21	-257	1.96	
9:11	10.67			16.1	10.68	8.226	14.98	-286	0.40	
9:17	10.76			16.1	10.68	8.204	30.89	-295	0.32	
9:22	10.79			16.1	10.68	8.209	44.85	-299	0.30	
9:27	10.84			16.6	10.67	8.168	87.76	-307	0.26	

Begin Sample at 9:27

FIELD OBSERVATIONS

Facility: ARCh

Sample Point ID: MW127

Field Personnel: SLM / NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 5-28-20 ; 8:00

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (Y) 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: 5-28-20 8:11 A.M

Date/Time Completed: 5-28-20

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

Riser Diameter (inches) 2"

Initial Water Level (ft): 5.13

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 72 oz.

Purged to Dryness: Y / N

Purge Observations:

Start 8:15 Finish 8:43

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
8:15	5.13			17.8	7.54	4.168	12.11	+0.4	3.37	
8:20	5.79			16.8	7.39	4.164	14.53	-0.7	1.05	
8:25	5.95			16.6	7.38	4.144	18.36	-1.6	0.65	
8:30	6.04			16.6	7.38	4.140	20.01	-1.1	0.69	
8:35	6.11			16.7	7.38	4.142	27.95	-0.8	0.70	

Stabilized @ 8:35 Begin Sampling at 8:35

FIELD OBSERVATIONS

Facility: ARCh Chemical Sample Point ID: B-7

Field Personnel: SM / NA / PW Sample Matrix: Water

MONITORING WELL INSPECTION

Date/Time: 5-28-20 1:16 Condition of seal: (X) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: ( ) unlocked (X) 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: 5.28.20 1:16 Date/Time Completed: 5-28-20

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

Initial Water Level (ft): 13.49 Elevation G/W MSL: ____

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

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

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

Purge Observations: Start ~~1:16~~ 1:17 Finish 1:50

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
1:17	13.49			18.6	6.76	3.125	60.06	-7.9	1.78	
~~1:22~~	~~14.77~~									
1:27	15.71			17.4	6.75	3.082	11.94	-5.1	0.56	
1:32	16.55			17.6	6.74	2.971	69.15	-13.3	0.56	
1:37	17.05			17.2	6.75	2.940	54.93	-33.3	0.58	
1:42	17.30			17.8	6.75	2.854	24.89	-39	0.62	

1:42 Start Sampling

FIELD OBSERVATIONS

Facility: ARCh Sample Point ID: BR 9

SAMPLING INFORMATION

Date/Time 6/1/20 2:15 Water Level at Sampling (ft)

Method of Sampling Pump in well / valve 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~~ Feet DTW - 6ft
2:15	14.7	7.11	4.018	1668	-182	2.63	34.63

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: _____

Sample characteristics: _____

Comments and Observations: _____

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: BR-127

SAMPLING INFORMATION

Date/Time 6/1/20 2:00 Water Level at Sampling (ft)

Method of Sampling Purge well / Value 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~~ DTW - Feet
2:00	13.5	9.28	3.556	36.1	-2.2	3.20	50

INSTRUMENT CALIFBRATION/CHECK DATA

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

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny Hot !

Sample characteristics:

Comments and Observations: Pump Discharge line Plugged. Pump works when you open Valve

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: PW-10

Field Personnel: SM / NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 6/1/20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose (X) 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: 6/1/20 10:16

Date/Time Completed: 6/1/20 10:42

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

Riser Diameter (inches) ____

Initial Water Level (ft): 7.68

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge GeoPump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2

Purged to Dryness: Y / N

Purge Observations:

Start 10:16 Finish 10:42

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
10:16	7.68			16.4	8.84	27.310	349	-119	4.08	
10:21	7.95			16.0	~~8.86~~	27.348	101	-191	0.85	
10:26	8.00			16.8	8.80	27.159	1065	-190	0.58	
10:31	8.24			15.7	8.56	26.304	152	-175	0.45	
10:36	8.43			15.5	8.28	25.681	239	-156	0.39	

(SB)

Sampled @ 10:36

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: B-17

Field Personnel: NA / Sam

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 6/1/20 10:48

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose (X) 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: 6/1/20 10:50

Date/Time Completed: 6/1/20 11:15

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

Riser Diameter (inches) ____

Initial Water Level (ft): 7.24

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): ____

Purged to Dryness: Y / N

Purge Observations:

Start 10:50 Finish 11:15

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
10:50	7.24			16.3	9.01	9.481	11.87	-122	3.13	
10:55	7.27			15.8	9.0	9.813	8.19	-129	1.53	
11:00	7.27			15.6	9.06	9.069	4.86	-139	0.69	
11:05	7.27			15.6	9.72	12.080	4.14	-140	0.40	
11:10	7.27			15.5	9.82	12.963	2.53	-215	0.35	

Begin Sample 11:11

FIELD OBSERVATIONS

Facility: Arch

Sample Point ID: BR-5A

Field Personnel: SM / NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 6/1/20

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: 6/1/20 11:32

Date/Time Completed: 6/1/20 11:57

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

Riser Diameter (inches) ____

Initial Water Level (ft): 4.72

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (~~gal~~): 40 oz.

Purged to Dryness: Y / N

Purge Observations:

Start 11:32 Finish 11:57

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
11:32	4.79			17.7	7.67	4027	185	-140	4.13	
11:37	4.83			15.0	7.32	3.791	89.18	-107	1.63	
11:42	4.85			14.7	7.31	3.669	97.19	-97.3	0.56	
11:47	4.86			14.9	7.31	3.667	96.57	-94	0.45	

Begin Sampled at 11:48

FIELD OBSERVATIONS

Facility: ARCh

Sample Point ID: PW-12

Field Personnel: SM/NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 6/1/20

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

(X) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose (X) 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: 6/1/20 1:17

Date/Time Completed: 6/1/20 - 1:45

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

Riser Diameter (inches) ____

Initial Water Level (ft): 4.47 - 1:17

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 3/4 gal

Purged to Dryness: Y / N

Purge Observations:

Start 1:17 Finish 1:45

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
1:17	4.47			18.5	8.33	0.385	106	*328	8.67	
1:22	4.62			17.2	9.0	0.333	75.78	+505	9.06	
1:27	4.68			17.3	7.89	.333	78.34	+595.6	9.11	
1:32	4.71			17.1	7.85	.328	15.53	+631	9.14	
1:37	4.69			17.0	7.87	.328	5.73	+650	9.19	

FIELD OBSERVATIONS

Facility: ARCh

Sample Point ID: E-3

Field Personnel: Shu / NA

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 6/1/20

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

(X) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose ( ) flush mount

( ) Damaged Ground

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: 6/1/20 - 12:00

Date/Time Completed: 6/1/20 - 12:25

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

Riser Diameter (inches) ____

Initial Water Level (ft): 3.80

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Geo-Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): ~~N/A~~ 50.02

Purged to Dryness: Y / N

Purge Observations:

Start 12:00 Finish 12:25

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
12:00	3.80			16.9	7.55	4.814	366	-194	2.02	
12:05	4.26			17.3	7.58	4.760	322	-210	0.73	
12:10	4.33			17.8	7.54	3.547	150	-199	0.34	
12:15	4.36			17.7	7.41	3.284	148	-189	0.31	

Begin Sample at 12:15

FIELD OBSERVATIONS

Facility: ARCH

Sample Point ID: QO-251

Field Personnel: Sim / NA

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 6-2-20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: _____

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

if prot casing; depth to riser below: _____

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

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

PURGE INFORMATION

Date/Time Initiated: _____

Date/Time Completed: _____

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

Riser Diameter (inches) _____

Initial Water Level (ft): _____

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge Grab - Stainless bucket

One (1) Riser Vol (gal): _____

Dedicated: Y / N

Total Volume Purged (gal): _____

Purged to Dryness: Y / N

Purge Observations:

Start _____ Finish 11:28

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
11:28				19.5	8.42	0.614	5.30	+241	9.57	

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: PW-13

SAMPLING INFORMATION

Date/Time 6/2/20 Water Level at Sampling (ft) 27.14

Method of Sampling Pump well / valve 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
9:40	15.2	6.90	3.317	11.44	-220	1.23	

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:

Sample characteristics:

Comments and Observations: MS + MSD Collected

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Arch Sample Point ID: GW-2

SAMPLING INFORMATION

Date/Time 6/2/20 Water Level at Sampling (ft)

Method of Sampling Grab - Stainless Bucket 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
11:18	13.2	~~8.09~~ 8.19	2.365	21.45	-67	8.12	

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: _____

Sample characteristics: _____

Comments and Observations: _____

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: QD-1

SAMPLING INFORMATION

Date/Time 6/2/20 Water Level at Sampling (ft)

Method of Sampling _____ 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

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: _____

Sample characteristics: _____

Comments and Observations: No water running. Pumps in quarry are not operating. Waited for 30 min.

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: ARCH Sample Point ID: QS-4

SAMPLING INFORMATION

Date/Time 6/2/20 Water Level at Sampling (ft)

Method of Sampling Grab 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
10:01	11.6	8.07	2.943	-0.33	-95	9.37	

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: _____

Sample characteristics: _____

Comments and Observations: _____

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

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: ARCH

Sample Point ID: BR-8

Field Personnel: Sim/NA

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 9:56 6/2/20

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (X) 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: 6/2/20 - 9:01

Date/Time Completed: 6/2/20 9:25

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

Riser Diameter (inches) ____

Initial Water Level (ft): 12.83

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Bp Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 1/2

Purged to Dryness: Y / N

Purge Observations:

Start 9:01 Finish 9:25

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
9:01	12.83			15.3	9.05	12.399	11.97	-275	3.68	
9:06	12.92			14.5	9.09	12.711	7.44	-306	0.86	
9:11	13.00			14.6	9.12	12.753	6.46	-324	0.39	
9:16	13.02			14.7	9.13	12.768	6.01	-333	0.31	

Begin Sampling 9:16

FIELD OBSERVATIONS

Facility: Arch Sample Point ID: PW-16

SAMPLING INFORMATION

Date/Time 6/2/20 Water Level at Sampling (ft) 20.39

Method of Sampling Purge/Bailer - Pump 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~~ DTW - feet
8:47	12.7	7.71	8.422	84.93	-248	2.39	20.39

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: Rain / 72°

Sample characteristics:

Comments and Observations:

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

Date: _____ by: _____ Company: _____

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:	
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:	
CITY:	Rochester STATE: NY ZIP: 14603	CITY: STATE: ZIP:	
PHONE:	585-613-3752 FAX:	PHONE: FAX:	
ATTN:	Francien Trubia	ATTN:	

LAB PROJECT ID: 202218

Quotation #: MS 120519H

Email: francien.trubia@lonza.com

PROJECT REFERENCE

2020 Spring GW Event

May-20

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific VOCs	TCL Volatiles	MS	MSD						REMARKS	PARADIGM LAB SAMPLE NUMBER
5/22/2020	9:00 AM		X	PZ105	WG	3	X	X									01
5/22/2020	10:00 AM		X	BR6A	WG	3	X	X								PO Number 4502404389	02
5/22/2020	10:30 AM		X	PZ107	WG	3	X	X									03
5/22/2020	11:30 AM		X	B15	WG	3	X	X									04
5/22/2020	12:30 PM		X	BR126	WG	3	X	X									05
5/22/2020	1:45 PM		X	PZ104	WG	3	X	X									06
5/22/2020	1205			B-16	WG	3	X	X								per label mw 5/22/2020	07
5/12/2020				Trip Blank T979	W	1		X									09

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

19°C ice started in field mw 5/22/2020 1611

No custody seal client delivered

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	X	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	X
Rush 2 day	☐	Category B	X		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed: DEC/WOOD EDD	X

Sampled By: Patrick Bell — Date/Time: 5/22/2020

Relinquished By: [signature] — Date/Time: 5/22/2020 15:35

Received By: [signature] — Date/Time: 5/22/2020 1535

Received @ Lab By: [signature] — Date/Time: 5/22/2020 1611

Total Cost:

PIF

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM

REPORT TO:		INVOICE TO:		LAB PROJECT ID
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	202233
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		Quotation #: MS 120519H
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email: francien.trubia@lonza.com
ATTN:	Francien Trubia	ATTN:		

PROJECT REFERENCE

2020 Spring GW Event

May-20

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific VOCs SVOCs	TCL Volatiles	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
5/26/2020	7:45 AM		X	PZ101	WG	3	X	X										01
5/26/2020	8:20 AM		X	PZ102	WG	3	X	X									PO Number 4502404389	02
5/26/2020	8:55 AM		X	PZ103	WG	3	X	X										03
5/26/2020	9:40 AM		X	BR105D per email 5/26/2020	WG	3	X	X										04
5/26/2020	11:00 AM		X	MW114	WG	3	X	X										05
5/26/2020	11:40 AM		X	BR114	WG	3	X	X										06
5/26/2020	10:15AM		X	~~PZ105~~ BR105 per email 5/26/2020	WG	3	X	X										07
5/26/2020	12:35PM		X	BR7A	WG	9	X	X	X	X							(MS: 12:40PM; MSD: 12:45PM)	08
5/12/2020				Trip Blank T982														09

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

22°C ice started in field

No custody seals client delivered

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☑
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Other (please indicate date needed)	☐	Other (please indicate package needed)	☐	Other EDD (please indicate EDD needed)	☒
				DECWOOD EDD	

Sampled By	5/26/2020	Total Cost:	
Relinquished By	5/26/2020 1420		
Received By	5/26/2020 1420		
Received @ Lab By	5/26/2020 1425	PIF	☐

Mail 5/26/2020 1425

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

1 of 2

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	LAB PROJECT ID: 202265
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 120519H
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email:
ATTN:	Francien Trubia	ATTN:		francien.trubia@lonza.com

PROJECT REFERENCE
2020 Spring GW Event
May-20

Matrix Codes:
AQ - Aqueous Liquid, NQ - Non-Aqueous Liquid, WA - Water, WG - Groundwater, DW - Drinking Water, WW - Wastewater, SO - Soil, SL - Sludge, SD - Solid, PT - Paint, WP - Wipe, CK - Caulk, OL - Oil, AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific VOCs	TCL Volatiles	REMARKS	PARADIGM LAB SAMPLE NUMBER
5/27/2020	7:00 AM		X	MW106	WG	3	X	X		01
5/27/2020	8:00 AM		X	BR106	WG	3	X	X	PO Number 4502404389	02
5/27/2020	8:29 AM		X	BR112D	WG	~~3~~ 1	X	~~X~~	per email MS 5/27/2020	03
5/27/2020	9:36 AM		X	BR113D	WG	~~3~~ 1	X	~~X~~		04
5/27/2020	12:25 PM		X	BR117D	WG	~~3~~ 1	X	~~X~~		05
5/27/2020	12:48 PM		X	BR118D	WG	~~3~~ 1	X	~~X~~		06
5/27/2020	1:30 PM		X	BR122D	WG	~~3~~ 1	X	~~X~~		07
5/27/2020	2:12 PM		X	BR123D	WG	~~3~~ 1	X	~~X~~		08
5/12/2020				Trip Blank T978 MS 5/27/2020	W	1		X		09

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

15°C iced started in field.
No custody seals client delivered
MollyVail 5/27/2020 1458

Turnaround Time / **Report Supplements**
Availability contingent upon lab approval; additional fees may apply.

Turnaround Time		Report Supplements			
Standard 5 day	[ ]	None Required	[ ]	None Required	[ ]
10 day	[X]	Batch QC	[ ]	Basic EDD	[ ]
Rush 3 day	[ ]	Category A	[ ]	NYSDEC EDD	[X]
Rush 2 day	[ ]	Category B	[X]		
Rush 1 day	[ ]				
Other (please indicate date needed:)	[ ]	Other (please indicate package needed:)	[ ]	Other EDD (please indicate EDD needed:) DEC/WOOD EDD	[X]

Sampled By: [signature] Date/Time: 5/27/2020
Relinquished By: [signature] Date/Time: 5/27/2020 1453
Received By: [signature] Date/Time: 5/27/20 1453
Received @ Lab By: MollyVail Date/Time: 5/27/2020 1458

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:	
COMPANY:	Arch Chemicals, Inc.	COMPANY: SAME	LAB PROJECT ID: 202291
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:	Quotation #: MS 120519H
CITY:	Rochester STATE: NY ZIP: 14603	CITY: STATE: ZIP:	Email: francien.trubia@lonza.com
PHONE:	585-613-3752 FAX:	PHONE: FAX:	
ATTN:	Francien Trubia	ATTN:	

PROJECT REFERENCE
2020 Spring GW Event
May-20

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific VOCs	TCL Volatiles	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
5/28/2020	8:43AM		X	MW127	WG	3	X	X										01
5/28/2020	9:37 AM		X	PW14	WG	3	X	X									PO Number 4502404389	02
5/28/2020	10:15 AM		X	PZ106	WG	3	X	X										03
5/28/2020	11:10 AM		X	PW17	WG	3	X	X										04
5/28/2020	11:54 AM		X	BR3	WG	3	X	X										05
5/28/2020	12:00 PM		X	PW15	WG	9	X	X	X	X								06
5/28/2020	1:50 PM		X	B7	WG	3	X	X										07
5/12/2020				Trip Blank T981														08

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

17°C iced started in field. Custody seals N/A client delivered Mollie Mail 5/28/2020 1440

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	X	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	X
Rush 2 day	☐	Category B	X		
Rush 1 day	☐				
Other please indicate date needed	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed	X
				DEC/WOOD EDD	

Sampled By:	5/20/2020 Date/Time	Total Cost:
Relinquished By	5/20/2020 14:25 Date/Time	
Received By	5/28/20 14:25 Date/Time	P.I.F
Received @ Lab By	Mollie Mail 5/28/2020 Date/Time	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

1 of 2

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:		LAB PROJECT ID
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	202363
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		Quotation #: MS 120519H
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email: francien.trubia@lonza.com
ATTN:	Francien Trubia	ATTN:		

PROJECT REFERENCE
2020 Spring GW Event
May-20

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific VOCs per Work Plan dated 5/2020	TCL Volatiles	MS	MSD	REMARKS	PARADIGM LAB SAMPLE NUMBER
6/1/2020	10:42AM		X	PW10	WG	3	X	X				01
6/1/2020	11:15 AM		X	B17	WG	3	X	X			PO Number 4502404389	02
6/1/2020	11:57 AM		X	BR5A	WG	3	X	X				03
6/1/2020	12:25 PM		X	E3	WG	3	X	X				04
6/1/2020	1:45 PM		X	PW12	WG	3	X	X				05
6/1/2020	2:00 PM		X	BR127	WG	3	X	X				06
6/1/2020	2:15 PM		X	BR9	WG	3	X	X				07
5/12/2020				Trip Blank T980 per Sample Label MW 6/1/2020	W	1		X				08

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	X	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	X
Rush 2 day	☐	Category B	X		
Rush 1 day	☐				
Other (please indicate date needed)	☐	Other (please indicate package needed:)	☐	Other EDD (please indicate EDD needed)	X
				DEC/WOOD EDD	

	Date/Time	
Sampled By	6/1/20 3:17	Total Cost:
Relinquished By: Francien Trubia	6/2/20 14:30	
Received By	6/2/2020 1430	P.I.F.
Received @ Lab By: Molly Vail	6/2/2020 1450	

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

4°C iced 6/2/2020 14:50

Custody Seal N/A, samples delivered by client. GP 6/2/2020

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

PARADIGM ENVIRONMENTAL SERVICES, INC.

REPORT TO:		INVOICE TO:		LAB PROJECT ID
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	202364
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		Quotation #: MS 120519H
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email: francien.trubia@lonza.com
ATTN:	Francien Trubia	ATTN:		

PROJECT REFERENCE
2020 Spring GW Event
May-20

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Site Specific SVOCs (8270)	TCL Volatiles (8260)	MS	MSD						REMARKS	PARADIGM LAB SAMPLE NUMBER
6/2/2020	8:47 AM		X	PW16	WG	3	X	X									01
6/2/2020	9:28 AM		X	BR8	WG	3	X	X								PO Number 4502404389	02
6/2/2020	9:40 AM		X	PW13	WG	9	X	X	X	X							03
6/2/2020	10:01 AM		X	QS4	WG	1	X										04
6/2/2020	11:18 AM		X	QO2	WG	1	X										05
6/2/2020	11:28 AM		X	QO2S1	WG	1	X										06
																6/1/20 and 6/2/20 samples were	
																delivered in same cooler.	

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☒		
Rush 1 day	☐				
Other (please indicate date needed:)	☐	Other (please indicate package needed:)	☐	Other EDD (please indicate EDD needed:) DEC/WOOD EDD	☒

Sampled By: Francien Trubia Date/Time: 6/2/20 14:30 (6/2/20 1:39)
Relinquished By: Date/Time: 6/2/2020 1430
Received By: Molly Nail Date/Time: 6/2/2020 1507
Received @ Lab By: Date/Time:

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

4°C iced 6/2/2020 14:50

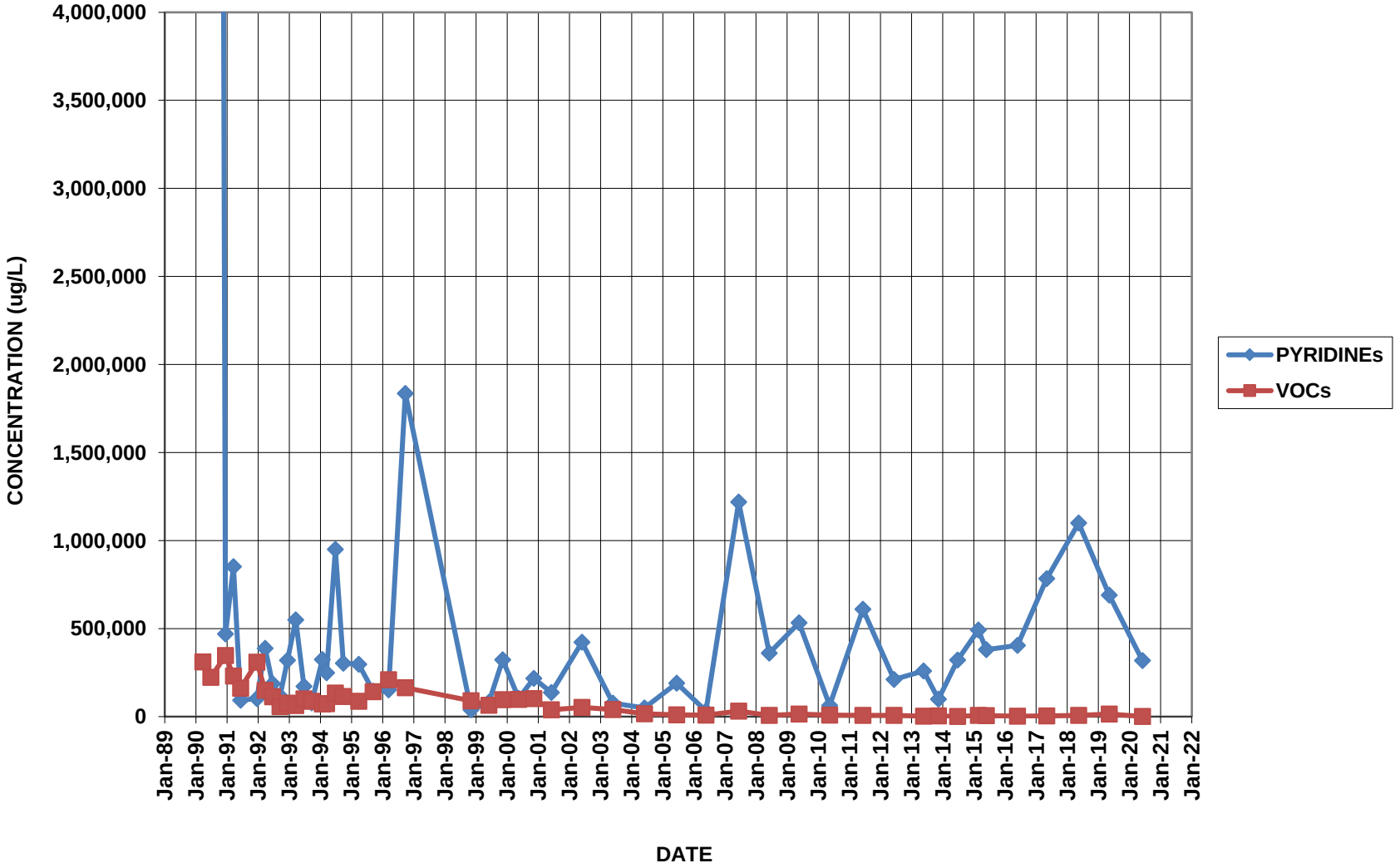
Custody Seal N/A, samples delivered by client. 6/2/2020

See additional page for sample conditions.

Appendix B

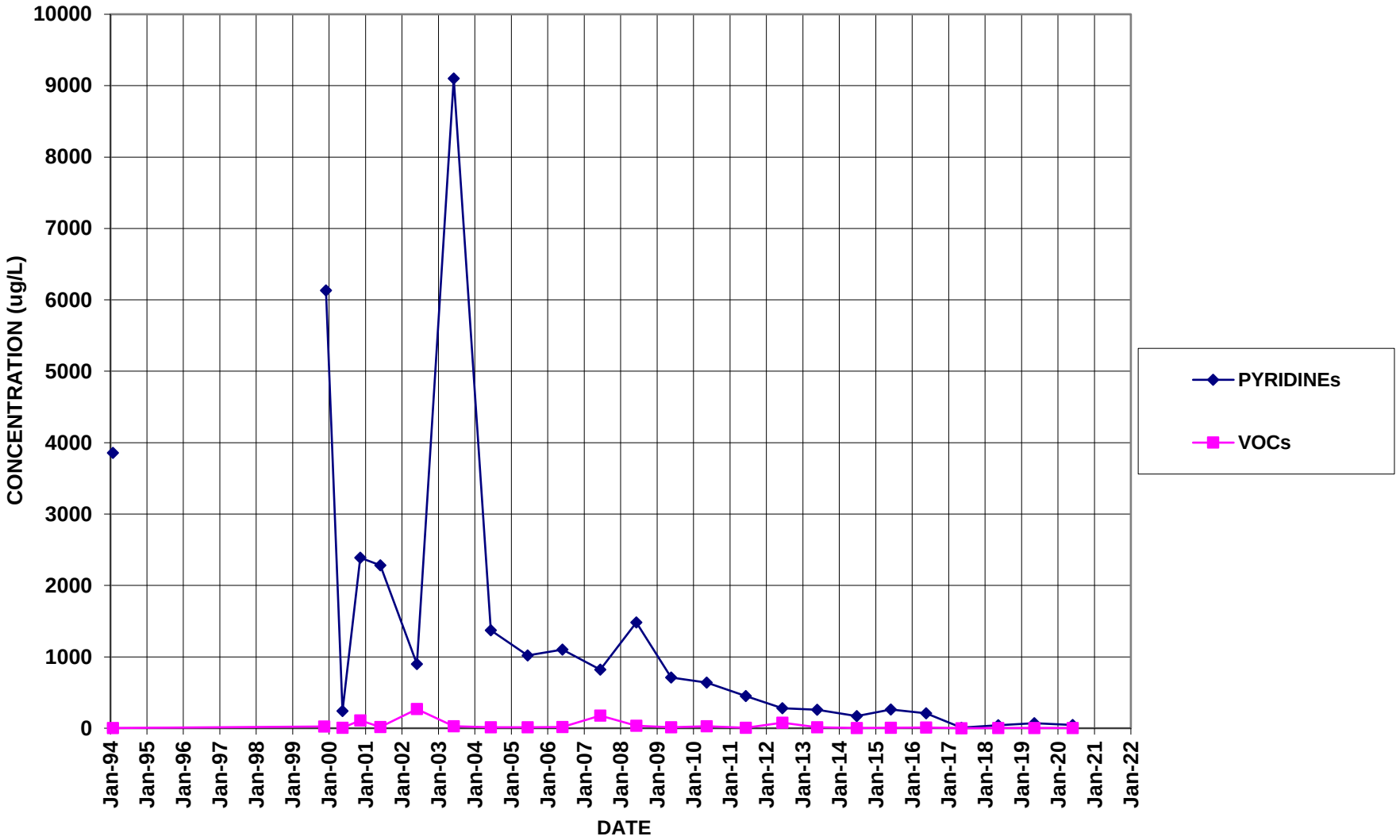
Well Trend Data

B-17

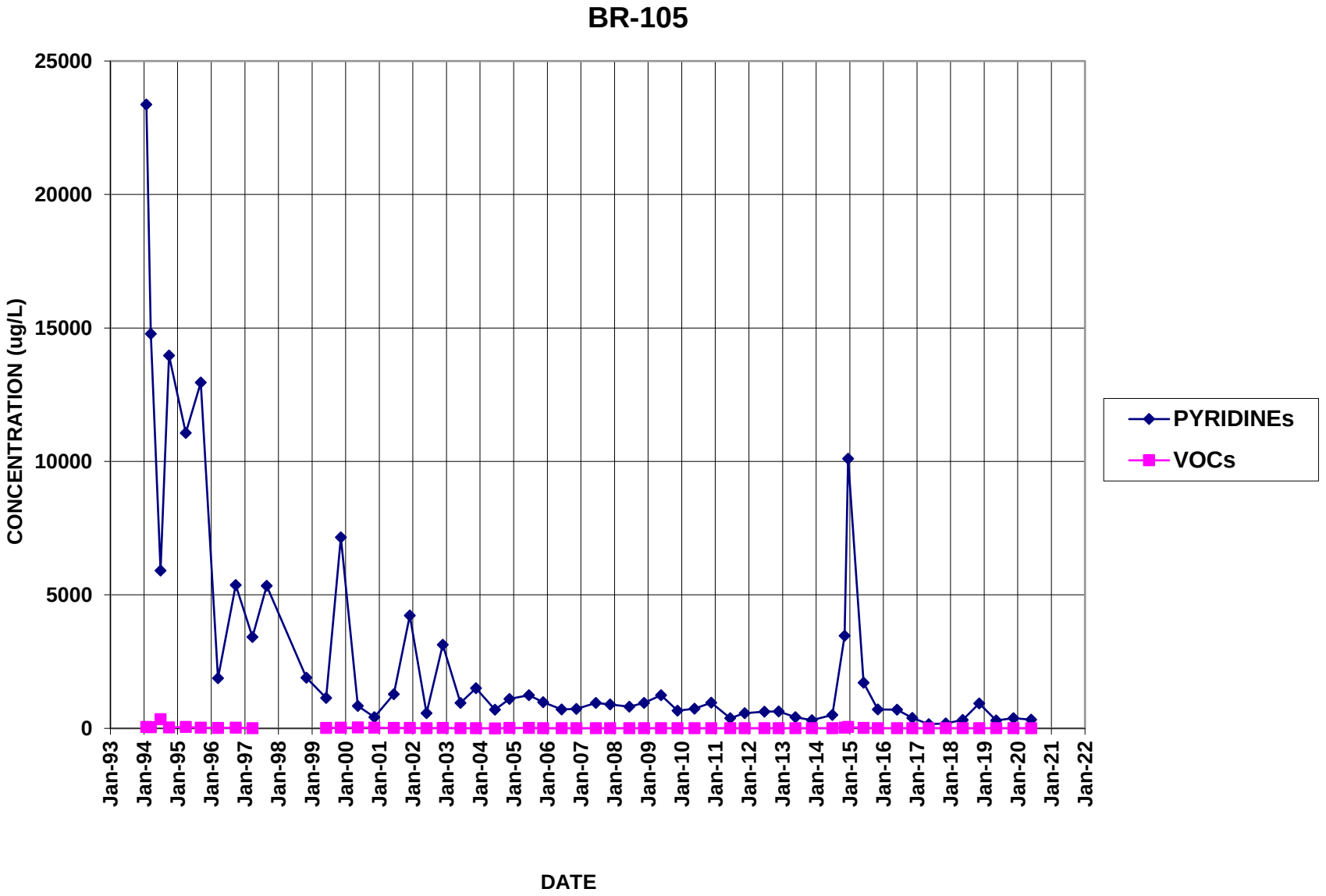


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

B-7

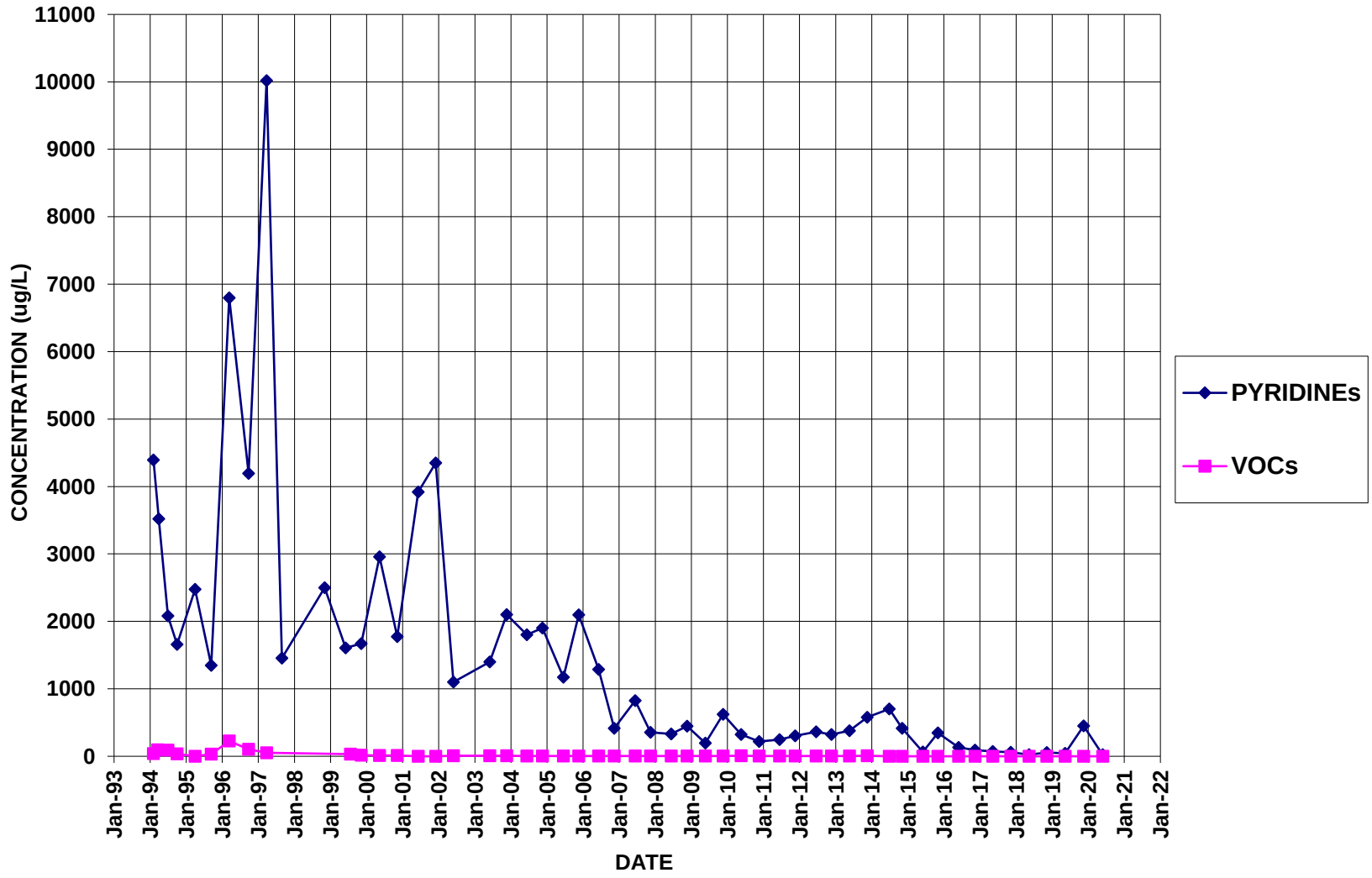


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020



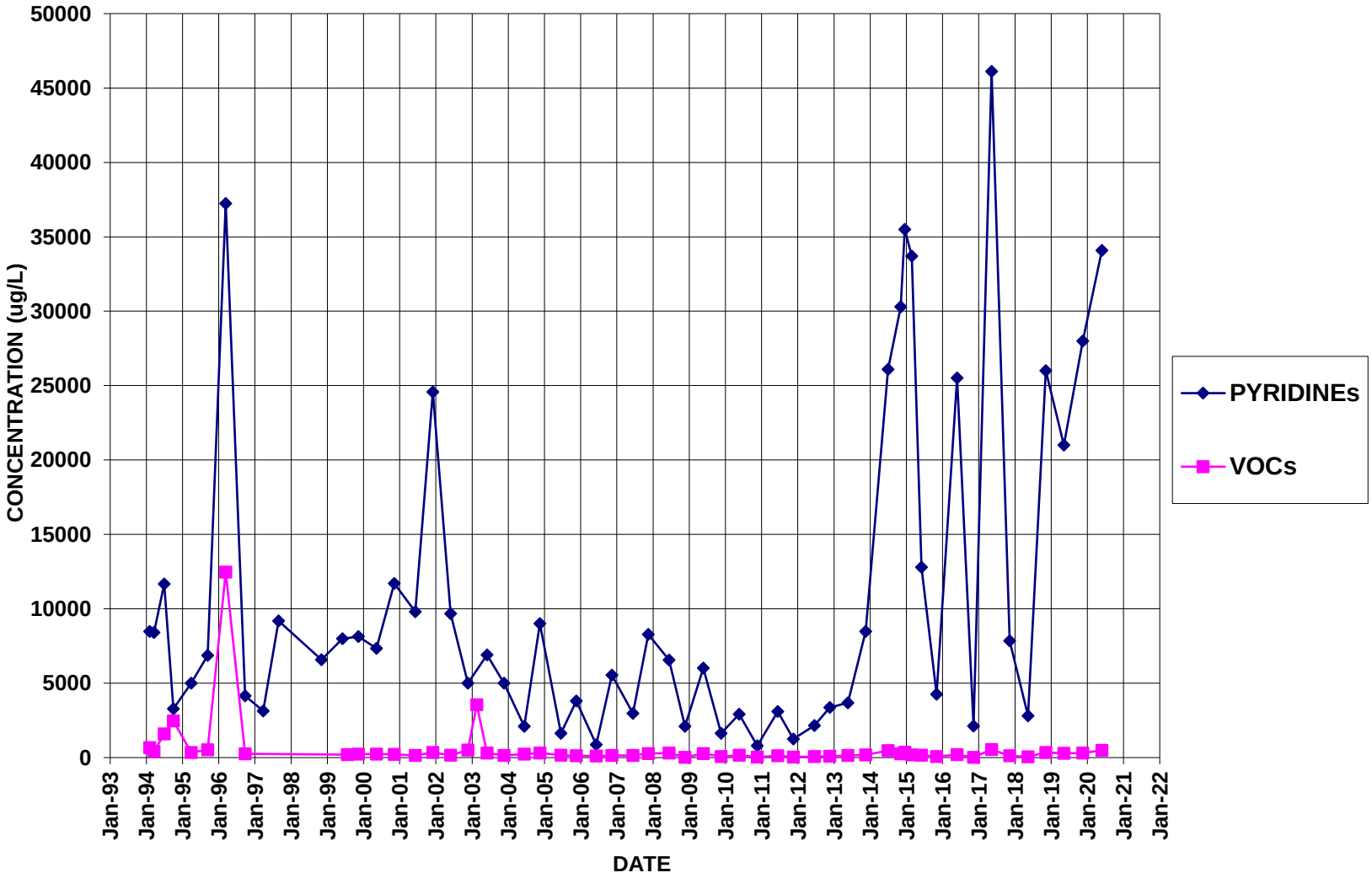
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-105D



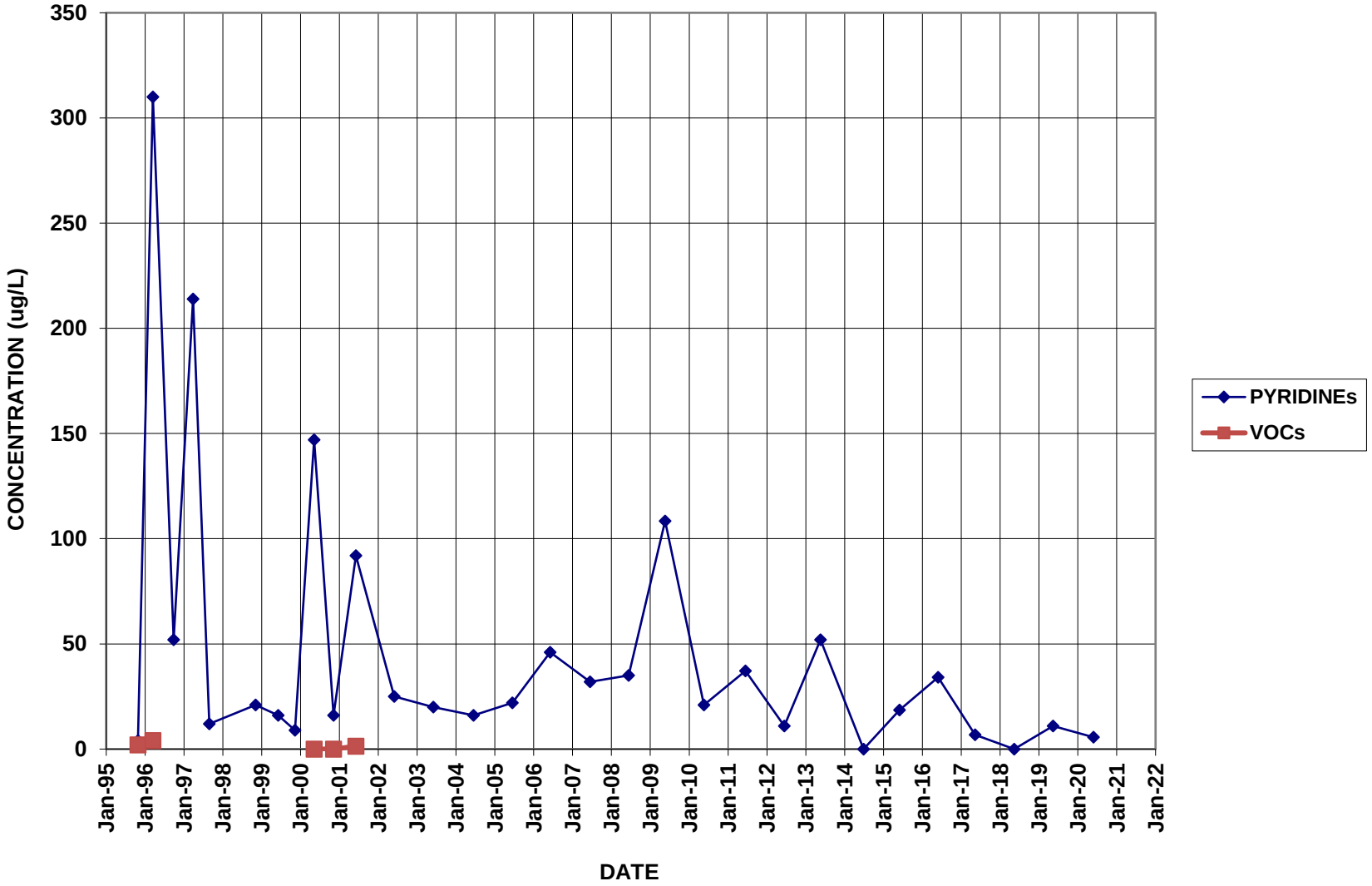
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-106



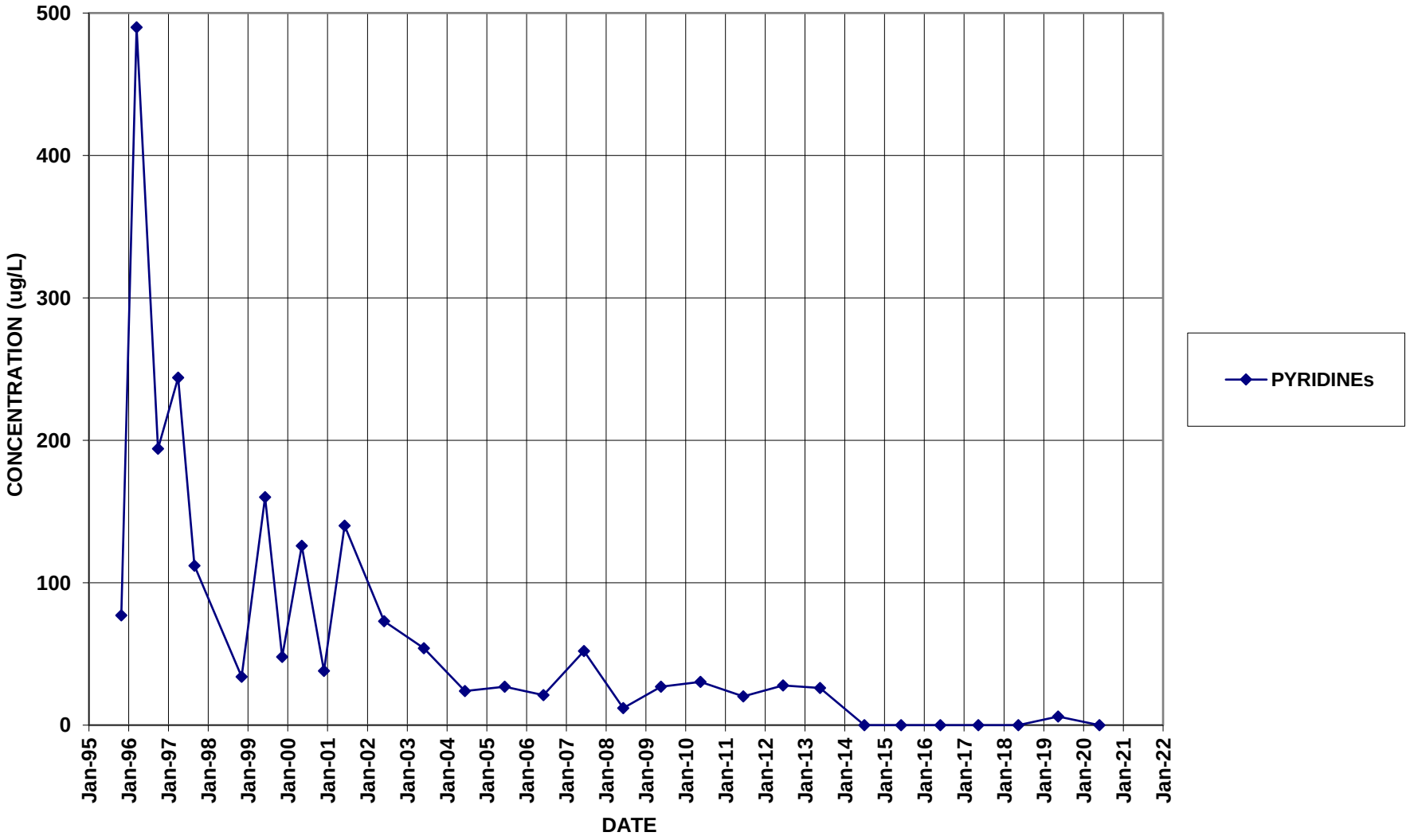
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-112D



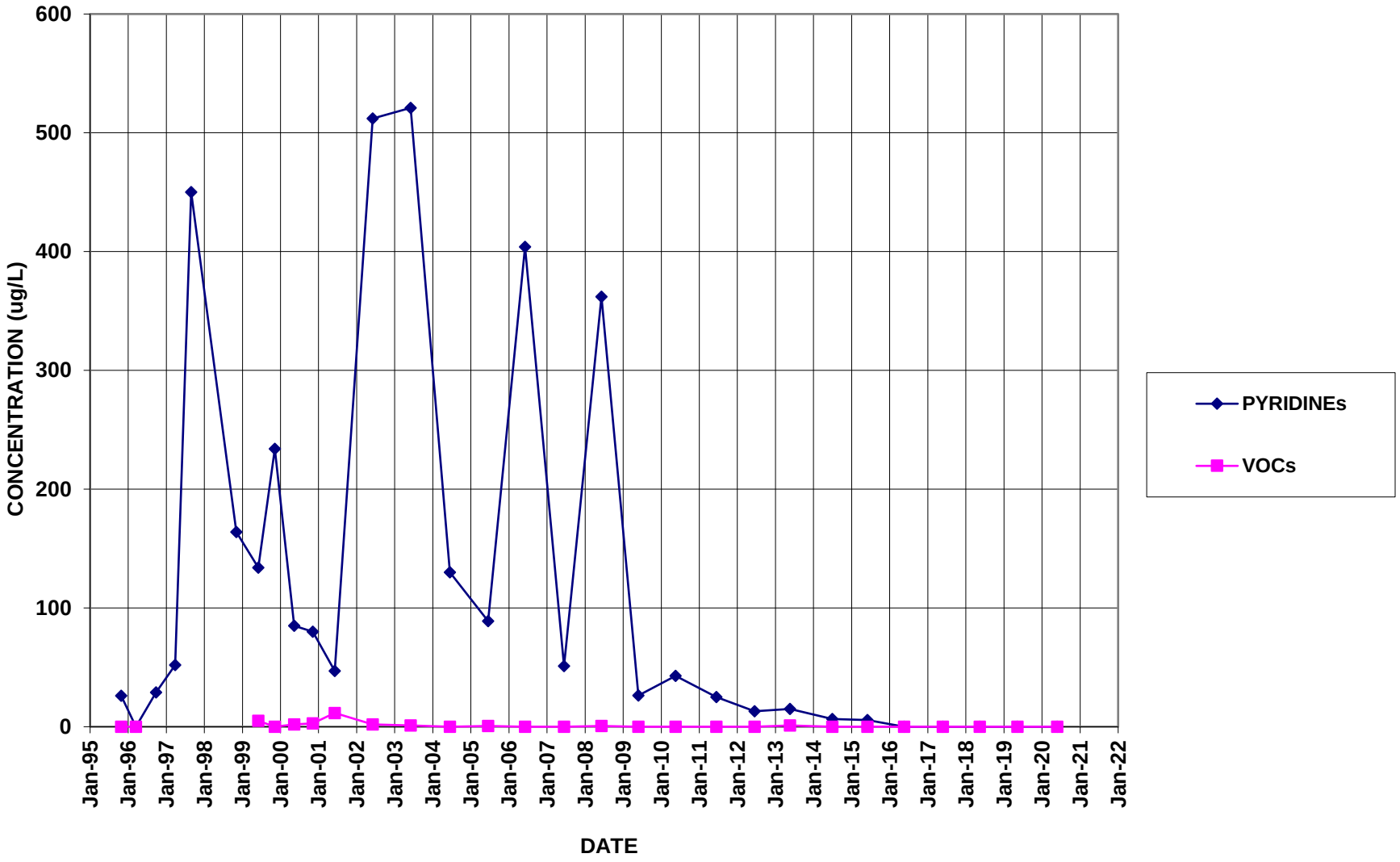
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-113D



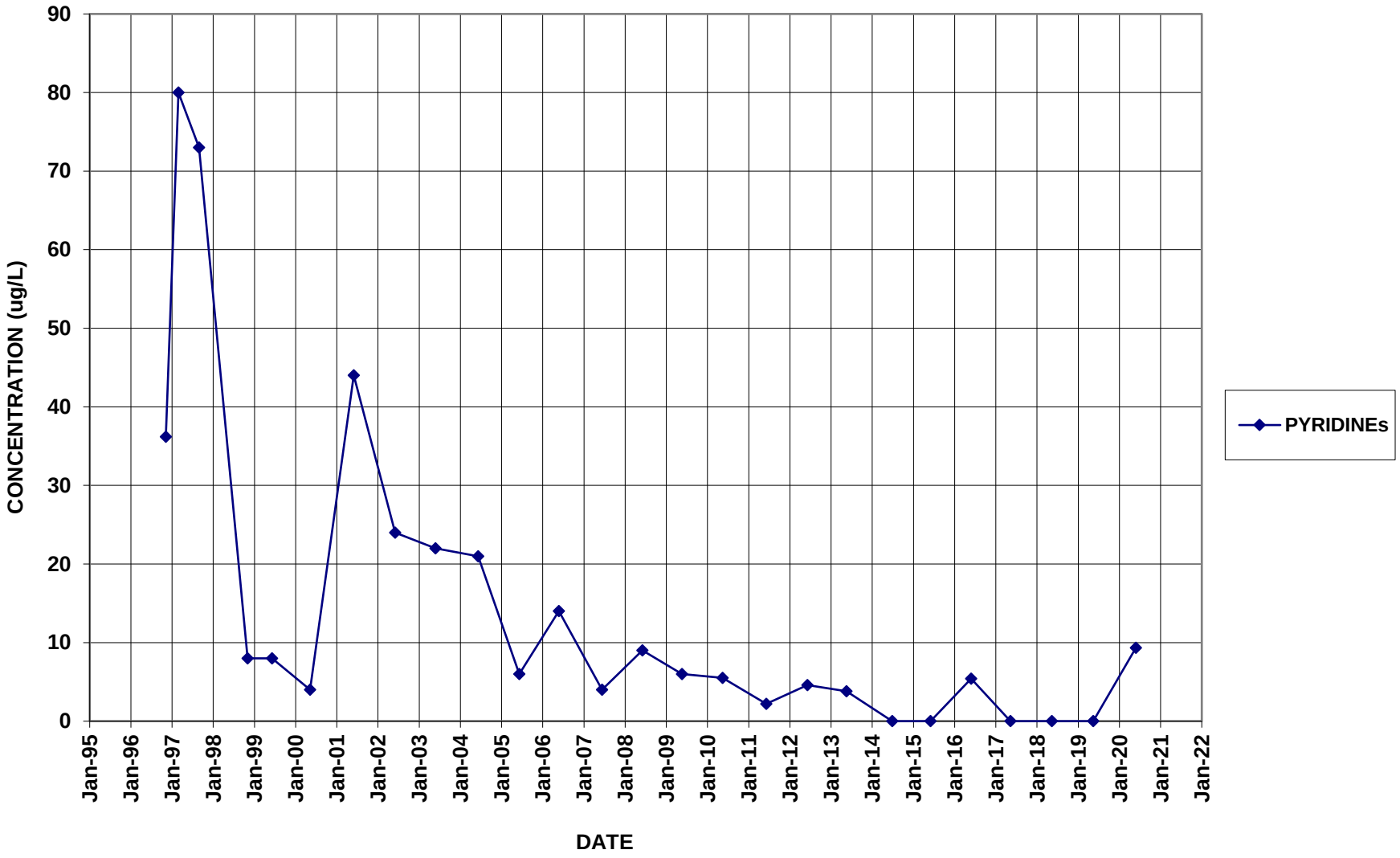
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-114



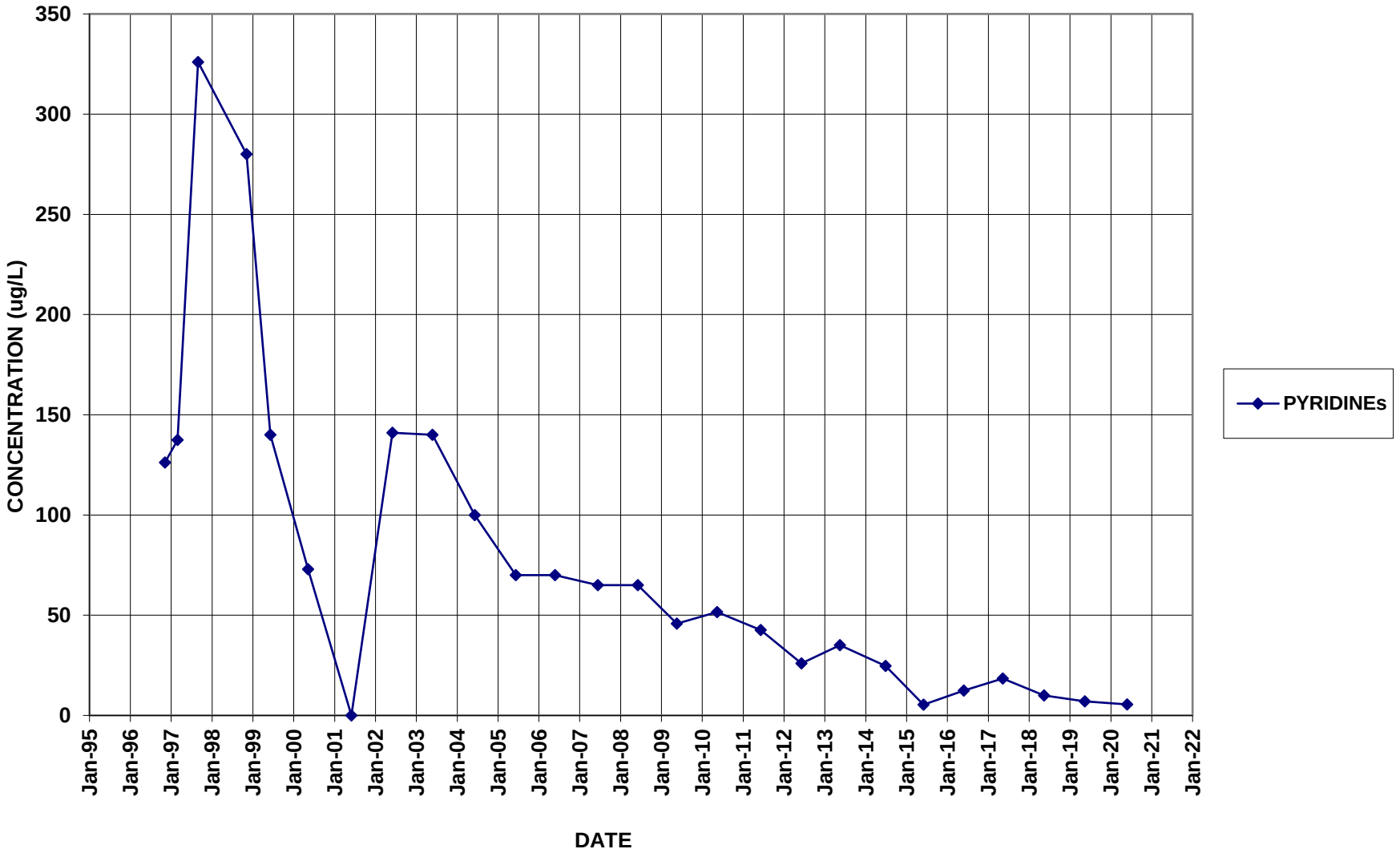
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-117D



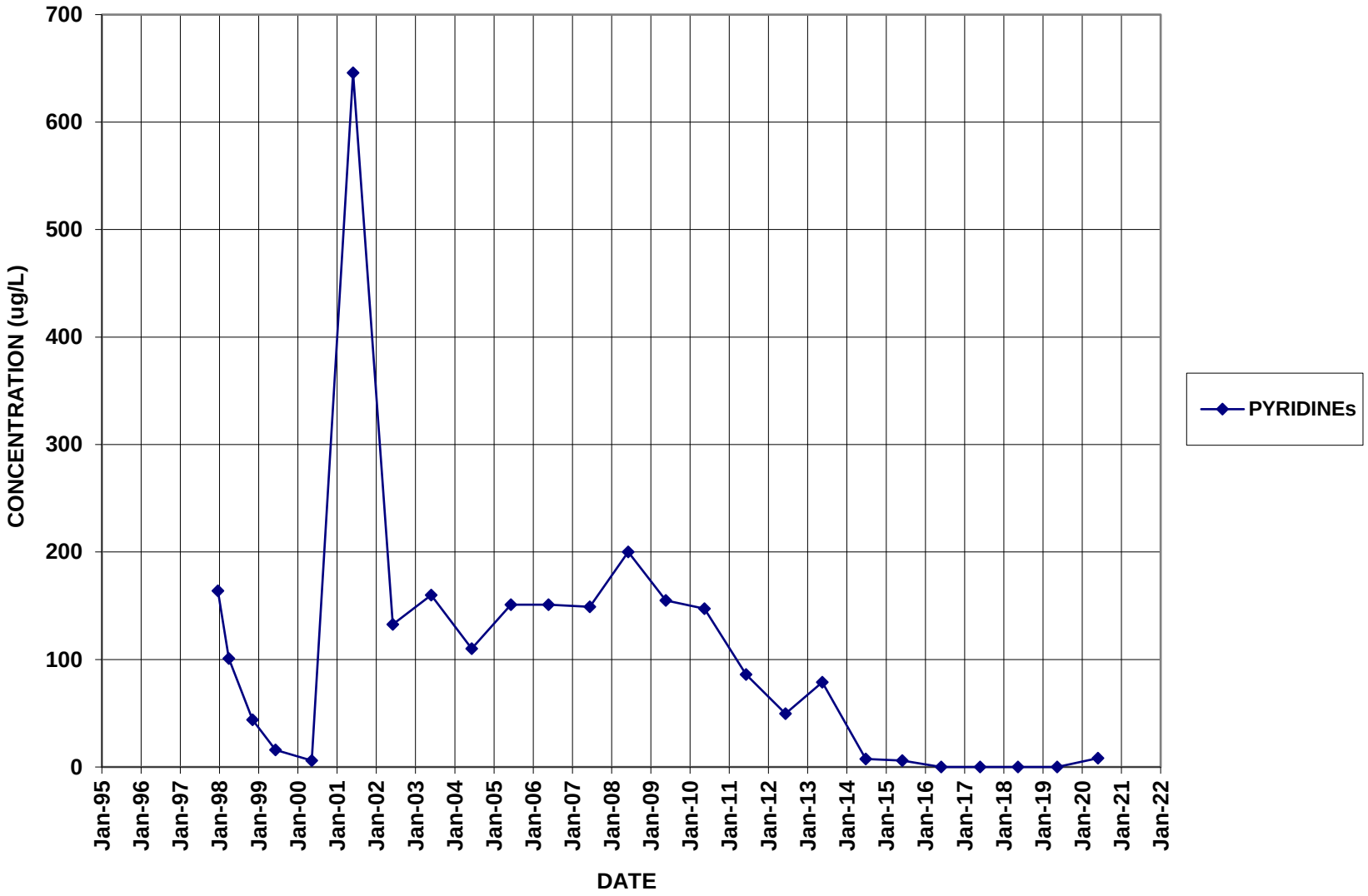
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-118D



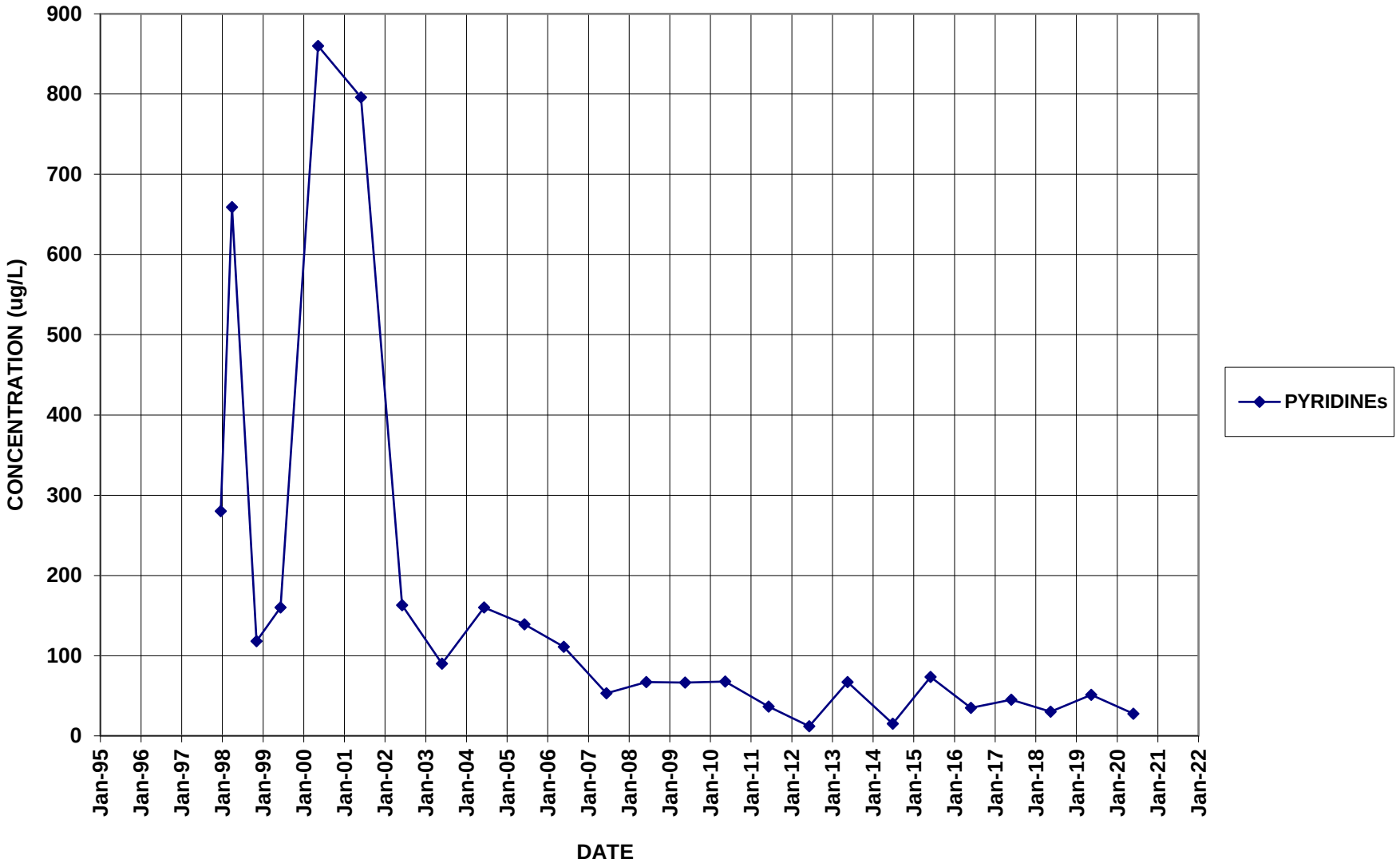
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-122D



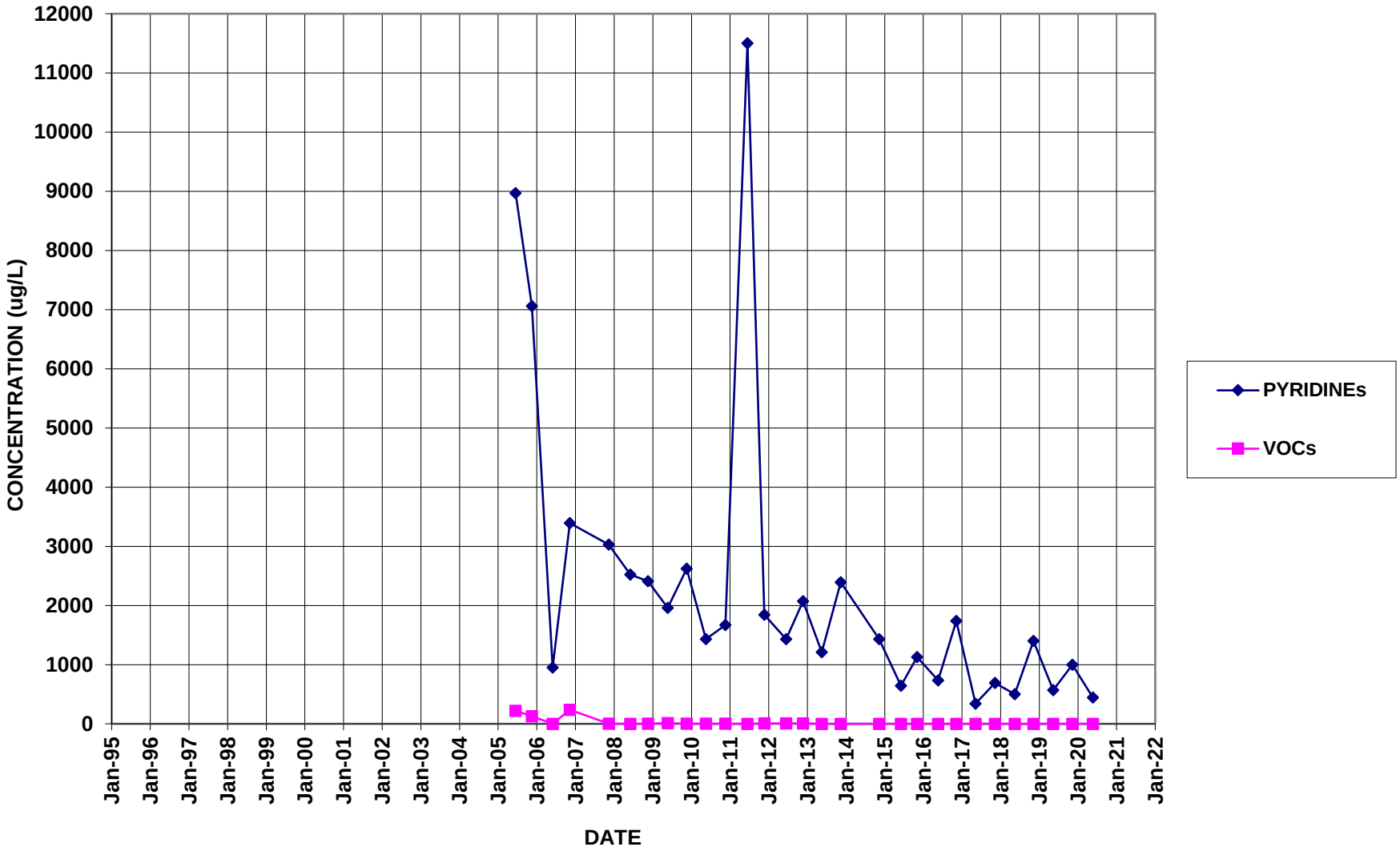
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-123D



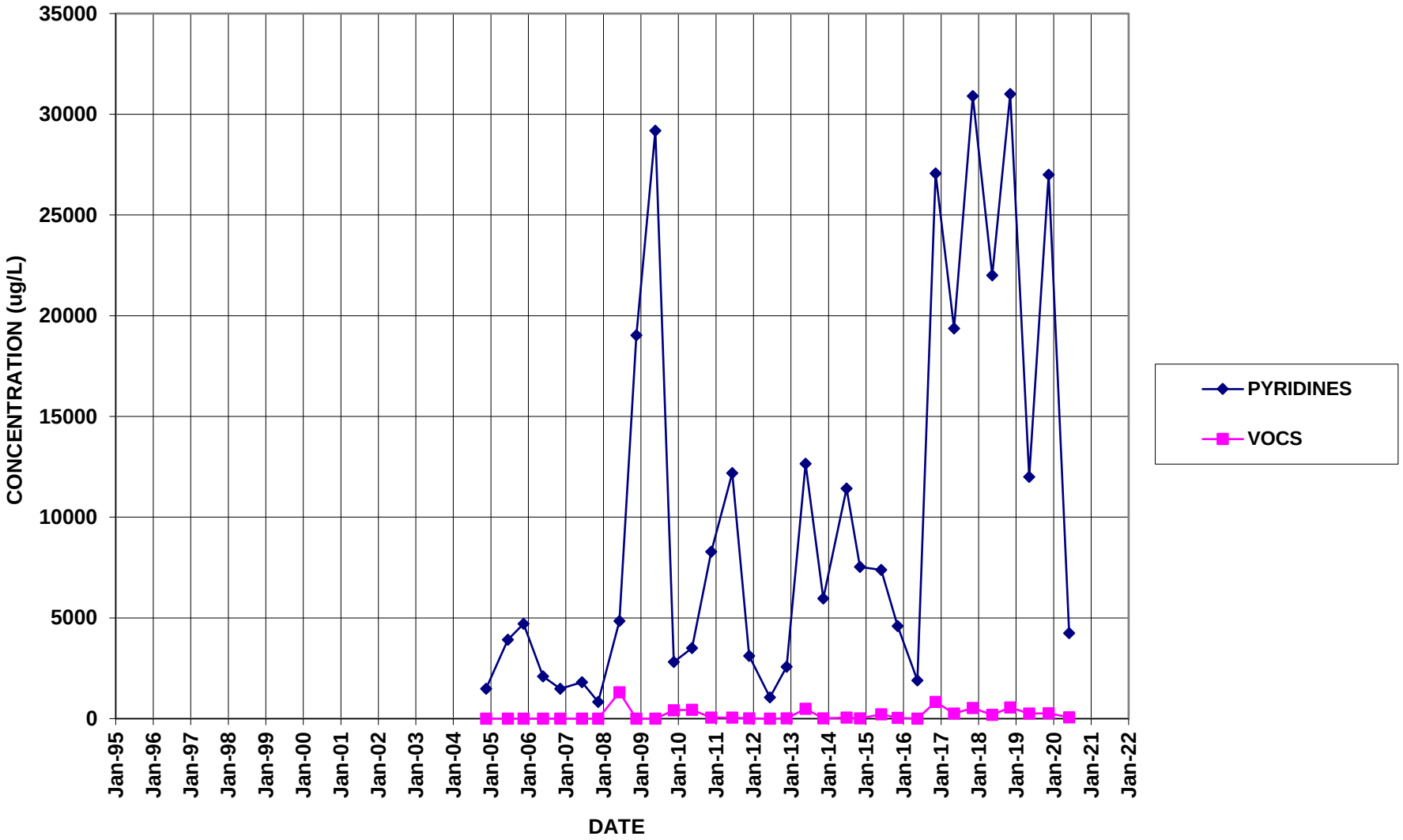
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-126

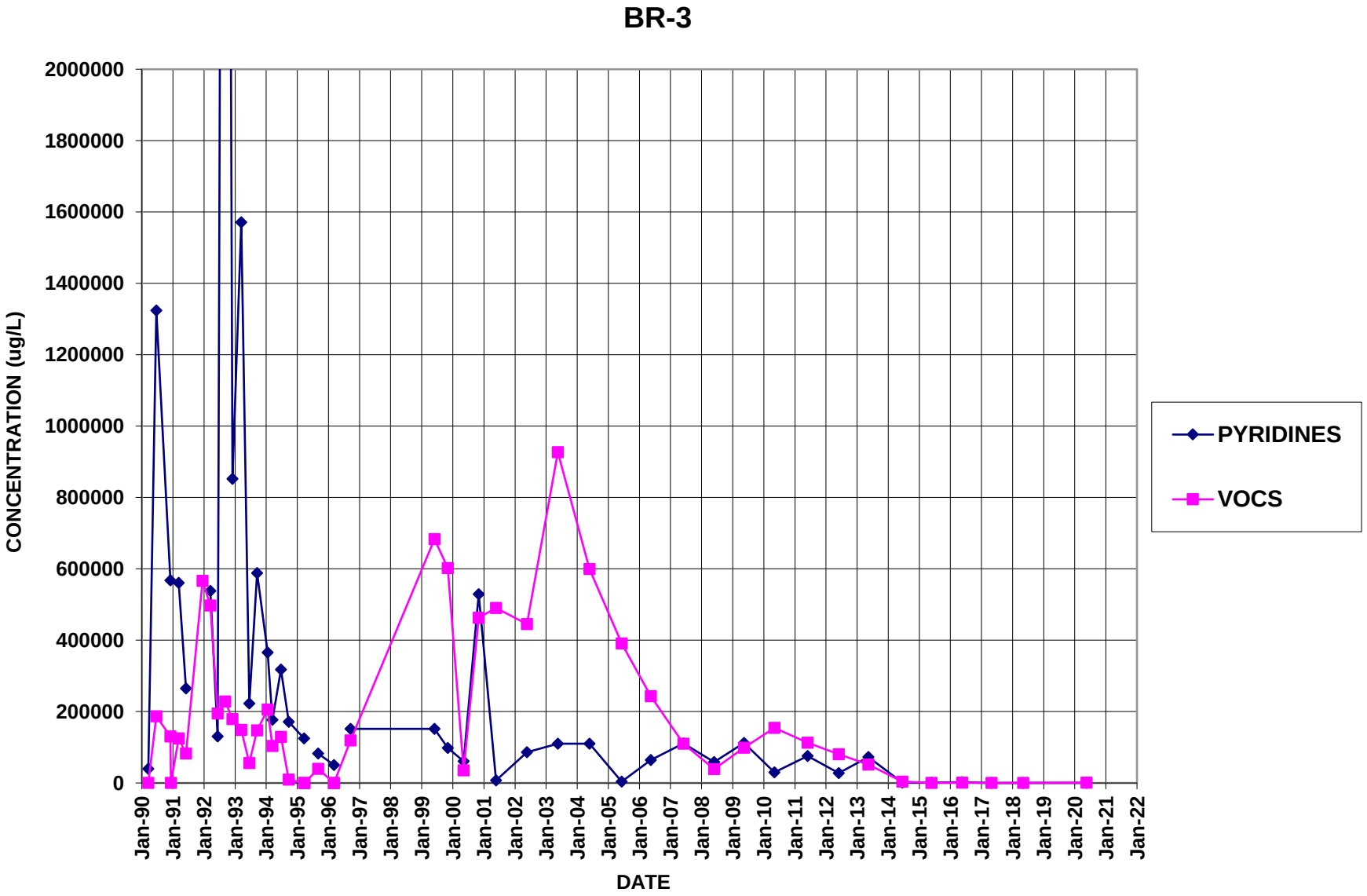


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-127

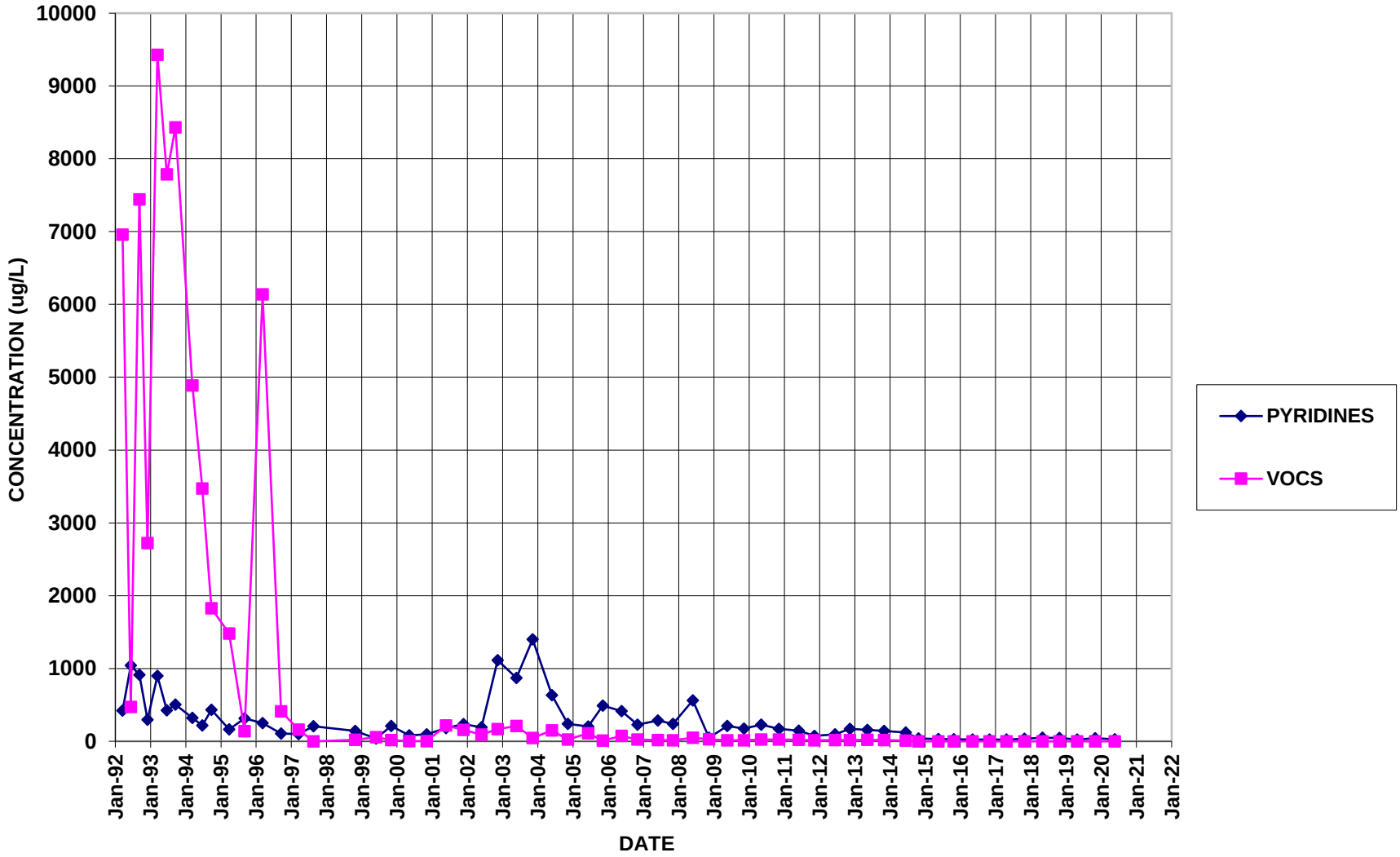


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020



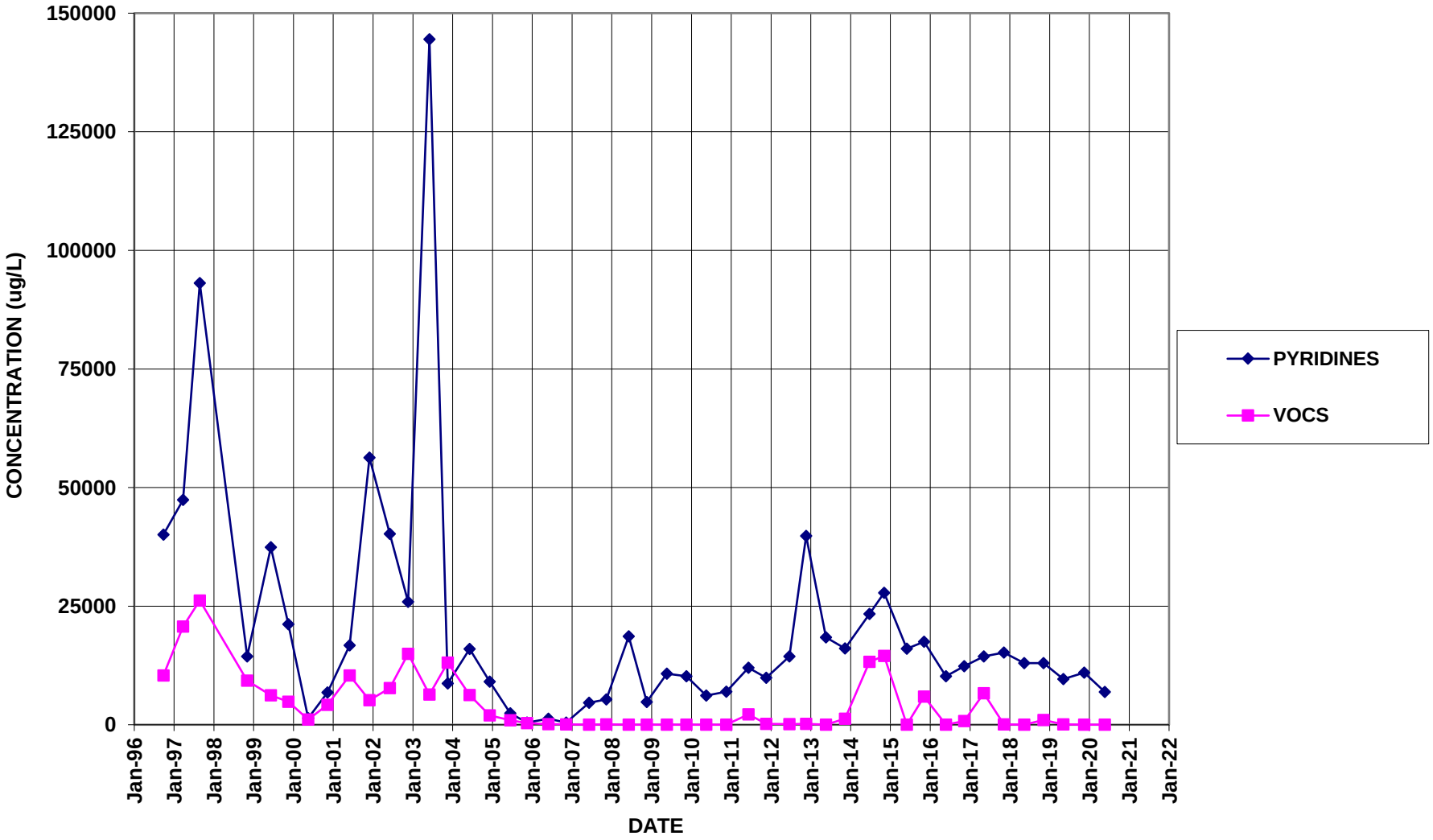
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-5A



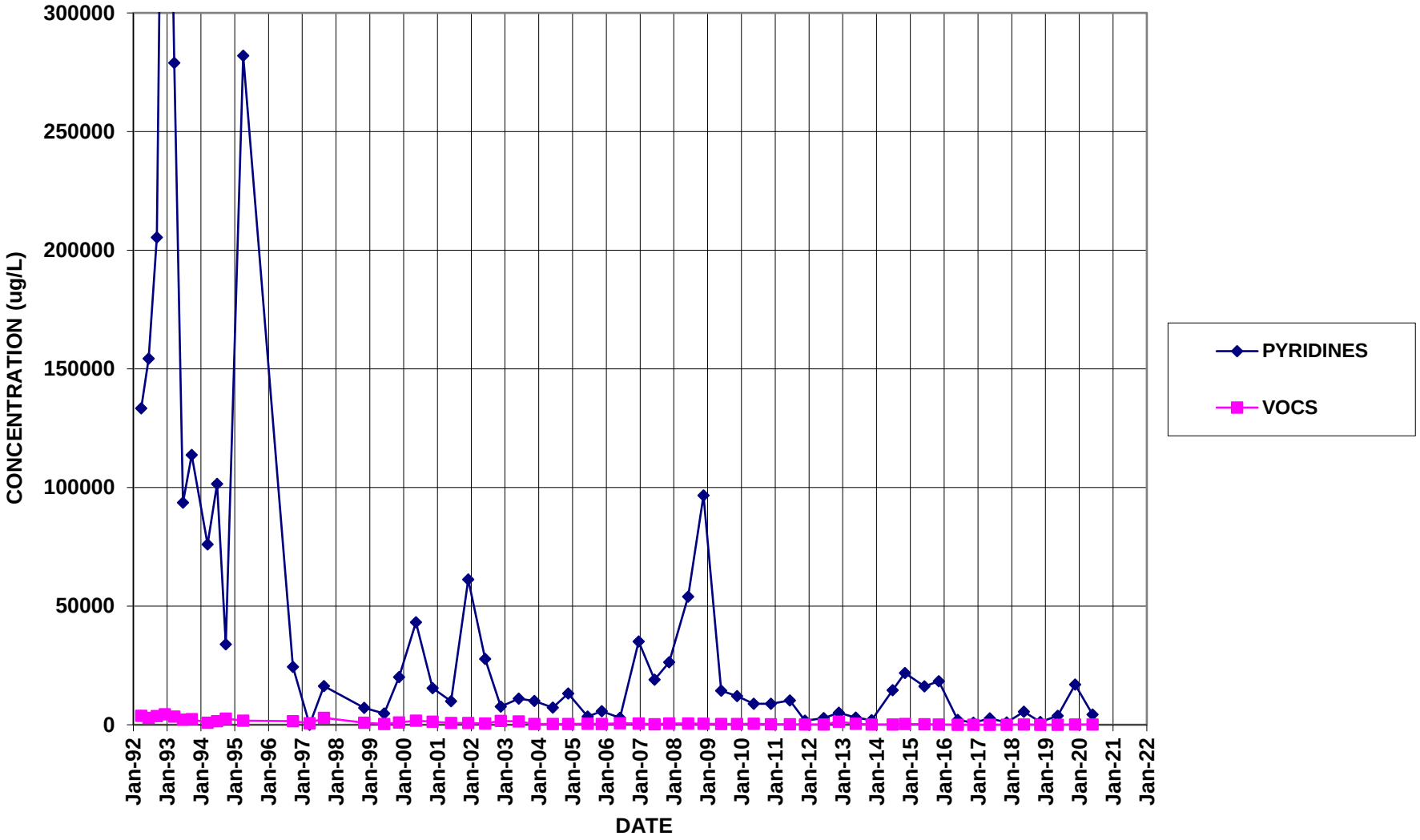
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-6A



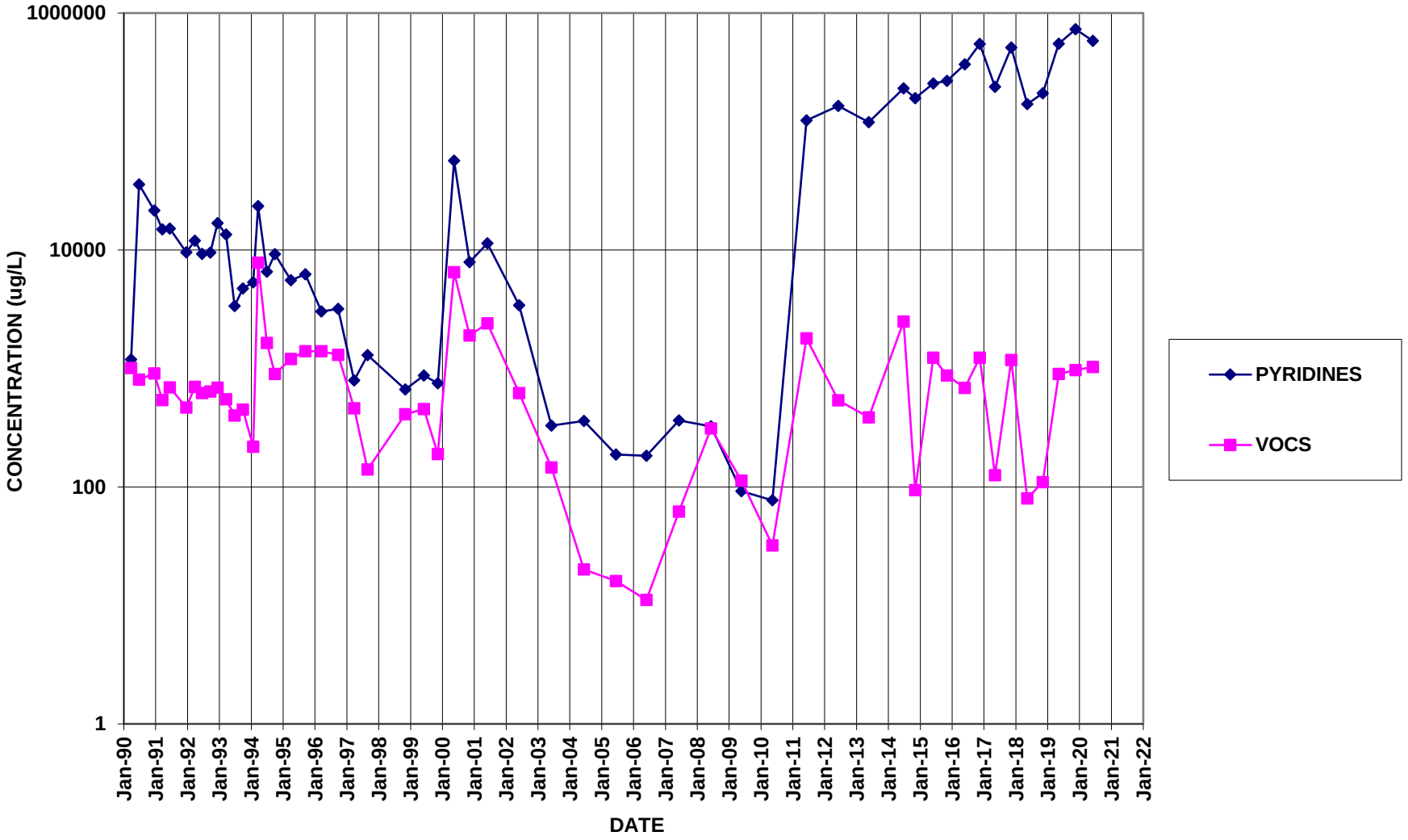
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-7A



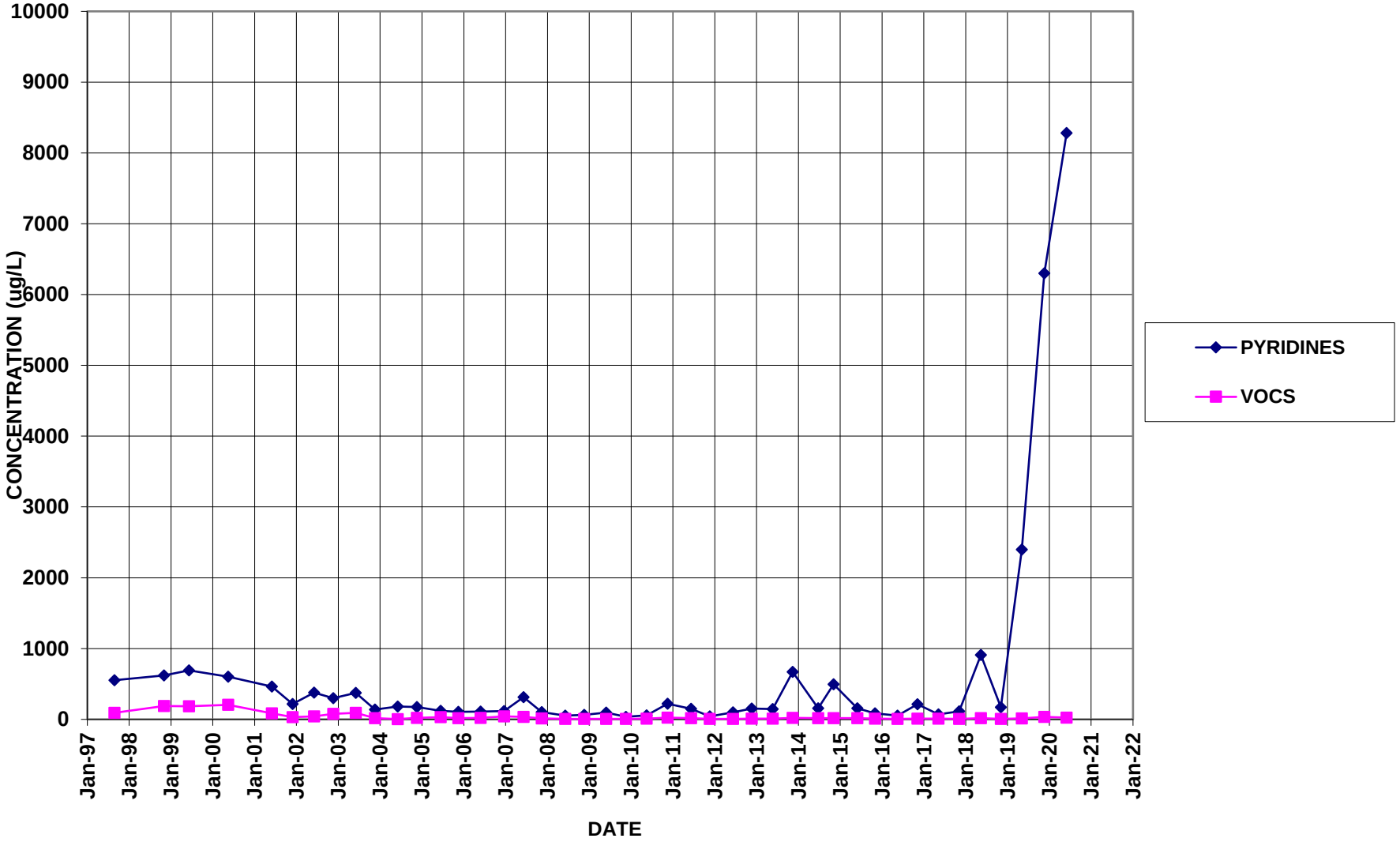
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-8



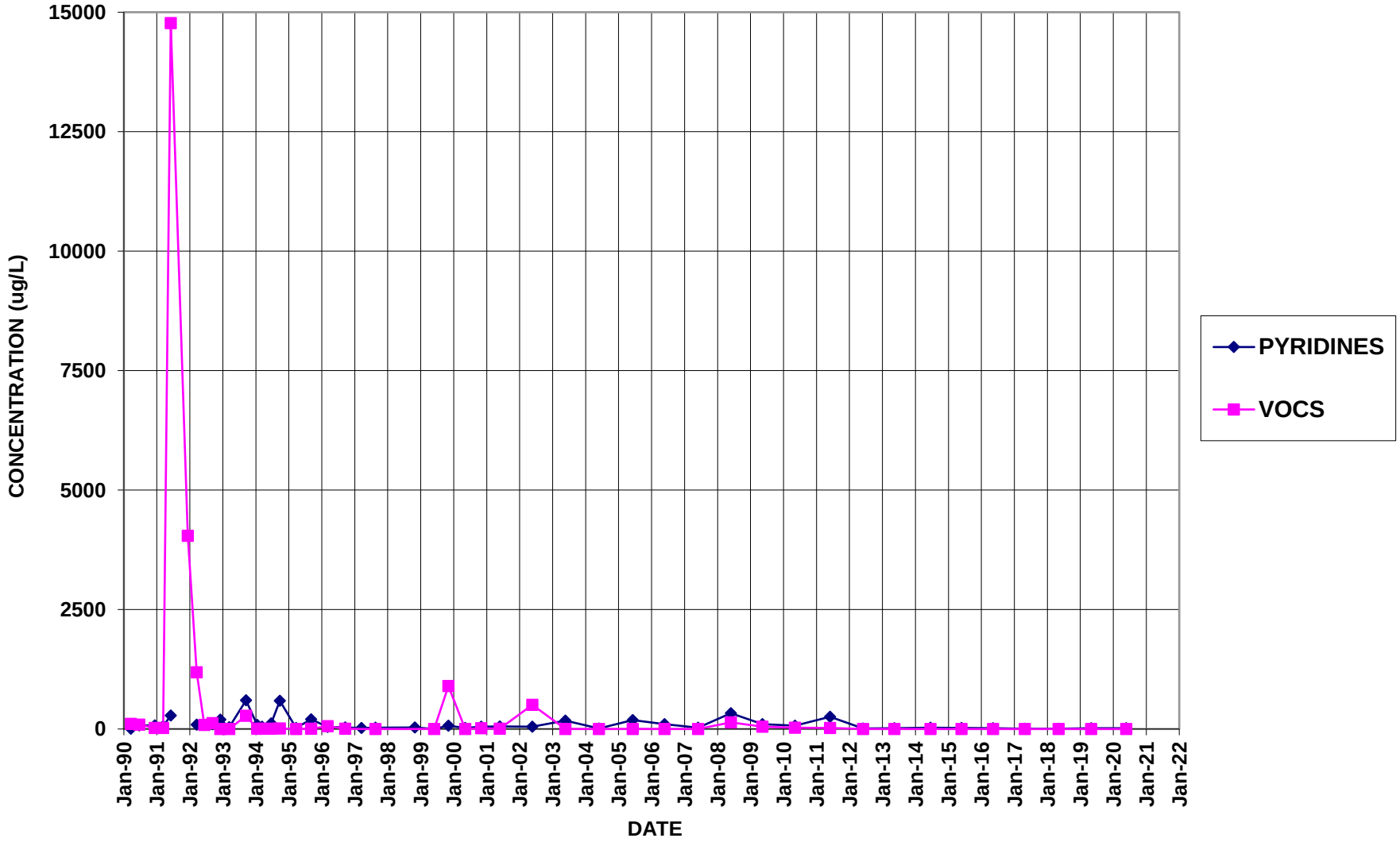
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

BR-9



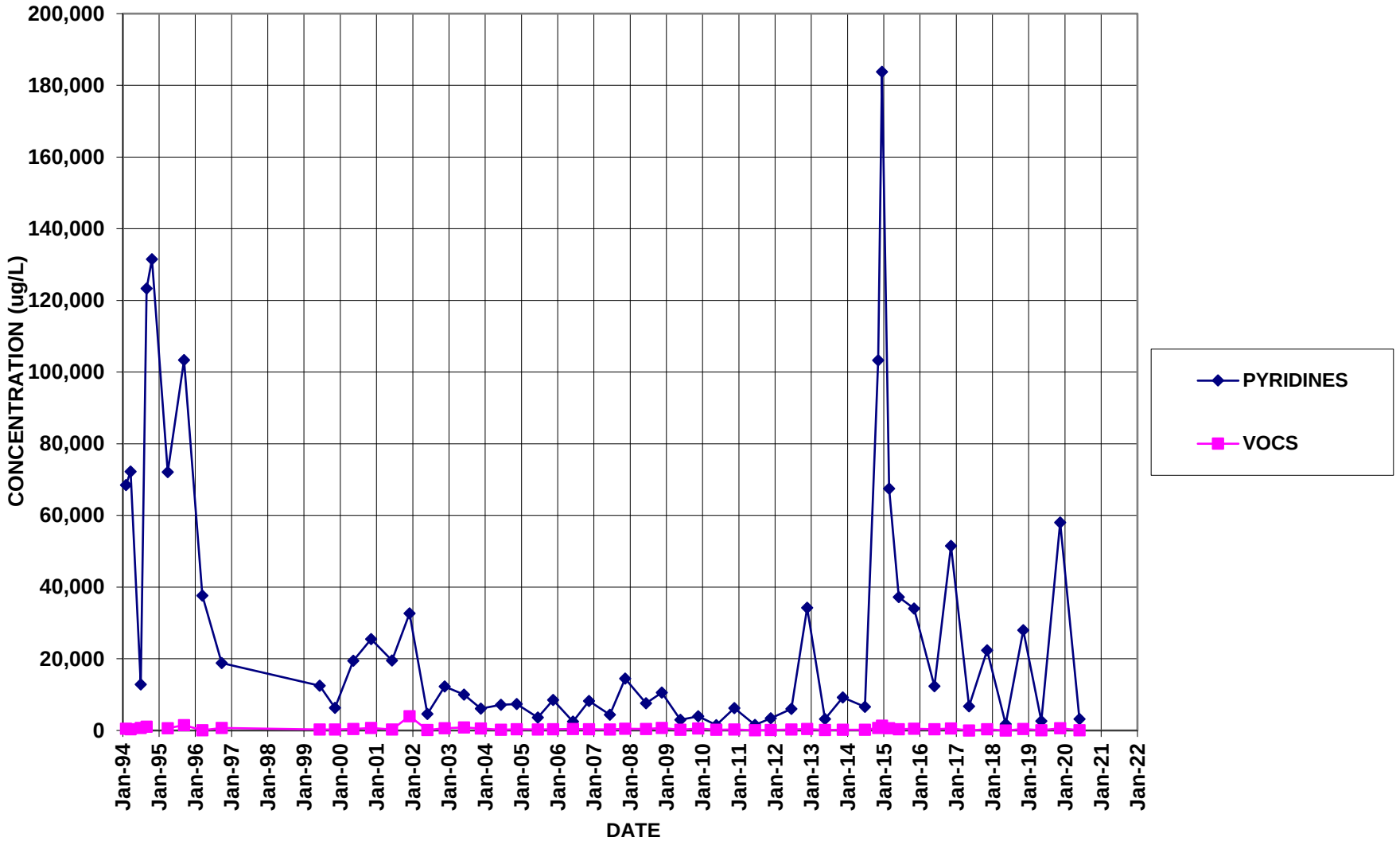
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

E-3



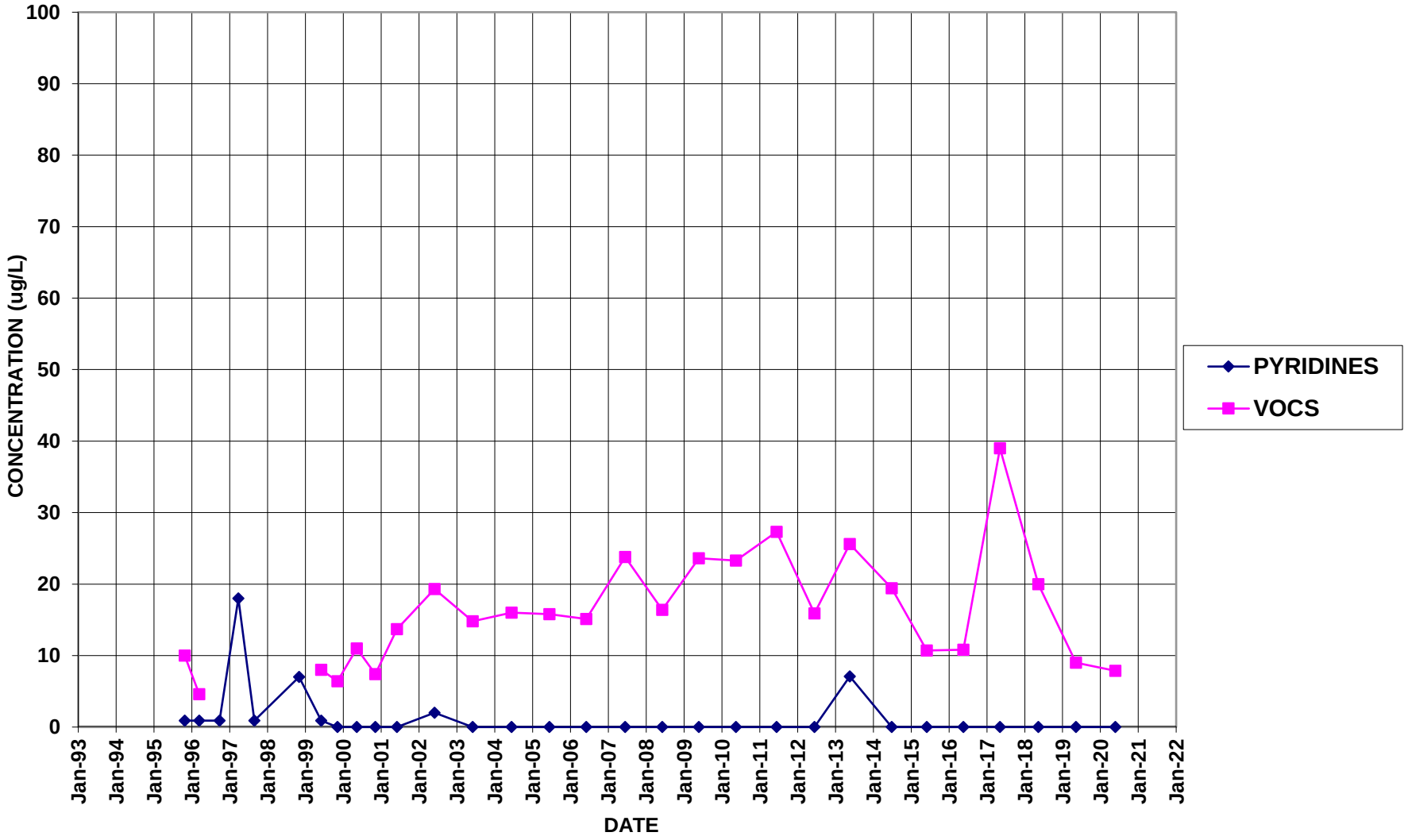
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

MW-106



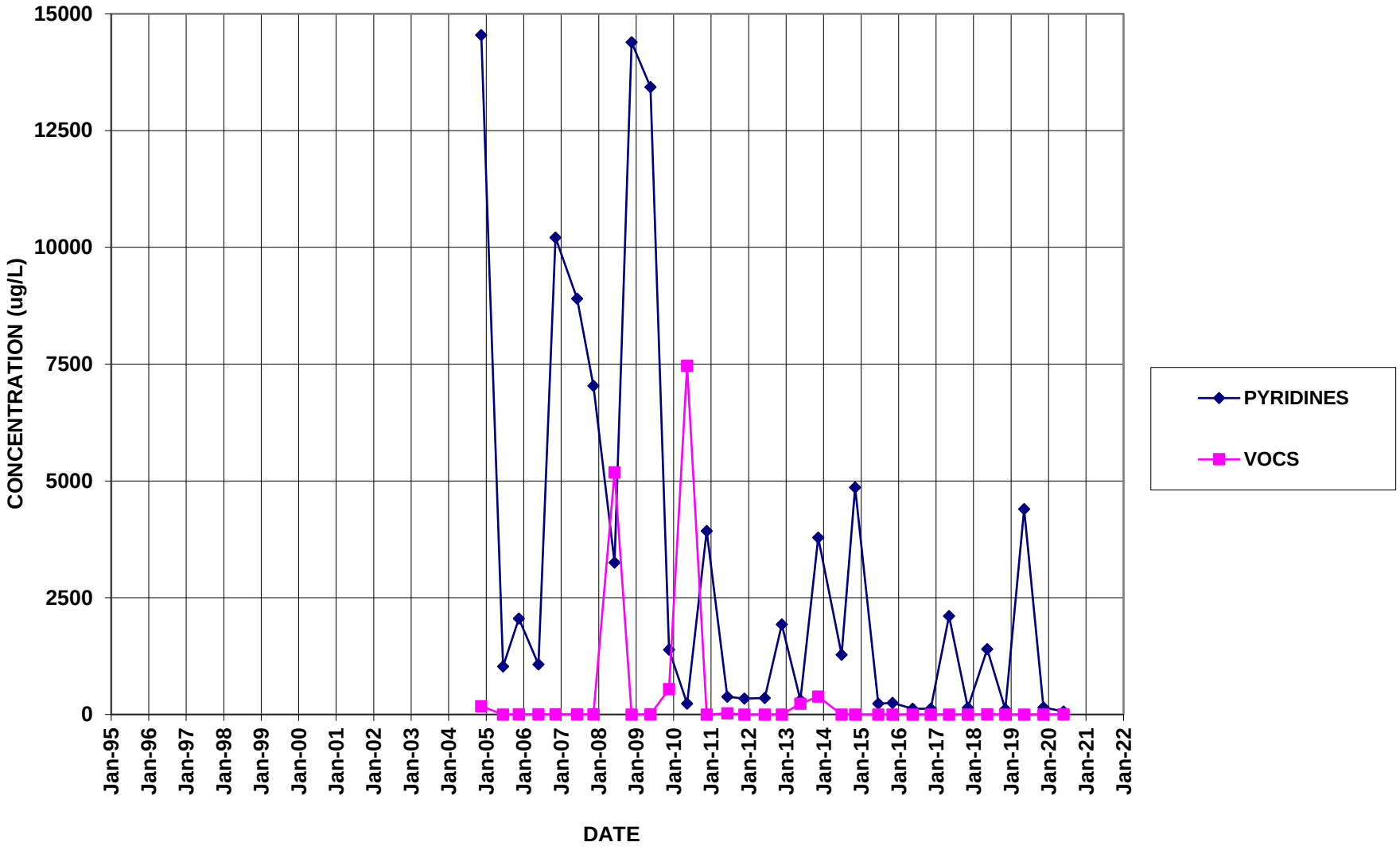
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

MW-114



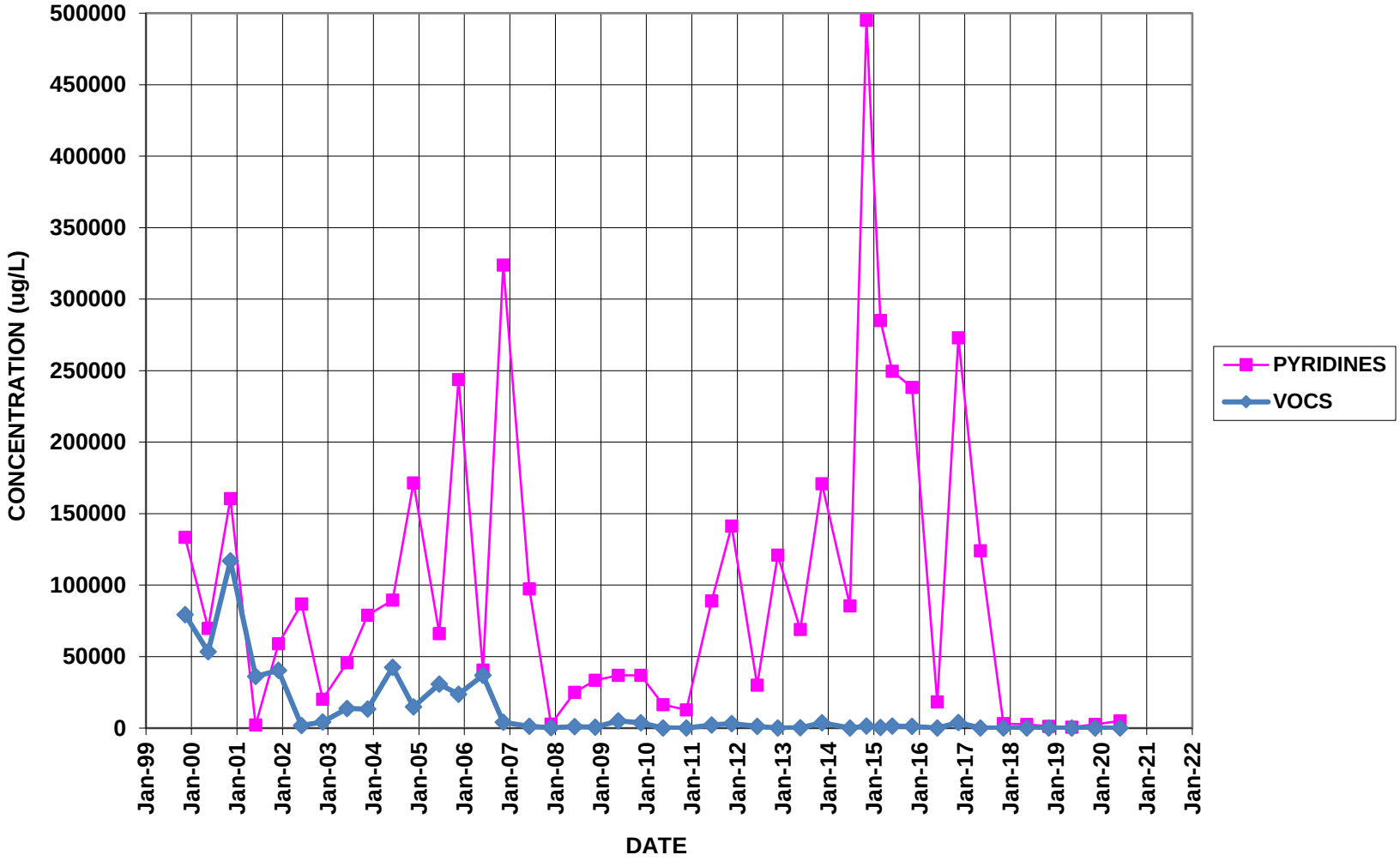
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

MW-127



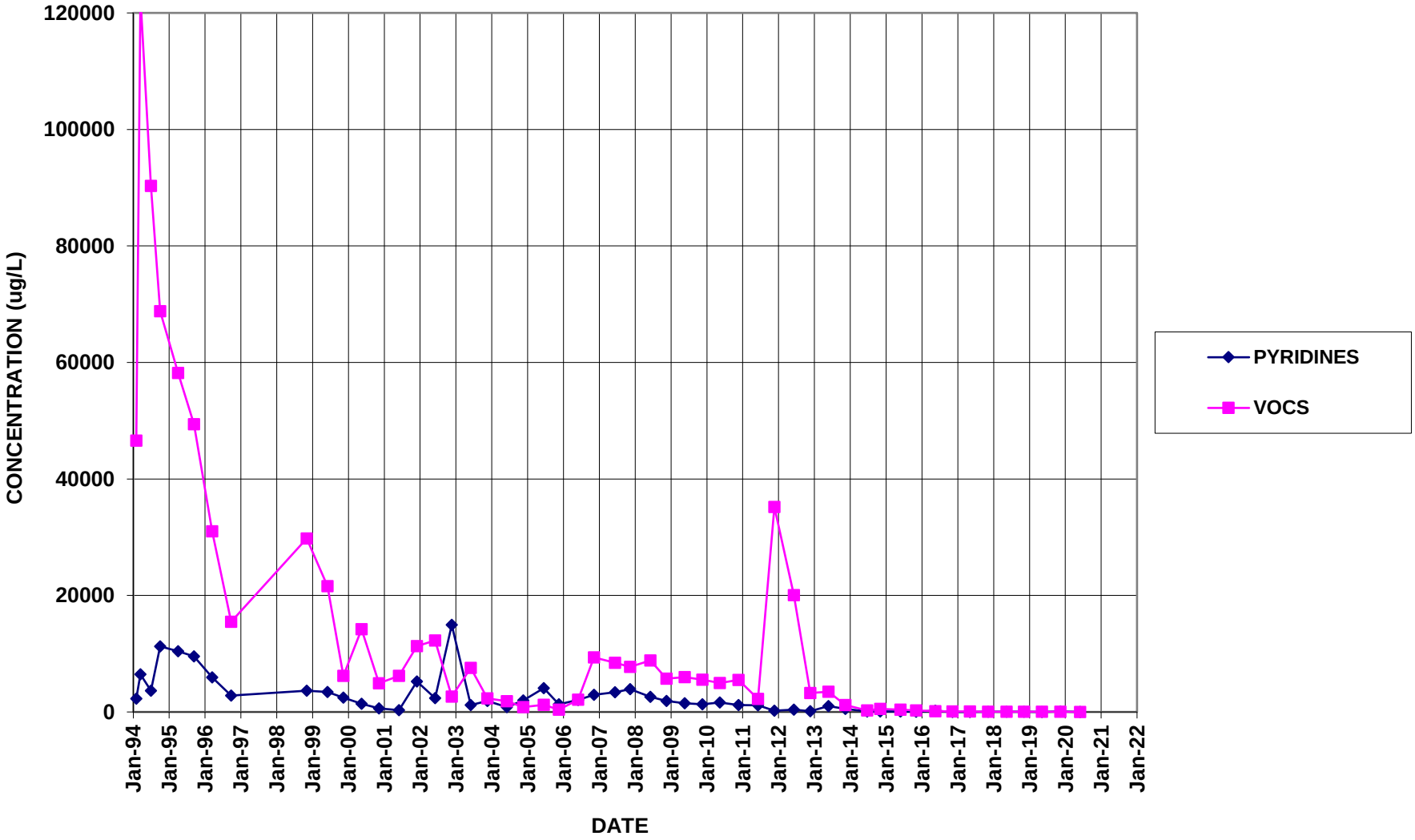
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW10



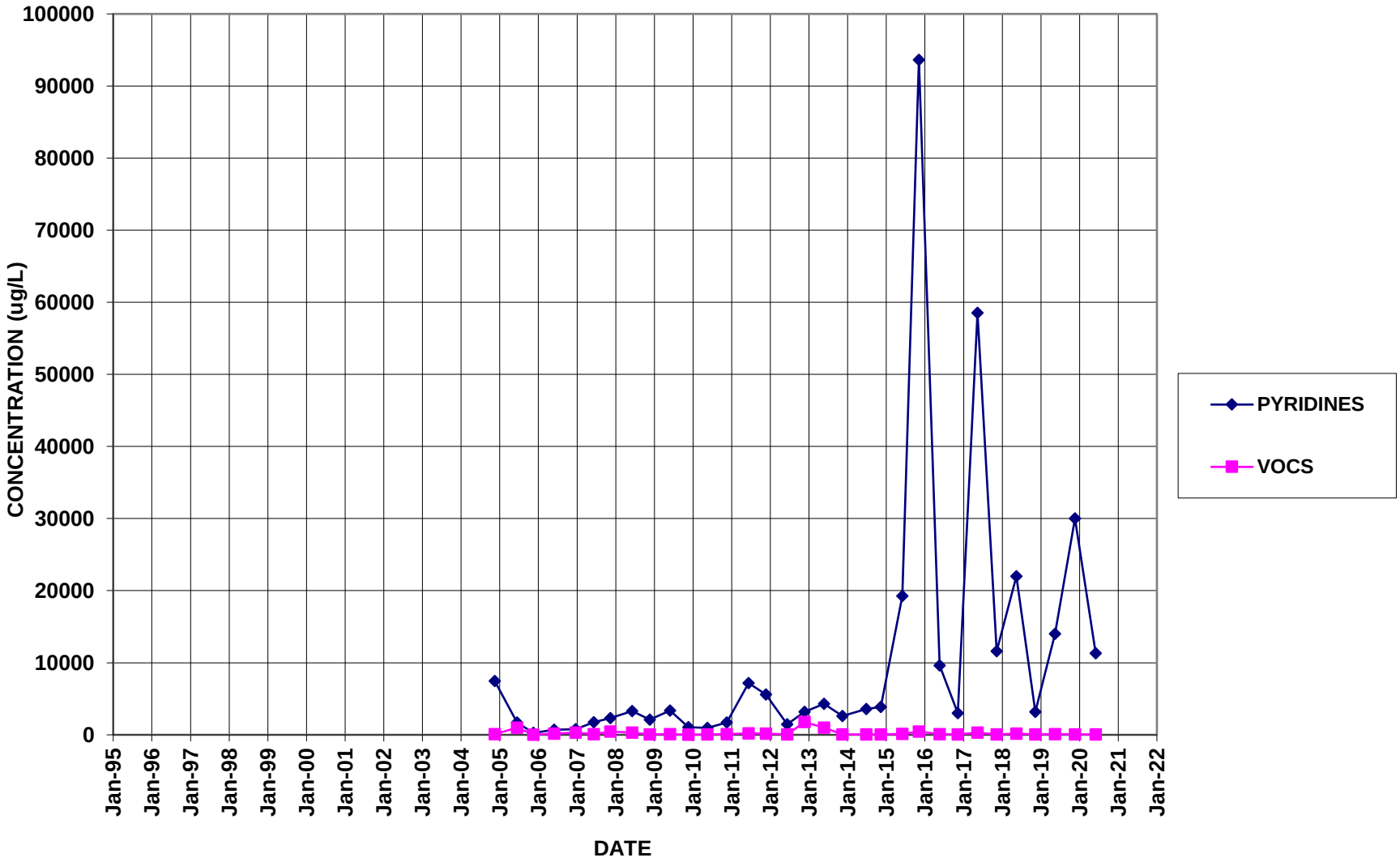
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW12 (Formerly BR-101)



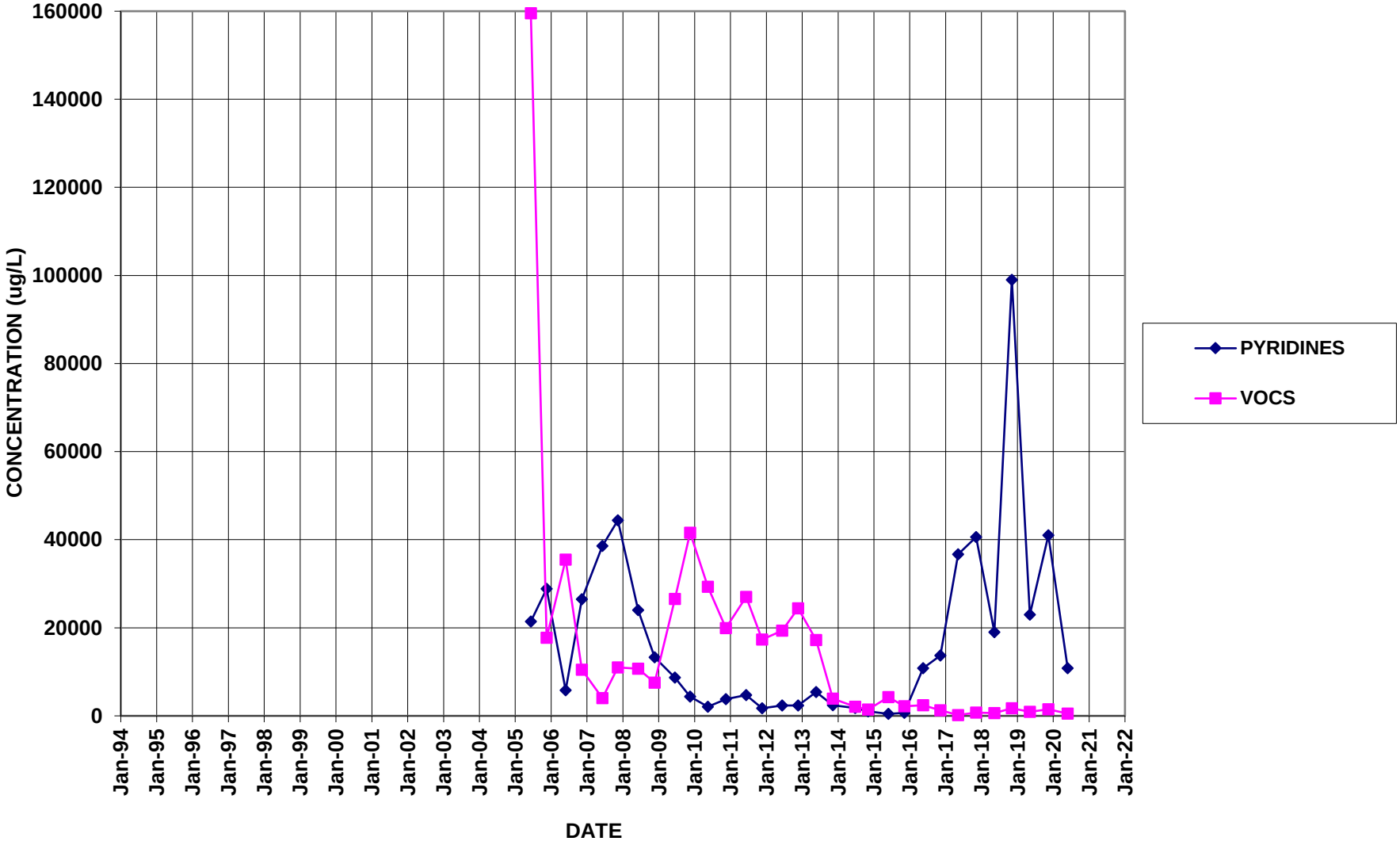
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW13



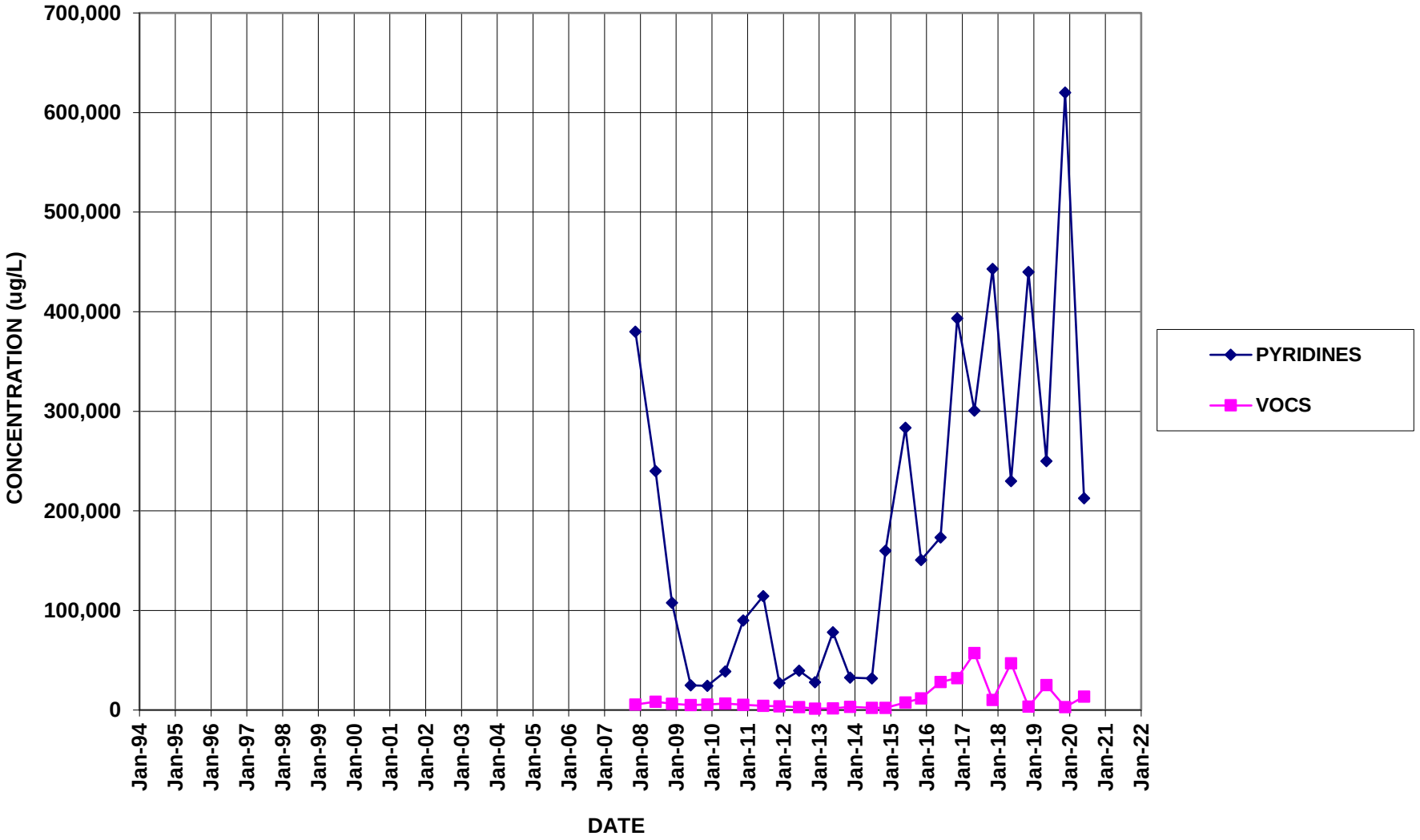
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW14



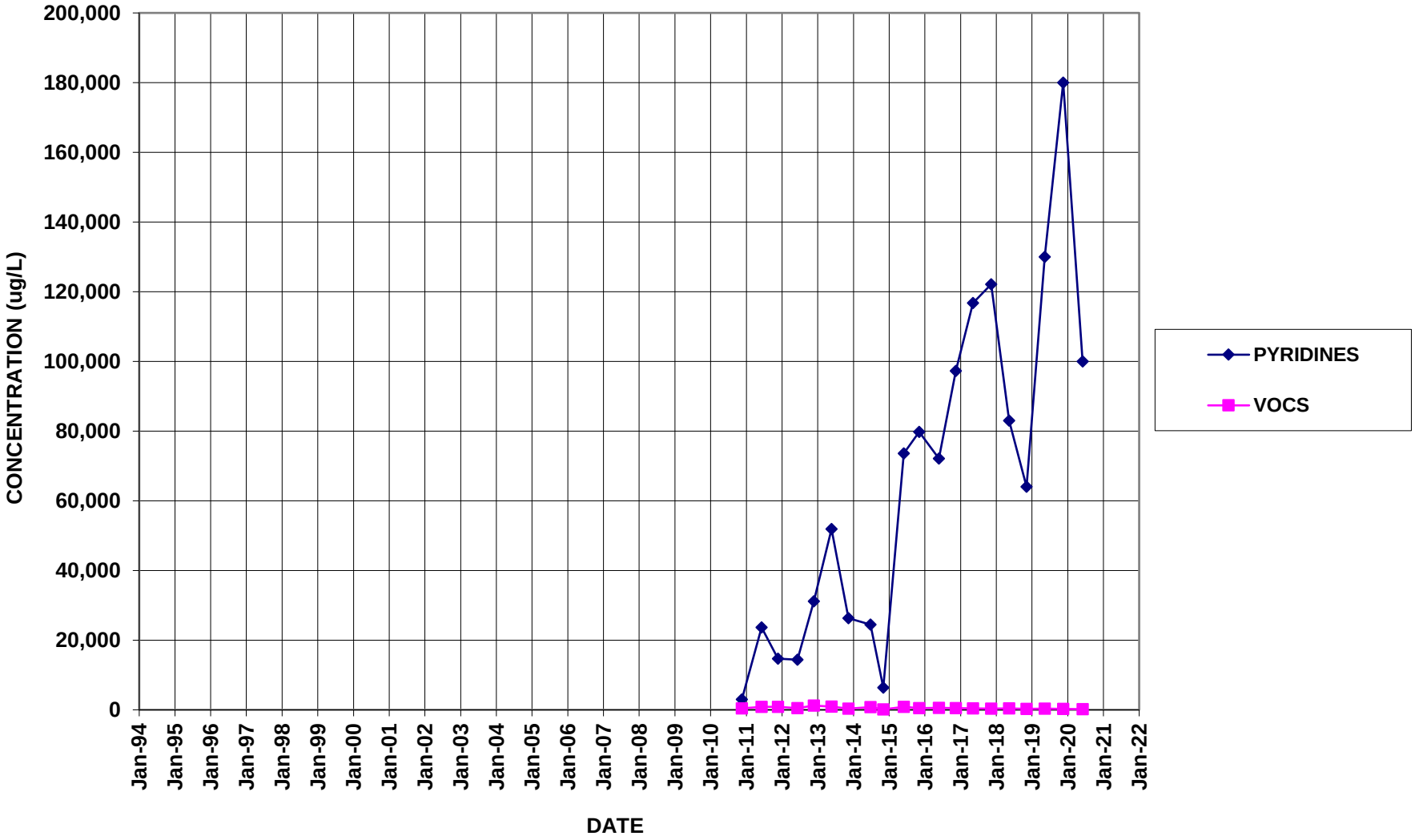
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW15



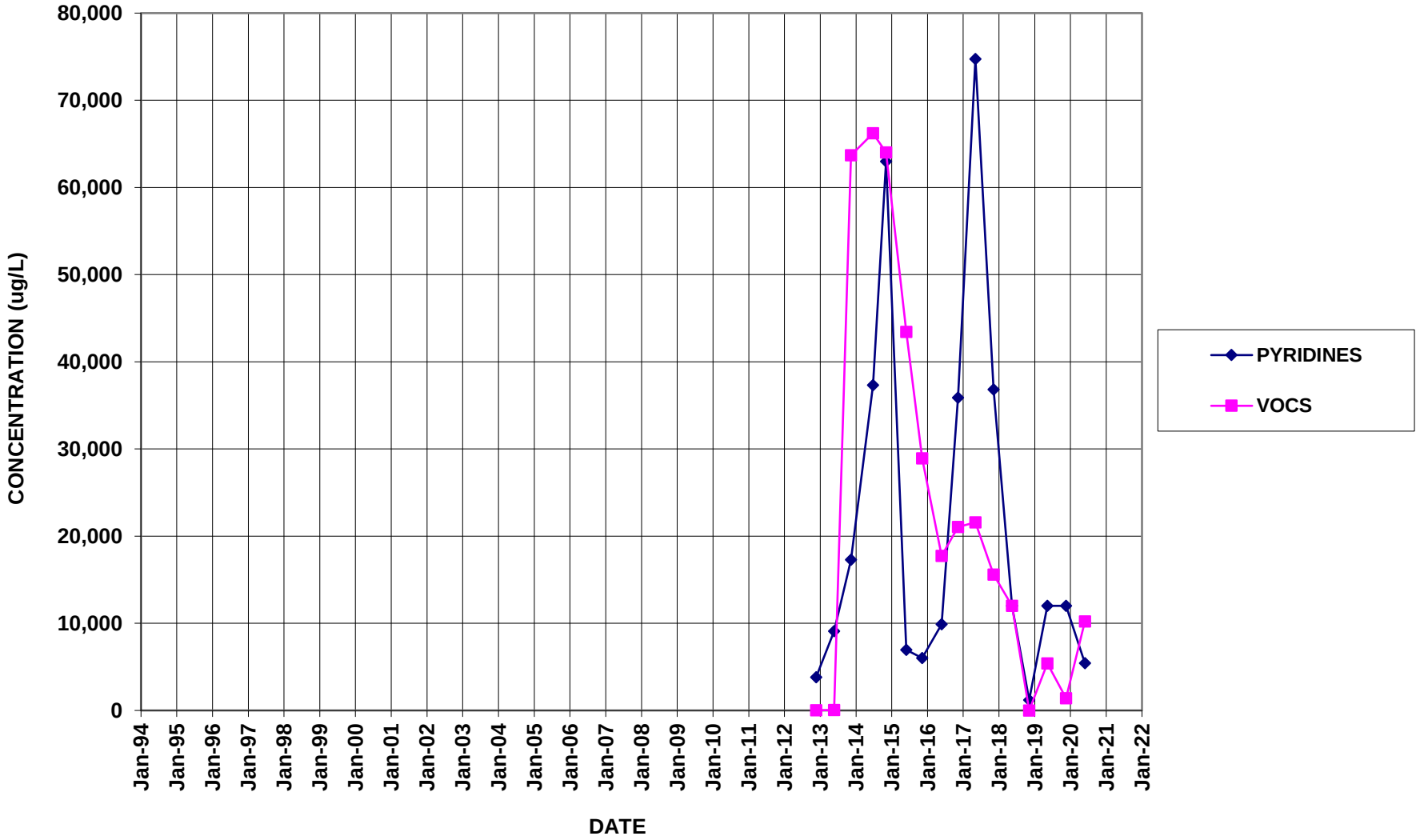
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW16



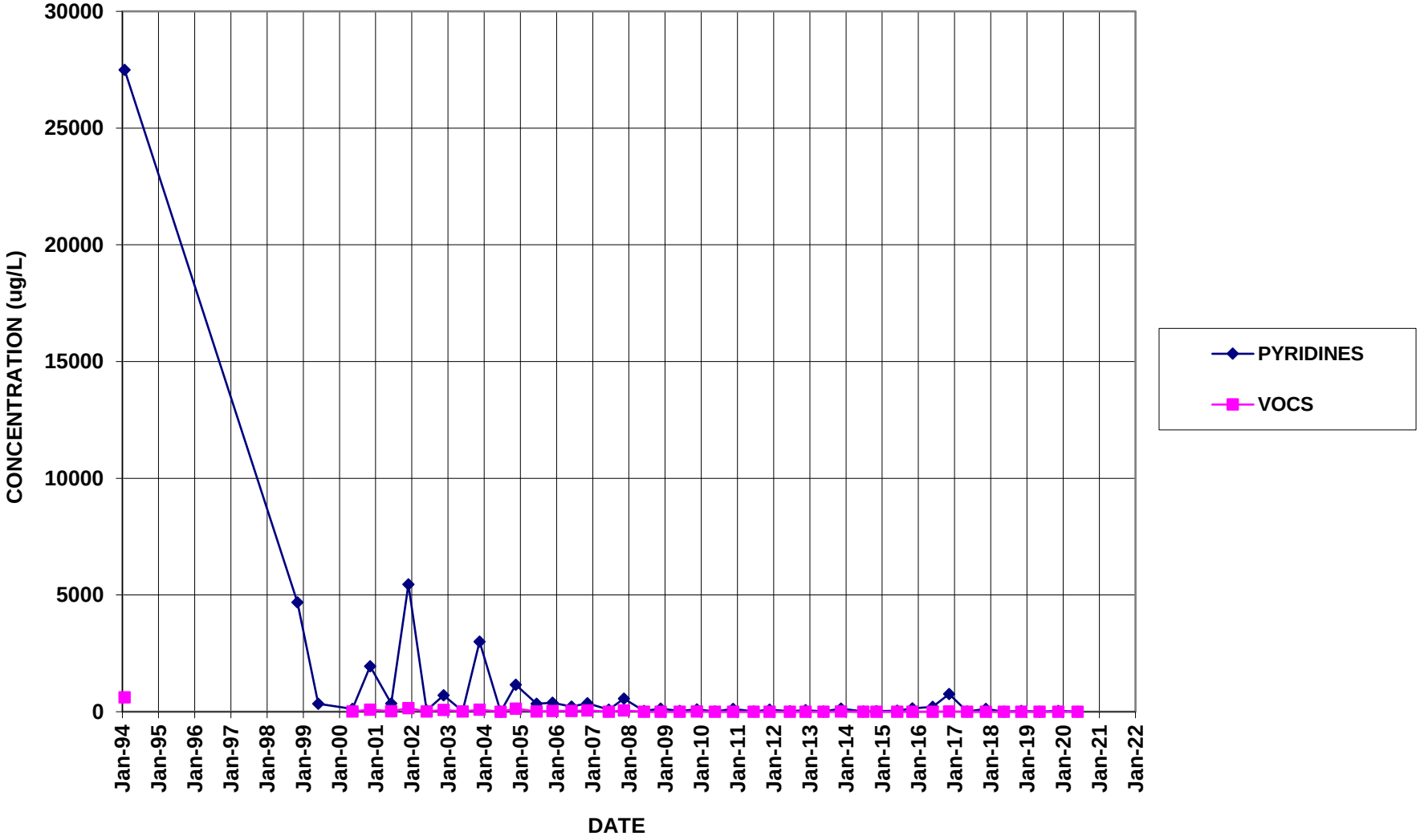
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PW17



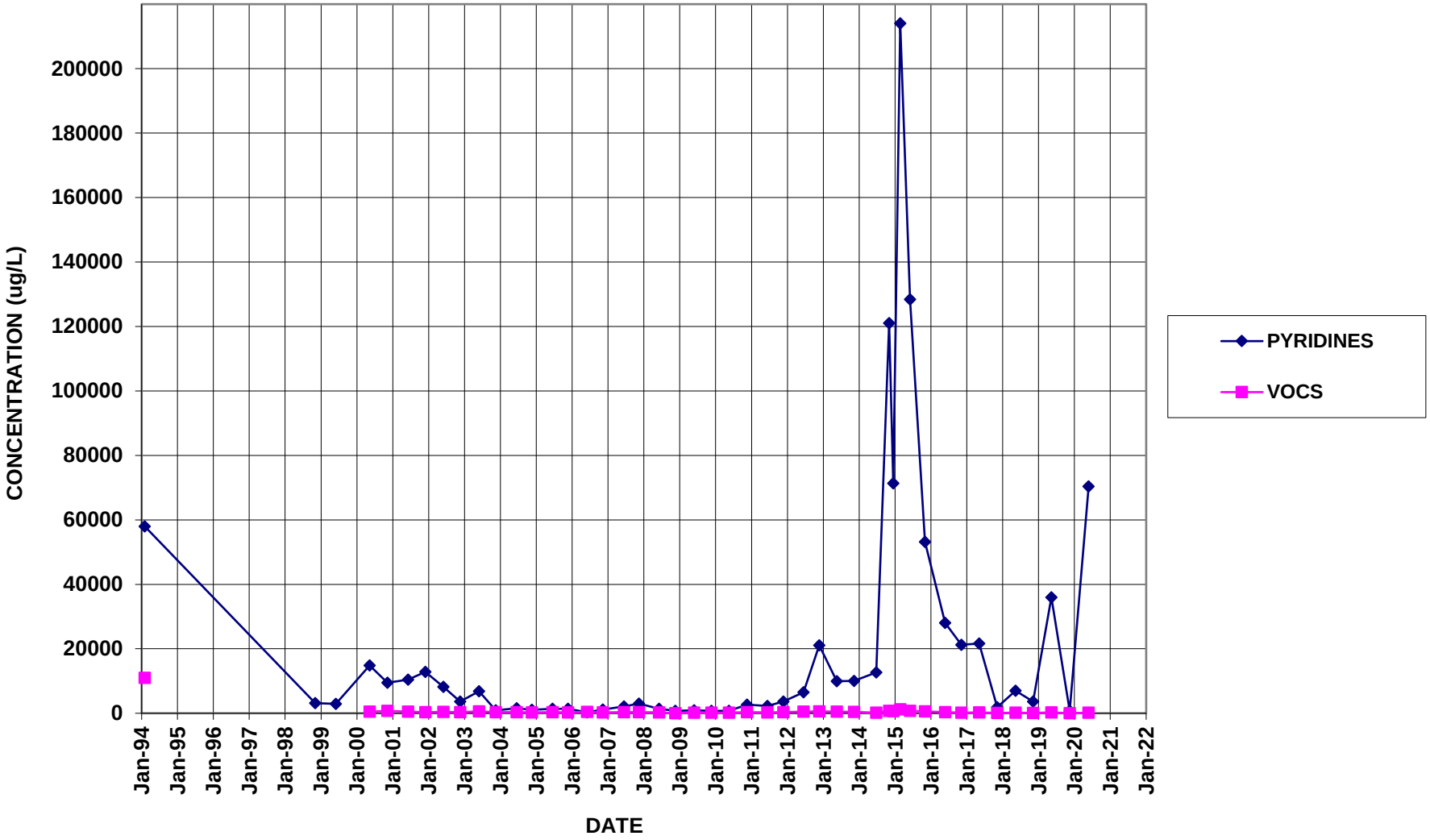
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-101



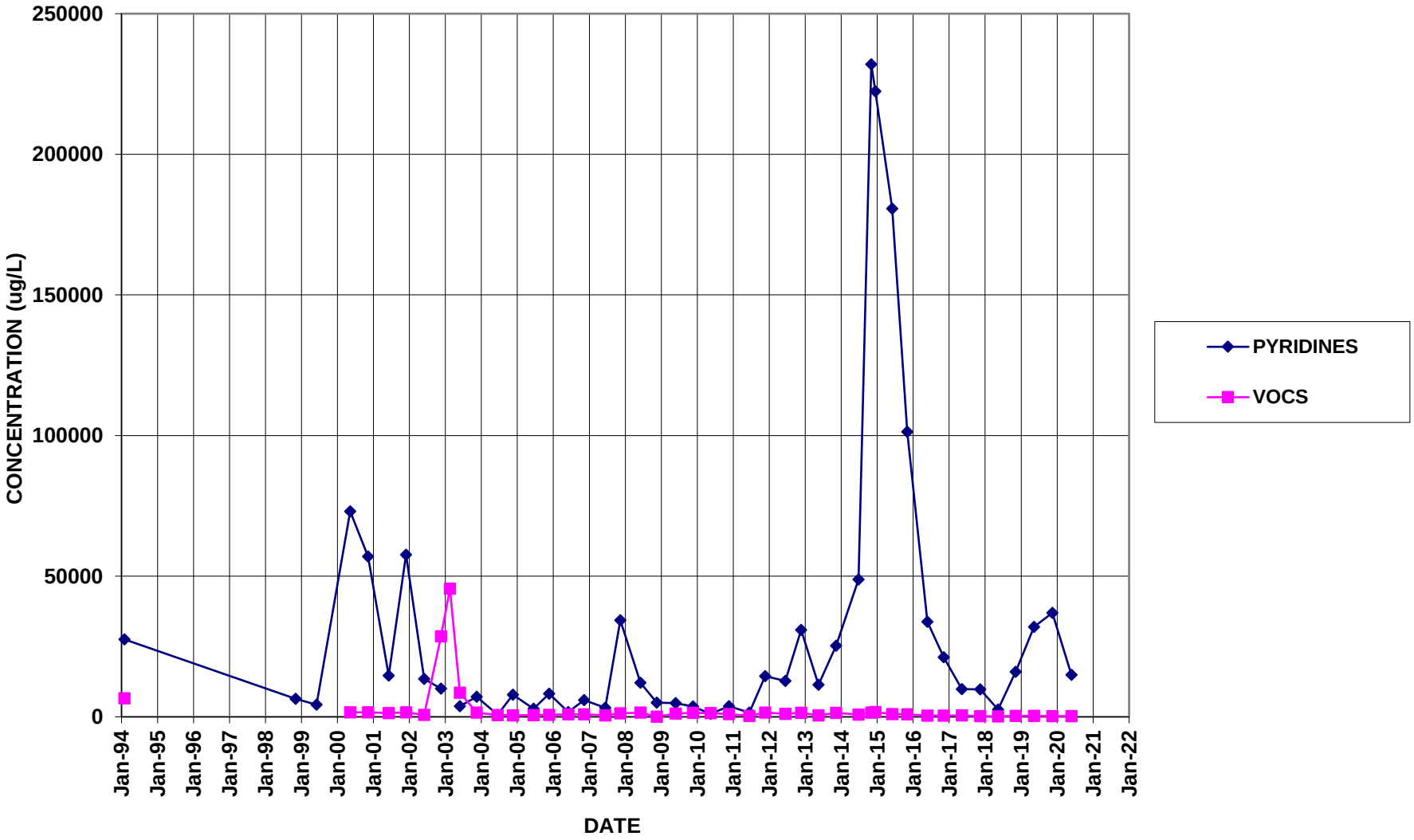
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-102



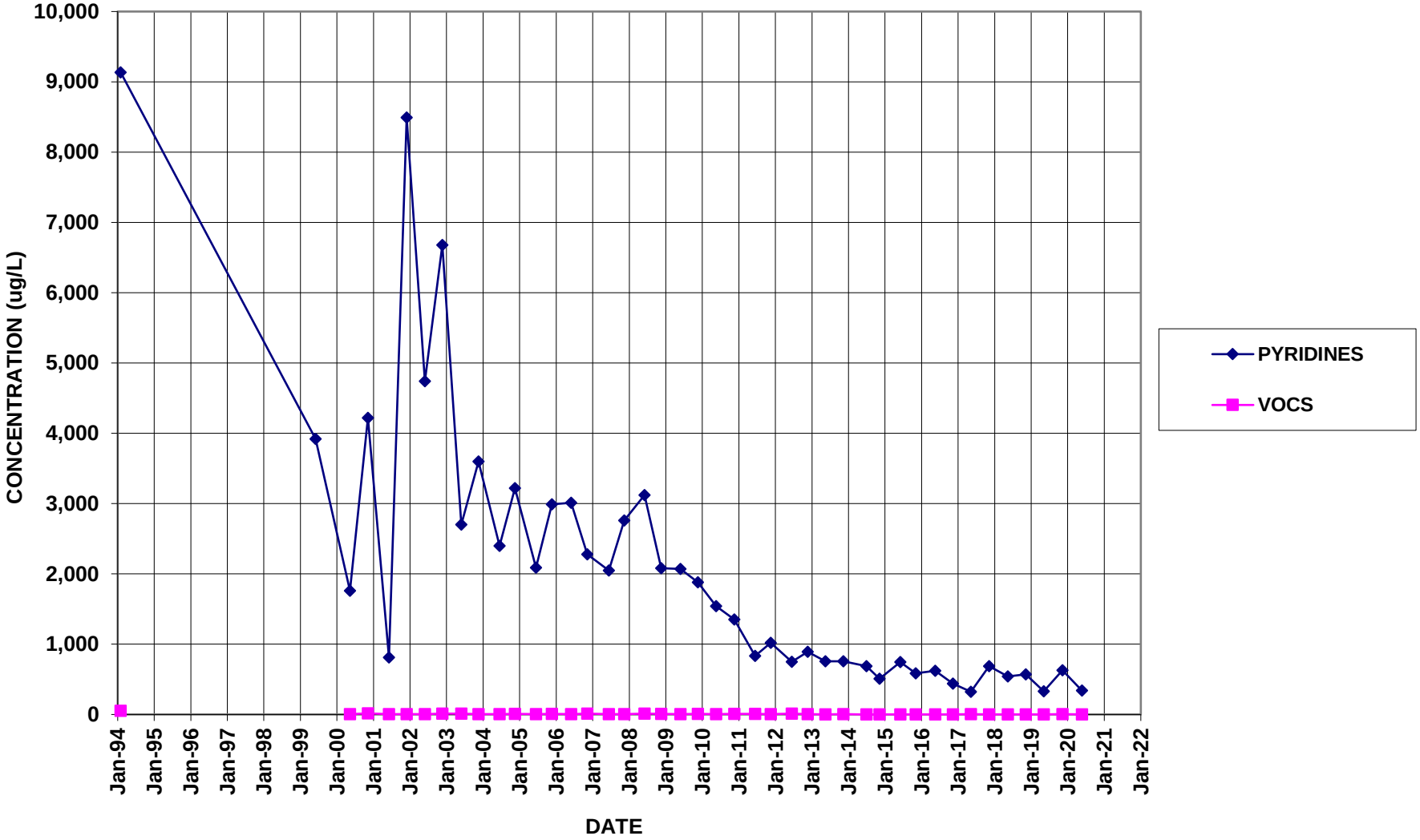
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-103



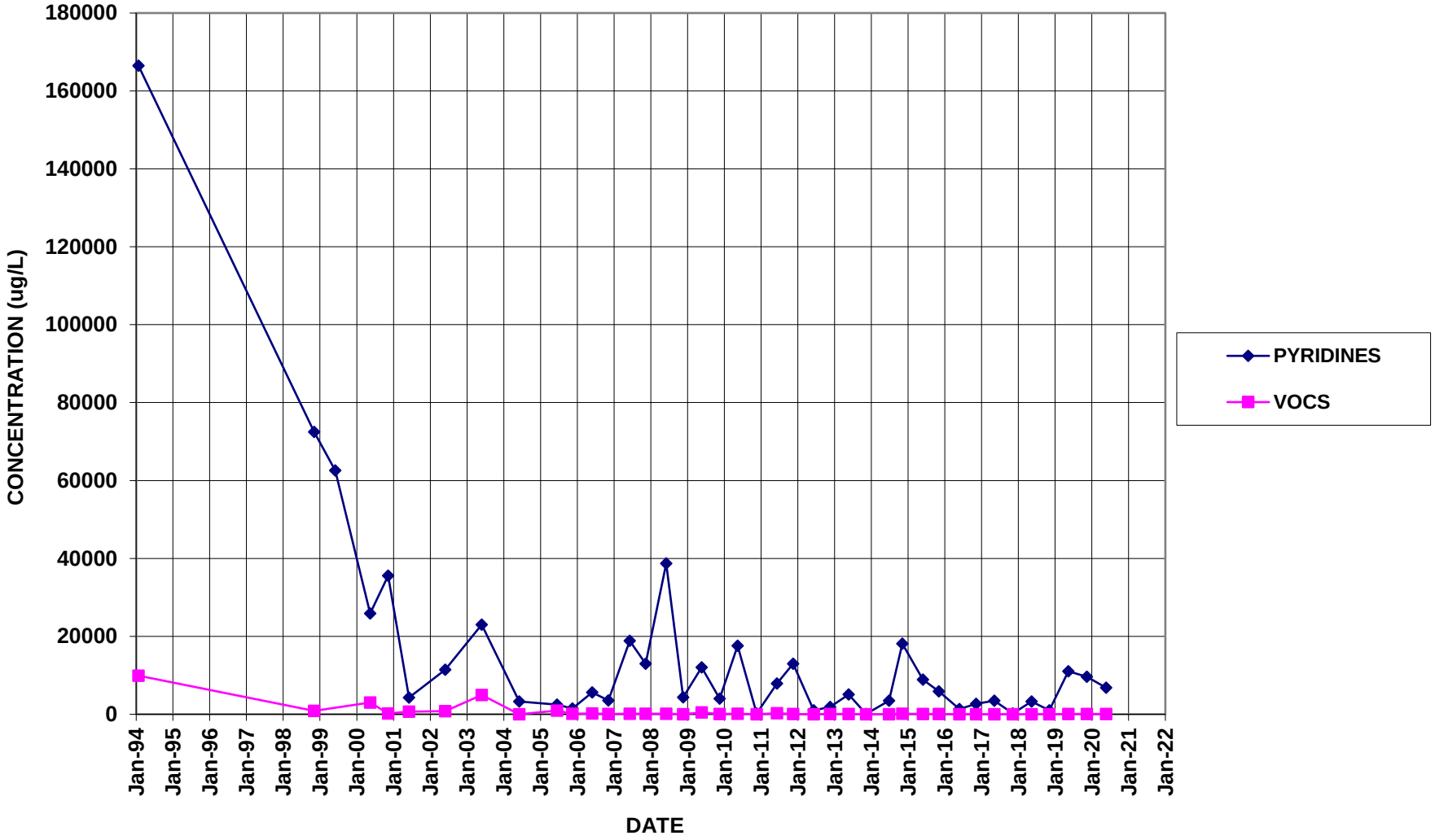
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-104



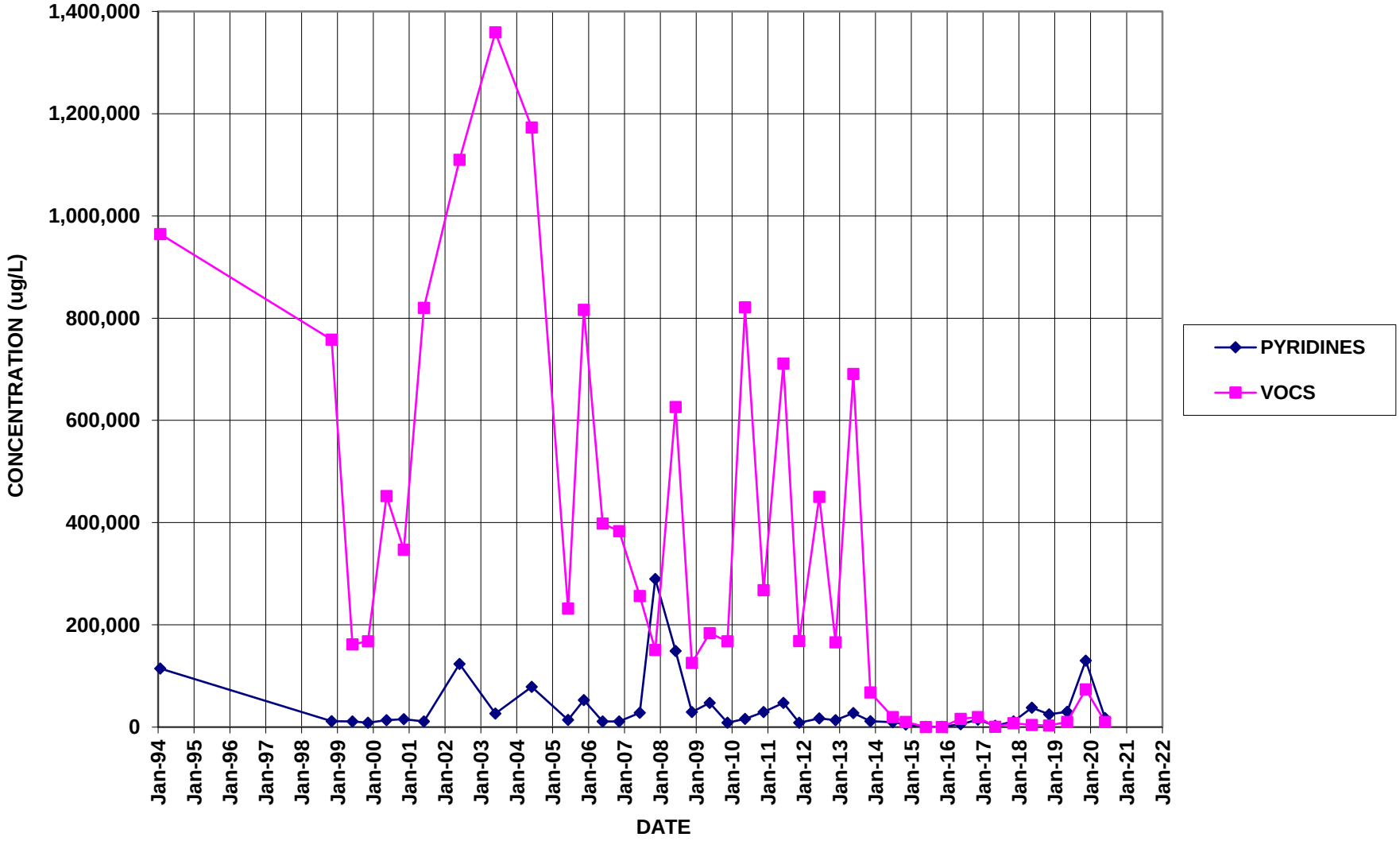
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-105



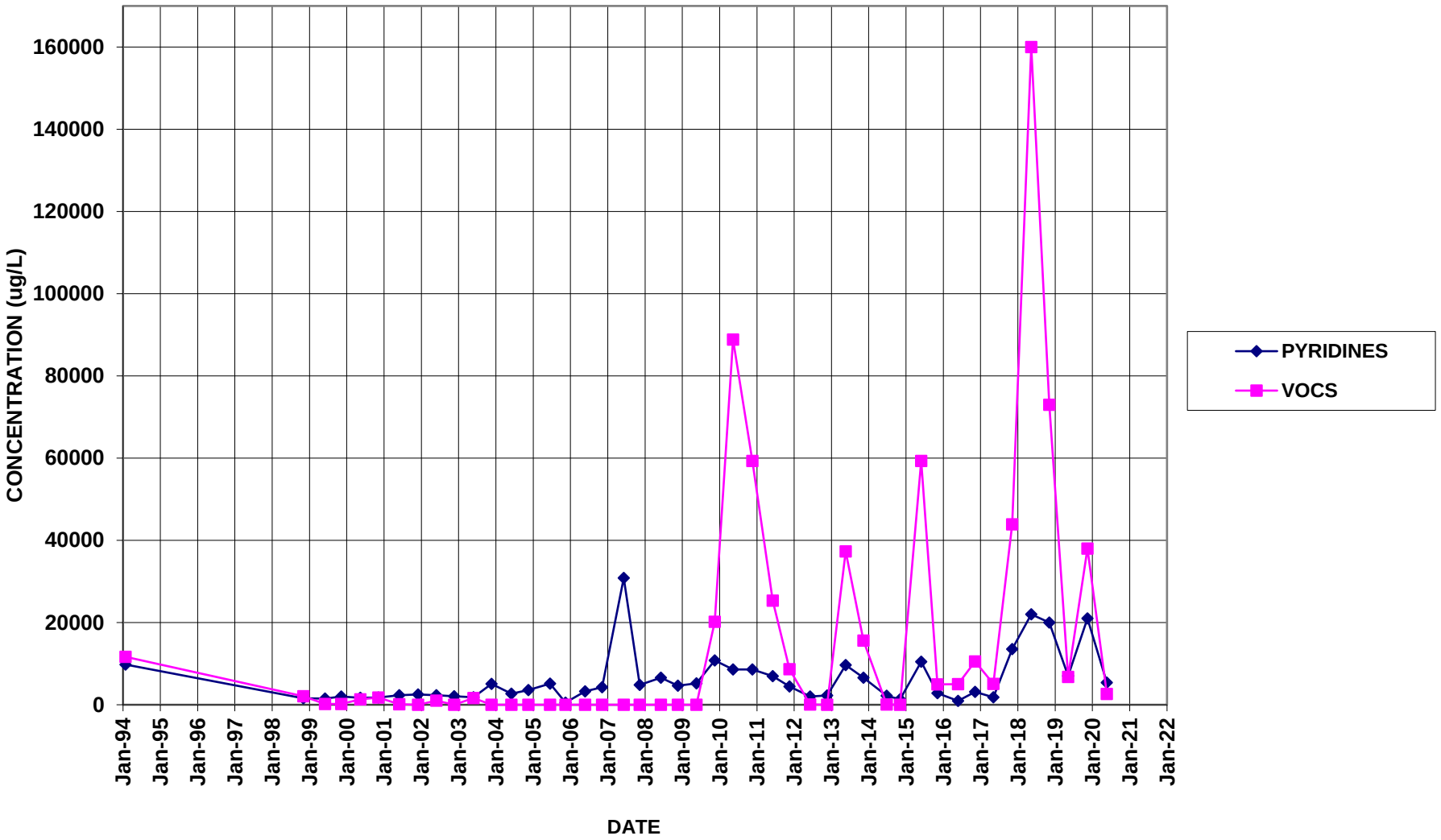
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-106

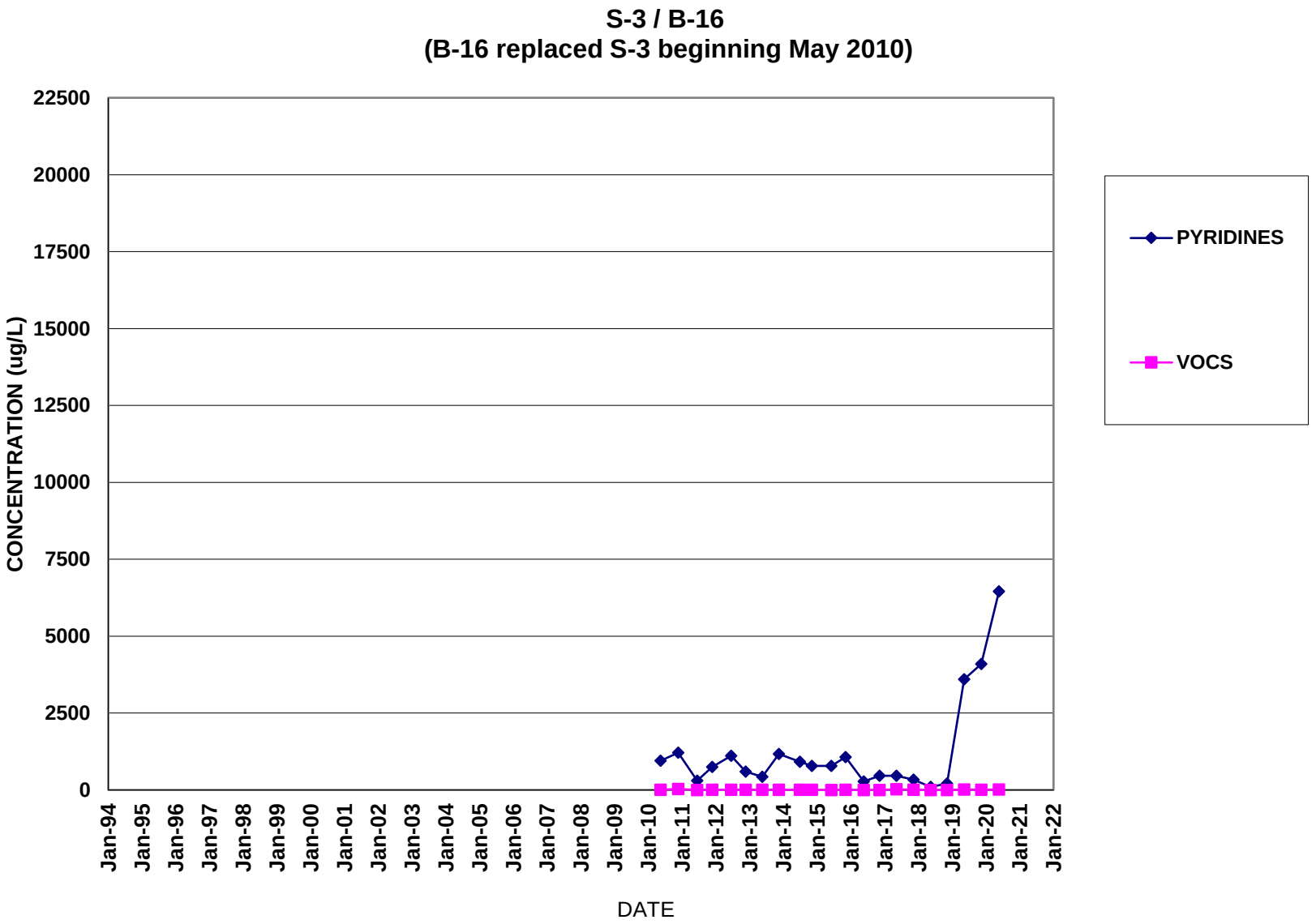


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

PZ-107

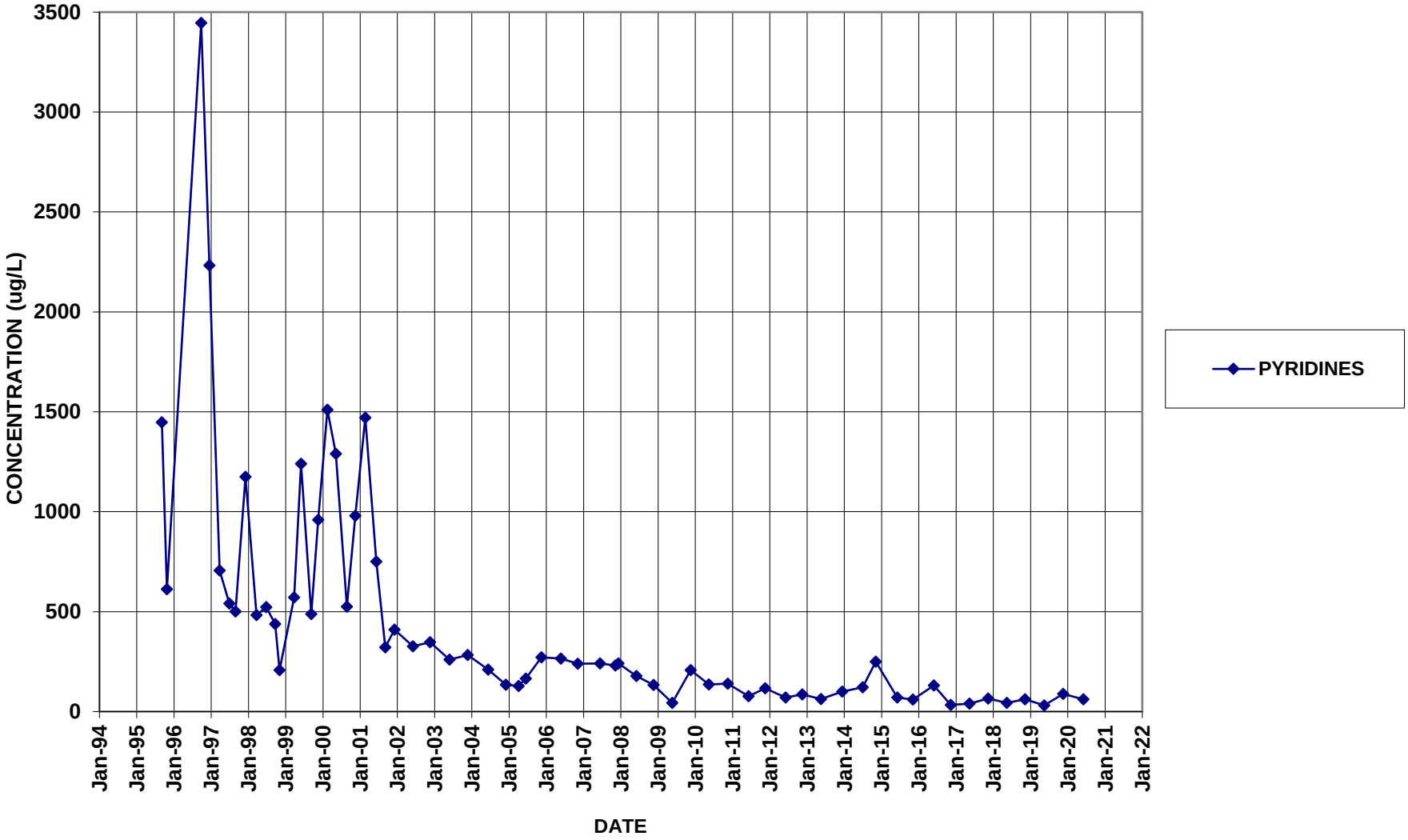


Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020



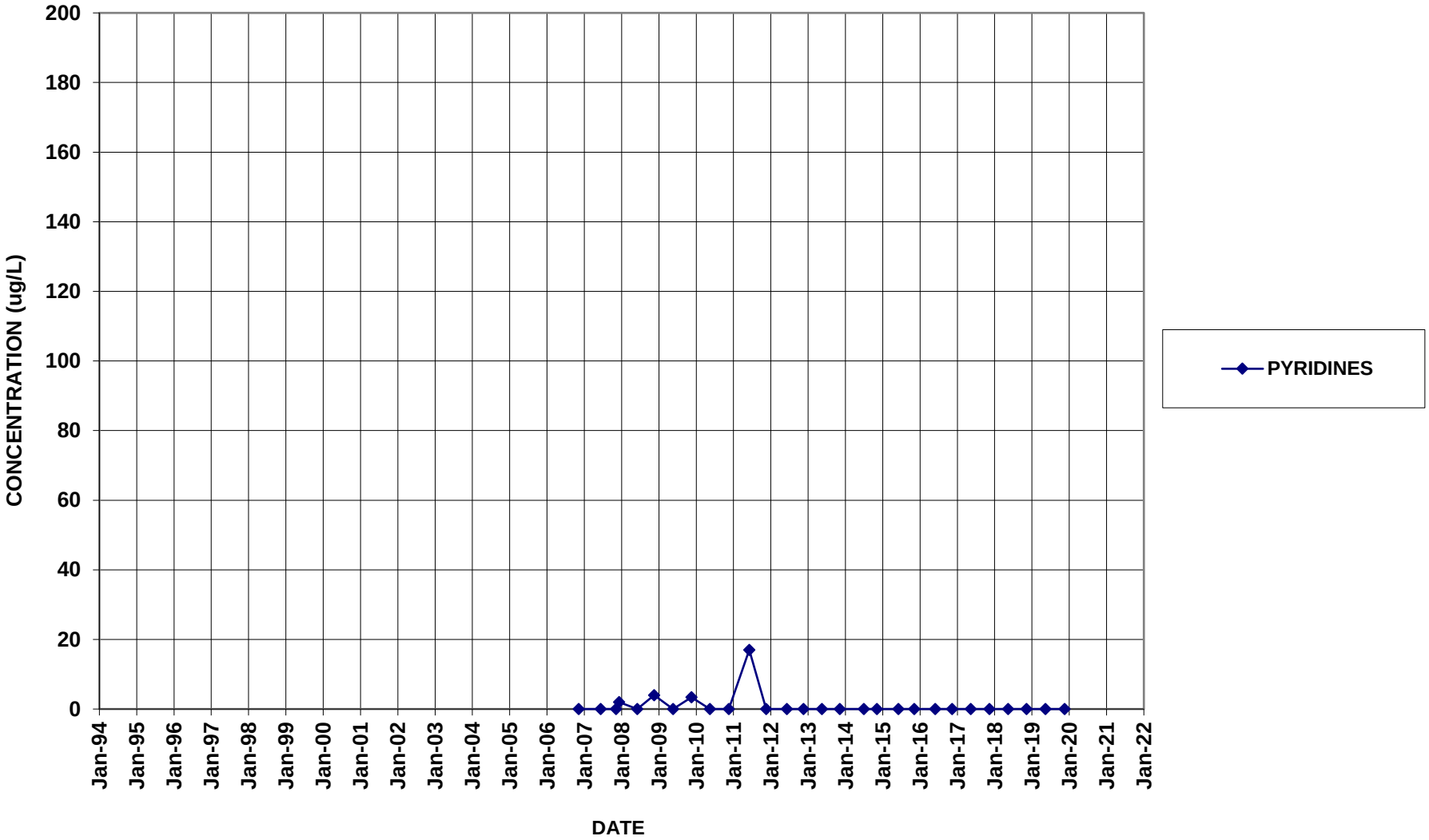
Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

QS-4 (QUARRY SEEP)



Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020

QO-2 (QUARRY OUTFALL)



Prepared by: NMB 08/25/20
Reviewed by: JAR 08/31/2020