2018 Annual Monitoring Report

Olin Niagara Falls Plant
Niagara Falls, New York

Prepared for:

OLIN CORPORATION

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ABBREVIATIONS AND ACRONYMS

Acronym	Definition
ARGC	Alundum Road Gill Creek
bgs	below ground surface
BHC	Benzene hexachloride
GWTS	Groundwater Treatment System
HG	mercury
NYSDEC	New York State Department of Environmental Conservation
Olin	Olin Corporation
Order	Administrative Order on Consent
Plan	Optimized Monitoring Plan
PR	Passive Relief
PW	Pumping Well
RW	Recovery Well
VOC	volatile organic compounds

1.0 INTRODUCTION

Olin Corporation (Olin) is implementing a Remedial Plan (CRA, 1996) to address groundwater contamination at Plant 2, in Niagara Falls, New York as required by the Administrative Order on Consent (Order) #R9-4171-94-08 between New York State Department of Environmental Conservation (NYSDEC) and Olin. The goals of the Remedial Plan are to reduce the concentration of Olin-derived constituents (aromatic compounds, benzene hexachlorides (BHCs), and mercury) in Site groundwater and control migration of these constituents within the Alundum Road Gill Creek (ARGC) Area.

In June 2018, Olin submitted an Optimized Monitoring Plan (Plan) to NYSDEC. The Plan described the proposed program that will be used to monitor and document Site groundwater conditions (Wood, 2018). The Plan proposed site-wide groundwater elevation monitoring twice per year and constituent monitoring as a comprehensive spring event and a fall event that is a smaller subset of the monitoring locations. In an August 2018 letter, NYSDEC approved the Plan and Olin subsequently began implementation.

This annual report describes 2018 Site activities and summarizes and evaluates the annual monitoring data collected during 2018 for compliance with the Order and Remedial Plan. The 2018 monitoring data shows continued effective hydraulic capture of A-zone groundwater by passive relief wells (PRs) and B-zone groundwater by pumping wells PW-3B and PW-4B. Site constituent concentrations and distribution are consistent with historical monitoring data. Groundwater elevations indicate hydraulic control of groundwater in the ARGC Area is being maintained. Operation of Olin's process water production well continues to capture C-Zone (~25-35 feet below ground surface (bgs)) west of Gill Creek and CD-Zone (~45-50 feet bgs) groundwater west of OBA-6C.

2.0 SITE ACTIVITIES

Site activities in 2018 included well maintenance and groundwater monitoring events in March, May, June, and October 2018. The March and June 2018 sampling events predate the Plan; therefore, the monitoring locations were consistent with those listed in the *Demonstration Program Work Plan* (Amec Foster Wheeler, 2015). The October 2018 sampling locations were consistent with the Plan.

2.1 WELL MAINTENANCE

Site personnel replaced road boxes at OBA-25A, PN-12A, PN-12B, and PN-19B. No modification to the well risers were made at these wells so survey was not required. Additionally, several wells needed bolt holes re-threaded for well caps to be secured properly and all wells were re-labeled. Repairs were performed in May 2018.

2.2 MARCH 2018 QUARTERLY MONITORING

Groundwater quality samples were collected March 27-28, 2018 from fourteen of fifteen quarterly monitoring locations. PN-20A was dry and therefore not sampled. Samples were collected using low flow groundwater sampling techniques and submitted to Pace Analytical Services in Melville, NY for volatile organic compounds (VOCs), pesticides, and mercury analysis. Groundwater level measurements were collected on March 26, 2018. Five A-Zone wells were dry (OBA-2A, PN-1A, PN-2A, PN-9A and PN-10A) and level measurements were not collected.

2.3 JUNE 2018 ANNUAL MONITORING

Groundwater quality samples were collected June 13-20, 2018 from forty-five of the fifty-two annual monitoring locations. OBA-2A, OBA-4A, OBA-16A, PN-1A, PN-3A, PN-4A and PN-18A were dry and therefore not sampled. Samples were collected and analyzed as described above. Groundwater level measurements were collected on June 11, 2018. Six A-Zone wells were dry (OBA-2A, OBA-23A, PN-1A, PN-2A, PN-10A, and OW-5A) and level measurements were not collected. Dry A-zone wells is a reflection of the effectiveness of the passive relief wells.

2.4 OCTOBER 2018 QUARTERLY MONITORING

Groundwater quality samples were collected October 3-4, 2018 from the fifteen quarterly monitoring locations. Samples were collected as described above. Groundwater level measurements were collected on October 2, 2018. Seven A-Zone wells were dry (OBA-2A, PN-2A, PN-10A, OW-5A, OW-20A, OW-21A, and OW-22A) and therefore water level measurements were not collected from these wells.

2.5 DECEMBER 2018 QUARTERLY MONITORING

Consistent with the approval of the Optimized Monitoring Plan, there was no fourth quarter monitoring event.

3.0 HYDRAULIC ANALYSIS

Groundwater level measurements were collected during three quarterly events in 2018. Tables 3.1 through 3.3 present the quarterly water elevations for the zones monitored at the site. These include wells screened in the A-Zone, B-Zone, C-Zone and CD-Zone. The water elevations were used to interpret the potentiometric surfaces within these groundwater zones.

3.1 A-ZONE

Figures 3.1 through 3.3 show the interpreted A-Zone potentiometric surface (March, June, and October) for each monitoring event of 2018. These figures show A-Zone capture in the ARGC area by passive relief wells (i.e. groundwater flow is toward the passive relief wells which drain the A-Zone groundwater to the B-Zone). In addition, since potentiometric heads in the B-Zone are below Gill Creek, the passive relief wells continued to effectively prevent groundwater flow to Gill Creek.

The corresponding table shows which wells had water level elevations that were below the physical bottom of the A-Zone. In cases where the A Zone was dewatered, the physical bottom of the fracture system was used as a surrogate for the interpreted potentiometric surface.

3.2 B-ZONE

Figures 3.4 through 3.6 show B-Zone potentiometric surface maps for each monitoring event conducted in 2018. The B-Zone potentiometric surface maps show hydraulic capture of B-Zone groundwater by Solvent pumping wells PW-3B and PW-4B. Groundwater extracted by PW-3B and PW-4B is treated by the Solvent groundwater treatment system located directly east of the Olin plant. The drawdown observed in pumping well PW-3B creates a gradient that influences local B-Zone flow. Additionally, groundwater elevations at PN-24B consistently show an inward gradient from Buffalo Avenue towards the Site.

3.3 C-ZONE

Figures 3.7 through 3.9 show C-Zone potentiometric surface maps for each monitoring event conducted in 2018. The C-Zone figures show a groundwater divide around OBA-15B and OBA-4C which is consistent with historical potentiometric surfaces. Groundwater east of OBA-15B and OBA-4C generally flows east toward a low elevation at OBA-14C. However, the March

2018 data shows an unusually high groundwater elevation at OBA-14C which results in an interpreted flow to the west from OBA-14C. Groundwater west of OBA-15B and OBA-4C generally flows west toward Plant 1 and a low elevation at the Olin production well.

3.4 CD-ZONE

Figures 3.10 through 3.12 show CD-Zone potentiometric surface maps for each monitoring event conducted in 2018. The CD-Zone potentiometric surfaces show a groundwater divide centered around OBA-6C which is consistent with historical potentiometric surfaces. Groundwater east of OBA-6C generally flows northeast toward a low elevation at OBA-3C. Groundwater west of OBA-6C generally flows southwest toward a low elevation at OBA-8C which is typically at a lower elevation than the estimated water levels at the production well.

Groundwater elevation used for the Olin production well is calculated based on an equation correlating flow to groundwater elevation that was developed during a 1991 pump test of the south production well (Woodward-Clyde, 1994). The location of the production well shown on the figures represents two production wells that are located within 15 feet of one another and are operated one at a time. During 2018, the production wells generally operated at a discharge rate of about 600 gpm (ranging from 584 gpm to 623 gpm), yet the potentiometric contours appear to illustrate minimal impact from extraction. Consequently, the calculated elevation does not appear to be representative of actual groundwater elevation. Olin intends to modify the wellheads in 2019 to allow direct collection of water level measurements from either production well which will improve the accuracy of potentiometric contours.

4.0 GROUNDWATER QUALITY

Tables 4.1 through 4.3 summarize the analytical results for each event. Figures 4.1 through 4.8 show the constituent distributions for the following indicator parameters in the A and B-Zones for each monitoring event:

- 1,2,4-Trichlorobenzene - Aromatic
- Gamma-BHC – Pesticide
- Total Mercury – Mercury
- Trichloroethene – Aliphatic (Non-Olin Constituent)

Appendices A and B are time series graphs depicting historical results of indicator parameter results for the semi-annually monitored wells. These tables and figures show that current constituent concentrations and distribution are generally consistent with historical Site monitoring data.

A spike in the detected Hg concentration occurred at OBA-25A in March 2018. In the subsequent sample, the Hg concentration at this well declined almost two orders of magnitude and was more consistent with historical observed data and data from June and October 2018. An order of magnitude increase in Hg concentration was also observed at PN-15B in June 2018 (44.4 µg/L). This observed concentration is high compared to historical concentrations in this and other nearby B-Zone wells. Similar concentrations have been observed in the past in A-Zone wells (PN-17A and PN-18A) upgradient from PN-15B. However, the difference between A-Zone and B-Zone Hg concentrations indicate there has been little Hg migration from the A-Zone to the B-Zone historically. This well is centrally located within the ARGC area which is hydraulically controlled by PW-3B and PW-4B. PN-15B is sampled annually and will be sampled next during the 2019 spring monitoring event.

5.0 CONCLUSIONS

The goal of the Remedial Plan to control migration of Olin-derived constituents was maintained throughout 2018. The 2018 monitoring data shows effective hydraulic capture of A-zone groundwater by PR wells and B-zone groundwater by Solvent's pumping wells PW-3B and PW-4B. Site constituent concentrations and distribution are consistent with historical monitoring data indicating effective hydraulic control. Additionally, operation of Olin's process water production well appears to influence C-Zone groundwater west of Gill Creek. CD-Zone groundwater appears less influenced by the production well; however, the analysis is conducted with an assumed water level based on a calculation with an accuracy that cannot be verified with the current wellhead configuration. An improved method that will rely on physical collection of water level measurements from the production wells is being developed. Overall, the site objectives established in the Order and Remedial Plan were achieved in 2018 and monitoring will continue as set forth in the approved Optimized Monitoring Plan.

6.0 REFERENCES

Amec Foster Wheeler, 2015. *Demonstration Program Work Plan.* Kennesaw, GA. Amec Foster Wheeler Environment & Infrastructure, Inc. November 6, 2015

CRA, 1996. *Remedial Plan – Olin Chemicals Corp. – Niagara Falls, New York.* Conestoga-Rovers & Associates February 1996

Wood, 2018. *Optimized Monitoring Plan.* Kennesaw, GA. Wood Environment & Infrastructure Solutions, Inc. June 28, 2018

Woodward-Clyde, 1994. *RCRA Facility Investigation Report for the Olin Buffalo Avenue Plant.* Woodward-Clyde Consultants, Inc. August 1994.

TABLES

Table 3.1: March 26, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	3/26/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - OLIN				
OBA-1A	562.33	570.67	4.66	566.01
OBA-2A	561.32	572.54	DRY	DRY
OBA-3A	552.36	572.07	12.45	559.62
OBA-4A	558.34	572.42	12.01	560.41
OBA-5A	557.72	571.72	7.53	564.19
OBA-6A	561.01	570.17	6.01	564.16
OBA-7A	562.71	573.39	8.89	564.50
OBA-8A	559.59	572.49	10.52	561.97
OBA-9A	558.01	569.24	6.54	562.70
OBA-9AR	557.28	570.22	7.71	562.51
OBA-10A	552.15	568.39	6.07	562.32
OBA-11A	558.76	572.83	13.01	559.82
OBA-14A	552.44	570.67	13.90	556.77
OBA-15A	551.06	572.59	16.10	556.49
OBA-16A	560.42	573.26	15.80	557.46
OBA-18A	559.18	573.47	13.21	560.26
OBA-19A	558.08	573.86	12.53	561.33
OBA-23A	560.94	570.19	8.74	561.45
OBA-24A	557.76	568.95	6.24	562.71
OBA-25A	558.07	569.02	6.31	562.71
OBA-26A	557.28	569.55	6.51	563.04
PN-1A	560.21	570.51	DRY	DRY
PN-2A	561.41	570.64	DRY	DRY
PN-3A	560.12	571.80	9.65	562.15
PN-4A	558.94	568.35	7.55	560.80
PN-5A	558.95	568.55	7.39	561.16
PN-6A	559.06	568.43	7.19	561.24
PN-7A	558.52	568.23	6.45	561.78
PN-8A	557.53	568.28	4.56	563.72
PN-9A	558.97	570.74	DRY	DRY
PN-10A	561.35	570.11	DRY	DRY
PN-11A	557.78	567.49	5.55	561.94
PN-12A	558.85	570.07	4.89	565.18
PN-13A	559.98	573.25	8.38	564.87
PN-14A	560.62	573.30	8.28	565.02
PN-15A	559.44	570.69	7.22	563.47
PN-16A	560.17	570.44	8.30	562.14
PN-17A	560.32	570.55	5.25	565.30
PN-18A	561.55	570.23	7.95	562.28
PN-19A	562.00	570.74	7.96	562.78
PN-20A	558.35	570.07	10.50	559.57
PN-21A	558.77	569.48	4.86	564.62
Gill Creek Stilling Well[1]	NA	571.48	9.25	562.23

Table 3.1: March 26, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	3/26/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - SOLVENT[6]				
OW-5A	NA	573.05	11.94	561.11
OW-6A	NA	572.10	9.71	562.39
OW-20A	NA	572.62	11.97	560.65
OW-21A	NA	569.33	6.15	563.18
OW-22A	NA	570.68	7.19	563.49
A/B-ZONE[4,5]				
PR-1	561.70	572.29	8.96	563.33
PR-1-PZ	561.70	571.15	8.36	562.79
PR-2	561.17	572.21	14.58	557.63
PR-2-PZ	561.17	572.17	15.26	556.91
PR-3	557.65	572.39	15.62	556.77
PR-3-PZ	557.65	571.69	15.05	556.64
PR-4	556.58	569.66	12.79	556.87
PR-4-PZ	556.58	569.65	12.94	556.71
PR-5	558.47	570.18	13.08	557.10
PR-5-PZ	558.47	569.23	12.05	557.18
PR-6	559.35	568.28	9.96	558.32
PR-7	558.56	568.57	9.40	559.17
PR-8	558.91	567.97	NM	NM
PR-9	556.16	568.39	7.47	560.92
PR-10	558.38	568.16	7.25	560.91
PR-11	558.31	567.53	4.18	563.35
PR-12	558.37	569.28	6.80	562.48
PR-13	559.15	568.69	11.31	557.38
PR-14	558.59	568.60	7.06	561.54
RW-1	560.93	573.22	15.02	558.20
RW-1-PZ	560.93	572.33	14.11	558.22
RW-2	559.03	572.01	15.41	556.60
RW-2-PZ	559.03	571.76	15.21	556.55
RW-3	556.69	569.40	12.83	556.57
RW-3-PZ	556.69	569.37	12.81	556.56
RW-4	557.05	569.27	12.39	556.88
RW-4-PZ	557.05	569.33	12.36	556.97
RW-5	556.81	569.28	11.60	557.68
RW-5-PZ	556.81	569.24	11.58	557.66
B-ZONE[5]				
OBA-1B	NA	570.35	10.89	559.46
OBA-2B	NA	572.63	16.10	556.53
OBA-4B	NA	573.03	15.11	557.92
OBA-5B	NA	572.29	12.48	559.81
OBA-6B	NA	570.31	6.90	563.41
OBA-7B	NA	573.97	11.36	562.61
OBA-8B	NA	572.64	14.39	558.25

Table 3.1: March 26, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	3/26/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
B-ZONE CONTINUED[5]				
OBA-11B	NA	572.87	15.80	557.07
OBA-14B	NA	570.76	14.44	556.32
OBA-16B	NA	572.99	10.98	562.01
OBA-23B	NA	570.04	11.86	558.18
OBA-24B	NA	568.76	11.51	557.25
OBA-25B	NA	568.93	11.06	557.87
OBA-26B	NA	569.65	12.29	557.36
PN-1B	NA	570.32	12.06	558.26
PN-2B	NA	570.44	13.78	556.66
PN-3B	NA	571.73	14.29	557.44
PN-4B	NA	568.46	11.79	556.67
PN-5B	NA	568.58	12.32	556.26
PN-6B	NA	568.56	12.04	556.52
PN-7B	NA	568.45	11.31	557.14
PN-8B	NA	567.85	11.36	556.49
PN-9B	NA	570.68	14.00	556.68
PN-10B	NA	571.15	13.45	557.70
PN-11B	NA	567.78	10.56	557.22
PN-12B	NA	570.00	12.49	557.51
PN-13B	NA	573.24	15.79	557.45
PN-14B	NA	573.30	9.82	563.48
PN-15B	NA	570.70	13.62	557.08
PN-16B	NA	570.36	10.19	560.17
PN-17B	NA	570.54	12.18	558.36
PN-18B	NA	570.50	11.76	558.74
PN-19B	NA	570.64	9.12	561.52
PN-20B	NA	569.70	13.20	556.50
PN-21B	NA	569.39	11.86	557.53
PN-22B	NA	569.08	NM	NM
PN-23B	NA	568.90	NM	NM
PN-24B	NA	570.87	13.90	556.97
B-ZONE - SOLVENT[6]				
PW-3B	NA	571.21	19.97	551.24
PW-4B	NA	569.72	14.75	554.97
OW-4B	NA	570.55	13.71	556.84
OW-14B	NA	570.87	14.28	556.59
OW-15B	NA	569.78	13.10	556.68
OW-22B	NA	570.90	14.39	556.51
OW-23B	NA	569.67	13.22	556.45
OW-24B	NA	570.36	13.68	556.68
OW-25B	NA	570.90	14.68	556.22
OW-31B	NA	570.14	12.79	557.35
OW-32B	NA	569.99	12.69	557.3
OW-33B	NA	569.55	12.98	556.57

Table 3.1: March 26, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	3/26/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
C-ZONE				
OBA-1C	NA	570.41	14.98	555.43
OBA-4C	NA	573.05	16.52	556.53
OBA-7C	NA	574.30	19.89	554.41
OBA-14C	NA	570.15	10.35	559.80
OBA-15B	NA	573.13	16.71	556.42
CD-ZONE				
OBA-2C	NA	572.43	19.03	553.40
OBA-3C	NA	572.67	18.89	553.78
OBA-5C	NA	572.01	17.84	554.17
OBA-6C	NA	570.35	15.03	555.32
OBA-8C	NA	573.14	22.01	551.13
OBA-11C	NA	572.94	16.74	556.20
Olin Production Well[2]	NA	NA	584	554.37

Notes:

1. The Gill Creek Stilling Well is monitored with a dedicated level transducer which collects hourly elevation measurements. The water elevation shown and used to prepare the A-Zone potentiometric surface map is the average hourly elevation for the date shown.
2. The Olin Production Well water elevation is calculated based on the production well flow rate using an empirical formula presented in the 1994 Remedial Facility Investigation. The flow rate is shown in place of the depth to water.
3. The orange highlighted water elevations are at or below the bottom of the A-Zone. A-Zone bottom elevations were used for these wells on the A-Zone potentiometric surface map.
4. Water elevations from the A/B-Zone wells with red text were used for the A-Zone potentiometric surface map. Pumping well piezometers (green text) were used for both A-Zone and B-Zone potentiometric surface maps.
5. The blue highlighted wells were not used when preparing the B-Zone potentiometric surface map. These appear to be poorly or not connected to the B-Zone based on their typical water elevations which are more than 2 feet higher than the average B-Zone elevation.
6. Water levels from A-Zone & B-Zone Solvent wells located on Olin property between Gill Creek and Dupont Road were measured and used for the A-Zone and B-Zone potentiometric surface maps.

Prepared by: ASN 01/07/2019
Checked by: FKM 02/08/2019

Table 3.2: June 11, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	6/11/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - OLIN				
OBA-1A	562.33	570.67	4.35	566.32
OBA-2A	561.32	572.54	DRY	DRY
OBA-3A	552.36	572.07	14.93	557.14
OBA-4A	558.34	572.42	13.86	558.56
OBA-5A	557.72	571.72	7.79	563.93
OBA-6A	561.01	570.17	6.21	563.96
OBA-7A	562.71	573.39	9.01	564.38
OBA-8A	559.59	572.49	14.38	558.11
OBA-9A	558.01	569.24	6.69	562.55
OBA-9AR	557.28	570.22	8.10	562.12
OBA-10A	552.15	568.39	6.11	562.28
OBA-11A	558.76	572.83	13.08	559.75
OBA-14A	552.44	570.67	13.81	556.86
OBA-15A	551.06	572.59	16.05	556.54
OBA-16A	560.42	573.26	10.98	562.28
OBA-18A	559.18	573.47	13.20	560.27
OBA-19A	558.08	573.86	13.50	560.36
OBA-23A	560.94	570.19	DRY	DRY
OBA-24A	557.76	568.95	7.90	561.05
OBA-25A	558.07	569.02	5.81	563.21
OBA-26A	557.28	569.55	7.15	562.40
PN-1A	560.21	570.51	DRY	DRY
PN-2A	561.41	570.64	DRY	DRY
PN-3A	560.12	571.80	9.86	561.94
PN-4A	558.94	568.35	7.50	560.85
PN-5A	558.95	568.55	7.24	561.31
PN-6A	559.06	568.43	7.04	561.39
PN-7A	558.52	568.23	6.48	561.75
PN-8A	557.53	568.28	4.80	563.48
PN-9A	558.97	570.74	10.57	560.17
PN-10A	561.35	570.11	DRY	DRY
PN-11A	557.78	567.49	4.55	562.94
PN-12A	558.85	570.07	5.10	564.97
PN-13A	559.98	573.25	8.65	564.60
PN-14A	560.62	573.30	8.49	564.81
PN-15A	559.44	570.69	7.30	563.39
PN-16A	560.17	570.44	8.50	561.94
PN-17A	560.32	570.55	7.51	563.04
PN-18A	561.55	570.23	8.00	562.23
PN-19A	562.00	570.74	7.05	563.69
PN-20A	558.35	570.07	8.57	561.50
PN-21A	558.77	569.48	5.05	564.43
Gill Creek Stilling Well[1]	NA	571.48	8.68	562.80

Table 3.2: June 11, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	6/11/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - SOLVENT[6]				
OW-5A	NA	573.05	DRY	DRY
OW-6A	NA	572.10	9.81	562.29
OW-20A	NA	572.62	12.03	560.59
OW-21A	NA	569.33	8.10	561.23
OW-22A	NA	570.68	9.28	561.40
A/B-ZONE[4,5]				
PR-1	561.70	572.29	10.02	562.27
PR-1-PZ	561.70	571.15	8.68	562.47
PR-2	561.17	572.21	14.75	557.46
PR-2-PZ	561.17	572.17	15.19	556.98
PR-3	557.65	572.39	15.30	557.09
PR-3-PZ	557.65	571.69	14.78	556.91
PR-4	556.58	569.66	12.35	557.31
PR-4-PZ	556.58	569.65	12.59	557.06
PR-5	558.47	570.18	12.83	557.35
PR-5-PZ	558.47	569.23	11.82	557.41
PR-6	559.35	568.28	10.48	557.80
PR-7	558.56	568.57	8.95	559.62
PR-8	558.91	567.97	9.62	558.35
PR-9	556.16	568.39	7.83	560.56
PR-10	558.38	568.16	7.19	560.97
PR-11	558.31	567.53	4.45	563.08
PR-12	558.37	569.28	7.01	562.27
PR-13	559.15	568.69	11.20	557.49
PR-14	558.59	568.60	7.21	561.39
RW-1	560.93	573.22	15.29	557.93
RW-1-PZ	560.93	572.33	14.35	557.98
RW-2	559.03	572.01	15.21	556.80
RW-2-PZ	559.03	571.76	15.10	556.66
RW-3	556.69	569.40	12.82	556.58
RW-3-PZ	556.69	569.37	12.82	556.55
RW-4	557.05	569.27	12.56	556.71
RW-4-PZ	557.05	569.33	12.55	556.78
RW-5	556.81	569.28	10.90	558.38
RW-5-PZ	556.81	569.24	10.90	558.34
B-ZONE[5]				
OBA-1B	NA	570.35	11.28	559.07
OBA-2B	NA	572.63	16.00	556.63
OBA-4B	NA	573.03	15.79	557.24
OBA-5B	NA	572.29	12.40	559.89
OBA-6B	NA	570.31	6.25	564.06
OBA-7B	NA	573.97	11.13	562.84
OBA-8B	NA	572.64	14.60	558.04

Table 3.2: June 11, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	6/11/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
B-ZONE CONTINUED[5]				
OBA-11B	NA	572.87	16.35	556.52
OBA-14B	NA	570.76	14.06	556.70
OBA-16B	NA	572.99	15.68	557.31
OBA-23B	NA	570.04	12.12	557.92
OBA-24B	NA	568.76	11.29	557.47
OBA-25B	NA	568.93	11.40	557.53
OBA-26B	NA	569.65	12.31	557.34
PN-1B	NA	570.32	12.23	558.09
PN-2B	NA	570.44	13.90	556.54
PN-3B	NA	571.73	14.21	557.52
PN-4B	NA	568.46	11.59	556.87
PN-5B	NA	568.58	11.85	556.73
PN-6B	NA	568.56	11.92	556.64
PN-7B	NA	568.45	11.08	557.37
PN-8B	NA	567.85	11.24	556.61
PN-9B	NA	570.68	13.65	557.03
PN-10B	NA	571.15	13.34	557.81
PN-11B	NA	567.78	10.30	557.48
PN-12B	NA	570.00	12.35	557.65
PN-13B	NA	573.24	15.63	557.61
PN-14B	NA	573.30	10.16	563.14
PN-15B	NA	570.70	13.45	557.25
PN-16B	NA	570.36	9.94	560.42
PN-17B	NA	570.54	12.40	558.14
PN-18B	NA	570.50	12.15	558.35
PN-19B	NA	570.64	9.91	560.73
PN-20B	NA	569.70	13.10	556.60
PN-21B	NA	569.39	9.10	560.29
PN-22B	NA	569.08	NM	NM
PN-23B	NA	568.90	NM	NM
PN-24B	NA	570.87	13.53	557.34
B-ZONE - SOLVENT[6]				
PW-3B	NA	571.21	14.25	556.96
PW-4B	NA	569.72	12.70	557.02
OW-4B	NA	570.55	13.53	557.02
OW-14B	NA	570.87	13.93	556.94
OW-15B	NA	569.78	12.16	557.62
OW-22B	NA	570.90	13.92	556.98
OW-23B	NA	569.67	12.82	556.85
OW-24B	NA	570.36	12.11	558.25
OW-25B	NA	570.90	13.15	557.75
OW-31B	NA	570.14	12.50	557.64
OW-32B	NA	569.99	13.06	556.93
OW-33B	NA	569.55	12.51	557.04

Table 3.2: June 11, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	6/11/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
C-ZONE				
OBA-1C	NA	570.41	14.90	555.51
OBA-4C	NA	573.05	15.84	557.21
OBA-7C	NA	574.30	18.78	555.52
OBA-14C	NA	570.15	16.02	554.13
OBA-15B	NA	573.13	16.49	556.64
CD-ZONE				
OBA-2C	NA	572.43	17.79	554.64
OBA-3C	NA	572.67	19.06	553.61
OBA-5C	NA	572.01	17.30	554.71
OBA-6C	NA	570.35	14.36	555.99
OBA-8C	NA	573.14	21.10	552.04
OBA-11C	NA	572.94	17.19	555.75
Olin Production Well[2]	NA	NA	623	554.13

Notes:

1. The Gill Creek Stilling Well is monitored with a dedicated level transducer which collects hourly elevation measurements. The water elevation shown and used to prepare the A-Zone potentiometric surface map is the average hourly elevation for the date shown.
2. The Olin Production Well water elevation is calculated based on the production well flow rate using an empirical formula presented in the 1994 Remedial Facility Investigation. The flow rate is shown in place of the depth to water.
3. The orange highlighted water elevations are at or below the bottom of the A-Zone. A-Zone bottom elevations were used for these wells on the A-Zone potentiometric surface map.
4. Water elevations from the A/B-Zone wells with red text were used for the A-Zone potentiometric surface map. Pumping well piezometers (green text) were used for both A-Zone and B-Zone potentiometric surface maps.
5. The blue highlighted wells were not used when preparing the B-Zone potentiometric surface map. These appear to be poorly or not connected to the B-Zone based on their typical water elevations which are more than 2 feet higher than the average B-Zone elevation.
6. Water levels from A-Zone & B-Zone Solvent wells located on Olin property between Gill Creek and Dupont Road were measured and used for the A-Zone and B-Zone potentiometric surface maps.

Prepared by: ASN 01/07/2019
Checked by: FKM 02/08/2019

Table 3.3: October 2, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	10/2/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - OLIN				
OBA-1A	562.33	570.67	15.12	555.55
OBA-2A	561.32	572.54	DRY	DRY
OBA-3A	552.36	572.07	15.29	556.78
OBA-4A	558.34	572.42	11.30	561.12
OBA-5A	557.72	571.72	7.60	564.12
OBA-6A	561.01	570.17	5.01	565.16
OBA-7A	562.71	573.39	9.15	564.24
OBA-8A	559.59	572.49	10.98	561.51
OBA-9A	558.01	569.24	6.94	562.30
OBA-9AR	557.28	570.22	7.15	563.07
OBA-10A	552.15	568.39	5.79	562.60
OBA-11A	558.76	572.83	13.01	559.82
OBA-14A	552.44	570.67	13.71	556.96
OBA-15A	551.06	572.59	16.15	556.44
OBA-16A	560.42	573.26	11.03	562.23
OBA-18A	559.18	573.47	13.20	560.27
OBA-19A	558.08	573.86	12.45	561.41
OBA-23A	560.94	570.19	8.93	561.26
OBA-24A	557.76	568.95	6.54	562.41
OBA-25A	558.07	569.02	6.01	563.01
OBA-26A	557.28	569.55	7.15	562.40
PN-1A	560.21	570.51	7.62	562.89
PN-2A	561.41	570.64	DRY	DRY
PN-3A	560.12	571.80	9.51	562.29
PN-4A	558.94	568.35	7.18	561.17
PN-5A	558.95	568.55	7.01	561.54
PN-6A	559.06	568.43	7.14	561.29
PN-7A	558.52	568.23	6.68	561.55
PN-8A	557.53	568.28	4.99	563.29
PN-9A	558.97	570.74	10.06	560.68
PN-10A	561.35	570.11	DRY	DRY
PN-11A	557.78	567.49	4.78	562.71
PN-12A	558.85	570.07	5.21	564.86
PN-13A	559.98	573.25	9.01	564.24
PN-14A	560.62	573.30	8.89	564.41
PN-15A	559.44	570.69	7.77	562.92
PN-16A	560.17	570.44	9.76	560.68
PN-17A	560.32	570.55	6.67	563.88
PN-18A	561.55	570.23	8.07	562.16
PN-19A	562.00	570.74	7.47	563.27
PN-20A	558.35	570.07	8.62	561.45
PN-21A	558.77	569.48	5.11	564.37
Gill Creek Stilling Well[1]	NA	571.48	8.61	562.87

Table 3.3: October 2, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	10/2/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
A-ZONE - SOLVENT[6]				
OW-5A	NA	573.05	DRY	DRY
OW-6A	NA	572.10	10.20	561.90
OW-20A	NA	572.62	DRY	DRY
OW-21A	NA	569.33	DRY	DRY
OW-22A	NA	570.68	DRY	DRY
A/B-ZONE[4,5]				
PR-1	561.70	572.29	9.64	562.65
PR-1-PZ	561.70	571.15	8.39	562.76
PR-2	561.17	572.21	14.15	558.06
PR-2-PZ	561.17	572.17	15.43	556.74
PR-3	557.65	572.39	15.21	557.18
PR-3-PZ	557.65	571.69	12.56	559.13
PR-4	556.58	569.66	12.97	556.69
PR-4-PZ	556.58	569.65	12.98	556.67
PR-5	558.47	570.18	13.13	557.05
PR-5-PZ	558.47	569.23	12.11	557.12
PR-6	559.35	568.28	11.01	557.27
PR-7	558.56	568.57	8.16	560.41
PR-8	558.91	567.97	9.67	558.30
PR-9	556.16	568.39	7.84	560.55
PR-10	558.38	568.16	7.72	560.44
PR-11	558.31	567.53	4.29	563.24
PR-12	558.37	569.28	9.56	559.72
PR-13	559.15	568.69	11.04	557.65
PR-14	558.59	568.60	8.01	560.59
RW-1	560.93	573.22	15.03	558.19
RW-1-PZ	560.93	572.33	14.10	558.23
RW-2	559.03	572.01	15.22	556.79
RW-2-PZ	559.03	571.76	15.11	556.65
RW-3	556.69	569.40	12.79	556.61
RW-3-PZ	556.69	569.37	12.81	556.56
RW-4	557.05	569.27	12.59	556.68
RW-4-PZ	557.05	569.33	12.59	556.74
RW-5	556.81	569.28	12.01	557.27
RW-5-PZ	556.81	569.24	12.00	557.24
B-ZONE[5]				
OBA-1B	NA	570.35	12.13	558.22
OBA-2B	NA	572.63	15.97	556.66
OBA-4B	NA	573.03	15.60	557.43
OBA-5B	NA	572.29	12.08	560.21
OBA-6B	NA	570.31	5.26	565.05
OBA-7B	NA	573.97	10.14	563.83
OBA-8B	NA	572.64	14.15	558.49

Table 3.3: October 2, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	10/2/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
B-ZONE CONTINUED[5]				
OBA-11B	NA	572.87	15.98	556.89
OBA-14B	NA	570.76	14.15	556.61
OBA-16B	NA	572.99	15.12	557.87
OBA-23B	NA	570.04	12.09	557.95
OBA-24B	NA	568.76	11.91	556.85
OBA-25B	NA	568.93	12.51	556.42
OBA-26B	NA	569.65	12.59	557.06
PN-1B	NA	570.32	12.15	558.17
PN-2B	NA	570.44	13.40	557.04
PN-3B	NA	571.73	13.59	558.14
PN-4B	NA	568.46	11.39	557.07
PN-5B	NA	568.58	12.15	556.43
PN-6B	NA	568.56	11.94	556.62
PN-7B	NA	568.45	11.07	557.38
PN-8B	NA	567.85	10.74	557.11
PN-9B	NA	570.68	13.50	557.18
PN-10B	NA	571.15	13.29	557.86
PN-11B	NA	567.78	10.27	557.51
PN-12B	NA	570.00	12.35	557.65
PN-13B	NA	573.24	15.59	557.65
PN-14B	NA	573.30	10.10	563.20
PN-15B	NA	570.70	13.29	557.41
PN-16B	NA	570.36	11.10	559.26
PN-17B	NA	570.54	12.61	557.93
PN-18B	NA	570.50	12.22	558.28
PN-19B	NA	570.64	9.90	560.74
PN-20B	NA	569.70	14.01	555.69
PN-21B	NA	569.39	11.09	558.30
PN-22B	NA	569.08	NM	NM
PN-23B	NA	568.90	NM	NM
PN-24B	NA	570.87	13.69	557.18
B-ZONE - SOLVENT[6]				
PW-3B	NA	571.21	14.21	557.00
PW-4B	NA	569.72	12.81	556.91
OW-4B	NA	570.55	13.48	557.07
OW-14B	NA	570.87	14.18	556.69
OW-15B	NA	569.78	12.41	557.37
OW-22B	NA	570.90	14.14	556.76
OW-23B	NA	569.67	12.79	556.88
OW-24B	NA	570.36	13.51	556.85
OW-25B	NA	570.90	13.84	557.06
OW-31B	NA	570.14	12.66	557.48
OW-32B	NA	569.99	12.59	557.4
OW-33B	NA	569.55	12.51	557.04

Table 3.3: October 2, 2018 Water Elevations

Well	A-Zone Bottom Elevation (feet)	Reference Point Elevation (feet)	10/2/2018	
			Depth to Water (feet btoc)	Water Elevation[3] (feet)
C-ZONE				
OBA-1C	NA	570.41	14.81	555.60
OBA-4C	NA	573.05	16.49	556.56
OBA-7C	NA	574.30	19.48	554.82
OBA-14C	NA	570.15	17.09	553.06
OBA-15B	NA	573.13	15.88	557.25
CD-ZONE				
OBA-2C	NA	572.43	17.27	555.16
OBA-3C	NA	572.67	20.04	552.63
OBA-5C	NA	572.01	16.88	555.13
OBA-6C	NA	570.35	14.80	555.55
OBA-8C	NA	573.14	21.11	552.03
OBA-11C	NA	572.94	17.11	555.83
Olin Production Well[2]	NA	NA	601	554.3

Notes:

1. The Gill Creek Stilling Well is monitored with a dedicated level transducer which collects hourly elevation measurements. The water elevation shown and used to prepare the A-Zone potentiometric surface map is the average hourly elevation for the date shown.
2. The Olin Production Well water elevation is calculated based on the production well flow rate using an empirical formula presented in the 1994 Remedial Facility Investigation. The flow rate is shown in place of the depth to water.
3. The orange highlighted water elevations are at or below the bottom of the A-Zone. A-Zone bottom elevations were used for these wells on the A-Zone potentiometric surface map.
4. Water elevations from the A/B-Zone wells with red text were used for the A-Zone potentiometric surface map. Pumping well piezometers (green text) were used for both A-Zone and B-Zone potentiometric surface maps.
5. The blue highlighted wells were not used when preparing the B-Zone potentiometric surface map. These appear to be poorly or not connected to the B-Zone based on their typical water elevations which are more than 2 feet higher than the average B-Zone elevation.
6. Water levels from A-Zone & B-Zone Solvent wells located on Olin property between Gill Creek and Dupont Road were measured and used for the A-Zone and B-Zone potentiometric surface maps.

Prepared by: ASN 01/07/2019
Checked by: FKM 02/08/2019

Table 4.1: March 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-2B 3/28/2018		Sample OBA-4A 3/27/2018		Sample OBA-4B 3/27/2018		Sample OBA-5B 3/27/2018		Sample OBA-6B 3/28/2018		Sample OBA-24A 3/27/2018	
Volatile Organic Compound Concentrations - SW846 8260C µg/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	8.0		1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1.1		1.0	U	1.0	U	15.6		1.0	U	1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	1.0	U	1.0	U	1.0	U	19.9		1.0	U	1.0	U
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	1.7		1.0	U	1.0	U
Chloromethane (Methyl chloride)	1.0	UJ	1.0	UJ	1.0	U	1.0	U	1.0	UJ	1.0	U
cis-1,2-Dichloroethene	19.6		1.0	U	14.3		1330		1.0	U	3.6	
Methylene chloride (Dichloromethane)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	19.7		5.0		16.6		1630		1.0	U	4.1	
trans-1,2-Dichloroethene	1.0	U	1.0	U	1.0	U	31.2		1.0	U	1.0	U
Trichloroethene (TCE)	70.8		3.5		14.4		4600		1.0	U	24.2	
Vinyl chloride	1.0	U	1.0	U	8		29.7		1.0	U	1.0	U
Aromatic Compounds												
1,2,4-Trichlorobenzene	2300		1.0	U	1.2		452		1.0	U	1.0	U
1,2-Dichlorobenzene	23.6		1.0	U	1.0	U	42.9		1.0	U	1.0	U
1,3-Dichlorobenzene	49.4		1.0	U	1.5		56.8		1.0	U	1.0	U
1,4-Dichlorobenzene	13.6		1.0	U	1.7		76.2		1.0	U	1.0	U
Benzene	1.3		1.0	U	1.3		278		1.0	U	1.0	U
Chlorobenzene	2.6		1.0	U	5.7		172		1.0	U	1.0	U
Pesticide Concentrations - SW846 8081 ug/L												
alpha-BHC	2.2		0.15		0.16		8.4		0.073		0.050	U
beta-BHC	0.38		0.059		0.10		4.4		0.053		0.050	U
delta-BHC	0.076	JQ	0.089		0.12		3.2		0.020	JQ	0.050	U
gamma-BHC (Lindane)	0.22	JQ	0.20		0.21		7.4		0.048	JQ	0.050	U
Total Metal Concentrations - SW846 7470 ug/L												
Mercury	0.88		1.1		0.2	U	0.089	JQ	0.15	JQ	0.071	JQ

Notes:
ug/L - micrograms per liter

Prepared by: RMB 6/4/2018
Checked By: MMB 6/25/2018

Data Qualifier Definitions:
J - Estimated concentration based on QC criteria
JQ - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
U - Constituent not detected above the Reporting Limit shown
UJ - Constituent not detected, estimated due to QC criteria

Table 4.1: March 2018 Groundwater Analytical Result

Well ID: / Sample Date:	Sample OBA-24B 3/27/2018	Duplicate OBA-24B 3/27/2018	Sample OBA-25A 3/27/2018	Sample OBA-25B 3/27/2018	Sample OBA-26A 3/27/2018	Sample OBA-26B 3/27/2018
Volatile Organic Compound Concentrations - SW846 8260C µg/L						
Aliphatic Compounds						
1,1,1-Trichloroethane	39.2	38.4	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	346	359	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	48.3	47.5	1.0 U	1.0 U	1.0 U	1.0 U
Carbon tetrachloride	8.9	9.9	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	6.4	14.3	2.9	1.8
Methylene chloride (Dichloromethane)	12.1	11.5	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene (PCE)	16700	17300	4.4	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	113	100	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene (TCE)	24200	24900	19.3	1.0 U	1.0 U	1.2
Vinyl chloride	245	251	1.0 U	44.8	1.0 U	1.0 U
Aromatic Compounds						
1,2,4-Trichlorobenzene	618	665	1.0 U	2.4	1.0 U	1.0 U
1,2-Dichlorobenzene	525	536	1.0 U	43.1	1.0 U	16.3
1,3-Dichlorobenzene	120	118	1.0 U	47.5	1.0 U	22.7
1,4-Dichlorobenzene	506	429	1.0 U	112	1.0 U	49.3
Benzene	1660	1740	1.0 U	7.4	1.0 U	2.5
Chlorobenzene	415	419	1.0 U	239	1.0 U	95.7
Pesticide Concentrations - SW846 8081 ug/L						
alpha-BHC	60.3	38.1	0.050 U	0.050 U	0.050 U	0.050 U
beta-BHC	14.3	10	0.050 U	0.050 U	0.050 U	0.050 U
delta-BHC	0.050 UJ	16.6 J	0.050 U	0.050 U	0.050 U	0.050 U
gamma-BHC (Lindane)	73.7	46.8	0.050 U	0.050 U	0.050 U	0.050 U
Total Metal Concentrations - SW846 7470 ug/L						
Mercury	0.5	0.64	184	0.35	1.5	0.18 JQ

Notes:
ug/L - micrograms per liter

Prepared by: RMB 6/4/2018
Checked By: MMB 6/25/2018

Data Qualifier Definitions:
J - Estimated concentration based on QC criteria
JQ - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
U - Constituent not detected above the Reporting Limit shown
UJ - Constituent not detected, estimated due to QC criteria

Table 4.1: March 2018 Groundwater Analytical Result

Well ID: / Sample Date:	Sample PN-5B 3/28/2018		Duplicate PN-5B 3/28/2018		Sample PN-20B 3/28/2018		Sample PN-24B 3/28/2018	
Volatile Organic Compound Concentrations - SW846 8260C µg/L								
Aliphatic Compounds								
1,1,1-Trichloroethane	16.8		17.1		1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1190		1560		608		1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	21		21.5		4.2		1.0	U
Carbon tetrachloride	12		11.8		28.9		1.0	U
Chloromethane (Methyl chloride)	1.0	U	1.0	U	1.0	U	1.0	UJ
cis-1,2-Dichloroethene	767		1000		518		16.3	
Methylene chloride (Dichloromethane)	73.1		74.3		1.0	U	1.0	U
Tetrachloroethene (PCE)	3280		4210		13200		12.2	
trans-1,2-Dichloroethene	32.7		32.8		12.4		1.0	U
Trichloroethene (TCE)	5590		7390		5530		7.9	
Vinyl chloride	59.8		60.2		44.8		10.1	
Aromatic Compounds								
1,2,4-Trichlorobenzene	8580	J	11700	J	453		2.6	
1,2-Dichlorobenzene	602		760		160		1.7	
1,3-Dichlorobenzene	556		712		83.2		4.4	
1,4-Dichlorobenzene	355		434		142		7.8	
Benzene	842		1100		3.6		1.0	U
Chlorobenzene	584		744		28.1		8.2	
Pesticide Concentrations - SW846 8081 ug/L								
alpha-BHC	520		650		0.66		0.63	
beta-BHC	63.5	JQ	67.4		0.032	JQ	0.11	JQ
delta-BHC	281		335		0.15	JQ	0.88	
gamma-BHC (Lindane)	1250		1610		0.25		0.39	
Total Metal Concentrations - SW846 7470 ug/L								
Mercury	4.3	J	3.3	J	0.2	U	0.2	U

Notes:
ug/L - micrograms per liter

Prepared by: RMB 6/4/2018
Checked By: MMB 6/25/2018

Data Qualifier Definitions:
J - Estimated concentration based on QC criteria
JQ - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
U - Constituent not detected above the Reporting Limit shown
UJ - Constituent not detected, estimated due to QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-1A 6/19/2018		Sample OBA-1B 6/19/2018		Sample OBA-2B 6/15/2018		Sample OBA-3A 6/20/2018		Sample OBA-4B 6/13/2018		Sample OBA-5A 6/14/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	18.5		1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1.0	U	1.0	U	1.0	UJ	588		1.0	U	2.1	
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	16.1		1.0	U	1.0	U
1,1-Dichloroethene	1.0	UJ	1.0	U	1.0	U	12.7	J	1.0	U	0.83	J
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane (Methyl chloride)	1.0	U	1.0	U	1.0	UJ	1.0	U	1.0	UJ	1.0	UJ
cis-1,2-Dichloroethene	1.0	U	3.9		43.7		1.0	U	18.6		120	
Methylene chloride (Dichloromethane)	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	1.0	U	10.2		40.8		2310		5.2	J	353	
trans-1,2-Dichloroethene	1.0	U	1.0	U	1.0	U	98.6		1.0	U	5.8	
Trichloroethene (TCE)	1.0	U	6.7		82.4		5140		8.8		250	
Vinyl chloride	1.0	U	1.0	U	1.0	UJ	242		9.7		9.2	
Aromatic Compounds												
1,2,4-Trichlorobenzene	1.3		1.0	U	416		221		24.5		2930	
1,2-Dichlorobenzene	1.0	U	1.0	U	6.7		244		2.2		125	
1,3-Dichlorobenzene	1.0	U	1.0	U	19.9		176		2.5		408	
1,4-Dichlorobenzene	1.0	U	1.0	U	5.9		246		3.0		286	
Benzene	1.0	U	1.0	U	1.0	U	56.4		1.6		8.1	
Chlorobenzene	1.0	U	1.0	U	1.0	U	198		9.7		22	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	1.2	U	0.050	U	2.3		13.4		0.050	U	18.5	J
beta-BHC	7.4		0.024	J	0.63		1.7		0.088		2.1	J
delta-BHC	1.2	U	0.050	U	0.25	U	1.9		0.050	U	0.25	U
gamma-BHC (Lindane)	1.2	U	0.050	U	0.26		9.0		0.070		2.3	J
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.20	U	95.5		0.46		0.20	U	0.20	U	0.50	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Duplicate OBA-5A 6/14/2018		Sample OBA-5B 6/14/2018		Sample OBA-6A 6/19/2018		Sample OBA-6B 6/19/2018		Sample OBA-8A 6/20/2018		Sample OBA-8B 6/20/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	142		1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1.8		142		1.0	U	1.0	UJ	1.0	U	1.0	U
1,1,2-Trichloroethane	1.0	U	172	J	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	0.85	J	211	J	1.0	UJ	0.53	J	1.0	UJ	0.53	J
Carbon tetrachloride	1.0	U	23.4		1.0	U	1.0	U	1.0	U	1.0	U
Chloromethane (Methyl chloride)	1.0	UJ	1.0	UJ	1.0	U	1.0	U	1.0	U	1.0	U
cis-1,2-Dichloroethene	122		5060		1.0	U	10.4		1.0	U	18.1	
Methylene chloride (Dichloromethane)	1.0	U	3.7		1.0	U	4.7		1.0	U	1.0	U
Tetrachloroethene (PCE)	349		28400		1.0	U	77.4		1.3		23	
trans-1,2-Dichloroethene	5.8		135		1.0	U	1.0	U	1.0	U	1.0	U
Trichloroethene (TCE)	248		84800		1.0	U	32.2		1.3		31.3	
Vinyl chloride	10.2		499	J	1.0	U	2.4		1.0	UJ	6.1	
Aromatic Compounds												
1,2,4-Trichlorobenzene	3130		3210		3.7		169		1.0	U	5770	
1,2-Dichlorobenzene	123		760		1.0	U	7.2		1.0	U	177	
1,3-Dichlorobenzene	400		649		1.0	U	11.2		1.0	U	346	
1,4-Dichlorobenzene	289		983		1.0	U	22		1.0	U	67.9	
Benzene	7.1		5170		1.0	U	8		1.0	U	7.9	
Chlorobenzene	21.6		2650		1.0	U	2.4		1.0	U	13	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	87.8	J	143		0.12		0.050	U	0.25	U	1.3	
beta-BHC	41.5	J	26.2		0.057		0.17		0.25		0.97	
delta-BHC	5.0	U	7.5		0.018	J	0.050	U	0.25	U	0.050	U
gamma-BHC (Lindane)	42.1	J	137		0.019	J	0.050	U	0.25	U	0.053	
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.66		0.20	U	0.20	U	2.4		0.20	U	0.20	U

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-10A 6/13/2018		Sample OBA-11B 6/20/2018		Duplicate OBA-11B 6/20/2018		Sample OBA-14A 6/14/2018		Sample OBA-14B 6/14/2018		Sample OBA-15A 6/20/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	5.0	U	1.9		1.9		5.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	5.0	U	26.5		41		5.0	U	1.0	U	1.0	U
1,1,2-Trichloroethane	5.0	U	1.9		2.1		5.0	U	1.0	U	1.0	U
1,1-Dichloroethene	5.0	U	39.7	J	30.4		5.0	U	1.0	U	1.0	UJ
Carbon tetrachloride	5.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U
Chloromethane (Methyl chloride)	5.0	U	1.0	UJ	1.2	J	5.0	U	1.0	UJ	1.0	U
cis-1,2-Dichloroethene	5.0	U	5950		1.0	U	5.0	U	1.0	U	28.9	
Methylene chloride (Dichloromethane)	5.0	U	1.0	U	1.0	U	5.0	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	5.0	U	239		244		5.0	U	16.8	J	1.0	U
trans-1,2-Dichloroethene	5.0	U	69.6		115		5.0	U	1.0	U	3	
Trichloroethene (TCE)	5.0	U	796		820		5.0	U	20.1		1.5	
Vinyl chloride	5.0	U	1400		1400		5.0	U	1.0	U	3.3	
Aromatic Compounds												
1,2,4-Trichlorobenzene	9.7		719		837		24.5		78.6		1.0	U
1,2-Dichlorobenzene	5.0	U	31.6		35.6		5.0	U	4.7		18.3	
1,3-Dichlorobenzene	5.0	U	63.1		75.6		5.0	U	2.6		36.1	
1,4-Dichlorobenzene	5.0	U	25		27.2		5.0	U	4.7		59.3	
Benzene	5.0	U	12.8		14.6		5.0	U	1		3.8	
Chlorobenzene	5.0	U	25.8		28.7		5.0	U	2.1		72.9	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	1.7		6.0		5.9		0.18		0.050	U	0.058	
beta-BHC	5.1		1.1		1.1		0.050	U	0.050	U	0.039	J
delta-BHC	0.52	J	0.50	U	0.20		0.050	U	0.050	U	0.090	
gamma-BHC (Lindane)	1.6		0.50	U	0.052		0.19		0.050	U	0.050	U
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.62		0.20	U	0.20		0.20	U	0.20	U	0.20	U

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-16B 6/18/2018		Sample OBA-23B 6/18/2018		Sample OBA-24A 6/13/2018		Sample OBA-24B 6/13/2018		Duplicate OBA-24B 6/13/2018		Sample OBA-25A 6/13/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	37.2	JL	38.1	JL	1.0	U
1,1,2,2-Tetrachloroethane	1.1	JL	1.0	UJ	1.0	U	331		264		1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	33.4		28.6		1.0	U
1,1-Dichloroethene	7.5		1.0	U	1.0	U	40.6	JL	39.4	JL	1.0	U
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	8.1	JL	8.2	JL	1.0	U
Chloromethane (Methyl chloride)	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ
cis-1,2-Dichloroethene	276		24.2		1.7		2440		2330		6.2	
Methylene chloride (Dichloromethane)	1.0	U	1.0	U	1.0	U	11.6	JL	11.1	JL	1.0	U
Tetrachloroethene (PCE)	172		3.2		3.4	J	15900		16300		5	J
trans-1,2-Dichloroethene	7.2		3		1.0	U	64.2	JL	60.4	JL	1.0	U
Trichloroethene (TCE)	520		10.4		16.4		28200		28100		27.8	
Vinyl chloride	35.8	J	3.1	J	1.0	U	233		254		1.0	U
Aromatic Compounds												
1,2,4-Trichlorobenzene	268		525		1.0	U	3020		2520		1.0	U
1,2-Dichlorobenzene	35.9		20.7		6.6		4100		4070		1.0	U
1,3-Dichlorobenzene	94.5		669		22.9		742		656		1.0	U
1,4-Dichlorobenzene	42.3		482		79.7		3260		3130		1.1	
Benzene	16.2		1.5		1.0	U	14700		14500		1.0	U
Chlorobenzene	32.4		53.8		158		3540		3570		1.0	U
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	0.49		0.45		0.050	U	49.2		67.6		0.050	U
beta-BHC	3.6		0.19		0.053		11.2		15.4		0.050	U
delta-BHC	0.15	J	0.050	U	0.050	U	24.0		29.4		0.050	U
gamma-BHC (Lindane)	0.56		0.17		0.067		84.9		104		0.050	U
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	3.4		0.20	U	0.23		0.20	U	0.13	J	4.8	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-25B 6/13/2018		Sample OBA-26A 6/13/2018		Sample OBA-26B 6/13/2018		Sample PN-4B 6/18/2018		Sample PN-5A 6/18/2018		Sample PN-5B 6/18/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	106		1.0	U	29.1	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	U	1.0	U	1540	JL	2.2	JL	1190	JL
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	1.0	U	1.0	U	1.0	U	59.4		1.0	U	23.3	
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	51.3	J	1.0	U	14.8	J
Chloromethane (Methyl chloride)	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ
cis-1,2-Dichloroethene	70.9		2.4		4		1.0	U	1.5		1340	
Methylene chloride (Dichloromethane)	1.0	U	1.0	U	1.0	U	138		1.0	U	69.9	
Tetrachloroethene (PCE)	1.0	U	1.0	U	1.0	U	15800		19.9		6520	
trans-1,2-Dichloroethene	2.2		1.0	U	1.0	U	143		1.0	U	45	
Trichloroethene (TCE)	1.0	U	1.0	U	1.0	U	30100		10.7		10500	
Vinyl chloride	170		1.0	U	8.1		309		1.0	UJ	85.8	J
Aromatic Compounds												
1,2,4-Trichlorobenzene	1.0	U	1.0	U	1.0	U	3160		121		7760	
1,2-Dichlorobenzene	40.6		1.0	U	462		200		1.0	U	507	
1,3-Dichlorobenzene	34.1		1.0	U	475		282		4.1		524	
1,4-Dichlorobenzene	93.1		1.0	U	1160		254		2.4		327	
Benzene	18.5		1.0	U	74.5		156		1.0	U	984	
Chlorobenzene	337		1.0	U	2800		193	J	1.0	U	724	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	0.050	UJ	0.050	U	0.050	U	143		0.15	J	400	
beta-BHC	0.050	UJ	0.050	U	0.050	U	17.4		0.21		44.0	
delta-BHC	0.050	UJ	0.050	U	0.050	U	22.2		0.15	U	256	
gamma-BHC (Lindane)	0.050	UJ	0.059		0.050	U	193		0.15	J	1000	
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.20	U	0.16	J	0.20	U	6.1		0.20	U	0.16	J

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Duplicate PN-5B 6/18/2018		Sample PN-6A 6/18/2018		Sample PN-6B 6/18/2018		Sample PN-7A 6/19/2018		Sample PN-7B 6/19/2018		Sample PN-11A 6/19/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	28.7		1.0	U	118		1.0	U	1.2		1.0	U
1,1,2,2-Tetrachloroethane	940	JL	1.0	UJ	834	JL	1.0	U	9.7		1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	55.2		1.0	U	1.2		1.0	U
1,1-Dichloroethene	22.9		1.0	U	53.8		1.0	U	2.8		1.0	UJ
Carbon tetrachloride	14.6	J	1.0	U	65.7	J	1.0	U	1.0	U	1.0	U
Chloromethane (Methyl chloride)	1.0	UJ	1.0	U	1.0	UJ	1.0	U	1.0	U	1.0	U
cis-1,2-Dichloroethene	1220		1.2		1.0	U	1.0	U	599		1.0	U
Methylene chloride (Dichloromethane)	70		1.0	U	678		1.0	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	5660		2.1		7970		12.3		134		1.3	
trans-1,2-Dichloroethene	43.5		1.0	U	107		1.0	U	51.7		1.0	U
Trichloroethene (TCE)	9100		2.4		22300		12.6		283		1.6	
Vinyl chloride	89.5	J	1.0	UJ	126	J	1.0	U	39.9		1.0	U
Aromatic Compounds												
1,2,4-Trichlorobenzene	6530		5.1		8850		1.0	U	3970		4.0	
1,2-Dichlorobenzene	445		2.3		659		1.0	U	213		2.5	
1,3-Dichlorobenzene	452		72.8		2440		3.4		488		21.4	
1,4-Dichlorobenzene	284		120		1640		1.7		225		16	
Benzene	871		2.1		1690		1.0	U	1.0	U	1.0	U
Chlorobenzene	625		185		1490		8.3		290		4.6	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	455		0.056		216		0.29		129		0.31	J
beta-BHC	46.5		0.12		29.6		10.5		15.7		0.077	J
delta-BHC	296		0.039	J	32.9		0.19		12.4		0.076	J
gamma-BHC (Lindane)	1130		0.12		326		0.23		137		0.60	J
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.16	J	0.17	J	0.32		5.7		0.27		0.42	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
JL = constituent detected, estimated, possibly biased low
U = constituent not detected, reporting limit shown
UJ = constituent not detected, estimated based on QC criteria

Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample PN-11B 6/19/2018	Duplicate PN-11B 6/19/2018	Sample PN-12A 6/15/2018	Sample PN-12B 6/15/2018	Sample PN-14A 6/15/2018	Sample PN-14B 6/15/2018
Volatile Organic Compound Concentrations - SW846 8260C, ug/L						
Aliphatic Compounds						
1,1,1-Trichloroethane	40.6	41.6	1.0 U	2.9	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	528	499	1.0 UJ	46.1 JL	1.0 UJ	1.0 UJ
1,1,2-Trichloroethane	35.8	33.6	1.0 U	2.7	1.0 U	1.0 U
1,1-Dichloroethene	28.3 J	5.2 J	1.0 U	13.4	1.0 U	1.0 U
Carbon tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U
cis-1,2-Dichloroethene	1480	1340	1.6	2390	1.8	1.0 U
Methylene chloride (Dichloromethane)	2.3	2	1.5	2.4	1.3	1.0 U
Tetrachloroethene (PCE)	4620	4010	3.1	2360	27.0	1.0 U
trans-1,2-Dichloroethene	47.4 J	182 J	1.0 U	73.1	1.0 U	1.0 U
Trichloroethene (TCE)	12400	12000	4.0	1930	16.0	1.0 U
Vinyl chloride	62.1 J	43.8 J	1.0 UJ	221	1.0 UJ	1.0 UJ
Aromatic Compounds						
1,2,4-Trichlorobenzene	10800	9670	6.9	14700	290	152 JL
1,2-Dichlorobenzene	8350	8310	1.0 U	1020	14.4	2.3
1,3-Dichlorobenzene	1400	1360	6.3	1230	25.4	44.4
1,4-Dichlorobenzene	7770	7340	4.4	809	2.4	31.8
Benzene	277	262	6.4	2190	0.97 J	4
Chlorobenzene	565	551	1.9	1460	1	2.5
Pesticide Concentrations - SW846 8081, ug/L						
alpha-BHC	350	300	0.25 U	155	0.29 J	1.5
beta-BHC	37.0	35.0	1.5	27.0	9.0	1.9
delta-BHC	11.5	10.9	0.25 U	0.80	0.50 U	0.25 U
gamma-BHC (Lindane)	278	244	0.25 U	49.0	0.50 U	0.25 U
Total Metal Concentrations - SW846 7470, ug/L						
Mercury	0.20 U	0.12 J	0.22	0.80	3.6	0.49

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
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Table 4.2: June 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample PN-15A 6/19/2018		Sample PN-15B 6/19/2018		Sample PN-17A 6/15/2018		Sample PN-17B 6/15/2018		Sample PN-20A 6/15/2018		Sample PN-20B 6/15/2018		Sample PN-24B 6/14/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L														
Aliphatic Compounds														
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	473	JL	1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
1,1-Dichloroethene	1.0	U	1.0	U	1.0	U	1.2		1.0	U	5.1		1.0	U
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	33.6	J	1.0	U
Chloromethane (Methyl chloride)	1.0	U	1.0	U	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ	1.0	UJ
cis-1,2-Dichloroethene	1.1		17.3		1.3		25.1		1.0	U	646		11	
Methylene chloride (Dichloromethane)	1.0	U	1.1		1.0	U	1.0	U	1.0	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	1.0	U	75.9		2.2		54.4		10.4		13900		22.6	J
trans-1,2-Dichloroethene	1.0	U	2.7		1.0	U	2.9		1.0	U	12.5		1.0	U
Trichloroethene (TCE)	1.0	U	77.4		1.1		43.4		14.5		6590		18.2	
Vinyl chloride	1.0	UJ	2.1	J	1.0	UJ	11.2	J	1.0	UJ	30	J	6.7	
Aromatic Compounds														
1,2,4-Trichlorobenzene	1.1		17300		16.8	JL	9820		6.0	J	106		40.1	
1,2-Dichlorobenzene	5.7		927		1.4		1060		1.0	U	140		5.1	
1,3-Dichlorobenzene	444		2620		37	JL	1490		1.0	U	41.5		5.7	
1,4-Dichlorobenzene	1030		537		12.8		1220		1.0	U	72.1		10.9	
Benzene	6.1		75.6		4.6		81.7		1.0	U	7.3		1.1	
Chlorobenzene	1420		60.2		13.1		1070		1.0	U	13.8		9.9	
Pesticide Concentrations - SW846 8081, ug/L														
alpha-BHC	0.048	J	130	J	0.050	UJ	5.8		0.050	U	0.40		0.13	
beta-BHC	0.10		26.8	J	0.086	JL	14.0		0.13		0.050	U	0.10	
delta-BHC	0.050	U	0.22	J	0.050	UJ	1.0	U	0.050	U	0.070		0.050	U
gamma-BHC (Lindane)	0.023	J	0.66	J	0.050	UJ	1.0	U	0.050	U	0.28		0.13	
Total Metal Concentrations - SW846 7470, ug/L														
Mercury	0.14	J	44.4		25.3		1.4		0.22		0.12	J	1.2	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
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Table 4.3: October 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-2B 10/4/2018		Sample OBA-4A 10/3/2018		Sample OBA-4B 10/3/2018		Sample OBA-5B 10/3/2018		Sample OBA-6B 10/4/2018		Sample OBA-24A 10/3/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	1.0	U	1.0	U	1.0	U	100	U	1.0	U	1.0	U
1,1,2,2-Tetrachloroethane	1.0	U	1.0	U	1.0	U	189		1.0	U	1.0	U
1,1,2-Trichloroethane	1.0	U	1.0	U	1.0	U	100	U	1.0	U	1.0	U
1,1-Dichloroethene	1.0	U	1.0	U	1.0	U	54.2	J	1.0	U	1.0	U
Carbon tetrachloride	1.0	U	1.0	U	1.0	U	100	U	1.0	U	1.0	U
Chloromethane (Methyl chloride)	1.0	U	1.0	U	1.0	U	100	UJ	1.0	U	1.0	U
cis-1,2-Dichloroethene	14.5		1.0	U	42		4860		1.0	U	1.4	
Methylene chloride (Dichloromethane)	1.0	U	1.0	U	1.0	U	100	U	1.0	U	1.0	U
Tetrachloroethene (PCE)	13.7		6.8		1.3		4030		1.0	U	2.0	
trans-1,2-Dichloroethene	1.0	U	1.0	U	1.0	U	100	U	1.0	U	1.0	U
Trichloroethene (TCE)	41.8		4		6.4		9770		1.0	U	8.4	
Vinyl chloride	1.0	U	1.0	U	19.5		398		1.0	U	1.0	U
Aromatic Compounds												
1,2,4-Trichlorobenzene	1200		1.0	U	1.0	U	3330		1.0	U	2.5	
1,2-Dichlorobenzene	23.4		1.0	U	1.0	U	514		1.0	U	62.6	
1,3-Dichlorobenzene	31.8		1.0	U	2.3		855		1.0	U	97.4	
1,4-Dichlorobenzene	8.8		1.0	U	1.9		1080		1.0	U	223	
Benzene	0.83	J	1.0	U	1.6		1860		1.0	U	0.72	J
Chlorobenzene	1.2		1.0	U	12.8		2450		1.2		263	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	2.1		0.050	U	0.18		171		0.050	U	0.050	U
beta-BHC	0.65		0.050	U	0.16		28.6		0.040	J	0.045	J
delta-BHC	0.25	U	0.050	U	0.059		8.4		0.019	J	0.037	J
gamma-BHC (Lindane)	0.33		0.050	U	0.27		98.9		0.050	U	0.12	
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.22		0.33		0.20	U	0.20	U	0.19	J	0.21	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
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Table 4.3: October 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample OBA-24B 10/3/2018		Duplicate OBA-24B 10/3/2018		Sample OBA-25A 10/3/2018		Sample OBA-25B 10/3/2018		Sample OBA-26A 10/3/2018		Sample OBA-26B 10/3/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L												
Aliphatic Compounds												
1,1,1-Trichloroethane	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
1,1,2,2-Tetrachloroethane	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
1,1,2-Trichloroethane	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
1,1-Dichloroethene	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
Carbon tetrachloride	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
Chloromethane (Methyl chloride)	20.0	UJ	20.0	UJ	1.0	U	5.0	U	1.0	U	50.0	U
cis-1,2-Dichloroethene	632		607		9.5		5.0	U	4.3		50.0	U
Methylene chloride (Dichloromethane)	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
Tetrachloroethene (PCE)	20.0	U	20.0	U	4.8		5.0	U	1.0	U	50.0	U
trans-1,2-Dichloroethene	20.0	U	20.0	U	1.0	U	5.0	U	1.0	U	50.0	U
Trichloroethene (TCE)	20.0	U	20.0	U	25.9		5.0	U	1.0	U	50.0	U
Vinyl chloride	151		153		1.0	U	5.0	U	1.0	U	50.0	U
Aromatic Compounds												
1,2,4-Trichlorobenzene	394		422		1.0	U	5.0	U	1.0	U	50.0	U
1,2-Dichlorobenzene	626		633		1.0	U	13.2		1.0	U	251	
1,3-Dichlorobenzene	162		164		1.0	U	9.6		1.0	U	467	
1,4-Dichlorobenzene	479		486		1.0	U	30.4		1.0	U	1070	
Benzene	1940		1850		1.0	U	5.3		1.0	U	40.1	J
Chlorobenzene	656		640		1.0	U	94.4		1.0	U	2070	
Pesticide Concentrations - SW846 8081, ug/L												
alpha-BHC	66.5	J	166	J	0.050	U	0.050	U	0.050	U	0.050	U
beta-BHC	18.1	J	44.8	J	0.042	J	0.050	U	0.050	U	0.050	U
delta-BHC	17.6	J	131	J	0.050	U	0.050	U	0.050	U	0.050	U
gamma-BHC (Lindane)	106	J	347	J	0.050	U	0.050	U	0.050	U	0.050	U
Total Metal Concentrations - SW846 7470, ug/L												
Mercury	0.20	U	0.20	U	3.6		0.20	U	0.20	U	0.20	U

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
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Table 4.3: October 2018 Groundwater Analytical Results

Well ID: / Sample Date:	Sample PN-5B 10/4/2018		Duplicate PN-5B 10/4/2018		Sample PN-20A 10/4/2018		Sample PN-20B 10/4/2018		Sample PN-24B 10/4/2018	
Volatile Organic Compound Concentrations - SW846 8260C, ug/L										
Aliphatic Compounds										
1,1,1-Trichloroethane	100	U	100	U	1.0	U	100	U	1.0	U
1,1,2,2-Tetrachloroethane	980		1000		1.0	U	221		1.0	U
1,1,2-Trichloroethane	100	U	100	U	1.0	U	100	U	1.0	U
1,1-Dichloroethene	100	U	100	U	1.0	U	100	U	1.0	U
Carbon tetrachloride	100	U	100	U	1.0	U	100	U	1.0	U
Chloromethane (Methyl chloride)	100	U	100	U	1.0	U	100	U	1.0	U
cis-1,2-Dichloroethene	1650		1730		1.0	U	633		15.7	
Methylene chloride (Dichloromethane)	100	U	100	U	1.0	U	100	U	1.0	U
Tetrachloroethene (PCE)	3910		4080		8.3		5400		9.6	
trans-1,2-Dichloroethene	100	U	100	U	1.0	U	100	U	1.0	U
Trichloroethene (TCE)	5610		5900		2.4		2500		5.9	
Vinyl chloride	123		154		1.0	U	100	U	7.4	
Aromatic Compounds										
1,2,4-Trichlorobenzene	7300		7740		5.2		116		2.6	
1,2-Dichlorobenzene	490		502		1.0	U	100	U	3.4	
1,3-Dichlorobenzene	465		487		1.0	U	146		7.0	
1,4-Dichlorobenzene	296		330		1.0	U	226		13.4	
Benzene	675		708		1.0	U	100	U	0.47	J
Chlorobenzene	523		517		1.0	U	100	U	14.6	
Pesticide Concentrations - SW846 8081, ug/L										
alpha-BHC	352		319		0.13		0.58		0.12	
beta-BHC	31.9		27.6		0.080		0.24		0.079	
delta-BHC	279		242		0.12		0.17		0.065	
gamma-BHC (Lindane)	911		811		0.37		0.38		0.17	
Total Metal Concentrations - SW846 7470, ug/L										
Mercury	0.72		0.54		0.66		0.20	U	0.38	

Notes:
ug/L - micrograms per liter

Prepared by: RMB 01/30/2019
Checked by: RJB 02/01/2019

Data Qualifier Definitions:
J = Estimated concentration detected above the adjusted method detection limit and below the adjusted reporting limit, or estimated due to QC criteria
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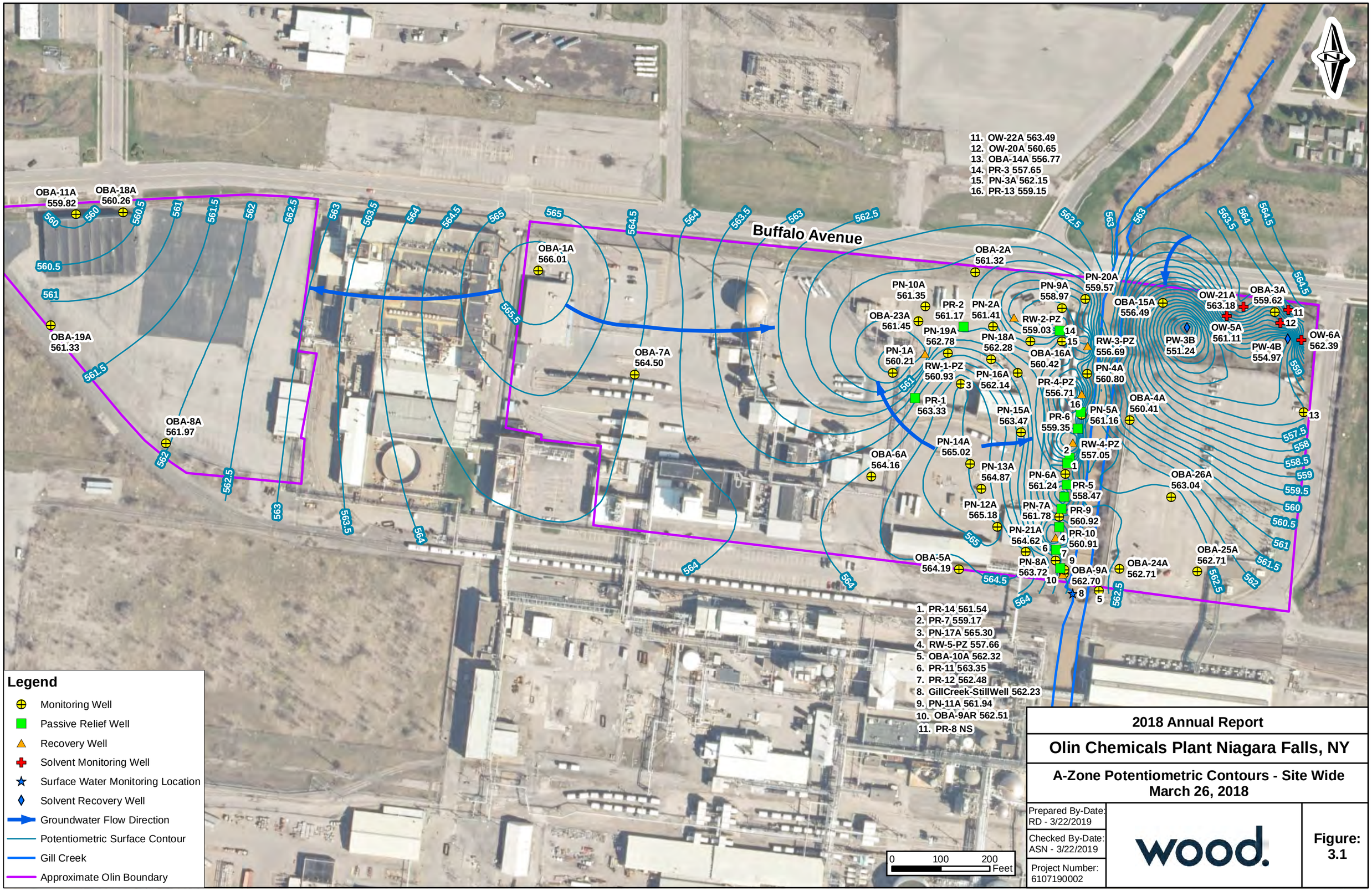
FIGURES



Legend

- Monitoring Well
- Passive Relief Well
- Recovery Well
- Solvent Monitoring Well
- Surface Water Monitoring Location
- Solvent Recovery Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

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2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Potentiometric Contours - Site Wide March 26, 2018

Prepared By-Date: RD - 3/22/2019	
Checked By-Date: ASN - 3/22/2019	wood.
Project Number: 6107190002	**Figure: 3.1**

Buffalo Avenue

OBA-11A 559.75
OBA-18A 560.27
OBA-19A 560.36
OBA-8A 558.11*
OBA-1A 566.32
OBA-7A 564.38
OBA-6A 563.96
OBA-5A 563.93
OBA-2A 561.32
PN-10A 561.35
OBA-23A 560.94
PR-2 557.46
PN-19A 563.69
PN-1A 560.21
RW-1-PZ 557.98
PR-1 562.27
PN-2A 561.41
RW-2-PZ 556.66
PN-18A 562.23
PN-16A 561.94
PN-9A 560.17
PN-20A 561.50
OBA-16A 562.28
PR-4-PZ 557.06
PN-15A 563.39
PR-6 557.80
PN-4A 560.85
OBA-15A 556.54
OW-21A 561.23
OBA-3A 557.14
OW-20A 560.59
OW-6A 562.29
OW-5A DRY
PW-3B 556.96
RW-3-PZ 556.55
PW-4B 557.02
OBA-4A 558.56
PN-5A 561.31
OBA-14A 556.86
PN-14A 564.81
PN-13A 564.60
PN-12A 564.97
PR-14 561.39
RW-4-PZ 556.78
PN-6A 561.39
PR-8 558.35
PR-5 557.35
PN-7A 561.75
PR-10 560.97
PN-21A 564.43
OBA-26A 562.40
OBA-24A 561.05
OBA-25A 563.21
PN-8A 563.48
OBA-9A 562.55
GillCreek-StillWell 562.80
OBA-10A 562.28

8. OW-22A 561.40
9. PR-3 557.09
10. PN-3A 561.94
11. PR-13 557.49
12. PR-7 559.62

1. PN-17A 563.04
2. PR-9 560.56
3. PR-11 563.08
4. RW-5-PZ 558.34
5. PN-11A 562.94
6. PR-12 562.27
7. OBA-9AR 562.12

560 560.5 561 561.5 562 562.5 563 563.5 564 564.5 565 565.5 566

Legend

- Monitoring Well
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- Recovery Well
- Solvent Monitoring Well
- Surface Water Monitoring Location
- Solvent Recovery Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Note:
*= Groundwater elevation not used in contouring. Water level measurement from March 2018 used in contouring for consistency.

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Potentiometric Contours - Site Wide June 11, 2018

Prepared By-Date: RD - 3/22/2019	
Checked By-Date: ASN - 3/22/2019	
Project Number: 6107190002	wood.

Figure: 3.2

Path: G:\olin_niagra\2018_Annual_Report\mxds\A_Zone_Full_Extent_061118.mxd

Buffalo Avenue

OBA-11A 559.82
OBA-18A 560.27
OBA-19A 561.41
OBA-8A 561.51
OBA-1A 555.55*
OBA-7A 564.24
OBA-6A 565.16
OBA-5A 564.12
OBA-2A 561.32
PN-10A 561.35
OBA-23A 561.26
PR-2 558.06
PN-19A 563.27
RW-1-PZ 558.23
PN-1A 562.89
PR-1 562.65
PN-2A 561.41
RW-2-PZ 556.65
PN-18A 562.16
OBA-16A 562.23
PN-16A 560.68
PR-4-PZ 556.67
PN-15A 562.92
PR-6 557.27
PN-14A 564.41
PR-14 560.59
PN-13A 564.24
PR-8 558.30
PN-6A 561.29
PR-5 557.05
PN-12A 564.86
PN-7A 561.55
PR-10 560.44
PN-21A 564.37
PN-8A 563.29
OBA-9A 562.30
GillCreek-StillWell 562.87
OBA-10A 562.60
PN-9A 560.68
PN-20A 561.45
RW-3-PZ 556.56
PN-4A 561.17
PN-5A 561.54
OBA-4A 561.12
RW-4-PZ 556.74
OBA-26A 562.40
OBA-24A 562.41
OBA-25A 563.01
OBA-15A 556.44
OW-21A DRY
OBA-3A 556.78
OW-5A DRY
OW-22A DRY
PW-3B 557.00
OW-20A DRY
PW-4B 556.91
OW-6A 561.90
OBA-14A 556.96

1. PR-3 557.18
2. PN-3A 562.29
3. PN-17A 563.88
4. PR-13 557.65
5. PR-7 560.41
6. PR-9 560.55
7. RW-5-PZ 557.24
8. PR-11 563.24
9. PN-11A 562.71
10. PR-12 559.72
11. OBA-9AR 563.07

Legend

- Monitoring Well
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- Approximate Olin Boundary

Note:
*= Groundwater elevation not used in contouring. Water level measurement from June 2018 used in contouring for consistency.

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Potentiometric Contours - Site Wide
October 2, 2018

Prepared By-Date: RD - 3/22/2019	
Checked By-Date: ASN - 3/22/2019	
Project Number: 6107190002	wood.

Figure: 3.3

Path: G:\olin_niagra\2018_Annual_Report\mxds\A_Zone_Full_Extent_100218.mxd

Buffalo Avenue

OBA-11B 557.07
OBA-1B 559.46
OBA-8B 558.25
OBA-2B 556.53
PN-24B 556.97
PN-20B 556.50
PN-10B 557.70
PN-9B 556.68
RW-2-PZ 556.55
OBA-23B 558.18
PN-19B 561.52*
RW-1-PZ 558.22
PN-18B 558.74
OBA-16B 562.01*
PN-1B 558.26
PN-17B 558.36
PR-4-PZ 556.71
PN-4B 556.67
RW-3-PZ 556.56
OBA-4B 557.92
PN-5B 556.26
PN-15B 557.08
RW-4-PZ 556.97
PN-13B 557.45
PN-6B 556.52
OBA-26B 557.36
PN-12B 557.51
RW-5-PZ 557.66
PN-7B 557.14
PN-11B 557.22
OBA-5B 559.81
OBA-24B 557.25
OBA-25B 557.87
PR-12 562.48
OBA-14B 556.32
OW-14B 556.59
OW-15B 556.68
OW-22B 556.51
OW-25B 556.22
PW-3B 551.24
PW-4B 554.97
OW-33B 556.57

1. OW-31B 557.35
2. OW-24B 556.68
3. OW-4B 556.84
4. OW-32B 557.30
5. OW-23B 556.45
6. PN-3B 557.44
7. PN-2B 556.66
8. PN-21B 557.53
9. PN-8B 556.49

Legend

- Monitoring Well
- Passive Relief Well
- Recovery Well
- Solvent Monitoring Well
- Solvent Recovery Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Note:
*= Groundwater elevation not used in contouring.

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Potentiometric Contours - Site Wide March 26, 2018

Prepared By-Date: RD - 3/18/2019	
Checked By-Date: ASN - 3/18/2019	wood.
Project Number: 6107190002	Figure: 3.4

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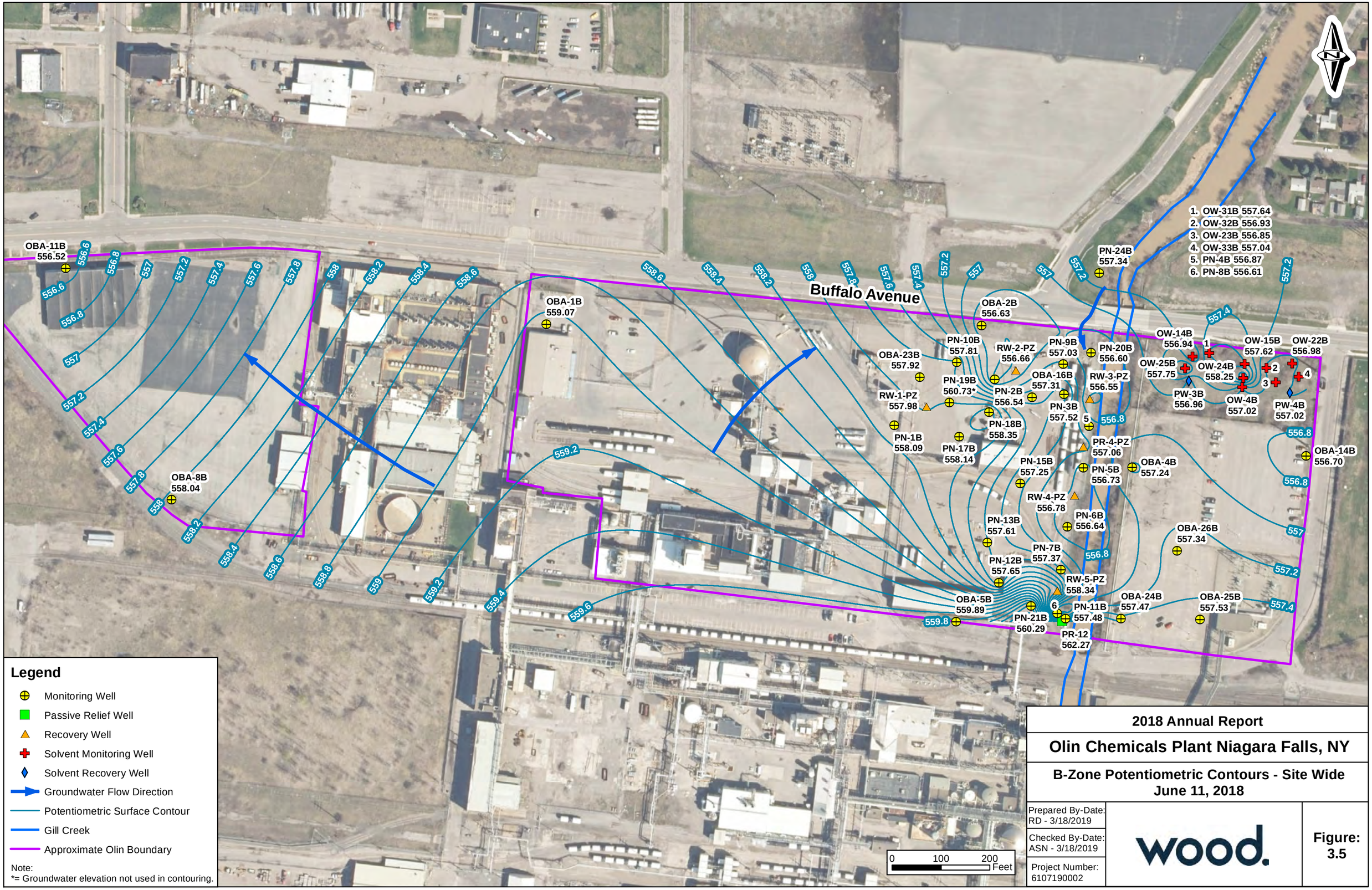

Legend

- Monitoring Well
- Passive Relief Well
- Recovery Well
- Solvent Monitoring Well
- Solvent Recovery Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Note:
*= Groundwater elevation not used in contouring.

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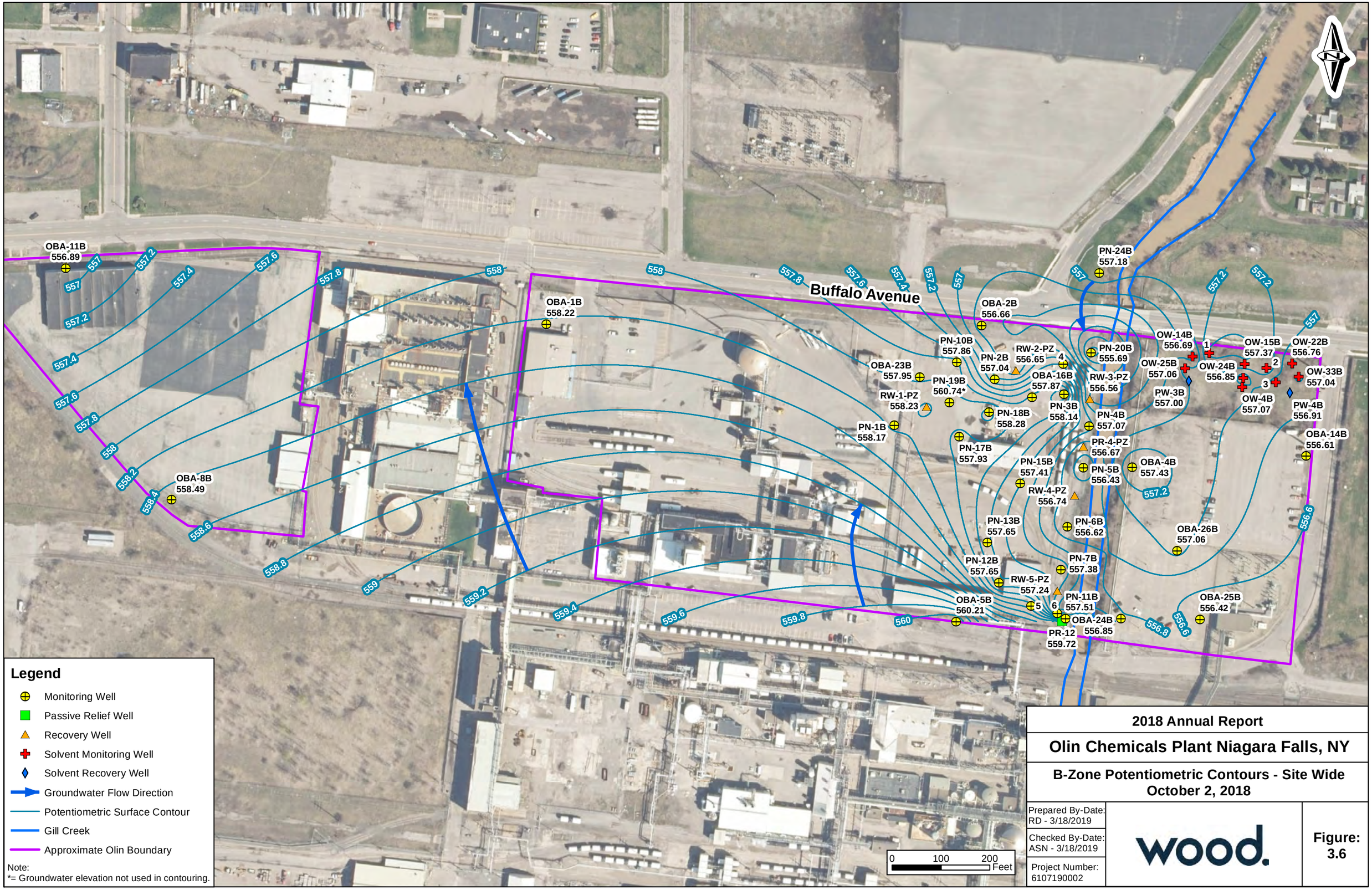
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Potentiometric Contours - Site Wide
June 11, 2018

Prepared By-Date: RD - 3/18/2019	wood.	Figure: 3.5
Checked By-Date: ASN - 3/18/2019		
Project Number: 6107190002		



Legend

- Monitoring Well
- Passive Relief Well
- Recovery Well
- Solvent Monitoring Well
- Solvent Recovery Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Note:
*= Groundwater elevation not used in contouring.

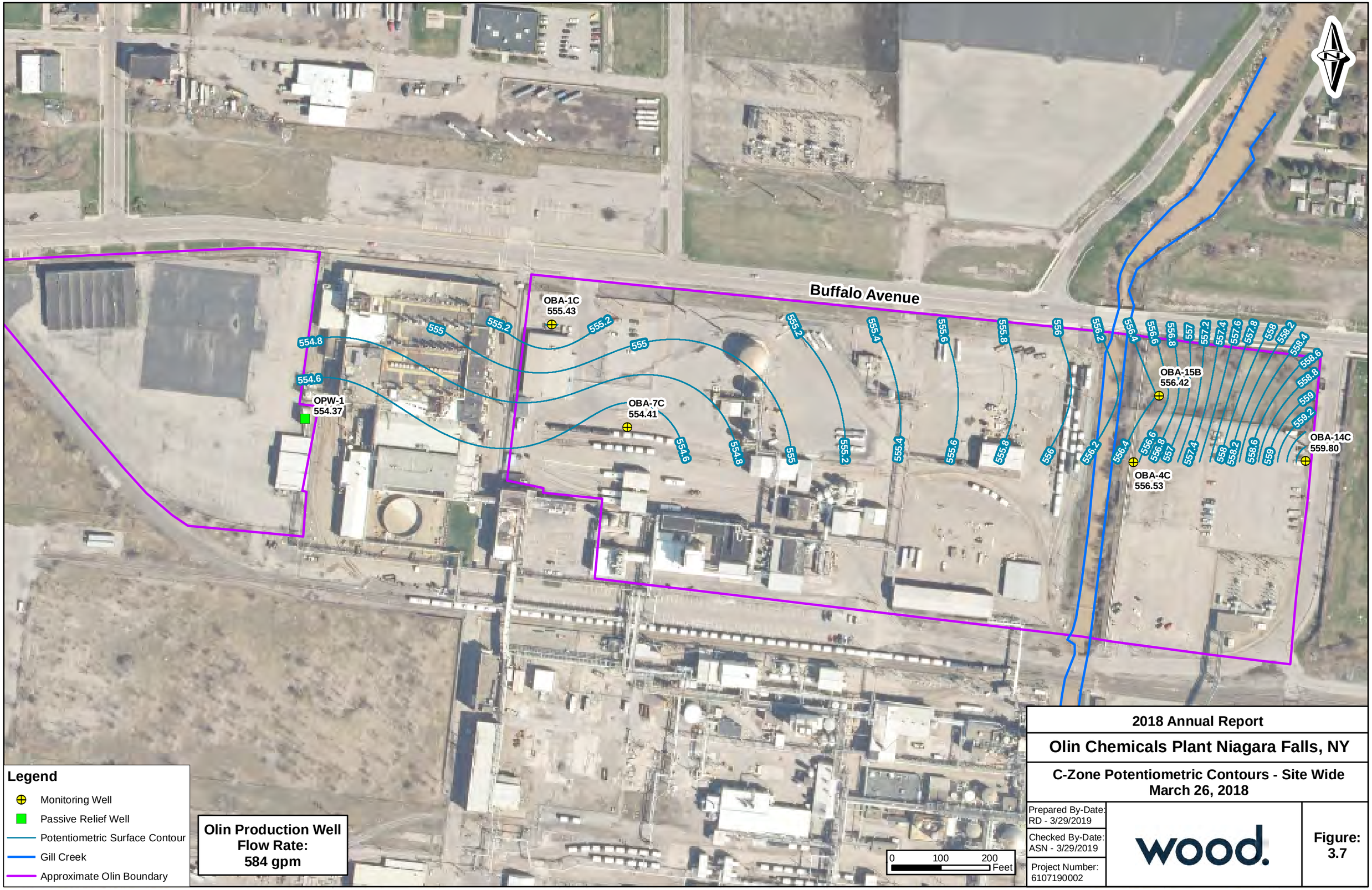
Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Full_Extent_100218.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Potentiometric Contours - Site Wide
October 2, 2018

Prepared By-Date: RD - 3/18/2019	wood.	Figure: 3.6
Checked By-Date: ASN - 3/18/2019		
Project Number: 6107190002		



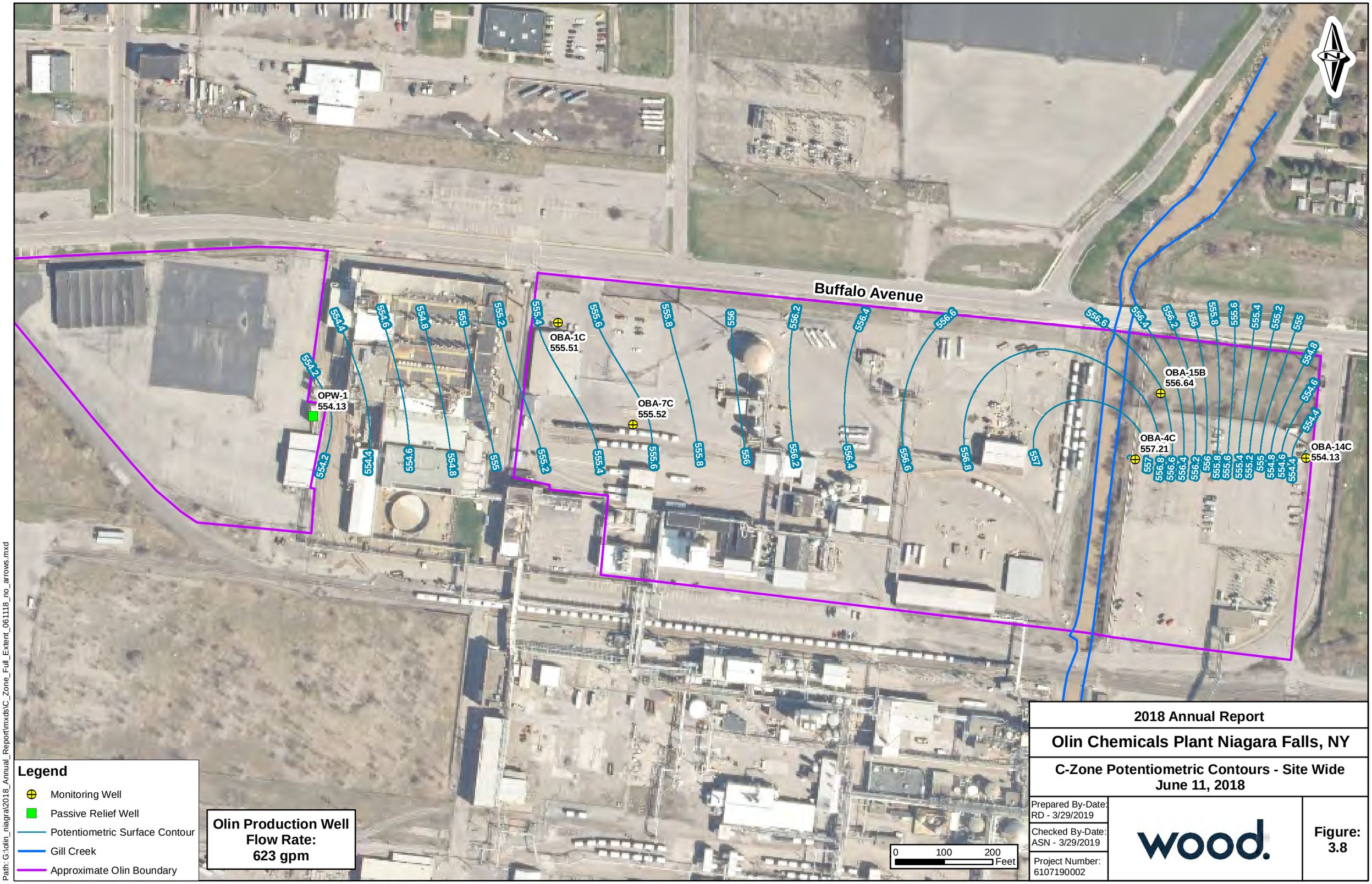
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

C-Zone Potentiometric Contours - Site Wide March 26, 2018

Prepared By-Date: RD - 3/29/2019	wood.	Figure: 3.7
Checked By-Date: ASN - 3/29/2019		
Project Number: 6107190002		

Path: G:\olin_niagra\2018_Annual_Report\mxds\C_Zone_Full_Extent_032618_no_arrows.mxd



2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

C-Zone Potentiometric Contours - Site Wide June 11, 2018

Prepared By-Date: RD - 3/29/2019	wood.	Figure: 3.8
Checked By-Date: ASN - 3/29/2019		
Project Number: 6107190002		

Path: G:\olin_niagra\2018_Annual_Report\mxds\C_Zone_Full_Extent_061118_no_arrows.mxd

Buffalo Avenue

OBA-1C
555.60

OPW-1
554.30

OBA-7C
554.82

OBA-15B
557.25

OBA-4C
556.56

OBA-14C
553.06

554.6 554.8 555 555.2 555.4 555.6 555.8 556 556.2 556.4 556.6 556.8 557 557.2

554.4 554.6 554.8 555 555.2 555.4 555.6 555.8 556 556.2 556.4 556.6

556.8 556.6 556.4 556.2 556 555.8 555.6 555.4 555.2 555 554.8 554.6 554.4 553.8 553.4

0 100 200 Feet

Legend

- Monitoring Well
- Passive Relief Well
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Olin Production Well Flow Rate: 601 gpm

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

C-Zone Potentiometric Contours - Site Wide October 2, 2018

Prepared By-Date: RD - 3/29/2019	
Checked By-Date: ASN - 3/29/2019	wood.
Project Number: 6107190002	**Figure: 3.9**

Path: G:\olin_niagra\2018_Annual_Report\mxds\C_Zone_Full_Extent_100218_no_arrow.mxd

Buffalo Avenue

OBA-11C
556.20

OBA-8C
551.13

OPW-1
554.37

OBA-2C
553.40

OBA-3C
553.78

OBA-6C
555.32

OBA-5C
554.17

556 556 555.8 555.6 555.4 555.2 555 554.8 554.6 554.4 554.2 554 553.8 553.6 553.4 553.2 553 552.8 552.6 552.4 552.2 552 551.8 551.6 551.4 551.2 551.4 551.6 551.8 552 552.2 552.4 552.6 552.8 553 553.2 553.4 553.6 553.8 554 554.2 554.4 554.6 554.8 555 555.2 555.4 555.6 555.8 556 554.8 554.6 554.4 554.2 554 553.8 553.6 555.2 555 554.8 554.6 554.4 554.2 554 553.8 553.6 554 554.2 554.4 554.6

Legend

- Monitoring Well
- Passive Relief Well
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Olin Production Well Flow Rate: 584 gpm

0 100 200 Feet

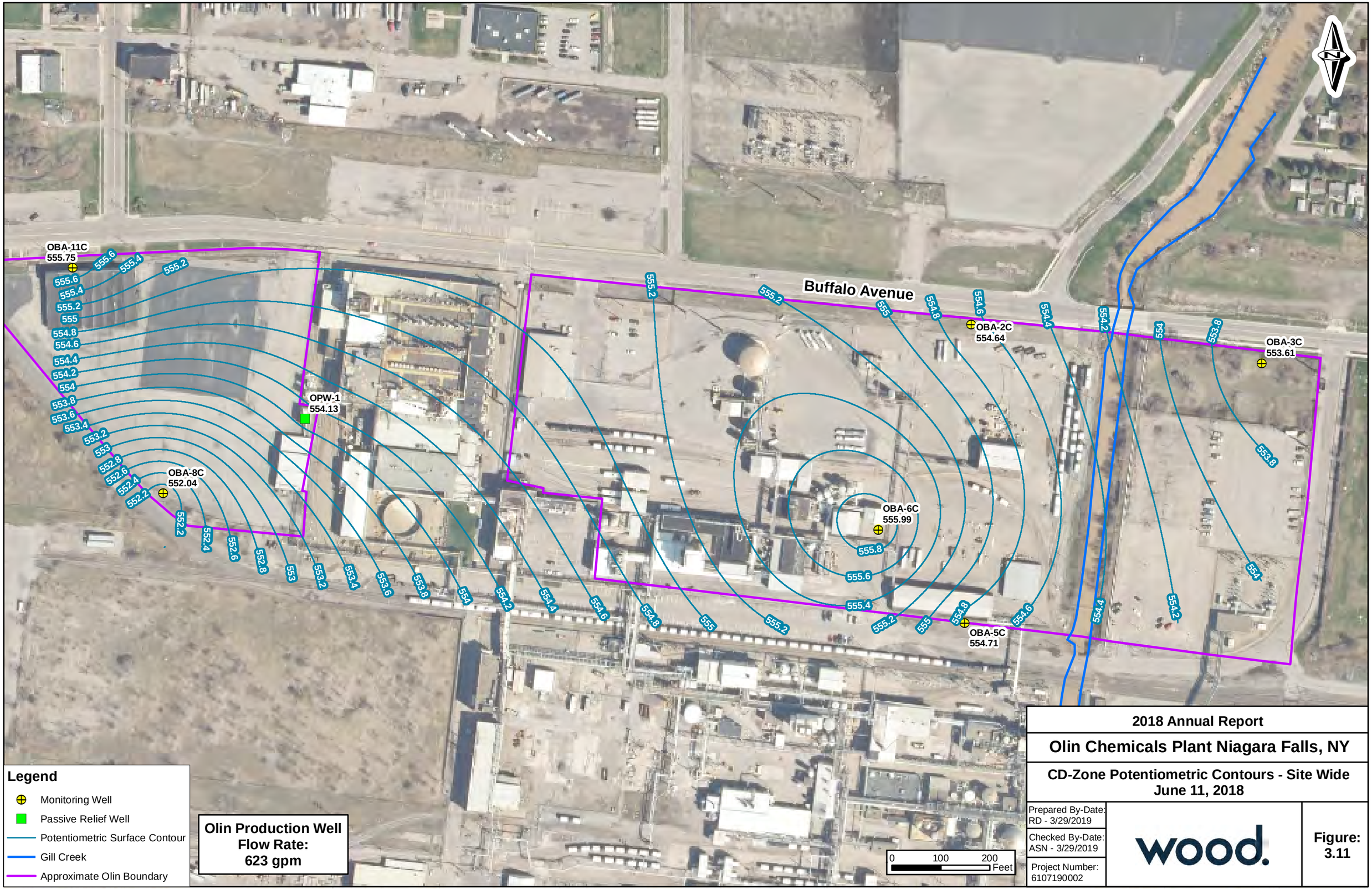
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

CD-Zone Potentiometric Contours - Site Wide March 26, 2018

Prepared By-Date: RD - 3/29/2019	wood.	Figure: 3.10
Checked By-Date: ASN - 3/29/2019		
Project Number: 6107190002		

Path: G:\olin_niagra\2018_Annual_Report\mxds\CD_Zone_Full_Extent_032618_no_arrows.mxd



Legend

- Monitoring Well
- Passive Relief Well
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Olin Production Well Flow Rate: 623 gpm

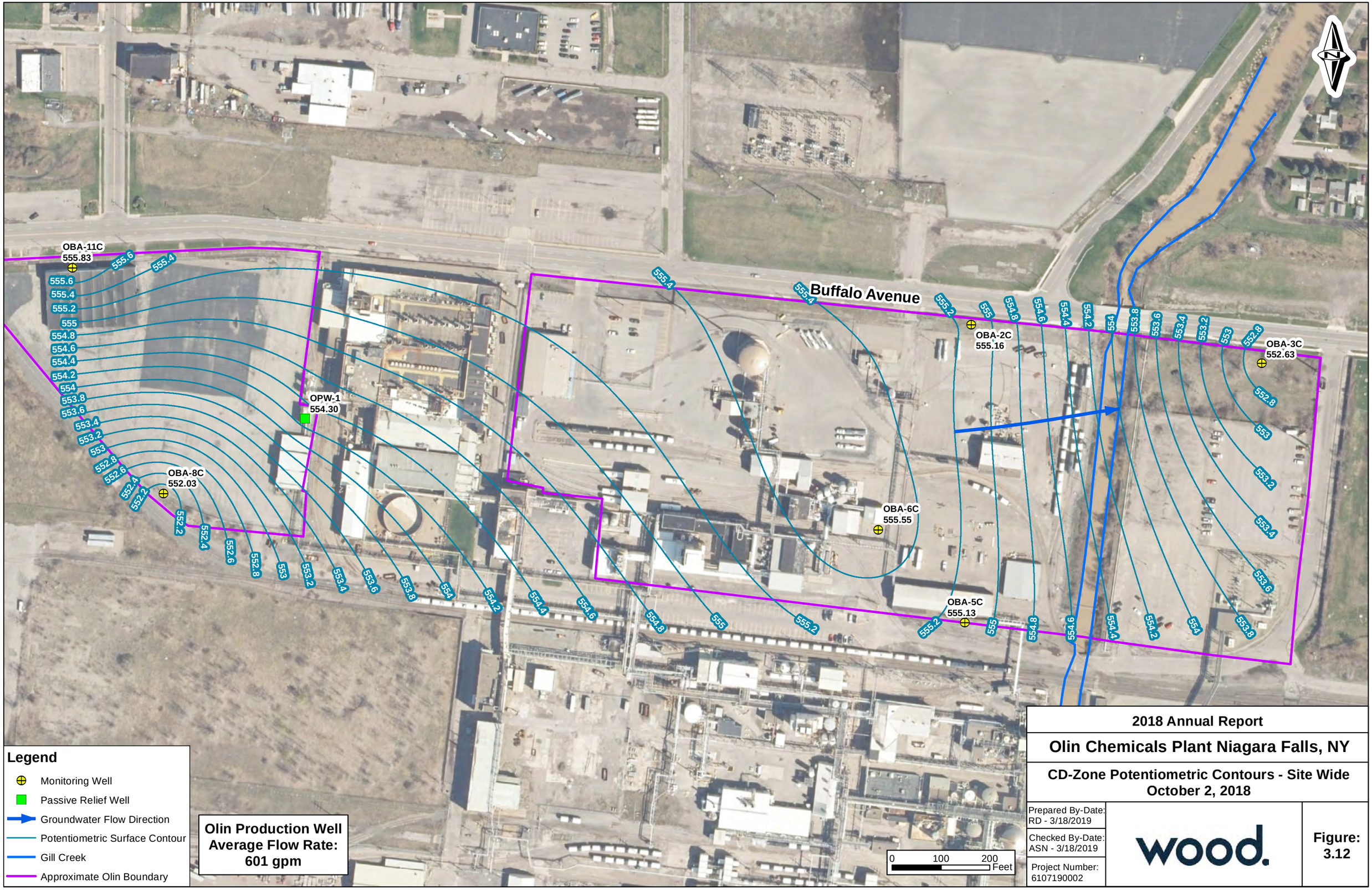
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

CD-Zone Potentiometric Contours - Site Wide June 11, 2018

Prepared By-Date: RD - 3/29/2019	wood.	Figure: 3.11
Checked By-Date: ASN - 3/29/2019		
Project Number: 6107190002		

Path: G:\olin_niagra\2018_Annual_Report\mxds\CD_Zone_Full_Extent_061118_no_arrows.mxd



Legend

- Monitoring Well
- Passive Relief Well
- Groundwater Flow Direction
- Potentiometric Surface Contour
- Gill Creek
- Approximate Olin Boundary

Olin Production Well Average Flow Rate: 601 gpm

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

CD-Zone Potentiometric Contours - Site Wide October 2, 2018

Prepared By-Date: RD - 3/18/2019	
Checked By-Date: ASN - 3/18/2019	wood.
Project Number: 6107190002	Figure: 3.12

Path: G:\olin_niagra\2018_Annual_Report\mxds\CD_Zone_Full_Extent_100218.mxd

Buffalo Avenue

OBA-4A
1.0U

OBA-26A
1.0U

OBA-24A
1.0U

OBA-25A
1.0U

Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

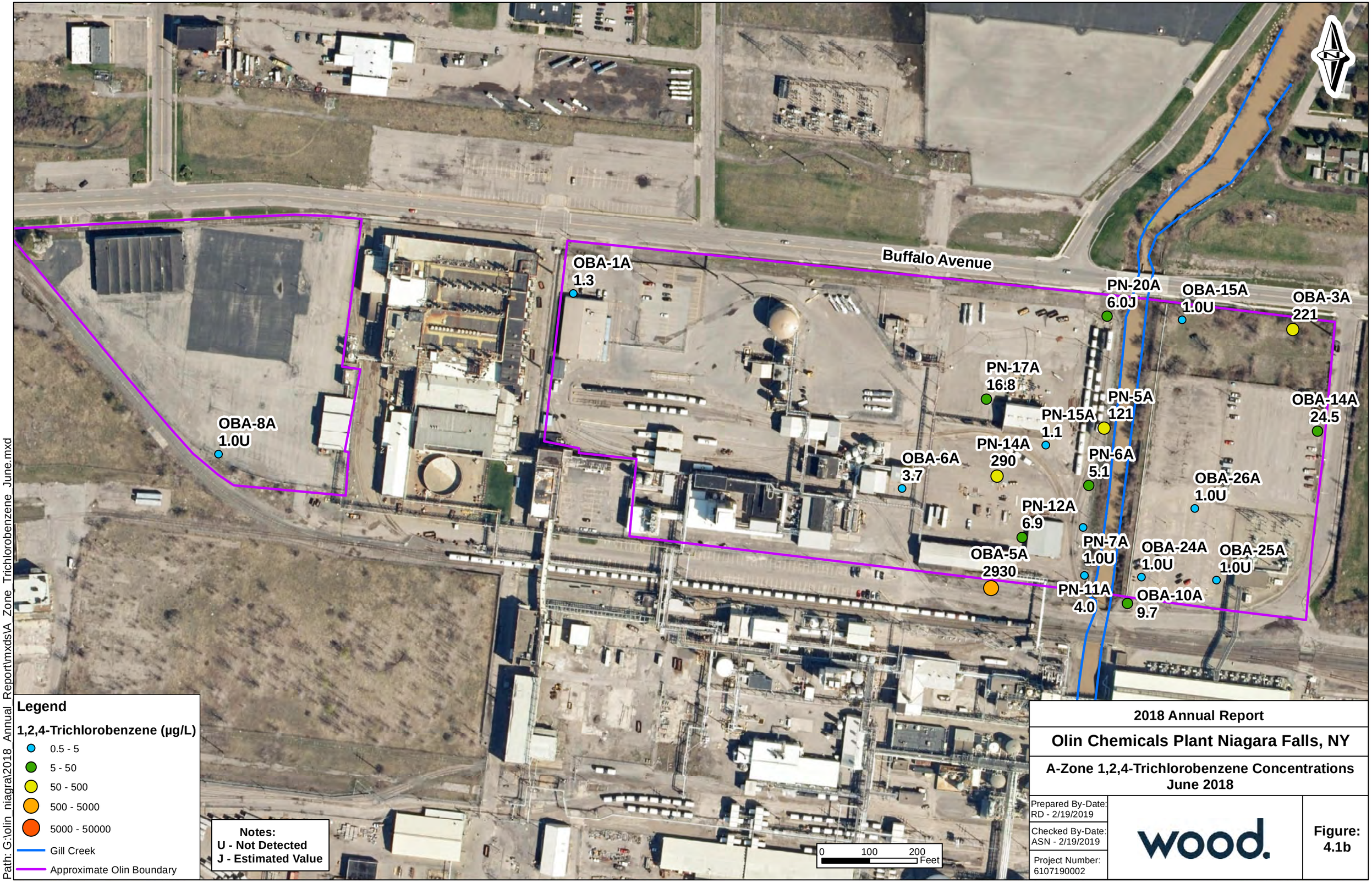
A-Zone 1,2,4-Trichlorobenzene Concentrations March 2018

Prepared By-Date: RD - 2/19/2019	
Checked By-Date: ASN - 2/19/2019	
Project Number: 6107190002	

wood.

Figure: 4.1a

Path: G:\olin_niagra\2018 Annual Report\mxds\A_Zone_Trichlorobenzene_March.mxd



Path: G:\olin_niagra\2018_Annual_Report\mxds\A_Zone_Trichlorobenzene_June.mxd

Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

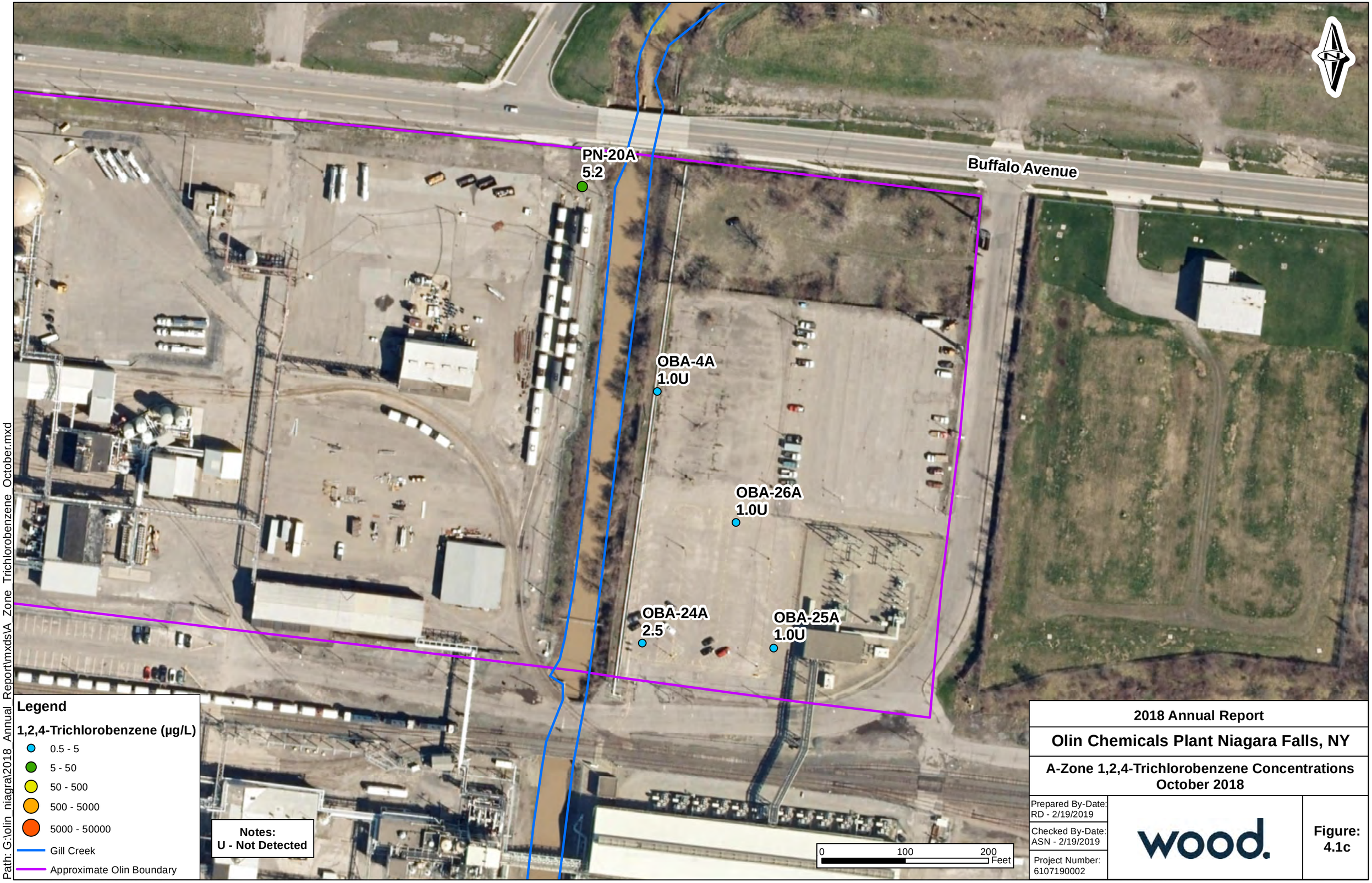
Notes:
U - Not Detected
J - Estimated Value

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone 1,2,4-Trichlorobenzene Concentrations June 2018

Prepared By-Date: RD - 2/19/2019	wood.	Figure: 4.1b
Checked By-Date: ASN - 2/19/2019		
Project Number: 6107190002		



Path: G:\olin_niagra\2018 Annual Report\mxds\A_Zone_Trichlorobenzene_October.mxd

Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone 1,2,4-Trichlorobenzene Concentrations October 2018

Prepared By-Date: RD - 2/19/2019	wood.	Figure: 4.1c
Checked By-Date: ASN - 2/19/2019		
Project Number: 6107190002		

PN-24B
2.6

OBA-2B
2300

PN-20B
453

Buffalo Avenue

PN-5B
8580J

OBA-4B
1.2

OBA-6B
1.0U

OBA-26B
1.0U

OBA-24B
618

OBA-25B
2.4

OBA-5B
452

Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
J - Estimated Value

0 100 200 Feet

2018 Annual Report

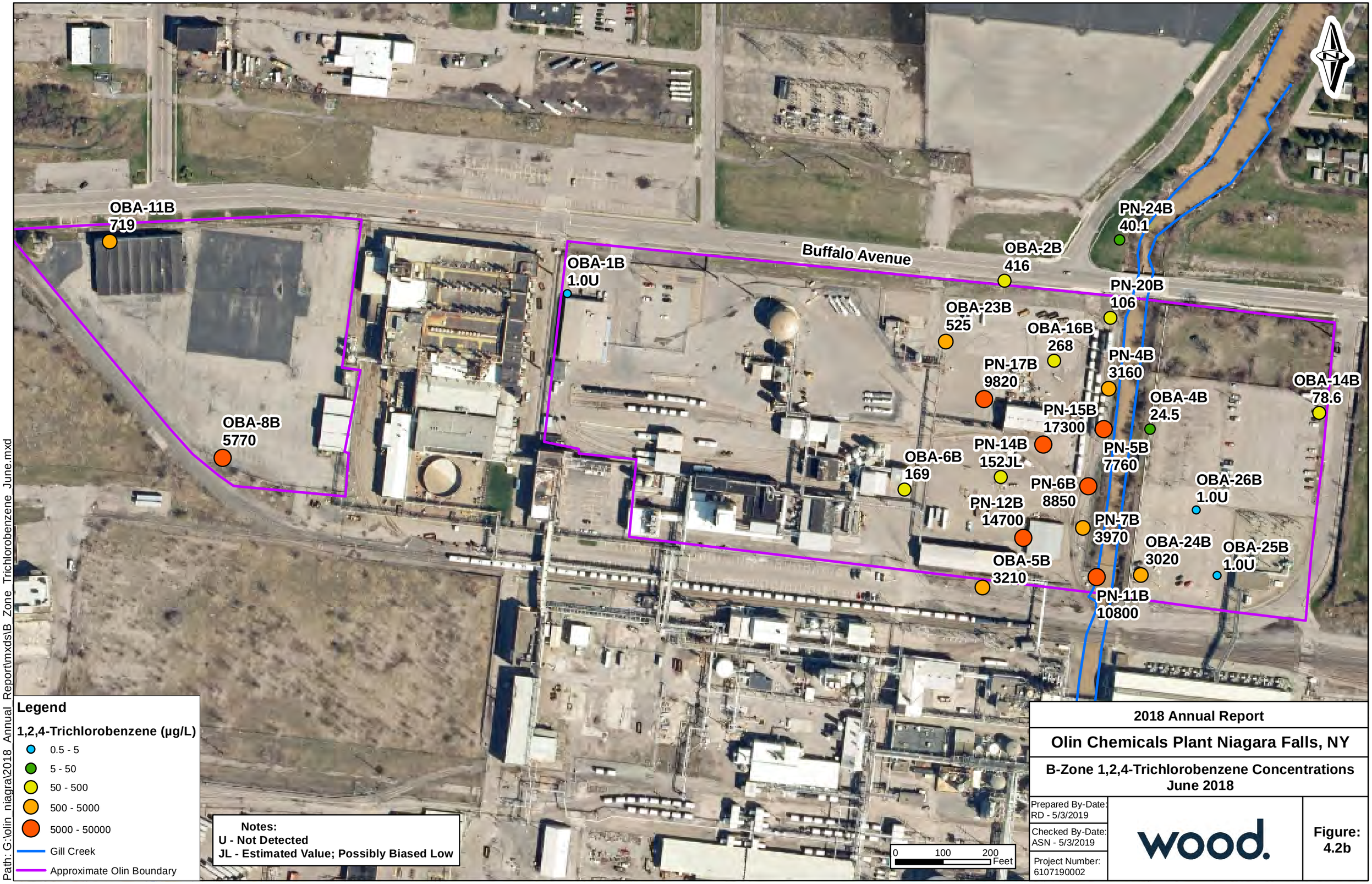
Olin Chemicals Plant Niagara Falls, NY

B-Zone 1,2,4-Trichlorobenzene Concentrations March 2018

Prepared By-Date: RD - 5/3/2019	**Figure: 4.2a**
Checked By-Date: ASN - 5/3/2019	
Project Number: 6107190002	

wood.

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichlorobenzene_March.mxd



Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
JL - Estimated Value; Possibly Biased Low

Path: G:\olin_niagra\2018 Annual Report\mxds\B Zone Trichlorobenzene June.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone 1,2,4-Trichlorobenzene Concentrations June 2018

Prepared By-Date: RD - 5/3/2019	wood.
Checked By-Date: ASN - 5/3/2019	**Figure: 4.2b**
Project Number: 6107190002	

PN-24B
2.6

OBA-2B
1200

PN-20B
116

Buffalo Avenue

PN-5B
7300

OBA-4B
1.0U

OBA-6B
1.0U

OBA-26B
50.0U

OBA-24B
394

OBA-25B
5.0U

OBA-5B
3330

Legend

1,2,4-Trichlorobenzene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichlorobenzene_October.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone 1,2,4-Trichlorobenzene Concentrations October 2018

Prepared By-Date: RD - 5/3/2019	wood.	Figure: 4.2c
Checked By-Date: ASN - 5/3/2019		
Project Number: 6107190002		

Buffalo Avenue

OBA-4A
0.2

OBA-26A
0.050U

OBA-24A
0.050U

OBA-25A
0.050U

Legend

Gamma BHC (µg/L)

- 0.005 - 0.05
- 0.05 - 0.5
- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

Path: G:\olin niagra\2018 Annual Report\mxds\A Zone Gamma March.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Gamma-BHC Concentrations
March 2018

Prepared By-Date: RD - 3/13/2019	wood.	Figure: 4.3a
Checked By-Date: ASN - 3/13/2019		
Project Number: 6107190002		

Buffalo Avenue

OBA-1A
1.2U

OBA-8A
0.25U

OBA-6A
0.019J

PN-14A
0.50U

PN-15A
0.023J

PN-17A
0.050UJ

PN-20A
0.050U

OBA-15A
0.050U

OBA-3A
9.0

PN-5A
0.15J

OBA-14A
0.19

PN-6A
0.12

OBA-26A
0.059

PN-12A
0.25U

OBA-5A
2.3J

PN-7A
0.23

OBA-24A
0.067

OBA-25A
0.050U

PN-11A
0.60J

OBA-10A
1.6

Legend

Gamma BHC (µg/L)

- 0.005 - 0.05
- 0.05 - 0.5
- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
J - Estimated Value
UJ - Estimated Value

0 100 200 Feet

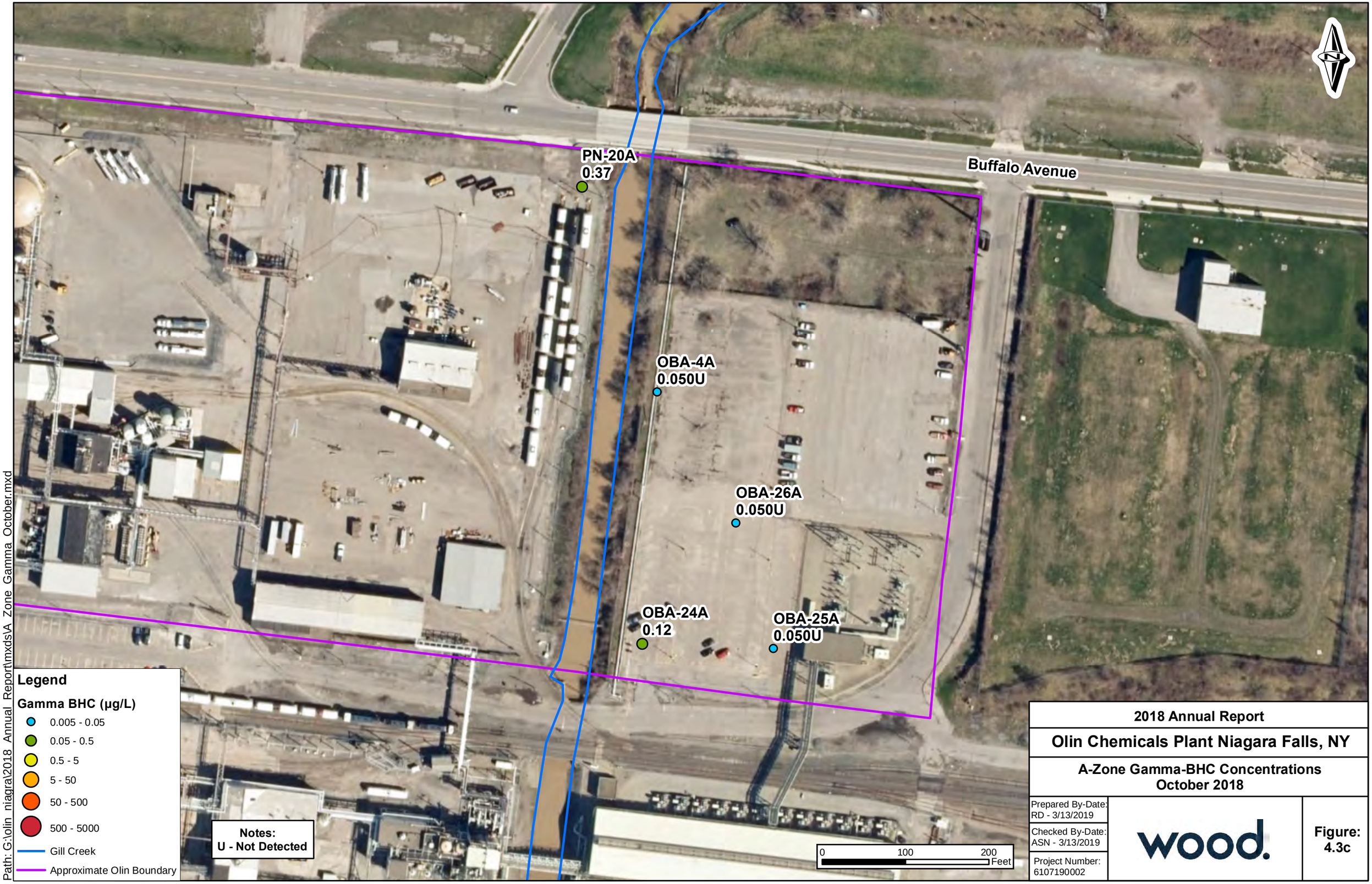
Path: G:\olin_niagra\2018 Annual Report\mxds\A Zone Gamma June.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Gamma-BHC Concentrations June 2018

Prepared By-Date: RD - 3/13/2019	wood.	Figure: 4.3b
Checked By-Date: ASN - 3/13/2019		
Project Number: 6107190002		



2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Gamma-BHC Concentrations October 2018

Prepared By-Date: RD - 3/13/2019	wood.	Figure: 4.3c
Checked By-Date: ASN - 3/13/2019		
Project Number: 6107190002		

PN-24B
0.39

OBA-2B
0.22

PN-20B
0.25

Buffalo Avenue

PN-5B
1250

OBA-4B
0.21

OBA-6B
0.048JQ

OBA-26B
0.050U

OBA-24B
73.7

OBA-25B
0.050U

OBA-5B
7.4

Legend

Gamma BHC (µg/L)

- 0.005 - 0.05
- 0.05 - 0.5
- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
JQ - Estimated Value

0 100 200 Feet

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Gamma_March.mxd

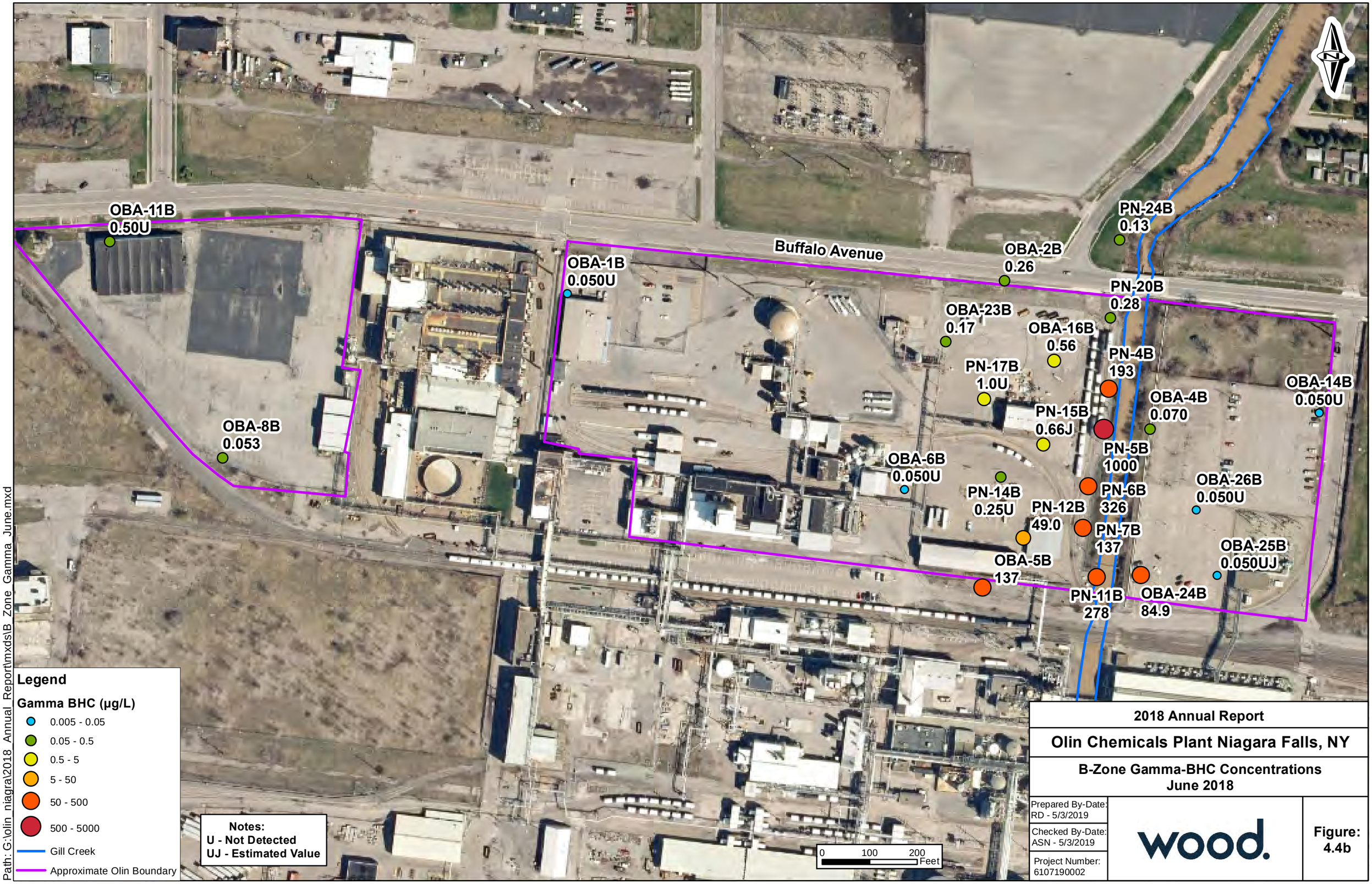
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Gamma-BHC Concentrations March 2018

Prepared By-Date: RD - 5/3/2019	wood.
Checked By-Date: ASN - 5/3/2019	
Project Number: 6107190002	

Figure: 4.4a



Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Gamma_June.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Gamma-BHC Concentrations
June 2018

Prepared By-Date: RD - 5/3/2019	wood.	Figure: 4.4b
Checked By-Date: ASN - 5/3/2019		
Project Number: 6107190002		

PN-24B
0.17

OBA-2B
0.33

PN-20B
0.38

Buffalo Avenue

PN-5B
911

OBA-4B
0.27

OBA-6B
0.050U

OBA-26B
0.050U

OBA-24B
106

OBA-25B
0.050U

OBA-5B
98.9

Legend

Gamma BHC (µg/L)

- 0.005 - 0.05
- 0.05 - 0.5
- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Gamma_October.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Gamma-BHC Concentrations October 2018

Prepared By-Date: RD - 5/3/2019	wood.
Checked By-Date: ASN - 5/3/2019	Figure: 4.4c
Project Number: 6107190002	

Buffalo Avenue

OBA-4A
1.1

OBA-26A
1.5

OBA-24A
0.071JQ

OBA-25A
184

Legend

Total Mercury (µg/L)

- 0.2 - 2
- 2 - 20
- 20 - 200
- 200 - 2000
- Gill Creek
- Approximate Olin Boundary

Notes:
JQ - Estimated Value

0 100 200 Feet

Path: G:\olin_niagra\2018 Annual Report\mxds\A Zone Mercury March.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Total Mercury Concentrations March 2018

Prepared By-Date: RD - 3/13/2019	
Checked By-Date: ASN - 3/13/2019	wood.
Project Number: 6107190002	**Figure: 4.5a**

Buffalo Avenue

OBA-1A
0.20U

OBA-8A
0.20U

OBA-6A
0.20U

PN-20A
0.22

OBA-15A
0.20U

OBA-3A
0.20U

PN-17A
25.3

PN-15A
0.14J

PN-5A
0.20U

OBA-14A
0.20U

PN-14A
3.6

PN-6A
0.17J

OBA-26A
0.16J

PN-12A
0.22

PN-7A
5.7

PN-11A
0.42

OBA-24A
0.23

OBA-25A
4.8

OBA-5A
0.50

OBA-10A
0.62

Legend

Total Mercury (µg/L)

- 0.2 - 2
- 2 - 20
- 20 - 200
- 200 - 2000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
J - Estimated Value

0 100 200 Feet

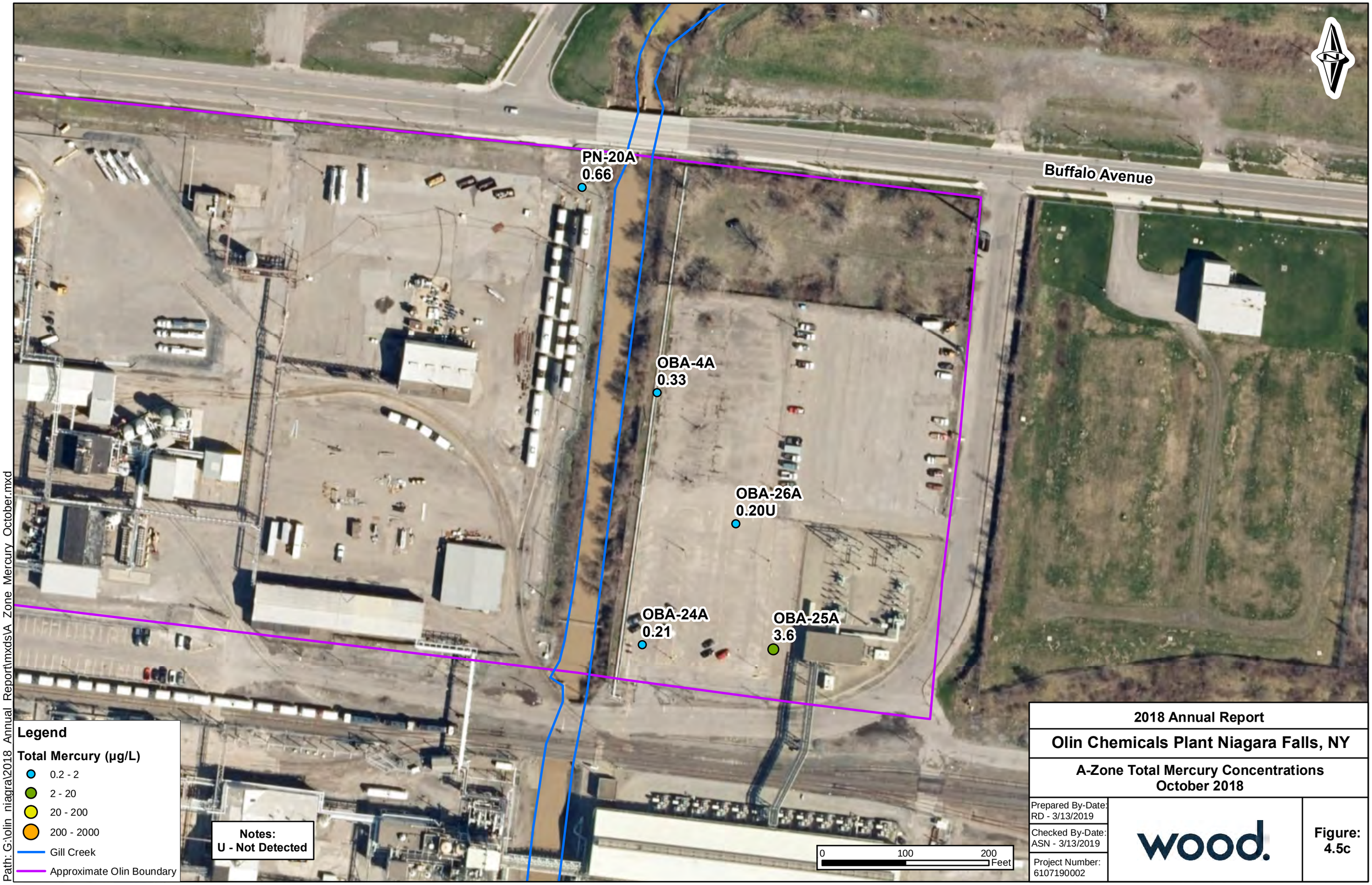
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Total Mercury Concentrations June 2018

Prepared By-Date: RD - 3/13/2019	
Checked By-Date: ASN - 3/13/2019	wood.
Project Number: 6107190002	**Figure: 4.5b**

Path: G:\olin_niagra\2018 Annual Report\mxds\A Zone Mercury June.mxd



Path: G:\olin niagra\2018 Annual Report\mxds\A Zone Mercury October.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Total Mercury Concentrations October 2018

Prepared By-Date: RD - 3/13/2019	wood.	Figure: 4.5c
Checked By-Date: ASN - 3/13/2019		
Project Number: 6107190002		

PN-24B
0.20U

OBA-2B
0.88

PN-20B
0.20U

Buffalo Avenue

PN-5B
4.3J

OBA-4B
0.20U

OBA-6B
0.15JQ

OBA-26B
0.18JQ

OBA-24B
0.50

OBA-25B
0.35

OBA-5B
0.089JQ

Legend

Total Mercury (µg/L)

- 0.2 - 2
- 2 - 20
- 20 - 200
- 200 - 2000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
J - Estimated Value
JQ - Estimated Value

0 100 200 Feet

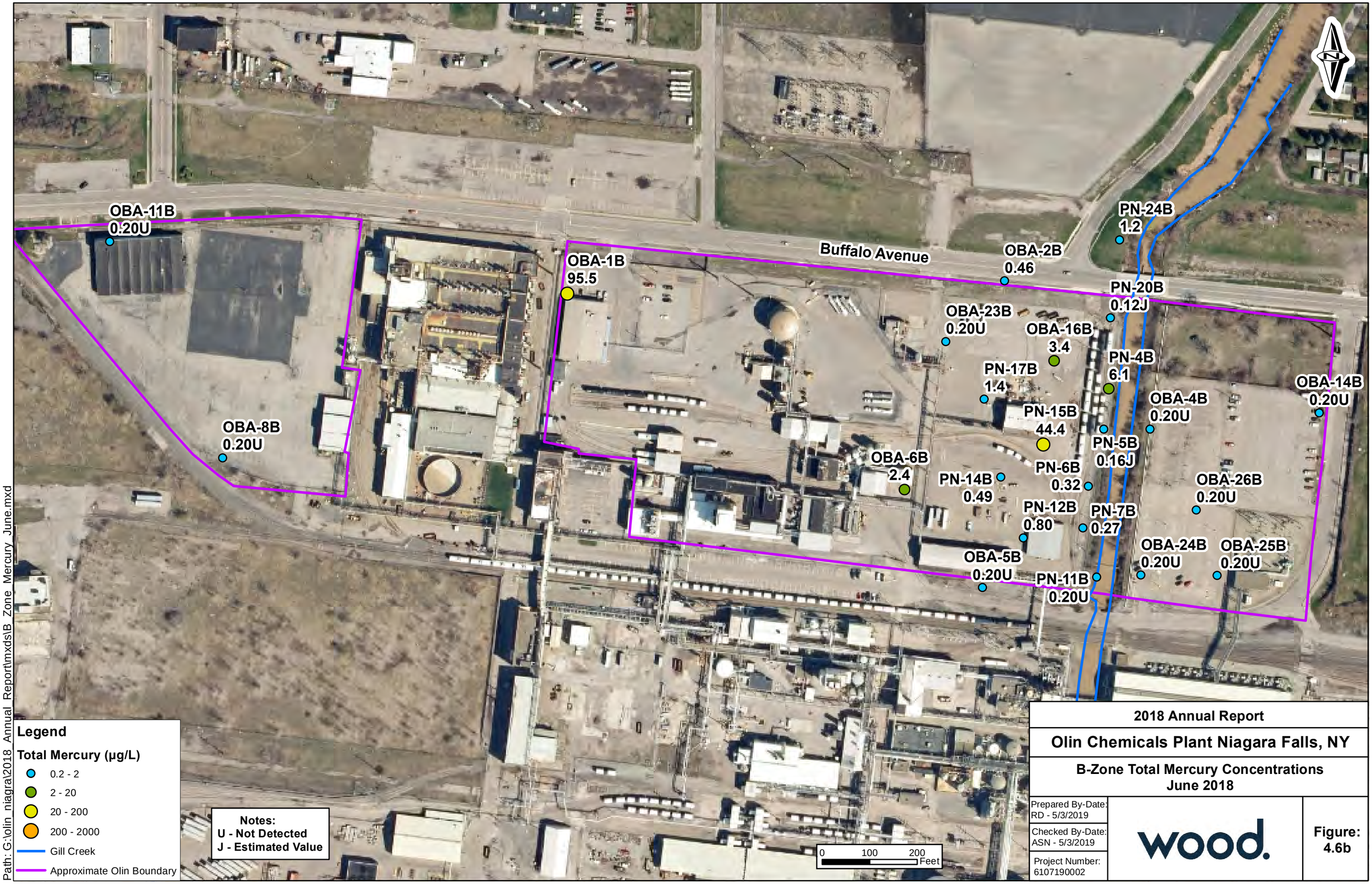
Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Mercury_March.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Total Mercury Concentrations March 2018

Prepared By-Date: RD - 5/3/2019	wood.
Checked By-Date: ASN - 5/3/2019	**Figure: 4.6a**
Project Number: 6107190002	



Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Mercury_June.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Total Mercury Concentrations June 2018

Prepared By-Date: RD - 5/3/2019	
Checked By-Date: ASN - 5/3/2019	
Project Number: 6107190002	wood.

Figure: 4.6b

PN-24B
0.38

OBA-2B
0.22

PN-20B
0.20U

Buffalo Avenue

PN-5B
0.72

OBA-4B
0.20U

OBA-6B
0.19J

OBA-26B
0.20U

OBA-24B
0.20U

OBA-25B
0.20U

OBA-5B
0.20U

Legend

Total Mercury (µg/L)

- 0.2 - 2
- 2 - 20
- 20 - 200
- 200 - 2000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected
J - Estimated Value

0 100 200 Feet

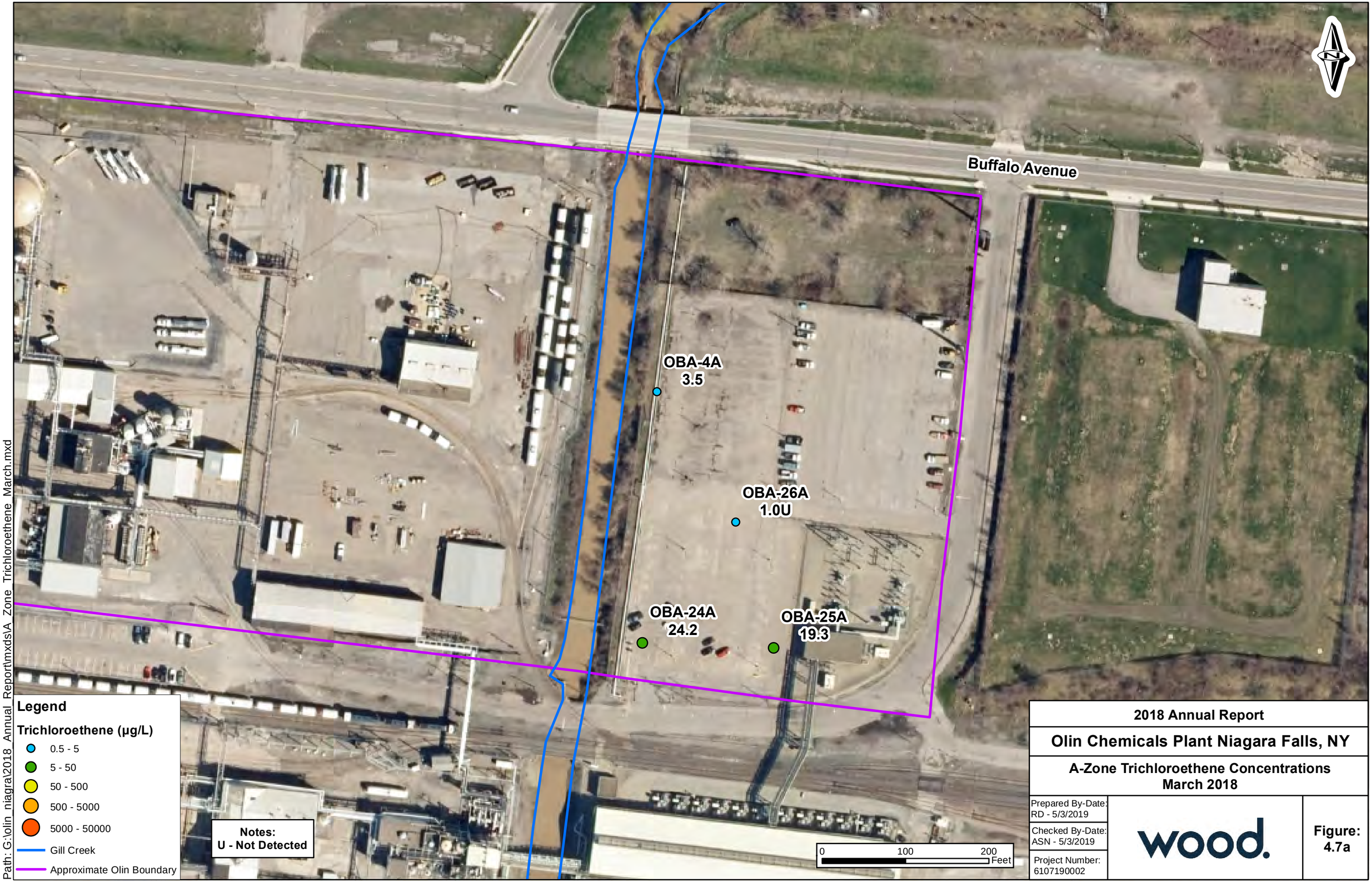
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Total Mercury Concentrations October 2018

Prepared By-Date: RD - 5/3/2019	
Checked By-Date: ASN - 5/3/2019	wood.
Project Number: 6107190002	**Figure: 4.6c**

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Mercury_October.mxd



Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Trichloroethene Concentrations
March 2018

Prepared By-Date: RD - 5/3/2019	**Figure: 4.7a**
Checked By-Date: ASN - 5/3/2019	
Project Number: 6107190002	

wood.

Path: G:\olin_niagra\2018 Annual Report\mxds\A Zone Trichloroethene March.mxd

Buffalo Avenue

OBA-1A
1.0U

OBA-8A
1.3

OBA-6A
1.0U

PN-17A
1.1

PN-14A
16.0

PN-15A
1.0U

PN-20A
14.5

OBA-15A
1.5

OBA-3A
5140

PN-5A
10.7

OBA-14A
5.0U

PN-6A
2.4

OBA-26A
1.0U

PN-12A
4.0

OBA-5A
250

PN-7A
12.6

OBA-24A
16.4

OBA-25A
27.8

PN-11A
1.6

OBA-10A
5.0U

Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

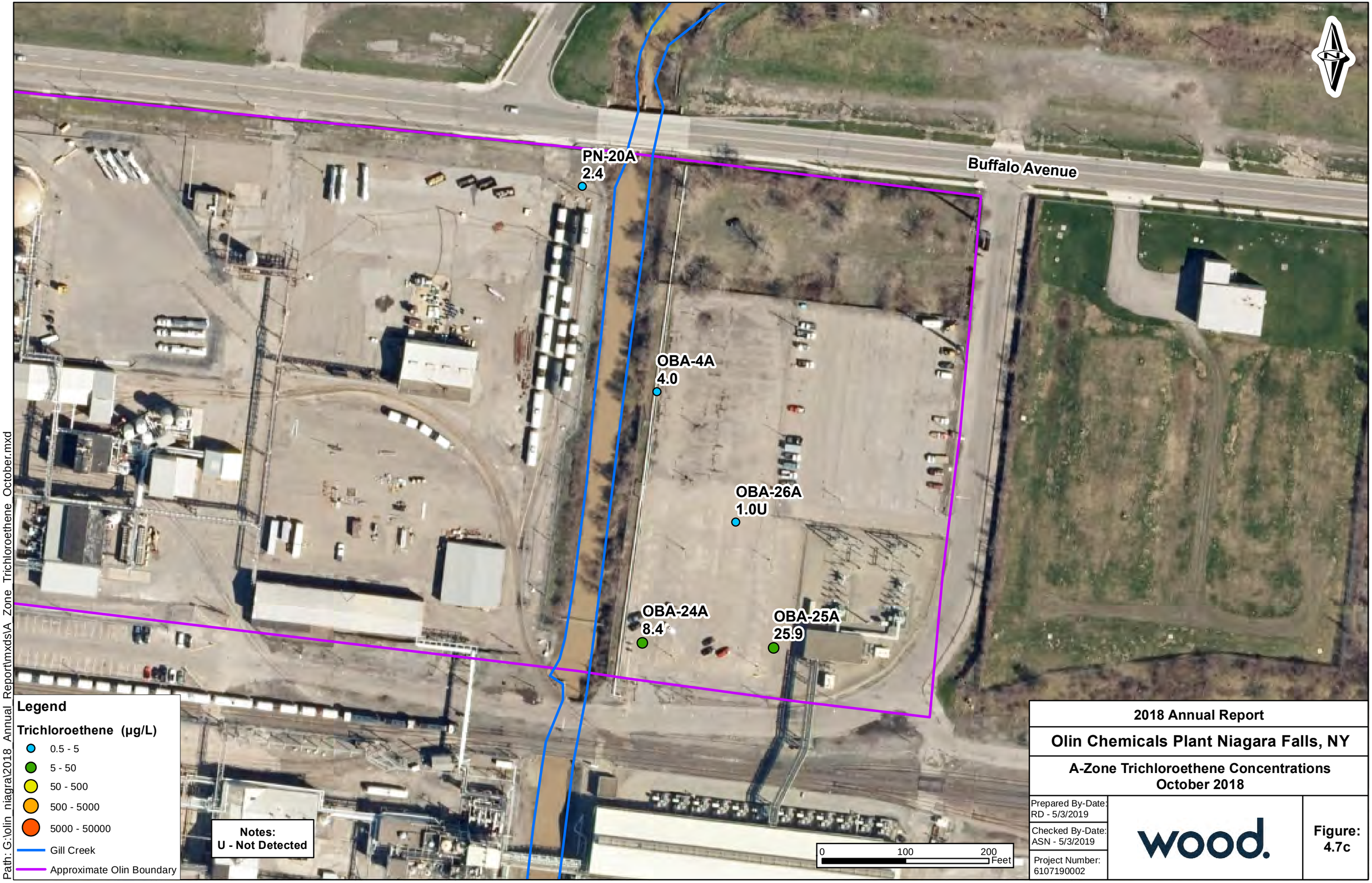
2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Trichloroethene Concentrations
June 2018

Prepared By-Date: RD - 5/3/2019	wood.	Figure: 4.7b
Checked By-Date: ASN - 5/3/2019		
Project Number: 6107190002		

Path: G:\olin_niagra\2018_Annual_Report\mxds\A_Zone_Trichloroethene_June.mxd



Path: G:\olin_niagra\2018 Annual Report\mxds\A Zone Trichloroethene October.mxd

Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

A-Zone Trichloroethene Concentrations October 2018

Prepared By-Date: RD - 5/3/2019	
Checked By-Date: ASN - 5/3/2019	wood.
Project Number: 6107190002	**Figure: 4.7c**

PN-24B
7.9

OBA-2B
70.8

PN-20B
5530

Buffalo Avenue

PN-5B
5590

OBA-4B
14.4

OBA-6B
1.0U

OBA-26B
1.2

OBA-24B
24200

OBA-25B
1.0U

OBA-5B
4600

Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Trichloroethene Concentrations
March 2018

Prepared By-Date:
RD - 5/3/2019

Checked By-Date:
ASN - 5/3/2019

Project Number:
6107190002

wood.

Figure:
4.8a

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichloroethene_March.mxd

PN-24B
7.9

OBA-2B
70.8

PN-20B
5530

Buffalo Avenue

PN-5B
5590

OBA-4B
14.4

OBA-6B
1.0U

OBA-26B
1.2

OBA-24B
24200

OBA-25B
1.0U

OBA-5B
4600

Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Trichloroethene Concentrations
March 2018

Prepared By-Date:
RD - 5/3/2019

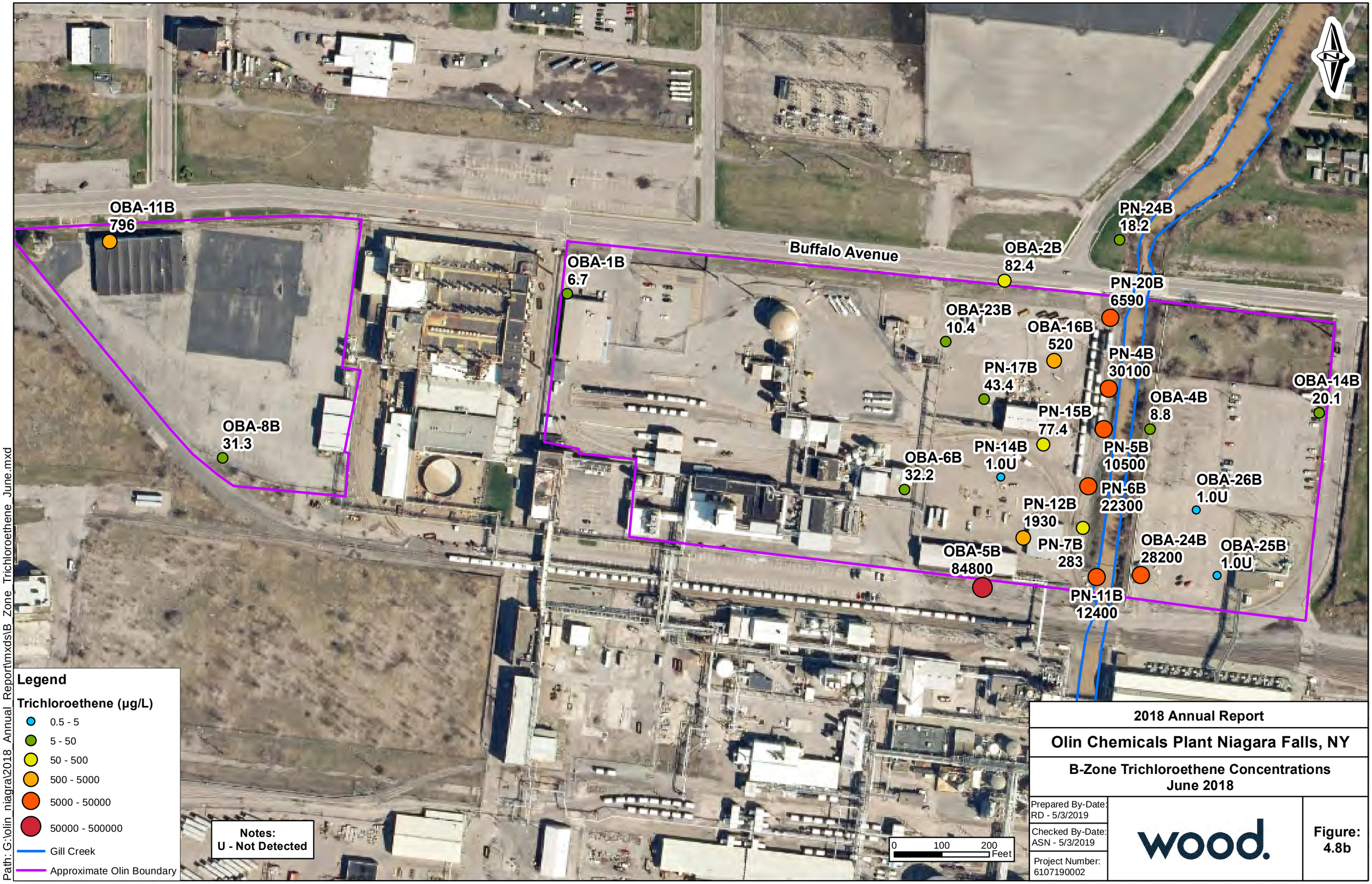
Checked By-Date:
ASN - 5/3/2019

Project Number:
6107190002

wood.

Figure:
4.8a

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichloroethene_March.mxd



Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichloroethene_June.mxd

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Trichloroethene Concentrations
June 2018

Prepared By-Date: RD - 5/3/2019	wood.	Figure: 4.8b
Checked By-Date: ASN - 5/3/2019		
Project Number: 6107190002		

PN-24B
5.9

OBA-2B
41.8

PN-20B
2500

Buffalo Avenue

PN-5B
5610

OBA-4B
6.4

OBA-6B
1.0U

OBA-26B
50.0U

OBA-24B
20.0U

OBA-25B
5.0U

OBA-5B
9770

Legend

Trichloroethene (µg/L)

- 0.5 - 5
- 5 - 50
- 50 - 500
- 500 - 5000
- 5000 - 50000
- Gill Creek
- Approximate Olin Boundary

Notes:
U - Not Detected

0 100 200 Feet

2018 Annual Report

Olin Chemicals Plant Niagara Falls, NY

B-Zone Trichloroethene Concentrations October 2018

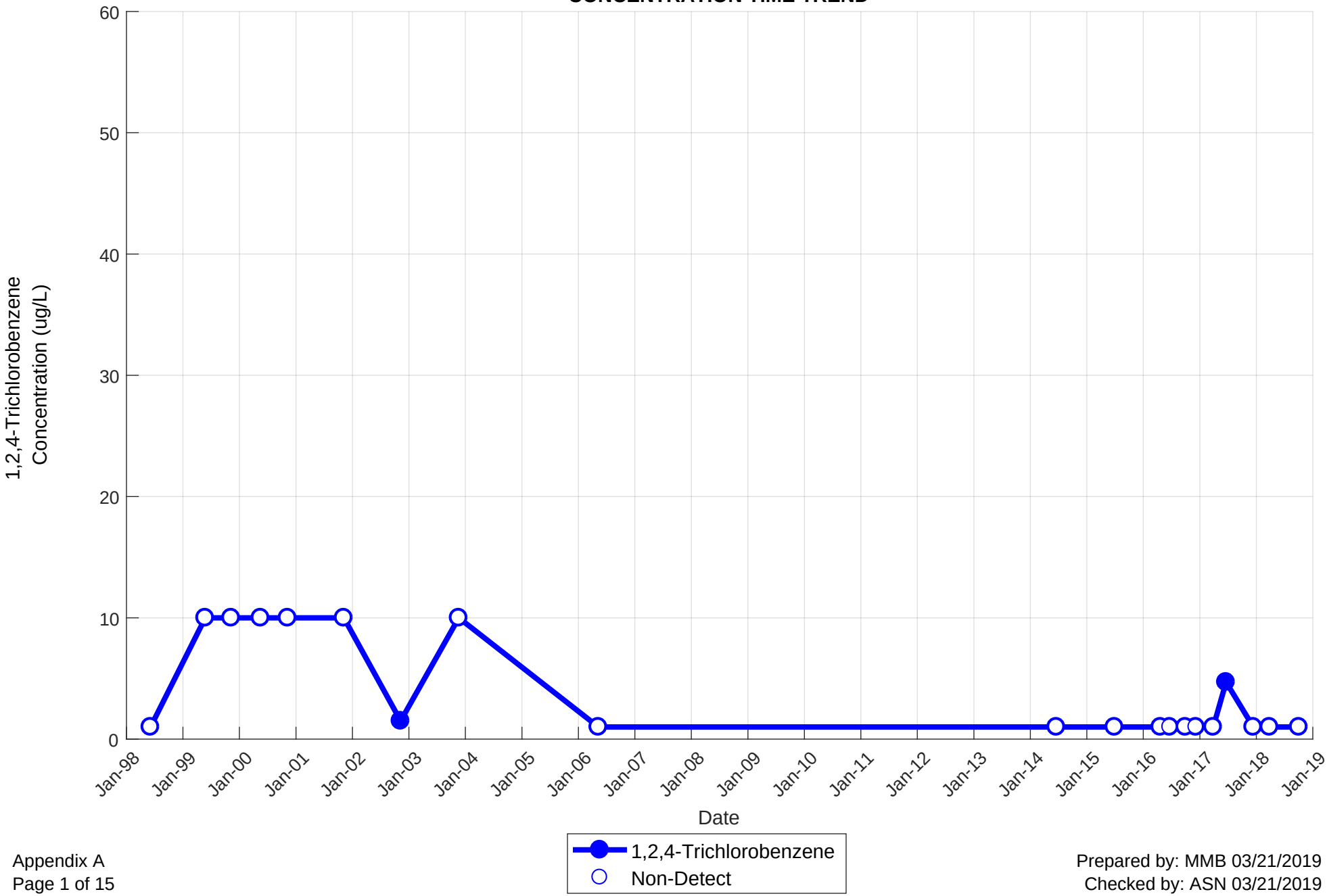
Prepared By-Date: RD - 5/3/2019	
Checked By-Date: ASN - 5/3/2019	wood.
Project Number: 6107190002	**Figure: 4.8c**

Path: G:\olin_niagra\2018_Annual_Report\mxds\B_Zone_Trichloroethene_October.mxd

APPENDIX A

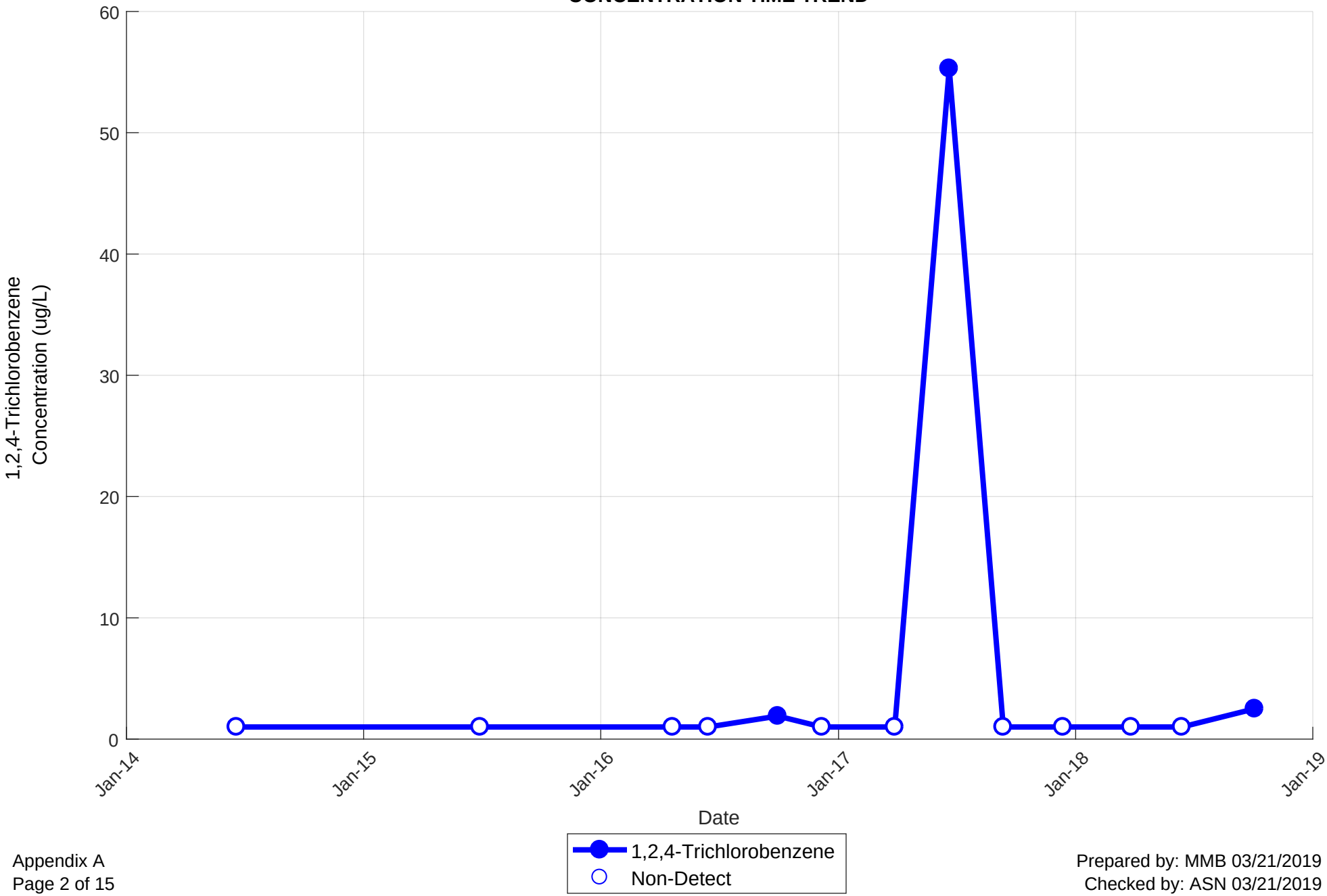
A-ZONE CONSTITUENT TIME TRENDS

OBA-4A
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



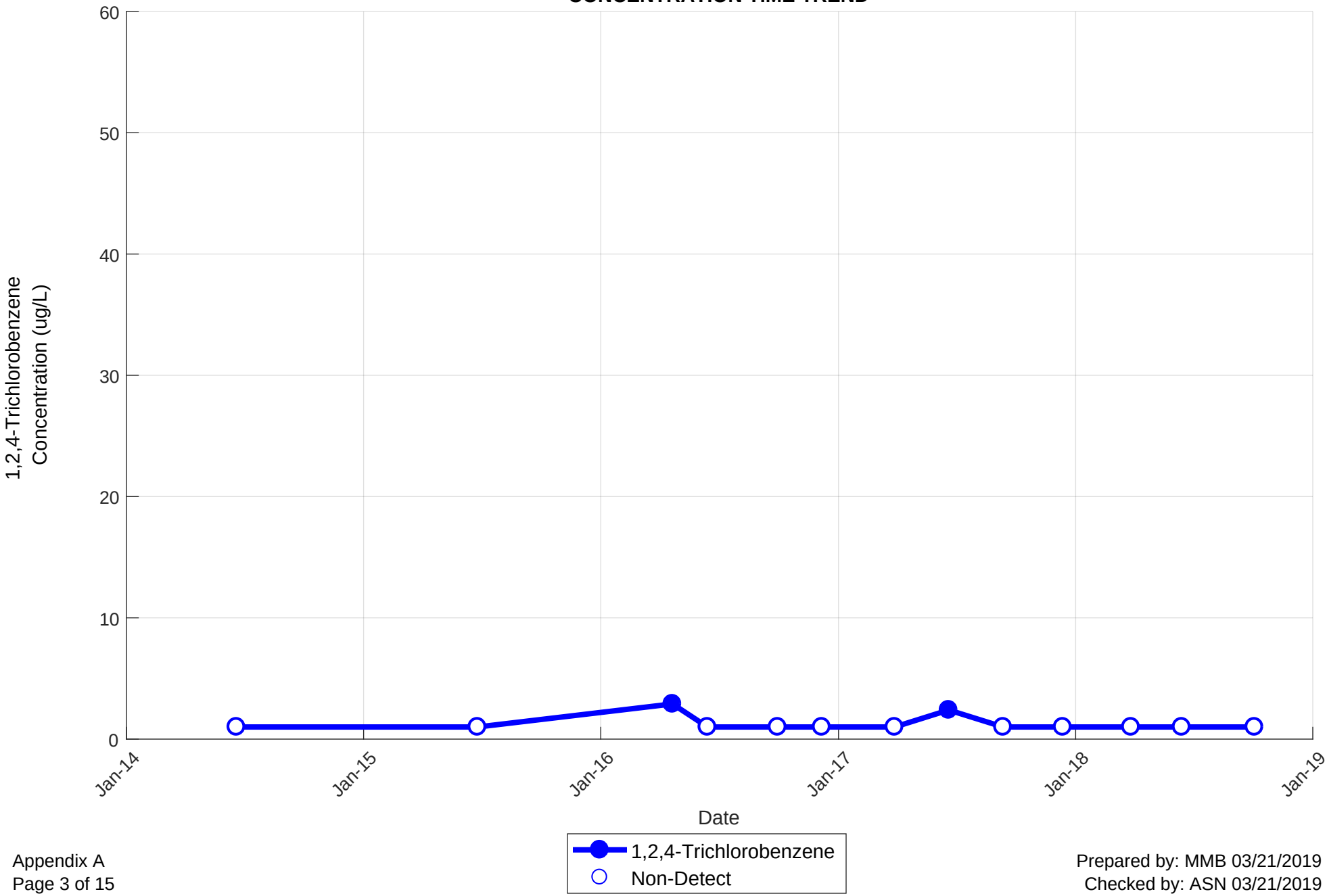
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24A
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



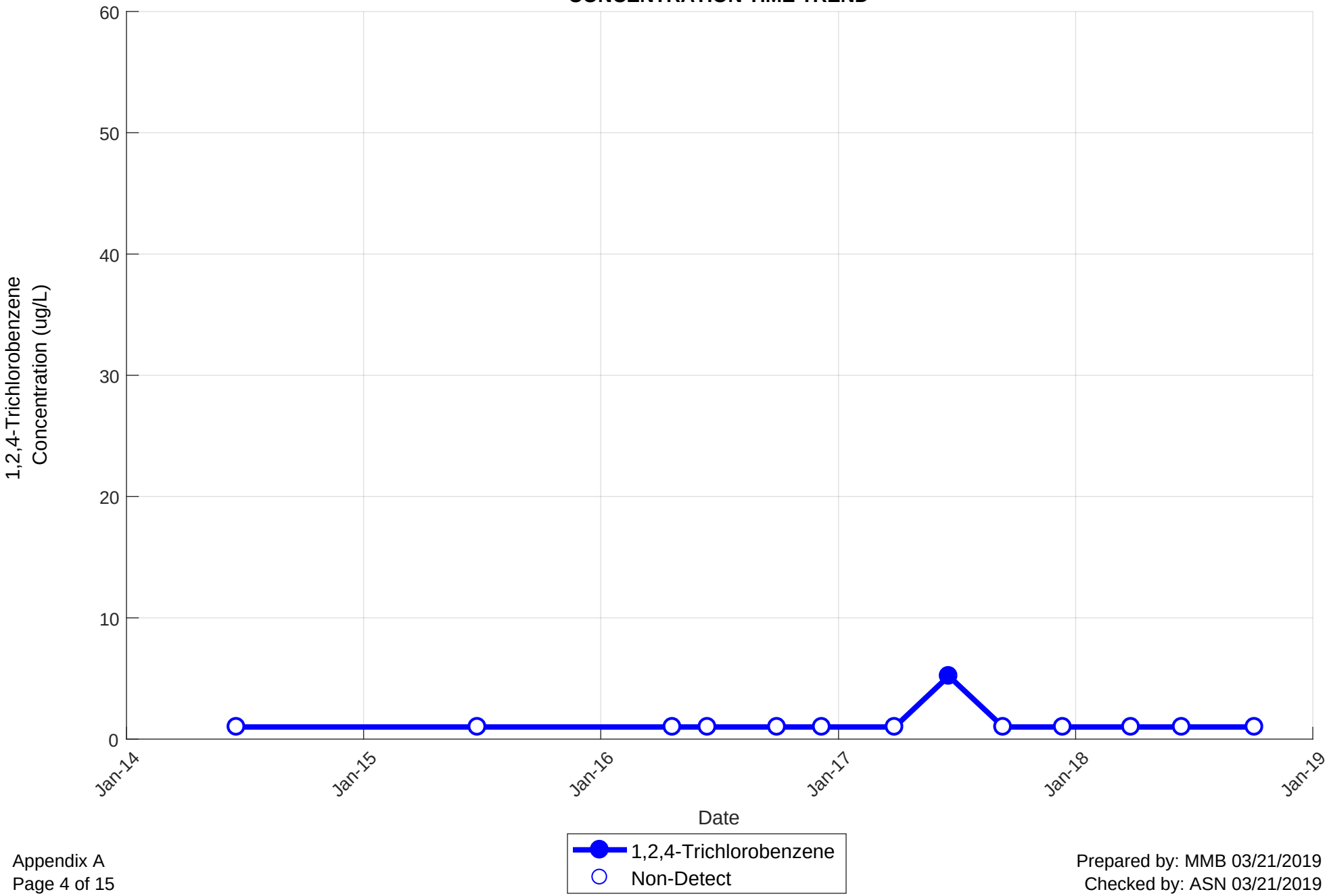
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25A
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



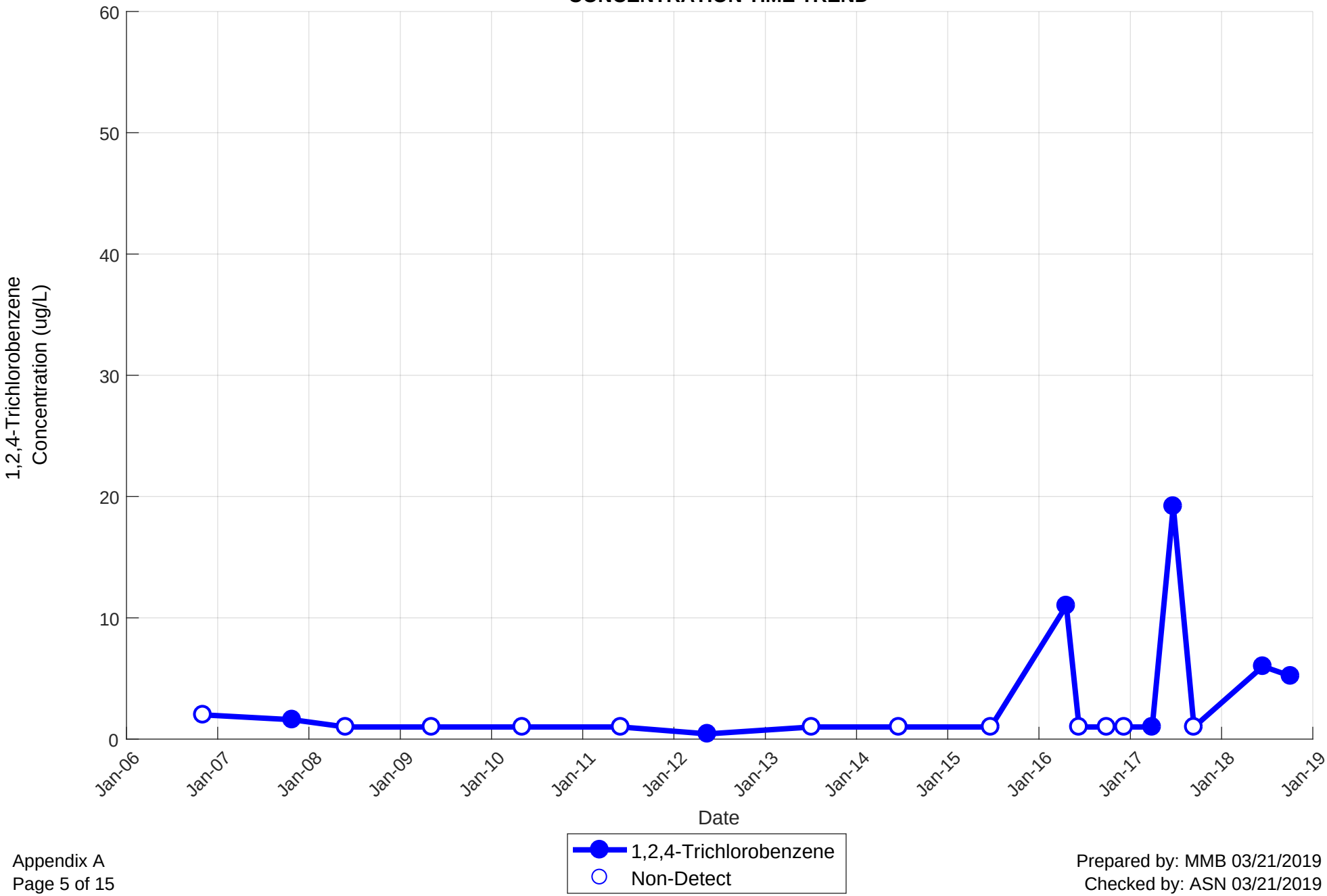
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26A
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



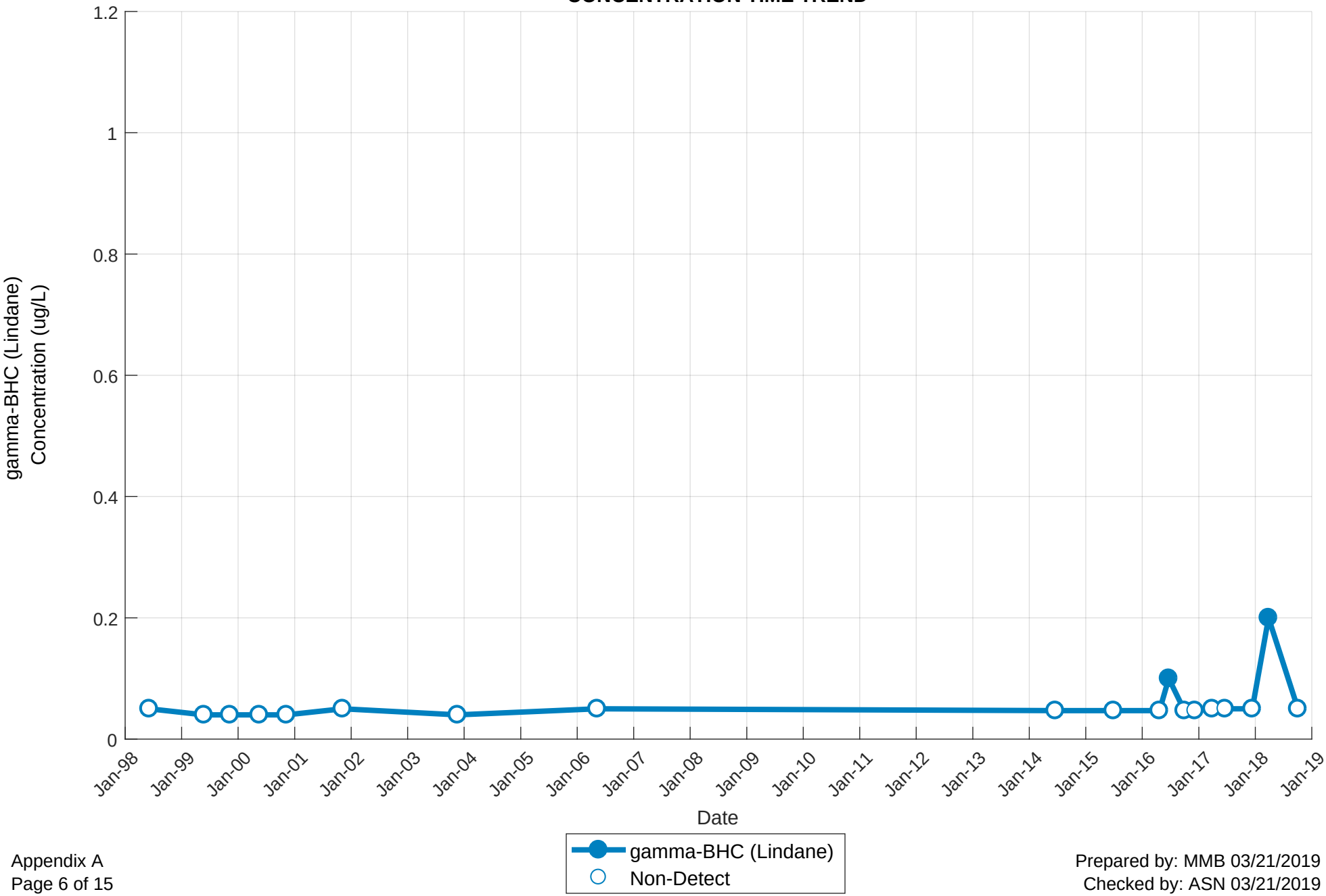
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20A
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



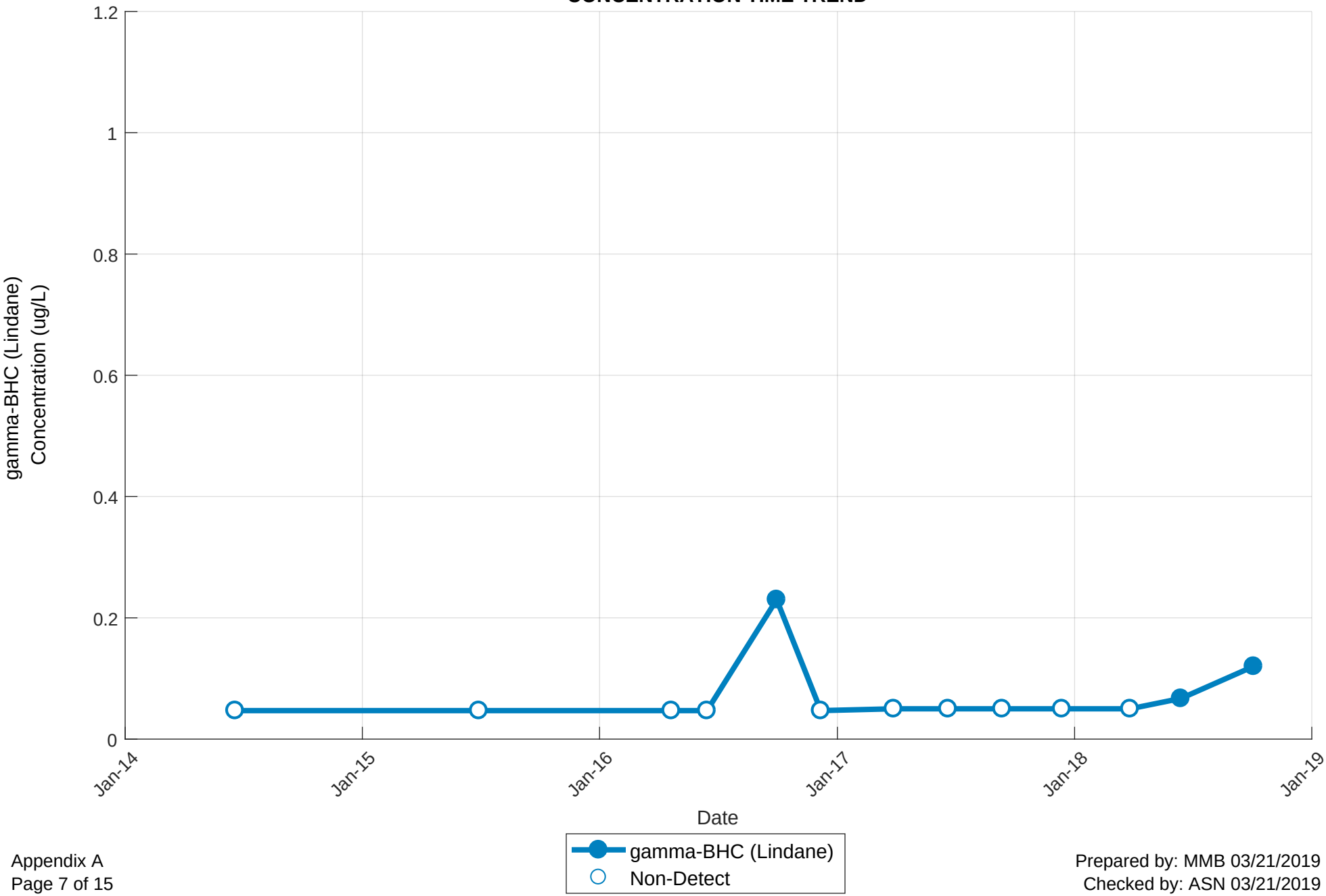
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-4A
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



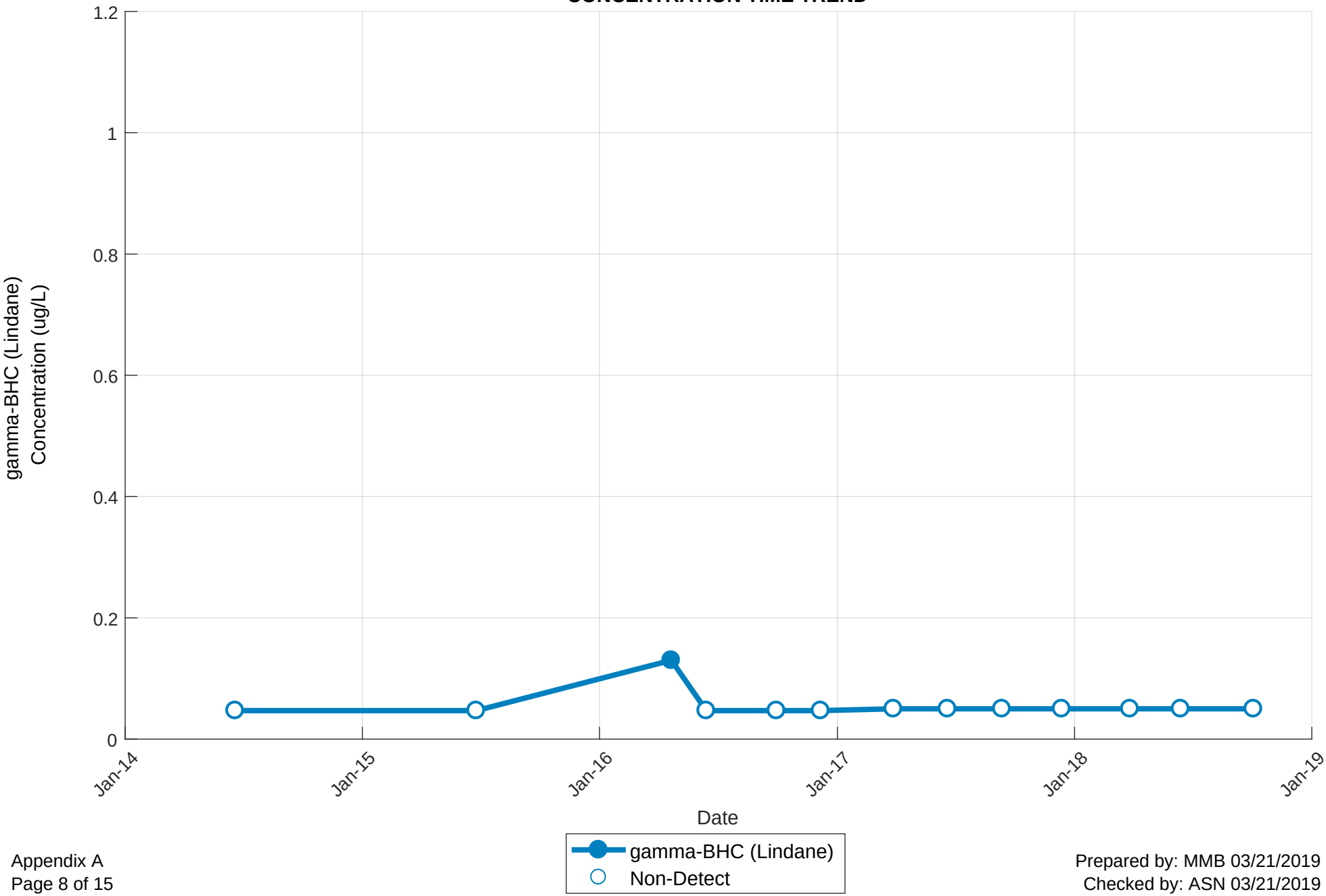
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24A
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



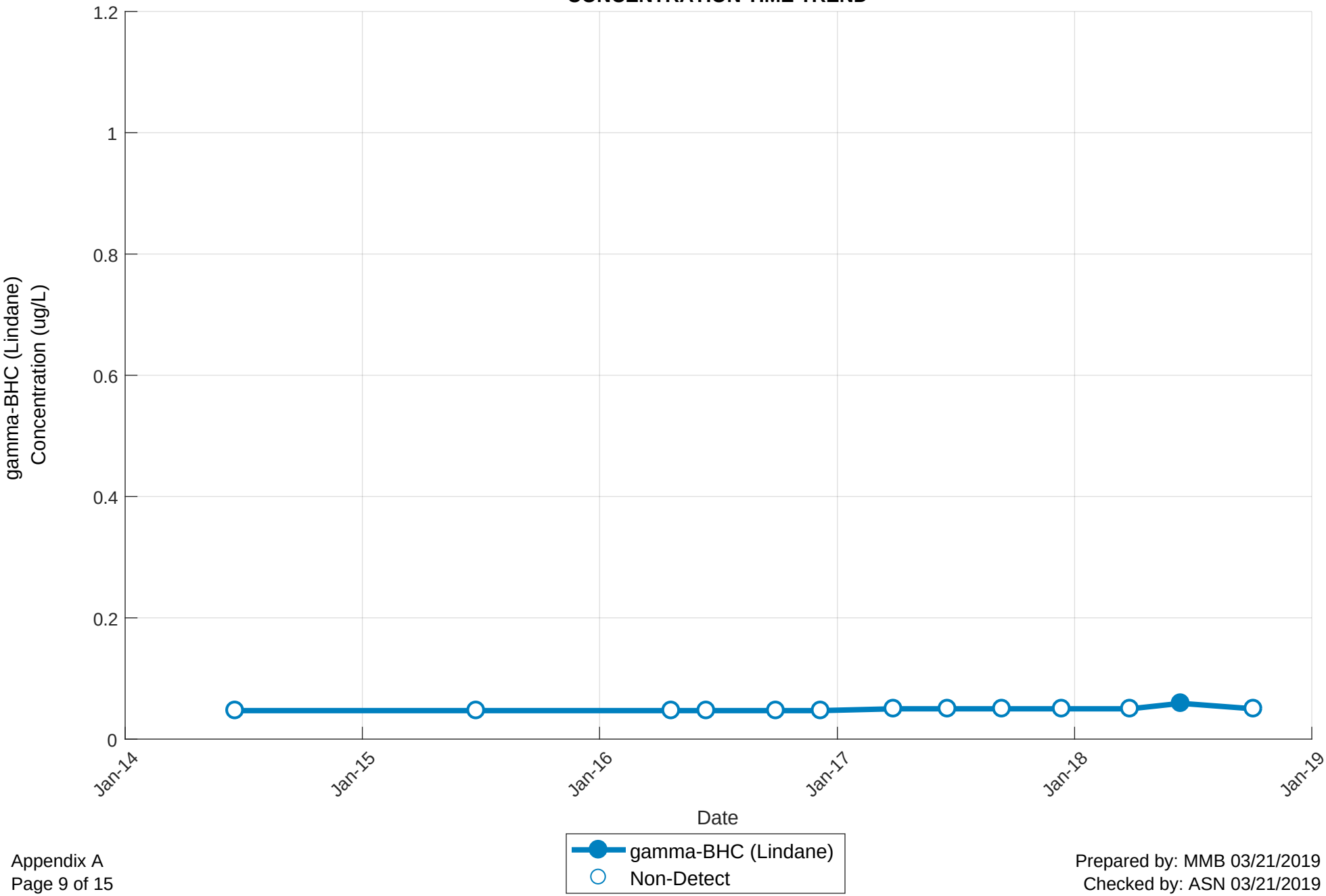
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25A
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



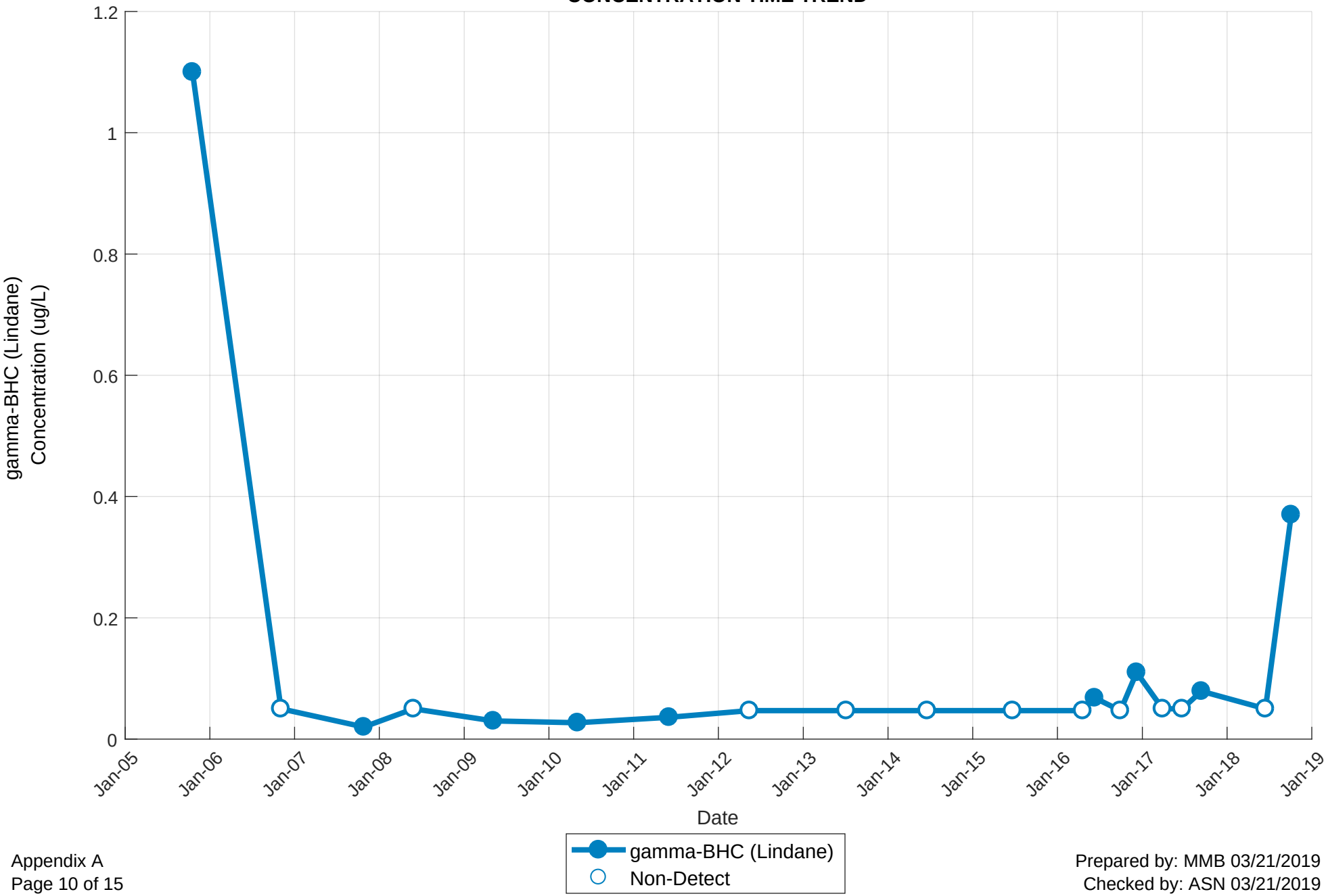
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26A
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



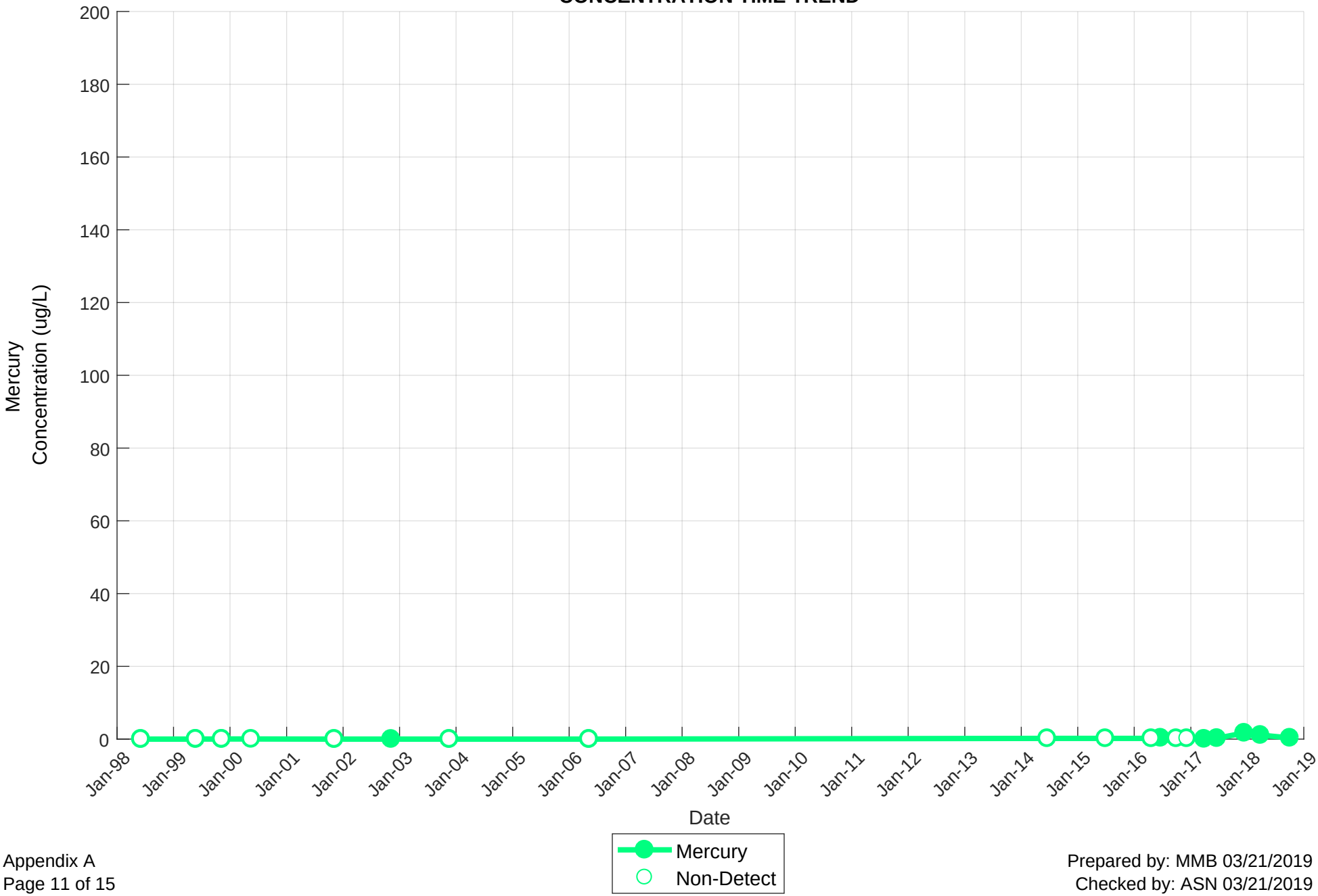
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20A
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



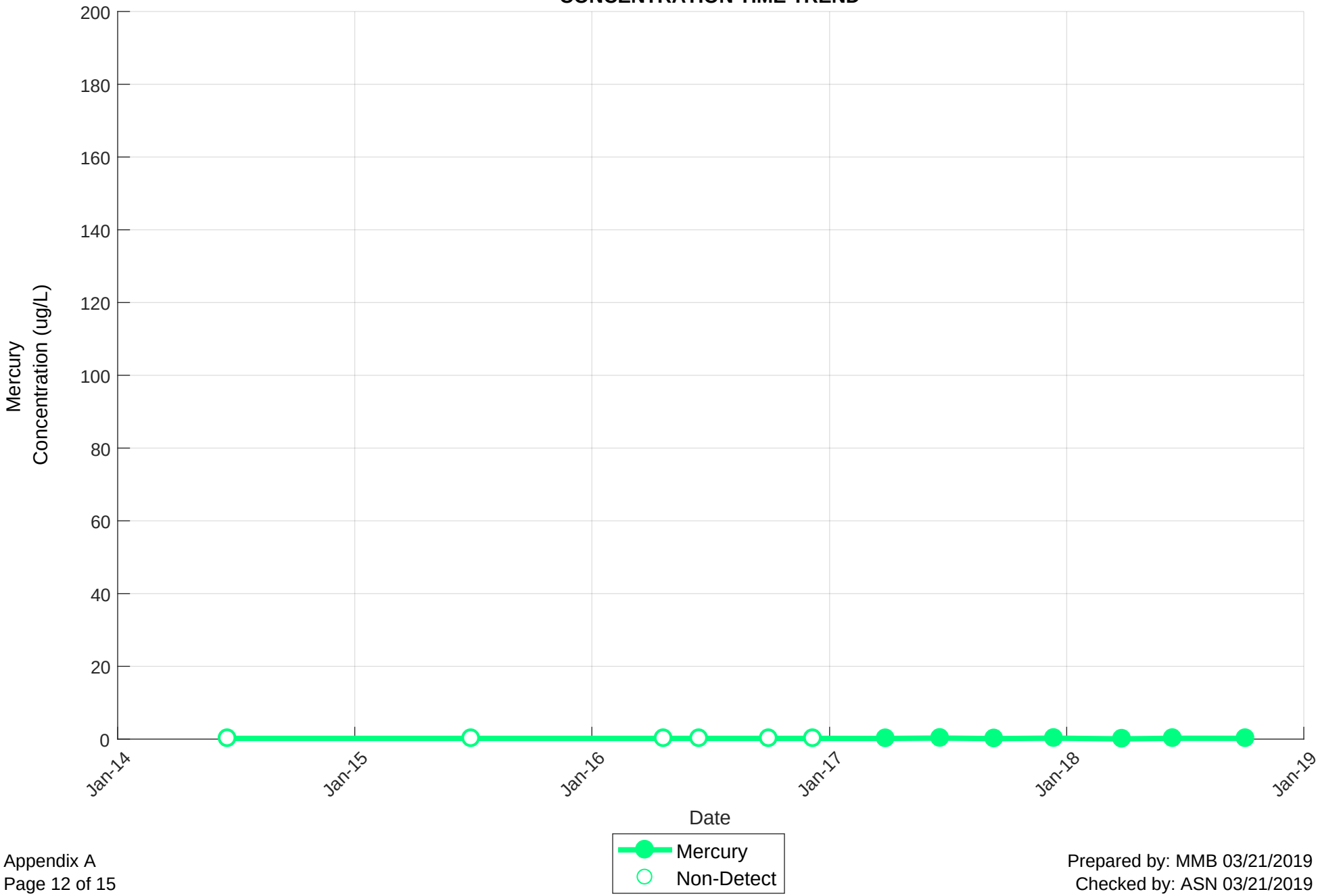
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-4A
MERCURY
CONCENTRATION TIME TREND



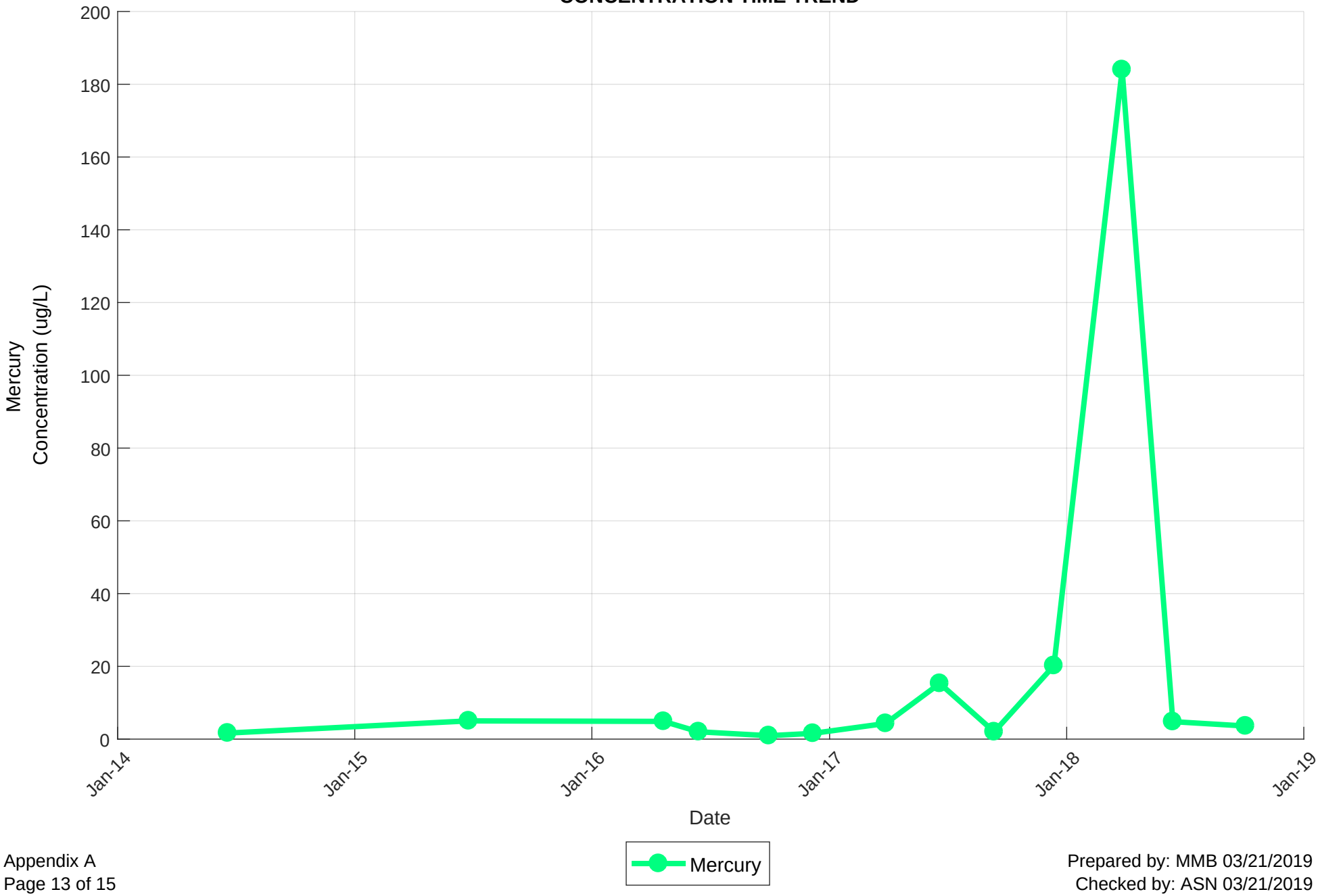
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24A
MERCURY
CONCENTRATION TIME TREND



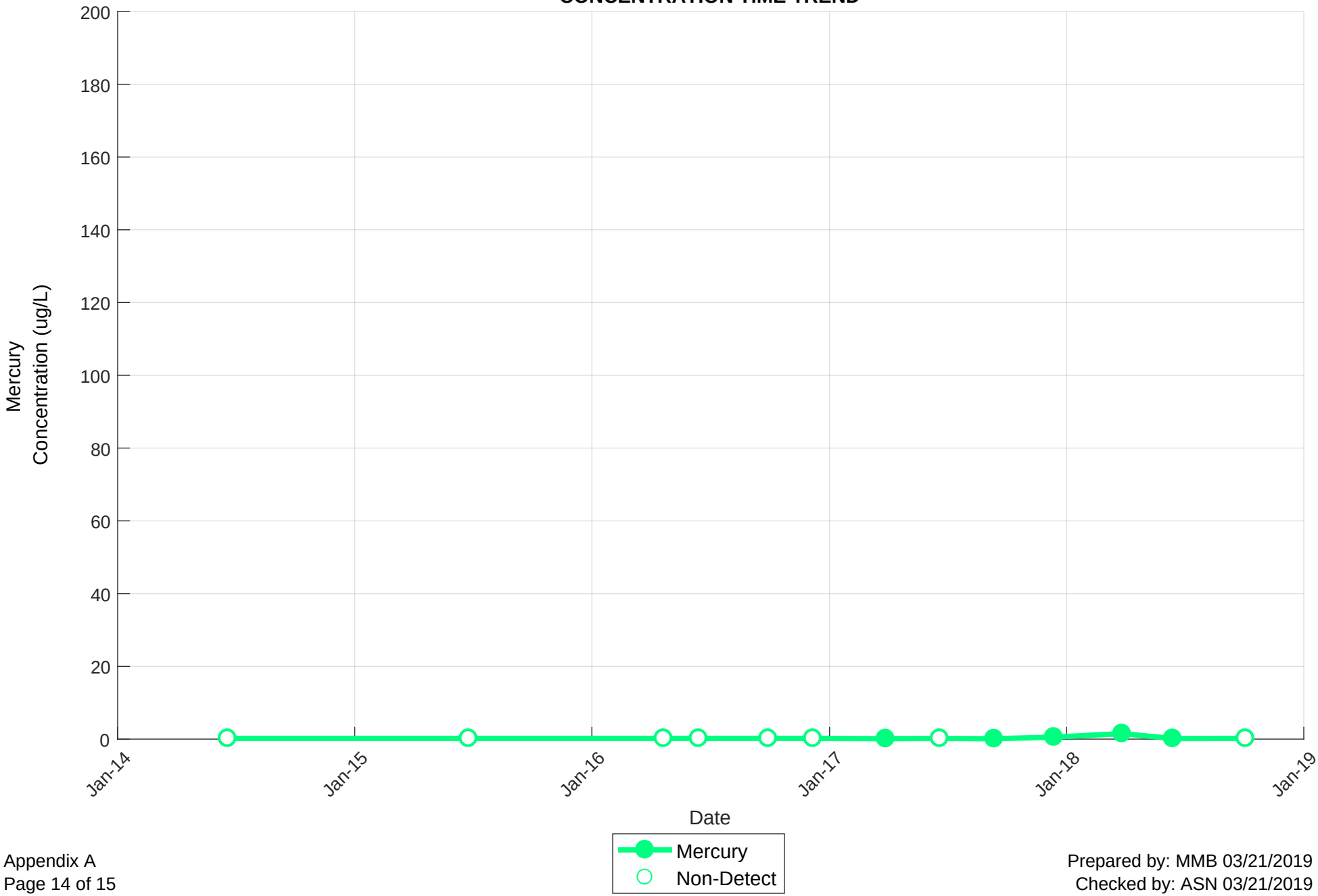
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25A
MERCURY
CONCENTRATION TIME TREND



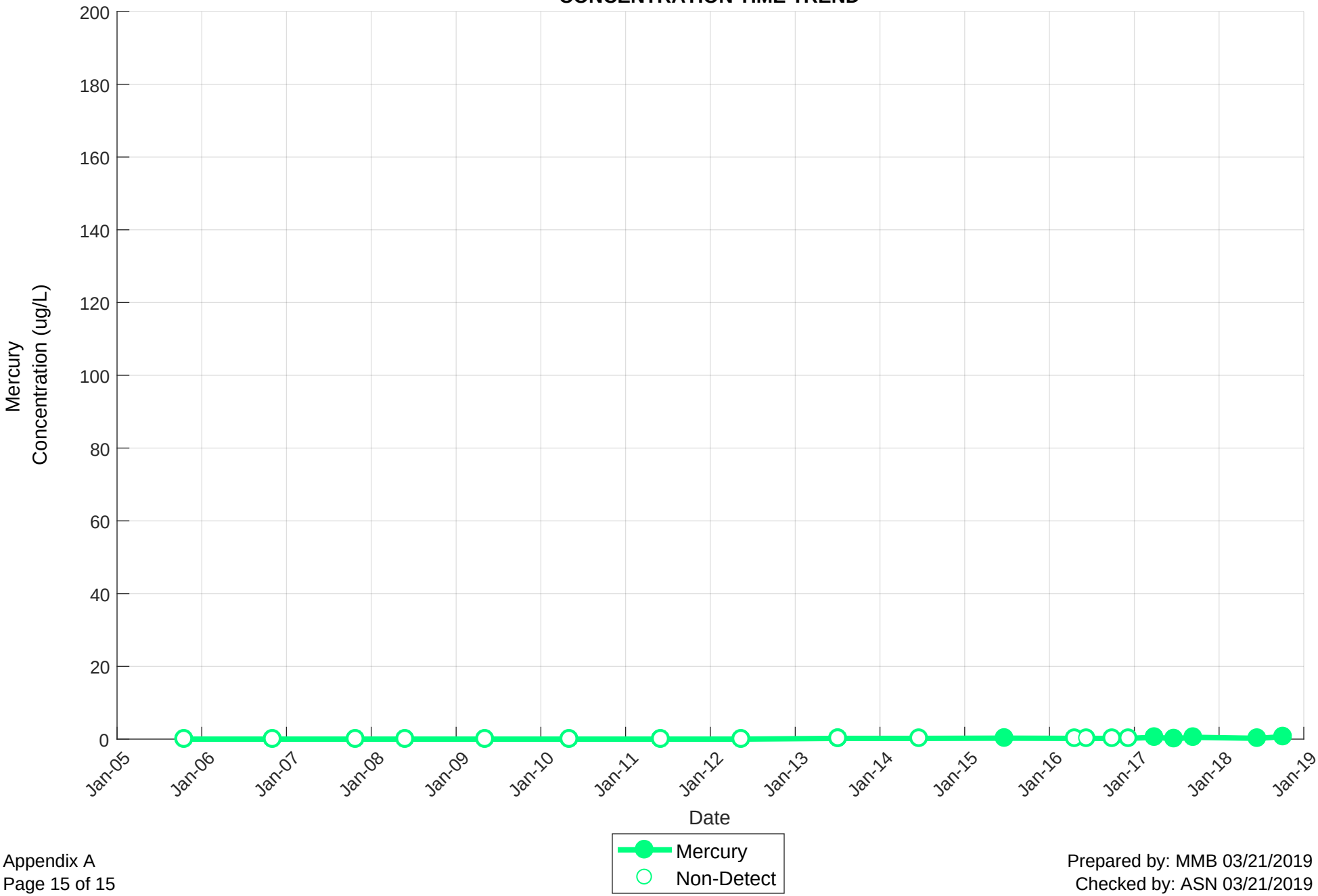
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26A
MERCURY
CONCENTRATION TIME TREND



Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20A
MERCURY
CONCENTRATION TIME TREND

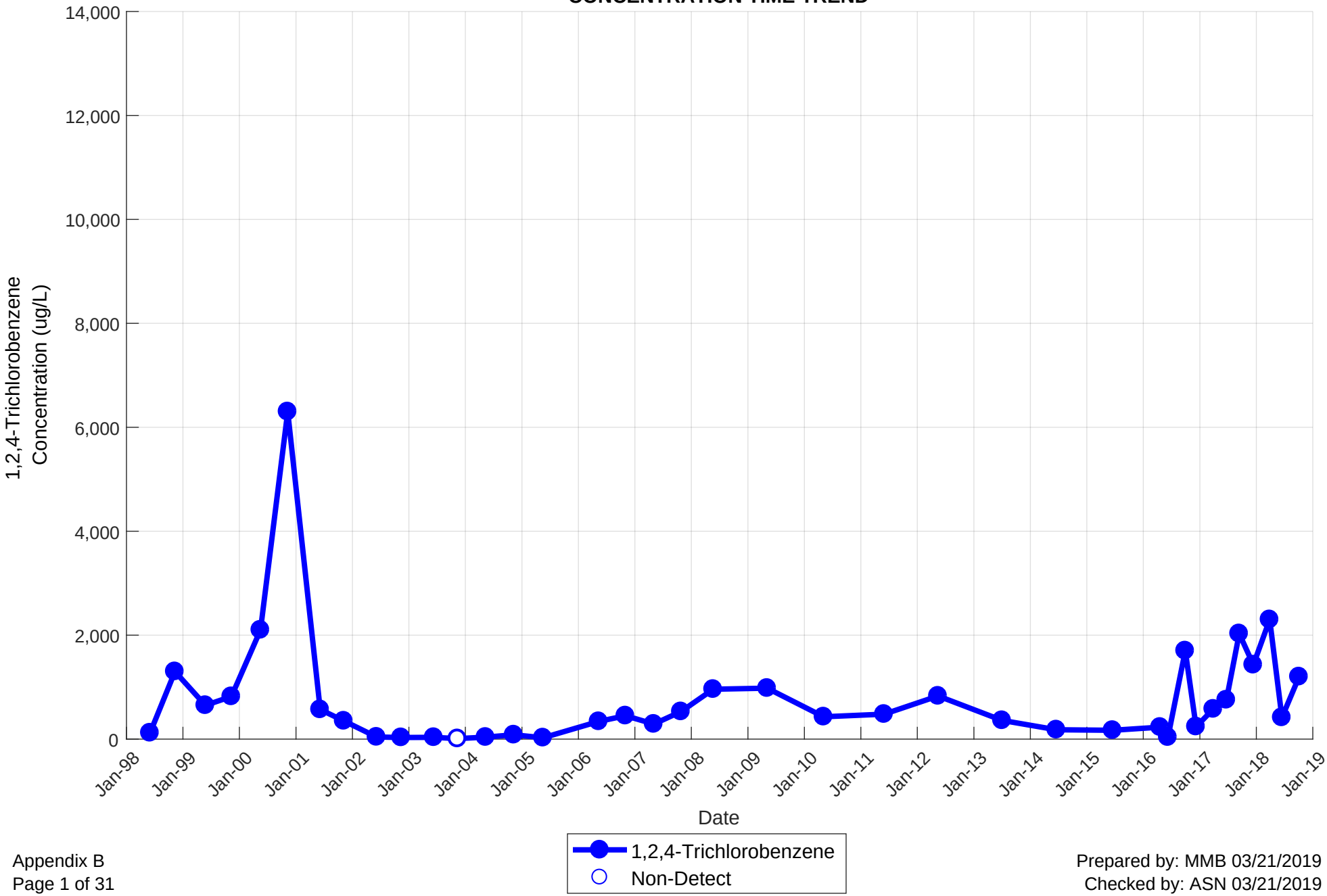


Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

APPENDIX B

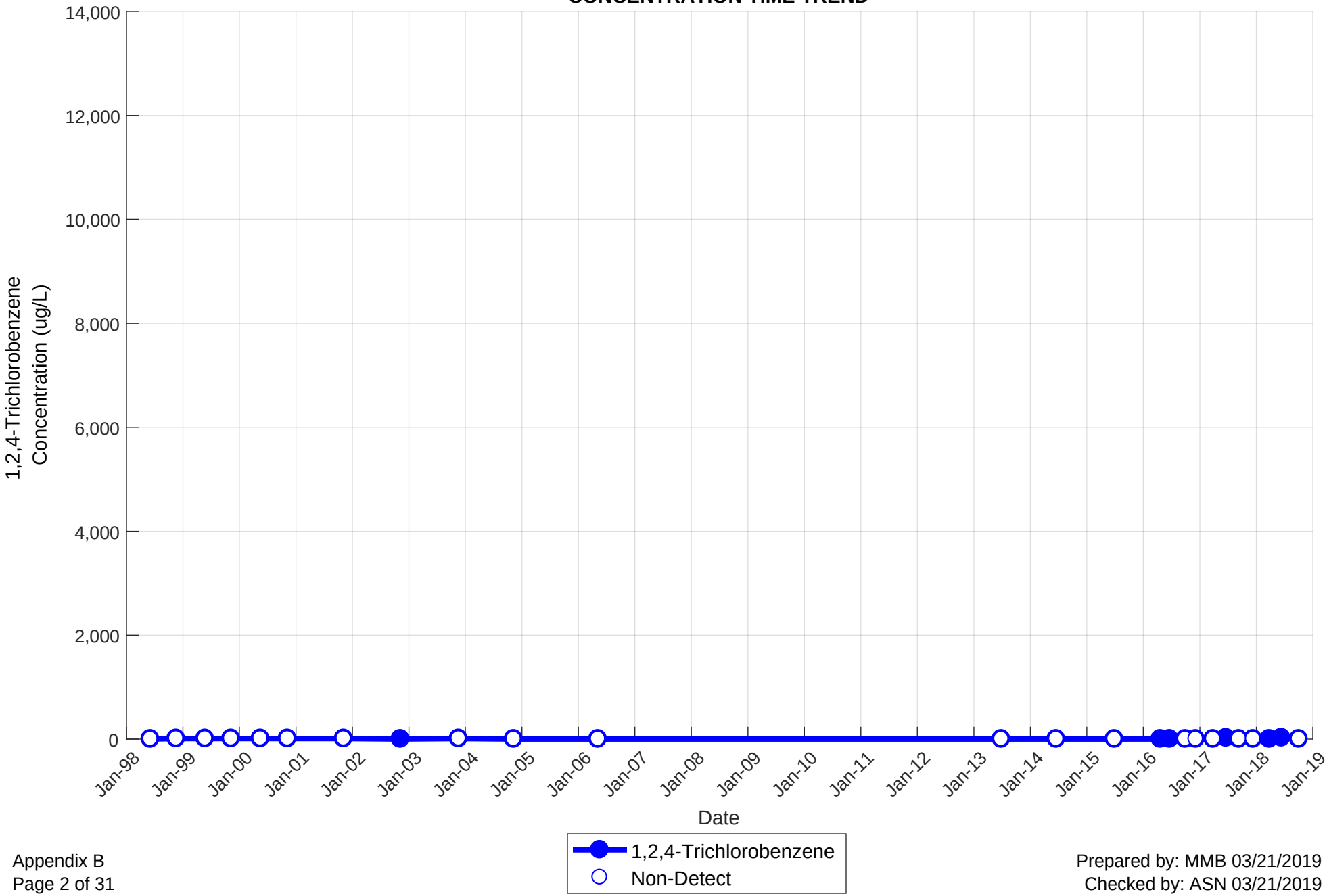
B-ZONE CONSTITUENT TIME TRENDS

OBA-2B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



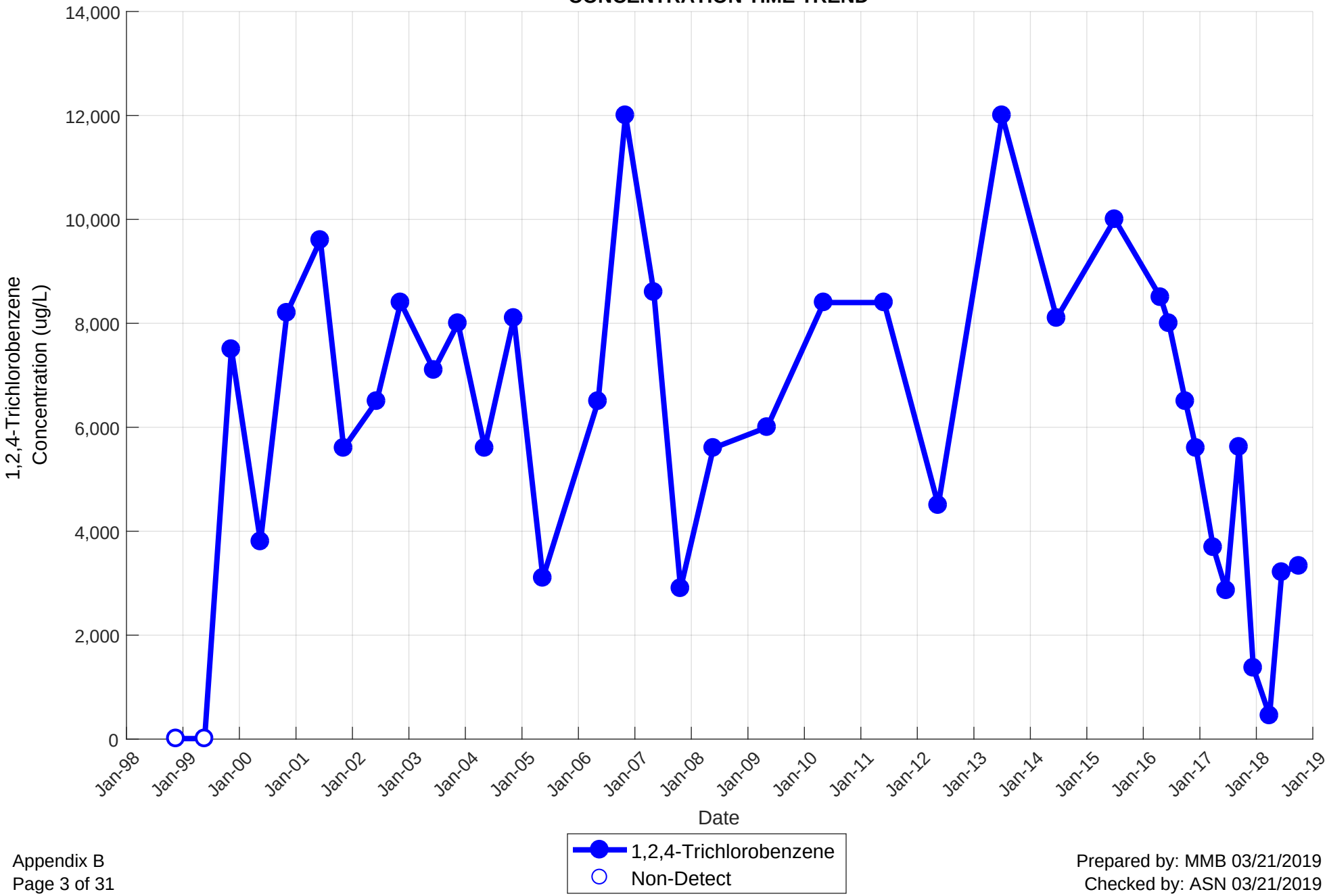
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-4B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



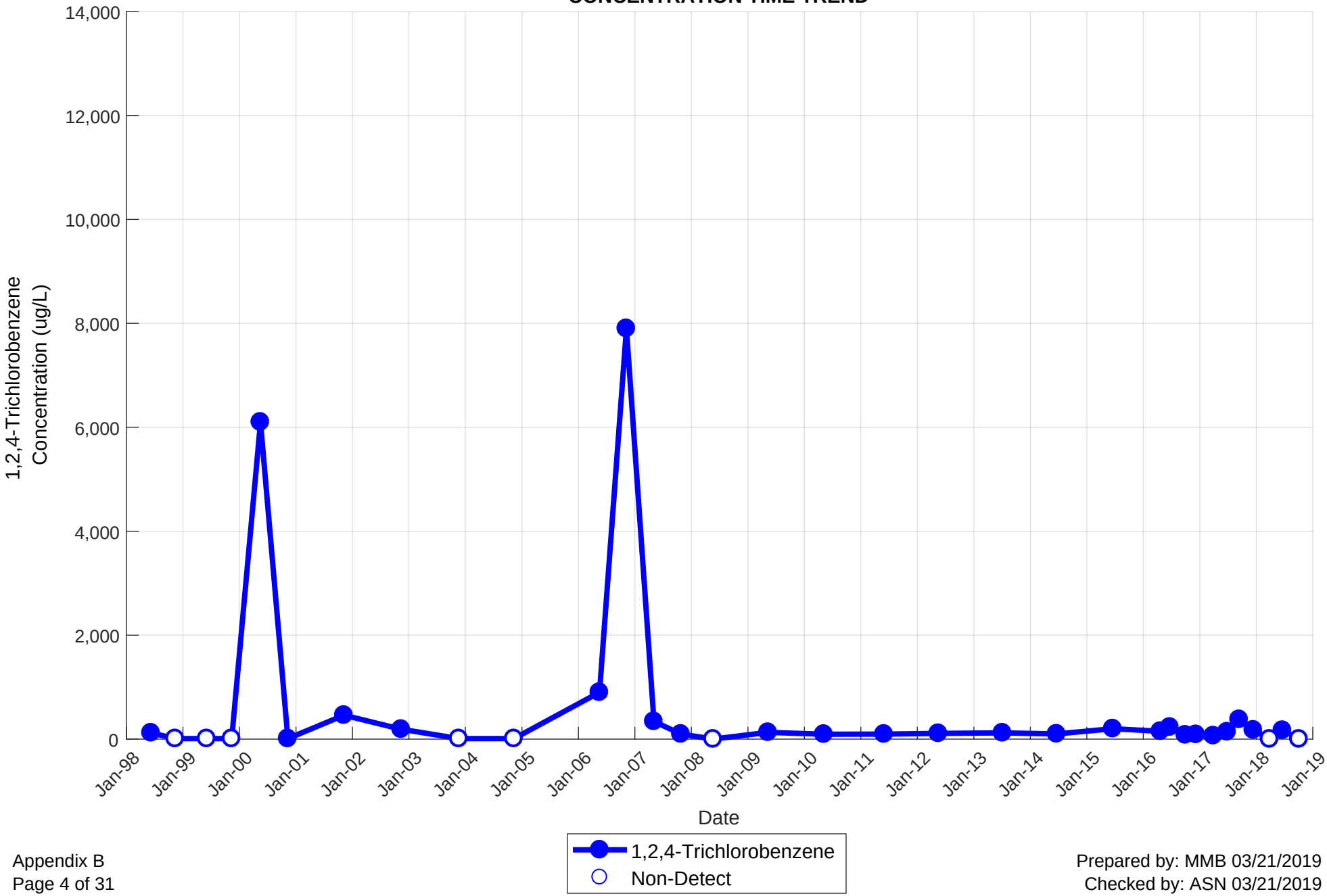
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-5B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



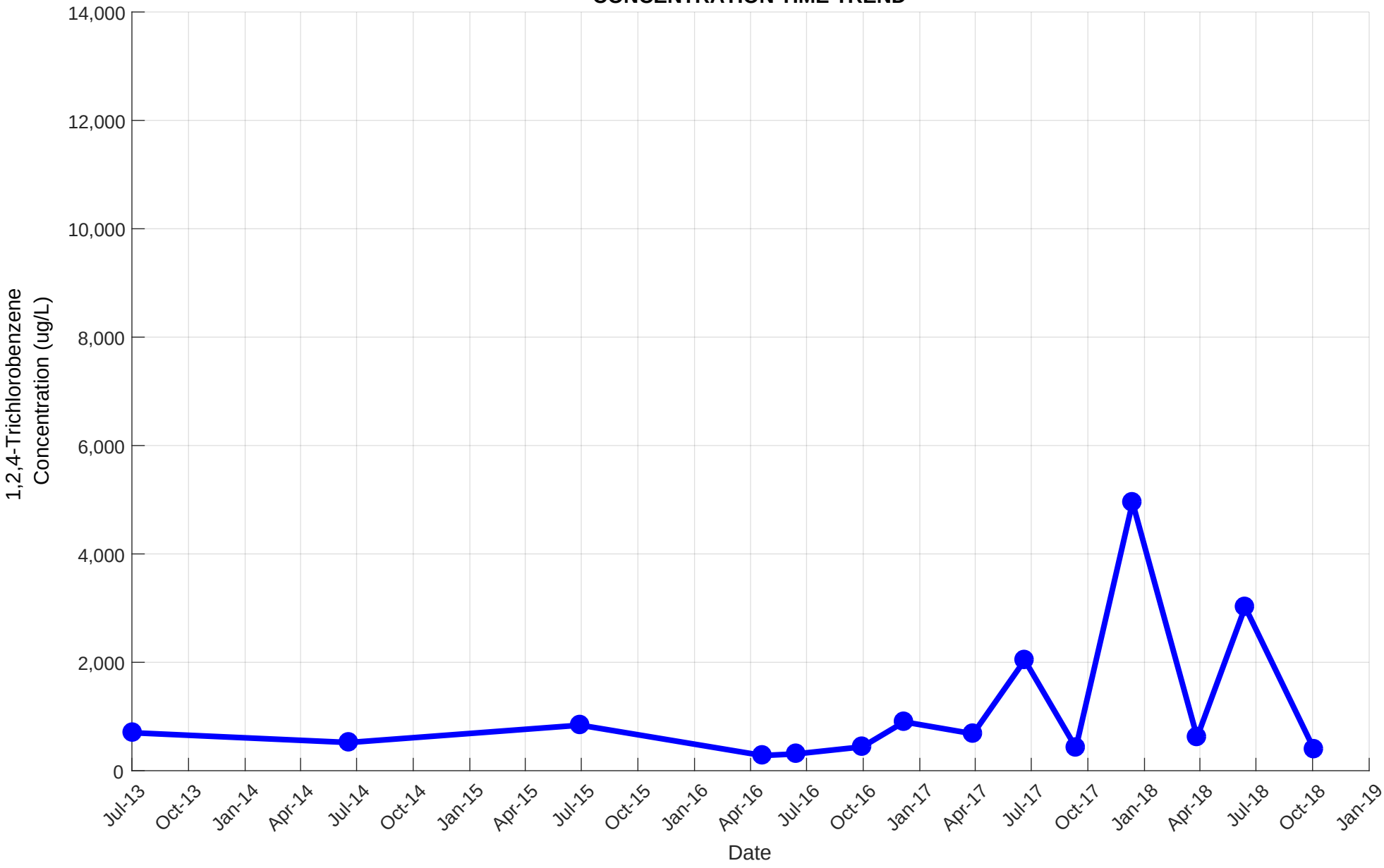
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-6B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



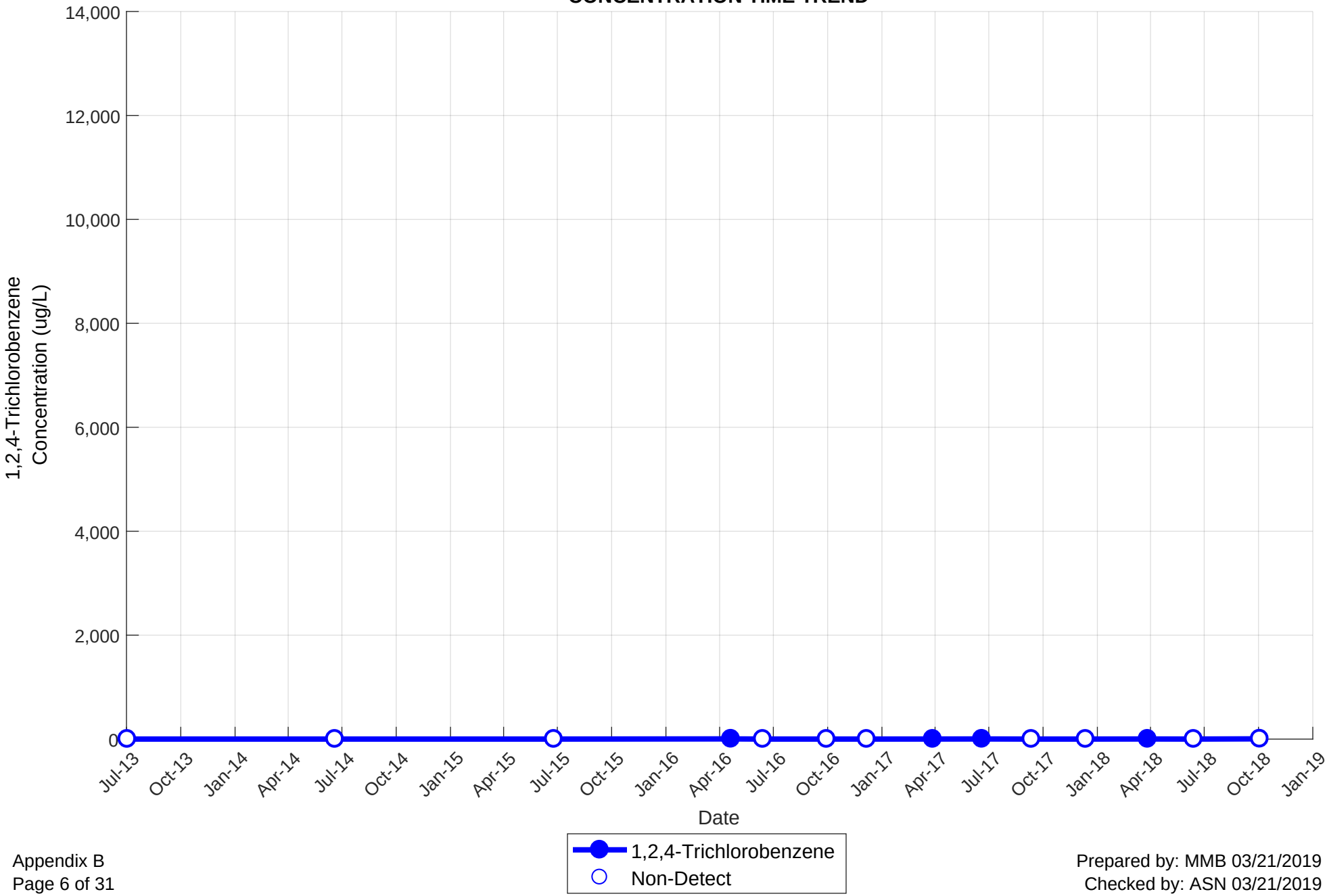
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



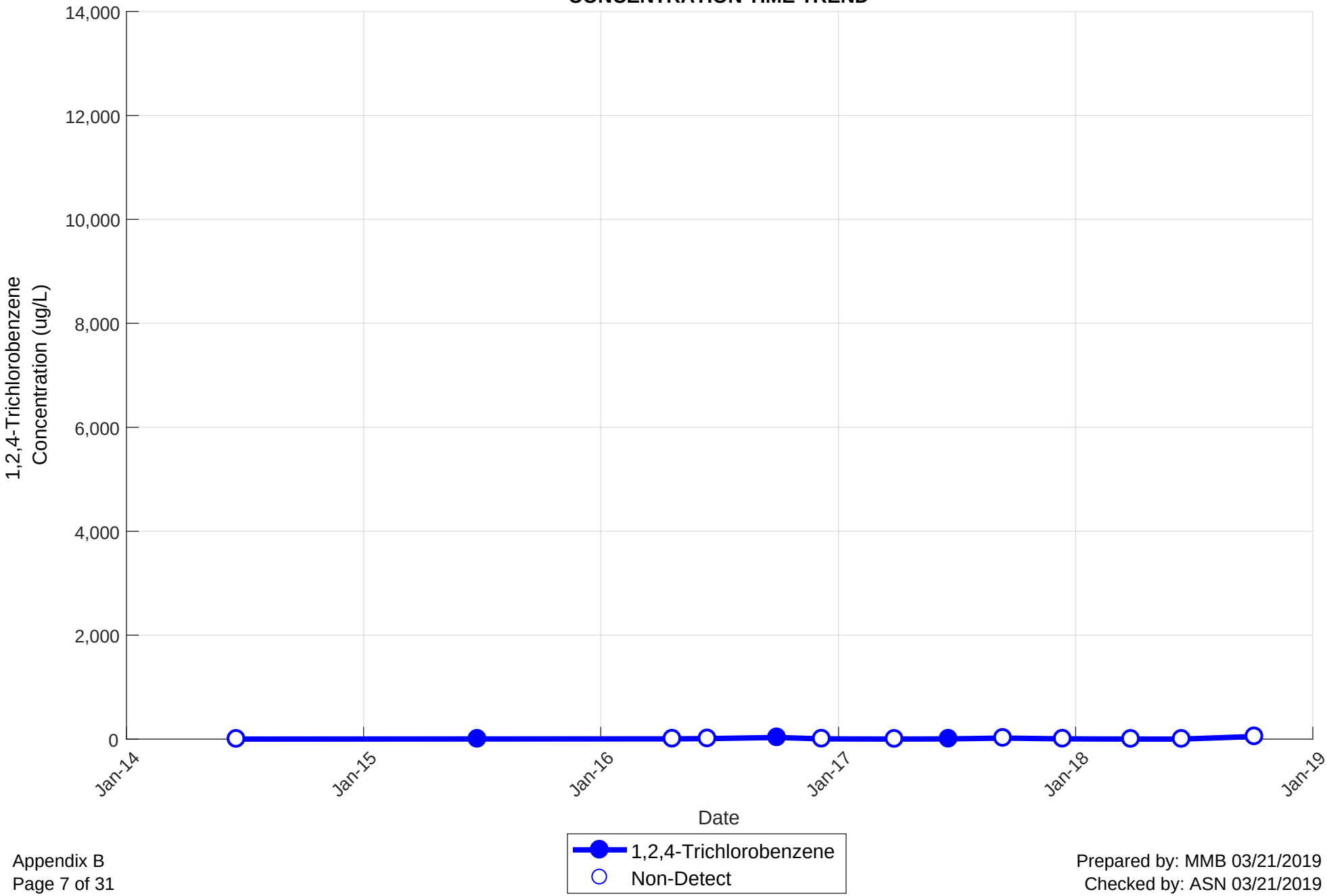
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



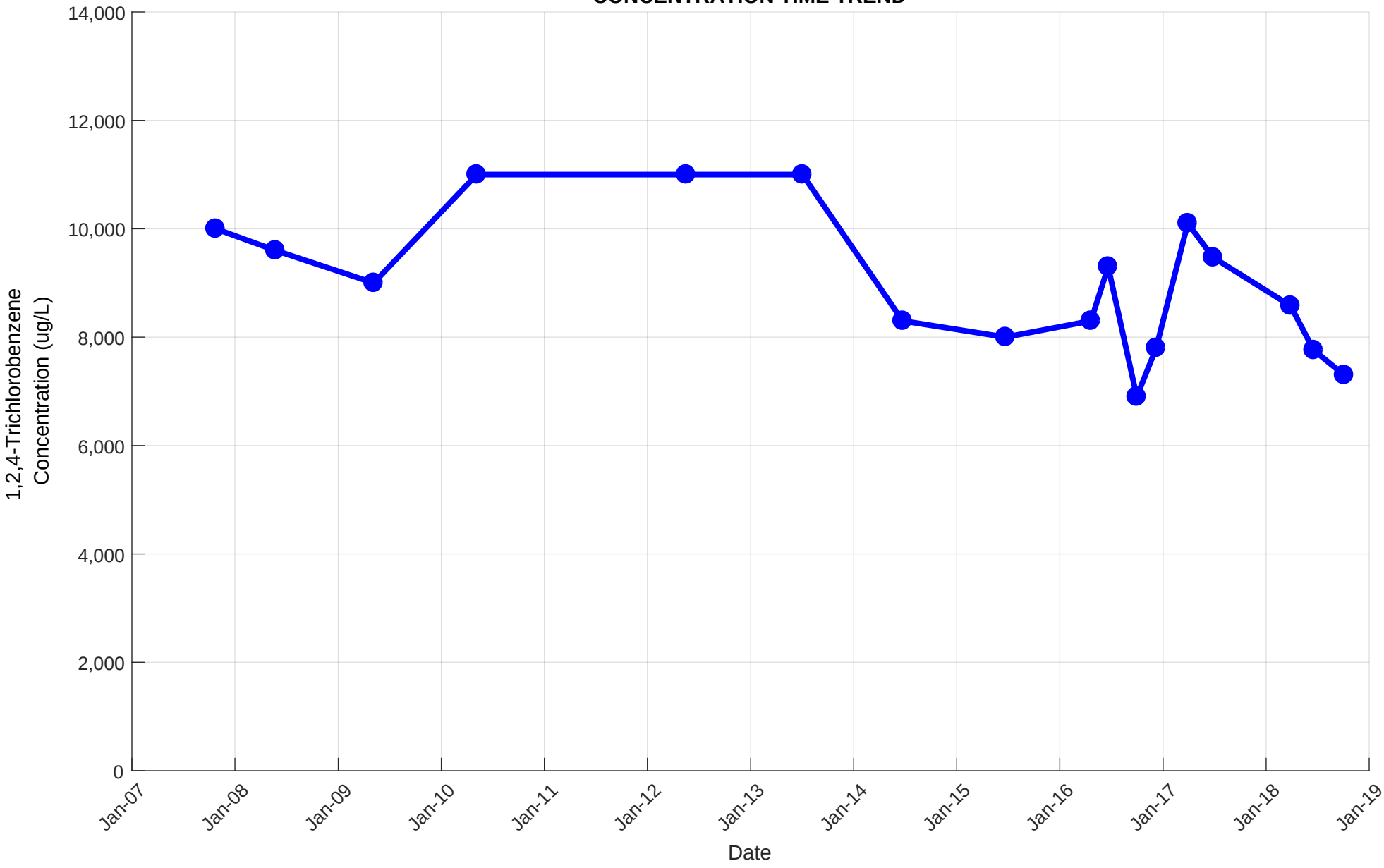
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



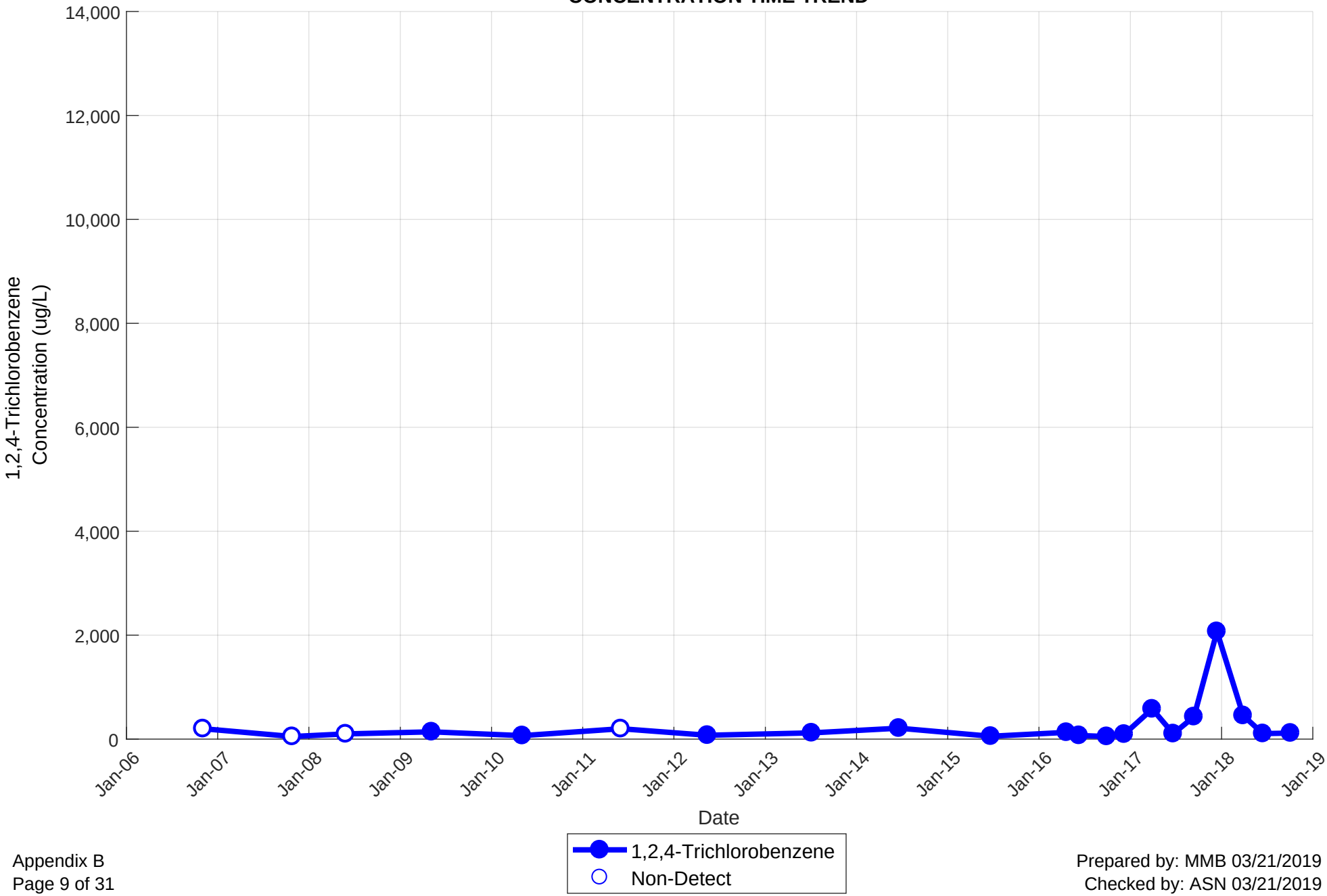
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-5B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



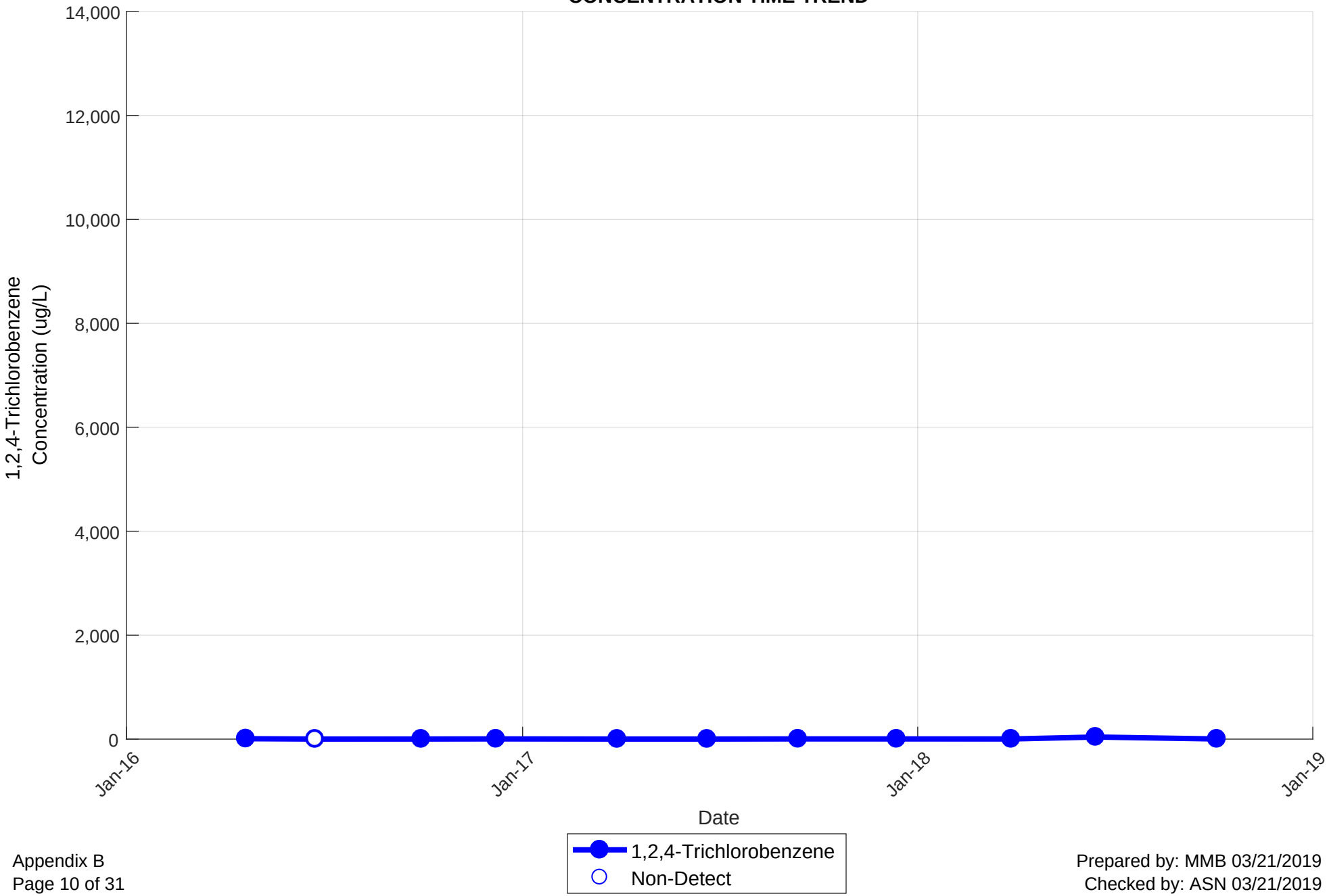
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



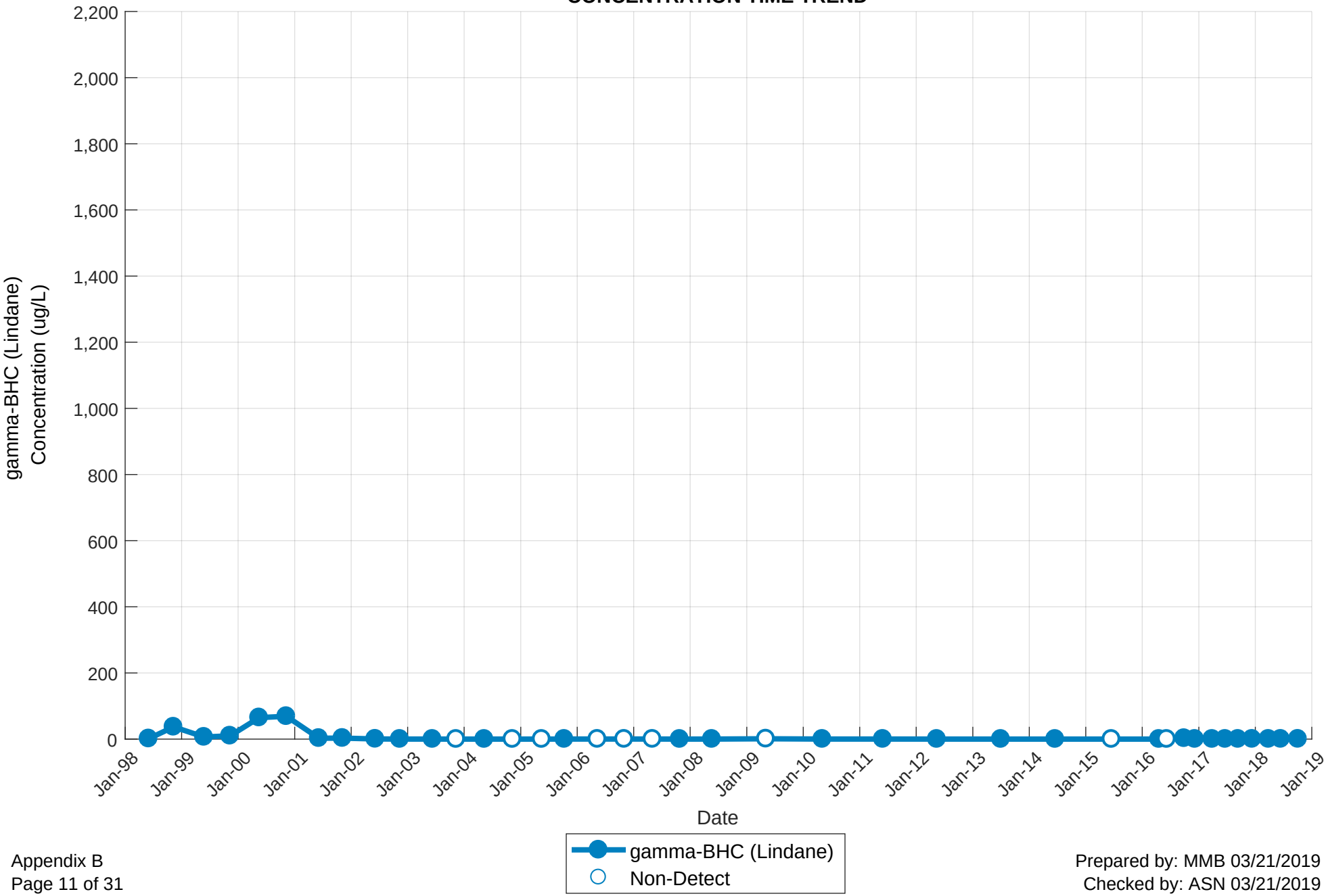
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-24B
1,2,4-TRICHLOROBENZENE
CONCENTRATION TIME TREND



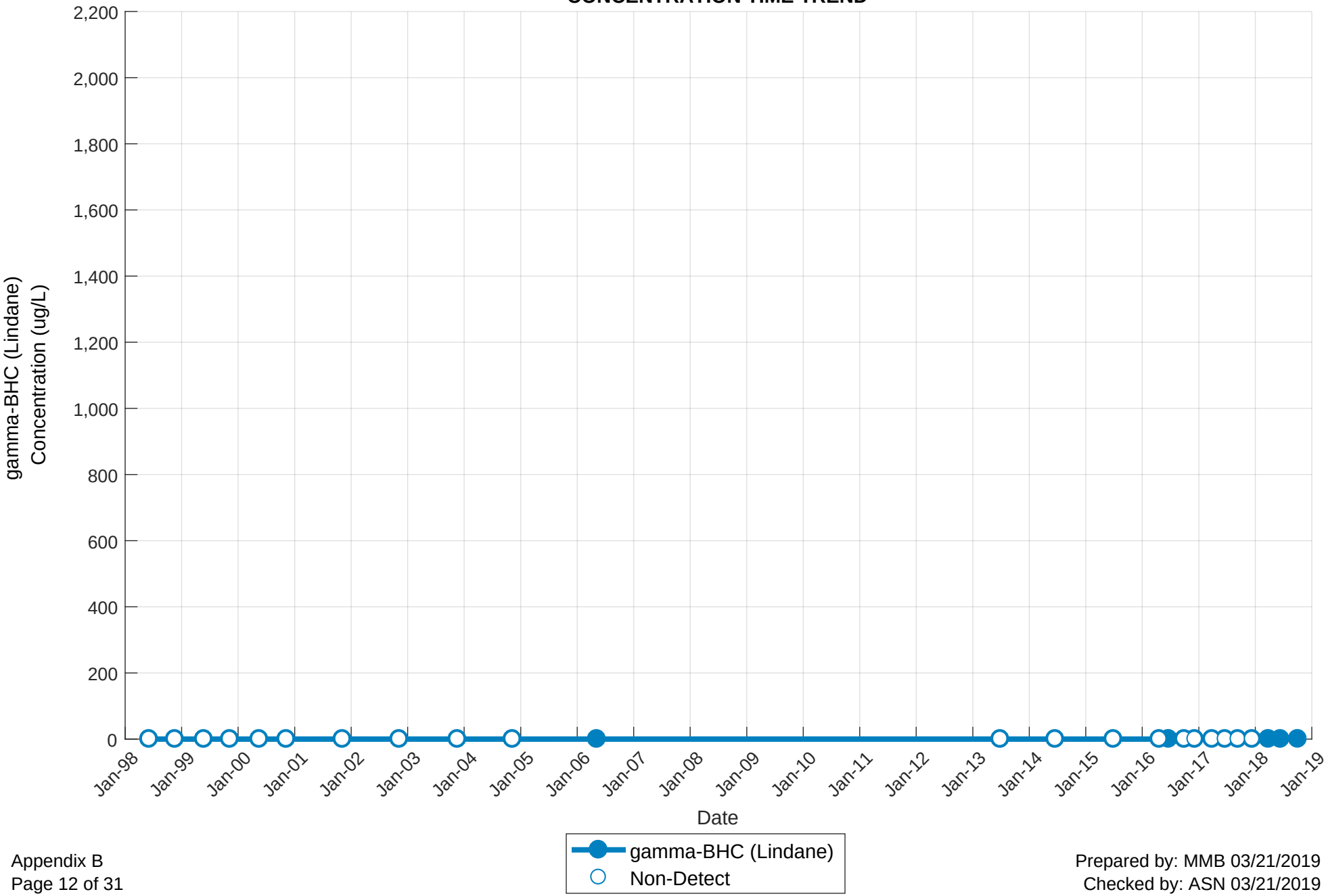
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-2B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



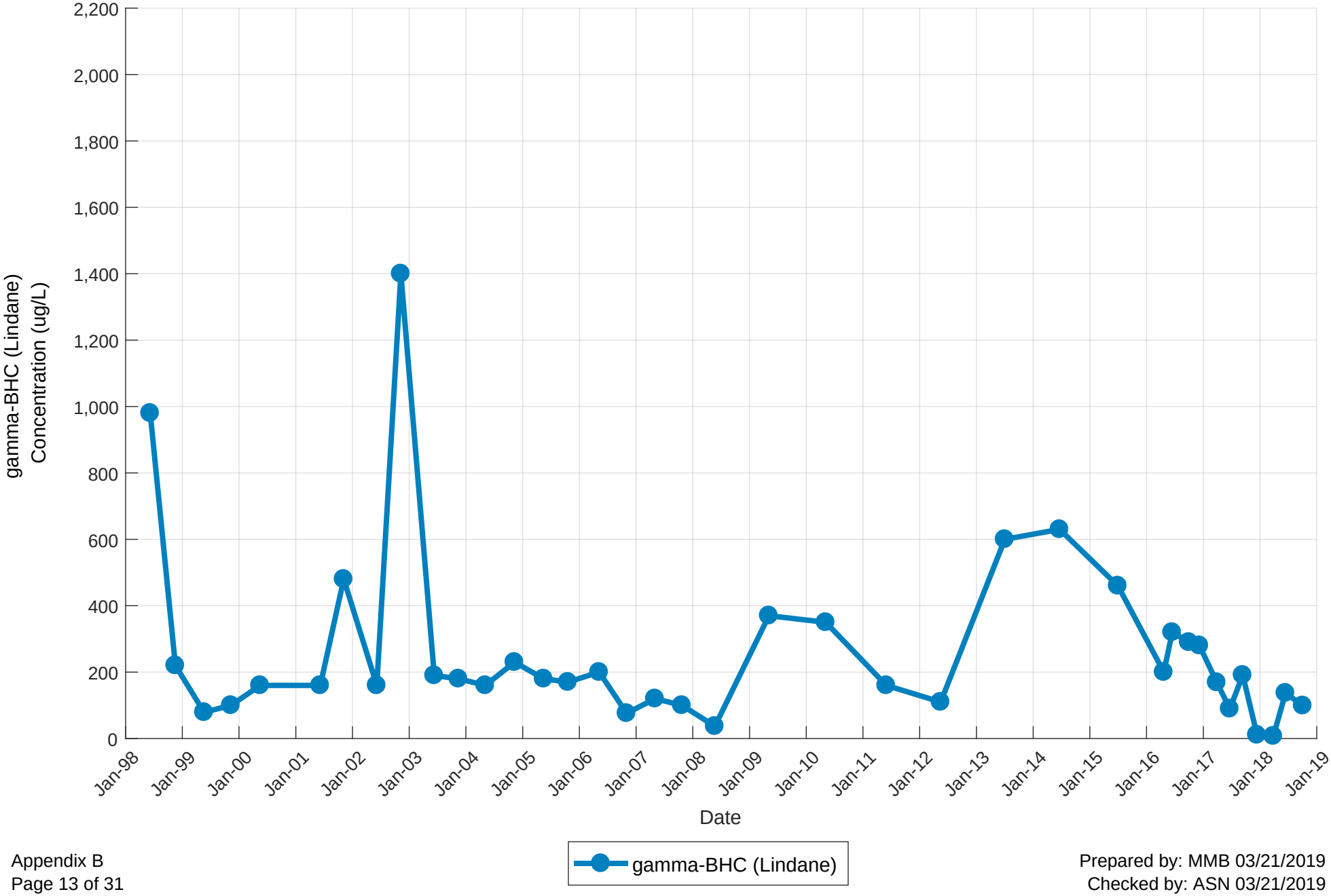
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-4B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



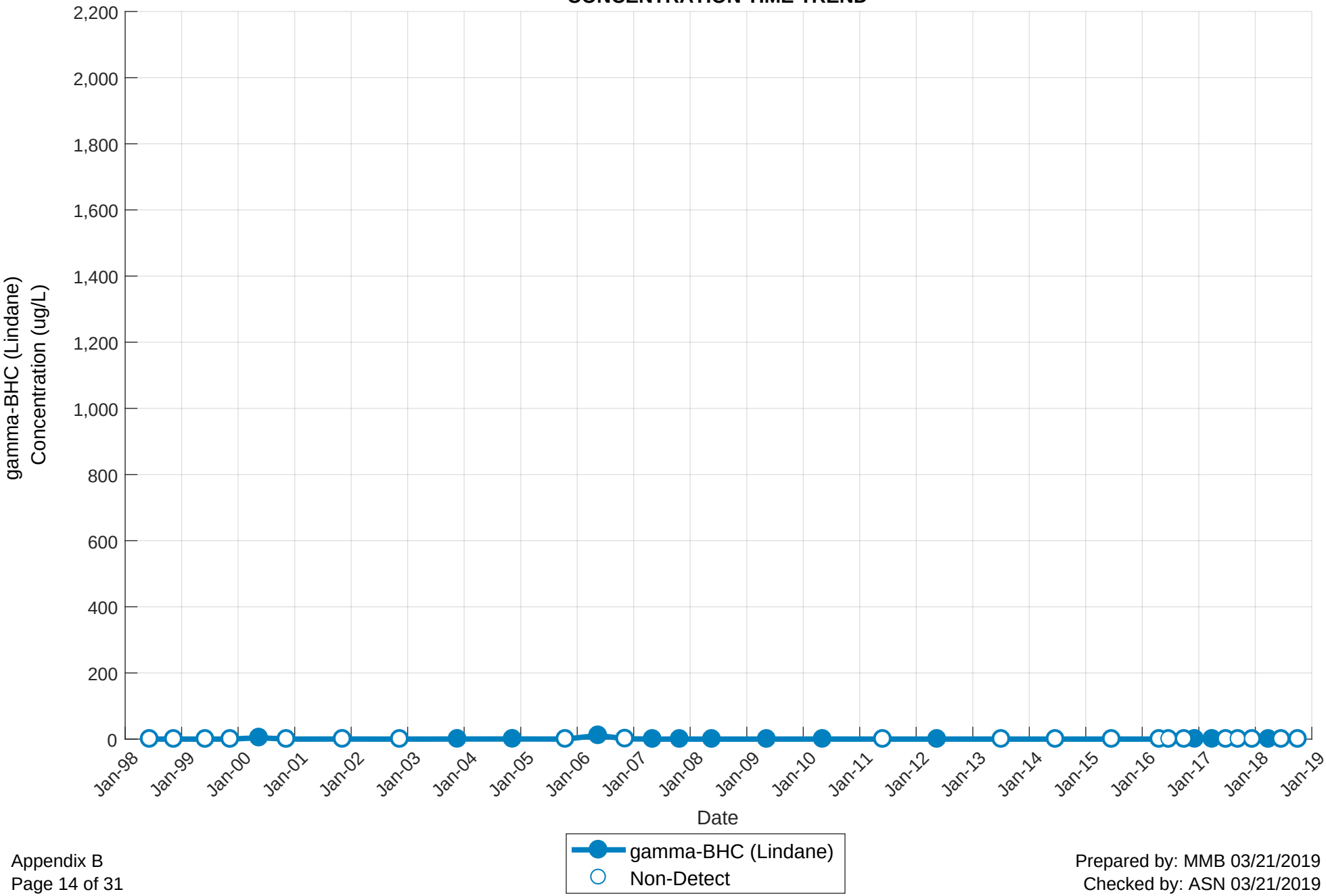
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-5B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



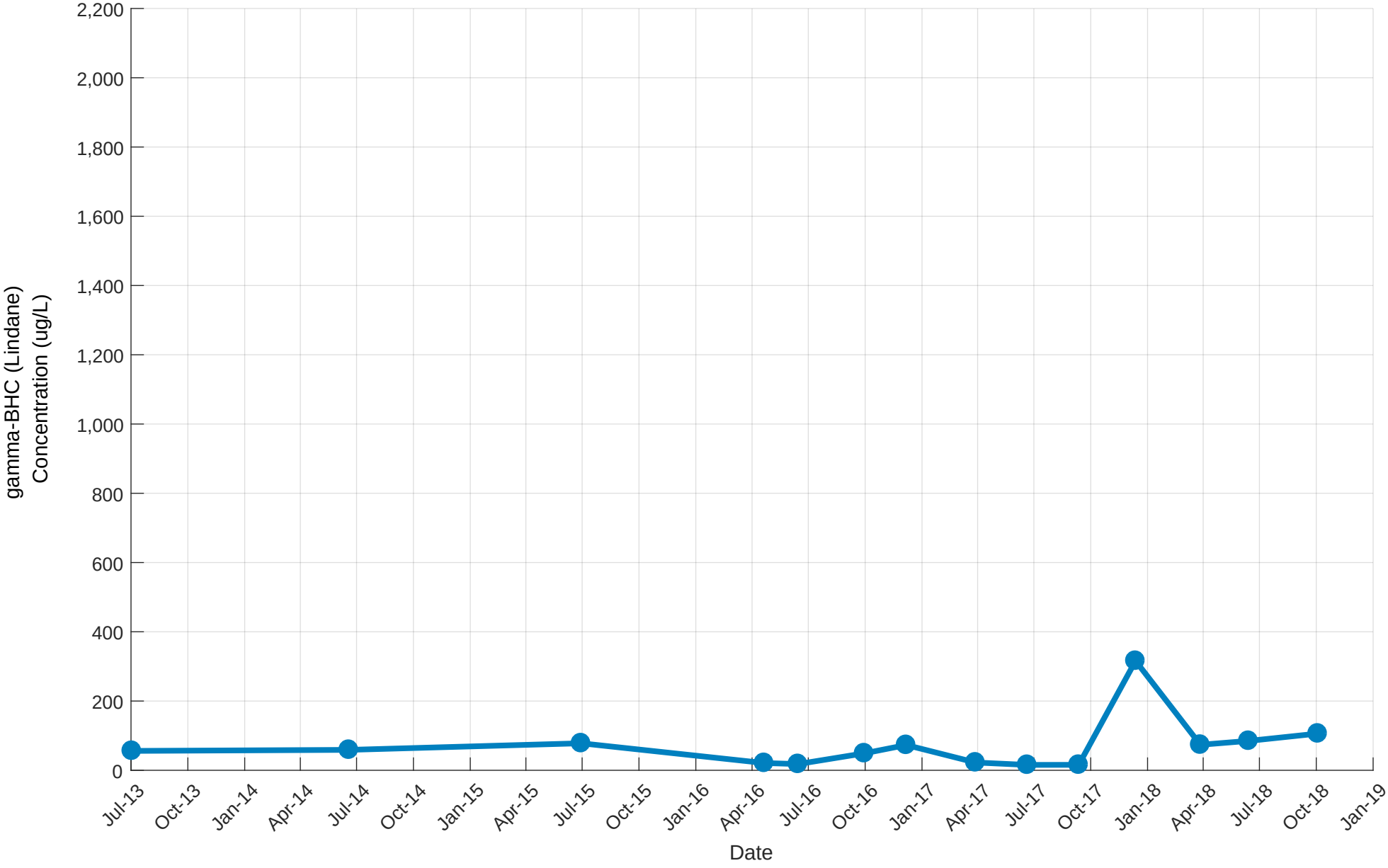
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-6B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



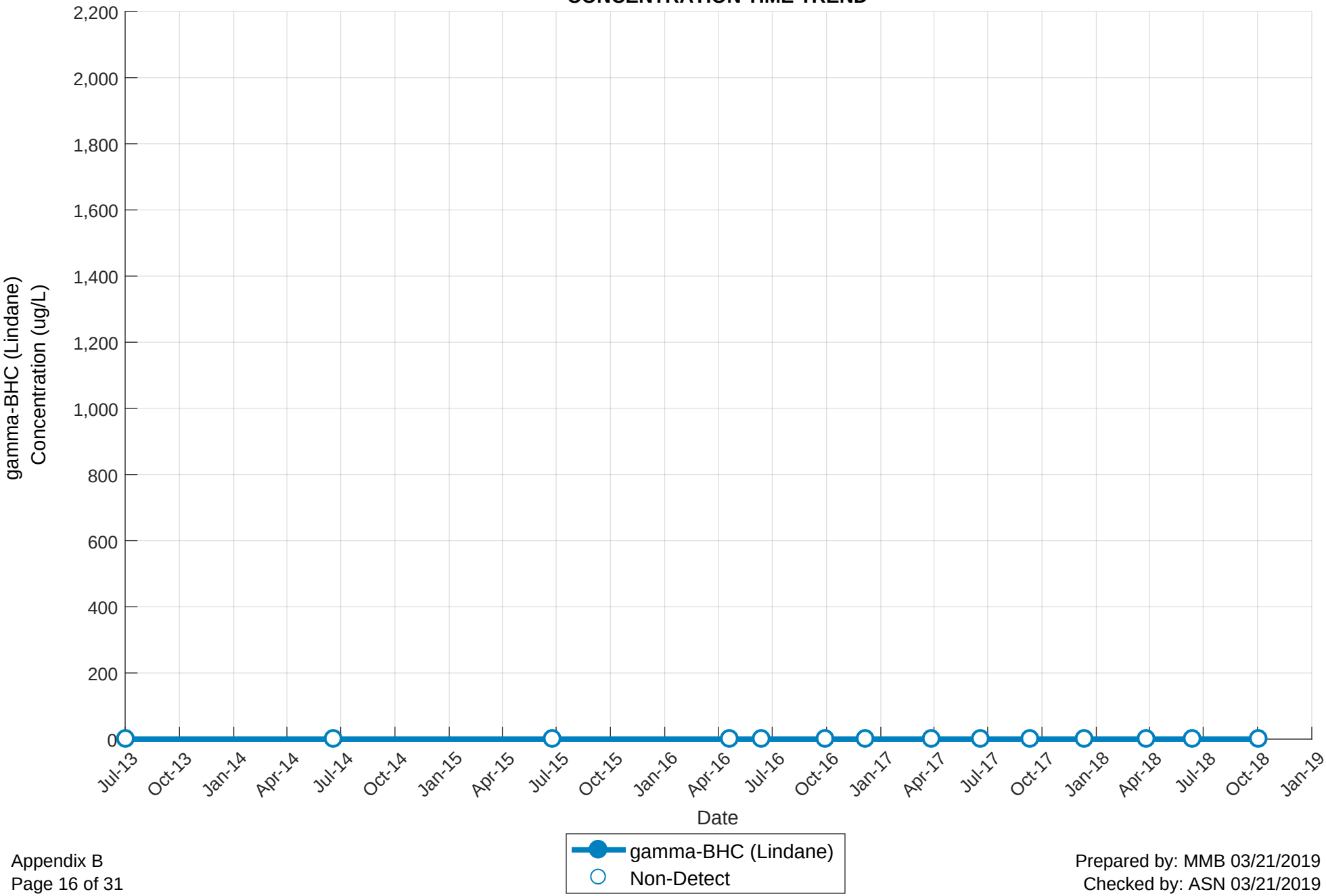
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



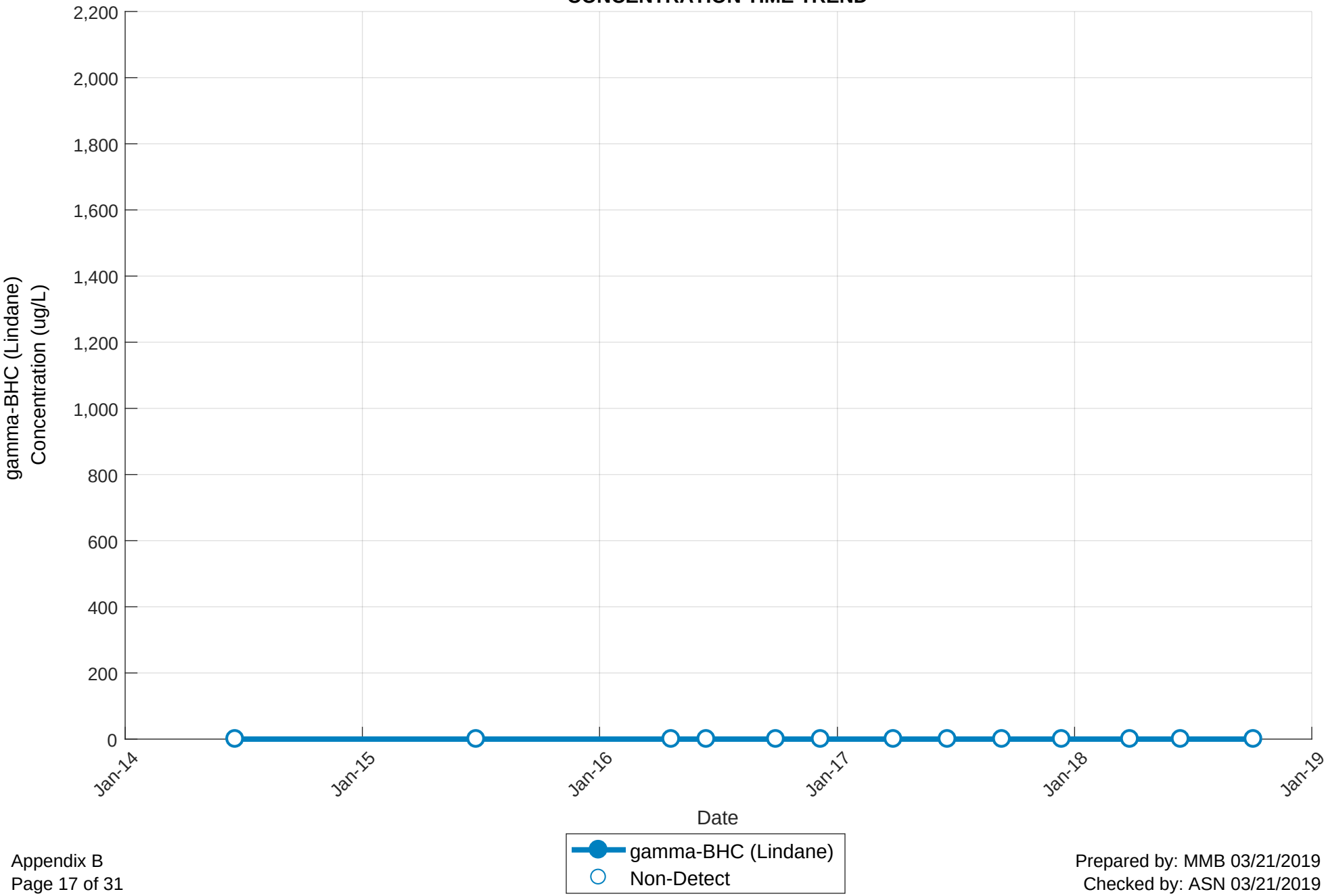
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



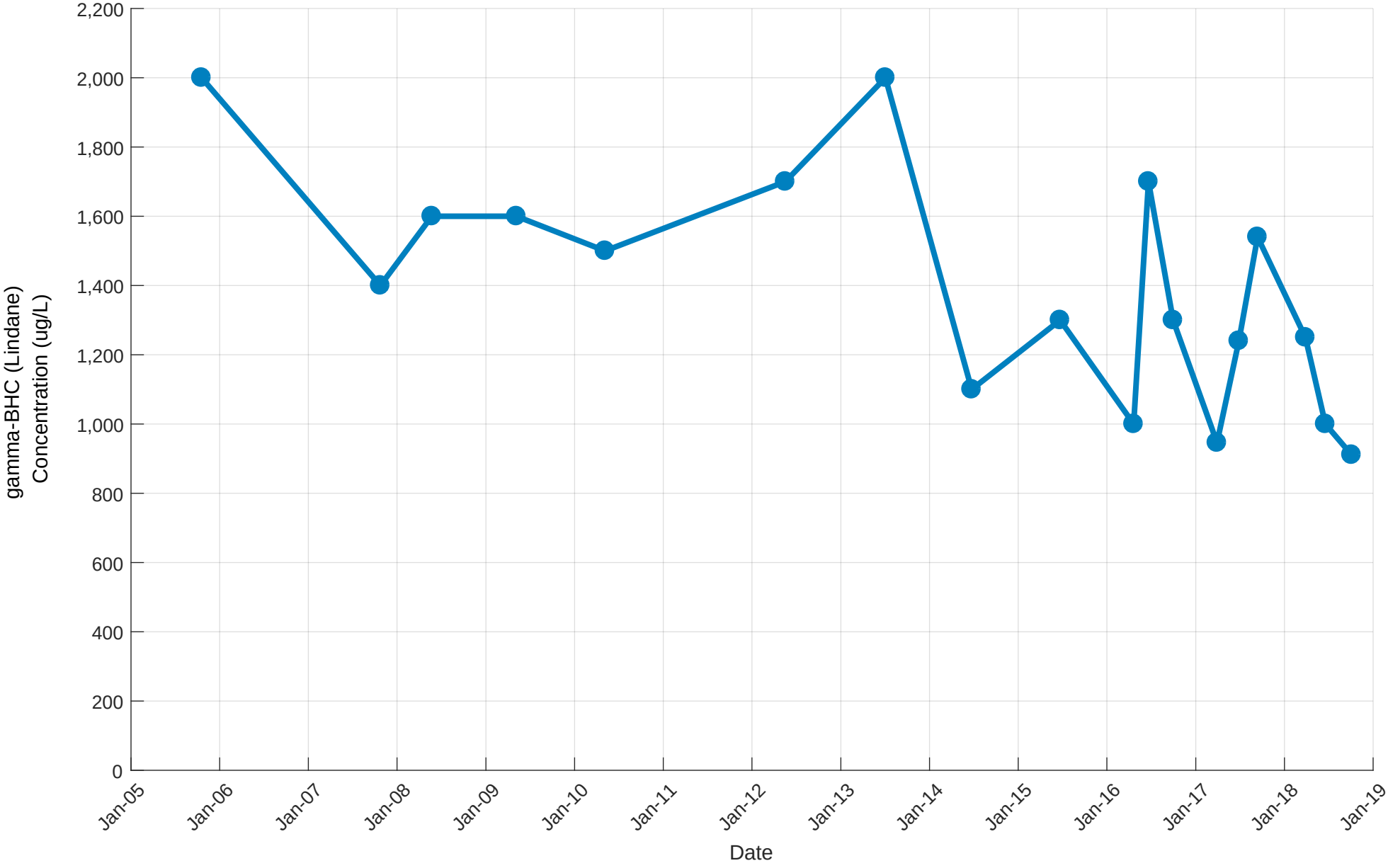
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



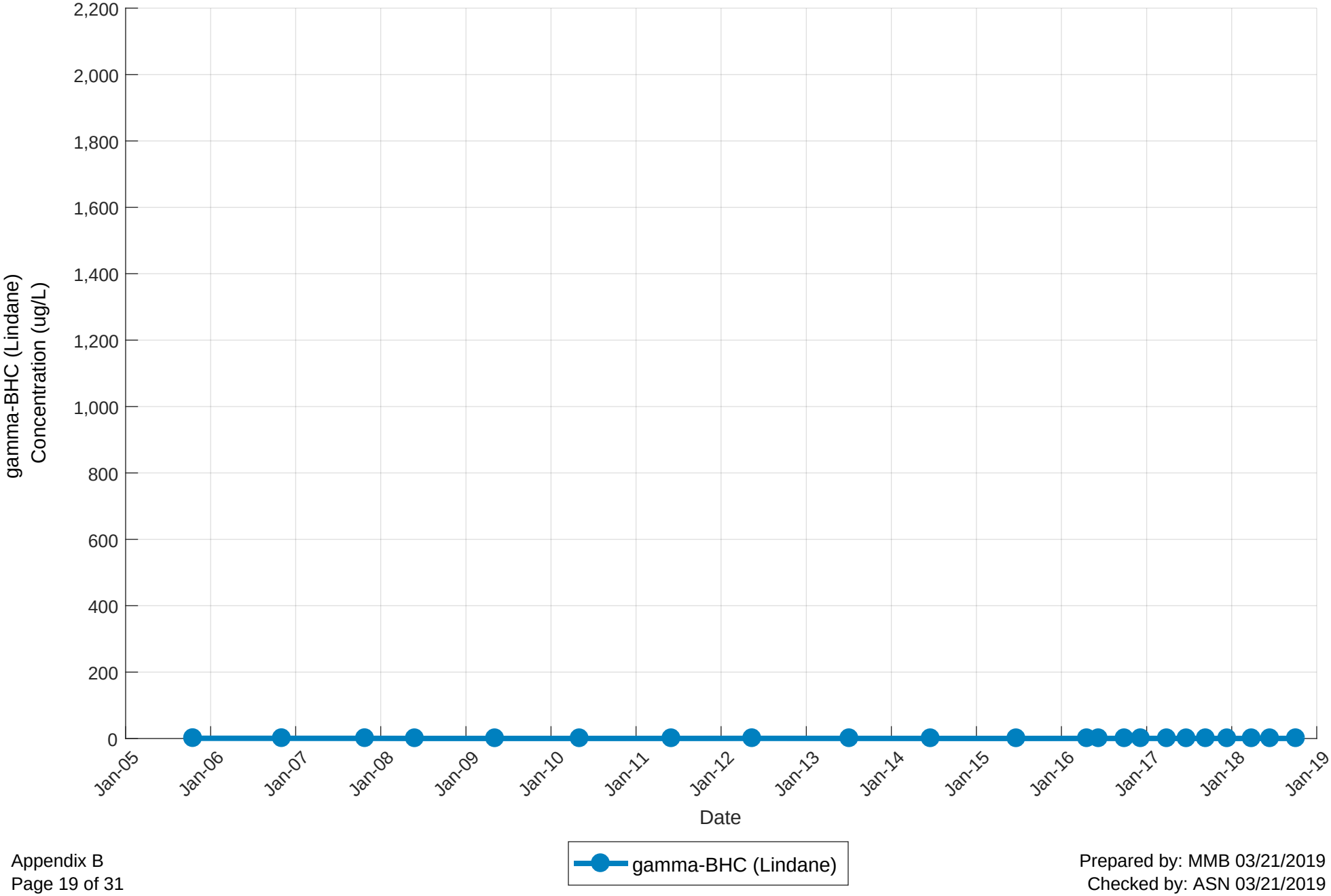
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-5B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



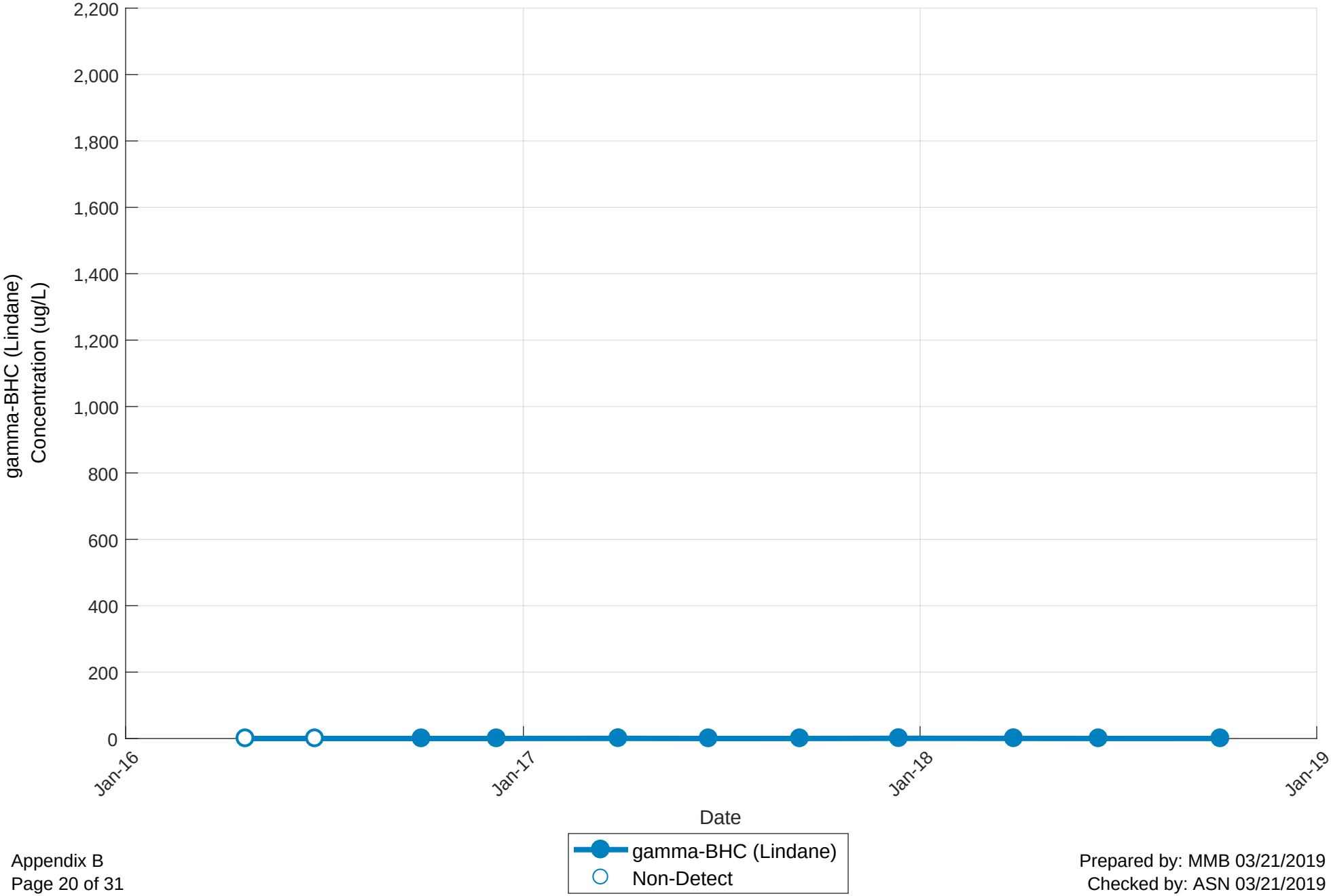
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-24B
GAMMA-BHC (LINDANE)
CONCENTRATION TIME TREND



Prepared by: MMB 03/21/2019
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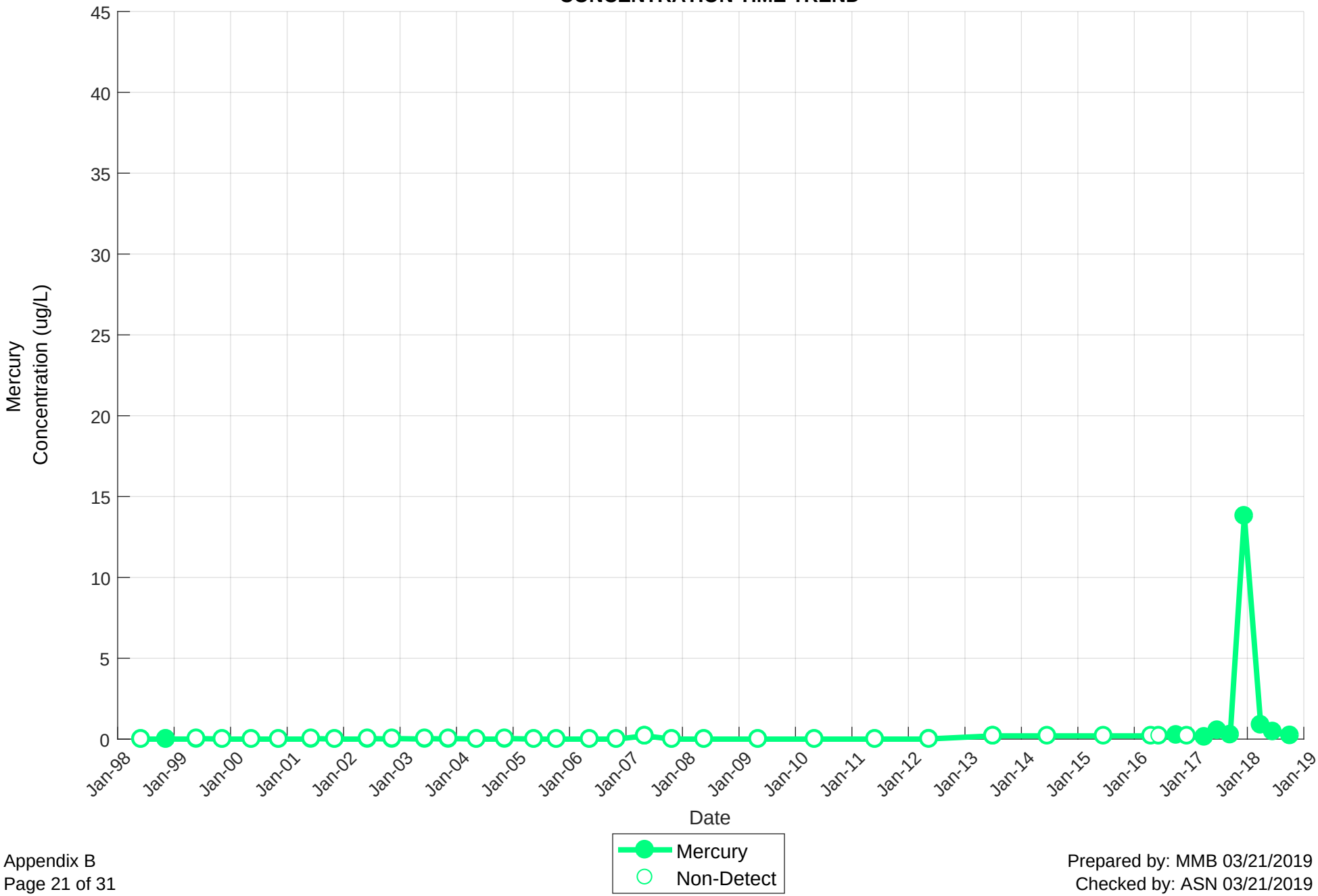
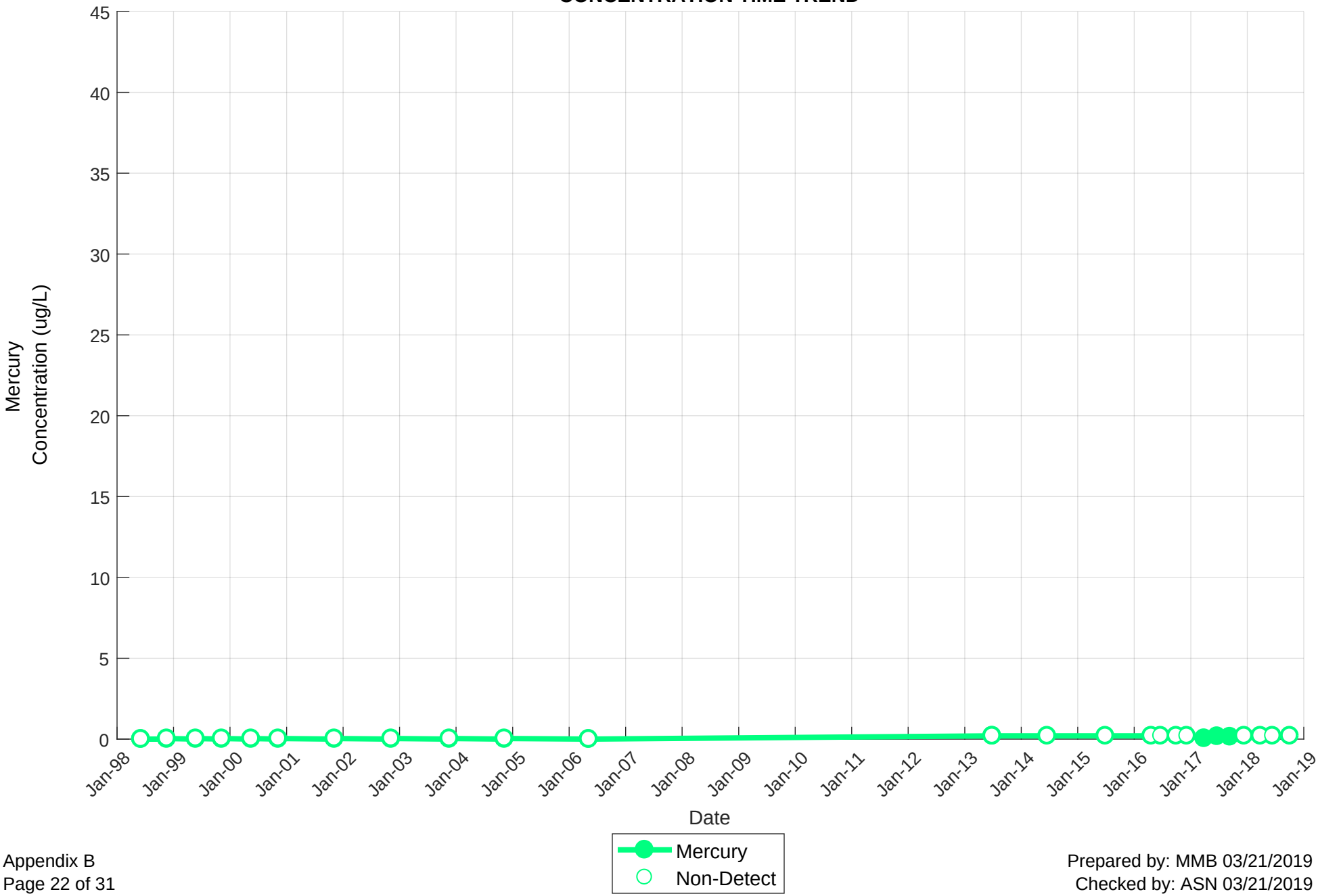
OBA-2B
MERCURY
CONCENTRATION TIME TREND



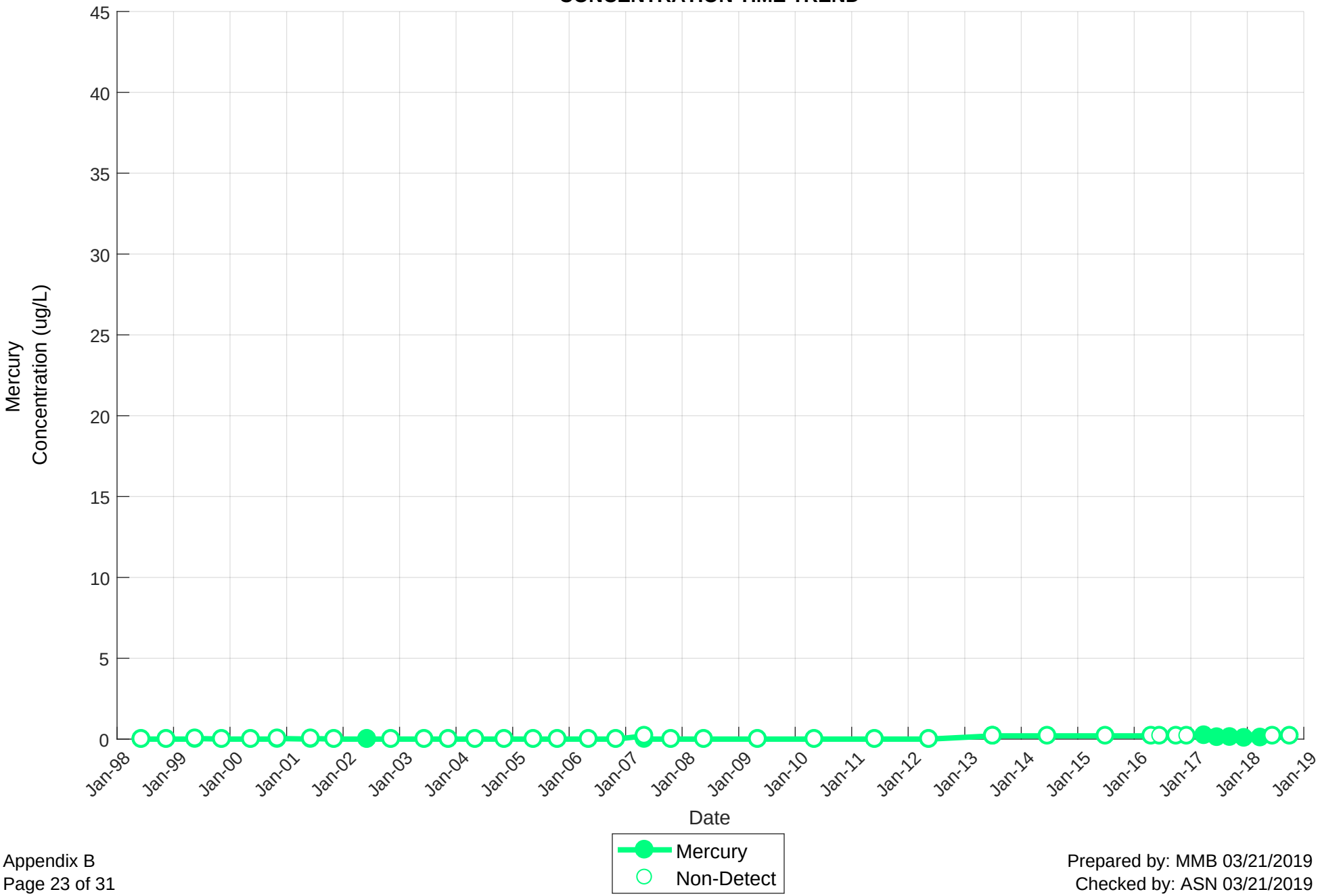
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-4B
MERCURY
CONCENTRATION TIME TREND



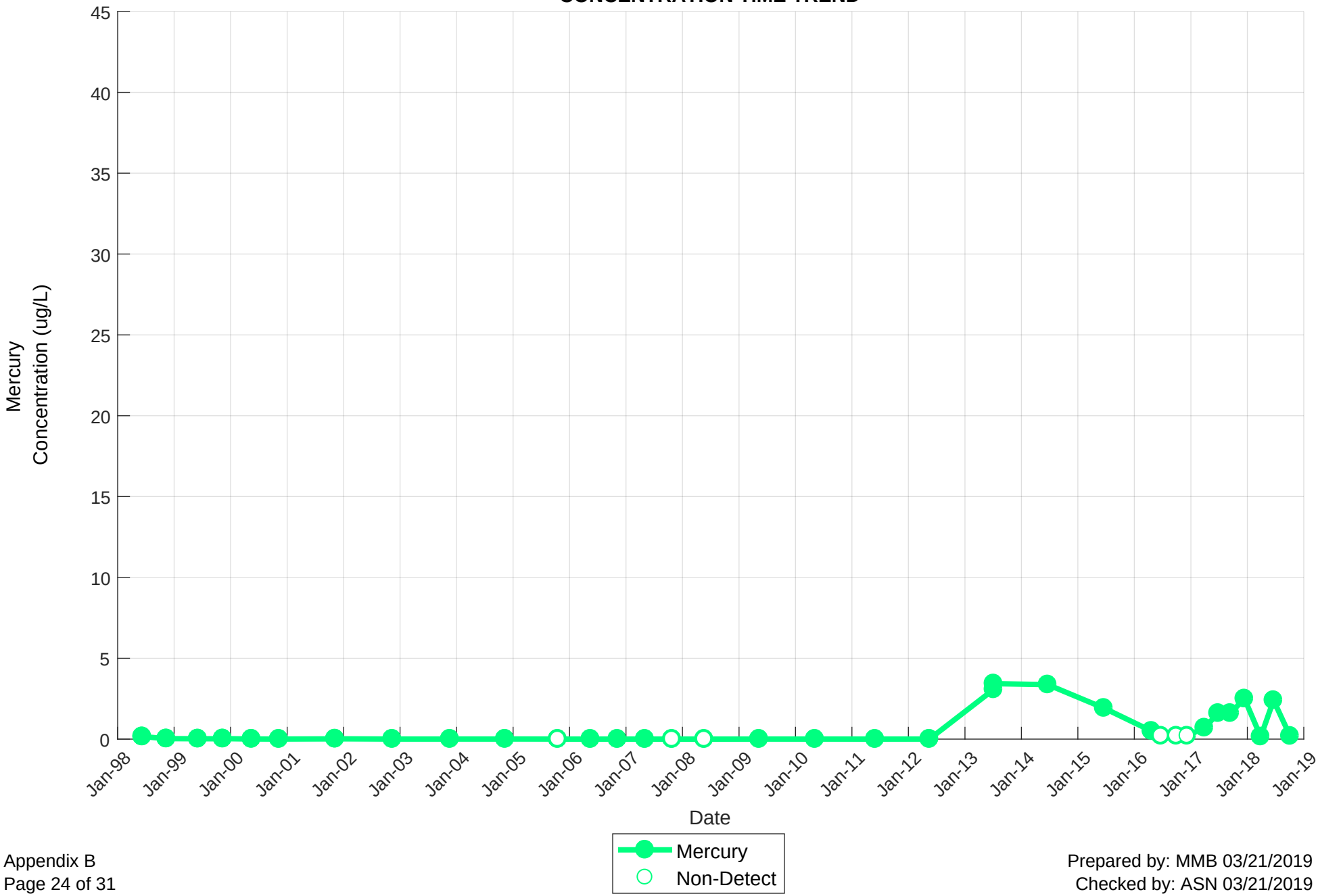
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-5B
MERCURY
CONCENTRATION TIME TREND



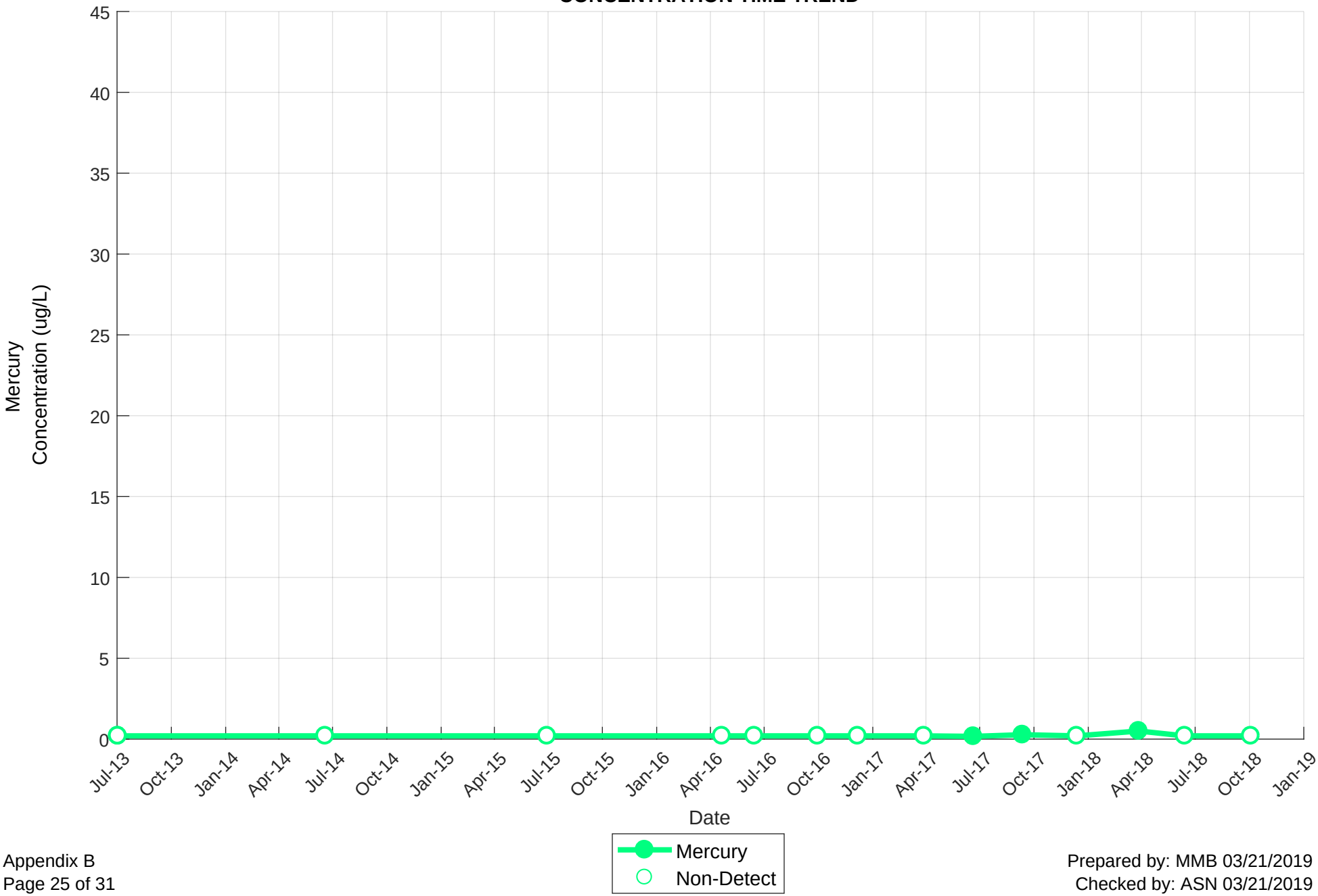
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-6B
MERCURY
CONCENTRATION TIME TREND



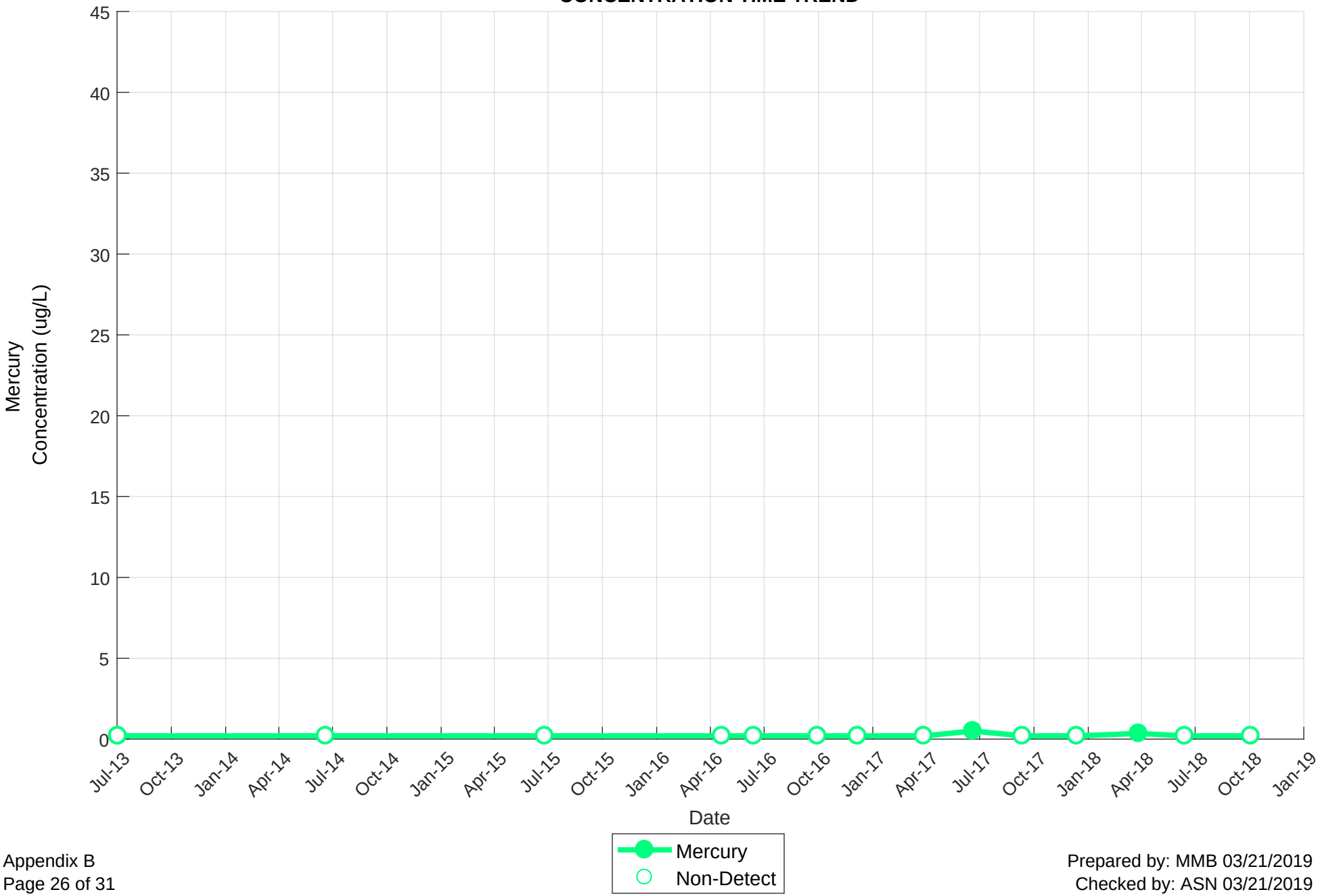
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-24B
MERCURY
CONCENTRATION TIME TREND



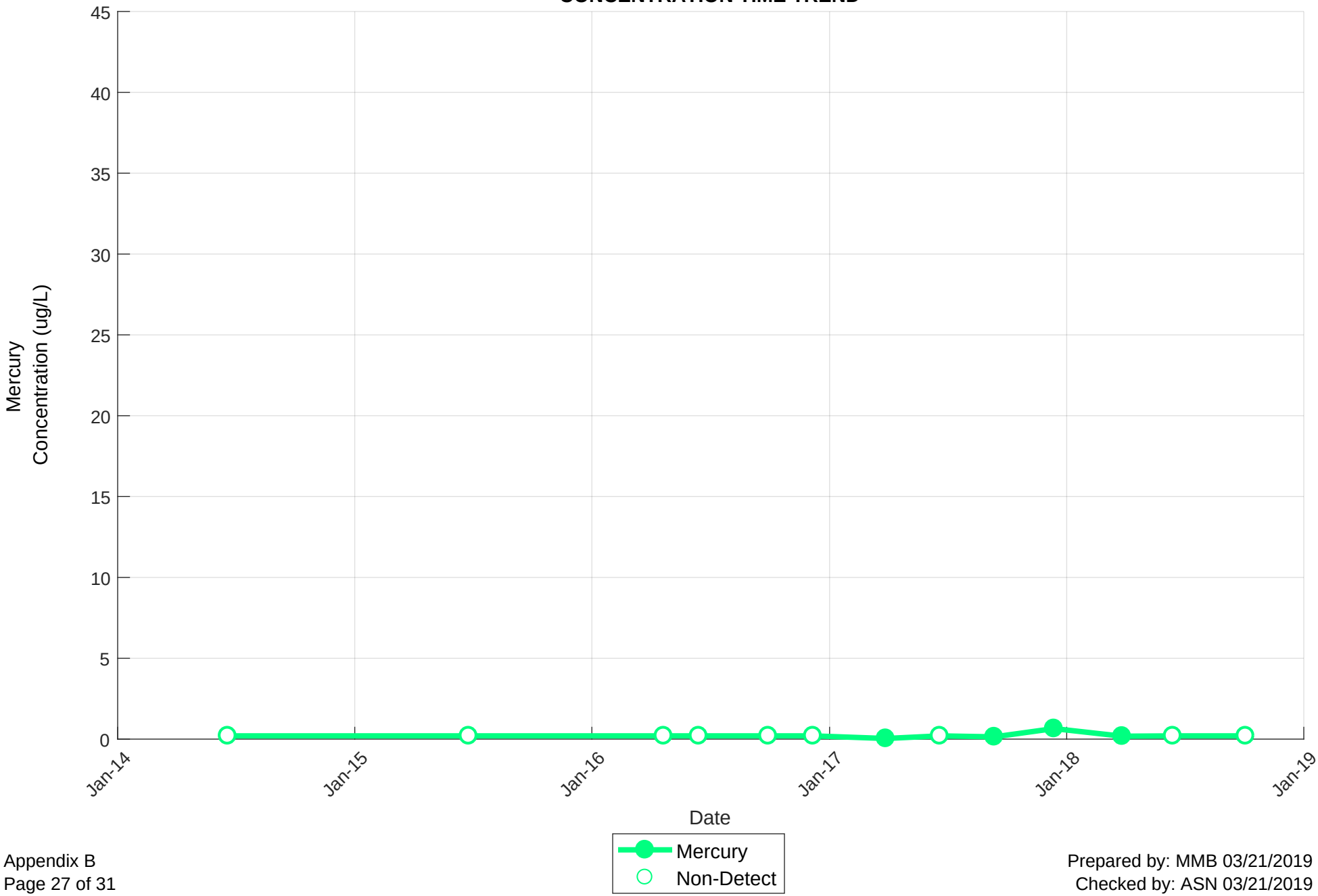
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-25B
MERCURY
CONCENTRATION TIME TREND



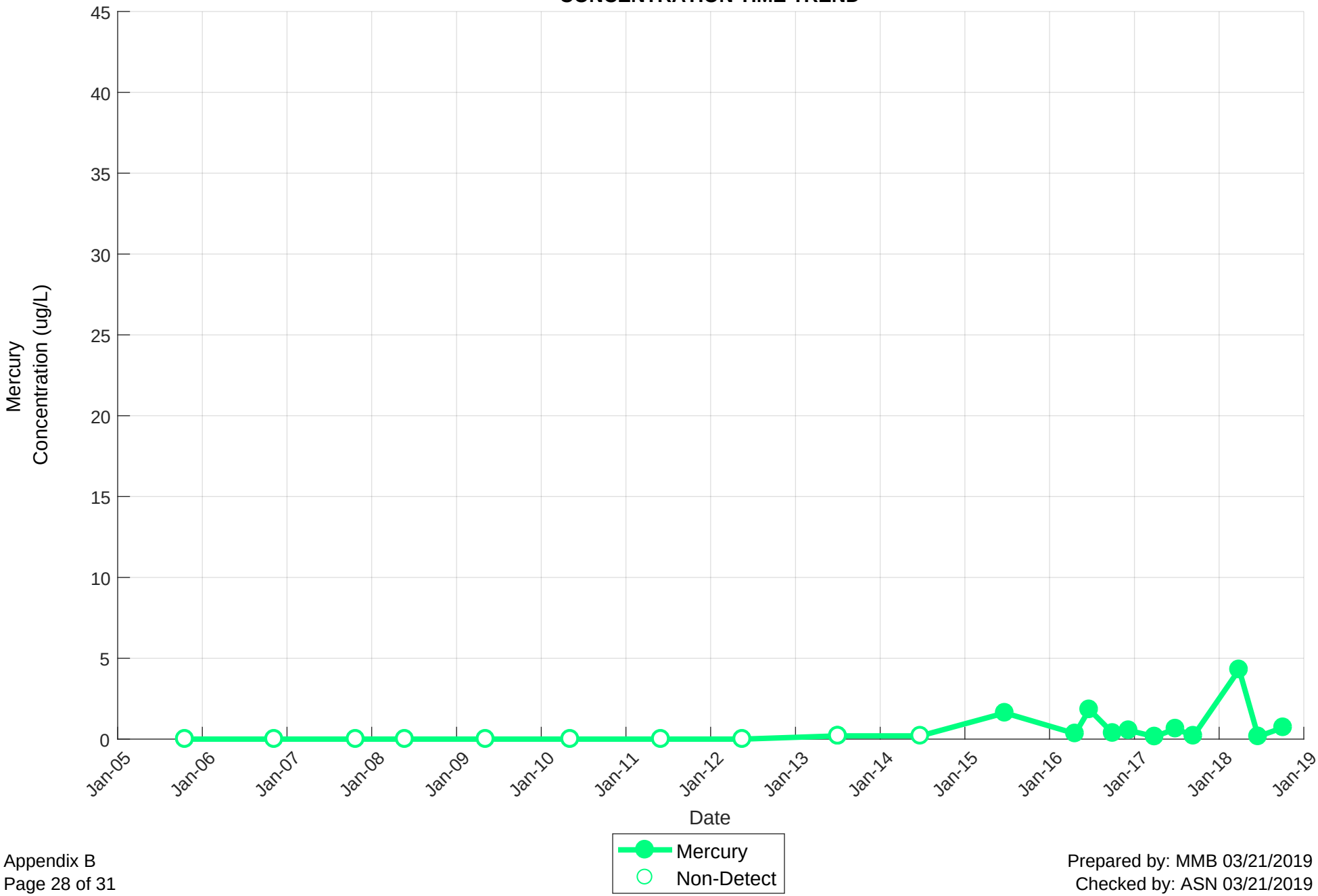
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

OBA-26B
MERCURY
CONCENTRATION TIME TREND



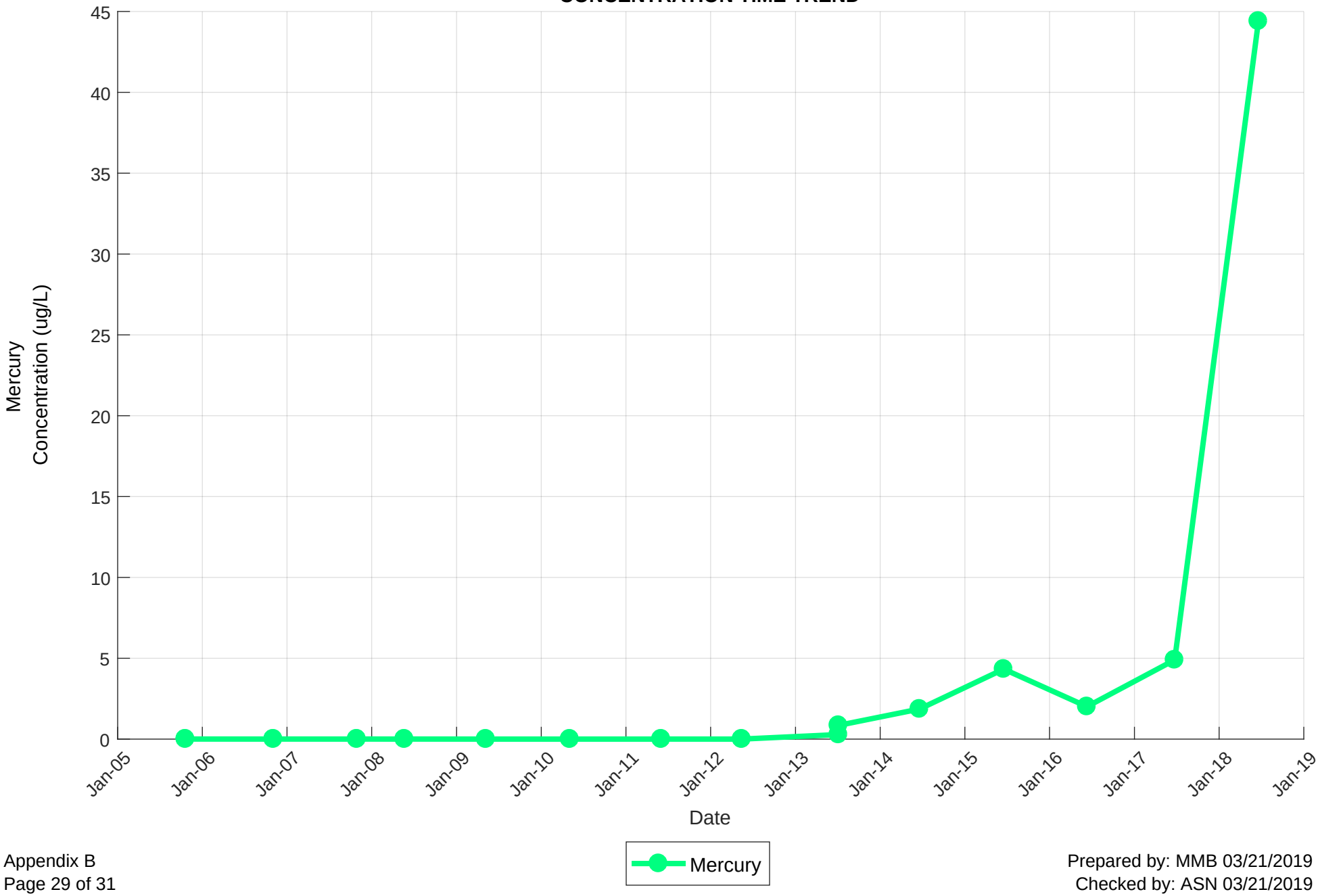
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-5B
MERCURY
CONCENTRATION TIME TREND



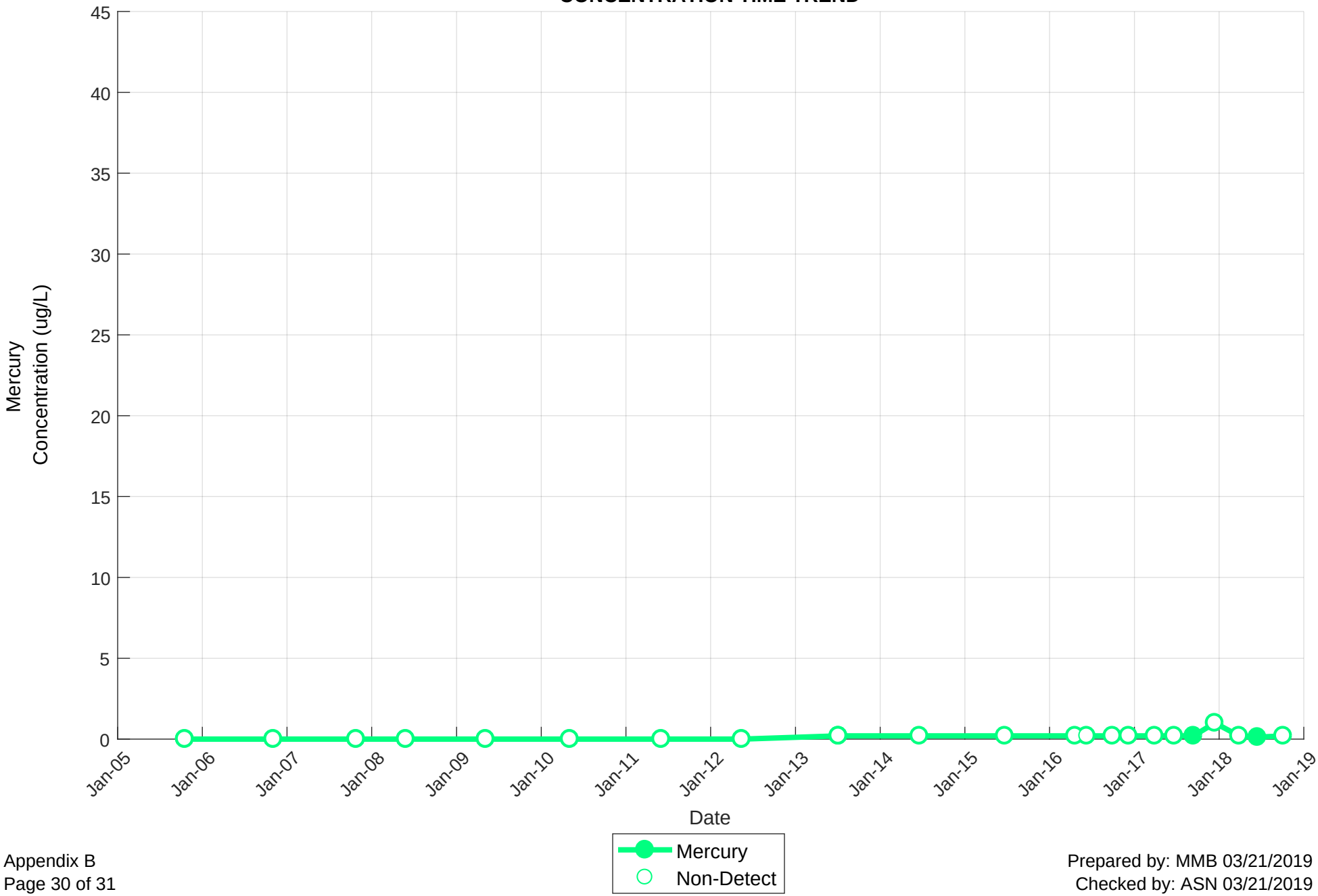
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-15B
MERCURY
CONCENTRATION TIME TREND



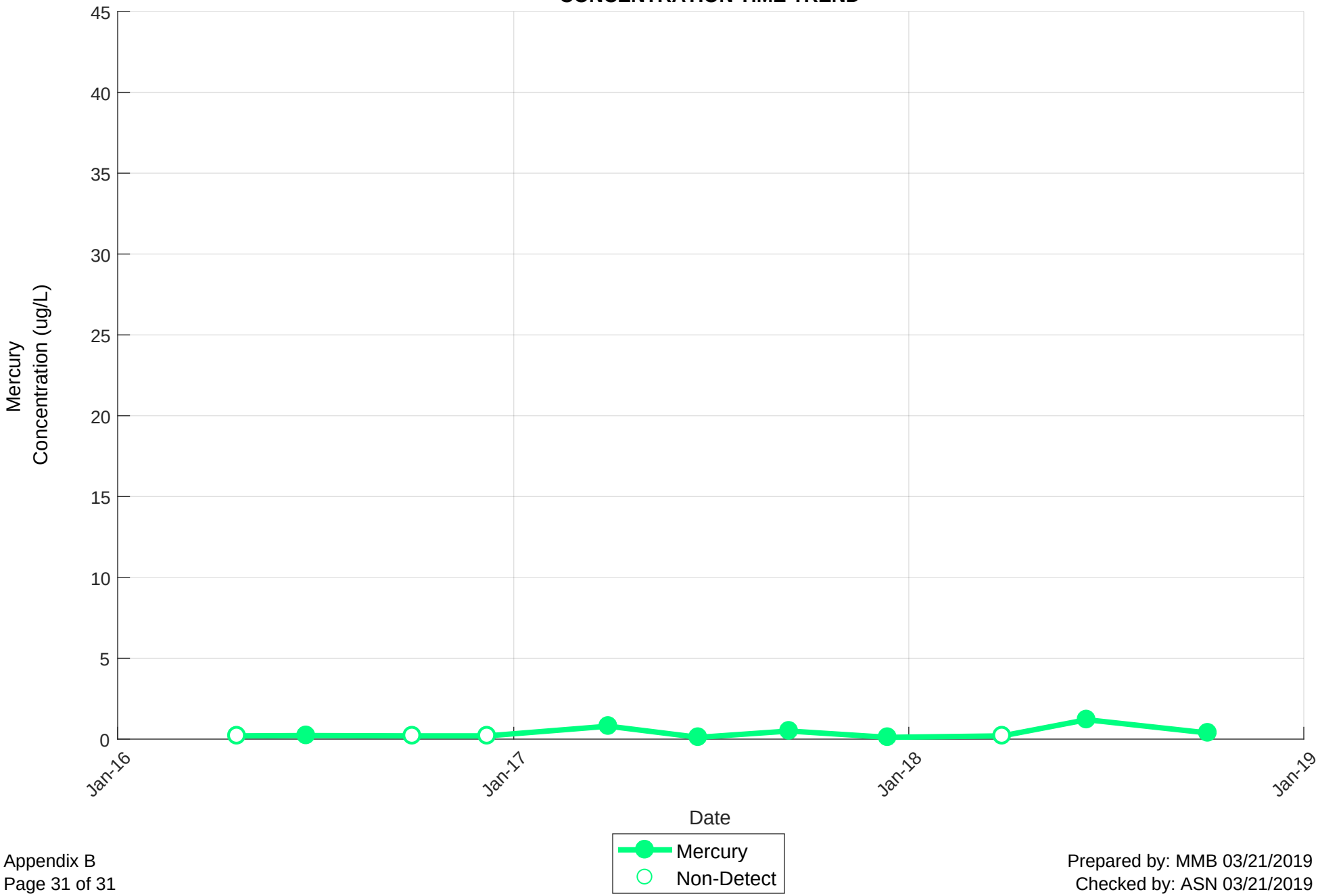
Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-20B
MERCURY
CONCENTRATION TIME TREND



Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019

PN-24B
MERCURY
CONCENTRATION TIME TREND



Prepared by: MMB 03/21/2019
Checked by: ASN 03/21/2019