

Bridgeton Landfill LLC

Tuesday, September 3, 2019

Mr. Chris Nagel
Missouri Department of Natural Resources
Solid Waste Management Program
1738 East Elm Street
Jefferson City, Missouri 65101

Re: Termination of Daily Path Monitoring at Bridgeton Landfill

Dear Mr. Nagel:

Bridgeton Landfill, LLC ("Bridgeton Landfill") respectfully requests approval to terminate Daily Monitoring Path - Ambient Air Monitoring activities around the perimeter of the landfill. Daily Path Monitoring will continue until MDNR grants this termination request. The requirements and specifications for the monitoring were set forth in Order 31.b. of the Final Consent Judgment dated June 29, 2018.

31. Defendant Bridgeton Landfill, LLC shall conduct air monitoring and air sampling in place of the Department's prior air monitoring and air sampling as follows: b. Daily Monitoring Path: Defendant Bridgeton Landfill, LLC will assume responsibility for daily air monitoring consistent with the Odor Management Plan, incorporated into this Final Consent Judgment as Exhibit F. Bridgeton will conduct daily monitoring for odors, hydrogen sulfide, and benzene at pre-determined locations on a specified path around the perimeter of the landfill outside of the fence line, as determined by the specifications of the Odor Management Plan. The daily air monitoring will be terminated one year after the Final Consent Judgment is entered unless the combined evidence from all sampling conducted on or around Bridgeton Landfill indicates that benzene or hydrogen sulfide were consistently present at the Site's fence-line at concentrations of potential concern for public health in concentrations exceeding the response levels in the Department of Health and Senior Services' May 2013 Bridgeton Sanitary Landfill Ambient Air Response Protocol;

Bridgeton Landfill assumed the monitoring program on July 15, 2018 and has been conducting daily monitoring for one year as of July 15, 2019. Based on the data collected, there is no evidence that benzene or hydrogen sulfide were present at concentrations of potential concern for public health. As such, Bridgeton Landfill has met the requirements for termination of Daily Path Monitoring under paragraph 31 of the Final Consent Judgment. Over 9,000 separate data points were collected, analyzed and reported on a routine basis as part of this effort. The enclosed report from Stantec Consulting Services, Inc. further details and summarizes the data analyses completed to ensure benzene and hydrogen sulfide were not present at concentrations of potential concern for public health.

Thank you very much for your time, and please do not hesitate to contact me at (209) 227-9531 or efanning@republicservices.com.

Kindest regards,


Erin Fanning
Division Manager

cc: Mark Milward, Saint Louis County Department of Public Health



Stantec Consulting Services Inc.
1500 Lake Shore Drive Suite 100, Columbus OH 43204-3800

September 3, 2019
File: 182608047

Attention: Ms. Erin Fanning
Division Manager
Bridgeton Landfill
13570 Saint Charles Rock Road
Bridgeton, MO 63044
EFanning@republicservices.com

Dear Ms. Fanning,

Reference: Summary of Daily Monitoring Path - Ambient Air Monitoring Associated with the Bridgeton Landfill, 13570 St. Charles Rock Road, Bridgeton, Missouri.

Stantec Consulting Services, Inc (Stantec) has prepared this summary report describing the results of the ambient air monitoring performed by Bridgeton Landfill, LLC (Bridgeton Landfill) associated with the Daily Monitoring Path around the perimeter of Bridgeton Landfill. The requirements and specifications for the monitoring were set forth in Order 31.b. of the Final Consent Judgment - June 29, 2018 (referred to as the Order).

31. Defendant Bridgeton Landfill, LLC shall conduct air monitoring and air sampling in place of the Department's prior air monitoring and air sampling as follows: b. Daily Monitoring Path: Defendant Bridgeton Landfill, LLC will assume responsibility for daily air monitoring consistent with the Odor Management Plan, incorporated into this Final Consent Judgment as Exhibit F. Bridgeton will conduct daily monitoring for odors, hydrogen sulfide, and benzene at pre-determined locations on a specified path around the perimeter of the landfill outside of the fence line, as determined by the specifications of the Odor Management Plan. The daily air monitoring will be terminated one year after the Final Consent Judgment is entered unless the combined evidence from all sampling conducted on or around Bridgeton Landfill indicates that benzene or hydrogen sulfide were consistently present at the Site's fence-line at concentrations of potential concern for public health in concentrations exceeding the response levels in the Department of Health and Senior Services' May 2013 Bridgeton Sanitary Landfill Ambient Air Response Protocol;

The Missouri Department of Natural Resources (MDNR) began conducting the Daily Monitoring Path Ambient Air Monitoring program for Bridgeton Landfill on May 20, 2013. Consistent with the Order, Bridgeton Landfill assumed the monitoring program on July 15, 2018 and has been conducting daily monitoring for one year as of July 15, 2019. The Bridgeton Landfill performed the air monitoring at least twice daily and monitored for the presence of benzene, hydrogen sulfide, and odors. Daily monitoring has continued beyond July 15, 2019 and will continue until MDNR issues final approval to terminate the Daily Monitoring Path.

The data collected from the Daily Monitoring Path are evaluated throughout the week to ensure that the concentrations of benzene and hydrogen sulfide remain below Missouri Department of Health and Senior

Reference: Summary of Daily Monitoring Path - Ambient Air Monitoring Associated with the Bridgeton Landfill, 13570 St. Charles Rock Road, Bridgeton, Missouri.

Services (MDHSS) response levels. The data collected from the daily monitoring are summarized in weekly reports and posted on the Bridgeton Landfill website (www.BridgetonLandfill.com). The monitoring locations have been generally consistent with historical monitoring locations utilized by MDNR, although current sample locations were adopted August 5, 2018 for consistency with the Odor Management Plan as stipulated by the Order.

Benzene

Benzene concentrations are measured using RAE Systems® UltraRAE 3000. Bridgeton Landfill initially utilized an UltraRAE 3000 that had a limit of detection (LOD) of 0.025 parts per million (ppm). The unit was used from July 15, 2018 to March 25, 2019. As of March 25, 2019, Bridgeton Landfill began using a different UltraRAE 3000 with a LOD of 0.01 ppm. The second unit is currently in use for the Daily Monitoring Path events. The LOD can be defined as the lowest quantity or concentration of substance/compound that can be reliably detected using a given analytical instrument. Both UltraRAE units deployed by Bridgeton Landfill have a LOD that is lower than the MDHSS benzene response level (benzene concentration ≥ 0.05 ppm); therefore, any concentration of benzene above the response level would be detected with either unit.

Benzene was detected in only one (1) sample out of a total of 9,653 total samples during the twelve (12) months of monitoring required by the Order. The detected concentration was 0.025 ppm, which was equal to the LOD of the UltraRAE and below the MDHSS benzene response level (benzene concentration ≥ 0.05 ppm). The one detection occurred on March 11, 2019 at the Vacant Gas Station along St. Charles Rock Road. At the time of this detection, winds were out of the north-northeast, placing this location upwind of the Bridgeton Landfill, suggesting an alternate source other than the Bridgeton Landfill. Time series graphs of benzene concentrations for each location along the monitoring path are presented in Attachment A.

Hydrogen Sulfide

Hydrogen sulfide concentrations in air are measured using a Jerome® J605 Hydrogen Sulfide Analyzer (Jerome meter) that has a LOD of 0.003 ppm, well below the MDHSS hydrogen sulfide response level. Over the course of the year hydrogen sulfide was detected in 2,909 samples out of a total of 9,653 samples. The low-level of detected concentrations ranged from 0.003 to 0.009 ppm. All detected concentrations were below the MDHSS hydrogen sulfide response level (hydrogen sulfide concentration ≥ 0.07 ppm). Time series graphs of hydrogen sulfide concentrations for each location along the monitoring path are presented in Attachment A.

Hydrogen sulfide in ambient air has multiple potential regional sources. Hydrogen sulfide was not detected above laboratory analytical reporting limits in the six (6) comprehensive on-site ambient air investigations conducted on Bridgeton Landfill between August 2012 to January 2019, suggesting that detections of hydrogen sulfide in ambient air may be associated with other potential regional sources. A reporting limit is the smallest concentration of a chemical that can be reliably reported by a specific laboratory at a given level of confidence. All reporting limits for samples collected on the Bridgeton Landfill were below the MDHSS hydrogen sulfide response level (hydrogen sulfide concentration ≥ 0.07 ppm).

Reference: Summary of Daily Monitoring Path - Ambient Air Monitoring Associated with the Bridgeton Landfill, 13570 St. Charles Rock Road, Bridgeton, Missouri.

Conclusions

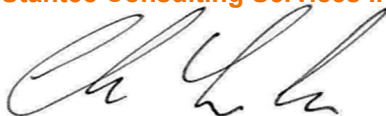
The large air monitoring database collected between July 15, 2018 – July 15, 2019 generated 9,653 discrete monitoring events from multiple sampling locations along the Daily Monitoring Path. The results described above support the following conclusions:

- All monitoring results for benzene and hydrogen sulfide were below the response levels detailed in the MDHSS *May 2013 Bridgeton Sanitary Landfill Ambient Air Response Protocol*. Potential exposures to concentrations below the MDHSS response levels are not expected to pose a health threat to the general population, including sensitive individuals such as children and asthmatics.
- Benzene was detected in only one (1) of 9,653 samples. The detection (0.025 ppm) was at the LOD of the UltraRAE 3000 and below the MDHSS response level (0.05 ppm).
- Hydrogen sulfide has multiple regional sources. The low-level concentrations of hydrogen sulfide (range 0.003 – 0.009 ppm) detected in ambient air likely reflect regional and other local sources of hydrogen sulfide.
- Sampling results indicate that levels of benzene and hydrogen sulfide in ambient air near the perimeter of Bridgeton Landfill are not a concern for public health.

Daily air monitoring will continue until receipt of approval to terminate per MDNR. Please feel free to contact me by e-mail at chris.lalonde@stantec.com or by phone at (614) 643-4379 if you require additional information or wish to discuss.

Regards,

Stantec Consulting Services Inc.



Christopher La Londe

Sr. Risk Assessor - Associate

Phone: 614 643 4379

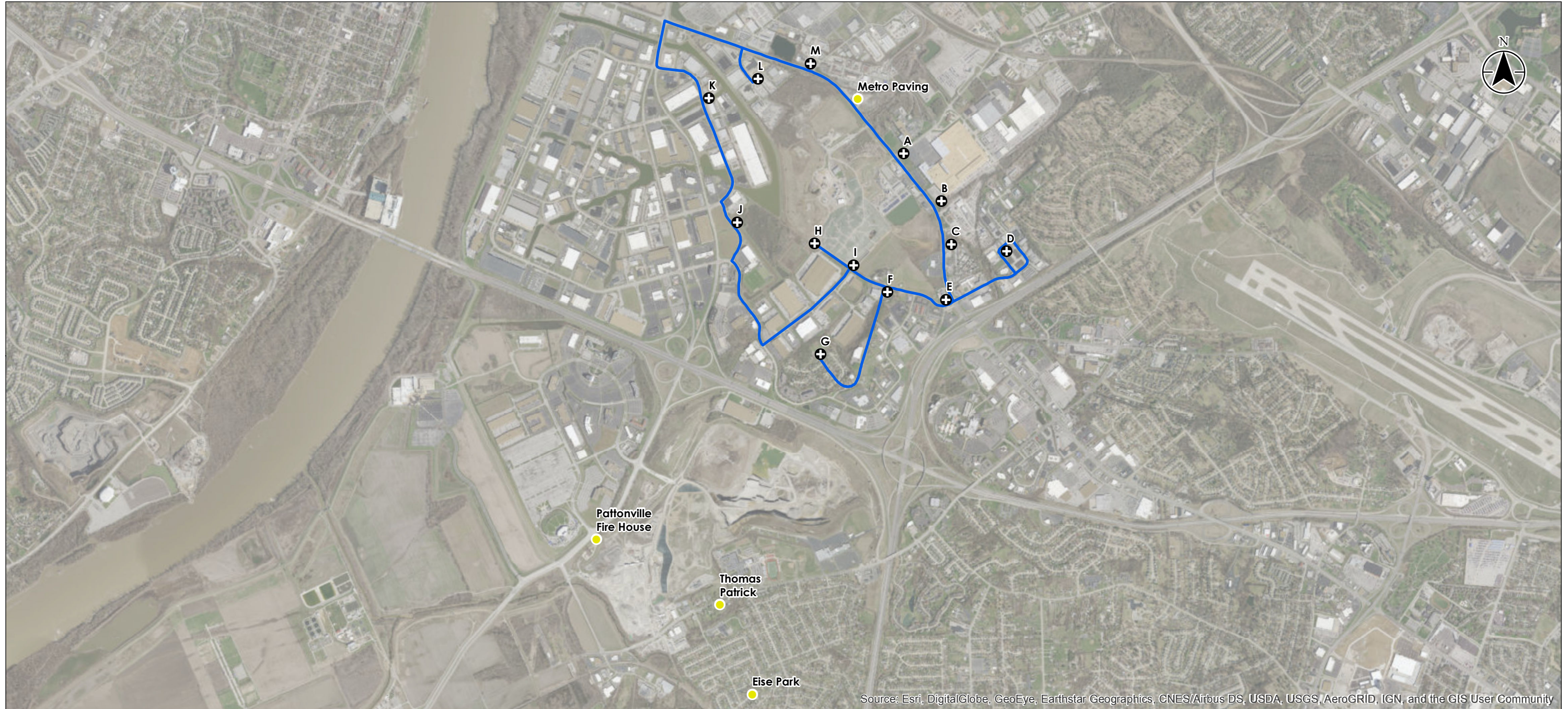
Chris.lalonde@Stantec.com

Attachment: Attachment A - Figures

- c. Ally Cunningham, Esq. Lathrop & Cage
Dana Sincox, Bridgeton Landfill
Deborah L. Gray, Ph. D., DABT, Stantec Consulting Services

ATTACHMENT A

Figures



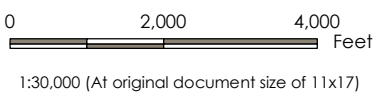
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

W:\0-GS\18268020 - Bridgeton Landfill LLC\2018_09\Figure01_Daily_Odor_SelfInspection_Route_20181001_11x17.mxd Revised: 2019-07-19 By: ckwalkowski

Legend

- Odor Monitoring Location
- Former Monitoring Location
- Route

Notes
 1. Coordinate System: North American 1983 UTM Zone 15N
 2. Prepared by Stantec for Bridgeton Landfill LLC



Prepared by CK
 Technical Review by NI
 Independent Review by DG

Client/Project
 BRIDGETON LANDFILL, LLC
 13570 ST. CHARLES ROCK ROAD
 BRIDGETON, MISSOURI 63044

Figure No.
1

Title
**DAILY MONITORING PATH
 SAMPLE LOCATIONS**

Figure 2a.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location A
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

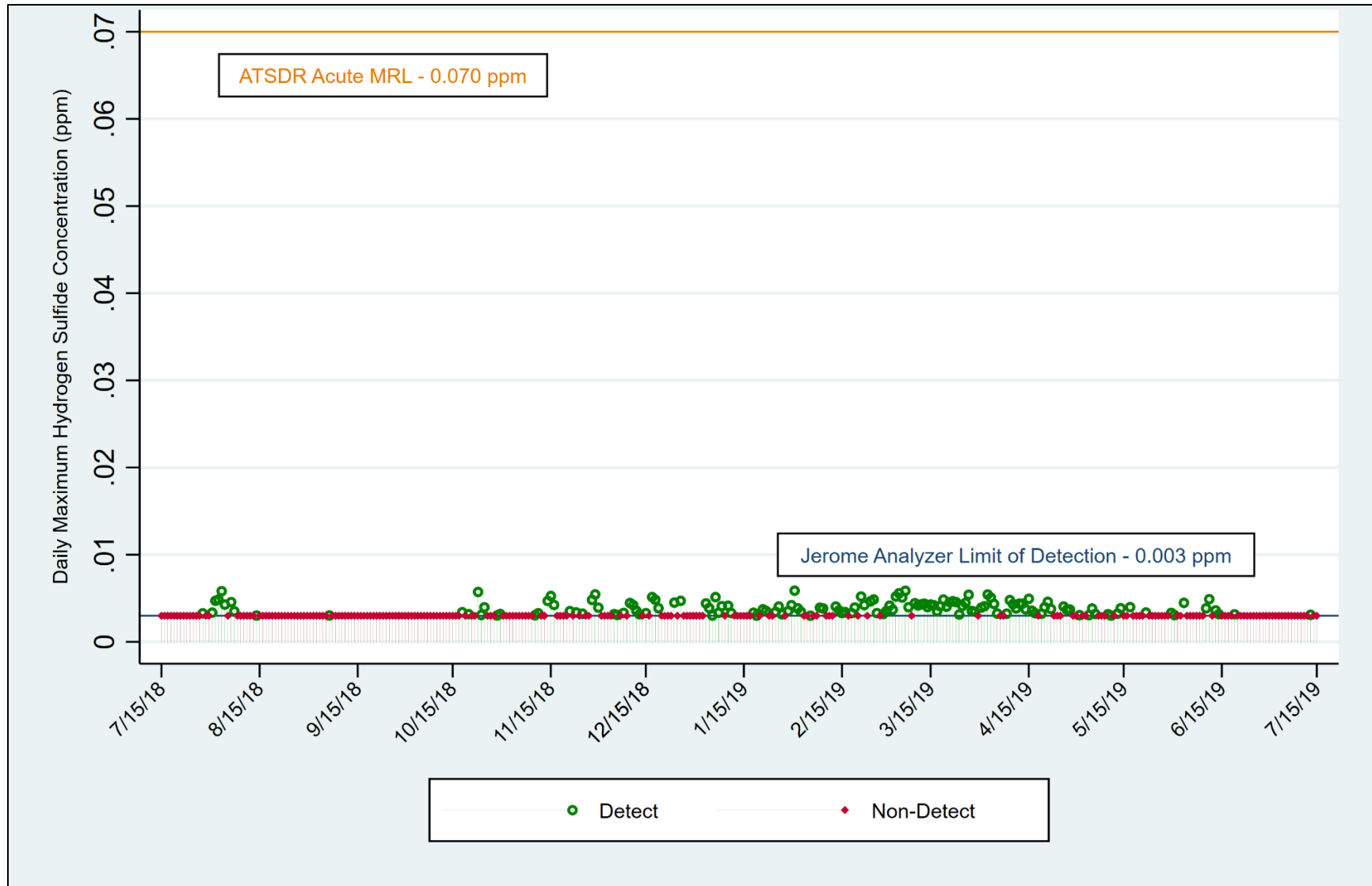


Figure 2b.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location B
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

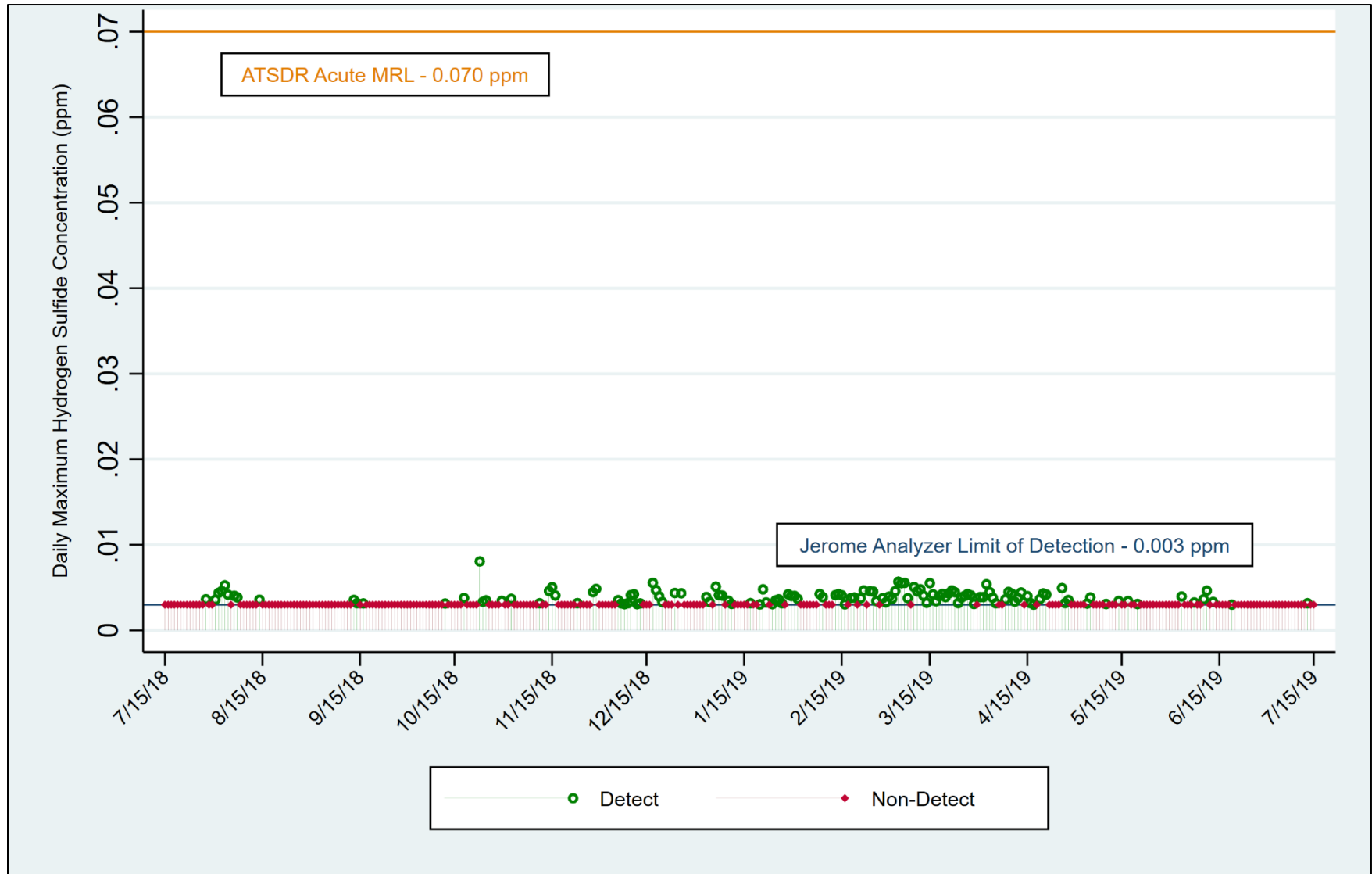


Figure 2c.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location C
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

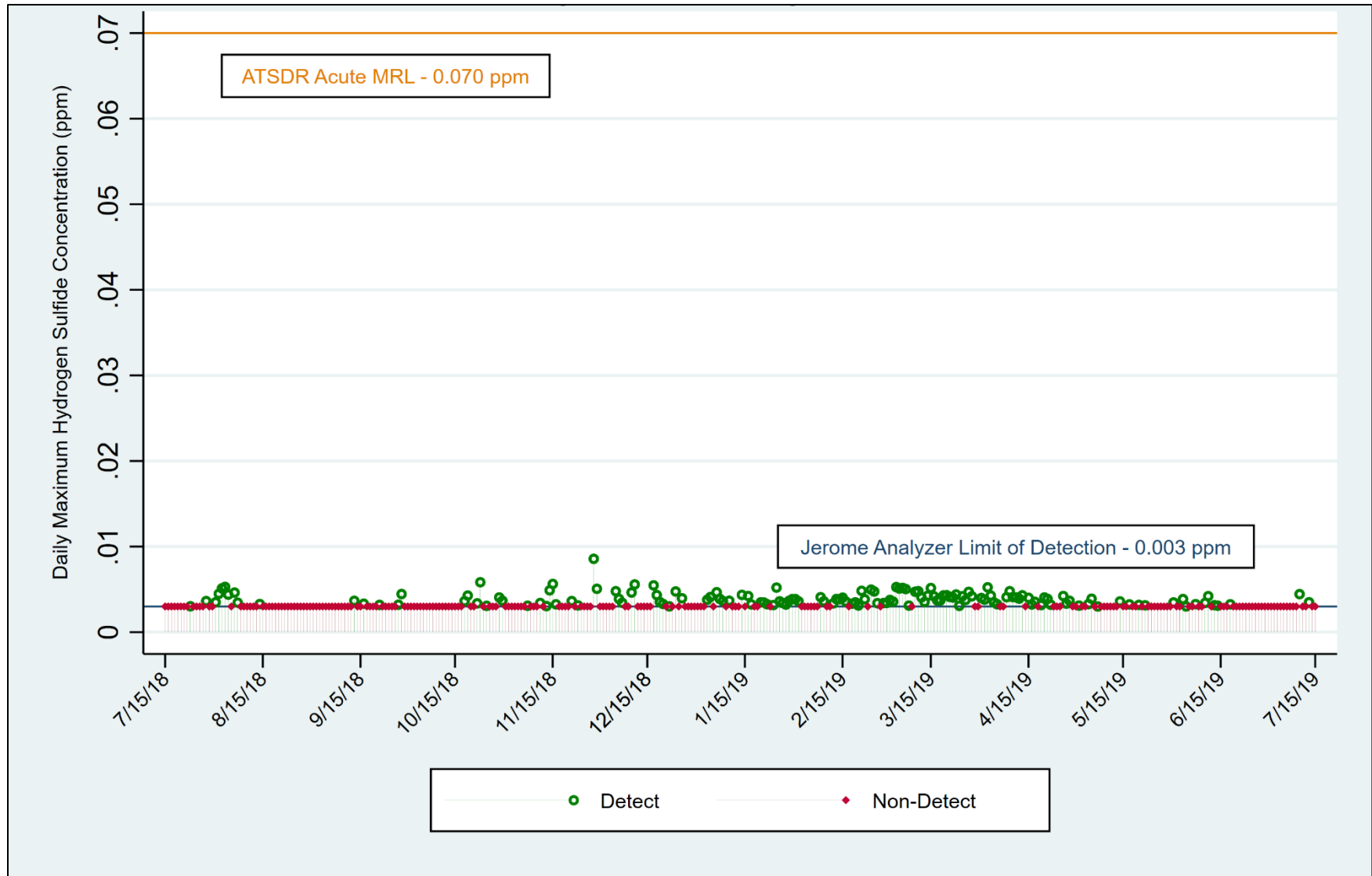


Figure 2d.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location D
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

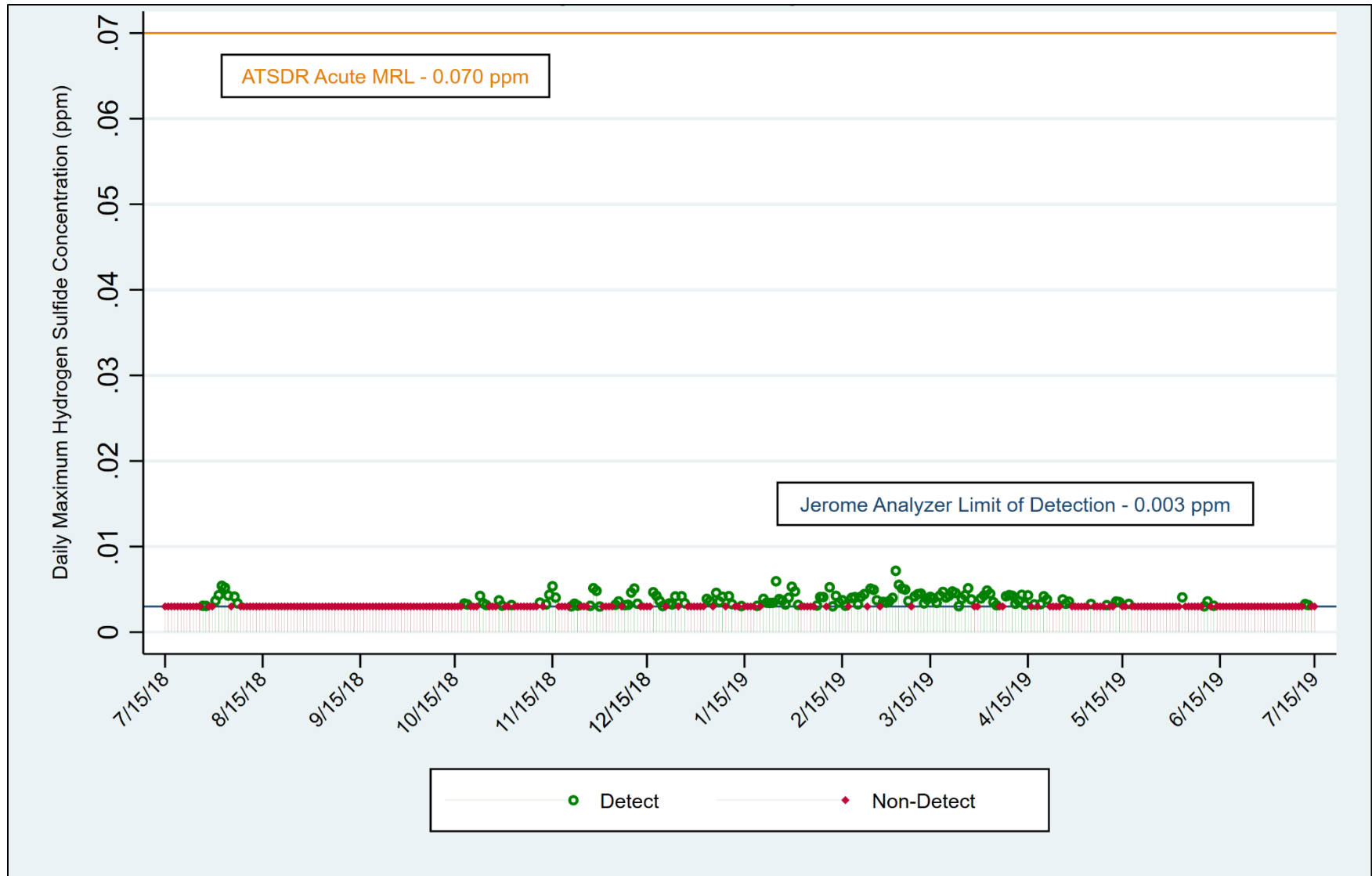


Figure 2e.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location E
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

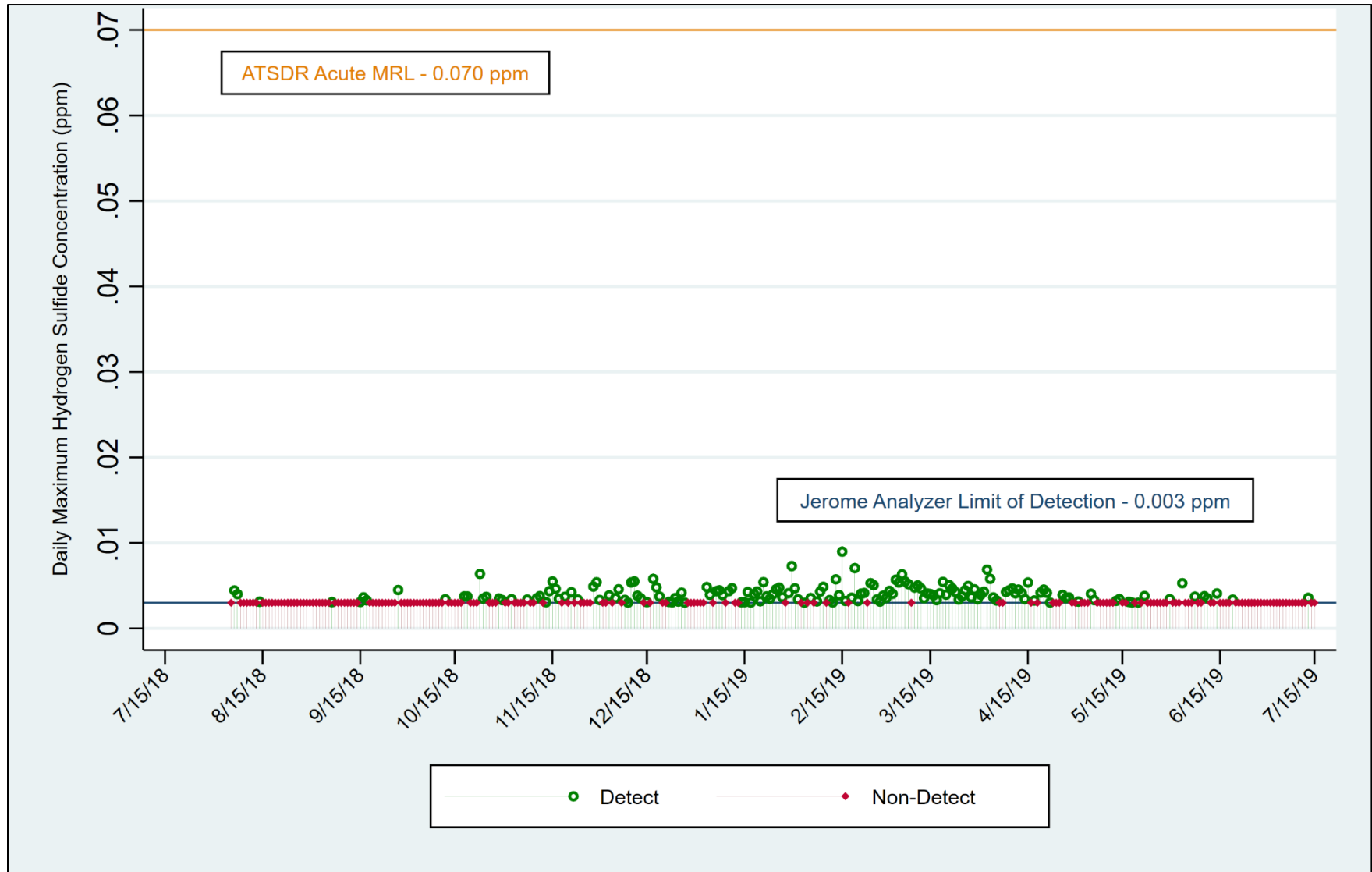


Figure 2f.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location F
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

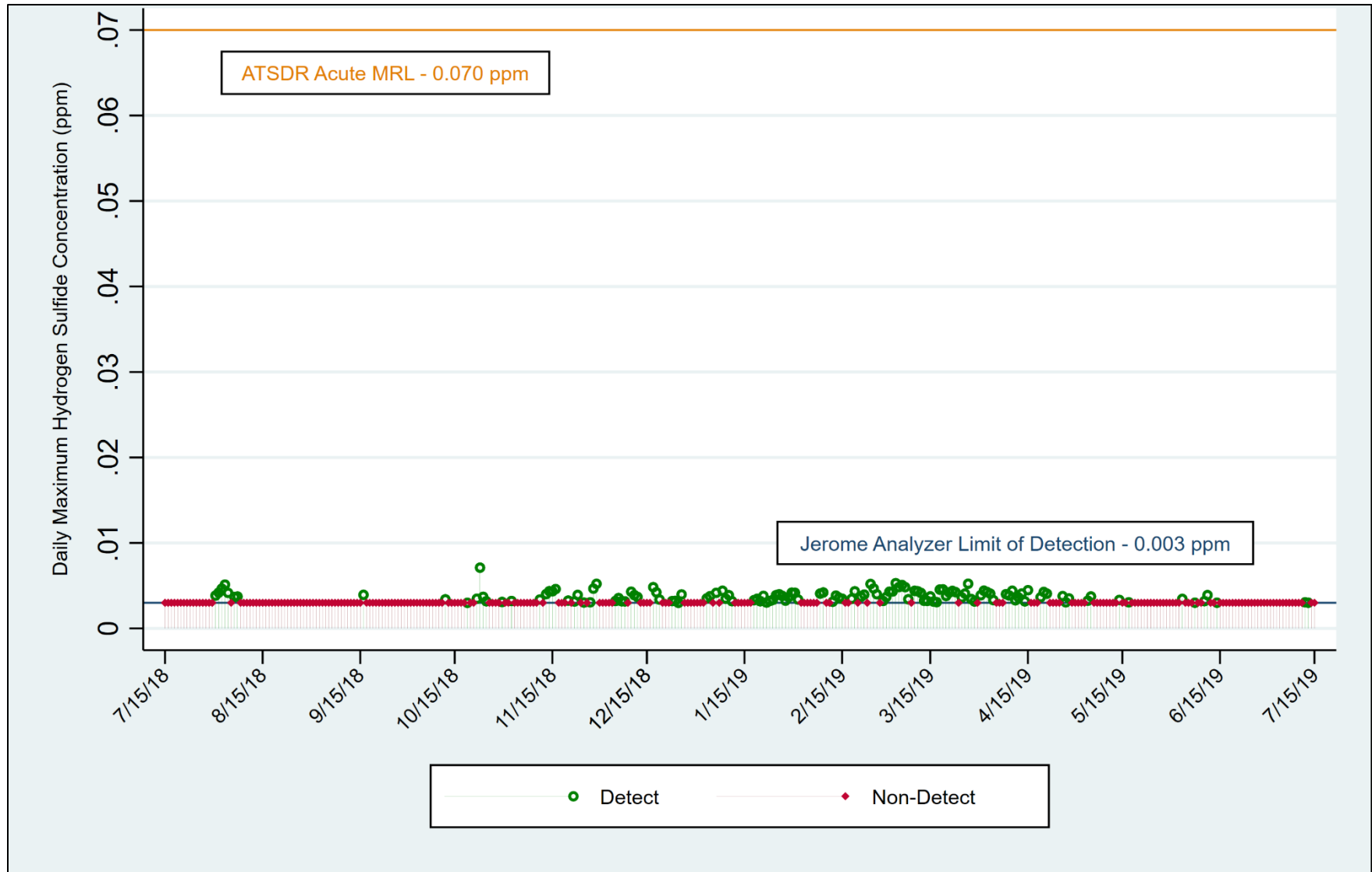


Figure 2g.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location G
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

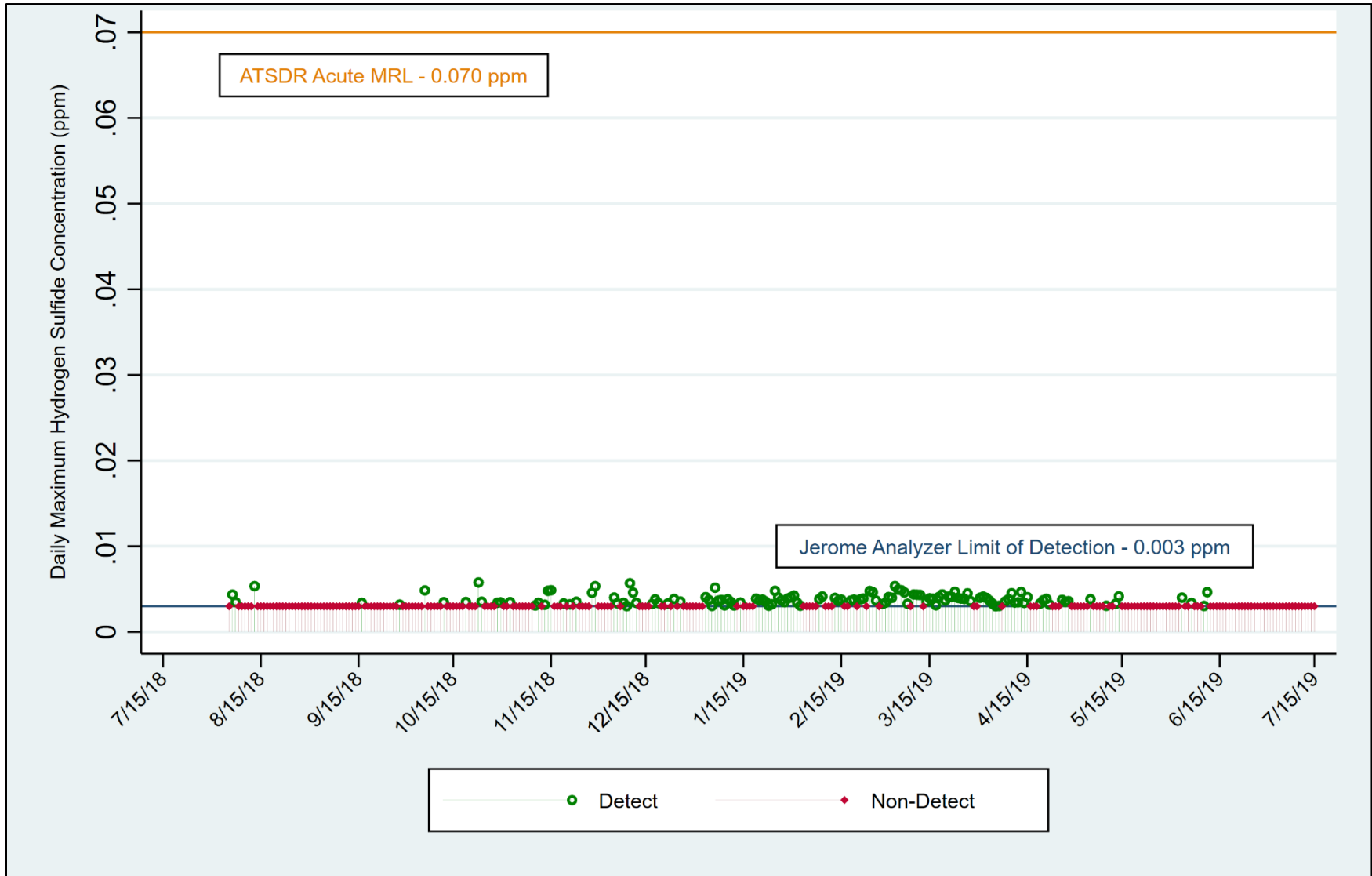


Figure 2h.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location H
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

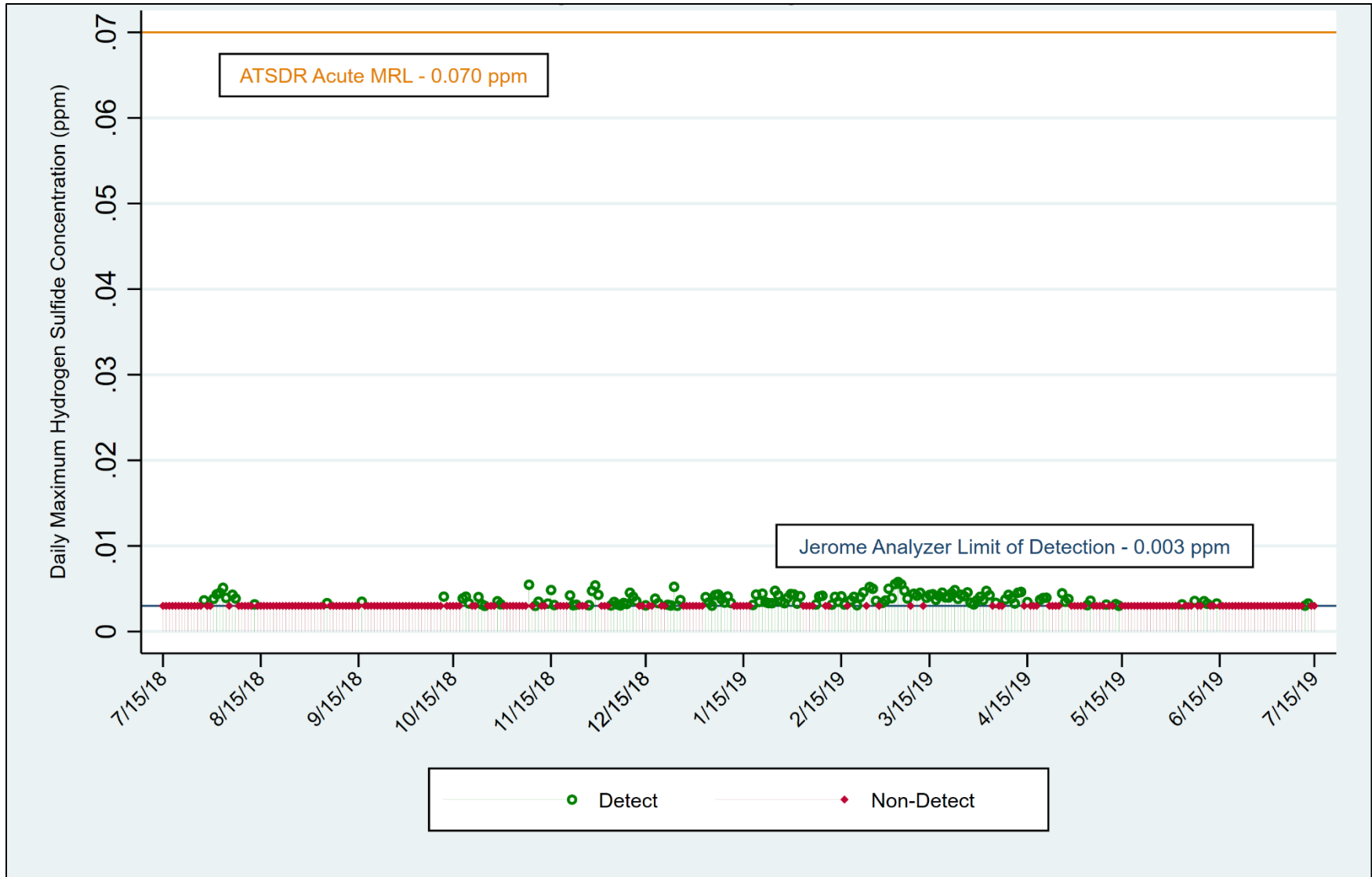


Figure 2i.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location I
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

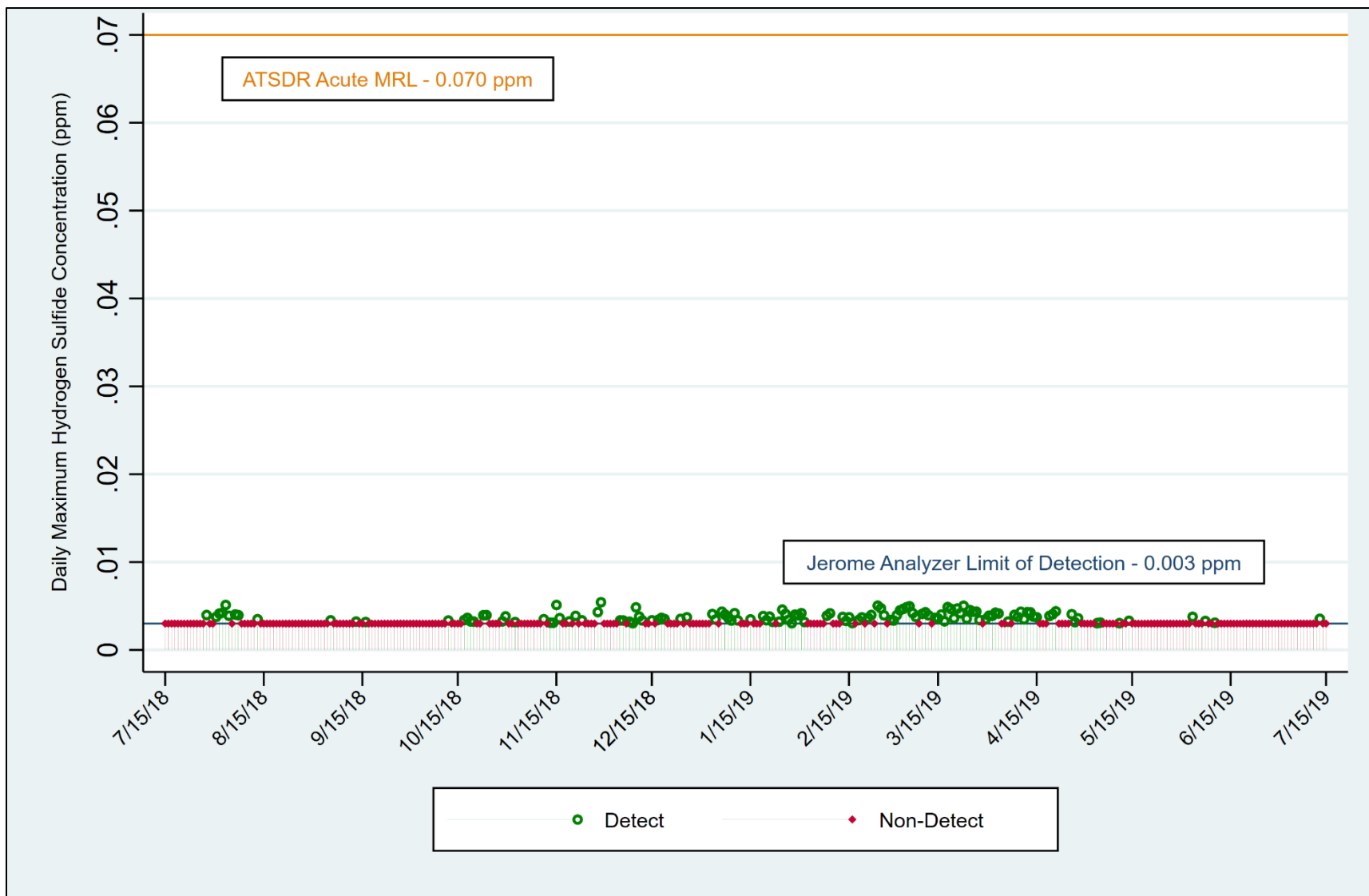


Figure 2j.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location J
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

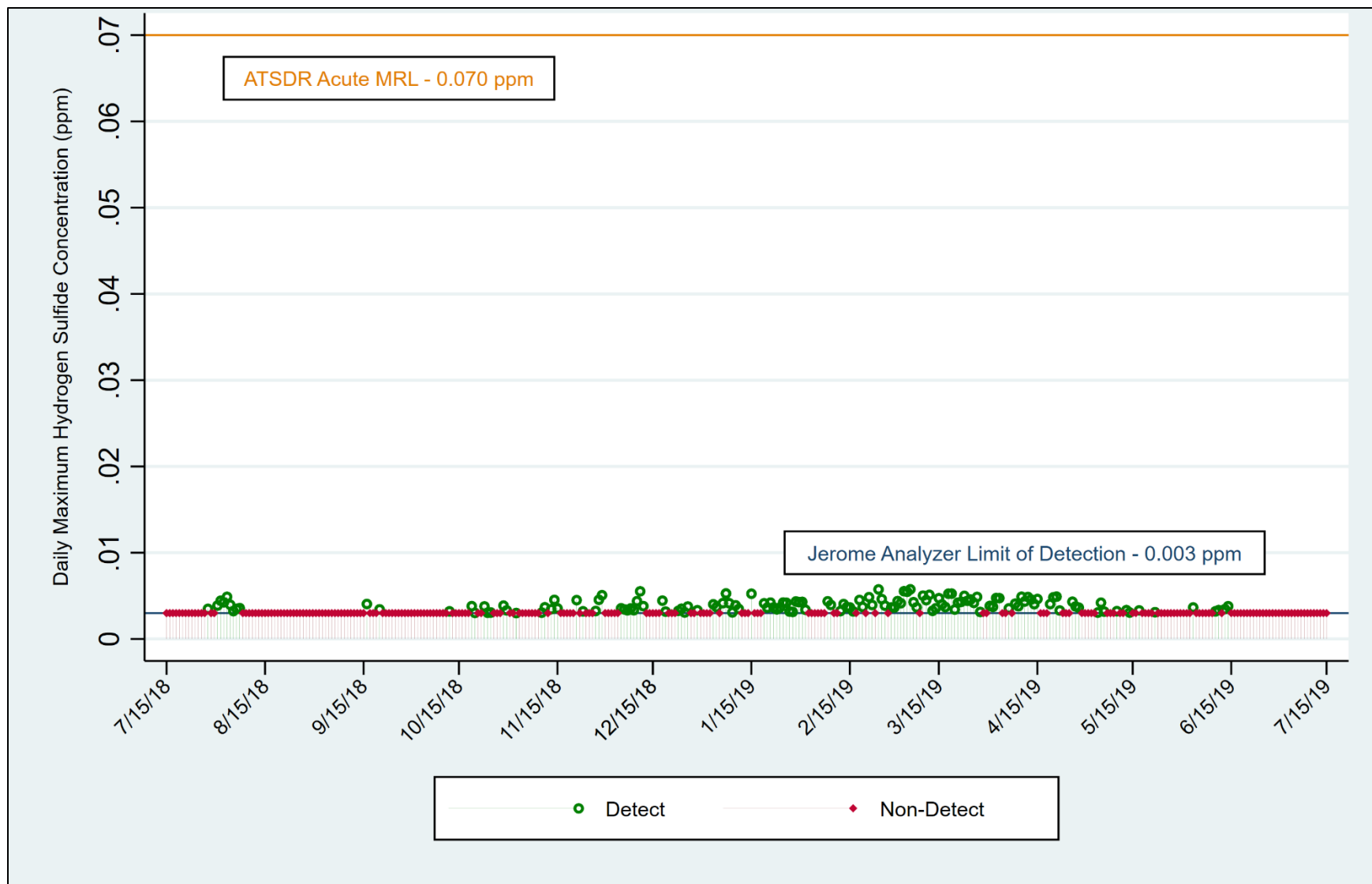


Figure 2k.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location K
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

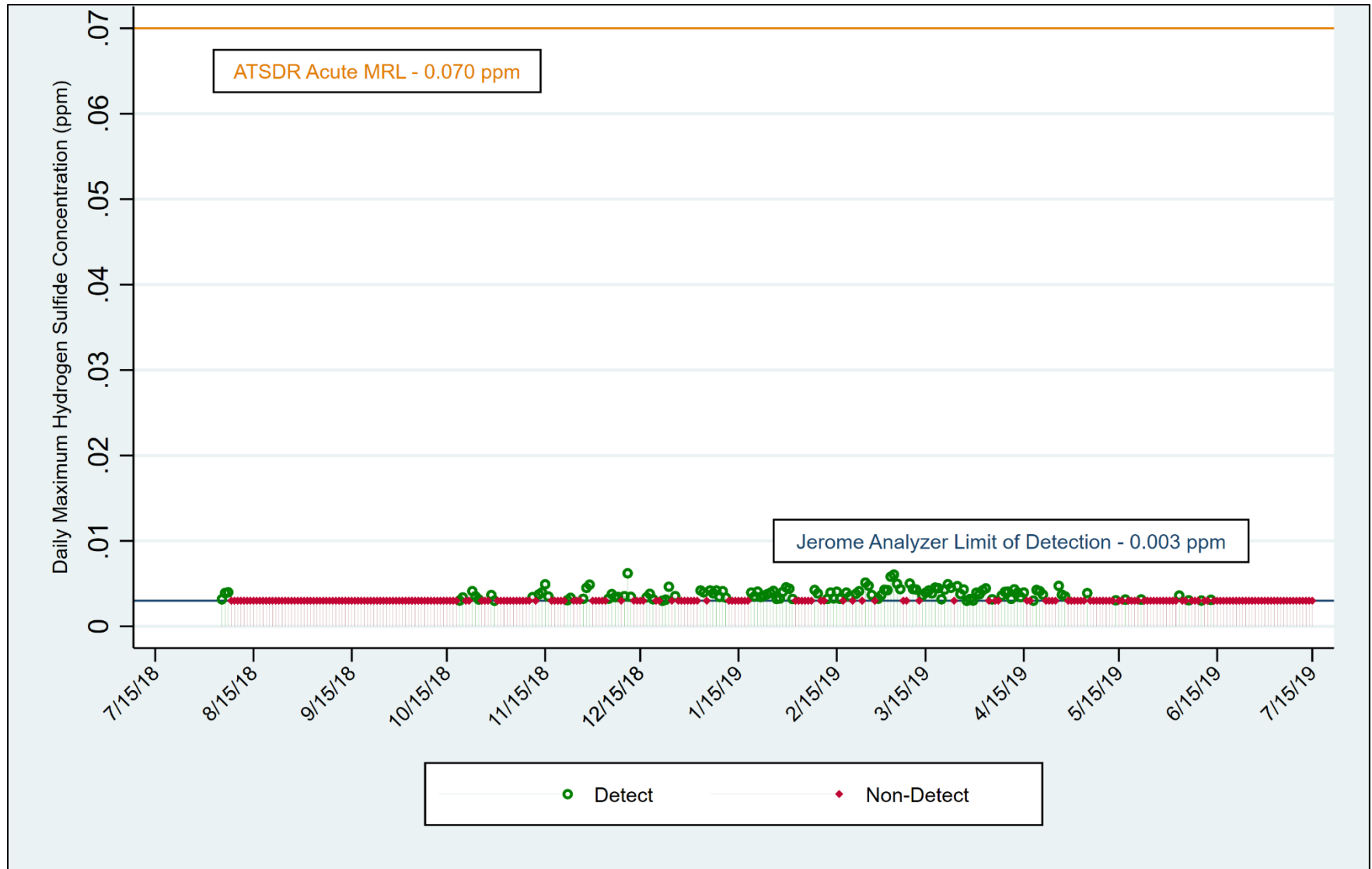


Figure 21.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sampling Location L
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

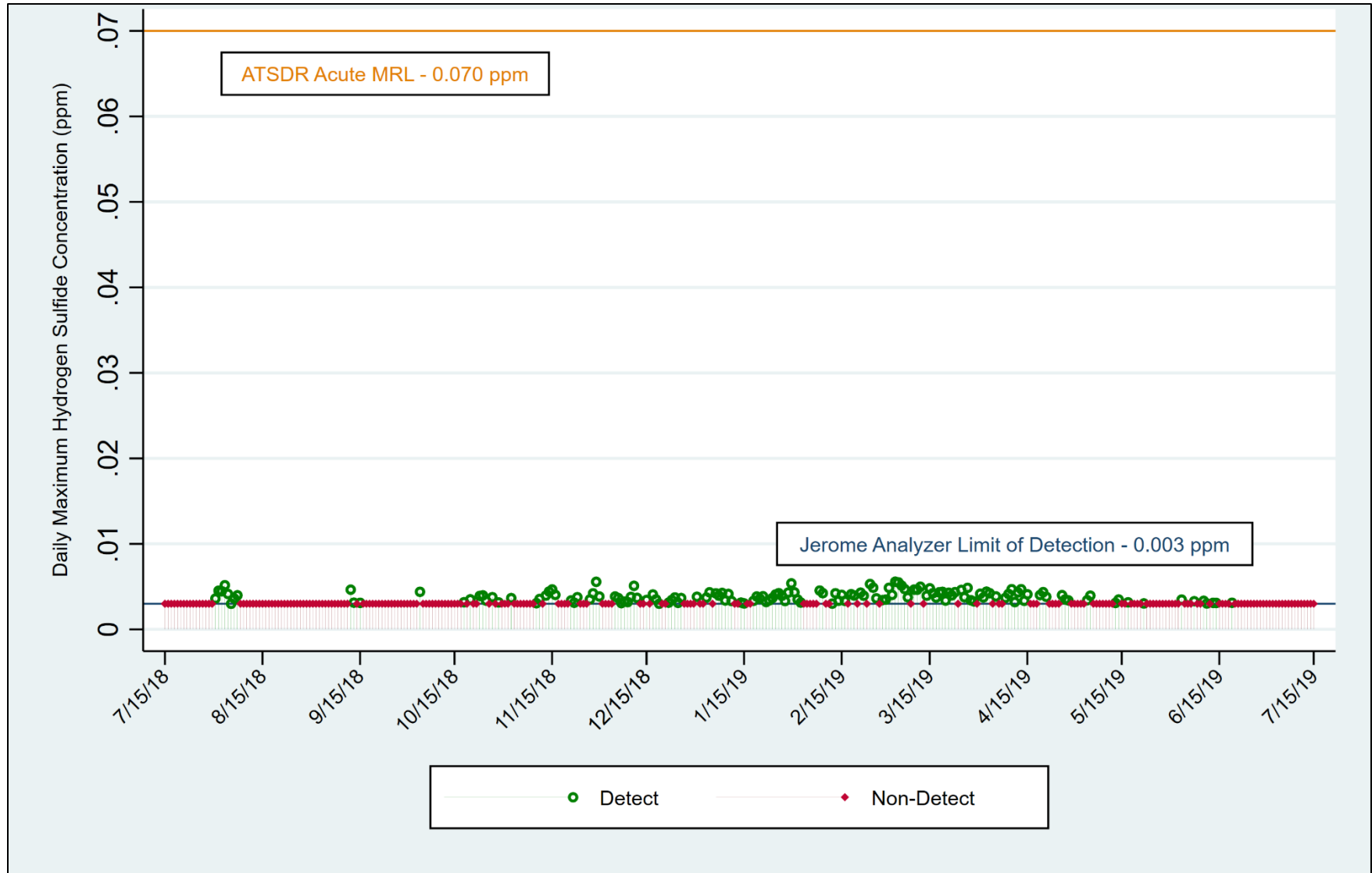


Figure 2m.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Sample Location M
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

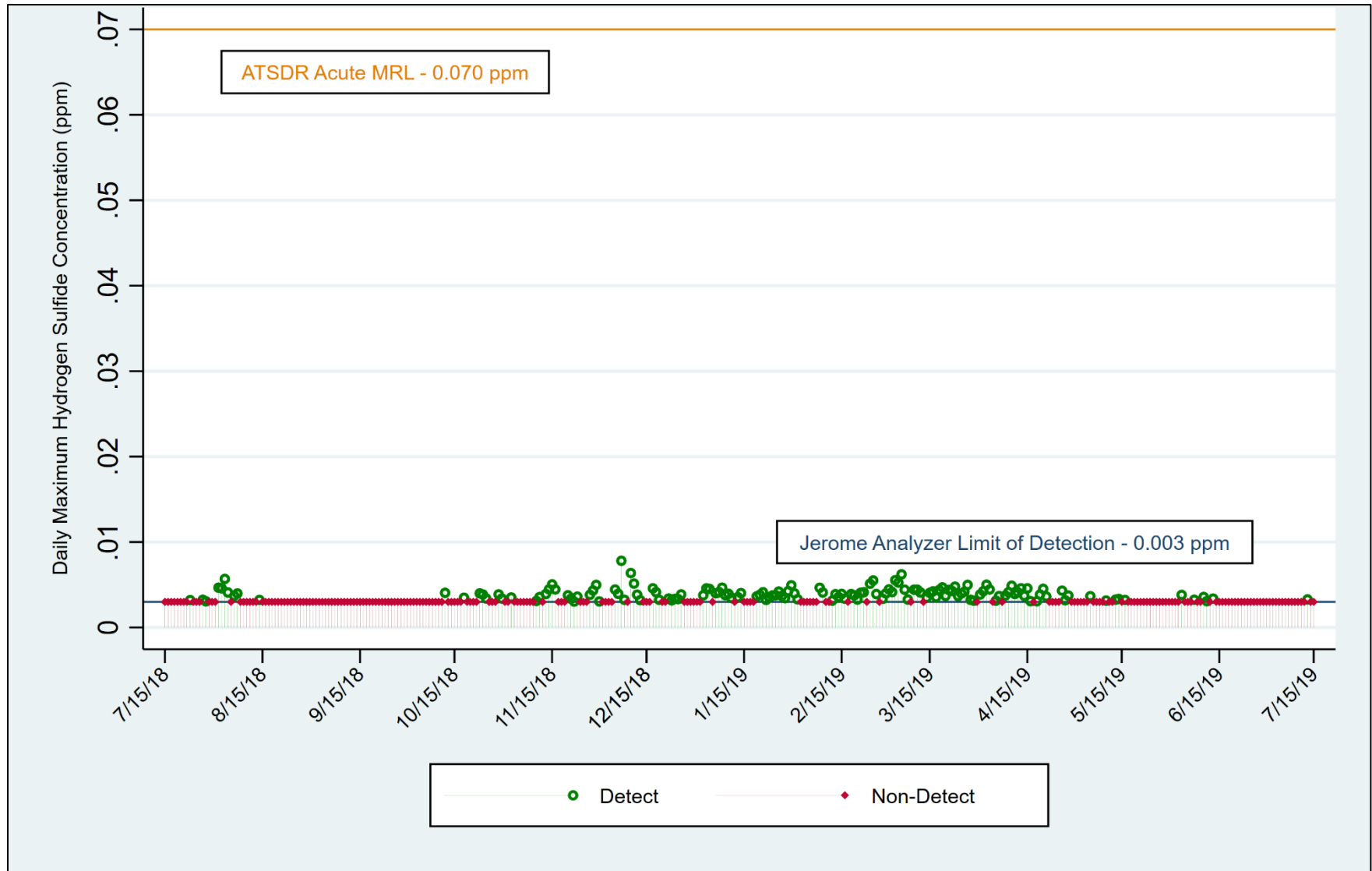


Figure 2n.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Thomas Patrick & CCM Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

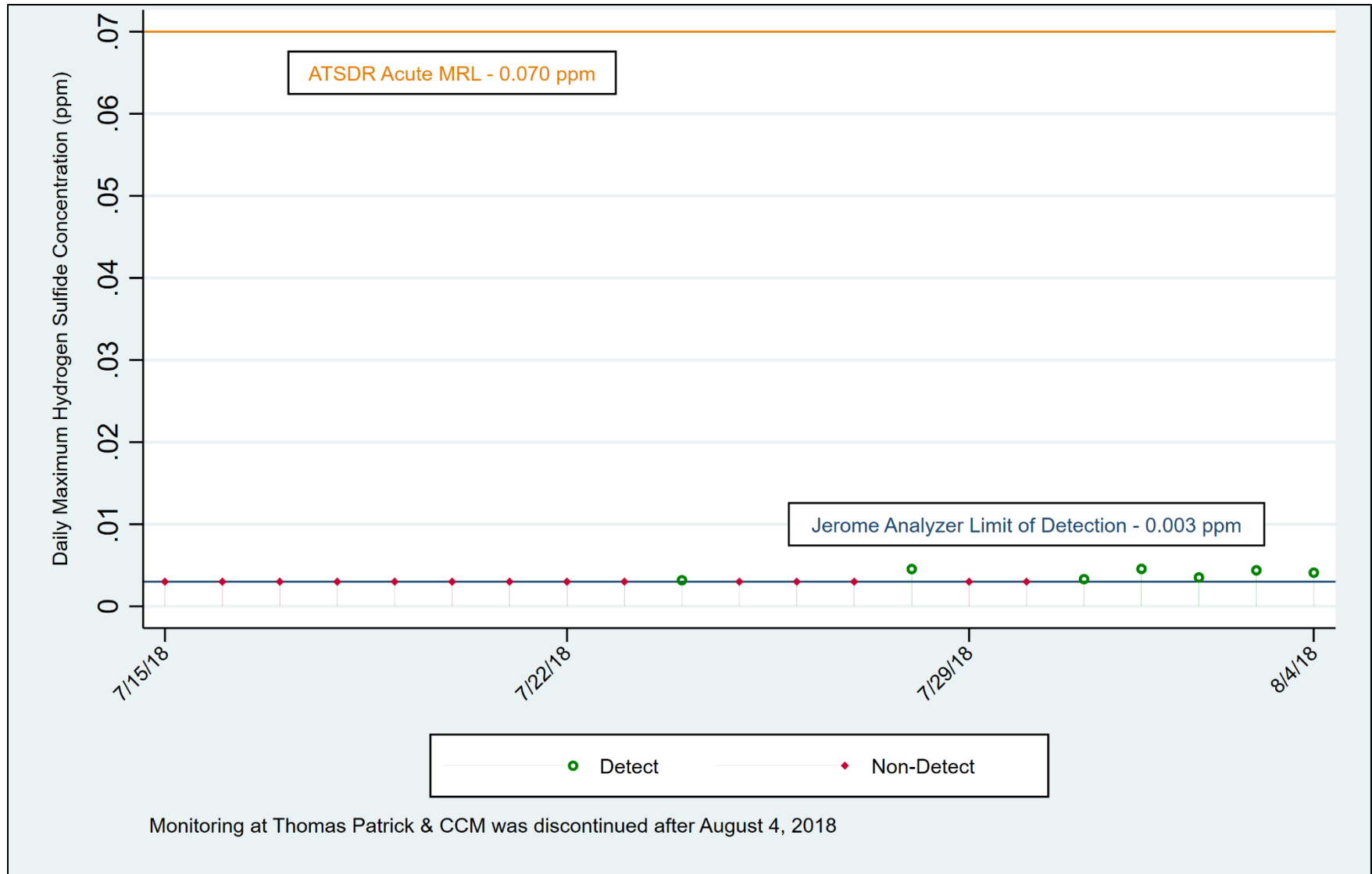


Figure 2o.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Pattonville Fire District House #3 Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

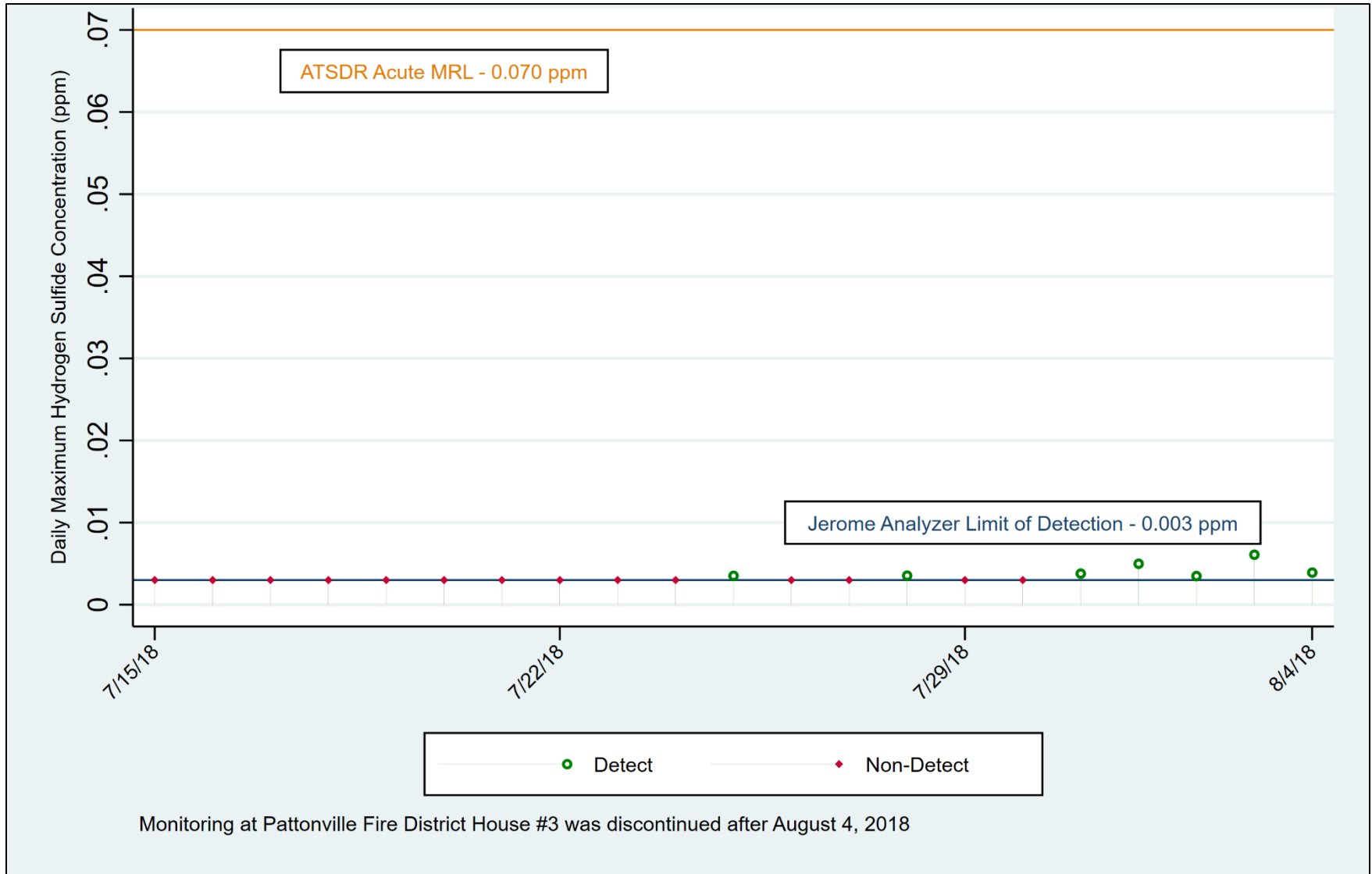


Figure 2p.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Eise Park Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

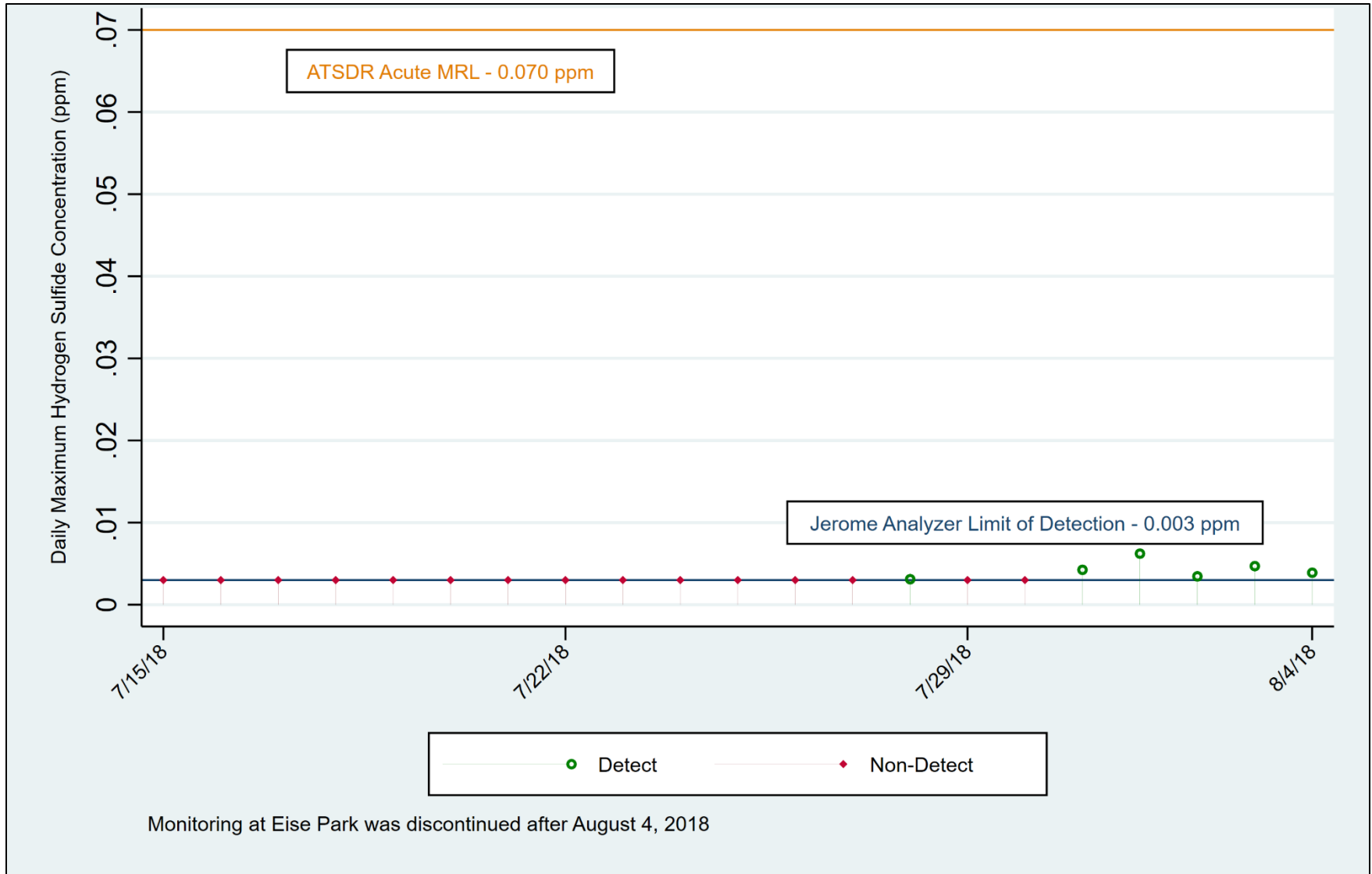


Figure 2q.
Daily Monitoring Path Hydrogen Sulfide Drop-Line Graph – Metro Paving Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

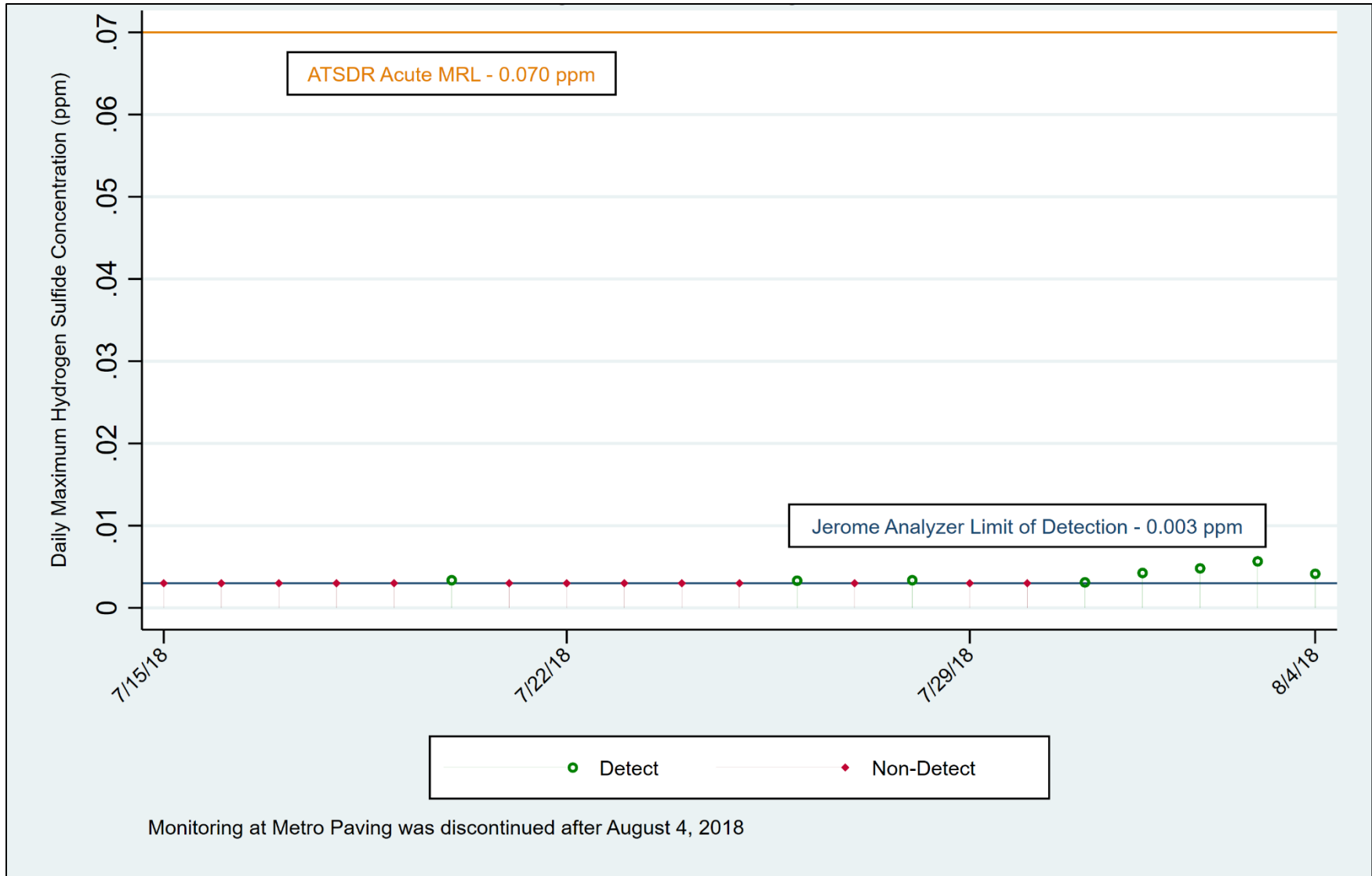


Figure 3a.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location A
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

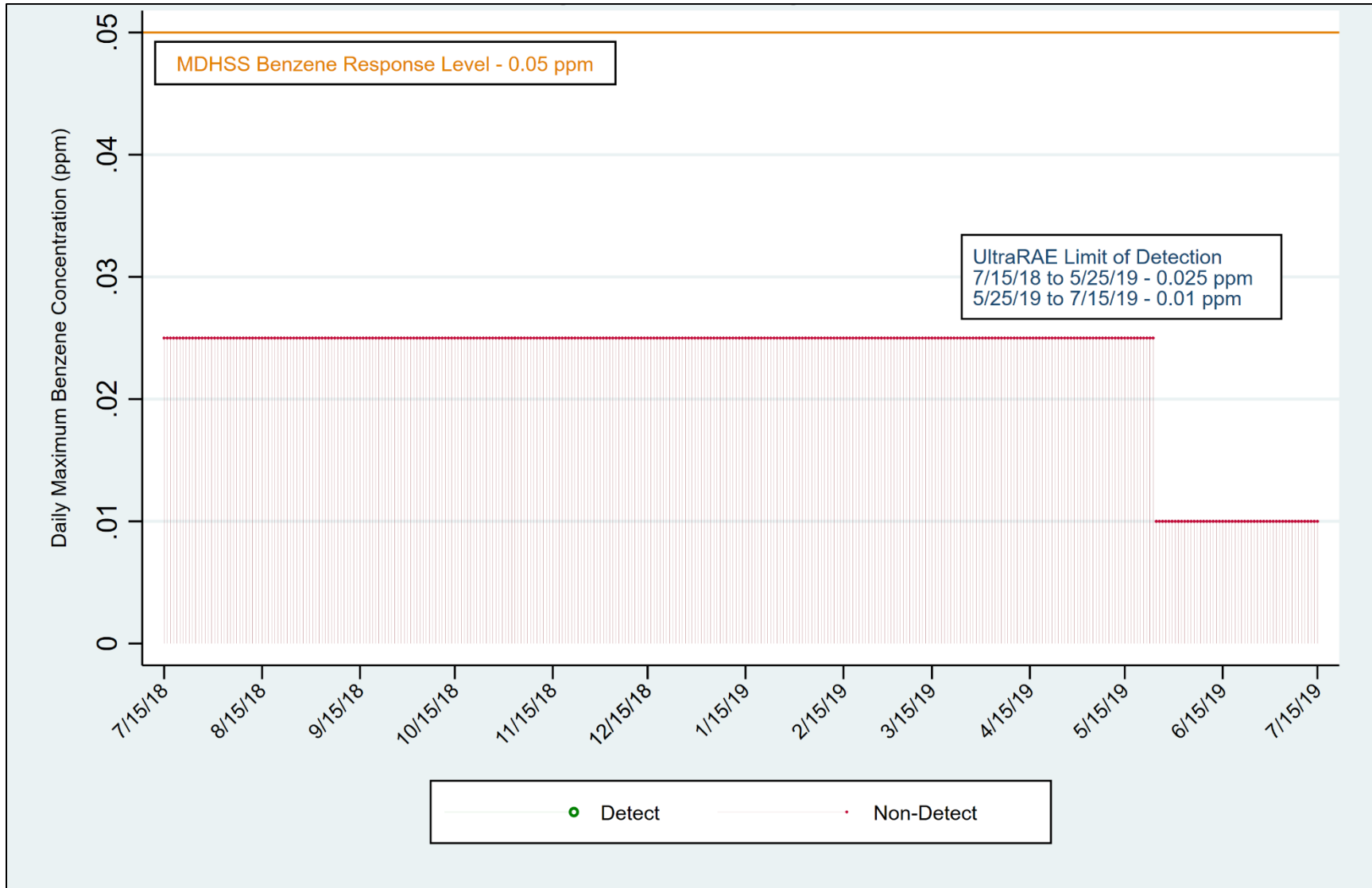


Figure 3b.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location B
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

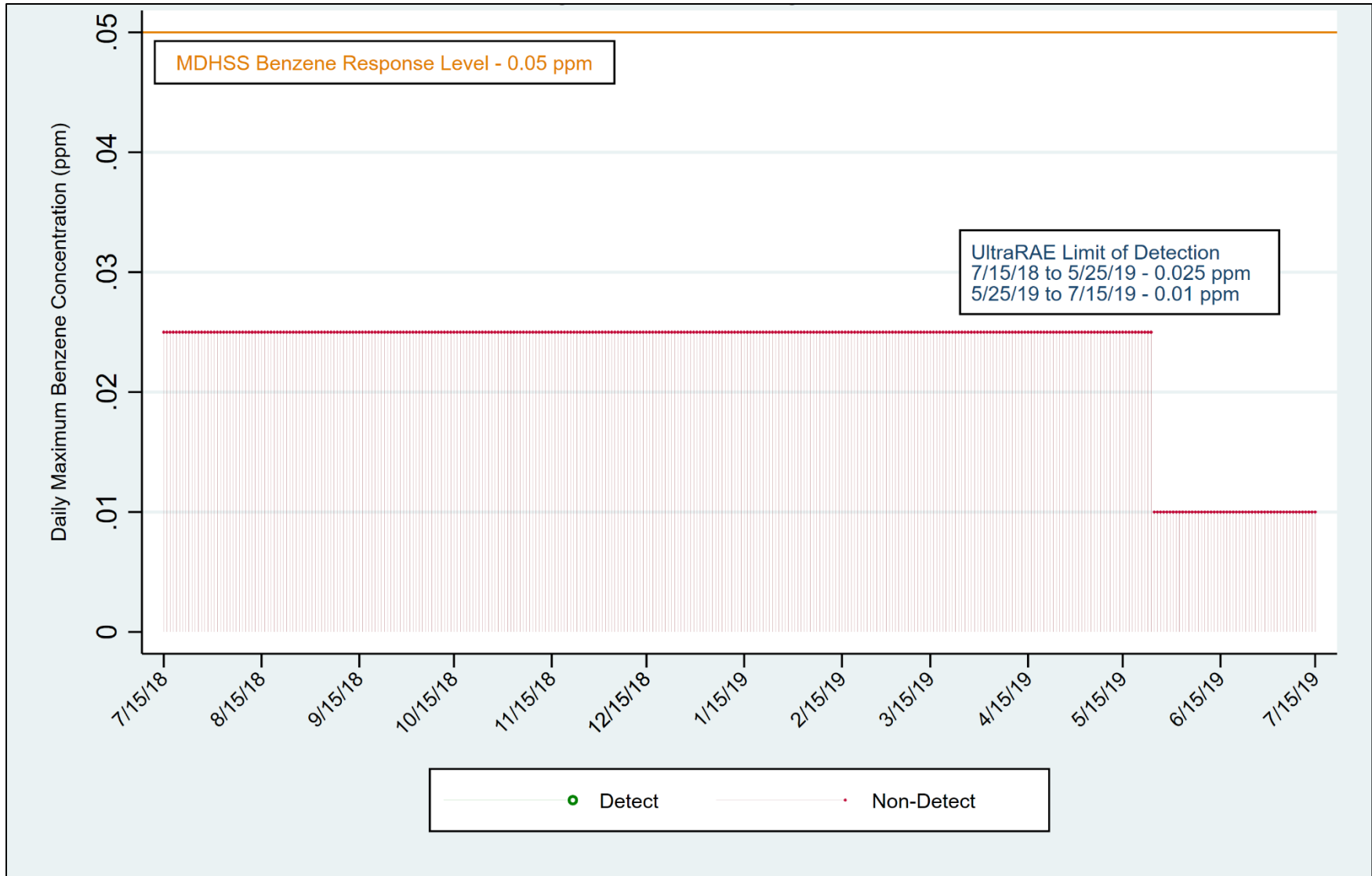


Figure 3c.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location C
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

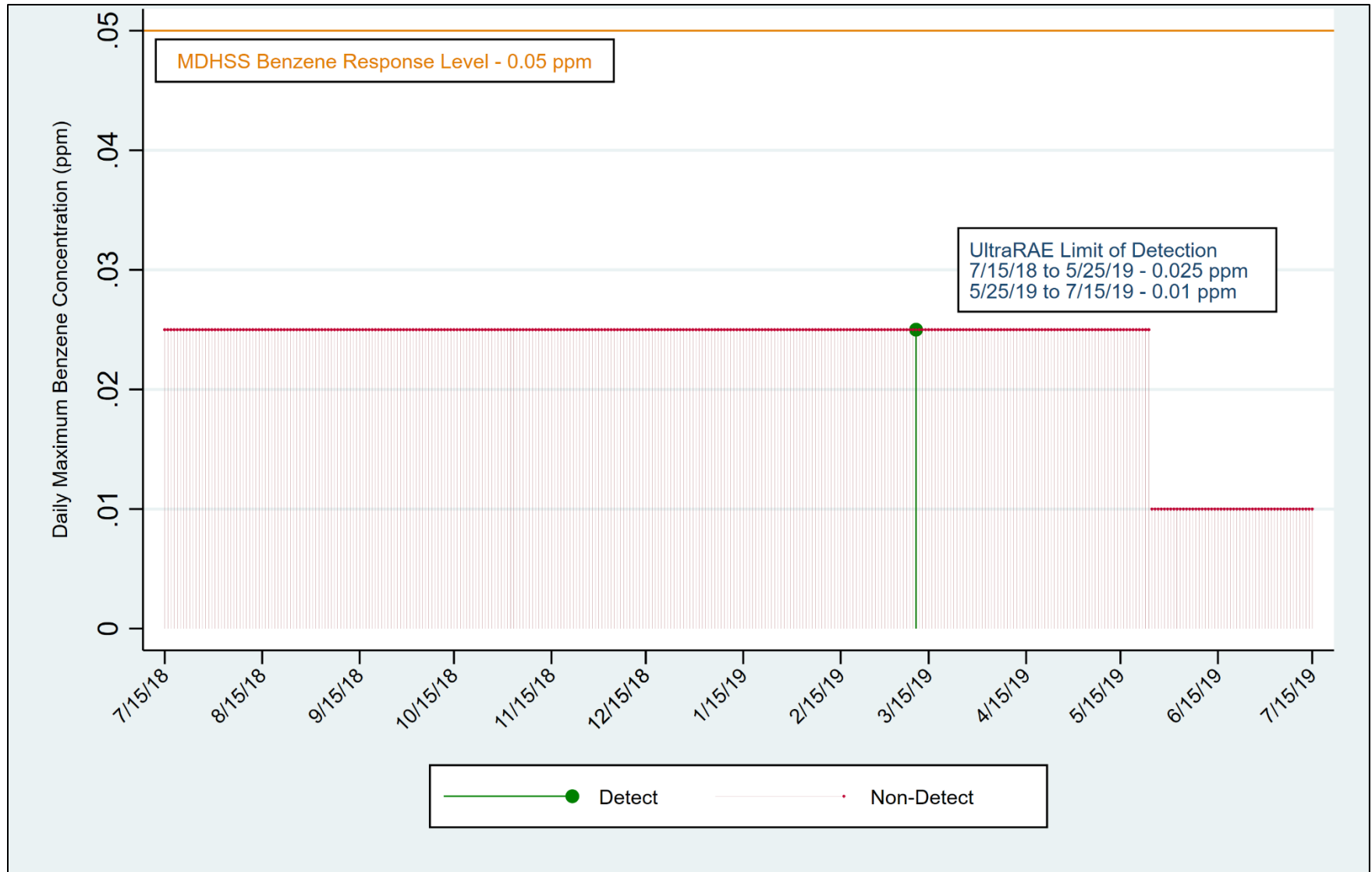


Figure 3d.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location D
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

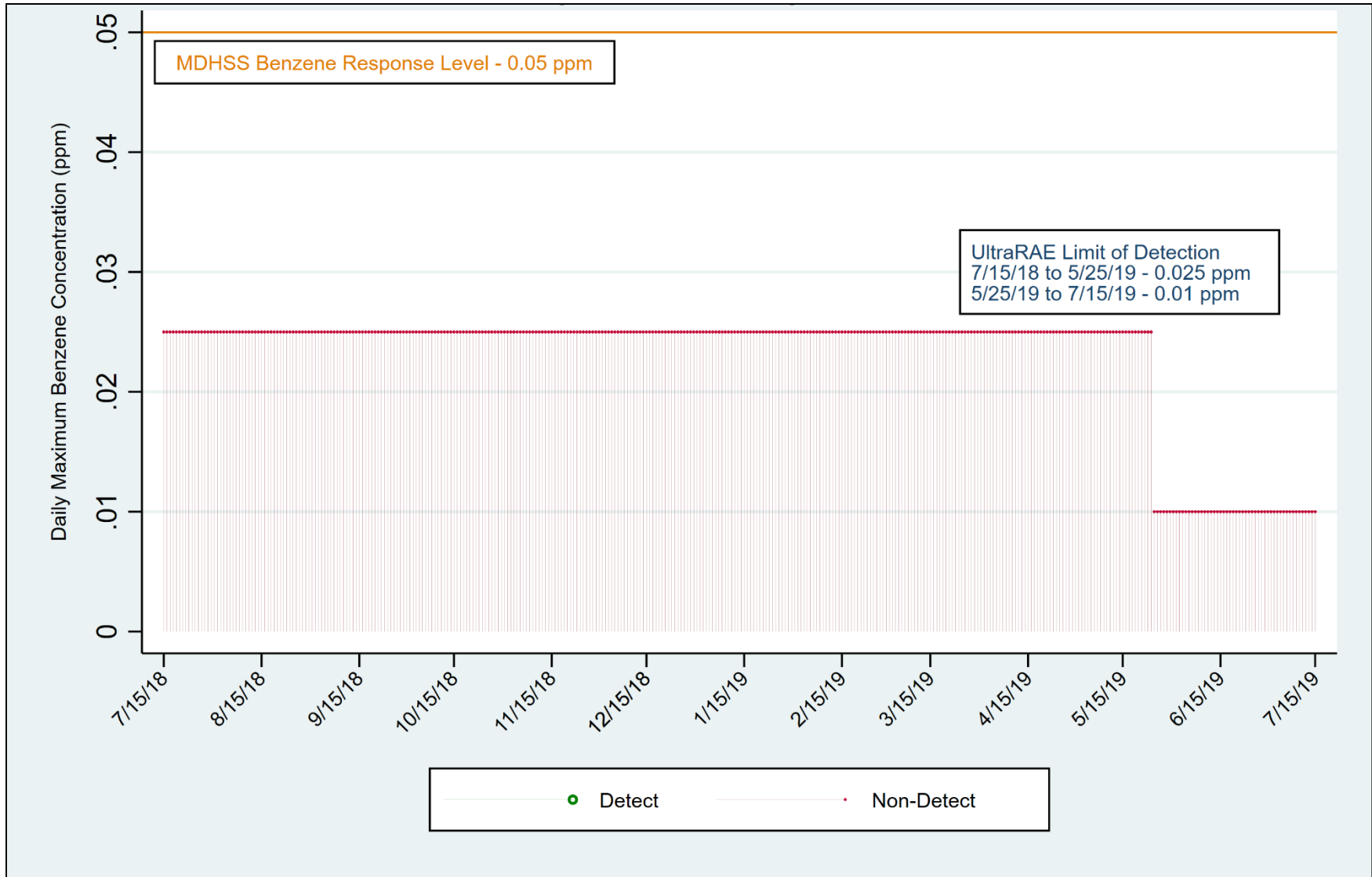


Figure 3e.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location E
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

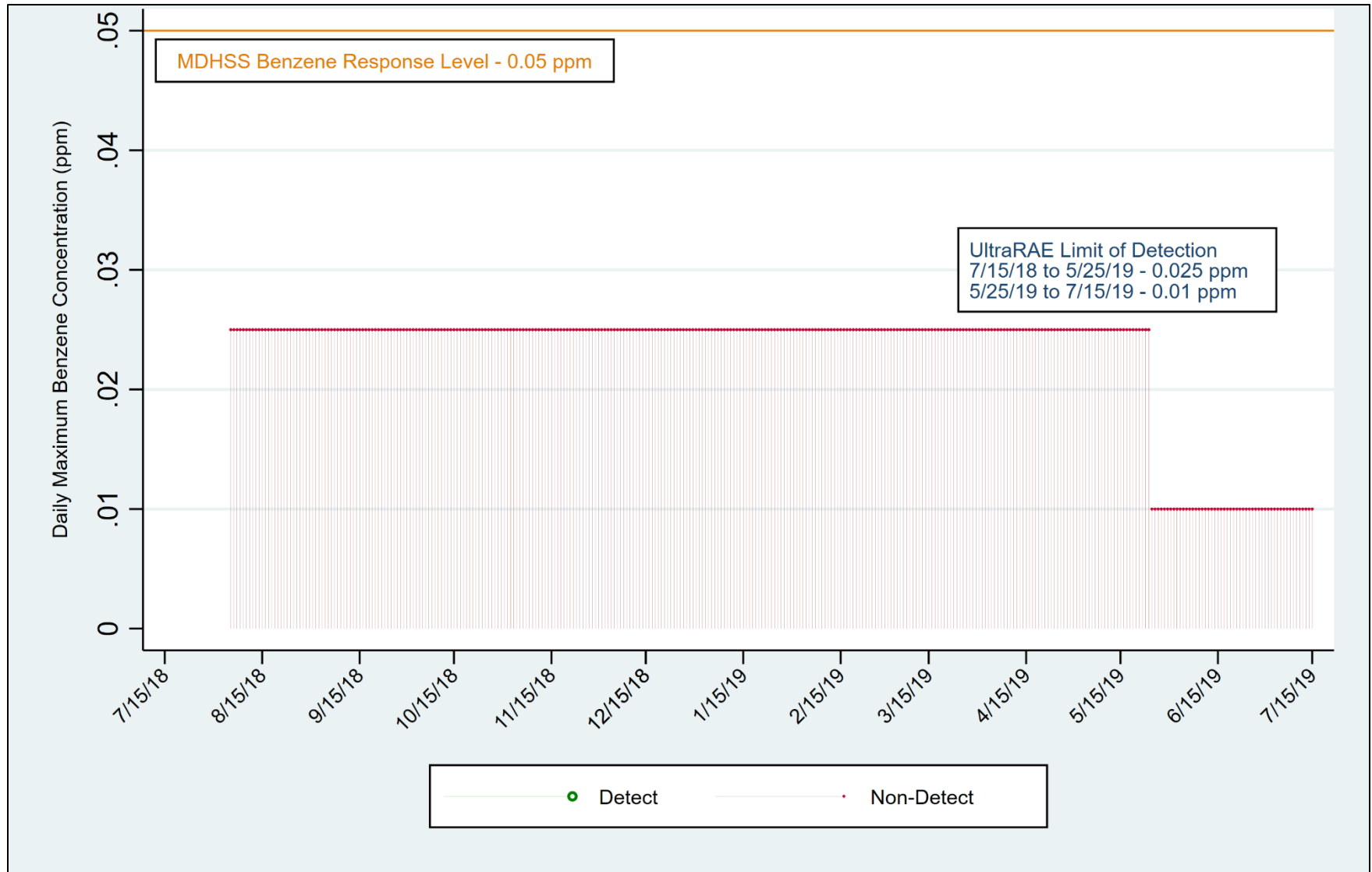


Figure 3f.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location F
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

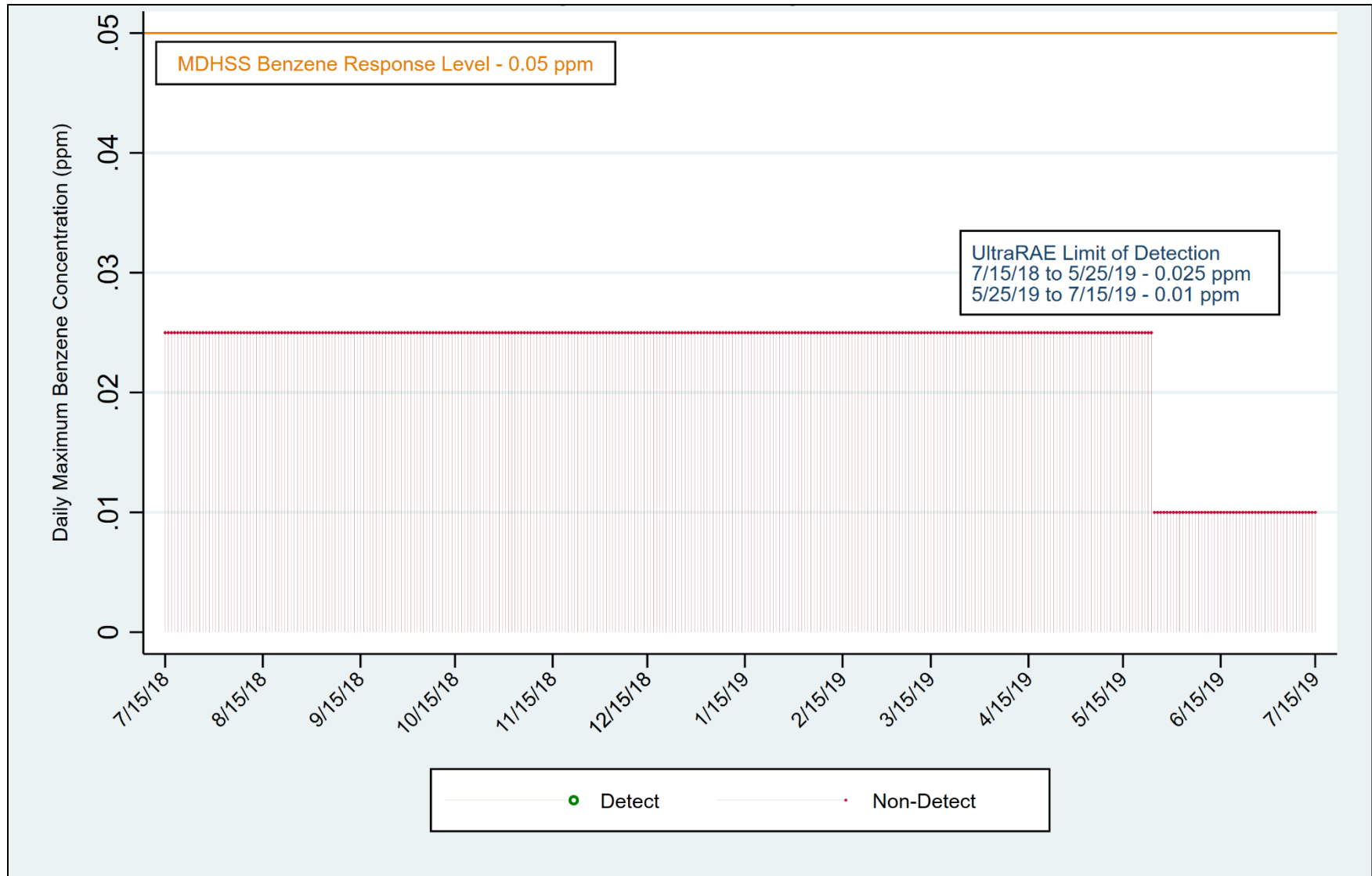


Figure 3g.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location G
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

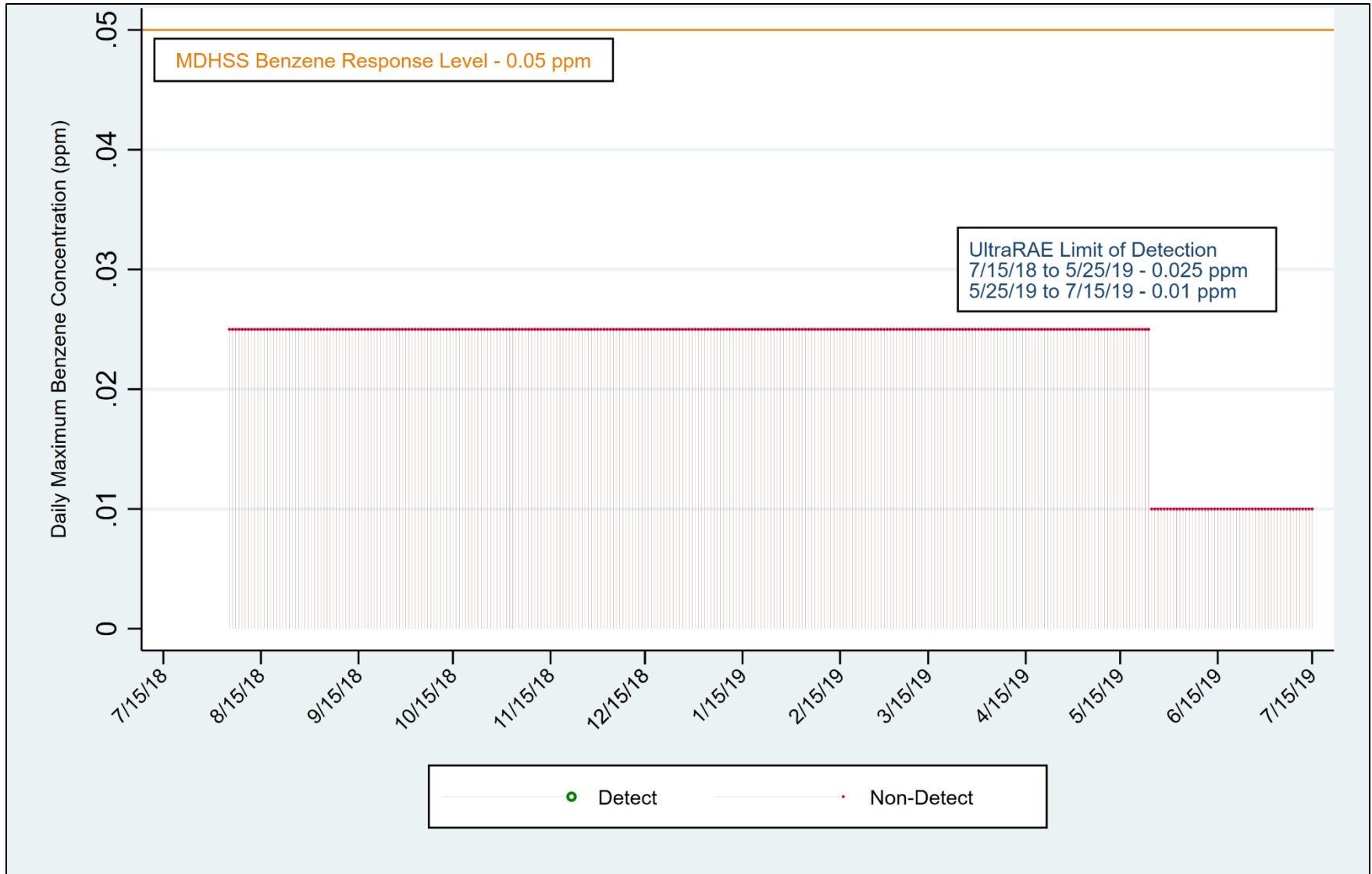


Figure 3h.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location H
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

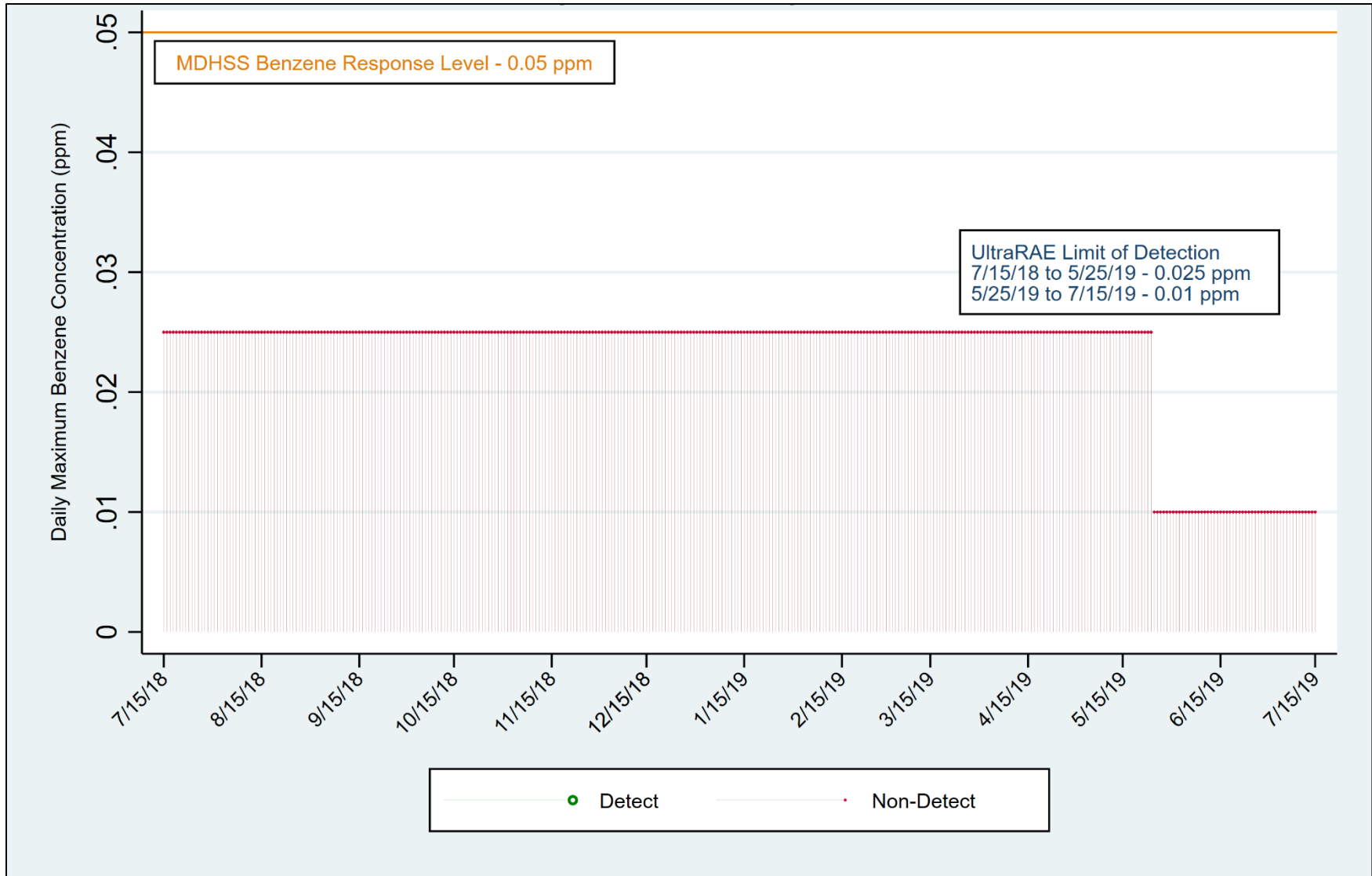


Figure 3i.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location I
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

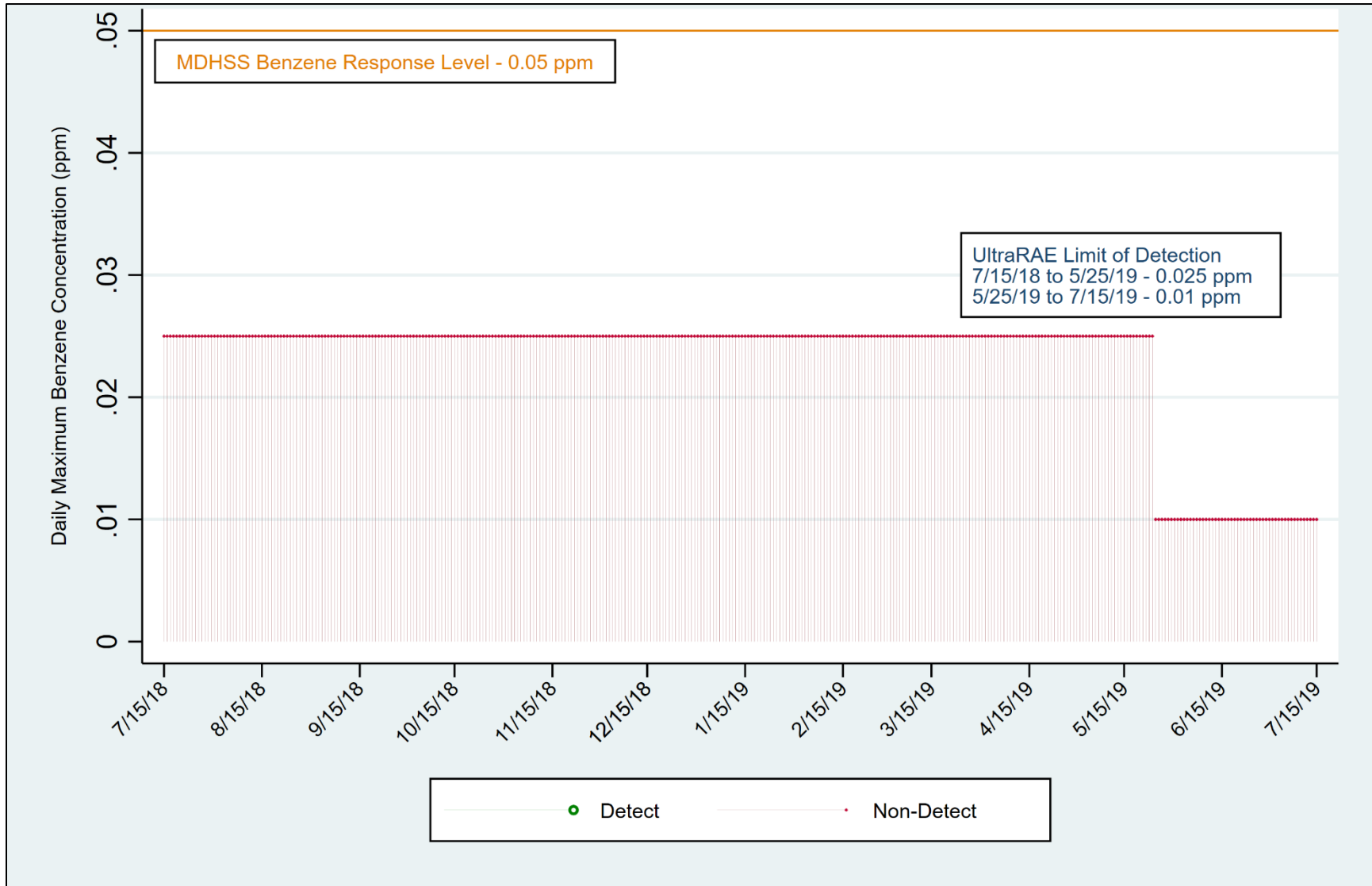


Figure 3j.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location J
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

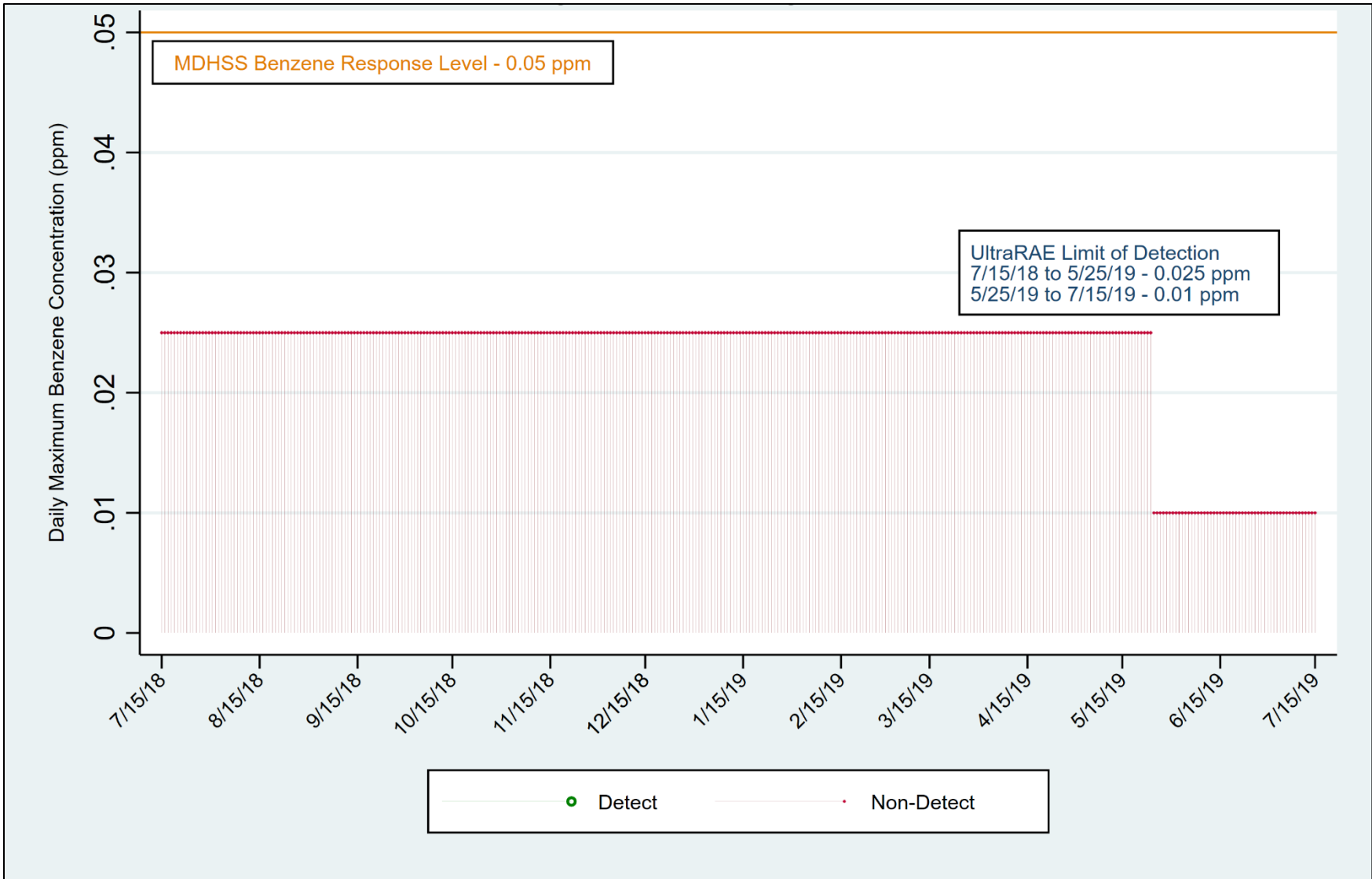


Figure 3k.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location K
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

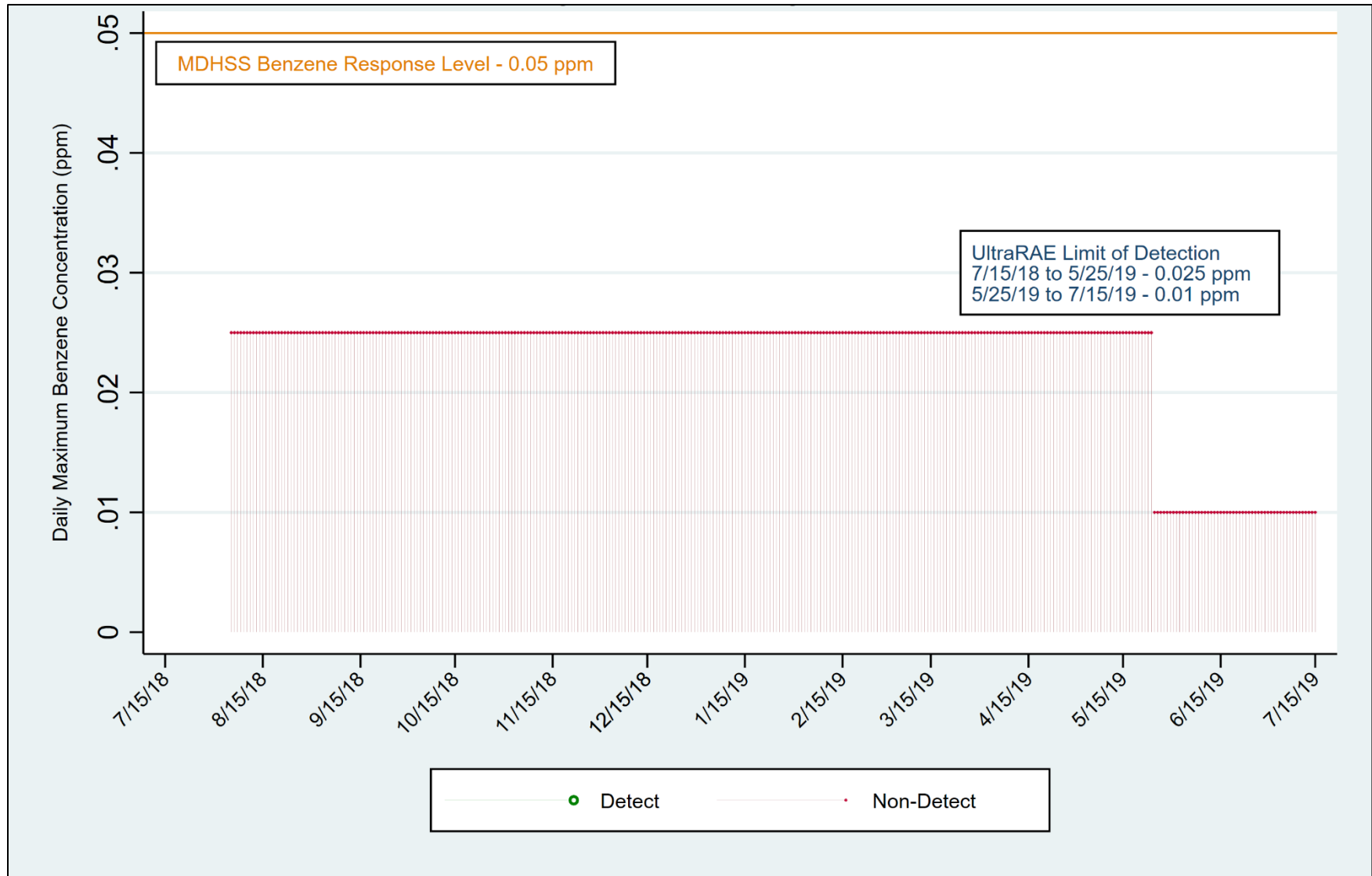


Figure 31.
Daily Monitoring Path Benzene Drop-Line Graph – Sampling Location L
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

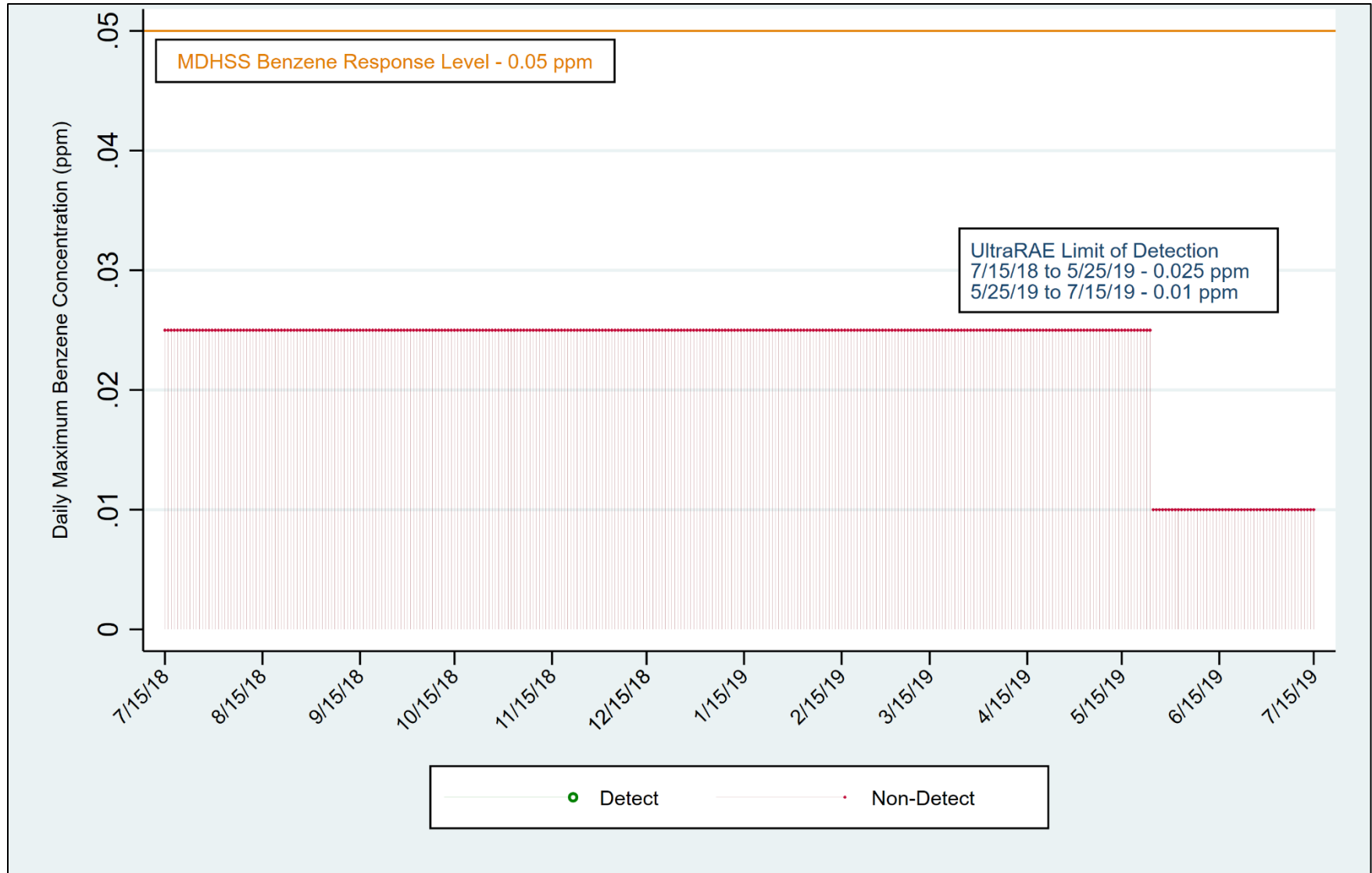


Figure 3m.
Daily Monitoring Path Benzene Drop-Line Graph – Sample Location M
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

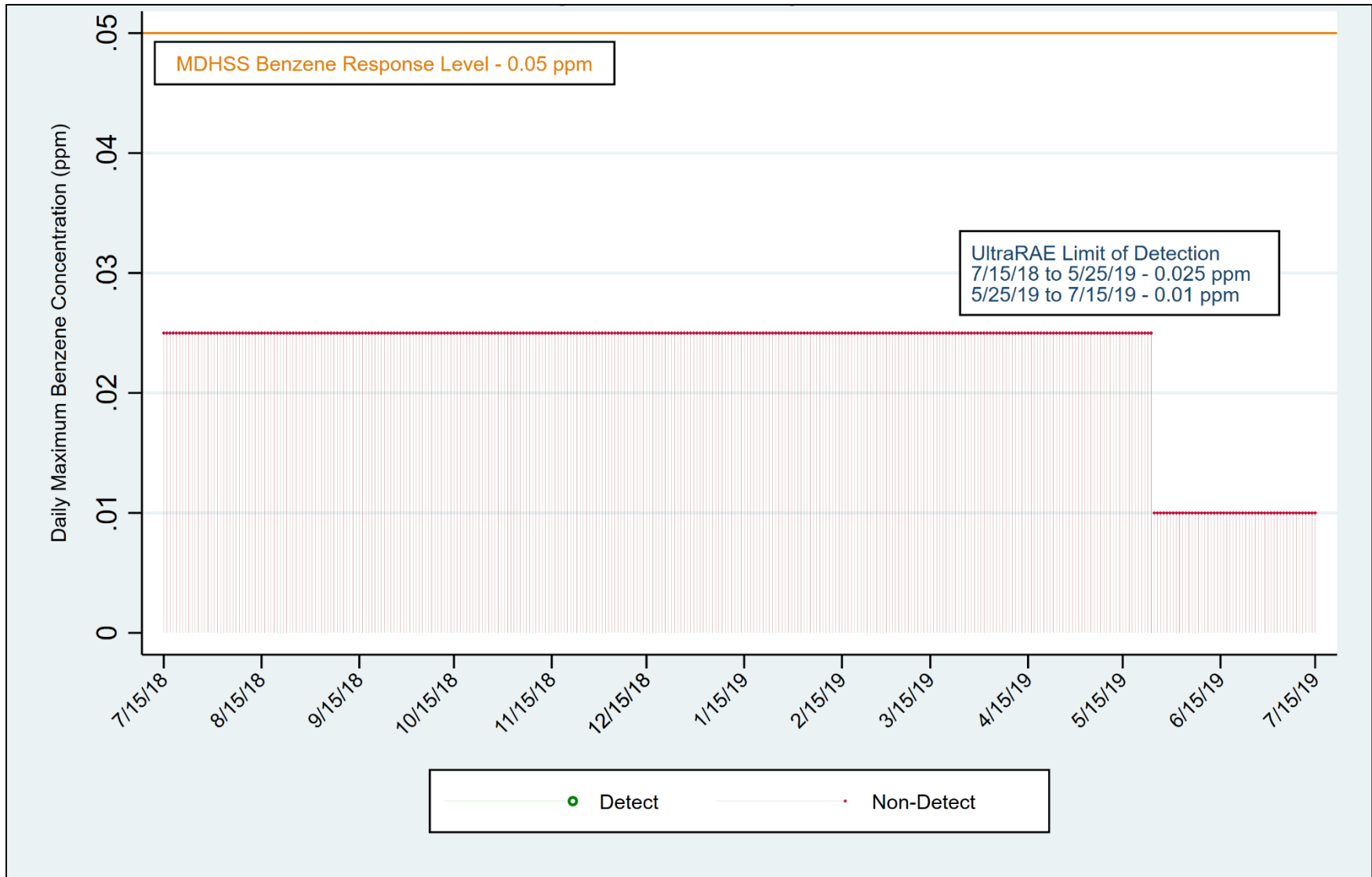


Figure 3n.
Daily Monitoring Path Benzene Drop-Line Graph – Thomas Patrick & CCM Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

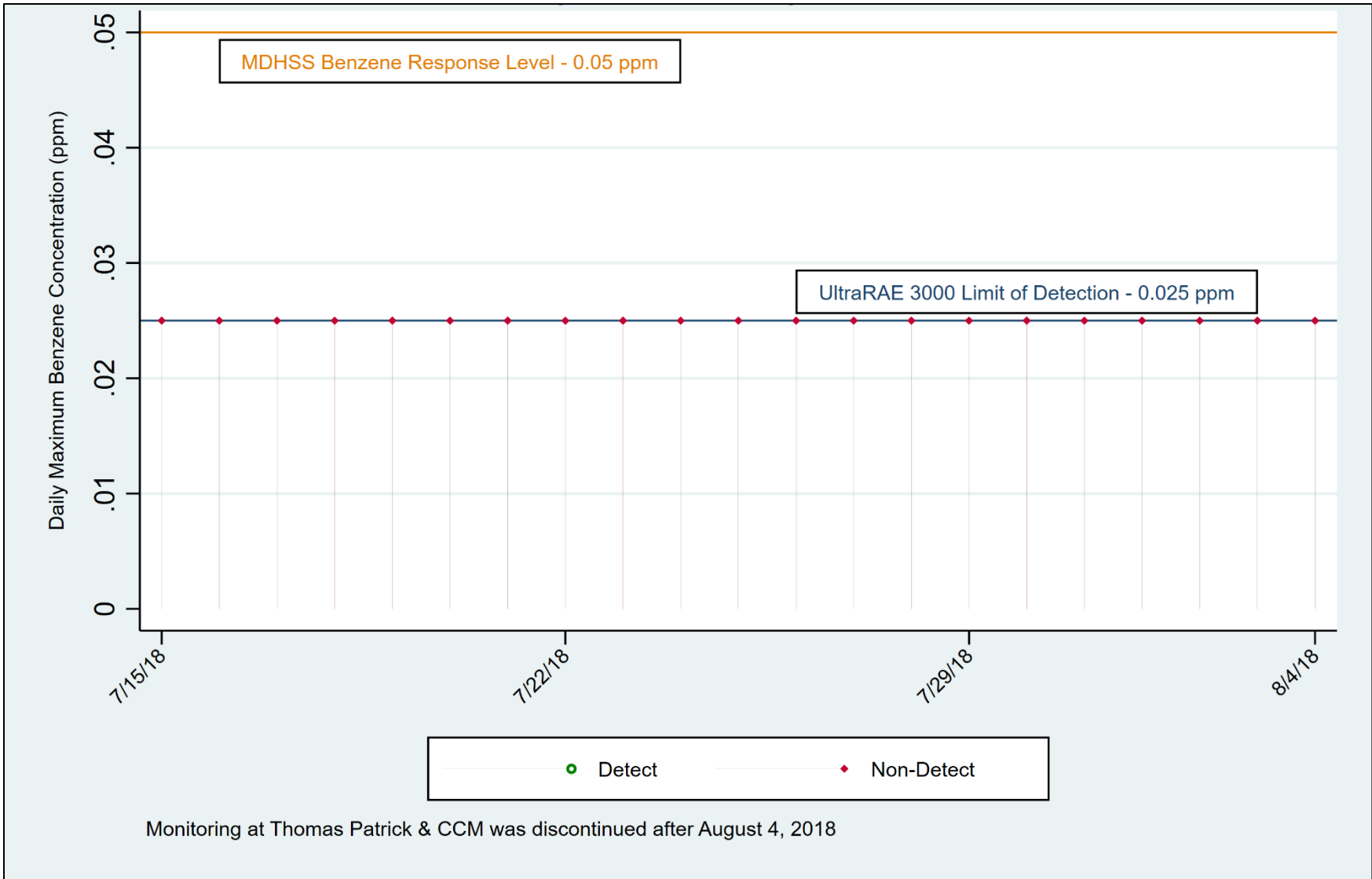


Figure 3o.
Daily Monitoring Path Benzene Drop-Line Graph – Pattonville Fire District House #3 Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

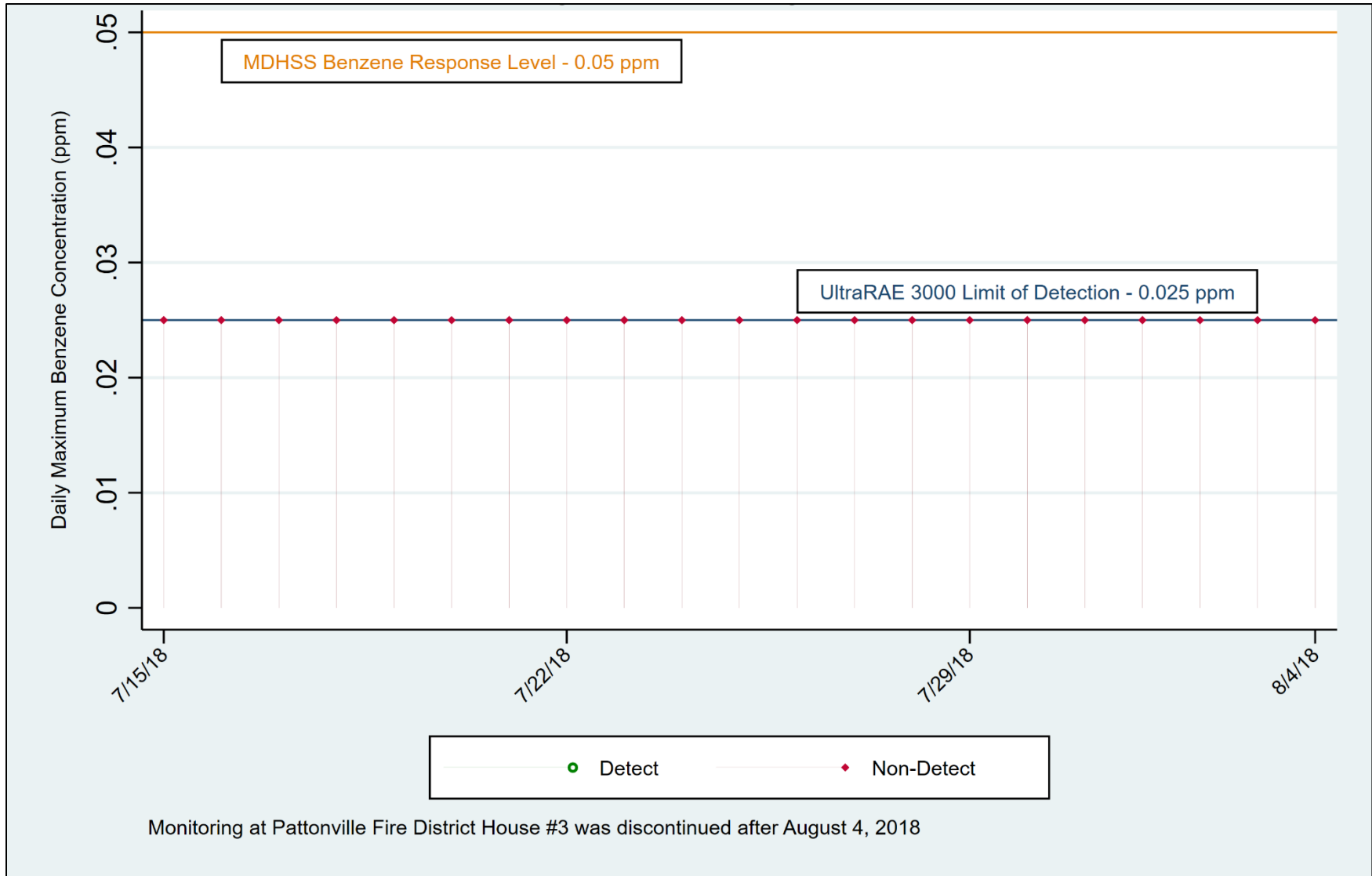


Figure 3p.
Daily Monitoring Path Benzene Drop-Line Graph – Eise Park Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

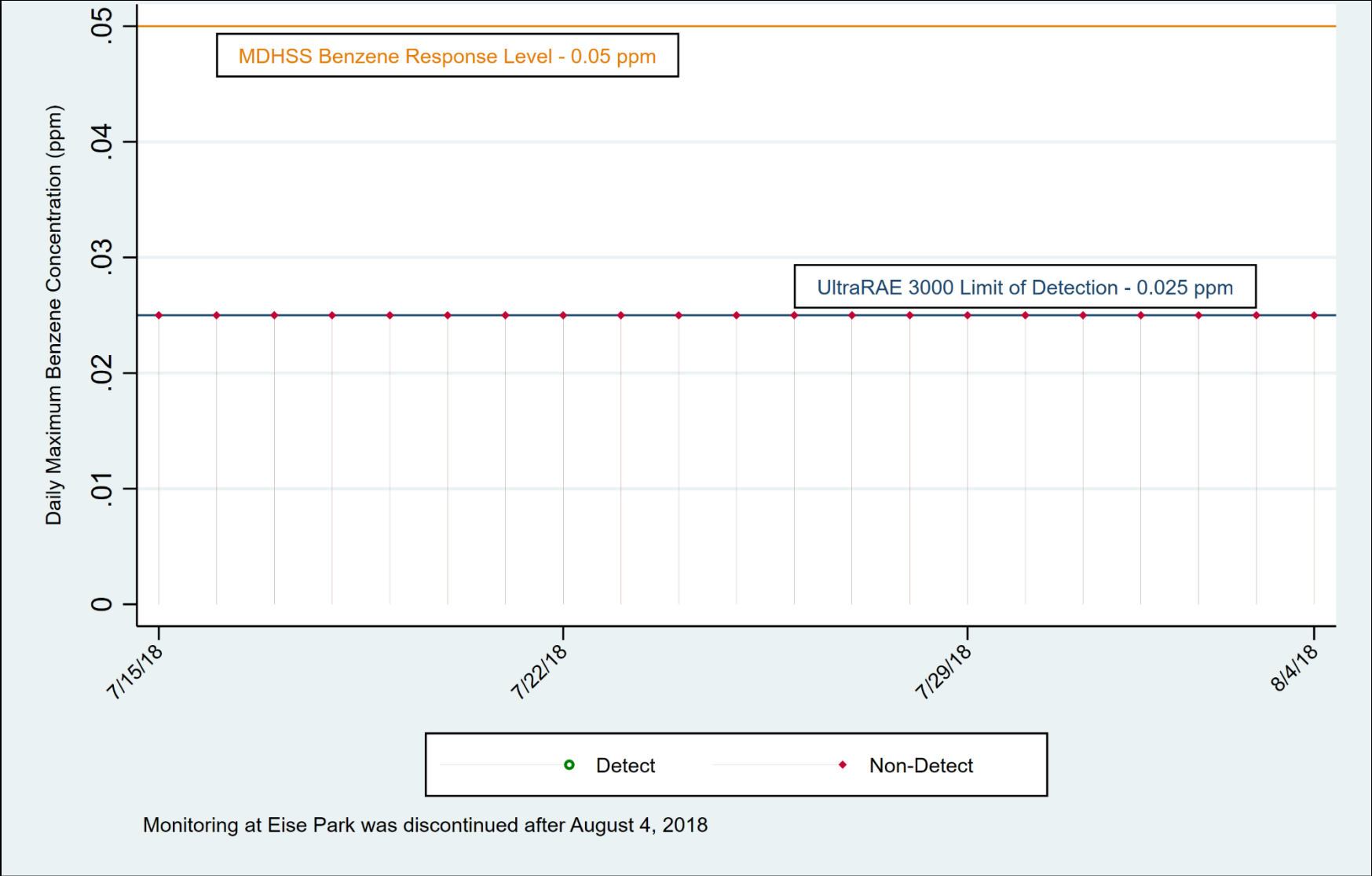


Figure 3q.
Daily Monitoring Path Benzene Drop-Line Graph – Metro Paving Sample Location
Bridgeton Landfill
Bridgeton, St. Louis County, Missouri

